CHAPTER 1.1

The Global Competitiveness Index: Measuring the Productive Potential of Nations

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The World Economic Forum has been studying the competitiveness of nations for nearly three decades. Since 1979, annual *Global Competitiveness Reports* have examined the factors enabling national economies to achieve sustained economic growth and long-term prosperity. Over the years our reports have served as benchmarking tools for business leaders and policymakers to identify obstacles to improved competitiveness, with the goal of stimulating discussion on strategies to overcome them.

The methodology used to assess national competitiveness has necessarily evolved over time as we have taken into account the latest thinking on the factors driving competitiveness and growth. It was in this context that in 2004 the World Economic Forum introduced the Global Competitiveness Index (GCI), a highly comprehensive index for measuring national competitiveness, taking into account the microeconomic and macroeconomic foundations of national competitiveness.

We define *competitiveness* as *the set of institutions, policies, and factors that determine the level of productivity of a country*. The level of productivity, in turn, sets the sustainable level of prosperity that can be earned by an economy. In other words, more competitive economies tend to be able to produce higher levels of income for their citizens. The productivity level also determines the rates of return obtained by investments in an economy. Because the rates of return are the fundamental determinants of the growth rates of the economy, a more competitive economy is one that is likely to grow faster over the medium to long run.

The concept of competitiveness thus involves static and dynamic components: although the productivity of a country clearly determines its ability to sustain a high *level* of income, it is also one of the central determinants of the returns to investment, which is one of the central factors explaining an economy's *growth potential*.

The 12 pillars of competitiveness

Our experience in studying competitiveness has made it clear that the determinants of competitiveness are many and complex. Some of the best economic minds of the last 200 years have tried to address the question of what determines the wealth of nations. Adam Smith argued that specialization and the division of labor lead to dramatic improvements in productivity. Thomas Malthus, David Ricardo, and many other economists of the 19th century believed that the law of diminishing returns would reduce the potential for expanding the level of prosperity.

The neoclassical economists of the 20th century emphasized investment in physical capital and infrastructure. The failure of many developing countries to grow despite huge investments in infrastructure proved that investing in physical capital was not enough to generate aggregate wealth. Economists, then, looked for other mechanisms: education and training (or *human capital*, as modern economists call it), technological progress

(whether created by the country or adopted from the leading economies),[1] macroeconomic stability, good governance, the rule of law, transparent and well-functioning institutions, lack of corruption, market orientation, government waste, firm sophistication, demand conditions, market size, and many others. Each of these conjectures rests on solid theoretical foundations and makes economic sense; some even have strong empirical support. The central point, however, is that they could all be true at the same time because they are open-ended. That is, because they are not mutually exclusive, two or more of them could be true at the same time. Hundreds of econometric studies show that many of these conjectures are, in fact, simultaneously true.[2]

The GCI captures this open-endedness by providing a weighted average of many different components, each of which reflects one aspect of the complex reality that we call competitiveness.[3] We group all these components in 12 different pillars that we call the *12 pillars of competitiveness*.[4] These pillars are:

First pillar: Institutions

The institutional environment forms the framework within which private individuals, firms, and governments interact to generate income and wealth in the economy. The institutional framework has a strong bearing on competitiveness and growth.[5] It plays a central role in the ways in which 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. Owners of land, corporate shares, and even intellectual property are unwilling to invest in the improvement and upkeep of their property if their rights as owners are insecure.[6] Equally importantly, if property cannot be bought and sold with the confidence that the authorities will endorse the transaction, the market itself will fail to generate dynamic growth.

The importance of institutions is not restricted to the legal framework. Government attitudes toward markets and freedoms and the efficiency of its operations are also very important: excessive bureaucracy and red tape,[7] overregulation, corruption, dishonesty in dealing with public contracts, lack of transparency and trustworthiness, or the political dependence of the judiciary system impose significant economic costs to businesses and slow down the process of economic development.

Although the economic literature has focused mainly on public institutions, private institutions are also important ingredients in the process of the creation of wealth. The large corporate scandals that have occurred over the past few years have highlighted the relevance of accounting and reporting standards for preventing fraud and mismanagement, and for maintaining investor and consumer confidence. An economy is well served by businesses that are run honestly, where managers abide by strong ethical practices in their dealings with the government, other firms, and the public.[8] Private-sector transparency is indispensable to business, and can be brought about through the use of standards and auditing and accounting practices that ensure access to information in a timely manner.[9]

Second pillar: Infrastructure

The existence of high-quality infrastructure is critical for ensuring the efficient functioning of the economy, as it is an important factor determining the location of economic activity and the kinds of activities or sectors that can develop in an economy. High-quality infrastructure reduces the effect of distance between regions, with the result of truly integrating the national market and connecting it to markets in other countries and regions.

Extensive and high-quality infrastructure is an essential driver of competitiveness, significantly impacting economic growth and reducing income inequalities and poverty in a variety of ways.[10] In this regard, a well-developed transport and communications infrastructure network is a prerequisite for the efficient functioning of markets and for export growth, as well as for poor communities' ability to connect to core economic activities and schools.

Effective modes of transport for goods, people, and services—such as quality roads, railroads, ports, and air transport—enable entrepreneurs to get their goods to market in a secure and timely manner, and facilitate the movement of workers around the country to the most suitable jobs. Economies also depend on electricity supplies that are free of interruptions and shortages, to ensure that businesses and factories can work unimpeded. Finally, a solid and extensive telecommunications network allows for a rapid and free flow of information, which increases overall economic efficiency by helping to ensure that decisions made by economic actors take into account all available relevant information.

Third pillar: Macroeconomy

The stability of the macroeconomic environment is important for business and, therefore, is important for the overall competitiveness of a country.[11] Although it is certainly true that macroeconomic stability alone cannot increase the productivity of a nation, it is not less true that macroeconomic disarray harms the economy. Firms cannot make informed decisions when the inflation rate is in the hundreds (typically as a result of public finances being out of control). The financial sector cannot function if the government runs gigantic deficits (especially if, as a result, it represses banks and forces them to lend it money at below-market interest rates). The government cannot provide services efficiently if it has to make enormous interest payments on its past debts. In sum, the economy cannot grow unless the macro environment is stable or favorable.

Fourth pillar: Health and primary education

A healthy workforce is vital to a country's competitiveness and productivity. Workers who are ill cannot function to

their potential, and will be less productive. Poor health leads to significant costs to business, as sick workers are often absent or operate at lower levels of efficiency. Investment in the provision of health services is thus critical for clear economic, as well as moral, considerations.[12]

In addition to health, this pillar takes into account the quantity and quality of basic education received by the population, which is increasingly important in today's economy. Basic education increases the efficiency of each individual worker, making the economy more productive. Furthermore, a workforce that has received little formal education can carry out only basic manual tasks and finds it much more difficult to adapt to more advanced production processes and techniques. A shortage of qualified administrative staff might also have a negative impact on overall business performance. Lack of basic education can therefore become a constraint on business development, with firms finding it difficult to move up the value chain by producing more sophisticated or value-intensive products.

Fifth pillar: Higher education and training

Quality higher education and training is crucial for economies that want to move up the value chain beyond simple production processes and products.[13] In particular, today's globalizing economy requires economies 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. The importance of vocational and continuous on-the-job training, neglected in many economies, cannot be overstated, as it ensures a constant upgrading of workers' skills to the changing needs of the production system.

Sixth pillar: Goods market efficiency

Countries with efficient goods markets are positioned to produce the right mix of products and services given supply-and-demand conditions, and such markets also ensure that these goods can be most effectively traded in the economy. Healthy market competition, both domestic and foreign, is important in driving market efficiency and thus business productivity, by ensuring that the most efficient firms, producing goods demanded by the market, are those that survive. And to ensure the best possible environment for the exchange of goods, there must be a minimum of impediments to business activity through government intervention. For example, competitiveness is hindered by distortionary or burdensome taxes, and by restrictive and discriminatory rules on foreign ownership or foreign direct investment (FDI). Market efficiency also depends on demand conditions such as customer orientation and buyer sophistication: customers who accept poor treatment by firms tend not to impose the necessary discipline on companies for efficiency to be achieved in the market.

Seventh pillar: Labor market efficiency

The efficiency and flexibility of the labor market are critical for ensuring that workers are allocated to their most efficient use in the economy. In a productive economy, workers are allocated appropriately and provided with incentives to give their best effort in their jobs. Labor markets must have the flexibility to shift workers from one economic activity to another quickly, and to allow for wage fluctuations without much social disruption. Efficient labor markets must also ensure a clear relationship between worker incentives and their efforts, as well as the best use of available talent—which includes equity in the business environment between women and men.

Eighth pillar: Financial market sophistication

An efficient financial sector is needed to allocate the resources saved by a nation's citizens to its most productive uses. A proficient financial sector channels resources to the best entrepreneurs or investment projects rather than to the politically connected. A thorough assessment of risk is therefore a key ingredient. A modern financial sector develops products and methods so that small innovators with good ideas can implement them. A well-functioning financial sector needs to provide risk capital and loans and be trustworthy and transparent.

Most critical to productivity is business investment. Therefore economies require sophisticated financial markets that can make capital available for private-sector investment from such sources as loans from a sound banking sector, well-regulated securities exchanges, and venture capital.

Ninth pillar: Technological readiness

This pillar measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries.[14] This is a critical concept, as 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 growing in recent years, as progress in the dissemination of knowledge and the rising use of information and communication technologies (ICT) have become increasingly widespread.

In particular, considering that ICT has evolved into the "general purpose technology" of our time,[15] ICT access and usage become fundamental to determine economies' overall level of technological readiness, given the critical spillovers of ICT to the other economic sectors and its role as efficient infrastructure for commercial transactions.

In this sense, the presence of an ICT-friendly regulatory framework as well the actual ICT penetration rates are of key importance for a country's overall competitiveness.

Whether the technology used has or has not been invented within its borders is immaterial for our purposes in analyzing competitiveness. The central point is

that the firms operating in the country have access to these advanced products and blueprints. That is, it does not matter whether a country has invented electricity, the Internet, or the airplane. What is important is that these inventions are available to the business community. This does not mean that the process of innovation is irrelevant. However, the level of technology available to firms in a country needs to be distinguished from the country's ability to innovate and expand the frontiers of knowledge. That is why we separate technological readiness from innovation, which is the 12th pillar below.

Tenth pillar: Market size

The size of the market affects productivity because large markets allow firms to exploit economies of scale. Traditionally, the markets available to firms have been constrained by the borders of the nation. In the era of globalization, international markets have become a substitute for domestic markets, especially for small countries. The empirical evidence on the relation between international trade and growth is controversial. However, much evidence shows that trade is positively associated with growth. Some research casts doubts on the robustness of this relationship, but the truth of the matter is that there is no evidence suggesting that trade and growth are negatively associated. [16] Hence, our reading of the overall literature is that the relationship between openness and growth is likely to be positive and robust, especially for small countries with small domestic markets. Thus, we think of international trade as a substitute for domestic demand in determining the size of the market for the firms of a country. This is particularly important in a world in which economic borders are not as clearly delineated as political ones. In other words, when Belgium sells goods to the Netherlands, the national accounts register the transaction as an export (so the Netherlands is a foreign market of Belgium), but when California sells the same kind of output to Nevada, the national accounts register the transaction as domestic (so Nevada is a domestic market of California). By including both domestic and foreign markets in our measure of market size, we avoid discriminating against geographic areas (such as the European Union) that are broken into many countries but have one common market. This is why we take into account both markets when we construct the 10th pillar of economic competitiveness: market size.

Eleventh pillar: Business sophistication

Business sophistication is conducive to higher efficiency in the production of goods and services. This leads, in turn, to increased productivity, thus enhancing a nation's competitiveness. Business sophistication concerns the quality of a country's overall business networks, as well as the quality of individual firms' operations and strategies. This pillar is particularly important for economies in the innovation-driven stage of development.

The quality of a country's business networks and supporting industries, which we capture by using variables on the quantity and quality of local suppliers, is important for a variety of reasons. When companies and suppliers are interconnected in geographically proximate groups ("clusters"), efficiency is heightened, leading to greater opportunities for innovation and to the reduction of barriers to entry for new firms. Individual firms' operations and strategies (branding, marketing, the presence of a value chain, and the production of unique and sophisticated products) all lead to sophisticated and modern business processes.

Twelfth pillar: Innovation

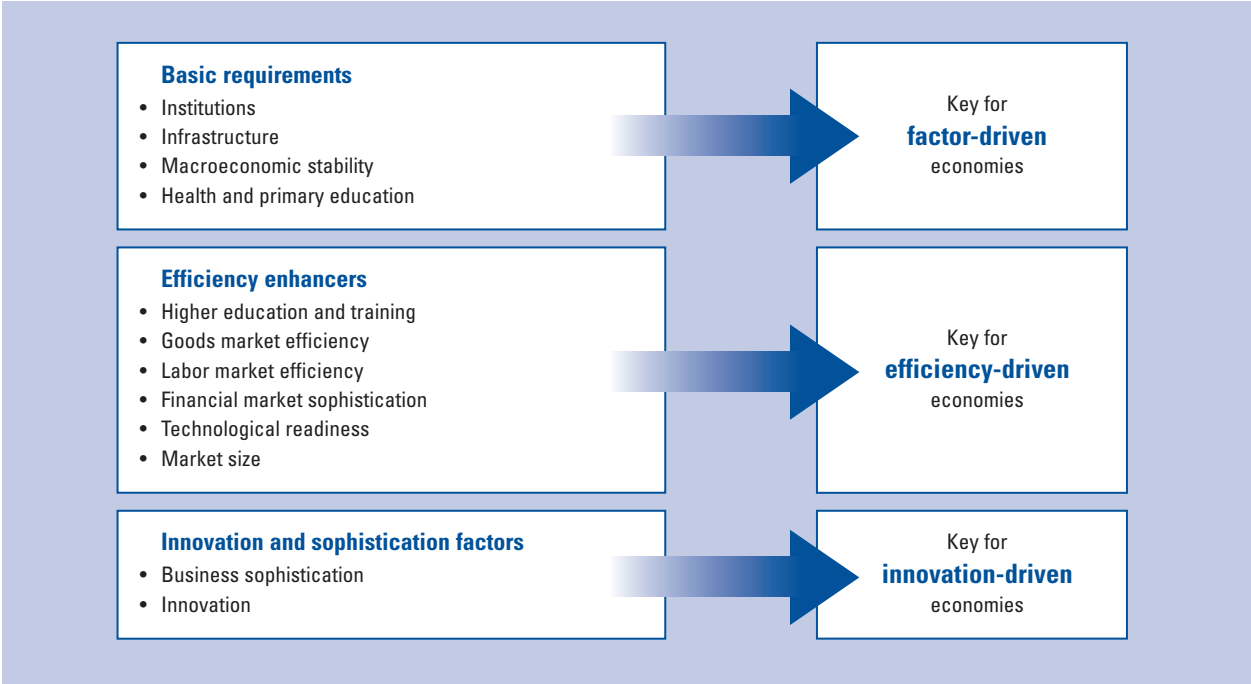
The last pillar of competitiveness is technological innovation. Although substantial gains can be obtained by improving institutions, building infrastructure, reducing macroeconomic instability, or improving the human capital of the population, all these factors eventually seem to run into diminishing returns. The same is true for the efficiency of the labor, financial, and goods markets. In the long run, therefore, when all the other factors run into diminishing returns, standards of living can be expanded only by technological innovation. Innovation is particularly important for economies as they approach the frontiers of knowledge and the possibility of integrating and adapting exogenous technologies tend to disappear. [17]

Although 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 edge. This requires an environment that is conducive to innovative activity, supported by both the public and the private sectors. In particular, this means sufficient investment in research and development especially by private, high-quality scientific research institutions, collaboration in research between universities and industry, and protection of intellectual property.

The interrelation of the 12 pillars

Although we describe the 12 pillars of competitiveness separately, we do so only for expository purposes. This should not obscure the fact that they are not independent: not only they are related to each other, but they tend to reinforce each other. For example, innovation (12th pillar) is not possible in a world without institutions (1st pillar) that guarantee intellectual property rights, cannot be performed in countries with a poorly educated and poorly trained labor force (5th pillar), and will never take place in economies with inefficient markets (6th, 7th, and 8th pillars) or without extensive and efficient infrastructure (2nd pillar). Although the actual construction of the Index will involve the aggregation of the 12 pillars into a single index, we report measures

Figure 1: The 12 pillars of competitiveness



of the 12 pillars separately because offering a more disaggregated analysis can be more useful to countries and practitioners: such an analysis gets closer to the actual areas in which a particular country needs to improve.

Stages of development and the weighted Index

The first tenet on which our index is founded is that the determinants of competitiveness are many, are complex, and are open-ended. The second is that different pillars affect different countries differently: the best way for Zimbabwe to improve its competitiveness is not the same as it is for Finland. This is because Zimbabwe and Finland are in different stages of development: as countries move along the development path, wages tend to increase and, in order to sustain this higher income, labor productivity must improve.[18]

We adapt Michael Porter's definition of stages of development.[19] In the first stage, the economy is *factor-driven* and countries compete based on their factor endowments, primarily unskilled labor and natural resources. Companies compete on the basis of price and sell basic products or commodities, with their low productivity reflected in low wages. Maintaining competitiveness at this stage of development hinges primarily on well-functioning public and private institutions (pillar 1), appropriate infrastructure (pillar 2), a stable macroeconomic framework (pillar 3), and a healthy and 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 is increasingly driven by higher education and training (pillar 5), efficient goods markets (pillar 6), well-functioning labor markets (pillar 7), sophisticated financial markets (pillar 8), a large domestic or foreign market (pillar 9), and the ability to harness the benefits of existing technologies (pillar 10).

Finally, as countries move into the *innovation-driven* stage, they are able to sustain higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. At this stage, companies must compete through innovation (pillar 12), producing new and different goods using the most sophisticated production processes (pillar 11).

We integrate the concept of stages of development into the Index by attributing higher relative weights to those pillars that are relatively more important for a country given its particular stage of development. That is, although all 12 pillars matter to a certain extent for all countries, the importance of each one depends on a country's stage of development. To take this into account, the pillars are organized into three subindexes, each critical to a particular stage of development. The *basic requirements subindex* groups those pillars most critical for countries in the factor-driven stage. The *efficiency enhancers subindex* includes those pillars critical for countries in the efficiency-driven stage. And the *innovation and sophistication factors subindex* includes all pillars critical to countries in the innovation-driven stage. The three subindexes are shown in Figure 1.

The specific weights we attribute to each subindex in every stage of development are shown in Table 1. To obtain the precise weights that each subindex gets in the overall GCI, a maximum likelihood regression of GDP per capita was run against each subindex for past years, allowing for different coefficients for each stage of development.[20] The rounding of these econometric estimates led to the choice of weights displayed in Table 1. We have also carried out sensitivity analysis on the weighting schemes, which is shown in Box 1.

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

Pillar group	Factor-driven stage (%)	Efficiency-driven stage (%)	Innovation-driven stage (%)
Basic requirements	60	40	20
Efficiency enhancers	35	50	50
Innovation and sophistication factors	5	10	30

Box 1: Sensitivity of the GCI to weighting schemes

An important question is how sensitive the final index is to different weighting schemes. To answer this question we estimated the regression

$$GCI_{is} = \alpha_{s1} Basic_i + \alpha_{s2} Efficiency_i + (1 - \alpha_{s1} - \alpha_{s2}) Innovation_i ,$$

where s = 1st, 2nd, 3rd stage of development, and where we allowed each value of α_{s1} and α_{s2} to take all possible values from 0 to 1. Thus, we estimated all possible random combinations of potential indexes for all stages of development and regressed this randomly generated index against our true index. For each of the more than one million regressions estimated, we stored the R^2 (a measure of how well the regression fits). Of the more than one million estimates, the median was 0.95 (this means that more than half of the estimates were larger than 0.95). Seventy-three percent of the estimates are larger than 90 percent (keep in mind that an R^2 of 0.90 means a correlation coefficient of 0.95). The average was 0.945 (which implies a correlation coefficient of 0.972) and a standard deviation of 0.032. Hence all the estimates are clustered quite closely around 0.945. The smallest R^2 was 0.76 and the largest was 0.997. This exercise suggests that the Index is not very sensitive to the actual numbers used to weight the three subpillars.

Implementation of stages of development: Smooth transitions

How is the stage of development decided for each country? Countries are allocated to stages of development based on two criteria. The first criterion is the level of 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 are not available for all countries covered (see Table 2). The second criterion measures the extent to which countries are factor driven. We proxy this by the share of exports of primary goods in total exports (goods and services) and assume that countries that export more than 70 percent of primary products are to a large extent factor driven.[21]

Table 2: Income thresholds for establishing stages of development

Stage of Development	GDP per capita (in US$)
Stage 1: Factor driven	< 2,000
Transition from stage 1 to stage 2	*2,000–3,000*
Stage 2: Efficiency driven	3,000–9,000
Transition from stage 2 to stage 3	*9,000–17,000*
Stage 3: Innovation driven	> 17,000

Countries falling in between two of 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 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.

Adjustments to the Global Competitiveness Index this year

Some adjustments have been made to the GCI this year. The changes are of three types: the number of countries covered has increased, and there have been some adjustments to both the structure of the model and to the weighting scheme. These changes are reflected both in the calculations shown for this year's rankings as well as the rankings for last year, as shown in Table 4.

Table 3: List of countries/economies at each stage of development

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

Country coverage

Six new economies have been included in the analysis: Libya, Oman, Puerto Rico, Saudi Arabia, Syria, and Uzbekistan. In addition, Serbia and Montenegro, previously analyzed as a single country, are now included separately. This has increased our coverage to a total of 131 countries this year.

Adjustments to the model

We have been publishing the calculations of the GCI for the past four years. Although we have maintained the basic structure and overall logic of the model, we have introduced refinements to reflect the results of our experience of testing and working with it.

To begin, compared with the version published in 2005 and 2006, we have this year returned to a 12-pillar model, similar to the one presented in 2004. This is the result of two modifications. First, the single pillar on market efficiency has been broken into its three subcomponents (goods, labor, and financial markets), which better demonstrate the differences in the various aspects of market efficiency. These three pillars clearly represent very different phenomena. As explained earlier, among other things, the financial sector pillar measures how easy it is for firms to have access to the right kind of financing and how much businesses trust their financial institutions. The labor market pillar reflects how flexible labor regulation is, and how meritocratic jobs are. Finally, the goods market measures the degree to which government regulation interferes in the activities of private businesses, and the extent to which competition across firms enhances competitiveness. Aggregating these

Table 4: Global Competitiveness Index rankings and 2006–2007 comparisons

Country/Economy	GCI 2007–2008 Rank	GCI 2007–2008 Score	GCI 2007–2008 rank (among 2006 countries)*	GCI 2006–2007 rank
United States	1	5.67	1	1
Switzerland	2	5.62	2	4
Denmark	3	5.55	3	3
Sweden	4	5.54	4	9
Germany	5	5.51	5	7
Finland	6	5.49	6	6
Singapore	7	5.45	7	8
Japan	8	5.43	8	5
United Kingdom	9	5.41	9	2
Netherlands	10	5.40	10	11
Korea	11	5.40	11	23
Hong Kong SAR	12	5.37	12	10
Canada	13	5.34	13	12
Taiwan, China	14	5.25	14	13
Austria	15	5.23	15	18
Norway	16	5.20	16	17
Israel	17	5.20	17	14
France	18	5.18	18	15
Australia	19	5.17	19	16
Belgium	20	5.10	20	24
Malaysia	21	5.10	21	19
Ireland	22	5.03	22	22
Iceland	23	5.02	23	20
New Zealand	24	4.98	24	21
Luxembourg	25	4.88	25	25
Chile	26	4.77	26	27
Estonia	27	4.74	27	26
Thailand	28	4.70	28	28
Spain	29	4.66	29	29
Kuwait	30	4.66	30	30
Qatar	31	4.63	31	32
Tunisia	32	4.59	32	33
Czech Republic	33	4.58	33	31
China	34	4.57	34	35
Saudi Arabia	35	4.55	n/a	n/a
Puerto Rico	36	4.50	n/a	n/a
United Arab Emirates	37	4.50	35	34
Lithuania	38	4.49	36	39
Slovenia	39	4.48	37	40
Portugal	40	4.48	38	43
Slovak Republic	41	4.45	39	37
Oman	42	4.43	n/a	n/a
Bahrain	43	4.42	40	48
South Africa	44	4.42	41	36
Latvia	45	4.41	42	44
Italy	46	4.36	43	47
Hungary	47	4.35	44	38
India	48	4.33	45	42
Jordan	49	4.32	46	46
Barbados	50	4.32	47	41
Poland	51	4.28	48	45
Mexico	52	4.26	49	52
Turkey	53	4.25	50	58
Indonesia	54	4.24	51	54
Cyprus	55	4.23	52	49
Malta	56	4.21	53	51
Croatia	57	4.20	54	56
Russia	58	4.19	55	59
Panama	59	4.18	56	60
Mauritius	60	4.16	57	55
Kazakhstan	61	4.14	58	50
Uzbekistan	62	4.13	n/a	n/a
Costa Rica	63	4.11	59	68
Morocco	64	4.08	60	65
Greece	65	4.08	61	61
Azerbaijan	66	4.07	62	62
El Salvador	67	4.05	63	53
Vietnam	68	4.04	64	64
Colombia	69	4.04	65	63
Sri Lanka	70	3.99	66	81
Philippines	71	3.99	67	75
Brazil	72	3.99	68	66
Ukraine	73	3.98	69	69
Romania	74	3.97	70	73
Uruguay	75	3.97	71	79
Botswana	76	3.96	72	57
Egypt	77	3.96	73	71
Jamaica	78	3.95	74	67
Bulgaria	79	3.93	75	74
Syria	80	3.91	n/a	n/a
Algeria	81	3.91	76	77
Montenegro	82	3.91	n/a	n/a
Honduras	83	3.89	77	90
Trinidad and Tobago	84	3.88	78	76
Argentina	85	3.87	79	70
Peru	86	3.87	80	78
Guatemala	87	3.86	81	91
Libya	88	3.85	n/a	n/a
Namibia	89	3.85	82	72
Georgia	90	3.83	83	87
Serbia	91	3.78	n/a	n/a
Pakistan	92	3.77	84	83
Armenia	93	3.76	85	80
Macedonia, FYR	94	3.73	86	84
Nigeria	95	3.69	87	95
Dominican Republic	96	3.65	88	93
Moldova	97	3.64	89	86
Venezuela	98	3.63	90	85
Kenya	99	3.61	91	88
Senegal	100	3.61	n/a	n/a
Mongolia	101	3.60	92	89
Gambia, The	102	3.59	93	103
Ecuador	103	3.57	94	94
Tanzania	104	3.56	95	97
Bolivia	105	3.55	96	100
Bosnia and Herzegovina	106	3.55	97	82
Bangladesh	107	3.55	98	92
Benin	108	3.49	99	107
Albania	109	3.48	100	98
Cambodia	110	3.48	101	106
Nicaragua	111	3.45	102	101
Burkina Faso	112	3.43	103	114
Suriname	113	3.40	104	104
Nepal	114	3.38	105	105
Mali	115	3.37	106	115
Cameroon	116	3.37	107	99
Tajikistan	117	3.37	108	96
Madagascar	118	3.36	109	111
Kyrgyz Republic	119	3.34	110	109
Uganda	120	3.33	111	110
Paraguay	121	3.30	112	108
Zambia	122	3.29	113	118
Ethiopia	123	3.28	114	116
Lesotho	124	3.27	115	102
Mauritania	125	3.26	116	117
Guyana	126	3.25	117	113
Timor-Leste	127	3.20	118	120
Mozambique	128	3.02	119	119
Zimbabwe	129	2.88	120	112
Burundi	130	2.84	121	122
Chad	131	2.78	122	121

(cont'd.)

