Executive Summary

PETER K. CORNELIUS, World Economic Forum

Last year's *Global Competitiveness Report* was published in an environment of exceptional uncertainty. In the two weeks following the terrorist attacks of September 11, 2001, the world equity markets lost approximately two trillion US dollars, with 20 of the world's major stock exchanges dropping more than 10 percent. There was widespread agreement that in the near term the horrific event would accelerate and deepen the slowdown in the global economy that had already been underway by causing substantial disruptions of the global transport networks and production chains and a fall in consumer and business confidence. There was less agreement, however, about how fast the global economy would recover and return to a sustained growth path in the medium term. Even greater uncertainty existed with regard to the long-term impact of the terrorist attacks. In the introduction to last year's *Report* we wrote:

> In the longer term, the terrorist attacks will have a lasting negative impact if the policy responses trigger a reversal of the global economic integration that has characterized the past 20 years. The possibility of large-scale global conflict, terrorism, political backlash, and market uncertainty have the potential to raise the costs of cross-border business to levels not seen in decades, and thereby to limit the gains in economic well-being that global economic integration can yield.
>
> Cornelius et al. (2002, p 8).

Over the last 12 months, the world economy seems to have proved quite robust thus far. Although global output growth has fallen, arguably the situation could have been considerably worse. However, this should not give rise to complacency. The risks we highlighted last year have hardly become smaller. Even if new terrorist attacks do not occur and large-scale conflicts can be avoided, the global economic outlook remains clouded with tremendous uncertainty.

Short-term uncertainties and longer-term growth dynamics

The prospects of a war in Iraq, corporate scandals, the bursting of the IT asset bubble, and the uncertain outlook in some emerging markets continue to weigh heavily on investors' confidence. Asset prices have remained subject to substantial volatility. In the two-and-a-half-year period between March 2000 when equity prices peaked and end-September 2002, some of the major stock indices lost up to two thirds of their value, with the Nikkei having hit a 19-year low. The NASDAQ and other tech-laden stock exchanges have suffered even greater losses, with some markets—including Germany's Neuer Markt and Switzerland's New Market—being dissolved. Moreover, the latest GDP revisions in the United States confirm that the situation a year ago was actually worse than thought. Rather than merely slowing, we now know that the largest economy in the world was already in recession when the terrorist attacks occurred, with output having shrunk for the first nine months of 2001.

Nevertheless, in each of the three subsequent quarters GDP growth has been positive, and judged by the fears many had a year ago, one might argue that the US economy has weathered the economic impact of the tragic events of September 11 reasonably well. To be sure, the terrorist attacks were not the only shock to the world economy. The failure of Enron and WorldCom and other high-profile collapses, the disappearance of Argentina's currency board, and the severe tensions in the Middle East might each have been expected to have a considerable impact on the global economic outlook, too. Taken together, their impact could have been far more serious, possibly pushing the world economy into a prolonged recession. Considering the potential damage these shocks could have caused, the world economy and the global financial system seem to have proved surprisingly resilient thus far.

Economic developments in the emerging markets are largely explicable in terms of the same contractionary forces affecting the industrialized countries. Asia's substantial reliance on exports of IT-related products made the region particularly vulnerable to the slowdown in the US economy, which was driven by a major decline in activity in the high-tech sector. Latin America, with the notable exception of Mexico, was generally less affected, while several emerging market economies in central and eastern Europe seemed almost immune. The economic crises in Argentina and Turkey have proved very costly, but the contagion effects have remained relatively limited.

Much credit for the global economy's resilience is due to the sharp monetary easing in most countries, especially the United States. This monetary easing has been accompanied by a more expansionary fiscal stance. In the United States, sizeable tax cuts were implemented and public expenditure has been rising strongly, especially in the aftermath of the terrorist attacks, and in 2002, the easing of the budgetary stance is estimated to amount to around 1.5 percent of GDP. Fiscal policy has become significantly more expansionary in several other countries, including Canada, Norway, Sweden, and especially the United Kingdom.