* Two countries that were covered in last year's *Report* but are not included in the present *Report* for lack of Survey data are excluded from the comparison (Angola and Malawi). Serbia and Montenegro, treated as one country last year, are now treated as two individual countries. We therefore do not show data for Serbia and Montenegro for last year.

three sectors into one pillar concealed important economic lessons. For example, countries might score very well in two of the pillars but do very poorly in the third one, a distinction that will be made entirely clear only when the performance of each is shown.

Second, market size, which was last year a subcomponent of the goods market pillar, is now reinstated as a pillar in its own right, as it was in the original index in 2004. This highlights the key importance of access to large domestic and foreign markets allowing for economies of scale, as described in the section above.

In addition to moving back to a 12-pillar model, we have included better data proxies for some variables and more hard data variables when available. We have also included new Survey data for some concepts that were previously missing from the model. For example, in the financial markets sophistication pillar we have introduced a hard data variable to capture the strength of investors' legal rights, and in the health and primary education pillar, we have introduced a Survey variable capturing the quality of primary education. In addition, we have dropped the real exchange rate (RER) from the model. Our reasons for doing so are explained in Box 2.

Box 2: Why the real exchange rate has been removed from the GCI

We have decided to drop the real exchange rate (RER) from the macroeconomic stability pillar. International macroeconomists use the term *competitive exchange rate* as a short way to describe an undervalued exchange rate that makes exporters more "competitive" since the products they sell are cheaper in international markets. The problem with using this as a measure of actual competitiveness is that, when it comes to the value of money, there are two sides to each coin: when the exchange rate is low, exports are cheaper but imports are more expensive. The implication is that firms that need to import capital goods from abroad will find it very expensive to work in that environment. Thus one can easily argue that the economy with an undervalued exchange rate is less, not more, competitive because the cost of doing business is higher.

This point is particularly important because all the pillars of the competitiveness index measure different aspects of the costs of doing business in a particular country: costs of dealing with bureaucracy, costs of having poor infrastructure, costs of having an uneducated or unhealthy labor force, costs of dealing with violence, costs of hiring and firing workers, costs of not having access to an efficient financial sector, costs of not having suppliers or networks, costs of not being able to rely on universities, costs of not having the best available technology, and so on and so forth.

We did consider introducing the RER into the model both as a positive factor (for selling exports more cheaply abroad) as well as a negative factor (since it increases the cost of imported inputs to production). However, since these two effects would tend to offset each other we felt that it made little sense. Further, there is no theoretical or empirical way to determine the relative size of each of the two effects.

Another reason for not including the RER is that it is very hard to measure in practice. The problem is that the level of the RER, *per se*, is not a measure of anything. What one would ideally like to capture is the "overvaluation" or "undervaluation" of the exchange rate relative to some "equilibrium" concept of exchange rate: if the value of the exchange rate is below this "equilibrium level," we would say that the currency is undervalued and that exports are overly cheap (and imports overly expensive), and vice versa. The problem is that this "equilibrium level" is not known outside the theoretical world. In theory, one would have to estimate a mathematical model that shows what this "equilibrium exchange rate" should be. The degree of overvaluation would then be the difference between the actual exchange rate and this theoretical equilibrium rate. In practice, it is impossible to compute such models for each country, for each and every year.

Hence, the only option in practice is to estimate the difference between the current exchange rate and the average exchange rate of a given set of base years, which is taken to be the "long-run equilibrium." This means that the actual measure of the RER turns out not to be a measure of overvaluation but instead it is the *increase in the value of the exchange rate (or the degree of depreciation) of the currency between the average 1997–2004 and 2005*. The problem is that the degree of exchange rate depreciation has nothing to do with the theoretical concept of overvaluation one would want to capture because, of course, the countries that have experienced huge devaluations (probably as a result of being the most unstable from a macroeconomic perspective) will have the best scores in this dimension. Since this is not what one would like to capture, we decided to drop the RER from the index this year.

The difficulty of including this measure in the GCI was highlighted by Kenneth Rogoff in a chapter he contributed to *The Global Competitiveness Report 2005–2006* entitled "Rethinking Exchange Rate Competitiveness." On page 104 Rogoff describes the two-edged sword of devaluations *"… This does not mean that countries cannot benefit, in certain circumstances, by maintaining a low exchange rate, and this policy is viewed by many as the core of the Asian model. Still, it does not follow that a country's long-term growth necessarily benefits from having an undervalued exchange rate. For example, there is considerable evidence that capital goods imports are important for enhancing productivity growth … But maintaining an undervalued real exchange rate makes capital goods imports expensive, affecting not only the traded goods sector but also nontraded goods, such as housing."* In other words, an undervalued exchange rate hurts the import of capital and, therefore, hurts competitiveness.

Modifications to the criteria for stages and weighting scheme

Another modification is that, as described in the text above, we reinstated a second criterion for separating countries into stages of development that aims at capturing the resource intensity of the economy, based on the share exports of mineral products in the economy.

Finally, we have modified the weights used for calculating the final scores for countries based on their stages of development. The weights used over the past three years were derived from a growth regression using three decades of data proxies capturing the basic categories measured by the Index. This year we have been able to refine these weights, since we have data available for the three years during which the Index has been calculated. As explained in the text, this was done by using maximum likelihood estimates of a GDP per capita equation using different coefficients for different stages of development. Specifically, this has allowed the data from the past few years to indicate the most appropriate weights. The weights are very similar to those used until now, but are not exactly identical. However, we believe they are an improvement since they have a solid econometric foundation based on more recent data.

Modifications to the Survey data process

The GCI is composed of 113 variables, of which 79 come from the Executive Opinion Survey (Survey) carried out annually by the World Economic Forum. This year, we introduce a new approach for computing the country scores for Survey variables. We have adopted a *moving average* technique, which consists of taking a weighted average of the results of the 2007 Survey and of the 2006 Survey. The weights are determined so that each individual response of the 2007 sample is given 1.5 times more weight than each response of the 2006 sample. For further information on this technique and on the Survey process in general, please refer to Chapter 2.1 of the *Report*.

In light of the adjustments made to the model and the improved Survey data treatment detailed above, this year's *Report* presents recalculated numbers for 2006 in order to allow countries to follow their progress over time since last year. Appendix A describes the exact composition of the GCI and provides technical details of its construction. Appendix B provides the detailed rankings and scores for last year, using the adjusted GCI model, for comparison.

The Global Competitiveness Index 2007–2008 rankings

The detailed rankings from this year's GCI are shown in Tables 4 through 8. As Table 4 shows, almost all of the countries in the top 10 remain the same as last year, with some shifts in the rankings. The sections below review the rankings of the following five regions: Europe and North America, Latin America and the Caribbean, Asia and the Pacific, Middle East and North Africa, and sub-Saharan Africa.

EUROPE AND NORTH AMERICA

The United States retains its leading position as the world's most competitive economy, just ahead of Switzerland, Denmark, and Sweden. The country is endowed with a winning combination of highly sophisticated and innovative companies operating in very efficient factor markets. This is buttressed by an excellent university system and strong collaboration between the educational and business sectors in research and development. These characteristics, combined with the scale opportunities afforded by the sheer size of its domestic economy, come together to make the United States arguably the country with the most productive and innovative potential in the world.

The United States is ranked 1st on the innovation pillar, with world-class scientific research institutions (ranked 2nd), high company spending on R&D (ranked 2nd), and significant collaboration between the business and university sectors in research (ranked 1st). This culture of innovation is buttressed by other critical factors such as high university enrollment and strong intellectual property protection. To support this activity, the country's markets are extremely efficient in allocating human and financial resources to their most effective use. In particular, labor markets are ranked 1st out of all countries, characterized by strong job creation facilitated by the ease and affordability of hiring workers and significant wage flexibility. Financial markets provide needed capital for business creation and innovation, through a variety of sources, most particularly venture capital, for which the United States is ranked number 1. The country's goods markets are also characterized by low levels of distortion within the context of a very competitive environment, providing consumers with a large selection of quality goods at reasonable prices, supplied in a timely manner.

However, a number of weaknesses in more basic areas, particularly related to macroeconomic imbalances and some aspects of the institutional environment, continue to pose a risk to the country's overall competitiveness position. The United States has a relatively low rank of 35th for the quality of its public institutions, with particular concerns on the part of the business community about the government's ability to maintain arms-length relationships with the private sector (45th for the favoritism in decisions of government officials), and in the formulation of policies more generally. But the country's greatest weakness concerns its macroeconomic stability, where it ranks a low 75th overall. The United States has built up large macroeconomic imbalances

over recent years, with repeated fiscal deficits leading to rising levels of public indebtedness. These are areas that require attention from the authorities to ensure that the country maintains its competitive edge going into the future.[22]

Switzerland remains among the best performers in the GCI, climbing two ranks from 2006 to reach the 2nd position overall. The country is characterized by an excellent capacity for innovation and very sophisticated business culture, ranked 1st overall in the innovation and sophistication factors subindex. Similar to the United States, Switzerland is endowed with top-notch scientific research institutions and high spending on research and development—particularly impressive given the country's small size. Strong collaboration between the academic and business sectors ensures that much of this basic research is translated into useful products and processes on the market, buttressed by strong intellectual property protection. The innovative activity is reflected in the high rate of patenting in the country, for which Switzerland ranks 6th worldwide on a per capita basis.

Switzerland has also developed an institutional environment that is rated among the most effective and transparent in the world (4th), ensuring a level playing field and enhancing business confidence, including an independent judiciary, a strong rule of law, and an accountable public sector. Competitiveness is also buttressed by excellent infrastructure and labor markets that are among the most flexible in the world, ranked 4th and 3rd overall, respectively. And compared with the United States as well as several other industrialized countries, Switzerland's macroeconomic environment receives a comparatively high ranking of 22, attributable to a balanced budget, high national savings, and an inflation rate that is among the lowest in the world.

Given the key role of innovation in spurring Switzerland's productivity enhancements, one area for improvement is the relatively low university enrollment rate of 47 percent, placing the country 37th on this indicator. Educational attainment at the highest level should be reinforced to prepare more home-grown talent for innovative activities.

The Nordic countries continue to hold privileged positions in the rankings. **Denmark** is ranked 3rd, with **Sweden** and **Finland** following closely at 4th and 6th places, respectively. There are a number of areas where the Nordic countries outperform the United States and Switzerland. For example, they receive among the best marks worldwide in terms of the macroeconomic environment, as they are running budget surpluses and have achieved very low levels of public indebtedness. Finland and Denmark display the most efficient institutions in the world (ranked 1st and 2nd, respectively), followed very closely by Sweden, ranked 6th in this area.

Finland, Denmark, and Sweden also occupy the top three positions in the higher education and training pillar, with Finland ranked 1st in this indicator for several years in a row. These countries have placed a significant focus on higher education over recent decades, which has been buttressed by excellent on-the-job training programs. This has provided the workforce with the skills needed to adapt rapidly to a changing environment and laid the ground for their very high levels of technological adoption in recent years. All three countries display among the highest rates of technological readiness (Sweden ranks 1st in this pillar), particularly in ICT adoption.

On the other hand, Finland and Sweden are not doing as well as the United States, Switzerland, and Denmark (ranked 5th) with regard to labor market flexibility. As is the case in a number of other European countries, in Finland and Sweden companies have little flexibility in setting wages, nonwage labor costs remain very high, firing and therefore hiring workers is deemed excessively expensive, and taxation has a distortionary effect on decisions to work and invest in these countries.

Germany and the **United Kingdom** retain their places among the most competitive economies in the world, ranked 5th and 9th, respectively. Both countries receive excellent scores for the quality of their infrastructure (particularly Germany, ranked number 1 in this pillar). In the context of the large market size available to both countries, another common strength is the efficiency of their goods and financial markets, with the United Kingdom receiving a particularly outstanding evaluation in the latter (2nd). On the other hand, the United Kingdom's flexible labor market (10th) stands in contrast to Germany's (115th), where the determination of wages and the cost of firing have become a strong hindrance to job creation. Both countries are also well assessed in the more complex innovation and business sophistication indicators, with Germany in particular ranking 1st out of all 131 economies with regard to the sophistication of its business sector.

The greatest weakness for both Germany and the United Kingdom is the macroeconomic environment (ranked respectively 60th and 46th), with—similar to the United States, public sector deficits and rising levels of public indebtedness, spending today instead of saving in order to meet tomorrow's burgeoning liabilities. A more detailed analysis of Germany's competitiveness can be found in Box 3.

France is ranked 18th in this year's GCI. France's status among the top 20 most competitive economies in the world rests on a number of features that contribute to its excellent business environment. The country's infrastructure is among the best in the world (ranked 2nd), with outstanding transport links, energy infrastructure, and communications. The high degree of sophistication of its business culture (10th in the business sophistication pillar) and its leadership in the area of technological innovation (17th in the innovation pillar) are important attributes that have helped to boost the country's growth potential.

Table 5: The Global Competitiveness Index 2007–2008

			SUBINDEXES					
	OVERALL INDEX		Basic requirements		Efficiency enhancers		Innovation and sophistication factors	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score
United States	1	5.67	23	5.41	1	5.77	4	5.68
Switzerland	2	5.62	4	6.05	7	5.35	1	5.77
Denmark	3	5.55	1	6.14	4	5.44	8	5.36
Sweden	4	5.54	6	5.94	8	5.34	5	5.62
Germany	5	5.51	9	5.82	11	5.28	3	5.70
Finland	6	5.49	2	6.11	14	5.19	6	5.56
Singapore	7	5.45	3	6.08	6	5.38	13	5.14
Japan	8	5.43	22	5.41	13	5.27	2	5.70
United Kingdom	9	5.41	16	5.59	2	5.53	14	5.10
Netherlands	10	5.40	7	5.90	9	5.31	12	5.21
Korea	11	5.40	14	5.67	12	5.28	7	5.42
Hong Kong SAR	12	5.37	5	6.03	3	5.45	21	4.81
Canada	13	5.34	11	5.73	5	5.39	17	5.01
Taiwan, China	14	5.25	19	5.50	17	5.10	10	5.31
Austria	15	5.23	10	5.75	21	5.02	11	5.22
Norway	16	5.20	8	5.84	15	5.13	18	4.89
Israel	17	5.20	30	5.22	16	5.10	9	5.35
France	18	5.18	13	5.70	20	5.04	16	5.08
Australia	19	5.17	12	5.71	10	5.29	23	4.61
Belgium	20	5.10	20	5.48	22	4.96	15	5.09
Malaysia	21	5.10	21	5.43	24	4.88	19	4.83
Ireland	22	5.03	27	5.31	19	5.05	22	4.80
Iceland	23	5.02	18	5.52	23	4.95	20	4.81
New Zealand	24	4.98	17	5.53	18	5.10	25	4.42
Luxembourg	25	4.88	15	5.67	25	4.75	24	4.57
Chile	26	4.77	33	5.17	28	4.58	36	4.06
Estonia	27	4.74	29	5.25	27	4.66	35	4.07
Thailand	28	4.70	40	5.03	29	4.56	39	4.04
Spain	29	4.66	26	5.32	26	4.68	31	4.20
Kuwait	30	4.66	28	5.27	49	4.17	49	3.89
Qatar	31	4.63	24	5.38	44	4.27	46	3.92
Tunisia	32	4.59	34	5.16	47	4.19	29	4.32
Czech Republic	33	4.58	42	4.85	30	4.54	28	4.33
China	34	4.57	44	4.80	45	4.26	50	3.89
Saudi Arabia	35	4.55	39	5.06	52	4.12	45	3.93
Puerto Rico	36	4.50	45	4.78	32	4.48	27	4.33
United Arab Emirates	37	4.50	25	5.36	35	4.45	42	3.99
Lithuania	38	4.49	43	4.82	41	4.33	44	3.94
Slovenia	39	4.48	37	5.10	38	4.40	30	4.20
Portugal	40	4.48	35	5.14	33	4.48	38	4.04
Slovak Republic	41	4.45	50	4.64	34	4.46	52	3.84
Oman	42	4.43	38	5.07	70	3.89	40	4.00
Bahrain	43	4.42	32	5.18	46	4.21	74	3.53
South Africa	44	4.42	61	4.45	36	4.44	33	4.16
Latvia	45	4.41	47	4.73	42	4.32	72	3.55
Italy	46	4.36	54	4.55	39	4.38	32	4.18
Hungary	47	4.35	55	4.54	40	4.34	43	3.98
India	48	4.33	74	4.22	31	4.52	26	4.36
Jordan	49	4.32	46	4.75	64	3.94	54	3.76
Barbados	50	4.32	36	5.12	59	4.03	57	3.71
Poland	51	4.28	64	4.41	43	4.30	61	3.66
Mexico	52	4.26	56	4.53	50	4.17	60	3.66
Turkey	53	4.25	63	4.44	51	4.16	48	3.90
Indonesia	54	4.24	82	4.14	37	4.43	34	4.10
Cyprus	55	4.23	31	5.21	53	4.12	55	3.75
Malta	56	4.21	41	4.92	54	4.12	58	3.70
Croatia	57	4.20	53	4.60	61	4.00	53	3.77
Russia	58	4.19	68	4.36	48	4.19	77	3.50
Panama	59	4.18	51	4.62	65	3.94	64	3.62
Mauritius	60	4.16	52	4.61	67	3.92	67	3.60
Kazakhstan	61	4.14	66	4.40	58	4.03	84	3.43
Uzbekistan	62	4.13	69	4.36	76	3.77	51	3.86
Costa Rica	63	4.11	81	4.15	56	4.08	37	4.06
Morocco	64	4.08	70	4.34	80	3.72	70	3.59
Greece	65	4.08	48	4.70	57	4.07	59	3.68
Azerbaijan	66	4.07	65	4.41	84	3.65	68	3.60

(cont'd.)

Table 5: The Global Competitiveness Index 2007–2008 *(cont'd.)*

	OVERALL INDEX		SUBINDEXES					
			Basic requirements		Efficiency enhancers		Innovation and sophistication factors	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score
El Salvador	67	4.05	62	4.45	75	3.77	89	3.29
Vietnam	68	4.04	77	4.20	71	3.85	76	3.51
Colombia	69	4.04	73	4.23	63	3.96	66	3.61
Sri Lanka	70	3.99	85	4.10	73	3.80	47	3.92
Philippines	71	3.99	93	3.99	60	4.03	65	3.61
Brazil	72	3.99	101	3.82	55	4.12	41	3.99
Ukraine	73	3.98	90	4.06	66	3.93	75	3.52
Romania	74	3.97	88	4.07	62	3.98	73	3.54
Uruguay	75	3.97	58	4.47	82	3.68	86	3.36
Botswana	76	3.96	75	4.22	83	3.68	100	3.13
Egypt	77	3.96	79	4.18	85	3.63	63	3.62
Jamaica	78	3.95	86	4.08	69	3.90	62	3.65
Bulgaria	79	3.93	76	4.22	72	3.83	91	3.26
Syria	80	3.91	71	4.26	100	3.37	82	3.44
Algeria	81	3.91	49	4.68	97	3.45	102	3.11
Montenegro	82	3.91	59	4.47	87	3.60	97	3.18
Honduras	83	3.89	80	4.17	94	3.50	90	3.27
Trinidad and Tobago	84	3.88	57	4.51	74	3.78	79	3.47
Argentina	85	3.87	83	4.13	78	3.75	83	3.44
Peru	86	3.87	94	3.90	68	3.92	81	3.45
Guatemala	87	3.86	84	4.11	86	3.61	71	3.57
Libya	88	3.85	67	4.39	123	3.11	105	3.05
Namibia	89	3.85	60	4.46	93	3.52	107	3.03
Georgia	90	3.83	87	4.07	90	3.55	119	2.90
Serbia	91	3.78	78	4.19	88	3.56	88	3.30
Pakistan	92	3.77	98	3.84	81	3.70	78	3.50
Armenia	93	3.76	91	4.05	101	3.36	103	3.06
Macedonia, FYR	94	3.73	72	4.25	98	3.45	101	3.12
Nigeria	95	3.69	108	3.66	77	3.76	69	3.60
Dominican Republic	96	3.65	95	3.90	89	3.55	96	3.19
Moldova	97	3.64	96	3.87	102	3.36	122	2.87
Venezuela	98	3.63	105	3.78	92	3.53	99	3.16
Kenya	99	3.61	117	3.52	79	3.74	56	3.75
Senegal	100	3.61	103	3.78	104	3.33	80	3.46
Mongolia	101	3.60	102	3.80	103	3.34	114	2.95
Gambia, The	102	3.59	100	3.83	111	3.24	93	3.21
Ecuador	103	3.57	89	4.07	108	3.27	104	3.06
Tanzania	104	3.56	107	3.68	99	3.38	85	3.38
Bolivia	105	3.55	97	3.85	117	3.17	126	2.65
Bosnia and Herzegovina	106	3.55	104	3.78	95	3.48	123	2.86
Bangladesh	107	3.55	111	3.60	91	3.55	111	2.99
Benin	108	3.49	106	3.72	122	3.13	92	3.24
Albania	109	3.48	99	3.83	105	3.33	125	2.72
Cambodia	110	3.48	109	3.62	106	3.31	106	3.05
Nicaragua	111	3.45	110	3.60	107	3.28	118	2.90
Burkina Faso	112	3.43	112	3.58	113	3.19	95	3.19
Suriname	113	3.40	92	4.04	126	2.99	115	2.91
Nepal	114	3.38	115	3.54	115	3.18	120	2.89
Mali	115	3.37	116	3.53	120	3.14	98	3.17
Cameroon	116	3.37	119	3.51	116	3.18	110	2.99
Tajikistan	117	3.37	114	3.57	124	3.07	108	3.00
Madagascar	118	3.36	120	3.51	121	3.14	94	3.20
Kyrgyz Republic	119	3.34	122	3.45	112	3.21	121	2.88
Uganda	120	3.33	127	3.25	96	3.47	87	3.32
Paraguay	121	3.30	123	3.41	114	3.19	127	2.65
Zambia	122	3.29	124	3.36	110	3.24	117	2.90
Ethiopia	123	3.28	126	3.32	109	3.26	116	2.90
Lesotho	124	3.27	118	3.52	127	2.94	129	2.60
Mauritania	125	3.26	121	3.47	128	2.93	109	3.00
Guyana	126	3.25	125	3.33	119	3.14	113	2.98
Timor-Leste	127	3.20	113	3.57	129	2.68	131	2.47
Mozambique	128	3.02	128	3.04	125	3.01	124	2.78
Zimbabwe	129	2.88	131	2.71	118	3.15	112	2.98
Burundi	130	2.84	129	3.00	131	2.59	130	2.56
Chad	131	2.78	130	2.88	130	2.64	128	2.62

Table 6: The Global Competitiveness Index: Basic requirements

	BASIC REQUIREMENTS		PILLARS							
			1. Institutions		2. Infrastructure		3. Macroeconomic stability		4. Health and primary education	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Albania	99	3.83	114	3.14	124	2.05	79	4.69	65	5.46
Algeria	49	4.68	64	3.88	82	3.00	2	6.41	67	5.44
Argentina	83	4.13	123	2.99	81	3.03	64	4.91	54	5.61
Armenia	91	4.05	96	3.40	87	2.85	57	4.98	99	4.96
Australia	12	5.71	13	5.66	18	5.53	34	5.39	17	6.26
Austria	10	5.75	11	5.72	14	5.69	40	5.32	15	6.29
Azerbaijan	65	4.41	83	3.64	60	3.58	23	5.69	103	4.73
Bahrain	32	5.18	35	4.67	34	4.44	13	5.85	46	5.76
Bangladesh	111	3.60	126	2.87	120	2.19	87	4.62	105	4.71
Barbados	36	5.12	25	5.05	29	4.77	105	4.30	9	6.35
Belgium	20	5.48	23	5.06	15	5.65	65	4.90	13	6.31
Benin	106	3.72	90	3.57	112	2.36	80	4.69	111	4.25
Bolivia	97	3.85	124	2.97	118	2.22	49	5.11	91	5.11
Bosnia and Herzegovina	104	3.78	113	3.14	117	2.26	90	4.56	87	5.16
Botswana	75	4.22	42	4.46	57	3.85	76	4.75	119	3.80
Brazil	101	3.82	104	3.32	78	3.07	126	3.66	84	5.23
Bulgaria	76	4.22	109	3.22	84	2.91	47	5.16	56	5.57
Burkina Faso	112	3.58	74	3.76	111	2.37	68	4.87	125	3.32
Burundi	129	3.00	117	3.10	129	1.90	121	3.78	127	3.23
Cambodia	109	3.62	100	3.36	96	2.68	113	4.05	108	4.37
Cameroon	119	3.51	118	3.10	123	2.06	54	5.03	118	3.85
Canada	11	5.73	17	5.26	8	6.05	42	5.26	8	6.37
Chad	130	2.88	130	2.56	131	1.63	110	4.10	128	3.23
Chile	33	5.17	29	4.83	31	4.56	12	5.86	70	5.42
China	44	4.80	77	3.71	52	3.97	7	6.03	61	5.49
Colombia	73	4.23	79	3.67	86	2.87	63	4.92	64	5.47
Costa Rica	81	4.15	52	4.17	95	2.68	111	4.07	50	5.68
Croatia	53	4.60	65	3.86	53	3.95	73	4.80	44	5.78
Cyprus	31	5.21	36	4.65	26	4.91	55	5.02	18	6.25
Czech Republic	42	4.85	69	3.84	41	4.22	43	5.26	29	6.06
Denmark	1	6.14	2	6.14	7	6.10	10	5.87	3	6.45
Dominican Republic	95	3.90	107	3.23	79	3.04	91	4.56	102	4.75
Ecuador	89	4.07	125	2.93	97	2.64	27	5.58	90	5.12
Egypt	79	4.18	51	4.19	62	3.54	124	3.74	83	5.23
El Salvador	62	4.45	84	3.63	51	3.98	67	4.89	80	5.28
Estonia	29	5.25	34	4.74	36	4.38	14	5.85	30	6.06
Ethiopia	126	3.32	76	3.71	103	2.54	129	3.46	123	3.58
Finland	2	6.11	1	6.16	10	5.84	9	5.87	1	6.58
France	13	5.70	22	5.09	2	6.46	59	4.93	12	6.31
Gambia, The	100	3.83	50	4.28	76	3.14	123	3.74	114	4.14
Georgia	87	4.07	86	3.62	83	2.92	93	4.49	82	5.26
Germany	9	5.82	7	5.83	1	6.65	60	4.93	40	5.88
Greece	48	4.70	49	4.31	35	4.38	106	4.29	42	5.83
Guatemala	84	4.11	91	3.49	70	3.30	86	4.63	97	5.03
Guyana	125	3.33	121	3.03	106	2.51	130	2.51	81	5.28
Honduras	80	4.17	89	3.58	75	3.18	71	4.82	92	5.11
Hong Kong SAR	5	6.03	12	5.70	5	6.24	5	6.13	28	6.06
Hungary	55	4.54	54	4.14	54	3.93	107	4.22	41	5.86
Iceland	18	5.52	5	5.88	22	5.35	102	4.35	2	6.52
India	74	4.22	48	4.32	67	3.45	108	4.21	101	4.92
Indonesia	82	4.14	63	3.90	91	2.74	89	4.59	78	5.31
Ireland	27	5.31	18	5.25	49	4.03	21	5.69	16	6.28
Israel	30	5.22	28	4.83	28	4.81	61	4.93	11	6.32
Italy	54	4.55	71	3.77	55	3.91	96	4.46	25	6.08
Jamaica	86	4.08	87	3.61	63	3.54	120	3.78	72	5.38
Japan	22	5.41	24	5.06	9	5.98	97	4.45	23	6.14
Jordan	46	4.75	32	4.77	42	4.22	100	4.38	53	5.61
Kazakhstan	66	4.40	80	3.67	71	3.22	25	5.63	94	5.09
Kenya	117	3.52	101	3.35	93	2.71	122	3.77	110	4.26
Korea	14	5.67	26	5.05	16	5.55	8	6.00	27	6.08
Kuwait	28	5.27	38	4.55	40	4.28	1	6.56	48	5.70
Kyrgyz Republic	122	3.45	127	2.86	110	2.38	128	3.52	96	5.05
Latvia	47	4.73	59	4.02	56	3.91	44	5.24	45	5.77
Lesotho	118	3.52	112	3.15	127	1.97	41	5.32	121	3.63
Libya	67	4.39	75	3.75	113	2.36	4	6.16	79	5.30
Lithuania	43	4.82	58	4.08	48	4.05	38	5.34	43	5.80

(cont'd.)

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

	BASIC REQUIREMENTS		PILLARS							
			1. Institutions		2. Infrastructure		3. Macroeconomic stability		4. Health and primary education	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Luxembourg	15	5.67	14	5.50	21	5.37	15	5.80	35	5.99
Macedonia, FYR	72	4.25	102	3.34	85	2.90	53	5.04	47	5.70
Madagascar	120	3.51	93	3.44	115	2.28	118	3.83	106	4.48
Malaysia	21	5.43	20	5.18	23	5.29	45	5.18	26	6.08
Mali	116	3.53	67	3.85	99	2.57	95	4.46	129	3.22
Malta	41	4.92	31	4.78	47	4.11	66	4.90	38	5.89
Mauritania	121	3.47	72	3.77	122	2.12	116	3.95	116	4.05
Mauritius	52	4.61	45	4.44	46	4.12	109	4.18	49	5.69
Mexico	56	4.53	85	3.62	61	3.55	35	5.36	55	5.59
Moldova	96	3.87	105	3.30	107	2.45	92	4.56	85	5.17
Mongolia	102	3.80	120	3.09	125	2.03	48	5.13	98	4.96
Montenegro	59	4.47	78	3.69	90	2.79	33	5.40	33	6.00
Morocco	70	4.34	57	4.09	68	3.43	94	4.46	75	5.35
Mozambique	128	3.04	110	3.21	121	2.18	119	3.80	131	2.95
Namibia	60	4.46	53	4.17	39	4.30	18	5.74	122	3.63
Nepal	115	3.54	119	3.10	128	1.96	85	4.64	107	4.46
Netherlands	7	5.90	10	5.73	11	5.84	20	5.73	10	6.32
New Zealand	17	5.53	9	5.80	33	4.52	36	5.36	4	6.45
Nicaragua	110	3.60	108	3.22	116	2.27	115	3.96	100	4.94
Nigeria	108	3.66	103	3.33	119	2.20	28	5.58	124	3.55
Norway	8	5.84	8	5.82	24	5.06	6	6.10	7	6.39
Oman	38	5.07	30	4.80	44	4.15	11	5.87	66	5.46
Pakistan	98	3.84	81	3.66	72	3.22	101	4.37	115	4.09
Panama	51	4.62	66	3.85	50	3.99	52	5.06	57	5.56
Paraguay	123	3.41	129	2.67	126	2.02	117	3.85	89	5.12
Peru	94	3.90	106	3.28	101	2.56	78	4.70	95	5.07
Philippines	93	3.99	95	3.42	94	2.70	77	4.70	86	5.16
Poland	64	4.41	82	3.65	80	3.03	56	5.01	36	5.96
Portugal	35	5.14	27	4.87	25	4.98	81	4.68	32	6.04
Puerto Rico	45	4.78	40	4.53	30	4.64	69	4.87	93	5.09
Qatar	24	5.38	16	5.28	38	4.30	19	5.73	20	6.19
Romania	88	4.07	94	3.44	100	2.57	84	4.64	52	5.62
Russia	68	4.36	116	3.10	65	3.48	37	5.35	60	5.51
Saudi Arabia	39	5.06	41	4.51	45	4.14	3	6.20	71	5.40
Senegal	103	3.78	97	3.40	98	2.62	58	4.94	113	4.17
Serbia	78	4.19	99	3.37	92	2.72	88	4.61	31	6.04
Singapore	3	6.08	3	6.03	3	6.36	24	5.68	19	6.24
Slovak Republic	50	4.64	60	3.99	58	3.78	62	4.92	39	5.88
Slovenia	37	5.10	44	4.45	37	4.32	29	5.47	22	6.16
South Africa	61	4.45	39	4.55	43	4.22	50	5.08	117	3.96
Spain	26	5.32	43	4.46	19	5.46	32	5.42	37	5.95
Sri Lanka	85	4.10	68	3.85	73	3.21	125	3.71	51	5.65
Suriname	92	4.04	98	3.39	102	2.55	74	4.79	68	5.44
Sweden	6	5.94	6	5.86	12	5.71	17	5.76	5	6.44
Switzerland	4	6.05	4	5.90	4	6.32	22	5.69	14	6.30
Syria	71	4.26	61	3.99	74	3.19	98	4.45	69	5.42
Taiwan, China	19	5.50	37	4.55	20	5.38	26	5.62	6	6.43
Tajikistan	114	3.5708	88	3.60	109	2.41	127	3.54	104	4.72
Tanzania	107	3.68	62	3.97	105	2.53	114	4.03	112	4.18
Thailand	40	5.03	47	4.33	27	4.85	30	5.47	63	5.47
Timor-Leste	113	3.57	128	2.79	130	1.76	31	5.42	109	4.32
Trinidad and Tobago	57	4.51	92	3.47	69	3.32	16	5.79	62	5.47
Tunisia	34	5.16	21	5.16	32	4.54	72	4.80	24	6.13
Turkey	63	4.44	55	4.13	59	3.68	83	4.66	77	5.31
Uganda	127	3.25	111	3.21	108	2.42	104	4.31	130	3.06
Ukraine	90	4.06	115	3.12	77	3.09	82	4.67	74	5.37
United Arab Emirates	25	5.36	19	5.20	17	5.53	39	5.34	73	5.38
United Kingdom	16	5.59	15	5.31	13	5.71	46	5.18	21	6.16
United States	23	5.41	33	4.76	6	6.10	75	4.78	34	6.00
Uruguay	58	4.47	46	4.43	64	3.50	99	4.41	58	5.54
Uzbekistan	69	4.36	56	4.10	66	3.46	103	4.34	59	5.54
Venezuela	105	3.78	131	2.41	104	2.53	70	4.84	76	5.33
Vietnam	77	4.20	70	3.78	89	2.80	51	5.08	88	5.14
Zambia	124	3.36	73	3.76	114	2.31	112	4.05	126	3.30
Zimbabwe	131	2.71	122	2.99	88	2.84	131	1.37	120	3.64

Table 7: The Global Competitiveness Index: Efficiency enhancers

	EFFICIENCY ENHANCERS		PILLARS											
			5. Higher education and training		6. Goods market efficiency		7. Labor market efficiency		8. Financial market sophistication		9. Technological readiness		10. Market size	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Albania	105	3.33	103	3.15	117	3.51	88	4.12	103	3.66	74	3.00	107	2.53
Algeria	97	3.45	94	3.39	92	3.86	124	3.62	127	3.06	105	2.54	42	4.23
Argentina	78	3.75	51	4.22	115	3.53	129	3.49	114	3.49	78	2.96	23	4.83
Armenia	101	3.36	95	3.35	104	3.71	40	4.54	110	3.59	104	2.55	111	2.42
Australia	10	5.29	14	5.46	11	5.32	13	5.00	7	5.87	17	5.20	20	4.90
Austria	21	5.02	17	5.40	5	5.41	42	4.52	28	5.13	18	5.17	35	4.47
Azerbaijan	84	3.65	89	3.51	95	3.82	46	4.48	91	3.88	83	2.92	71	3.29
Bahrain	46	4.21	59	4.08	33	4.71	69	4.27	12	5.65	37	4.04	109	2.49
Bangladesh	91	3.55	126	2.47	93	3.84	76	4.21	75	4.09	125	2.25	36	4.41
Barbados	59	4.03	32	4.65	70	4.12	38	4.58	41	4.78	34	4.20	125	1.84
Belgium	22	4.96	11	5.57	21	5.20	91	4.10	22	5.37	24	4.82	25	4.68
Benin	122	3.13	114	2.84	99	3.76	110	3.86	97	3.76	112	2.46	121	2.11
Bolivia	117	3.17	91	3.42	125	3.26	121	3.65	106	3.64	126	2.25	96	2.79
Bosnia and Herzegovina	95	3.48	98	3.26	113	3.59	77	4.21	71	4.23	110	2.49	80	3.12
Botswana	83	3.68	90	3.49	106	3.69	54	4.41	42	4.77	71	3.06	101	2.66
Brazil	55	4.12	64	4.01	97	3.80	104	3.96	73	4.14	55	3.35	10	5.44
Bulgaria	72	3.83	66	3.99	90	3.89	73	4.25	74	4.09	65	3.11	61	3.66
Burkina Faso	113	3.19	125	2.50	89	3.90	84	4.14	94	3.83	116	2.40	112	2.39
Burundi	131	2.59	130	2.16	129	3.13	93	4.09	131	2.51	131	2.10	127	1.55
Cambodia	106	3.31	120	2.58	77	4.01	30	4.74	128	2.93	121	2.32	73	3.27
Cameroon	116	3.18	113	2.84	110	3.63	108	3.87	125	3.16	101	2.56	87	3.00
Canada	5	5.39	13	5.49	15	5.26	8	5.24	13	5.64	13	5.34	14	5.34
Chad	130	2.64	131	2.00	131	2.84	115	3.74	129	2.86	130	2.13	116	2.26
Chile	28	4.58	42	4.41	28	4.93	14	4.96	26	5.17	42	3.89	47	4.15
China	45	4.26	78	3.77	58	4.26	55	4.40	118	3.35	73	3.00	2	6.80
Colombia	63	3.96	69	3.88	85	3.93	74	4.25	72	4.22	76	2.98	30	4.52
Costa Rica	56	4.08	50	4.24	52	4.40	18	4.93	70	4.25	56	3.35	69	3.31
Croatia	61	4.00	46	4.31	71	4.10	56	4.38	68	4.27	49	3.46	64	3.45
Cyprus	53	4.12	38	4.46	37	4.65	80	4.16	39	4.88	44	3.85	98	2.72
Czech Republic	30	4.54	28	4.85	38	4.65	35	4.64	53	4.60	35	4.12	38	4.38
Denmark	4	5.44	3	5.96	3	5.43	5	5.52	6	5.89	5	5.64	45	4.19
Dominican Republic	89	3.55	99	3.24	100	3.74	86	4.13	108	3.63	64	3.13	63	3.46
Ecuador	108	3.27	111	2.92	123	3.35	116	3.73	99	3.69	100	2.57	68	3.37
Egypt	85	3.63	80	3.68	76	4.03	130	3.21	113	3.50	87	2.84	31	4.52
El Salvador	75	3.77	92	3.42	56	4.32	41	4.53	62	4.40	85	2.87	86	3.06
Estonia	27	4.66	23	5.18	27	4.95	26	4.76	31	5.10	19	5.07	91	2.89
Ethiopia	109	3.26	124	2.55	109	3.65	71	4.26	119	3.32	119	2.36	65	3.44
Finland	14	5.19	1	6.01	10	5.35	29	4.75	17	5.58	11	5.36	49	4.08
France	20	5.04	18	5.38	24	5.03	98	4.06	24	5.20	22	4.88	7	5.66
Gambia, The	111	3.24	110	2.96	80	3.95	48	4.45	82	3.98	95	2.67	129	1.43
Georgia	90	3.55	86	3.59	83	3.95	28	4.75	84	3.98	103	2.56	108	2.49
Germany	11	5.28	20	5.33	14	5.29	47	4.45	14	5.64	21	5.05	5	5.90
Greece	57	4.07	39	4.44	60	4.24	120	3.69	60	4.41	58	3.29	39	4.33
Guatemala	86	3.61	101	3.17	62	4.23	81	4.15	87	3.94	81	2.94	74	3.26
Guyana	119	3.14	97	3.29	103	3.72	109	3.87	100	3.68	102	2.56	126	1.75
Honduras	94	3.50	96	3.30	87	3.91	61	4.33	81	4.01	98	2.62	94	2.81
Hong Kong SAR	3	5.45	26	4.97	1	5.79	4	5.64	1	6.23	6	5.48	27	4.56
Hungary	40	4.34	33	4.64	59	4.26	58	4.36	51	4.64	41	3.91	41	4.26
Iceland	23	4.95	8	5.62	26	4.98	6	5.46	18	5.56	2	5.77	115	2.30
India	31	4.52	55	4.13	36	4.66	96	4.07	37	4.93	62	3.17	3	6.16
Indonesia	37	4.43	65	4.00	23	5.06	31	4.74	50	4.65	75	2.99	15	5.17
Ireland	19	5.05	21	5.26	4	5.41	19	4.87	5	5.91	25	4.65	46	4.17
Israel	16	5.10	19	5.36	25	5.00	12	5.01	10	5.72	14	5.29	44	4.21
Italy	39	4.38	36	4.55	55	4.32	128	3.50	86	3.96	27	4.37	8	5.61
Jamaica	69	3.90	71	3.83	57	4.29	53	4.42	49	4.66	43	3.89	113	2.34
Japan	13	5.27	22	5.21	19	5.22	10	5.11	36	4.94	20	5.06	4	6.08
Jordan	64	3.94	47	4.31	48	4.46	94	4.09	55	4.55	63	3.16	83	3.08
Kazakhstan	58	4.03	57	4.11	63	4.20	15	4.95	80	4.02	77	2.98	56	3.91
Kenya	79	3.74	88	3.56	79	3.97	60	4.34	48	4.67	92	2.76	78	3.15
Korea	12	5.28	6	5.65	16	5.23	24	4.79	27	5.15	7	5.46	11	5.37
Kuwait	49	4.17	52	4.21	50	4.42	20	4.86	40	4.79	47	3.55	77	3.17
Kyrgyz Republic	112	3.21	87	3.57	118	3.49	67	4.29	112	3.53	129	2.14	117	2.25
Latvia	42	4.32	29	4.82	47	4.47	36	4.61	38	4.90	40	4.01	82	3.08
Lesotho	127	2.94	117	2.66	122	3.40	106	3.92	121	3.27	117	2.38	123	1.98
Libya	123	3.11	76	3.77	121	3.41	131	3.21	130	2.78	127	2.24	76	3.22
Lithuania	41	4.33	25	4.98	44	4.52	44	4.49	54	4.59	38	4.04	67	3.40

(cont'd.)

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

	EFFICIENCY ENHANCERS		PILLARS											
			5. Higher education and training		6. Goods market efficiency		7. Labor market efficiency		8. Financial market sophistication		9. Technological readiness		10. Market size	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Luxembourg	25	4.75	43	4.40	18	5.23	39	4.56	8	5.85	10	5.38	81	3.09
Macedonia, FYR	98	3.45	75	3.77	98	3.77	112	3.86	83	3.98	90	2.77	106	2.54
Madagascar	121	3.14	121	2.56	105	3.71	63	4.31	123	3.19	111	2.47	104	2.58
Malaysia	24	4.88	27	4.86	20	5.20	16	4.95	19	5.49	30	4.28	29	4.52
Mali	120	3.14	119	2.60	94	3.82	90	4.10	117	3.42	113	2.45	110	2.44
Malta	54	4.12	40	4.44	46	4.51	103	3.96	20	5.40	32	4.25	120	2.16
Mauritania	128	2.93	128	2.33	120	3.42	102	3.98	126	3.15	96	2.65	122	2.04
Mauritius	67	3.92	68	3.94	49	4.42	82	4.15	32	5.05	54	3.39	103	2.59
Mexico	50	4.17	72	3.83	61	4.23	92	4.09	67	4.28	60	3.23	13	5.34
Moldova	102	3.36	81	3.66	107	3.69	68	4.28	101	3.68	108	2.51	114	2.31
Mongolia	103	3.34	74	3.78	96	3.81	59	4.35	105	3.65	106	2.53	124	1.94
Montenegro	87	3.60	79	3.71	91	3.89	52	4.42	43	4.75	48	3.53	130	1.31
Morocco	80	3.72	83	3.63	68	4.13	125	3.60	88	3.93	70	3.06	55	3.95
Mozambique	125	3.01	129	2.33	126	3.22	105	3.96	120	3.31	122	2.29	88	2.98
Namibia	93	3.52	107	3.05	88	3.90	50	4.44	59	4.42	91	2.77	105	2.55
Nepal	115	3.18	118	2.65	102	3.73	122	3.62	107	3.64	115	2.41	85	3.06
Netherlands	9	5.31	10	5.57	8	5.37	32	4.71	15	5.63	4	5.65	19	4.95
New Zealand	18	5.10	12	5.53	9	5.35	9	5.17	4	6.02	23	4.82	59	3.69
Nicaragua	107	3.28	108	3.04	111	3.61	97	4.07	92	3.87	120	2.32	97	2.76
Nigeria	77	3.76	109	3.00	65	4.19	75	4.22	56	4.48	97	2.64	52	4.03
Norway	15	5.13	9	5.60	22	5.09	17	4.93	16	5.61	8	5.46	48	4.09
Oman	70	3.89	61	4.03	45	4.51	64	4.31	69	4.26	68	3.08	79	3.13
Pakistan	81	3.70	116	2.72	82	3.95	113	3.86	65	4.32	89	2.77	28	4.56
Panama	65	3.94	73	3.81	54	4.33	70	4.27	23	5.20	61	3.18	93	2.85
Paraguay	114	3.19	112	2.87	116	3.51	114	3.74	95	3.82	128	2.21	90	2.96
Peru	68	3.92	84	3.63	67	4.14	87	4.12	46	4.68	80	2.94	53	4.01
Philippines	60	4.03	62	4.02	64	4.19	100	4.05	77	4.06	69	3.07	24	4.77
Poland	43	4.30	35	4.62	69	4.12	49	4.44	64	4.32	51	3.44	22	4.88
Portugal	33	4.48	34	4.62	41	4.59	83	4.14	35	4.94	31	4.28	40	4.28
Puerto Rico	32	4.48	48	4.31	29	4.89	27	4.76	30	5.11	26	4.40	66	3.44
Qatar	44	4.27	37	4.53	42	4.55	34	4.70	29	5.13	39	4.02	99	2.72
Romania	62	3.98	54	4.14	74	4.04	85	4.13	78	4.05	59	3.29	43	4.23
Russia	48	4.19	45	4.33	84	3.94	33	4.70	109	3.60	72	3.03	9	5.54
Saudi Arabia	52	4.12	63	4.02	51	4.40	66	4.29	76	4.08	50	3.44	33	4.50
Senegal	104	3.33	105	3.11	78	3.98	119	3.70	111	3.56	82	2.93	100	2.70
Serbia	88	3.56	82	3.65	114	3.53	111	3.86	98	3.73	57	3.34	75	3.23
Singapore	6	5.38	16	5.42	2	5.76	2	5.67	3	6.02	12	5.36	50	4.06
Slovak Republic	34	4.46	41	4.42	35	4.66	25	4.76	33	5.02	36	4.08	57	3.81
Slovenia	38	4.40	24	5.08	39	4.63	51	4.43	47	4.68	29	4.29	72	3.28
South Africa	36	4.44	56	4.12	32	4.73	78	4.16	25	5.19	46	3.57	21	4.89
Spain	26	4.68	31	4.75	40	4.59	95	4.08	34	4.96	28	4.33	12	5.36
Sri Lanka	73	3.80	77	3.77	53	4.35	118	3.71	63	4.39	88	2.84	58	3.74
Suriname	126	2.99	100	3.20	127	3.19	101	4.04	102	3.68	118	2.37	128	1.44
Sweden	8	5.34	2	5.98	7	5.37	37	4.61	9	5.73	1	5.87	34	4.47
Switzerland	7	5.35	7	5.63	6	5.39	3	5.64	21	5.40	3	5.67	37	4.38
Syria	100	3.37	104	3.13	81	3.95	117	3.72	116	3.44	109	2.50	62	3.50
Taiwan, China	17	5.10	4	5.73	17	5.23	22	4.83	58	4.45	15	5.27	16	5.08
Tajikistan	124	3.07	106	3.06	119	3.47	72	4.25	124	3.16	123	2.27	118	2.23
Tanzania	99	3.38	123	2.55	86	3.92	57	4.38	79	4.03	99	2.60	95	2.81
Thailand	29	4.56	44	4.38	34	4.66	11	5.09	52	4.63	45	3.61	17	4.99
Timor-Leste	129	2.68	127	2.39	130	2.99	107	3.91	122	3.25	114	2.42	131	1.10
Trinidad and Tobago	74	3.78	70	3.87	75	4.04	62	4.32	45	4.70	66	3.11	102	2.64
Tunisia	47	4.19	30	4.78	31	4.77	79	4.16	66	4.32	52	3.43	60	3.68
Turkey	51	4.16	60	4.05	43	4.54	126	3.60	61	4.40	53	3.39	18	4.97
Uganda	96	3.47	115	2.84	108	3.66	23	4.79	96	3.76	94	2.69	84	3.08
Ukraine	66	3.93	53	4.20	101	3.74	65	4.30	85	3.96	93	2.75	26	4.62
United Arab Emirates	35	4.45	58	4.11	30	4.84	21	4.83	44	4.75	33	4.23	54	3.97
United Kingdom	2	5.53	15	5.42	13	5.30	7	5.29	2	6.17	16	5.27	6	5.74
United States	1	5.77	5	5.68	12	5.32	1	5.71	11	5.68	9	5.43	1	6.83
Uruguay	82	3.68	67	3.99	73	4.05	89	4.10	89	3.89	67	3.09	89	2.97
Uzbekistan	76	3.77	49	4.25	66	4.16	43	4.49	115	3.47	84	2.92	70	3.30
Venezuela	92	3.53	85	3.61	124	3.28	123	3.62	104	3.66	79	2.95	51	4.04
Vietnam	71	3.85	93	3.39	72	4.07	45	4.48	93	3.83	86	2.85	32	4.51
Zambia	110	3.24	122	2.56	112	3.61	99	4.06	57	4.48	107	2.52	119	2.23
Zimbabwe	118	3.15	102	3.15	128	3.15	127	3.57	90	3.89	124	2.26	92	2.87

Table 8: The Global Competitiveness Index: Innovation and sophistication factors

			PILLARS			
	Innovation and sophistication factors		11. Business sophistication		12. Innovation	
Country/Economy	Rank	Score	Rank	Score	Rank	Score
Albania	125	2.72	109	3.35	131	2.10
Algeria	102	3.11	114	3.26	89	2.95
Argentina	83	3.44	75	3.97	91	2.91
Armenia	103	3.06	115	3.26	94	2.87
Australia	23	4.61	28	4.81	22	4.41
Austria	11	5.22	5	5.69	15	4.76
Azerbaijan	68	3.60	80	3.84	54	3.36
Bahrain	74	3.53	53	4.25	98	2.81
Bangladesh	111	2.99	102	3.41	117	2.56
Barbados	57	3.71	66	4.10	56	3.32
Belgium	15	5.09	12	5.44	16	4.74
Benin	92	3.24	97	3.51	86	2.97
Bolivia	126	2.65	125	3.05	128	2.25
Bosnia and Herzegovina	123	2.86	119	3.20	121	2.53
Botswana	100	3.13	103	3.41	96	2.85
Brazil	41	3.99	39	4.48	44	3.50
Bulgaria	91	3.26	92	3.57	88	2.96
Burkina Faso	95	3.19	100	3.44	90	2.94
Burundi	130	2.56	130	2.82	126	2.29
Cambodia	106	3.05	105	3.40	103	2.69
Cameroon	110	2.99	112	3.29	105	2.68
Canada	17	5.01	20	5.12	12	4.90
Chad	128	2.62	128	2.96	127	2.28
Chile	36	4.06	32	4.65	45	3.48
China	50	3.89	57	4.18	38	3.60
Colombia	66	3.61	65	4.10	72	3.11
Costa Rica	37	4.06	38	4.50	35	3.62
Croatia	53	3.77	64	4.11	50	3.43
Cyprus	55	3.75	50	4.26	61	3.25
Czech Republic	28	4.33	30	4.71	27	3.95
Denmark	8	5.36	6	5.60	10	5.11
Dominican Republic	96	3.19	87	3.70	106	2.67
Ecuador	104	3.06	93	3.57	118	2.56
Egypt	63	3.62	67	4.08	67	3.17
El Salvador	89	3.29	78	3.92	109	2.66
Estonia	35	4.07	44	4.39	31	3.75
Ethiopia	116	2.90	120	3.18	113	2.61
Finland	6	5.56	11	5.46	3	5.67
France	16	5.08	10	5.47	17	4.69
Gambia, The	93	3.21	89	3.69	102	2.74
Georgia	119	2.90	123	3.14	110	2.65
Germany	3	5.70	1	5.93	7	5.46
Greece	59	3.68	62	4.13	63	3.23
Guatemala	71	3.57	61	4.15	83	3.00
Guyana	113	2.98	98	3.47	122	2.49
Honduras	90	3.27	84	3.79	101	2.75
Hong Kong SAR	21	4.81	15	5.28	23	4.34
Hungary	43	3.98	46	4.35	37	3.61
Iceland	20	4.81	21	5.10	20	4.52
India	26	4.36	26	4.81	28	3.90
Indonesia	34	4.10	33	4.65	41	3.56
Ireland	22	4.80	22	5.07	19	4.54
Israel	9	5.35	19	5.13	5	5.57
Italy	32	4.18	24	4.91	47	3.45
Jamaica	62	3.65	69	4.04	59	3.27
Japan	2	5.70	3	5.76	4	5.64
Jordan	54	3.76	58	4.18	55	3.34
Kazakhstan	84	3.43	85	3.76	75	3.10
Kenya	56	3.75	70	4.03	46	3.47
Korea	7	5.42	9	5.47	8	5.36
Kuwait	49	3.89	34	4.62	68	3.16
Kyrgyz Republic	121	2.88	117	3.22	120	2.53
Latvia	72	3.55	71	4.02	77	3.08
Lesotho	129	2.60	129	2.90	125	2.31
Libya	105	3.05	99	3.46	111	2.65
Lithuania	44	3.94	42	4.43	48	3.45
Luxembourg	24	4.57	23	4.96	24	4.18
Macedonia, FYR	101	3.12	108	3.35	92	2.88
Madagascar	94	3.20	104	3.41	84	2.99
Malaysia	19	4.83	18	5.17	21	4.50
Mali	98	3.17	107	3.35	85	2.98
Malta	58	3.70	60	4.15	62	3.24
Mauritania	109	3.00	101	3.43	116	2.56
Mauritius	67	3.60	56	4.19	81	3.01
Mexico	60	3.66	54	4.22	71	3.11
Moldova	122	2.87	124	3.12	112	2.62
Mongolia	114	2.95	126	3.03	95	2.86
Montenegro	97	3.18	90	3.68	104	2.69
Morocco	70	3.59	76	3.93	60	3.25
Mozambique	124	2.78	127	3.00	119	2.56
Namibia	107	3.03	106	3.39	108	2.66
Nepal	120	2.89	113	3.29	123	2.49
Netherlands	12	5.21	8	5.54	13	4.88
New Zealand	25	4.42	29	4.75	25	4.09
Nicaragua	118	2.90	110	3.31	124	2.48
Nigeria	69	3.60	74	3.98	66	3.22
Norway	18	4.89	17	5.19	18	4.60
Oman	40	4.00	47	4.33	34	3.67
Pakistan	78	3.50	79	3.85	69	3.15
Panama	64	3.62	49	4.27	87	2.97
Paraguay	127	2.65	122	3.18	130	2.11
Peru	81	3.45	63	4.11	100	2.78
Philippines	65	3.61	55	4.20	79	3.03
Poland	61	3.66	68	4.04	58	3.28
Portugal	38	4.04	45	4.37	33	3.71
Puerto Rico	27	4.33	25	4.82	29	3.84
Qatar	46	3.92	48	4.30	43	3.54
Romania	73	3.54	73	3.99	76	3.09
Russia	77	3.50	88	3.70	57	3.31
Saudi Arabia	45	3.93	43	4.42	49	3.44
Senegal	80	3.46	82	3.82	73	3.10
Serbia	88	3.30	95	3.53	78	3.08
Singapore	13	5.14	16	5.19	11	5.08
Slovak Republic	52	3.84	52	4.26	51	3.42
Slovenia	30	4.20	31	4.65	30	3.75
South Africa	33	4.16	36	4.61	32	3.71
Spain	31	4.20	27	4.81	39	3.58
Sri Lanka	47	3.92	51	4.26	40	3.58
Suriname	115	2.91	116	3.25	115	2.58
Sweden	5	5.62	4	5.70	6	5.53
Switzerland	1	5.77	2	5.80	2	5.74
Syria	82	3.44	72	4.00	93	2.88
Taiwan, China	10	5.31	14	5.37	9	5.24
Tajikistan	108	3.00	121	3.18	97	2.82
Tanzania	85	3.38	91	3.61	70	3.15
Thailand	39	4.04	40	4.45	36	3.62
Timor-Leste	131	2.47	131	2.78	129	2.17
Trinidad and Tobago	79	3.47	77	3.93	82	3.00
Tunisia	29	4.32	35	4.61	26	4.02
Turkey	48	3.90	41	4.45	53	3.36
Uganda	87	3.32	94	3.54	74	3.10
Ukraine	75	3.52	81	3.83	65	3.22
United Arab Emirates	42	3.99	37	4.61	52	3.37
United Kingdom	14	5.10	13	5.41	14	4.79
United States	4	5.68	7	5.60	1	5.77
Uruguay	86	3.36	86	3.72	80	3.01
Uzbekistan	51	3.86	59	4.17	42	3.55
Venezuela	99	3.16	96	3.52	99	2.79
Vietnam	76	3.51	83	3.81	64	3.22
Zambia	117	2.90	118	3.21	114	2.58
Zimbabwe	112	2.98	111	3.30	107	2.67

(cont'd.)

Box 3: Is Germany's recovery sustainable?

After a long period of anemic growth, Germany's economy is recovering. Reforms introduced at the beginning of the decade, coupled with the consumption boom caused by the World Cup and increasing exports due to the global cyclical recovery, have boosted GDP growth in 2006 to 2.7 percent. There is no doubt that there has been some improvement in economic fundamentals: the corporate sector has been restructured and unit labor costs have decreased over the last decade. Yet the obvious question is whether reforms undertaken are sufficient to put the country on a sustainable higher growth path. The current upswing, which is partly the result of a cyclical phenomenon, provides a good opportunity for further reforms and the Grand Coalition government is committed to pursue them.

The GCI can provide some insight into the current status of the country's competitiveness and the improvements it has realized over the past years. The positive trend in the German economy is reflected in the slightly improved rank, which rose from 7th to 5th, with most of the areas of the economy remaining rather stable compared with last year. Notable exceptions here are the financial sector and the labor market. Both are assessed as slightly improved this year, which may reflect recent reform efforts.

The positive evaluation of the German economy rests on excellent public institutions that are consistently ranked among the top 10 worldwide, a vibrant business sector that is considered the most advanced and sophisticated globally, and what is one of the most innovative business environments in existence. German firms run some of the most sophisticated operations in the world, and their products and services occupy the top end of the value chain. Advanced production processes, effective marketing, and control of distribution are among the competitive advantages of German businesses. Although public research and education are often criticized for lacking efficiency and not being on a par with the world's leading institutions in Anglo-Saxon countries, Germany continues to be one of the most innovative economies in the world. It places 7th on the innovation pillar of the GCI and has one of the highest number of utility patents globally. The basic elements for this success are already in place in the country: property rights, particularly intellectual property rights, are well protected; collaboration between universities and business is intense; and skilled scientists and engineers are available. In such a supporting environment, businesses spend heavily on R&D and their capacity for innovation is assessed as the best in the world. Taken together, all these features contribute to making Germany the *Exportweltmeister*—the country with largest exports worldwide.

Yet, despite those clear strengths, in the longer term a number of structural features will have to be addressed if the recovery is to be made sustainable. These features include persistent labor market rigidities, weaknesses in the educational system, and overregulation of certain markets for goods and services. Labor markets are in dire need of liberalization and more flexibility. At the beginning of the decade, unemployment insurance was reformed to increase incentives to work and more flexibility was introduced, and—helped also by the current upswing—full-time employment has been growing for the first time in decades. In fact, the unemployment rate, according to the International Labor Union (ILO) definition, fell from 8 percent in April 2006 to 6.4 percent one year later. But rigid wage determination, costly hiring and firing practices, and a high degree of social protection continue to stiffen the German labor market. This is reflected in the GCI: the country ranks 47th on the overall pillar, and is one of the worst performing countries in terms of flexibility of this market—115th out of 131 countries. The present government is planning to reduce social security contributions from almost 42 percent to 40 percent, and it has already increased incentives to work by reforming unemployment insurance as first steps to solving the unemployment problem. It also plans to relax job protection policies and further improve employment opportunities for the low skilled.

In the longer term, the country's growth path will, to a great extent, depend on the ability of the government to reform the educational system. The current upswing has created shortages for skilled workers such as engineers; the scarcity of human capital could threaten further growth. Tertiary enrollment and public expenditure on education as a percentage of GDP in Germany are low compared with other OECD countries. In terms of the quality of education, Germany ranks 25th, and it scores below other countries in the same stage of development; it also compares poorly with the average of EU25 countries. The OECD notes that the German university education system is inefficient and very expensive, given the longer-than-average duration of most programs of study.[1] Following dismal international assessments, the government has earmarked an additional 100 million euros for research in up to 10 elite universities, as well as introducing tuition fees.

To sum up, Germany will have to continue the reform process if it is to attain a higher growth path. But, although the current Grand Coalition enjoys a robust majority and the economy is strong, chances that it will introduce big reforms over the remaining two years of the election period are slim. With upcoming regional elections in several important *Länder*, both governing parties are likely to shun away from unpopular reforms and the old problems may reappear when the global economy slows down.

Notes

1 OECD 2006.

On the other hand, a number of weaknesses are hindering the country from unleashing all of its competitive potential. France's labor market is ranked a low 129th—third to last out of all countries—for its lack of flexibility, and 114th for red tape. The effect of such characteristics is lower job creation, exacerbating the unemployment problem. In this light, the present government's stated intention of addressing these weaknesses will be critical in raising the country's competitiveness. Another area of concern is the macroeconomic environment (59th). The government budget deficit and the related public sector debt ratio still remain large. Finally, per capita education spending and enrollment rates in French tertiary education are somewhat low by international standards, although the educational system receives good marks for quality (13th).[23]

Estonia (ranked 27th) continues to be, by a significant margin, the most competitive economy among the 12 countries that joined the European Union (EU) since 2004. The efficiency of Estonia's government institutions (22nd), the excellent management of public finances, and its aggressiveness in adopting new technologies (19th) outshine the performance of many of the "old time" members of the EU. This stands in contrast with **Poland** (ranked 51st), which continues to slip in the rankings this year—down from 45th in 2006, with poor marks for its institutional environment and low public trust in politicians, against the backdrop of weak and deteriorating public finances.

Italy (ranked 46th), while continuing to lag behind its main European competitors, has seen a slight improvement in its performance since last year, mainly linked to a better functioning of businesses and a more effective uptake of new technologies for productivity improvements. More generally, Italy is relatively well assessed in more complex areas measured by the GCI, particularly the sophistication of the businesses environment. Italy is ranked 24th for its business sophistication, producing goods high on the value chain using the latest production processes and fostering strong business clusters. However, the country's overall competitiveness performance is held back by some structural weaknesses in the economy. Among the most problematic areas are the weak public finances and extremely high levels of public indebtedness (ranked 118th on this indicator), the inefficient use of public resources, a weak institutional environment (ranked 71st), with low levels of accountability and transparency and a perceived lack of independence within the judicial system, all of which increase business costs and undermine investor confidence.

Turkey (53rd) has seen a measurable improvement in its performance since last year, when it was ranked 58th. Turkey benefits from a large market, which is characterized by relatively sophisticated business operations (41st), and a comparatively efficient allocation of goods in the economy (43rd). These characteristics point to the economy's preparedness to evolve to a more advanced stage of development. However, some more basic issues must still be tackled, such as upgrading the quality of infrastructure (especially ports and the electricity supply), improving the human resources base through better primary education and better healthcare (77th), and tackling the burgeoning inefficiencies in the labor market (126th).[24]

Russia is ranked 58th this year. Despite the country's large market size and improving macroeconomic management, Russia places below the other large European countries, mainly attributable to weaknesses in its institutional environment and business standards. Of major concern is a perceived lack of government efficiency (118th), the lack of independence of the judiciary in meting out justice (106th), and more general concerns about government favoritism in its dealings with the private sector. Further, the environment for the protection of property rights is extremely poor and worsening (122nd this year). Private institutions also get poor marks, with corporate ethics in the country placing Russia 120th overall on this indicator.

LATIN AMERICA AND THE CARIBBEAN

Although the Inter-American Development Bank (IADB) estimates that 2007 will be a year of healthy growth for Latin America, most countries in the region still lag behind the most competitive economies of the world. Indeed, the competitiveness snapshot for the region depicted by the GCI results this year is mixed, with only a handful of economies placed among the top half of the rankings, namely Chile (26th), Puerto Rico (36th), Barbados (50th), Mexico (52nd), Panama (59th), and Costa Rica (63rd), and only a few countries posting significant improvements with respect to 2006.

The GCI results for this year once again place **Chile**, ranked 26th, as the most competitive economy in the region and one of the top performers globally, up one position from last year. Indeed, sound macroeconomic management coupled with early and effective privatization and economic liberalization, buttressed by highly transparent and efficient public institutions, have enabled the country to attain remarkably high annual growth rates for the last 25 years.[25]

In particular, macroeconomic stability (in which Chile ranks a high 12th globally) has been instrumental in freeing up resources that have been invested in areas such as upgrading infrastructure, improving the educational system, and implementing poverty reduction programs. In parallel, the liberalization process, carried out within the context of a stable and predictable regulatory framework, has resulted in well-functioning factor markets. Most notable are labor and financial markets, ranked 14th and 26th, respectively, out of 131 countries. Chile boasts one of the most developed and sophisticated financial markets characterized by significant financial

depth (64 percent of GDP), including a very well functioning equity market in the region, buttressed by a modern pension scheme. [26]

While Chile thus demonstrates significant strengths by both regional and global standards, a weakness holding back the country's overall competitiveness performance is its relatively poor educational standards. Chile is ranked 95th and 42nd, respectively, for primary education and higher education and training, with the quality of the educational system getting poor marks across the board. An effort should be made to upgrade the educational system at all levels to improve the efficiency of the workforce and to boost the innovative potential of the country, now ranked a somewhat low 45th. As well as tackling the educational system, efforts should be made to improve the quality of research institutions and their collaboration with industry in the R&D process.

Covered for the first time this year by *The Global Competitiveness Report*, **Puerto Rico** is the highest-ranked new entrant, and the second highest ranked economy in the region at 36th. Puerto Rico's satisfactory performance rests on efficient goods (29th), labor (27th), and financial (30th) markets, and especially on a high level of business sophistication (25th) and innovative potential (29th) in the country. A number of tax benefits combined with the operational advantages of Puerto Rico's unique relationship with the United States (i.e., open access to the US market, US banking system and currency, intellectual property protection, and constitutional protections) and its developed infrastructure and educated workforce have boosted FDI in advanced manufacturing and in cutting-edge sectors, such as biotechnology and ICT.

Since last year, **Mexico** has moved up three places in a constant sample and is now ranked 52nd, well ahead Brazil, the other regional economic giant.[27] The important progress realized in terms of macroeconomic stability (now assessed as 35th out of 131 countries, up from 55th last year) and the country's large market size (13th in the world) contribute to the country's overall competitiveness. At the same time, public governance, security levels, and the educational system still require efforts to attain world-class levels. In addition, a further liberalization of factor markets, especially the labor market, is required to better allocate resources to their most productive use. For a more detailed analysis of Mexico's competitiveness performance, see Box 4.

Panama (59th), **Costa Rica** (63rd), **El Salvador** (67th), and **Colombia** (69th) cluster in the middle of the rankings. Costa Rica in particular has posted a significant improvement of five places (nine in a constant sample) from last year. Costa Rica benefits from relatively transparent institutions, satisfactory levels of primary and higher education, and particularly efficient labor markets. On the other hand, a lack of stability in the macroeconomic realm (111th) and poorly assessed infrastructure

Box 4: Unleashing Mexico's competitive potential

At 52nd place, Mexico is assessed by the GCI as the second most competitive country in Latin America, just after Chile. Estimated at US$840 billion in 2006,[1] Mexico's economy is the second largest in the region after Brazil and the top destination for FDI,[2] with a unique geographical position between two oceans as well as between Latin and North America.

Mexico has made impressive strides in laying the macroeconomic foundations for durable growth since the last major financial and exchange crisis in 1995, as confirmed by its comparatively strong performance in the macroeconomic stability pillar (35th, up 20 ranks from last year). Indeed, competent stabilization programs (involving external debt restructuring as well as prudent monetary and flexible exchange rate policies), coupled with large-scale privatizations, slashed inflation, public debt, and the current account deficit to manageable levels (3.6 percent, 20 percent, and 0.2 percent, respectively, of GDP in 2006), and even resulted in a modest government surplus (0.1 percent of GDP).

The country also benefits from a large and rapidly expanding domestic market (ranked 12th) and, thanks to a number of trade agreements, preferential access to the North American, Japanese, and European markets (ranked 17th in foreign market size). In particular, the North American Free Trade Agreement (NAFTA), which came into force in 1994, has enormously boosted trade between Mexico, the United States, and Canada (intra-regional trade more than tripled between 1994 and 2004)[3]—and has further facilitated the diversification in Mexico's productive and export structure, thanks to the *maquiladora* system and FDI. In this sense, according to the Economist Intelligence Unit (EIU), the United States accounted for 84.7 percent and 50 percent, respectively, of Mexican exports and imports in 2006, with the latter's export structure strongly dominated by manufactures (81 percent of the total).

Mexico's fairly diversified productive structure is reflected in the satisfactory scores registered in the business sophistication pillar (54th), with relatively developed clusters (54th), good quality local suppliers (49th), and producing goods quite high on the value chain (46th). Mexico is also quite successfully leveraging FDI to absorb, adopt, and adapt technology in its domestic production processes (41st in the FDI as a source of technology indicator).

Notwithstanding these strengths, Mexico does not seem to have fully exploited its potential, as it still ranks behind other relevant emerging markets such as China (36th) and India (48th). Indeed, annual GDP growth rates for the 2002–2006 period have averaged a fairly unimpressive 2.8 percent, compared with 10 percent and 7.6 percent for China and India, respectively.[4] In addition, although growth rates in 2006 reached a more impressive 4.8 percent, the economy remains vulnerable to external downturns, given its close association with the US business cycle and its heavy dependence on oil revenues.

(cont'd.)

Box 4: Unleashing Mexico's competitive potential *(cont'd.)*

Indeed, a number of factors are still hampering Mexico's productivity and competitiveness: in particular, the rigidities present in the factor markets and the mediocre quality of higher education are of concern. Among the factor markets, the **labor market**, ranked 92nd, is probably the most problematic. Burdensome labor regulations,[5] including high firing costs (i.e., 74 weeks of salary, which makes it rank 95th in the country sample), combined with high payroll taxes and social contributions, discourage hiring. A result is the large informal sector, which by some estimates employs 60 percent of the total workforce,[6] depressing overall productivity levels and reducing the tax base. The government has recently secured the passage of a much-needed pension reform for civil servants, but further structural reforms are sorely needed to liberalize and unleash the power of the market.

Still related to the country's human resources, the **educational system** does not provide the economy with the necessary pool of skilled labor, particularly scientists and engineers (96th). Despite Mexico's relatively high education expenditure (5.25 percent of GDP in 2005, 33rd in the sample), secondary and tertiary enrollment rates remain low, ranked 80th and 73rd respectively, and the educational system gets poor marks for quality (92nd), most notably in math and science (113th). In this vein, although McKinsey ranks Mexico 2nd in its index of most attractive offshoring centers (given its low labor cost and attractive geographical position), it also points out the troubles met by companies in finding suitable talent, especially for high-skilled jobs.[7]

As a result of the endemic macroeconomic instability and the recurring financial crises of the last three decades, the degree of **financial market sophistication** is still quite low (67th), even though it has significantly improved in recent years (up 20 positions from 87th in 2006). The availability of capital for Mexican companies (especially the medium and small enterprises) is far from optimal, be it through bank financing (88th), venture capital (86th), or local equity financing (68th). However, the country's increasing macroeconomic stability, new prudential regulations, enhanced investor guarantees, and opening to domestic and international competition have resulted in a sounder and more diversified financial system. It is hoped that this will result in a growing availability of affordable credit and capital for Mexican business and consumers.

Mexico's **goods market** suffers from inadequate (foreign and domestic) competition conditions, with overregulated and rather closed key economic sectors such as telecommunications or energy, the monopoly of the state-owned oil company PEMEX being the most blatant example. In this sense, Mexico is ranked very poorly in the variables looking at market dominance (87th) and the effectiveness of anti-monopoly policy (77th). The inefficient tax system (80th) is another priority action area, also in view of ensuring government financial sustainability, by increasing the non-oil tax revenues (now accounting for only 10.5 of GDP, according to EIU). Fiscal reform, recently approved by the Mexican congress, is an encouraging step ahead since it is expected to increase tax revenues by a 3 percent of GDP over the current six-year administration, by allowing states to levy an additional sales tax on goods and services and by imposing an "informality tax" of 2 percent on cash deposits exceeding a cumulative monthly amount of 20,000 pesos, among others.

Underlying many of the above weaknesses, Mexico displays serious shortcomings in the quality of its **public institutions** (89th). As is the case in several countries in the region, property rights are not adequately protected (70th), public governance standards are not up to OECD levels (87th), with rampant favoritism in decisions of government officials (90th), policymaking that is not very transparent (76th), and an inefficient legal framework (96th). Moreover, the country is perceived as dangerous (118th out of 131 countries in the security subpillar), with organized crime (120th) and violence (119th) imposing significant costs on business, and with business leaders complaining that they cannot count on the police to protect them from crime (119th). This is well understood by policymakers. Indeed, the fight against crime and drug trafficking is at the center of the present administration's agenda, and the deployment of 24,000 army troops into particularly hot areas was one of the first actions undertaken by the president.

Only by addressing these challenges can Mexico begin to fully leverage its important competitive advantages and create sustained and durable growth for its citizens. A number of important steps have already been taken, moving the economy in the right direction. If the congress continues to work constructively with the administration to implement the necessary reforms, there is every reason to expect Mexico will continue on its upward competitive trajectory.

Notes

1 See EIU 2007a.

2 According to UNCTAD (2006), Mexico attracted US$14.184 million in 2006, ahead of Brazil (US$10.144 million) and Chile (US$4.307 million).

3 See Consejo Ejecutivo de Empresas Globales 2006, p. 48.

4 See IMF 2007.

5 Interestingly enough, Mexico has been one of the few countries in the region that has not adopted labor reforms in the framework of the market reforms of the last 20 years.

6 Instituto Mexicano del Seguro Social 2006, quoted in IMCO 2006.

7 Farrel et al. 2007.

(95th) continue to hinder the country from moving to even higher levels of economic competitiveness.

Brazil is ranked slightly lower this year, at 72nd. The country has made notable improvements in recent years toward sounder public finances, with notably reduced levels of public indebtedness (65.5 percent of GDP in 2006 as opposed to 71.4 percent in 2005). Brazil has a number of important competitive advantages, such as the extensive size of the market available to its firms, ranked 10th overall, its relative prowess in absorbing and adapting technology from abroad and leveraging ICT (55th in the technological readiness pillar), and especially its degree of business sophistication (39th) and capacity to generate endogenous innovation (44th).

However, despite some improvements and the potential of Brazil's large domestic market and diversified industrial base, the country's competitiveness continues to lag behind the most dynamic markets in the world. In particular, notwithstanding debt reduction, the overall debt level remains high by international standards, contributing to a low national savings rate and high interest rates. The result is a dismal 126th position in the macroeconomic stability pillar. Also notable is the negative assessment of public institutions (112th), related to a lack of trust in the political class (126th)—perhaps linked in part to the recent wave of corruption scandals in the country. More generally, there are complaints about too much red tape and wasteful government spending (127th), and the burdensome and inefficient tax system, aspects that contribute to shifting labor to the informal sector, already huge by international standards.[28] In addition, a lack of physical security in the country (ranked 114th) imposes significant costs to doing business in the country. Finally, the poorly assessed educational standards (at all levels), with high dropout rates and characterized by large regional disparities in terms of attainment and quality, represent a major structural drag on Brazil's present and future growth prospects.[29]

Argentina, a country of vast potential and endowed with rich physical and human resources, is ranked a disappointing 85th this year. Although the economy strongly rebounded following the 2001 economic crisis, with average annual growth rates of nearly 8.9 percent during the period 2003–2006, this followed a deep contraction, and elements of vulnerability continue to be found in a number of areas. In particular, there are weaknesses in the country's macroeconomic stability. Public indebtedness, at 64 percent of GDP in 2006, remains extremely high by international standards, despite external debt restructuring. Inflation has also recently begun to pick up, and the government's efforts to deal with the problem had the perverse result of eroding investor confidence, as suggested by recent turmoil in Argentina's asset and currency markets.

With respect to the regulatory framework, Argentina continues to be assessed very poorly, ranked 125th in the public institutions subpillar. This highlights serious concerns among the business community regarding the transparency of public institutions, governance practices, the respect for the rule of law, red tape, and the presence of a set of norms regulating the government's relations with the private sector. Indeed, the interventionist and discretionary policies often adopted by the government, together with the still-pending renegotiation of a number of utility provision contracts, have eroded at investor confidence in the country's business climate. In this vein, the GCI highlights important deficiencies in the way the overregulated goods, labor, and financial markets function and allocate resources, ranked 115th, 129th, and 114th, respectively.

For the country to leverage the potential of its extensive market size (ranked 23rd) and its rather well educated labor force, the above shortcomings need to be addressed by institutionalizing sound fiscal policies and improving the transparency and predictability of the business climate.[30]

Peru, at 86th, closely follows Argentina in the rankings. Peru presents a mixed picture, with some strengths being outweighed by weaknesses in other areas. For example, the country's financial market, so important for allocating capital to its most productive use, is developed and sophisticated by regional standards (ranked 46th). However, notwithstanding the high growth rates of 5–6 percent achieved by the economy in the last six years—with good monetary management that resulted in low rates of inflation (2 percent in 2006)—the assessment of public institutions more generally is quite negative (117th), with poor marks for government efficiency (114th). Recent social unrest in the country has underlined the extent to which much of Peruvian society still feels that it is missing out on the benefits of growth and disapproves of the government's handling of the economy. Among areas of concern are also the country's physical infrastructure (101st), the country's basic human capital as indicated by levels of health and primary education (95th), and higher education and training programs (84th). In these areas there has been some decentralization of financing to the regions for investments in infrastructure, health care, and education, which might enhance Peru's competitiveness prospects going into the future.

Venezuela has fallen to 98th place in the ranking, linked to a deterioration in most areas assessed by the GCI. Most strikingly, at a time when most oil exporters are seeing improvements in their macroeconomic environments due to windfall oil profits, some aspects of macroeconomic stability have actually been worsening in Venezuela. In particular, the government has increased spending so significantly as to run up rising budget deficits, and monetary management has resulted in an inflation rate so high that it places the country 128th overall.

The concerns for the respect of the rule of law and for the evenhandedness of the government, already highlighted in previous years by the business community, have been aggravated this year, linked to the increasingly interventionist policies undertaken by the government.[31] As was the case last year, Venezuela is ranked last out of all countries with regard to its property rights environment, the prevalence of undue influence in decision-making, government inefficiency, and public ethics. The discretionary interventions of the government in the economy are also evident in the dismal marks Venezuela gets for the efficiency of its goods (124th), labor (123rd), and financial (104th) markets. Unfortunately, the perceived urgency of structural reforms to deregulate and make markets more efficient has been lessened by the oil revenue windfall.

It is notable that the sharp increase in public spending on the health and education sectors, with the goal of redistributing wealth to the poor, does not seem to be bearing fruit. The indicators relating to health and primary education, as well as higher education, not only did not show any improvement but, on the contrary, have worsened over the past year (down from 52nd to 76th, and from 76th to 85th, respectively).

Ecuador (103rd), **Bolivia** (105th), **Nicaragua** (111th), **Suriname** (113th), and **Paraguay** (121st) continue to round out the bottom of the rankings for the region. These countries share similarities in terms of the poor quality of infrastructure, the lack of strong institutions and a predictable regulatory framework, overregulated markets, and poor educational standards. Efforts will need to be made across all fronts to increase the competitiveness of these countries.

In sum, despite the mediocre rankings of a number of countries, the GCI shows the remarkable progress made by most countries in the region with regard to macroeconomic stability. The region is now much less vulnerable to external shocks than it was in the past.[32] However, the rankings reflect the fact that although improvements are being made in Latin America, countries in other regions are moving faster. This observation stresses the importance of developing a stronger commitment toward removing remaining structural and micro impediments to more rapid productivity increases. In this sense, the region, with few exceptions, continues to be characterized by large informal markets, [33] which reduce governments' income and depress overall investment and productivity, and by overregulated markets and burdensome tax systems. This is coupled with more structural obstacles to growth such as inefficient educational systems, underdeveloped infrastructure, and poor governance and public ethics. Given that Latin America has one of the world's most unequal income distributions, and where poverty affects 40 percent of its population by some estimates, the urgency of the task appears even clearer.

ASIA AND THE PACIFIC

The region encompasses the entire gamut, from highly competitive countries to the most challenged, drawing an extremely heterogeneous picture with respect to the levels of growth and development achieved in the region. Nine Asia Pacific countries are among the top 30 in the GCI rankings, led by Singapore (7th), Japan (8th), Korea (11th), and Hong Kong (12th). The countries in the next tier are among the largest markets in the region, led by China (34th) and India (48th). A number of smaller economies close the ranking for the region, with Mongolia, Bangladesh, Cambodia, Nepal, and Timor-Leste all positioned at the very bottom.

Singapore, up one rank from last year and now at 7th place, draws its greatest competitive advantages from the efficiency of its markets—goods, labor, and financial—where it ranks in the top three in the world for each pillar. The country also gets excellent marks for the strength of its public and private institutions (ranked 1st for the public trust of politicians, burden of government regulation, efficiency of government spending, and transparency of government policymaking). This is an area that saw a measurable improvement since last year, particularly with regard to the country's private institutions. Singapore also has world-class infrastructure: its port and air transport infrastructure are both ranked 1st among 131 economies. But Singapore's competitiveness is hindered by its small domestic market size and mixed performance in the macroeconomic stability pillar due to relatively high interest rates and government debt of more than 98 percent of GDP in 2006, which placed the country 115th on this indicator.

Japan, at 8th place, enjoys a major competitive edge in innovation, ranking 2nd in the world in the availability of scientists and engineers as well as the number of utility patents, and 3rd in both company spending on R&D and the capacity for innovation. The country's overall competitive performance, however, is dragged lower by its macroeconomic environment, where it ranks 120th in government debt (of close to 190 percent of GDP in 2006), the consequence of repeatedly high government budget deficits over the years. Financial markets remain fragile, with Japan ranking 84th on the soundness of its banks.

Japan's current ranking marks a drop of three places from its 5th place ranking last year, due to declines from a broad range of areas including infrastructure and higher education and training. There was also some weakening in the assessment of the country's public and private institutions, related to a perceived increase in the costs of organized crime, the wastefulness of government spending, and a weakening in auditing and reporting standards.[34]

Korea, up 12 ranks to 11th place, represents one of the most impressive improvements since last year. The country derives its strong position from five areas: higher education and training, technological readiness, macroeconomic stability, innovation, and business sophistication. On the higher education and training pillar, Korea ranks 1st in the world in tertiary enrollment, 4th in Internet access in schools, and 5th in the extent of staff training by companies. With regard to technological readiness, it is 2nd in the world in the number of broadband Internet subscribers, 6th in the number of Internet users, and 7th in laws relating to ICT. Korea also gets good marks for its macroeconomic stability: it is ranked 8th overall in this pillar, with the government running budget surpluses, with debt on a downward trend and now at manageable levels, and with low inflation and low interest rates. On the innovation pillar it is ranked 8th overall, with top-notch university-industry collaboration buttressed by government focus on advanced technology in its procurement process. Finally, the country ranks 9th overall with regard to business sophistication, with well-developed clusters and companies producing goods and processes high on the value chain.

The country's overall ranking, however, suffers from weaknesses in three areas: health, financial market sophistication, and security. On health, the country ranks 85th in tuberculosis incidence and 74th on malaria incidence. As far as financial markets are concerned, the country is 69th in the soundness of banks and 45th in the strength of investor protection. Finally, with regard to the security situation, the country suffers from the costs of organized crime (ranked 50th), and crime and violence more generally (40th) compared with many other industrialized countries.

Hong Kong SAR is very competitive at 12th place, despite its small domestic market size. The country leads the world in two areas: financial market sophistication and goods market efficiency, and, to a lesser extent, labor market efficiency, infrastructure, and macroeconomic stability. In the financial market pillar, Hong Kong is 1st in the world on legal rights and 3rd in financial market sophistication, strength of investor protection, restriction on capital flows, and financing through the local equity market. In the goods market efficiency pillar, Hong Kong ranks 1st for both its low trade barriers and low trade-weighted tariff rate. The labor market efficiency pillar is also a competitive strength, as Hong Kong ranks 1st in the flexibility of wage determination, pay, and productivity, as well as the rigidity of employment. Meanwhile, Hong Kong has transport infrastructure rated among the best in the world, particularly air transport and port infrastructure. Its overall competitiveness is also boosted by excellent macroeconomic stability (5th), with a healthy budget surplus, low inflation, and one of the lowest levels of government debt in the world (placing the country 2nd on this indicator).

On the other hand, Hong Kong could improve its competitive performance by increasing enrollment rates at all levels of the educational ladder; it is presently ranked 63rd in both primary and secondary enrollment and 61st in tertiary enrollment.

Taiwan, China, is ranked 14th this year, down one place from last year. The economy draws its greatest competitive strengths from education and innovation, in line with the government's development strategy in recent decades. On education, Taiwan has among the highest enrollment rates in the world, ranking 3rd and 5th in primary and tertiary enrollment rates, respectively. The economy also gets excellent marks for the quality of the educational system, particularly math and science education (8th). This has buttressed the country's innovation potential (ranked 9th), as demonstrated by the extremely high level of patenting per capita.

Two areas of particular concern remain: financial market sophistication (58th) and the quality of its public and private institutions (37th this year, down from 30th last year). With regard to financial markets, questions have arisen as to the soundness of banks (114th) and the restriction on capital flows (80th). Similarly, its rankings on the quality of public institutions have been driven lower with a decline in the public trust of politicians and an increased perception of government favoritism. There has also been a decline in all of the indicators related to corporate governance.

Australia, at 19th place, gains its strongest competitive advantages from four pillars: the financial market efficiency, goods market efficiency, quality of institutions, and higher education and training pillars. In terms of financial market sophistication, the country ranks 2nd in the regulation of its securities exchanges, 3rd on legal rights, and 6th on financing through the local equity market. On goods market efficiency, the country notably ranks 1st in the world in both the number of procedures and the time required to start a business. Its institutions, especially private institutions, also represent a key strength—the country is ranked 7th overall, with good marks on the efficacy of corporate boards, the strength of auditing and reporting standards, and the protection of minority shareholders' interests. Finally, the country performs well in the higher education and training pillar, ranking 1st with regard to secondary enrollment and 8th in the quality of the educational system.

Macroeconomic stability and business sophistication, however, encompass some of Australia's key competitive disadvantages. The country ranks 73rd for its national savings rate, 66th for its interest rate spread, 53rd for inflation, and 38th for the government budget deficit. On the business sophistication pillar, the country ranks 86th in value chain breadth and 49th in the state of cluster development.

Malaysia confirms its position as one of the most competitive markets in the region, ranked 21st this year. For a detailed assessment of Malaysia's performance, see Box 5.

New Zealand, at 24th place, draws competitive advantages from the efficiency of its financial, goods, and labor markets as well as measures of basic human resources such as the health of the workforce and primary education. New Zealand ranks 4th in the financial markets pillar, with strong investor protection and legal rights, and wide access to financing through the local equity market and bank loans. The goods market is characterized by strong competition, due for example to the country's non-distortionary agricultural policies (ranked 1st), low trade barriers, and efficient customs procedures. Labor markets are well assessed with significant flexibility to fire workers (ranked 1st on firing costs and 10th for non-wage labor costs). New Zealand has strong and transparent public institutions (ranked 8th), with good marks for judicial independence and low levels of corruption and government favoritism; private institutions are also well assessed (5th), with excellent corporate ethics, strong protection of minority shareholder interests, and well-functioning corporate boards. On the other hand, improvements could be made in the macroeconomic area, which is characterized by relatively high inflation and interest rates and a low national savings rate. Further, upgrading could be made to the country's transport and energy infrastructure.

Thailand, at 28th place, derives certain competitive strengths from its large market size and selected labor market efficiency indicators, such as cooperation in labor-employer relations, where it ranks 14th. But the country suffers weaknesses in the areas of health and primary education, with poor health indicators linked to high rates of diseases such as malaria, tuberculosis, and HIV/AIDS; in the area of education, it ranks a low 87th in primary enrollment and receives a mediocre assessment of the quality of primary education. Another source of competitive disadvantage is the financial markets pillar, where the country ranks 95th in terms of restrictions on capital flows and 71st in the soundness of banks.

China is up one rank this year, at 34th place. The country draws its key competitive advantage from its significant domestic and foreign market size (ranked 2nd and 1st, respectively) allowing the country's companies to benefit from significant economies of scale. Macroeconomic stability is another source of competitive advantage (ranked 7th), with manageable government debt, high national savings, and low inflation.

China's competitive performance reveals, however, the need to address weaknesses particularly in three areas: financial markets, higher education and training, and the quality of public and private institutions. China is ranked 118th in financial market sophistication, with poor ratings in terms of the soundness of its banks, legal rights, restriction on capital flows, regulation of securities exchanges, and ease of access to loans. The country must also do more to boost higher education attainment: it ranks 91st and 80th in terms of secondary and tertiary enrollment rates, respectively. Public and private institutions are also notable sources of weaknesses: on public institutions, the country receives poor assessments for the transparency of government policymaking, the diversion of public funds, and the lack of judicial independence; while on private institutions, corporate boards receive poor ratings for efficacy, minority shareholders' interests are not protected, auditing and reporting standards are insufficient, and firms are not seen to be behaving ethically.

Like China, **India**, at 48th place, derives substantial advantage from its market size, where it ranks 3rd in domestic market size and 4th in foreign market size. But unlike China, it also derives competitive advantages from the sophistication of its businesses (ranked 26th) and its innovative potential (ranked 28th). The country is well assessed for the state of its business clusters and the availability of local suppliers, as well as its reliance on professional management. On innovation, India is ranked an impressive 4th in the availability of scientists and engineers and 22nd in the quality of its scientific research institutions.

India has seen a small decline in its performance since last year, when it was ranked 42nd (representing a decline of three places in a constant sample). India's competitive disadvantages stem largely from three pillars: macroeconomic stability, health and primary education, and labor market efficiency. On the macroeconomic stability pillar, the country has a government deficit that places it 125th, which over time has led to the buildup of large government debt. In addition, India is experiencing inflation in excess of 6 percent at a time when the rate of price increases has been much reduced around the world. In terms of health, India has poor health indicators (ranked 103rd in this subpillar) with high infant mortality and low life expectancy, which are related to the high prevalence of diseases such as malaria and tuberculosis. Enrollment rates in the educational system remain low, with primary education also receiving poor marks for quality. Still focusing on human resources, within the labor market efficiency pillar India ranks 116th in both the total tax rate and female participation in the labor force and 102nd in hiring and firing practices. In the area of institutions, there has also been a marked decline in areas such as the transparency of government policymaking, business costs of crime and violence, judicial independence, and ethics.

Indonesia, at 54th place, also enjoys advantages because of its market size, where it ranks 15th in domestic market size and 21st in foreign market size. Its other competitive advantages are derived from selected indicators, most notably the goods market efficiency pillar where it is ranked 23rd, based on positive assessments for its agricultural policy, the extent and effect of taxation,

Box 5: Malaysia: A competitiveness appraisal 50 years after independence

Malaysia has come a long way since gaining independence in 1957: from living standards and access to education and health care to sanitation, infrastructure, and economic diversification, significant strides have been achieved toward an advanced economy status in a relatively short time.

The drive to modernization has especially accelerated since 1991, with the launch of an ambitious "Vision 2020" for Malaysia.[1] This program aimed at turning the latter into a fully developed country in the span of three decades by stepping up industrial restructuring, technological upgrading, and human resource development. The impressive 452-meter high Petronas Towers, completed in 1998 in Kuala Lumpur, embodied this vision, showing the world the confident face of modern Malaysia.

The economy has been growing every year since 1991, except the year of the 1998 financial crisis, with per capita income increasing from just over US$5,000 in 1991 to nearly US$12,000 in 2006 (in purchasing power parity, current terms). And although the economy contracted by more than 7 percent in 1998, it quickly recovered, with annual growth averaging a robust 5.4 percent in the years since, and a projected growth rate of 5.8 percent for 2007–2008. This has been made possible by the country's strong export-led growth—Malaysia is ranked a high 16th in the foreign market size subpillar of the GCI—and good macroeconomic management together with its increasing move into higher-value added sectors; not to mention, of course, its remarkable political stability.

In light of the above, it comes to no surprise that Malaysia is ranked by this year's GCI, at 21st, as the most competitive economy in Southeast Asia after Singapore, ahead of next-ranked Thailand by seven places.

The GCI's encouraging assessment is based on a number of strengths displayed by the country. To begin with, Malaysia's **institutional framework** appears to be fairly strong and efficient (19th in the public institutions subpillar), with well-protected property rights (24th), a competent government (7th), and low levels of corruption in the public sphere (21st). Private institutions also seem to have reached first-class levels of efficiency and transparency (21st in the private institution subpillar), with satisfactory corporate ethics (24th) and standards for auditing and reporting (25th) as well as for the protection of minority shareholders (19th).

The **physical infrastructure** is another important competitive advantage for the country, particularly by regional standards, with excellent evaluations of all transport infrastructure (within the top 20), although telephone lines remain scarce by international standards (69th). Indeed, infrastructure upgrading and development have been a constant in the government agenda, as shown once again by the latest five-year development roadmap adopted in 2006, the Ninth Malaysia Plan (9MP), which devoted around 27 percent of its 200 billion ringgit budget to the extension and enhancement of transport, energy, and public utilities infrastructure.

Moreover, all the right steps seem to have been taken to make **markets effective in allocating resources** throughout the economy. Labor markets are well evaluated for their efficiency (16th), with a strong relationship between productivity and remuneration (3rd), high levels of cooperation in labor-employer relations (8th), and some flexibility afforded to firms in determining wages (29th), even if the World Bank estimates firing workers to be quite costly (88 weeks of salary).

Goods markets are assessed as fairly efficient, at 20th, with intense competition (13th) both from local and foreign firms and business-friendly taxation.[2]

Financial markets have bounced back from the 1998 financial crisis, now ranking 19th internationally in terms of their sophistication, and the country is increasingly consolidating its position as a global Islamic financial hub. Banks are generally viewed as sound, well-capitalized, and highly liquid, as also captured by the GCI's variables on the ease of access to a variety of financing channels (including loans from the banking sector (20th), issuing shares on the local stock market (19th), and venture capital (18th). Moreover, measures have been adopted to upgrade the regulatory and supervisory framework to international standards and to promote a better integration with the international financial system.

Last but not least, Malaysia's **well-educated and English-speaking labor force** is a precious asset for investors and is mirrored in the remarkable innovation potential displayed by the country (21st in the innovation pillar). In this respect, Malaysia scores extremely well in all the GCI variables gauging the quality of the primary and higher educational system (17th and 20th, respectively) as well as the quality of its research institutions (17th), university-industry collaboration (16th), and the availability of scientists and engineers (21st). The budget for 2008, in line with the emphasis put by the 9MP on human capital, provides for the abolition of all school fees (which are already very limited) and for free textbooks.

The analysis performed above shows, in sum, that Malaysia has many reasons to celebrate its 50th anniversary. Nevertheless, a few challenges remain to attain a fully industrialized country status. There are three broad areas of concern. First, some remaining red tape and outdated regulations, such as programs awarding contracts to companies owned by Malays, introduce unnecessary rigidities in doing business in the country for national and foreign investors alike. Incidentally, the latter is one of the contentious matters slowing down the negotiation of a free-trade agreement with the United States, which is not expected to be completed before June 2008. The implications of this delay are significant, considering that the United States is Malaysia's largest market, absorbing around 19 percent of its exports, and the competition coming from Singapore that has a FTA in place with the US since 2003, the first ASEAN member to do so.

The second area where Malaysia needs to improve is education. The country shows rather low enrollment rates at secondary (ranked 86th) and tertiary (60th), and, to a lesser extent, primary (43rd) levels. It is possible that this is being exacerbated by the preferential quotas for Malays in education, which discriminate against other members of the population.

(cont'd.)

Box 5: Malaysia: A competitiveness appraisal 50 years after independence *(cont'd.)*

The third area that needs improvement is the relatively poor health of the workforce (ranked a low 63rd by the GCI).The prevalence of diseases such as malaria, tuberculosis, and HIV/AIDS places the country 83rd, 88th,and 77th, respectively, contributing to a relatively low life expectancy of 72 years.

Overall, the picture remains a positive one for Malaysia, where economic disparities and poverty have been reduced significantly in recent decades. The challenge the country now faces is to make the remaining structural reforms and to take the necessary steps to ensure that the fruits of the economy's strong growth are widely shared among the country's diverse population. In this way, Malaysia will provide a solid foundation for sustained competitiveness and prosperity for all of its citizens going forward.

Notes

1 Vision 2020 was introduced by the former prime minister of Malaysia, Mahathir Bin Mohamad, in the context of the Sixth Malaysia Plan in 1991. The full text is available online at http://www.wawasan2020.com/vision/.

2 This is confirmed by the Survey variable on the effect and extent of taxation (15th). Indeed, Malaysia's corporate tax currently stands at 27 percent, and it is set to decrease to 25 percent by 2009.

buyer sophistication, and the prevalence of foreign ownership.

In contrast, the country's sources of weaknesses are mainly related to infrastructure, macroeconomic stability, health and primary education, and technological readiness. On infrastructure, the country ranks 113th in both the quality of roads and the quality of port infrastructure and 100th in the availability of telephone lines. On macroeconomic stability (89th), Indonesia has been running government budget deficits and has built up relatively high government debt (although this is on a decreasing trend), and inflation is so high as to place the country 126th on this indicator. The health of the workforce is also a source of concern as the country ranks 110th in tuberculosis incidence, 96th in malaria incidence, and has poor ratings on other related health indicators. Finally, the country could be harnessing new technologies more effectively for productivity improvements (ranked 75th on this pillar).

Vietnam, at 68th place, has seen its competitive position eroded by weaknesses mainly in four areas: higher education and training, financial market sophistication, infrastructure, and health and primary education. With regard to higher education and training (ranked 93rd), the country has low enrollment rates at the secondary and university levels, and receives a poor assessment for the quality of the educational system, including management schools. Financial markets are also ranked 93rd, with particular concerns related to insufficient investor protection and the soundness of banks. Infrastructure too requires upgrading (ranked 89th), with poor assessments for transport infrastructure (particularly ports and roads) and the quality of the electricity supply. Similar to a number of other countries in the region, another area of concern is the health of the population. Along with the educational system, these are both vitally important for nurturing the country's human capital.

Sri Lanka, at 70th place, moved up by an impressive 11 places since last year, notwithstanding the current civil turbulence. The most notable improvements were in the areas of business sophistication and innovation, with indicators such as state of cluster development and university-industry research collaboration posting the largest improvements. On the other hand, the country has two prominent sources of competitive disadvantages: macroeconomic instability and labor market inefficiencies. On the former, the government has been running large budget deficits, which over the years has led to a large buildup of government debt and a high interest rate spread. As to the latter, Sri Lanka's labor markets are characterized by extremely high firing costs, low female participation in the labor force, a very high total tax rate, and little cooperation in labor-employer relations.

The **Philippines**, at 71st place, derives competitive advantage from its market size, where it ranks 24th in domestic market size and 25th in foreign market size. Compared with last year, the Philippines rose four places in the rankings (eight in a constant sample), driven largely by gains in the macroeconomic stability pillar, with a measured decrease in the inflation rate and interest rate spread, and lower government deficit and debt. But its overall competitive performance is dragged lower by its position in four key pillars: labor market efficiency, institutions, infrastructure, and health and primary education. On labor markets, the country is ranked 100th, with a severe brain drain problem, little flexibility for firms in wage determination, and excessively high firing costs, reducing the incentive for hiring. The country also receives poor assessments on the quality of its public and private institutions (ranked 95th), with high

business costs of terrorism, low public trust of politicians, excessive red tape, and concerns related to the diversion of public funds and the wastefulness of government spending. The quality of infrastructure is another major source of disadvantage, as the country receives poor marks for its transportation and communication infrastructure. Finally, the country's competitiveness would be enhanced by improving the health of the workforce, now ranked 95th, due to its poor performance on health indicators.

Like the Philippines, **Pakistan**, at 92nd place, benefits from its market size, especially its domestic market size where it ranks 25th. However, Pakistan's overall competitive performance is hindered by its position in key pillars, mostly related to human capital: higher education and training, health and primary education, and labor markets. On education and training, the country has low primary, secondary, and tertiary enrollment rates, (ranked 120th, 120th, and 116th, respectively), a poor assessment for the quality of the educational system, and the availability of staff training. Health indicators are also worrisome, placing the country 106th overall. Finally, the country receives poor marks for labor market efficiency (ranked 113th), with low female participation in the labor force, high firing costs, little reliance on professional management within companies, and wages that are not flexibly determined.

Mongolia at 101st, **Bangladesh** at 107th, **Cambodia** at 110th, **Nepal** at 114th, and **Timor-Leste** at 127th constitute the weakest competitive performers in the region. Although the specifics vary, these countries must make efforts in all areas measured by the GCI to improve their competitive standing, most urgently by improving health and educational standards, upgrading infrastructure and technology, and creating market-friendly business environments.

The GCI rankings thus reflect the great diversity of economic and institutional development in the Asia Pacific region, which includes some of the most and least competitive economies in the world: two economies within the top 10 and five within the top 20 hail from the region, while a number of Asian countries are also found well at the bottom of the rankings. Asia Pacific is also notable for its dynamism, with many countries making significant progress in improving their competitive performance and productive potential in recent years, lifting the living standards of their citizens significantly as a consequence.

MIDDLE EAST AND NORTH AFRICA

As Tables 4, 5, 6, 7, and 8 show, many countries in the Middle East and North Africa (MENA) region are well positioned by international standards, falling for the most part in the upper half of the rankings. Israel (17th) is the top-ranked country in the MENA region, followed closely by Kuwait, Qatar, and Tunisia, in 30th, 31st, and 32nd places, respectively. Saudi Arabia (35th) and United Arab Emirates (37th) round out the countries from the region at the upper part of the rankings. Oman (42nd), Bahrain (43rd), Jordan (49th), and Morocco (64th) are also all within the top half of the rankings this year.

Despite moving down by three ranks from last year, **Israel**, at 17th, continues to lead the Middle East and North Africa region in competitiveness, with an outstanding innovative capacity (5th) and excellent levels of technological readiness (14th). Israel's strong showing is boosted by a large number of competitive advantages. These include its first-class educational system (ranked 12th and 18th, respectively, for the quality of its primary and higher education), which has provided the country with a large pool of high-skilled labor (ranked 3rd for the availability of scientists and engineers) and with top-notch research institutions (3rd). Israel also has well-functioning factor markets, with a particularly flexible labor market (12th) and sophisticated financial market (10th), making capital available for business development. Although macroeconomic stability still represents an area of concern (ranked 61st), the fiscal consolidation and discipline introduced by the 2003 New Economics Agenda is starting to bear fruit, with a slight improvement of the government deficit (from 2.90 percent to 2.70 percent) and a reduction of overall debt (down from 95 percent to 86 percent of GDP) between 2005 and 2006.[35]

As in other oil-exporting countries in the region, the macroeconomic environment in **Kuwait** has markedly improved in the past few years and the country is presently assessed as second to none out of all countries with respect to macroeconomic stability, reflecting a large budget surplus, low debt, and growing national savings. The country also boasts an efficient financial infrastructure (29th) with easy access to a wide range of financial services, including loans, equity markets, and venture capital. The country's labor markets also get good marks for efficiency (20th), most particularly related to the flexibility of the system, facilitating job creation.

On the other hand, there is room for improvement with respect to education in the country. Although it is above levels found in many countries in the region, the primary enrollment rate of 86.5 percent places Kuwait 98th out of 131 countries. Similarly, improvements in the quality of higher education, now assessed at 59th, would benefit the country's business sector, enabling it to improve the sophistication of business operations and to enhance the innovative capacity of domestic businesses. Kuwait also remains somewhat sheltered from the international economy, forgoing some of the benefits of competition. Although formal trade barriers are not identified as obstacles, foreign ownership is considered the second most restricted of the countries covered (ranked 130th). Both the low level of imports and

restrictions on entry by foreign firms further reduce competition in the already small internal market.

Qatar is ranked 3rd in the region. A small country rich in natural gas reserves, it achieves the highest per capita income in the region and one of the highest in the world. Like Kuwait and the other oil-producing countries in the region, Qatar's macroeconomic stability has benefited from the increased production and export price of oil and gas. In this area, inflation remains one area of concern as it has reached very high levels (11.8 percent in 2006), placing the country 122nd on that indicator. Still, the overall picture is quite positive, with Qatar ranking 19th out of all countries on the macroeconomic stability pillar.

Qatar also has a relatively good track record with respect to education. It has reached almost universal primary and secondary enrollment, placing the country 40th and 25th on these indicators, respectively. Yet for the country to move ahead, a higher turnout of university graduates will be necessary. Its tertiary enrollment rate of 19 percent places the country 79th among 131 countries in this category.

As a country with high wage levels, Qatari businesses will need to focus on innovation and increasing business sophistication. In terms of innovation, the picture is mixed, although relatively good. The government is clearly providing intellectual property rights protection and gives priority to procuring advanced technology products (ranked 18th). Yet businesses and research institutions lag behind. The quality of the latter is not very well assessed (ranked 46th) and the two main players in innovation, universities and industry, miss out on collaboration opportunities. At the same time, appropriately trained staff for research activities is scarce (ranked 67th).

Tunisia (ranked 32nd) displays comparative strengths across many of the areas measured by the GCI. To begin, the country has public institutions that are assessed as efficient, with perceived low levels of corruption (17th), rather well protected property rights, and an independent judiciary as well as a strong security environment in the country (23rd). In terms of private institutions, corporate ethics also get quite high marks (28th), on a par with countries such as Portugal and Spain. Tunisia also provides excellent access to primary schooling, particularly by regional standards, with very good marks for the educational system. Goods markets in the country are characterized by relatively few distortions.

On the other hand, the macroeconomic environment is characterized by a public deficit (–3.0 percent of GDP in 2006 that has led to a substantial buildup of national debt). With regard to education, although primary enrollment is positively assessed, secondary and tertiary enrollment rates place the country 79th and 64th, respectively. Finally, Tunisia could be harnessing new technologies more effectively for productivity improvements—it is ranked 52nd in the area of technological readiness. In particular, laws relating to ICT are not seen as supporting their proliferation, and in fact, penetration rates of new communication tools (mobile phones, Internet users, personal computers) remain low by international standards.

Saudi Arabia enters the GCI for the first time this year at a respectable 35th place. As is the case of the other oil exporters, macroeconomic stability is the country's main competitive strength. With a healthy fiscal environment, relatively low interest rates, and inflation that has been kept under control, Saudi Arabia ranks a very high 3rd on this pillar. The country's access to a relatively large domestic and foreign market is also a competitive advantage, allowing Saudi businesses to benefit from economies of scale. This is complemented by elements of business sophistication, with relatively sophisticated production processes (35th) and strong control over international distribution chains (19th).

On the other hand, improving the human resources base will require attention to prepare the country for moving to more advanced stages of development. Saudi Arabia ranks a low 69th on the health subpillar, with weak showings on many health indicators. With regard to education, the country's primary enrollment rate of 78 percent is so low as to place it 112th out of 131 countries, and increasing secondary and tertiary education also require attention to prepare the country for more sophisticated production methods and increase its innovative potential. This should be buttressed by efforts to unleash the potential of Saudi Arabia's markets, which are presently characterized by a number of inefficiencies, particularly with regard to its labor and financial markets, ranked 66th and 76th, respectively.

The United Arab Emirates retains its place as one of the most competitive economies in the region, at 37th rank, which is attributable to a number of strengths. The macroeconomic environment remains one of them, ranked 39th overall, although rising inflation (10 percent in 2006, up from 6 percent in 2005) is of increasing concern. Other areas of strength include the very modern transport infrastructure and well-functioning public and private institutions. Labor markets are judged to be flexible and efficient by the business community, especially with regard to the expatriate labor force. For a fuller analysis of the country's competitiveness landscape, see Box 6.

Oman enters the GCI for the first time this year, ranked 42nd. The country's solid outcomes on macroeconomic indicators (ranked 11th), including a high budgetary surplus, low debt, and low inflation, are a result of the economic reforms started in the early 1990s that focused on diversification and privatization. Other strengths in Oman include its well-developed institutions (ranked 30th), both in the public and private spheres. Perceived low levels of corruption and favoritism and an excellent security situation contribute to a good business environment. Oman's commitment to improving labor market outcomes is reflected in the

Box 6: United Arab Emirates: A success story in economic diversification

The United Arab Emirates (UAE) have undergone a remarkable development over the past few years. Amid security problems, the Emirates have achieved one of the highest growth rates in the region by pursuing economic reforms and liberalization policies and by actively supporting economic diversification since the 1980s. One of the main vehicles for this development was the creation of free trade zones, which have become a widely imitated success story in the region. Dubai has pioneered this development but other Emirates, in particular Abu Dhabi, followed. Today, diversification away from the energy sector continues to be a priority—the country focuses not only on further developing financial services, but also health care, industry, outsourcing, and ICT. In recent years, much of the available liquidity has been invested in creating supportive environments for these sectors and new free trade zones have been created.

Although free trade zones are a key component of success, the UAE economy also demonstrates other strengths; public institutions are traditionally one of them. Institutions are considered transparent and free from corruption (12th) and government spending is judged by the business community to be efficient (3rd). Over the past few years, the federal government as well as the Emirate governments have successfully stabilized the country's macroeconomic environment and have managed the inflow of liquidity from rising oil prices well. Yet inflation—resulting from the economic upswing, booming real-estate markets, increasing liquidity, and a falling dollar to which the dirham is pegged—has reached double-digit levels and is currently becoming a concern. This has resulted in a strong drop on the macroeconomy pillar from 7th rank last year to 39th in this edition of the Report. Among other strengths, labor markets are judged to be flexible (12th)—it is relatively easy to hire and fire workers and wages can be determined to a large extent by supply and demand. However, the availability of talent could be improved by increasing female participation (ranked 117th).

The educational system, in particular primary education, remains an area of concern. In terms of the enrollment rate in primary education, the United Arab Emirates rank at 118th place within the entire sample, a result that, given the considerable resources available to the country and its aim of diversifying the economy, could undermine future growth. Although flexible migration laws allow easy access to foreign workforce, a rising number of jobs will have to be provided for the growing local population. This is going to be increasingly difficult if basic education is not going to be made universal, and this education is all the more important as the country still has one of the highest illiteracy rates in the region, with 21 percent of the adult population not able to read and write. Equally daunting are the outcomes of secondary schooling. A diversified economy will have to rely increasingly on better vocational training and a secondary education that is oriented toward the needs of the business sector. Yet, although the country boasts a very high teacher-pupil ratio, educational outcomes do not appear to be commensurate either with the public investment undertaken, or with the needs and expectations of the business sector. In particular, the quality of management schools, ranked 58th in the overall sample of countries, and the extent of vocational training, ranked 40th, are judged to be suboptimal. Recent initiatives in the area of tertiary education show that the Emirates are aware of this issue and tackling it seriously.

Education is not the only potential bottleneck to keeping the current growth momentum and further diversifying the economy. The GCI results point also to weaknesses related to the efficiency of markets for goods and services. Although on the overall category the Emirates achieve a fairly good result (ranked 30th), the openness of markets to new entrants appears to be considerably hindered by red tape. It still takes 63 days in the Emirates to set up a new business, and executives deplore the lack of openness to foreign ownership. Among the 131 countries covered by the entire sample, the Emirates achieve a low 86th rank in this category. This could prove more harmful, as the country is disadvantaged by its small market size, where it ranks 54th.

Finally, diversification will happen only if the level of sophistication of business operations—such as production processes, marketing, and distribution, as well as investment in research and the development of new products and processes—increases. Although the level of sophistication of business (37th) appears to be in line with the country's overall results, outcomes on innovation and R&D call for increased investment both from the public and private sectors. UAE businesses have registered only a few patents, and their innovative capacity does not match the country's income level. One of the main causes of this lack in innovation appears to be the low quality of scientific research institutions (68th) and the clear shortage of an appropriately schooled workforce, mainly scientists and engineers (80th). Furthermore, innovation is not a priority for companies when deciding on their spending (54th). On the positive side, leaving aside the educational component, the government appears to prioritize innovation. Intellectual property protection is well developed and enforced, and the government contributes to promoting innovation through the targeted procurement of advanced technology products, which then push for an upgrading of related products and services.

high level of efficiency in its local labor markets. Yet further reforms aimed at rendering the labor markets more flexible will be necessary to help reduce the high unemployment rate.

Another way of improving labor market outcomes is through education reforms. Oman's enrollment rates are not up to international standards at any level of education. In particular, its tertiary enrollment rates are lowest in the Gulf region, with only 13 percent of young people of the relevant age group attending universities, placing it 94th on this indicator. In addition to education, a poor showing in technological readiness, business sophistication, and innovation contribute to weakening the country's position. Efforts to increase the penetration and use of the latest technologies could boost the country's competitiveness.

Morocco is the second highest ranked country in North Africa, at 64th. There has been a measurable improvement in the assessment of the country's public institutions (ranked 52nd, up from 57th last year), particularly issues related to ethics and corruption (48th, up from 70th in 2006) and a perceived improvement in government efficiency (47th, up from 50th last year). However, despite the overall positive trend, a number of obstacles remain. Although public institutions have improved, private institutions receive poor marks in areas including corporate ethics (78th), the strength of auditing and accounting standards (82nd), and the efficacy of corporate boards in the country (105th). Further, health indicators remain worrisome, including infant mortality (placing the country 94th) and tuberculosis incidence (83rd). Moreover, enrollment rates across all educational levels (primary, secondary, and tertiary) remain very low. The human resources base is thus in need of reinforcement across a number of fronts. These problems are exacerbated by weaknesses with regard to how the country's markets allocate resources. In particular, Morocco's labor markets are characterized by a lack of flexibility (108th) and a talent base that is not being employed efficiently (124th).

Egypt is ranked a bit lower, at 77th place. Egypt's main strengths can be found in aspects of market efficiency, and in the economy's significant market size, which allows for economies of scale. With regard to goods market efficiency, the country benefits from the short time required to start a business and taxation that is not perceived to be distortionary. There are also some strengths in aspects of the country's labor markets, such as flexibility in wage determination (28th), although the labor market is clearly fraught with some challenges, such as stringent hiring and firing laws (106th) and a lack of cooperation in relations between labor and employers (72nd).

The macroeconomic environment is very poorly assessed, ranked a low 124th overall, with large budget deficits over the years that have led the country to build up debt of over 100 percent of GDP. On a positive note, inflation has been brought significantly under control, down from 11.4 percent in 2005 to 4.2 percent in 2006. Higher education and training is another area of weakness, with enrollment rates at all levels that could be improved, an educational system that gets poor marks for quality (119th), and insufficient on-the-job training provided by Egyptian businesses (81st). This is no doubt related to the lack of technological readiness in the country (87th), which includes a low mobile phone penetration rate (98th).

Algeria is ranked 81st, four positions down from last year. Among its competitive advantages are its excellent macroeconomic environment (ranked 2nd in the world for its stability), boosted by increasing oil and gas exports, the reasonably large market size (ranked 42nd), and, to a lesser extent, the rather good quality of the institutional environment (64th). With respect to the latter, in particular, it is interesting to note how public institutions (63rd) are perceived as more efficient and transparent than the private ones (88th), pointing to the need to improve corporate governance practices, notably the functioning of boards (117th) and the strength of auditing and reporting standards (114th).

On a more negative note, relevant impediments to Algeria's improved competitiveness are to be found especially in the poor functioning of factor markets, assessed a disappointing 92nd, 124th, and 127th for the goods, labor, and financial markets, respectively. Indeed, a still rather protectionist stance with respect to international competition, coupled with highly regulated labor markets and an especially fragile financial system, represent pressing challenges for the country's near future.

Syria and **Libya** enter the rankings this year for the first time, both countries toward the bottom of the regional ranking. **Syria** enters in 80th place, facing many challenges to improving its competitiveness. The country displays some relative strengths. In international comparison, businesses have trust in their political leaders (ranked 53rd) and the security situation in the country is very good (ranked 18th). However, unlike many countries in the region, Syria displays inferior results on macroeconomic indicators. Despite the current economic boom, the country has a significant deficit and has accumulated considerable public debt. In addition, inflation in 2006 was so high as to place the country 114th out of 131 countries. Another challenge is in the area of education. Secondary and university education are not widespread, and the quality of the educational system is assessed to be below the level necessary to support a growing business sector, at 83rd and 105th, respectively, for the quality of primary schools and the educational system more generally.

In addition, inefficiencies in the country's markets abound. High levels of protectionism in goods markets and rigid hiring and firing practices (94th) restrict competition in those markets and contribute to the high level of unemployment. The financial sector is in urgent

need of upgrading as it is currently unable to channel funds into the business sector, as confirmed by the dismal 116th position occupied by the country in the financial market sophistication pillar. Furthermore, much of the potential with respect to using technology to boost growth remains untapped (109th in the technological readiness pillar).

Libya enters the GCI for the first time this year as the lowest-ranked country in the MENA region (88th overall). Libya's strengths can be found in two areas: its security environment and macroeconomic stability in the country. With regard to security, Libya is characterized by perceived low business costs of terrorism (2nd), low crime and violence more generally (4th), and low levels of organized crime (6th). In terms of its macroeconomic climate, Libya comes in at an impressive 4th out of all the 131 countries in this pillar, attributable to windfall income from high oil prices. In 2006 the country had the highest government surplus in the world, a negligible government debt ratio of just above 6 percent, a high national savings rate, and also managed to keep inflation under control.

Beyond these two areas of strength, Libya faces a number of obstacles to its competitiveness throughout the other pillars measured by the Index. Most notably, the country's infrastructure requires upgrading (113th), primary education enrollment is low (94th), and the educational system receives extremely poor marks for quality (124th). The country's markets are assessed as among the most inefficient in the world, and Libya is simply not harnessing new technologies for productivity improvements (ranked 127th in technological readiness), with little technology entering the country through FDI and low uptake of ICT.

In sum, high oil prices and intensifying global trade linkages have led to very high rates of growth for the past half-decade in many of the region's countries. Initial reform efforts carried out in recent years have also contributed to this outcome, but, as shown by the GCI results in many countries, the region is still far from realizing its full productive potential. This will require an acceleration of the reform process to tackle many of the obstacles to competitiveness and productivity outlined above. Leaders in the region must seize the opportunity afforded by the windfall oil revenues in the region, which provide a cushion for making the necessary reforms, and they must resist the temptation of allowing what may be a short-lived boon to lead to complacency.

SUB-SAHARAN AFRICA

The economic resurgence observed in sub-Saharan Africa in recent years, with an annual average GDP growth rate of 4.9 percent between 2001 and 2006, is not yet reflected in improved competitiveness rankings for the region. Indeed, only South Africa (44th) and Mauritius (60th) feature in the top half of the GCI rankings this year, with several countries positioned at the very bottom, and most not experiencing any measurable improvements in recent years.

South Africa, ranked 44th overall, is the highest ranked country in sub-Saharan Africa, down from 36th place last year. South Africa remains sub-Saharan Africa's economic giant, representing a third of its GDP despite accounting for only 6 percent of its population.[36] The size of the economy is captured by its high ranking in the market size pillar (21st). The country continues to be well assessed in more complex areas measured by the GCI, receiving strong marks for its property rights (22nd), corporate ethics (39th), and goods (32nd), as well as financial market efficiency (25th), business sophistication (36th), and innovation (32nd). South Africa's scientific research institutions are assessed on a par with Hong Kong's, and the country has a higher rate of patenting than a number of European countries, including Greece and Portugal. These combined strengths explain South Africa's position at the top of the regional ranking.

However, South Africa does face a number of obstacles to competitiveness. For example, the country ranks 75th in labor market flexibility, encompassing hiring and firing practices (129th), flexibility of wage determination (121st), and worker-employer relations (120th). Further, the country's innovative potential could be at risk with a university enrollment rate of only 15 percent, which places the country 90th overall.

South Africa's infrastructure, while excellent by regional standards, has received a weakening assessment, dropping from last year's 32nd place to 43rd place this year, with particular concerns about the quality of the electricity supply that has been increasingly plagued by interruptions and the short supply of telephone lines. The government is aware of these challenges and there are a number of efforts underway to address them, with investments planned in the areas of utilities and infrastructure. Finally, lack of security remains an obstacle to doing business in South Africa. The business costs of crime and violence (126th) and the unreliability of police services to protect from crime (104th) are highlighted as particular concerns. These are areas that need to be tackled in order to improve the country's competitiveness outlook.

Mauritius is the second most competitive economy in the region, ranked 60th overall, falling slightly from 55th position last year (a fall of three places in a constant sample). The country is characterized by strong public institutions, with well-protected property rights, reasonable levels of judicial independence, and a security situation that is very good by regional standards (33rd). Private institutions are rated as accountable, with strong auditing and accounting standards and with a system that protects minority shareholders' interests. The country's

infrastructure is quite well developed, especially for the region. In particular air transport (39th), ports (41st), and roads (43rd) are of reasonably good quality, and the country has relatively abundant telephone lines. Financial markets in Mauritius are also highly developed (32nd), with relatively abundant capital for business development through a variety of channels such as loans from a sound banking system, and with strong investor protection and well-regulated securities exchanges.

However, to prepare for the next stage of development, efforts will be required in the area of education. The country has a low tertiary enrollment rate (placing Mauritius 85th), and the educational system does not get good marks for quality. On a positive note, however, firms provide significant on-the-job training to make up for this shortcoming (29th). Beyond the educational weaknesses, labor markets are sticky and inefficient, with stringent hiring and firing laws (112th), wages that are not flexibly determined (120th), and little relation between productivity and pay. Furthermore, there are some health concerns with regard to the workforce—particularly the high incidence of tuberculosis. Finally, Mauritius must work to improve the stability of the macroeconomic environment going forward, with a government budget deficit that places the country 120th out of 131 countries (which has led to the buildup of significant national debt and high interest rates), as well as relatively high inflation.

Despite its fall in this year's rankings, **Botswana** continues to be relatively successful by regional standards, ranking 76th—the third best performance in sub-Saharan Africa, after South Africa and Mauritius. The government has succeeded in using its wealth from key natural resources to invest in factors that set it on a more sustainable growth path. Among the country's strengths are its reliable and legitimate institutions, ranking a high 23rd worldwide for the efficiency of government spending, 24th for public trust of politicians, and 29th for judicial independence. Botswana is known to be one of the countries with the lowest levels of corruption in Africa. Corporate ethics also receive relatively high marks.

Over past years, the transparency and accountability of public institutions have contributed to a stable macroeconomic environment. However, this is one area of significant weakening over the past year, with a precipitous drop from 29th place last year to 76th place this year: between 2005 and 2006, the government budget surplus turned into an (admittedly small) deficit, interest rates increased, and the already relatively high inflation reached a rate (11.3 percent) to place Botswana 119th out of 131 countries in this indicator.

The other primary weaknesses are related to the country's human resources base. Educational attainment rates at all levels of the educational ladder remain low by international standards, and the quality of the educational system receives mediocre marks—an area clearly requiring attention. Yet it is clear that by far the biggest obstacle facing Botswana in its efforts to improve its competitiveness is the health situation in the country. Botswana has the second highest HIV prevalence rate of all countries covered, as well as very high malaria (111th) and tuberculosis (129th) incidence, which has led to one of the lowest life expectancies in the world (only 40 years by most recent estimates). Improving the health and educational levels of the workforce are clearly the main priorities for the government at this stage.

Namibia is ranked behind Botswana, at 89th place. Among Namibia's comparative strengths is the quality of the institutional environment (ranked 55th). Property rights are relatively well protected and the judiciary is perceived as fairly independent from undue influence. With regard to private institutions, auditing and accounting standards are strong and minority shareholders interests are relatively well protected. The country's strong institutional environment seems to be contributing to good macroeconomic management. The government budget moved from deficit to a healthy surplus between 2005 and 2006, allowing the country to lower the debt burden, although inflation still remains high by international standards. The quality of the country's infrastructure is also excellent by regional standards (ranked 39th).

With regard to weaknesses, as in Botswana, health and education indicators in Namibia are worrisome. The country is characterized by high infant mortality, low life expectancy due in great part to the high prevalence rates of HIV and malaria (both ranked 127th) as well as the highest incidence of tuberculosis of all 131 countries. On the educational side, attainment rates are extremely low, with primary, secondary, and tertiary enrollment rates placing the country 117th, 102nd, and 109th, respectively. The quality of the educational system is assessed as being among the worst of all countries in the Index, ranked 118th overall. In addition, Namibia's goods markets suffer from a number of distortions, such as a long time required for starting a business (95 days, placing the country 117th) and ineffective antitrust policy. Finally, the country could do more to harness new technologies to improve its productivity levels. Companies are not considered to be sufficiently aggressive in absorbing new technologies, and indeed Namibia has low penetration rates of mobile phones and the Internet.

Nigeria, Africa's most populous country, is ranked 95th this year. The country's greatest area of strength relates to the macroeconomic environment (ranked 28th), with oil revenues contributing to large government budget surpluses, and a high national savings rate. In addition, inflation, although still very high by international standards, has been coming down over recent years. Nigeria also benefits from a relatively large market, allowing for economies of scale. In addition, its financial markets are quite sophisticated by regional standards (ranked 56th), providing businesses with reasonable access to capital and providing satisfactory investor protection.

However, the GCI shows that Nigeria's economy is characterized by weak and deteriorating institutions (ranked 103rd, down from 87th in 2006)—including a serious security problem (123rd)—poor assessments for its infrastructure (119th), as well as basic health and education (124th). In addition, the country is not harnessing new technologies for productivity enhancements, as demonstrated by the very low levels of ICT penetration, notably personal computers and broadband Internet (both ranked 114th). The rankings show that Nigeria is not taking the opportunity presented by the windfall oil revenues to upgrade the population's access to basic health care and education, and to make improvements in other areas such as infrastructure. Movements in this direction would be critical to set the basis for sustainable growth going forward.

Kenya (ranked 99th overall) is an interesting case because its strengths lie in those areas normally reserved for countries at higher stages of development. For example, Kenya's innovative capacity is ranked an impressive 46th, with relatively good scientific research institutions, high company spending on research and development, relatively strong research collaboration between universities and industry, and good availability of scientists and engineers within the country. Moreover, in terms of innovative "output," after South Africa, Kenya has the highest rate of patenting in the region. Supporting this innovative potential is an educational system that—although educating a relatively small proportion of the population compared with most other countries (primary, secondary, and tertiary enrollment rates are ranked 110th, 107th, and 118th, respectively)—is rated highly for quality (34th) for those who are fortunate enough to attend schools. The economy is also supported by financial markets that are sophisticated by international standards (48th), with relatively easy access to loans and share issues on the local stock market.

However, there are a number of basic weaknesses that are eroding at Kenya's overall competitive potential. The country's public institutions are assessed as highly inefficient (106th), plagued by undue influence (105th), general government inefficiency (86th), and red tape (72nd), and with very high levels of corruption and poor ethics (113th). Similarly, corporate ethics are poorly assessed among the country's firms (90th). The security situation in Kenya is also extremely worrisome, particularly in crime and violence (124th). As well as the low enrollment rates, workers are subject to a high incidence of illnesses, with weak health indicators and a high prevalence of diseases—particularly tuberculosis, which is among the highest (128th) of all countries covered and contributes to the low life expectancy of 51 years.

Senegal (100th) enters the GCI for the first time this year, the last sub-Saharan African country within the top 100 countries covered. Senegal's main competitive strength as measured by the GCI is in its macroeconomic environment (ranked 58th). Although the country has been running budget deficits, government debt is now at a sustainable level (following debt relief initiatives), and inflation has been brought down to very low levels, particularly by regional standards.

However, Senegal is characterized by many of the same weaknesses as the other countries in the region. Institutions, while better assessed—at 97th—than many other African countries, remain characterized by undue influence (120th), inefficiency (111th), and corruption (123rd). Infrastructure (98th) requires further upgrading, and most particularly efforts must be made to address health and education inefficiencies in the country to improve its competitiveness and potential for productivity.

Zimbabwe, a country that showed so much promise until just a few years ago, is ranked among the least competitive economies included in the GCI, at 129th overall. This compares with last year's rank of 112, and represents a decline of eight places even in a constant sample. The institutional environment is ranked among the worst of all countries, with a complete absence of property rights (ranked a rock bottom 131st), high levels of corruption (126th), and a lack of even-handedness of the government in its dealings with the public (129th) as well as basic government inefficiency (128th). After a number of years of mismanagement of the public finances and monetary policy, Zimbabwe has sunk to the bottom of all countries covered with regard to macroeconomic stability (ranked 131st), with large deficit spending, a negligible national savings rate, and raging hyperinflation that is unparalleled anywhere in the world today. Zimbabwe's weaknesses abound across the other areas measured by the Index, with poor health indicators (ranked 129th in the health subpillar) low educational enrollment rates (82 percent, 36 percent, and 3.7 percent, respectively, for primary, secondary, and tertiary education, corresponding to a 107th, 114th, and 113th rank), and very inefficient markets—particularly goods (128th) and labor markets (127th). It is clear that for Zimbabwe to get back on track, improved governance affecting all levels of the economy will be necessary to restore confidence in the economy and to rebuild what was once one of Africa's stars.

Despite the recent economic resurgence in Africa, on average, the rankings show that the competitiveness of most countries in the region continues to lag behind the rest of the world, and even behind other developing regions. The results thus provide a sense of the magnitude of the efforts required to raise competitiveness levels. This points to the need for stable and sound foundations for growth beyond the favorable international environment and circumstances (such as debt relief and high commodity prices, which have boosted growth rates in recent years). In particular, governance practices, educational standards, health, access to credit, and infrastructure are all areas in need of improvement for the region to realize considerable and durable progress in competitiveness.

Conclusions

This chapter has presented a comprehensive overview of the results of the World Economic Forum's Global Competitiveness Index. The GCI captures what government and business leaders have known for a long time: competitiveness is a complex phenomenon and the overall level of competitiveness of a nation can be improved only through a whole array of reforms in different areas. The Index also highlights the fact that the priorities are different for different countries, depending on the level of development.

We believe that the Index is an instrument that can be used to identify the competitive strengths of a country as well as the barriers that impede its economic progress, whether these be labor market inflexibility, fiscal imbalances, lack of governance, inadequate infrastructure or education, poor public ethics, red tape, insufficient innovation or sophistication of business activities, or underdeveloped financial markets. As well as establishing comparisons with similar countries and the relative position in the overall rankings a particular country holds, policymakers should also pay attention to the relative scores for each of the subcategories within each of the pillars. Indeed, the Index is constructed by combining hard data with the opinions of the top business leaders answering the Survey questions. Hence, the relative scores of the various subcategories of the GCI provide useful information as to what the priorities for reform should be, both from the cold reality of the hard data and from the point of view of the business community that currently operates in the country.

Notes

1 Schumpeter 1942; Solow 1956; and Swan 1956.

2 See, for example, Sala-i-Martin, Doppelhofer, and Miller (*American Economic Review* 2004) for an extensive list of potential robust determinants of economic growth.

3 Constructing an index based on weighted averages, which are held constant over time, serves two important purposes. First, it ensures transparency and clarity of method for readers, as it can be easily explained and replicated. Second, it allows for a clear comparison across time, in the sense that improvements or drops in the overall ranking of individual countries can be traced to specific factors and variables. The weighted average approach is a widely employed methodology, used in the construction of the following indexes, among others: The Ease of Doing Business Index (The World Bank), The Corruption Perception Index (Transparency International), The Economic Freedom of the World Index (Fraser Institute), The Environmental Sustainability Index (Columbia and Yale Universities), and The Capital Access Index (The Milken Institute).

4 It is notable that the 12-pillar index recalls the origins of the World Economic Forum's work on competitiveness, taking into account the complexity of competitiveness and the large number of factors driving productivity. Klaus Schwab's pioneering competitiveness index from the *Report on the Competitiveness of European Industry* (Schwab 1979), and annual competitiveness reports released over the many years that followed, was a weighted average of 10 factors that can be summarized as follows: (1) dynamism of the economy, (2) industrial efficiency and cost of production, (3) the dynamics of the market, (4) financial dynamism, (5) human resources, (6) the role of the state, (7) infrastructural dimension, (8) outward orientation, (9) future orientation, and (10) sociopolitical consensus and stability.

5 See Acemoglu et al. 2001 and 2002; Rodrik, Subramanian, and Trebi 2002; Easterly and Levine 1997; and Sala-i-Martin and Subramanian 2003.

6 See de Soto 2000.

7 See de Soto 1990.

8 See Shleifer and Vishney 1997; Zingales 1998.

9 See Kaufmann and Vishwanath 2001.

10 See World Bank 1994; Gramlich 1994; Aschauer 1989; Canning, Fay and Perotti 1994; and Easterly 2002.

11 See Fischer 1993.

12 See Sachs 2001.

13 See Schultz 1961; Becker 1993; Lucas 1988; and Kremer 1993.

14 See Aghion and Howitt 1992 and Barro and Sala-i-Martin 2003 for a technical exposition of technology-based growth theories.

15 A general purpose technology (GPT), according to Trajtenberg (2005), is one that in any given period makes a particular contribution to the overall economy's growth thanks to its ability to transform the methods of production in a wide array of industries. Examples of GPT have been the invention of the steam engine and the electric dynamo.

16 See Frenkel and Romer 1999; Rodrik and Rodriguez 1999; and Sachs and Warner 1995.

17 See Romer 1990,1991; Aghion and Howitt 1992; and Grossman and Helpman 1991.

18 Probably the most famous theory of stages of development was elaborated by the American historian W.W. Rostow in the 1960s (see Rostow 1960).

19 See Porter 1990. Although the theory underlying our index is close in spirit to that of Porter, there are some important differences. One difference is that the exact elements that are important at each stage are not the same. A second difference is the way Porter sees the second stage as driven by the ability and willingness to invest, while we see it as being driven by efficiency. A third difference is in the way countries are classified. But the most important difference is in the exact translation of the concepts to the index.

20 Some restrictions were imposed on the coefficients estimated. For example, the three coefficients for each stage had to add up to one, and all the weights had to be non-negative.

21 In order to capture the resource intensity of the economy, we use as a proxy the exports of mineral products as a share of overall exports according to the sector classification developed by the International Trade Centre in their Trade Performance Index. In addition to crude oil and gas, this category also contains all metal ores, and other minerals as well as petroleum products, liquefied gas, coal, and precious stones. Further information on these data can be found at the following site: http://www.intracen.org/menus/countries.htm.

All countries that export more than 70 percent of mineral products are considered to be to some extent factor driven. The stage of development for these countries is adjusted downward smoothly depending on the exact primary export share. The higher the minerals export share, the stronger the adjustment and the closer the country will move to stage 1. For example, a country with 95 percent or more of its exports in minerals and that, based on the income criteria, would be in stage 3, will be in transition between stage 1 and 2. The income and primary exports criteria are weighted identically. Stages of development are dictated uniquely by income for countries that export less than 70 percent minerals. Countries that export only primary products would automatically fall into the factor-driven stage (stage 1).

22 For a more detailed analysis of the United States' competitiveness, see Box 4: "The United States: An erosion of its competitive potential?" in Lopez-Claros et al. 2006b.

23 For a more detailed analysis of France's competitiveness, see Box 1: "France: What will it take to be top 10?" in Lopez-Claros et al. 2006b.

24 For a more detailed assessment of Turkey's competitiveness performance, see Box 3: "Is Turkey competitive enough for Europe?" in Lopez-Claros et al. 2006b.

25 Chile registered 4.7 percent annual average growth rate from 1980 to 2005, which represents double the regional average. See H.-P. Elstrodt 2007.

26 See Andrade et al. 2007.

27 By referring to a country's performance in a "constant sample," we mean its ranking with respect to the same countries included in *The Global Competitiveness Report 2006–2007*—that is, excluding the ones covered for the first time this year.

28 Accounting for 55 percent of total employment from 1992 through 2002 and absorbing 87 percent of new jobs created (see Capp et al. 2005).

29 For a more detailed analysis of Brazil's competitiveness, see Box 7: "Laying the foundations for a new "Brazilian miracle" in Lopez-Claros et al. 2006b.

30 For a detailed account of Argentina's competitiveness performance, see Box 6: "Argentina's unfulfilled potential" in Lopez-Claros et al. 2006b.

31 These policies include the imposition of exchange and price controls to contain capital flight and inflationary pressures, and the design of constitutional reforms such as the one aimed at eliminating term limits for the president.

32 In this respect, according to the Economic Commission for Latin America and the Caribbean (ECLAC) the region has been growing uninterruptedly since 2003, posting a cumulative rise of 17.6 percent and 12 percent, respectively, in regional GDP and GDP per capita from 2003 to 2006. Such an evolution compares well with the low 2 percent growth rate the region experienced from the aftermath of the 1980s major debt crisis until 2003. See ECLAC 2006.

33 According to H.-P. Elstrodt (2007), the informal market accounts for 38 percent of Latin American GDP, as compared with 16 percent and 26 percent of China and India's respective GDP.

34 For a full assessment of Japan's competitiveness, see Box 5: "Will Japan rebound?" in Lopez-Claros et al. 2006b.

35 For a more detailed analysis of Israel's competitiveness, see Box 8: "Unleashing Israel's competitive advantage" in Lopez-Claros et al. 2006b.

36 As measured by GDP in purchasing power parity (see IMF 2007a).

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Appendix A: Structure of the Global Competitiveness Index 2007–2008

This appendix presents the structure of the Global Competitiveness Index (GCI).

The numbering of the variables matches the numbering of the data tables. The number preceding the period indicates to which pillar the variable belongs (e.g., variable **1**.01 belongs to the 1st pillar).

The hard data indicators used in the GCI are normalized on a 1-to-7 scale in order to align them with the Executive Opinion Survey's results.[a] The Technical Notes and Sources at the end of this *Report* provide detailed information on all the hard data indicators.

Those variables that are followed by the symbol[1/2] enter the GCI in two different places. In order to avoid double counting, we give them a half-weight in each place by dividing their value by 2 when computing the aggregate score for the two categories in which they appear.[b]

The percentage next to each category represents this category's weight within its immediate parent category. The computation of the GCI is based on successive aggregations of scores, from the variable level (i.e., the lowest level) all the way up to the overall GCI score (i.e., the highest level), using the weights reported below. For example, the score a country achieves in the 9th pillar accounts for 17 percent of this country's score in the *Efficiency enhancers* subindex. Similarly, the score achieved on the subpillar *Networks and supporting industries* accounts for 50 percent of the score of the 11th pillar. Reported percentages are rounded to the nearest integer, but exact figures are used in the calculation of the GCI.

The weight of each of the three subindexes (Basic requirements, Efficiency enhancers, and Innovation and sophistication factors) depends on each country's stage of development, as discussed in the text.[c]

Weight (%) within immediate parent category

BASIC REQUIREMENTS

1st pillar: Institutions.....25%

A. Public institutions.....75%

1. Property rights.....20%
   - 1.01 Property rights
   - 1.02 Intellectual property protection[1/2]
2. Ethics and corruption.....20%
   - 1.03 Diversion of public funds
   - 1.04 Public trust of politicians
3. Undue influence.....20%
   - 1.05 Judicial independence
   - 1.06 Favoritism in decisions of government officials
4. Government inefficiency.....20%
   - 1.07 Wastefulness of government spending
   - 1.08 Burden of government regulation
   - 1.09 Efficiency of legal framework
   - 1.10 Transparency of government policymaking
5. Security.....20%
   - 1.11 Business costs of terrorism
   - 1.12 Business costs of crime and violence
   - 1.13 Organized crime
   - 1.14 Reliability of police services

B. Private institutions.....25%

1. Corporate ethics.....50%
   - 1.15 Ethical behavior of firms
2. Accountability.....50%
   - 1.16 Strength of auditing and reporting standards
   - 1.17 Efficacy of corporate boards
   - 1.18 Protection of minority shareholders' interests

2nd pillar: Infrastructure.....25%

A. General infrastructure.....50%

- 2.01 Quality of overall infrastructure

B. Specific infrastructure.....50%

- 2.02 Quality of roads
- 2.03 Quality of railroad infrastructure
- 2.04 Quality of port infrastructure
- 2.05 Quality of air transport infrastructure
- 2.06 Available seat kilometers (hard data)
- 2.07 Quality of electricity supply
- 2.08 Telephone lines (hard data)

3rd pillar: Macroeconomic stability.....25%

- 3.01 Government surplus/deficit (hard data)
- 3.02 National savings rate (hard data)
- 3.03 Inflation (hard data)[d]
- 3.04 Interest rate spread (hard data)
- 3.05 Government debt (hard data)

(cont'd.)

Appendix A: Structure of the Global Competitiveness Index 2007–2008 *(cont'd.)*

4th pillar: Health and primary education 25%

A. Health 50%

4.01 Business impact of malaria[e]
4.02 Malaria incidence (hard data)[e]
4.03 Business impact of tuberculosis[e]
4.04 Tuberculosis incidence (hard data)[e]
4.05 Business impact of HIV/AIDS[e]
4.06 HIV prevalence (hard data)
4.07 Infant mortality (hard data)
4.08 Life expectancy (hard data)

B. Primary education 50%

4.09 Quality of primary education
4.10 Primary enrollment (hard data)
4.11 Education expenditure (hard data)[1/2]

EFFICIENCY ENHANCERS

5th pillar: Higher education and training 17%

A. Quantity of education 33%

5.01 Secondary enrollment (hard data)
5.02 Tertiary enrollment (hard data)
4.11 Education expenditure (hard data)[1/2]

B. Quality of education 33%

5.03 Quality of the educational system
5.04 Quality of math and science education
5.05 Quality of management schools
5.06 Internet access in schools

C. On-the-job training 33%

5.07 Local availability of specialized research and training services
5.08 Extent of staff training

6th pillar: Goods market efficiency 17%

A. Competition 67%

1. Domestic competition .....variable[f]
   6.01 Intensity of local competition
   6.02 Extent of market dominance
   6.03 Effectiveness of anti-monopoly policy
   6.04 Extent and effect of taxation[1/2]
   6.05 Total tax rate (hard data)[1/2]
   6.06 Number of procedures required to start a business (hard data)[g]
   6.07 Time required to start a business (hard data)[g]
   6.08 Agricultural policy costs
2. Foreign competition .....variable[f]
   6.09 Prevalence of trade barriers
   6.10 Trade-weighted tariff rate (hard data)
   6.11 Prevalence of foreign ownership
   6.12 Business impact of rules on FDI
   6.13 Burden of customs procedures
   10.04 Imports as a percentage of GDP (hard data)

B. Quality of demand conditions 33%

6.14 Degree of customer orientation
6.15 Buyer sophistication

7th pillar: Labor market efficiency 17%

A. Flexibility 50%

7.01 Cooperation in labor-employer relations
7.02 Flexibility of wage determination
7.03 Non-wage labor costs (hard data)
7.04 Rigidity of employment (hard data)
7.05 Hiring and firing practices
6.04 Extent and effect of taxation[1/2]
6.05 Total tax rate (hard data)[1/2]
7.06 Firing costs (hard data)

B. Efficient use of talent 50%

7.07 Pay and productivity
7.08 Reliance on professional management[1/2]
7.09 Brain drain
7.10 Female participation in labor force (hard data)

8th pillar: Financial market sophistication.....17%

A. Efficiency 50%

8.01 Financial market sophistication
8.02 Financing through local equity market
8.03 Ease of access to loans
8.04 Venture capital availability
8.05 Restriction on capital flows
8.06 Strength of investor protection (hard data)

B. Trustworthiness and confidence 50%

8.07 Soundness of banks
8.08 Regulation of securities exchanges
8.09 Legal rights index (hard data)

9th pillar: Technological readiness.....17%

9.01 Availability of latest technologies
9.02 Firm-level technology absorption
9.03 Laws relating to ICT
9.04 FDI and technology transfer
9.05 Mobile telephone subscribers (hard data)
9.06 Internet users (hard data)
9.07 Personal computers (hard data)
9.08 Broadband Internet subscribers (hard data)

10th pillar: Market size 17%

A. Domestic market size 75%

10.01 Domestic market size index (hard data)[h]

B. Foreign market size 25%

10.02 Foreign market size index (hard data)[i]

Appendix A: Structure of the Global Competitiveness Index 2007–2008 *(cont'd.)*

INNOVATION AND SOPHISTICATION FACTORS

11th pillar: Business sophistication 50%

A. Networks and supporting industries.....50%

11.01 Local supplier quantity
11.02 Local supplier quality
11.03 State of cluster development

B. Sophistication of firms' operations and strategy ...50%

11.04 Nature of competitive advantage
11.05 Value chain breadth
11.06 Control of international distribution
11.07 Production process sophistication
11.08 Extent of marketing
11.09 Willingness to delegate authority
7.08 Reliance on professional management[1/2]

12th pillar: Innovation.....50%

12.01 Capacity for innovation
12.02 Quality of scientific research institutions
12.03 Company spending on R&D
12.04 University-industry research collaboration
12.05 Government procurement of advanced technology products
12.06 Availability of scientists and engineers
12.07 Utility patents (hard data)
1.02 Intellectual property protection[1/2]

Notes

a The standard formula for converting hard data is the following:

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

The *sample minimum* and *sample maximum* are, respectively, the lowest and highest country scores in the sample of countries covered by the GCI. In some instances, adjustments were made to account for extreme outliers. For those hard data variables for which a higher value indicates a worse outcome (e.g., disease incidence, government debt), we rely on a normalization formula that, in addition to converting the series to a 1-to-7 scale, reverses it, so that 1 and 7 still corresponds to the worst and best possible outcomes, respectively:

$$-6 \times \frac{(\text{country score} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 7$$

b. For those groups of variables that contain one or several half-weight variables, country scores for those groups are computed as follows:

$$\frac{(\text{sum of scores on full-weight variables}) + \frac{1}{2} \times (\text{sum of scores on half-weight variables})}{(\text{count of full-weight variables}) + \frac{1}{2} \times (\text{count of half-weight variables})}$$

c. As described in the chapter, the weights are the following:

Weights	Factor-driven stage (%)	Efficiency-driven stage (%)	Innovation-driven stage (%)
Basic requirements	60	40	20
Efficiency enhancers	35	50	50
Innovation and sophistication factors	5	10	30

d In order to capture the idea that both high inflation and deflation are detrimental, 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. Outside this range, scores decrease linearly as they move away from these values.

e The impact of malaria, tuberculosis, and HIV/AIDS on competitiveness depends not only on their respective incidence rates, but also on how costly they are for business. Therefore, in order to estimate the impact of each of the three diseases, we combine its incidence rate with the Survey question on its perceived cost to businesses. To combine these data we first take the ratio of each country's disease incidence rate relative to the highest incidence rate in the whole sample. The inverse of this ratio is then multiplied by each country's score on the related Survey question. This product is then normalized to a 1-to-7 scale. Note that countries with zero reported incidence receive a 7, regardless their scores on the related Survey question.

f The *Competition* subpillar is the weighted average of two components: *Domestic competition* and *Foreign competition*. In both components, the included variables provide an indication of the extent to which competition is distorted. The relative importance of these distortions depends on the relative size of domestic versus foreign competition. This interaction between the domestic market and the foreign market is captured by the way we determine the weights of the two components. 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 *Domestic competition*, and a weight of M/(C+I+G+X+M) to *Foreign competition*.

g Variables 6.06 and 6.07 are combined to form one single variable.

h The size of the domestic market is constructed by taking the natural log of the sum of the gross domestic product valued at PPP plus the total value (PPP estimates) of imports of goods and services, minus the total value (PPP estimates) of exports of goods and services. Data are then normalized on a 1-to-7 scale. PPP estimates of imports and exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. The underlying data are reported in the Data Tables section.

i The size of the foreign market is estimated as the natural log of the total value (PPP estimates) of exports of goods and services, normalized on a 1-to-7 scale. PPP estimates of exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. The underlying data are reported in the Data Tables section.

Appendix B: Global Competitiveness Index 2006-2007: Detailed rankings and scores

In this appendix we present the detailed rankings and scores of the Global Competitiveness Index for 2006-2007, based upon the revised 12-pillar model described in the chapter. Our intention is to allow readers to compare their progress across all areas measured by the index described in the chapter with their performance last year.

Appendix Table B1: Global Competitiveness Index 2006–2007

			SUBINDEXES					
	OVERALL INDEX		Basic requirements		Efficiency enhancers		Innovation and sophistication factors	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score
United States	1	5.80	20	5.58	1	5.88	2	5.81
United Kingdom	2	5.56	15	5.76	2	5.69	10	5.23
Denmark	3	5.55	1	6.26	5	5.44	9	5.27
Switzerland	4	5.54	4	6.03	9	5.30	4	5.63
Japan	5	5.51	23	5.51	8	5.31	1	5.82
Finland	6	5.50	2	6.07	11	5.25	5	5.55
Germany	7	5.48	12	5.81	13	5.23	3	5.68
Singapore	8	5.46	3	6.06	4	5.44	13	5.09
Sweden	9	5.44	6	5.96	12	5.24	6	5.44
Hong Kong SAR	10	5.37	5	5.96	3	5.48	20	4.78
Netherlands	11	5.37	8	5.91	10	5.28	12	5.14
Canada	12	5.35	14	5.77	6	5.42	16	4.96
Taiwan, China	13	5.35	19	5.64	15	5.17	7	5.41
Israel	14	5.26	30	5.33	14	5.20	8	5.31
France	15	5.21	13	5.78	20	5.01	11	5.16
Australia	16	5.18	10	5.83	7	5.32	25	4.51
Norway	17	5.18	7	5.95	17	5.12	21	4.76
Austria	18	5.16	18	5.70	22	4.98	14	5.08
Malaysia	19	5.15	21	5.58	24	4.89	22	4.74
Iceland	20	5.12	11	5.82	19	5.04	18	4.80
New Zealand	21	5.08	17	5.73	16	5.17	24	4.51
Ireland	22	5.08	25	5.45	18	5.11	19	4.78
Korea, Rep.	23	5.07	24	5.50	21	4.99	17	4.89
Belgium	24	5.06	28	5.40	23	4.92	15	5.05
Luxembourg	25	4.96	16	5.75	25	4.86	23	4.59
Estonia	26	4.82	32	5.28	26	4.69	34	4.03
Chile	27	4.82	29	5.35	30	4.56	35	4.02
Thailand	28	4.76	38	5.08	29	4.58	37	3.97
Spain	29	4.70	26	5.42	27	4.69	28	4.23
Kuwait	30	4.68	27	5.41	47	4.14	52	3.67
Czech Republic	31	4.67	39	4.94	28	4.59	27	4.39
Qatar	32	4.59	22	5.56	46	4.16	58	3.59
Tunisia	33	4.57	33	5.24	54	4.05	30	4.15
United Arab Emirates	34	4.56	9	5.85	38	4.40	39	3.96
China	35	4.55	42	4.86	48	4.14	45	3.75
South Africa	36	4.54	48	4.76	35	4.44	29	4.20
Slovak Republic	37	4.54	47	4.76	31	4.50	43	3.82
Hungary	38	4.49	50	4.71	32	4.48	33	4.06
Lithuania	39	4.49	40	4.91	41	4.28	42	3.83
Slovenia	40	4.48	36	5.18	36	4.42	31	4.11
Barbados	41	4.48	37	5.17	42	4.24	53	3.66
India	42	4.47	60	4.47	33	4.47	26	4.48
Portugal	43	4.47	31	5.29	34	4.45	38	3.96
Latvia	44	4.47	43	4.84	39	4.35	57	3.59
Poland	45	4.39	54	4.62	40	4.33	48	3.73
Jordan	46	4.37	46	4.79	61	3.94	60	3.56
Italy	47	4.37	49	4.73	37	4.40	32	4.07
Bahrain	48	4.32	35	5.20	50	4.10	82	3.25
Cyprus	49	4.26	34	5.20	45	4.19	47	3.74
Kazakhstan	50	4.26	57	4.59	49	4.10	73	3.44
Malta	51	4.24	41	4.90	43	4.23	69	3.49
Mexico	52	4.23	53	4.63	55	4.04	55	3.62
El Salvador	53	4.21	52	4.66	68	3.82	76	3.37
Indonesia	54	4.18	75	4.19	44	4.21	41	3.91
Mauritius	55	4.18	55	4.62	64	3.92	50	3.68

(cont'd.)

Appendix Table B1: Global Competitiveness Index 2006–2007 *(cont'd.)*

	OVERALL INDEX		SUBINDEXES					
			Basic requirements		Efficiency enhancers		Innovation and sophistication factors	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Croatia	56	4.16	58	4.56	65	3.92	49	3.71
Botswana	57	4.14	59	4.50	75	3.72	83	3.23
Turkey	58	4.14	67	4.36	56	4.03	44	3.82
Russian Federation	59	4.13	66	4.36	52	4.08	68	3.50
Panama	60	4.12	56	4.60	66	3.85	59	3.57
Greece	61	4.12	44	4.83	53	4.07	46	3.74
Azerbaijan	62	4.12	64	4.41	76	3.70	65	3.52
Colombia	63	4.10	70	4.33	62	3.94	51	3.68
Vietnam	64	4.09	71	4.33	72	3.78	74	3.43
Morocco	65	4.08	63	4.43	82	3.57	77	3.37
Brazil	66	4.07	84	4.07	51	4.10	36	3.99
Jamaica	67	4.06	73	4.26	59	3.98	56	3.62
Costa Rica	68	4.05	78	4.15	58	3.99	40	3.96
Ukraine	69	4.03	80	4.14	63	3.93	72	3.45
Argentina	70	4.02	62	4.43	70	3.78	64	3.54
Egypt	71	4.02	72	4.30	80	3.61	71	3.47
Namibia	72	3.99	51	4.70	81	3.59	89	3.13
Romania	73	3.98	83	4.08	57	4.00	66	3.51
Bulgaria	74	3.98	68	4.35	67	3.84	84	3.20
Philippines	75	3.98	87	4.03	60	3.94	62	3.55
Trinidad and Tobago	76	3.95	61	4.47	71	3.78	70	3.49
Algeria	77	3.92	45	4.81	94	3.38	93	3.06
Peru	78	3.90	79	4.15	69	3.80	75	3.39
Uruguay	79	3.90	65	4.41	79	3.61	79	3.29
Armenia	80	3.87	77	4.17	91	3.43	85	3.20
Sri Lanka	81	3.85	86	4.04	83	3.57	67	3.50
Bosnia and Herzegovina	82	3.82	74	4.25	86	3.50	101	2.96
Pakistan	83	3.82	94	3.89	74	3.72	61	3.56
Macedonia, FYR	84	3.81	69	4.33	89	3.46	86	3.19
Venezuela	85	3.79	82	4.09	84	3.51	88	3.14
Moldova	86	3.77	90	4.01	87	3.47	99	2.98
Georgia	87	3.75	91	4.00	90	3.44	107	2.87
Kenya	88	3.72	102	3.70	73	3.77	54	3.65
Mongolia	89	3.72	92	3.96	92	3.42	105	2.90
Honduras	90	3.71	89	4.02	97	3.30	100	2.98
Guatemala	91	3.71	88	4.02	95	3.37	81	3.25
Bangladesh	92	3.71	98	3.82	78	3.62	94	3.05
Dominican Republic	93	3.68	85	4.04	85	3.51	92	3.07
Ecuador	94	3.62	76	4.18	106	3.20	97	3.00
Nigeria	95	3.59	108	3.54	77	3.67	63	3.55
Tajikistan	96	3.56	95	3.87	110	3.14	104	2.90
Tanzania	97	3.56	105	3.66	93	3.42	78	3.30
Albania	98	3.56	93	3.92	96	3.34	114	2.73
Cameroon	99	3.54	100	3.76	103	3.24	95	3.04
Bolivia	100	3.53	97	3.84	109	3.15	117	2.61
Nicaragua	101	3.53	101	3.74	100	3.26	108	2.86
Lesotho	102	3.52	96	3.85	115	3.08	116	2.64
Gambia, The	103	3.51	99	3.81	112	3.09	111	2.84
Suriname	104	3.45	81	4.09	118	3.06	110	2.85
Nepal	105	3.45	106	3.61	101	3.26	103	2.90
Cambodia	106	3.44	107	3.58	98	3.28	106	2.89
Benin	107	3.43	104	3.66	114	3.09	98	2.98
Paraguay	108	3.42	103	3.68	113	3.09	120	2.55
Kyrgyz Republic	109	3.38	109	3.52	104	3.23	112	2.81
Uganda	110	3.37	116	3.32	88	3.47	80	3.27
Madagascar	111	3.34	112	3.45	107	3.20	90	3.12
Zimbabwe	112	3.30	115	3.33	99	3.26	91	3.10
Guyana	113	3.29	111	3.46	119	3.06	109	2.86
Burkina Faso	114	3.28	118	3.32	102	3.24	87	3.15
Mali	115	3.27	113	3.41	116	3.08	96	3.03
Ethiopia	116	3.27	114	3.36	105	3.20	115	2.69
Mauritania	117	3.22	117	3.32	117	3.08	102	2.95
Zambia	118	3.17	120	3.21	108	3.18	119	2.56
Mozambique	119	3.16	119	3.23	111	3.10	113	2.79
Timor-Leste	120	3.12	110	3.51	122	2.53	121	2.48
Chad	121	2.81	121	2.98	121	2.58	122	2.43
Burundi	122	2.69	122	2.69	120	2.70	118	2.57

Appendix Table B2: Global Competitiveness Index 2006–2007: Basic requirements

	BASIC REQUIREMENTS		PILLARS							
			1. Institutions		2. Infrastructure		3. Macroeconomic stability		4. Health and primary education	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Albania	93	3.92	111	2.97	119	1.82	67	4.89	63	6.00
Algeria	45	4.81	66	3.68	74	2.90	1	6.57	48	6.11
Argentina	62	4.43	107	3.05	63	3.35	52	5.10	37	6.25
Armenia	77	4.17	86	3.35	87	2.68	66	4.89	77	5.79
Australia	10	5.83	10	5.56	13	5.58	20	5.80	23	6.39
Austria	18	5.70	11	5.51	16	5.56	34	5.44	30	6.31
Azerbaijan	64	4.41	74	3.58	60	3.49	45	5.23	95	5.35
Bahrain	35	5.20	46	4.19	39	4.26	8	6.09	38	6.24
Bangladesh	98	3.82	115	2.85	100	2.31	69	4.86	97	5.25
Barbados	37	5.17	23	5.00	28	4.72	96	4.34	12	6.62
Belgium	28	5.40	27	4.87	14	5.57	60	4.97	42	6.21
Benin	104	3.66	91	3.25	111	2.10	85	4.57	104	4.74
Bolivia	97	3.84	117	2.82	110	2.11	95	4.37	56	6.04
Bosnia and Herzegovina	74	4.25	106	3.05	104	2.22	53	5.09	11	6.63
Botswana	59	4.50	36	4.50	55	3.61	29	5.54	112	4.33
Brazil	84	4.07	82	3.37	68	3.15	114	3.70	60	6.04
Bulgaria	68	4.35	105	3.05	73	2.92	39	5.38	57	6.04
Burkina Faso	118	3.32	59	3.79	113	2.05	106	4.12	122	3.31
Burundi	122	2.69	113	2.94	120	1.80	122	2.46	116	3.55
Cambodia	107	3.58	100	3.10	96	2.42	111	3.93	100	4.87
Cameroon	100	3.76	101	3.09	116	1.88	50	5.12	98	4.96
Canada	14	5.77	19	5.08	9	5.97	32	5.45	14	6.56
Chad	121	2.98	120	2.50	122	1.47	87	4.56	119	3.38
Chile	29	5.35	28	4.81	31	4.54	10	6.04	61	6.01
China	42	4.86	75	3.57	52	3.73	3	6.45	85	5.68
Colombia	70	4.33	67	3.67	76	2.88	62	4.93	70	5.87
Costa Rica	78	4.15	53	3.93	85	2.70	112	3.90	55	6.06
Croatia	58	4.56	72	3.61	54	3.72	64	4.90	62	6.00
Cyprus	34	5.20	33	4.59	30	4.58	48	5.15	17	6.50
Czech Republic	39	4.94	55	3.89	33	4.42	36	5.43	58	6.04
Denmark	1	6.26	1	6.07	8	6.10	13	5.93	2	6.94
Dominican Republic	85	4.04	104	3.08	72	3.00	72	4.80	96	5.29
Ecuador	76	4.18	118	2.76	89	2.63	24	5.64	82	5.70
Egypt	72	4.30	48	4.02	59	3.54	115	3.58	53	6.07
El Salvador	52	4.66	62	3.75	44	4.04	56	5.05	79	5.78
Estonia	32	5.28	31	4.67	36	4.34	15	5.87	36	6.25
Ethiopia	114	3.36	83	3.37	106	2.20	93	4.40	117	3.46
Finland	2	6.07	2	6.03	11	5.78	18	5.84	10	6.65
France	13	5.78	21	5.05	2	6.45	54	5.06	16	6.53
Gambia, The	99	3.81	56	3.85	82	2.73	100	4.30	110	4.36
Georgia	91	4.00	84	3.36	91	2.56	98	4.31	80	5.78
Germany	12	5.81	8	5.68	1	6.58	61	4.94	59	6.04
Greece	44	4.83	41	4.32	34	4.37	94	4.38	39	6.24
Guatemala	88	4.02	109	3.00	75	2.88	79	4.68	91	5.54
Guyana	111	3.46	116	2.83	108	2.18	121	2.96	69	5.88
Honduras	89	4.02	110	2.99	79	2.76	83	4.59	81	5.73
Hong Kong SAR	5	5.96	15	5.42	4	6.22	11	6.04	45	6.17
Hungary	50	4.71	45	4.21	50	3.85	88	4.53	40	6.23
Iceland	11	5.82	4	5.89	19	5.37	49	5.13	3	6.89
India	60	4.47	37	4.47	62	3.39	86	4.57	92	5.47
Indonesia	75	4.19	60	3.75	78	2.81	73	4.80	93	5.41
Ireland	25	5.45	16	5.28	41	4.20	12	5.94	26	6.38
Israel	30	5.33	29	4.79	25	4.83	63	4.91	7	6.79
Italy	49	4.73	63	3.73	45	4.00	75	4.70	20	6.46
Jamaica	73	4.26	70	3.63	56	3.56	113	3.76	49	6.11
Japan	23	5.51	22	5.01	6	6.16	82	4.60	31	6.30
Jordan	46	4.79	32	4.64	42	4.11	104	4.25	44	6.18
Kazakhstan	57	4.59	73	3.59	67	3.19	14	5.89	83	5.68
Kenya	102	3.70	93	3.21	97	2.40	90	4.48	105	4.72
Korea, Rep.	24	5.50	42	4.29	23	5.21	5	6.24	34	6.26
Kuwait	27	5.41	38	4.43	37	4.34	2	6.55	28	6.33
Kyrgyz Republic	109	3.52	119	2.74	107	2.20	116	3.47	87	5.65
Latvia	43	4.84	51	3.96	49	3.85	33	5.44	50	6.09
Lesotho	96	3.85	79	3.42	114	2.01	44	5.24	106	4.71
Lithuania	40	4.91	58	3.79	43	4.04	25	5.62	43	6.19
Luxembourg	16	5.75	14	5.47	18	5.40	9	6.06	51	6.08

(cont'd.)

Appendix Table B2: Global Competitiveness Index 2006–2007: Basic requirements *(cont'd.)*

	BASIC REQUIREMENTS		PILLARS							
			1. Institutions		2. Infrastructure		3. Macroeconomic stability		4. Health and primary education	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Macedonia, FYR	69	4.33	102	3.09	80	2.75	40	5.35	46	6.14
Madagascar	112	3.45	90	3.29	109	2.17	117	3.41	99	4.92
Malaysia	21	5.58	17	5.18	20	5.34	31	5.47	29	6.33
Mali	113	3.41	65	3.71	101	2.27	99	4.30	120	3.35
Malta	41	4.90	34	4.58	48	3.86	65	4.90	33	6.27
Mauritania	117	3.32	57	3.80	118	1.83	120	3.03	107	4.61
Mauritius	55	4.62	47	4.15	47	3.98	103	4.27	54	6.07
Mexico	53	4.63	76	3.57	57	3.55	55	5.06	27	6.34
Moldova	90	4.01	96	3.15	94	2.43	74	4.78	86	5.66
Mongolia	92	3.96	108	3.05	112	2.08	57	5.02	84	5.68
Morocco	63	4.43	61	3.75	64	3.30	78	4.69	64	5.98
Mozambique	119	3.23	95	3.16	102	2.27	107	4.07	118	3.43
Namibia	51	4.70	49	4.02	40	4.23	21	5.76	102	4.76
Nepal	106	3.61	98	3.12	117	1.84	76	4.70	103	4.76
Netherlands	8	5.91	9	5.59	10	5.88	23	5.71	19	6.48
New Zealand	17	5.73	6	5.72	27	4.75	27	5.60	4	6.82
Nicaragua	101	3.74	103	3.08	99	2.33	110	3.95	89	5.62
Nigeria	108	3.54	87	3.33	95	2.42	71	4.83	115	3.57
Norway	7	5.95	7	5.72	24	5.08	6	6.22	6	6.79
Pakistan	94	3.89	77	3.44	69	3.15	84	4.57	109	4.41
Panama	56	4.60	68	3.66	51	3.76	77	4.70	32	6.27
Paraguay	103	3.68	121	2.50	115	1.97	102	4.29	65	5.96
Peru	79	4.15	94	3.18	92	2.55	59	5.00	71	5.86
Philippines	87	4.03	89	3.31	88	2.64	81	4.62	90	5.57
Poland	54	4.62	69	3.64	65	3.29	51	5.10	21	6.46
Portugal	31	5.29	26	4.91	26	4.83	68	4.88	13	6.56
Qatar	22	5.56	18	5.11	46	4.00	4	6.41	9	6.72
Romania	83	4.08	88	3.32	84	2.71	91	4.46	73	5.83
Russian Federation	66	4.36	112	2.95	66	3.27	35	5.43	78	5.79
Singapore	3	6.06	3	5.92	3	6.35	16	5.85	47	6.11
Slovak Republic	47	4.76	50	3.98	53	3.72	37	5.41	66	5.95
Slovenia	36	5.18	44	4.26	35	4.35	26	5.62	18	6.48
South Africa	48	4.76	35	4.54	32	4.45	46	5.19	101	4.86
Spain	26	5.42	39	4.38	22	5.29	28	5.60	24	6.39
Sri Lanka	86	4.04	81	3.38	77	2.81	108	4.02	68	5.93
Suriname	81	4.09	85	3.35	98	2.36	92	4.45	41	6.22
Sweden	6	5.96	13	5.48	15	5.57	17	5.84	1	6.94
Switzerland	4	6.03	5	5.74	5	6.20	19	5.82	25	6.38
Taiwan, China	19	5.64	30	4.71	21	5.34	22	5.75	8	6.77
Tajikistan	95	3.87	78	3.43	93	2.48	105	4.18	94	5.38
Tanzania	105	3.66	52	3.94	81	2.74	97	4.32	114	3.64
Thailand	38	5.08	40	4.35	29	4.68	30	5.47	72	5.83
Timor-Leste	110	3.51	114	2.93	121	1.79	58	5.00	111	4.34
Trinidad and Tobago	61	4.47	80	3.42	70	3.15	38	5.38	67	5.94
Tunisia	33	5.24	25	4.94	38	4.28	42	5.30	22	6.42
Turkey	67	4.36	54	3.91	61	3.42	101	4.29	75	5.80
Uganda	116	3.32	92	3.21	103	2.26	89	4.49	121	3.34
Ukraine	80	4.14	97	3.14	71	3.13	80	4.66	88	5.64
United Arab Emirates	9	5.85	24	4.96	17	5.42	7	6.19	5	6.81
United Kingdom	15	5.76	12	5.50	12	5.71	41	5.32	15	6.53
United States	20	5.58	20	5.07	7	6.14	70	4.85	35	6.26
Uruguay	65	4.41	43	4.28	58	3.54	109	4.01	74	5.81
Venezuela	82	4.09	122	2.43	86	2.68	47	5.17	52	6.08
Vietnam	71	4.33	71	3.62	90	2.61	43	5.30	76	5.79
Zambia	120	3.21	64	3.72	105	2.21	118	3.16	113	3.76
Zimbabwe	115	3.33	99	3.12	83	2.73	119	3.05	108	4.42

Appendix Table B3: Global Competitiveness Index 2006–2007: Efficiency enhancers

	EFFICIENCY ENHANCERS		PILLARS											
			5. Higher education and training		6. Goods market efficiency		7. Labor market efficiency		8. Financial market sophistication		9. Technological readiness		10. Market size	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Albania	96	3.34	95	3.00	107	3.46	77	4.05	75	3.91	88	2.50	95	3.09
Algeria	94	3.38	87	3.34	95	3.66	116	3.52	117	3.07	106	2.32	45	4.38
Argentina	70	3.78	43	4.40	96	3.66	119	3.44	112	3.25	61	2.98	24	4.97
Armenia	91	3.43	82	3.48	89	3.74	32	4.59	102	3.36	89	2.50	101	2.93
Australia	7	5.32	14	5.50	10	5.39	19	4.84	7	5.87	17	5.21	19	5.11
Austria	22	4.98	16	5.46	13	5.33	37	4.47	28	4.92	20	5.02	32	4.69
Azerbaijan	76	3.70	79	3.51	81	3.81	38	4.47	72	3.94	78	2.69	65	3.76
Bahrain	50	4.10	62	3.91	39	4.50	80	4.04	14	5.47	39	3.85	107	2.83
Bangladesh	78	3.62	111	2.56	78	3.88	70	4.12	56	4.27	116	2.20	33	4.68
Barbados	42	4.24	25	5.08	61	4.15	34	4.54	21	5.27	32	4.16	118	2.25
Belgium	23	4.92	10	5.56	20	5.18	83	4.02	25	5.15	24	4.71	25	4.92
Benin	114	3.09	105	2.72	98	3.60	104	3.76	84	3.72	119	2.11	113	2.62
Bolivia	109	3.15	84	3.44	119	3.16	106	3.73	115	3.17	112	2.21	90	3.19
Bosnia and Herzegovina	86	3.50	88	3.33	102	3.52	60	4.21	54	4.30	109	2.29	82	3.36
Botswana	75	3.72	77	3.52	82	3.80	44	4.43	41	4.73	65	2.94	103	2.90
Brazil	51	4.10	56	4.09	80	3.82	95	3.91	69	3.99	54	3.21	10	5.57
Bulgaria	67	3.84	59	4.02	88	3.75	72	4.12	62	4.14	68	2.91	56	4.12
Burkina Faso	102	3.24	116	2.44	91	3.70	66	4.18	79	3.84	98	2.37	102	2.91
Burundi	120	2.70	121	2.16	121	2.94	61	4.21	121	2.78	121	1.96	120	2.16
Cambodia	98	3.28	113	2.52	70	3.97	21	4.76	122	2.55	111	2.26	71	3.61
Cameroon	103	3.24	102	2.87	101	3.55	101	3.82	106	3.32	100	2.36	76	3.50
Canada	6	5.42	13	5.53	11	5.34	8	5.21	10	5.65	15	5.29	13	5.50
Chad	121	2.58	122	1.92	122	2.67	105	3.73	120	3.01	122	1.88	117	2.29
Chile	30	4.56	40	4.44	26	4.94	17	4.87	35	4.82	37	3.91	44	4.41
China	48	4.14	74	3.64	60	4.17	54	4.27	119	3.03	69	2.91	2	6.80
Colombia	62	3.94	66	3.86	74	3.94	63	4.20	67	4.01	71	2.87	31	4.74
Costa Rica	58	3.99	55	4.09	55	4.27	26	4.72	80	3.83	48	3.33	68	3.69
Croatia	65	3.92	50	4.20	67	3.99	56	4.25	68	4.00	52	3.25	63	3.85
Cyprus	45	4.19	38	4.50	32	4.69	67	4.16	26	4.95	42	3.77	93	3.10
Czech Republic	28	4.59	27	4.95	31	4.69	31	4.62	50	4.36	27	4.38	40	4.55
Denmark	5	5.44	2	6.00	7	5.45	6	5.45	11	5.64	3	5.63	42	4.45
Dominican Republic	85	3.51	91	3.15	93	3.67	89	3.99	104	3.35	62	2.97	61	3.89
Ecuador	106	3.20	98	2.92	116	3.27	112	3.61	113	3.22	90	2.48	69	3.69
Egypt	80	3.61	69	3.78	71	3.96	122	3.22	111	3.25	77	2.73	29	4.74
El Salvador	68	3.82	85	3.42	47	4.39	35	4.53	61	4.18	67	2.91	78	3.48
Estonia	26	4.69	23	5.22	25	5.01	23	4.74	39	4.76	19	5.05	81	3.36
Ethiopia	105	3.20	119	2.34	110	3.44	68	4.13	110	3.27	118	2.16	62	3.85
Finland	11	5.25	1	6.12	9	5.40	28	4.70	17	5.46	9	5.49	47	4.34
France	20	5.01	12	5.55	22	5.10	76	4.06	40	4.75	22	4.79	7	5.80
Gambia, The	112	3.09	106	2.70	97	3.65	59	4.22	94	3.51	96	2.40	121	2.05
Georgia	90	3.44	78	3.52	87	3.75	57	4.25	83	3.72	104	2.33	94	3.09
Germany	13	5.23	20	5.36	15	5.31	50	4.35	18	5.44	21	4.93	5	6.00
Greece	53	4.07	37	4.54	53	4.28	111	3.63	65	4.08	51	3.25	36	4.62
Guatemala	95	3.37	101	2.89	90	3.72	109	3.68	95	3.51	79	2.66	66	3.75
Guyana	119	3.06	107	2.68	84	3.78	108	3.69	100	3.45	108	2.29	116	2.46
Honduras	97	3.30	94	3.03	109	3.45	92	3.96	88	3.64	99	2.36	83	3.36
Hong Kong SAR	3	5.48	26	4.96	1	5.80	3	5.59	2	6.26	8	5.53	30	4.74
Hungary	32	4.48	30	4.87	45	4.42	36	4.50	43	4.58	36	3.97	41	4.52
Iceland	19	5.04	6	5.64	21	5.10	5	5.49	16	5.46	2	5.74	108	2.81
India	33	4.47	47	4.24	36	4.60	96	3.90	38	4.76	57	3.09	3	6.20
Indonesia	44	4.21	70	3.77	33	4.69	51	4.34	58	4.25	75	2.79	15	5.41
Ireland	18	5.11	22	5.33	6	5.48	18	4.85	6	5.94	26	4.67	46	4.37
Israel	14	5.20	15	5.48	23	5.08	14	4.93	9	5.73	5	5.55	43	4.45
Italy	37	4.40	35	4.63	52	4.30	113	3.55	71	3.96	30	4.26	8	5.73
Jamaica	59	3.98	63	3.89	49	4.38	48	4.38	46	4.47	41	3.77	97	2.99
Japan	8	5.31	19	5.39	19	5.21	9	5.20	33	4.82	18	5.14	4	6.13
Jordan	61	3.94	46	4.28	46	4.42	78	4.04	53	4.33	58	3.02	73	3.53
Kazakhstan	49	4.10	51	4.19	54	4.28	13	4.93	60	4.21	70	2.90	57	4.10
Kenya	73	3.77	83	3.46	66	4.00	65	4.19	42	4.63	80	2.64	67	3.70
Korea, Rep.	21	4.99	21	5.35	28	4.83	47	4.40	49	4.44	12	5.42	14	5.47
Kuwait	47	4.14	48	4.23	51	4.37	20	4.80	34	4.82	45	3.41	88	3.23
Kyrgyz Republic	104	3.23	80	3.50	104	3.50	55	4.26	108	3.30	120	1.97	106	2.83
Latvia	39	4.35	29	4.89	42	4.48	33	4.58	36	4.82	38	3.87	77	3.49
Lesotho	115	3.08	108	2.68	106	3.47	94	3.91	93	3.56	110	2.27	114	2.61
Lithuania	41	4.28	28	4.93	50	4.38	43	4.43	51	4.36	40	3.79	64	3.78
Luxembourg	25	4.86	41	4.42	8	5.43	29	4.63	4	6.05	16	5.27	84	3.36

(cont'd.)

Appendix Table B3: Global Competitiveness Index 2006–2007: Efficiency enhancers *(cont'd.)*

	EFFICIENCY ENHANCERS		PILLARS											
			5. Higher education and training		6. Goods market efficiency		7. Labor market efficiency		8. Financial market sophistication		9. Technological readiness		10. Market size	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Macedonia, FYR	89	3.46	67	3.83	100	3.58	103	3.77	74	3.92	91	2.48	92	3.17
Madagascar	107	3.20	112	2.55	105	3.49	52	4.33	105	3.33	107	2.30	91	3.18
Malaysia	24	4.89	32	4.79	16	5.26	15	4.90	12	5.57	31	4.20	34	4.65
Mali	116	3.08	115	2.46	99	3.58	88	4.00	103	3.35	115	2.20	104	2.88
Malta	43	4.23	44	4.32	44	4.46	102	3.80	19	5.33	23	4.75	111	2.72
Mauritania	117	3.08	118	2.35	113	3.32	75	4.06	101	3.36	82	2.63	110	2.74
Mauritius	64	3.92	61	3.91	41	4.48	93	3.95	29	4.89	53	3.25	96	3.06
Mexico	55	4.04	64	3.89	64	4.12	97	3.89	87	3.65	55	3.18	12	5.50
Moldova	87	3.47	75	3.64	92	3.70	58	4.24	78	3.86	95	2.41	98	2.98
Mongolia	92	3.42	68	3.82	83	3.78	46	4.40	90	3.62	94	2.41	115	2.51
Morocco	82	3.57	81	3.49	77	3.89	120	3.37	91	3.56	74	2.83	49	4.28
Mozambique	111	3.10	120	2.32	114	3.31	90	3.98	109	3.28	117	2.19	74	3.52
Namibia	81	3.59	92	3.15	69	3.98	45	4.41	52	4.34	76	2.73	99	2.94
Nepal	101	3.26	110	2.61	86	3.75	110	3.64	89	3.63	97	2.39	75	3.51
Netherlands	10	5.28	9	5.58	12	5.34	30	4.63	13	5.52	7	5.53	21	5.08
New Zealand	16	5.17	18	5.40	3	5.56	10	5.19	3	6.08	25	4.71	59	4.06
Nicaragua	100	3.26	93	3.11	108	3.46	99	3.86	99	3.45	103	2.34	86	3.33
Nigeria	77	3.67	99	2.91	62	4.13	73	4.11	57	4.25	92	2.47	52	4.17
Norway	17	5.12	8	5.62	24	5.04	12	4.97	15	5.46	14	5.30	48	4.32
Pakistan	74	3.72	103	2.80	59	4.20	107	3.70	55	4.29	85	2.54	27	4.82
Panama	66	3.85	72	3.77	58	4.22	86	4.01	30	4.89	60	3.01	89	3.23
Paraguay	113	3.09	100	2.91	112	3.33	118	3.47	114	3.22	114	2.20	79	3.40
Peru	69	3.80	73	3.66	68	3.98	81	4.03	73	3.93	66	2.92	50	4.26
Philippines	60	3.94	65	3.86	57	4.24	100	3.85	82	3.73	63	2.97	23	4.99
Poland	40	4.33	33	4.73	56	4.26	41	4.44	64	4.10	46	3.39	22	5.06
Portugal	34	4.45	36	4.62	40	4.49	71	4.12	37	4.80	34	4.09	39	4.55
Qatar	46	4.16	52	4.18	48	4.39	27	4.70	23	5.18	43	3.74	109	2.77
Romania	57	4.00	53	4.18	65	4.04	87	4.01	76	3.90	49	3.28	37	4.58
Russian Federation	52	4.08	45	4.30	79	3.84	40	4.44	98	3.47	72	2.86	9	5.57
Singapore	4	5.44	17	5.46	2	5.79	2	5.65	5	6.04	6	5.55	55	4.15
Slovak Republic	31	4.50	39	4.45	38	4.59	24	4.73	27	4.95	33	4.12	53	4.16
Slovenia	36	4.42	24	5.08	37	4.60	49	4.36	44	4.53	29	4.27	70	3.67
South Africa	35	4.44	49	4.22	29	4.74	79	4.04	24	5.16	47	3.37	20	5.10
Spain	27	4.69	31	4.80	34	4.67	85	4.01	31	4.85	28	4.29	11	5.52
Sri Lanka	83	3.57	86	3.40	63	4.13	121	3.28	66	4.01	84	2.54	58	4.06
Suriname	118	3.06	96	2.98	118	3.20	91	3.96	86	3.71	102	2.35	119	2.17
Sweden	12	5.24	3	5.90	18	5.22	39	4.47	20	5.29	1	5.89	35	4.64
Switzerland	9	5.30	7	5.63	17	5.24	4	5.58	22	5.20	4	5.57	38	4.57
Taiwan, China	15	5.17	5	5.74	14	5.32	16	4.88	47	4.47	13	5.36	16	5.24
Tajikistan	110	3.14	97	2.97	103	3.50	69	4.12	118	3.05	105	2.33	105	2.85
Tanzania	93	3.42	114	2.49	76	3.92	53	4.33	70	3.96	87	2.52	87	3.30
Thailand	29	4.58	42	4.40	30	4.72	11	5.02	45	4.47	44	3.59	17	5.24
Timor-Leste	122	2.53	109	2.62	120	3.04	98	3.87	116	3.13	113	2.21	122	0.33
Trinidad and Tobago	71	3.78	71	3.77	75	3.94	64	4.20	32	4.84	59	3.02	100	2.94
Tunisia	54	4.05	34	4.67	35	4.63	84	4.02	81	3.80	56	3.16	60	4.03
Turkey	56	4.03	58	4.03	43	4.47	114	3.53	85	3.72	50	3.26	18	5.16
Uganda	88	3.47	104	2.76	94	3.67	25	4.72	97	3.47	81	2.64	72	3.55
Ukraine	63	3.93	54	4.16	85	3.75	62	4.21	63	4.11	86	2.53	26	4.85
United Arab Emirates	38	4.40	57	4.06	27	4.85	22	4.74	48	4.46	35	4.05	51	4.26
United Kingdom	2	5.69	11	5.56	5	5.48	7	5.41	1	6.40	11	5.43	6	5.83
United States	1	5.88	4	5.80	4	5.55	1	5.80	8	5.84	10	5.43	1	6.85
Uruguay	79	3.61	60	4.00	73	3.94	74	4.10	107	3.30	64	2.97	80	3.37
Venezuela	84	3.51	76	3.60	111	3.42	115	3.52	96	3.48	73	2.86	54	4.16
Vietnam	72	3.78	89	3.31	72	3.95	42	4.43	92	3.56	83	2.59	28	4.80
Zambia	108	3.18	117	2.39	117	3.23	82	4.02	59	4.24	93	2.46	112	2.71
Zimbabwe	99	3.26	90	3.24	115	3.29	117	3.50	77	3.86	101	2.36	85	3.35

Appendix Table B4: Global Competitiveness Index 2006–2007: Innovation and sophistication factors

			PILLARS			
	Innovation and sophistication factors		11. Business sophistication		12. Innovation	
Country/Economy	Rank	Score	Rank	Score	Rank	Score
Albania	114	2.73	92	3.37	122	2.09
Algeria	93	3.06	107	3.16	85	2.96
Argentina	64	3.54	61	3.97	68	3.11
Armenia	85	3.20	93	3.35	74	3.04
Australia	25	4.51	28	4.80	23	4.22
Austria	14	5.08	8	5.60	17	4.56
Azerbaijan	65	3.52	73	3.78	53	3.26
Bahrain	82	3.25	64	3.94	108	2.55
Bangladesh	94	3.05	87	3.43	100	2.66
Barbados	53	3.66	55	4.03	50	3.29
Belgium	15	5.05	12	5.50	16	4.59
Benin	98	2.98	106	3.19	92	2.78
Bolivia	117	2.61	118	2.92	118	2.30
Bosnia and Herzegovina	101	2.96	99	3.26	99	2.66
Botswana	83	3.23	82	3.49	84	2.96
Brazil	36	3.99	35	4.46	37	3.51
Bulgaria	84	3.20	90	3.40	80	2.99
Burkina Faso	87	3.15	105	3.21	69	3.09
Burundi	118	2.57	120	2.79	117	2.34
Cambodia	106	2.89	102	3.23	109	2.55
Cameroon	95	3.04	100	3.25	90	2.83
Canada	16	4.96	18	5.15	13	4.77
Chad	122	2.43	122	2.68	119	2.18
Chile	35	4.02	33	4.58	40	3.46
China	45	3.75	58	4.00	38	3.51
Colombia	51	3.68	49	4.14	58	3.22
Costa Rica	40	3.96	40	4.35	36	3.56
Croatia	49	3.71	48	4.16	51	3.27
Cyprus	47	3.74	44	4.24	56	3.24
Czech Republic	27	4.39	27	4.80	27	3.97
Denmark	9	5.27	9	5.60	10	4.95
Dominican Republic	92	3.07	81	3.57	105	2.57
Ecuador	97	3.00	85	3.43	104	2.57
Egypt	71	3.47	68	3.92	75	3.02
El Salvador	76	3.37	60	3.99	95	2.75
Estonia	34	4.03	37	4.38	32	3.69
Ethiopia	115	2.69	116	2.93	111	2.46
Finland	5	5.55	6	5.63	4	5.47
France	11	5.16	11	5.52	11	4.80
Gambia, The	111	2.84	97	3.28	113	2.41
Georgia	107	2.87	111	3.03	98	2.72
Germany	3	5.68	1	5.99	7	5.37
Greece	46	3.74	52	4.13	46	3.34
Guatemala	81	3.25	74	3.76	96	2.74
Guyana	109	2.86	98	3.26	112	2.45
Honduras	100	2.98	88	3.42	110	2.53
Hong Kong SAR	20	4.78	14	5.28	22	4.28
Hungary	33	4.06	36	4.40	30	3.73
Iceland	18	4.80	20	5.09	18	4.50
India	26	4.48	24	4.93	26	4.03
Indonesia	41	3.91	41	4.33	39	3.49
Ireland	19	4.78	17	5.16	21	4.40
Israel	8	5.31	15	5.22	5	5.39
Italy	32	4.07	29	4.70	41	3.44
Jamaica	56	3.62	59	4.00	55	3.24
Japan	1	5.82	2	5.85	2	5.80
Jordan	60	3.56	70	3.87	54	3.26
Kazakhstan	73	3.44	75	3.75	65	3.14
Kenya	54	3.65	66	3.92	44	3.39
Korea, Rep.	17	4.89	23	5.04	14	4.75
Kuwait	52	3.67	39	4.35	81	2.98
Kyrgyz Republic	112	2.81	103	3.22	114	2.40
Latvia	57	3.59	53	4.11	71	3.08
Lesotho	116	2.64	117	2.92	115	2.36
Lithuania	42	3.83	43	4.31	45	3.35
Luxembourg	23	4.59	22	5.06	25	4.12
Macedonia, FYR	86	3.19	91	3.37	79	3.00
Madagascar	90	3.12	96	3.28	86	2.95
Malaysia	22	4.74	21	5.08	20	4.41
Mali	96	3.03	110	3.08	82	2.98
Malta	69	3.49	62	3.96	76	3.02
Mauritania	102	2.95	95	3.34	107	2.55
Mauritius	50	3.68	45	4.23	67	3.13
Mexico	55	3.62	54	4.09	64	3.15
Moldova	99	2.98	104	3.22	97	2.73
Mongolia	105	2.90	115	2.95	88	2.85
Morocco	77	3.37	79	3.65	70	3.08
Mozambique	113	2.79	114	2.96	101	2.63
Namibia	89	3.13	83	3.49	94	2.76
Nepal	103	2.90	101	3.25	106	2.56
Netherlands	12	5.14	10	5.56	15	4.73
New Zealand	24	4.51	25	4.89	24	4.12
Nicaragua	108	2.86	108	3.14	103	2.58
Nigeria	63	3.55	71	3.87	57	3.23
Norway	21	4.76	19	5.10	19	4.41
Pakistan	61	3.56	65	3.94	59	3.19
Panama	59	3.57	51	4.14	77	3.01
Paraguay	120	2.55	113	2.99	121	2.11
Peru	75	3.39	57	4.01	93	2.76
Philippines	62	3.55	50	4.14	83	2.97
Poland	48	3.73	56	4.03	43	3.43
Portugal	38	3.96	46	4.23	31	3.70
Qatar	58	3.59	69	3.91	52	3.27
Romania	66	3.51	63	3.96	72	3.07
Russian Federation	68	3.50	78	3.66	47	3.34
Singapore	13	5.09	16	5.20	9	4.99
Slovak Republic	43	3.82	47	4.21	42	3.43
Slovenia	31	4.11	30	4.61	34	3.62
South Africa	29	4.20	32	4.60	29	3.81
Spain	28	4.23	26	4.83	33	3.63
Sri Lanka	67	3.50	72	3.82	60	3.18
Suriname	110	2.85	109	3.12	102	2.58
Sweden	6	5.44	7	5.62	8	5.27
Switzerland	4	5.63	4	5.71	3	5.54
Taiwan, China	7	5.41	13	5.45	6	5.37
Tajikistan	104	2.90	112	3.00	91	2.80
Tanzania	78	3.30	84	3.43	63	3.16
Thailand	37	3.97	38	4.36	35	3.58
Timor-Leste	121	2.48	119	2.81	120	2.14
Trinidad and Tobago	70	3.49	67	3.92	73	3.06
Tunisia	30	4.15	34	4.46	28	3.84
Turkey	44	3.82	42	4.33	49	3.30
Uganda	80	3.27	89	3.40	66	3.13
Ukraine	72	3.45	76	3.72	61	3.18
United Arab Emirates	39	3.96	31	4.60	48	3.32
United Kingdom	10	5.23	5	5.68	12	4.78
United States	2	5.81	3	5.80	1	5.82
Uruguay	79	3.29	80	3.58	78	3.00
Venezuela	88	3.14	86	3.43	89	2.85
Vietnam	74	3.43	77	3.69	62	3.17
Zambia	119	2.56	121	2.78	116	2.35
Zimbabwe	91	3.10	94	3.35	87	2.86

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