In the United States, the economy has also benefited from the fact that banks entered the recession with strong balance sheets. Moreover, capital markets provided a ready alternative supply of credit, shielding the economy from the financial implications of the recession. Unlike many previous recessions, there was no oversupply of housing, a factor that—combined with low interest rates—helped shore up consumer spending. Finally, it has been argued that trend growth in the United States is now in the range of 3 to 3.5 percent thanks to increased productivity, around half a percentage point higher than it was in 1980–1995. This means that if output growth falls by 3 percent, the economy simply stalls, whereas in previous cycles it would have contracted.

Although the mildness of America's recent recession may seem surprising—from peak to trough, GDP fell by only 0.6 percent, compared with an average decline of over 2 percent during recessions in the postwar era—it is important to note that nominal GDP growth in the G-7 countries fell to one of its slowest rates for decades. It is too early to tell whether the worst is already over. To begin with, the recovery in the United States seems rather slow, and there remains considerable concern about a possible "double dip." Although massive adjustments in inventories boosted growth to an annual rate of 5 percent in the first quarter of 2002, the rate of expansion fell back to just 1.1 percent in the months from April to June. With consumption having increased by less than 2 percent, economic growth has fallen considerably short of what could be expected in a normal recovery. In other major industrialized countries, economic growth has also remained sluggish, and world trade actually shrank by around 1 percent in 2001—one of the worst performances in the last few decades.

To be sure, the relative resilience of the global economy should not lead to complacency. The short-term economic risks are considerable, and they exist regardless of the enormous uncertainties associated with the possibility of a protracted war in Iraq or new terrorist threats. For one thing, corporate and private debts still appear rather large in the United States. Lower interest rates have encouraged a house-price boom that has partially offset losses in the stock market, helping insulate private wealth and maintain consumer spending. Once households reduce their borrowing propped up by higher mortgages, they will spend less and save more, which could lead to a prolonged period of sluggish growth. The United States will not have much monetary policy ammunition left if, under such a scenario, the economy stumbles. With the US current account deficit becoming harder to be financed, there is concern that a sharp fall in the US dollar could help export deflationary pressures to other countries. At the same time, to the extent that the economy has become more open, fiscal policy might have become less effective to cushion downturns than it was in previous cycles.

How well the United States and the rest of the world can weather the potential turbulence will depend, first and foremost, on the robustness of their economies. Primarily, this ability is a function of the factors determining their competitiveness—that is, the set of institutions, policies, and regulations that support high levels of productivity and drive productivity growth and sustained increases in output. Competitive countries can be expected to return to a sustained growth path faster and earlier than those that are less competitive. This is precisely what *The Global Competitiveness Report* is concerned with—the five-to-eight-year prospects in a large number of individual economies.

As in the two previous years, *The Global Competitiveness Report* employs two distinct but complementary approaches to the analysis of competitiveness. The first one focuses on growth competitiveness. Introduced originally by Jeffrey D. Sachs and Andrew Warner and developed with the assistance of John McArthur, it has been further refined in this edition. This year covering 80 countries, the Growth Competitiveness Index (GCI) represents a best estimate of the underlying prospects for growth over the next five to eight years. Six new countries are covered by the Index this year: Botswana, Croatia, Haiti, Morocco, Namibia, and Tunisia. On the other hand, Egypt had to be dropped this year due to the lack of Survey data.

The *Report*'s second approach to competitiveness has been developed by Michael E. Porter of the Institute for Strategy and Competitiveness at the Harvard Business School. In contrast to the GCI, the Microeconomic Competitiveness Index (MICI) uses microeconomic indicators to measure the "set of institutions, market structures, and economic policies supportive of high current levels of prosperity," referring mainly to an economy's effective utilization of its current stock of resources. Covering the same countries, the Index thus assesses the current productive potential. Together, the GCI and the MICI present distinct yet highly complementary insights into sources of national competitiveness.

The two indexes reflect that there exist circumstances that contribute to the level of income per capita and those that contribute to the change in income per capita, or growth.[1] In its simplest form, the theory of growth supposes that the level of income per capita depends on the amount of capital per person—the capital intensity of the economy—and the level of technology determining the average productivity of a unit of capital. With a fixed proportion of income assumed to be saved, which is equal to the change in the capital stock, economic growth, then, has two major components: technological change and capital deepening.

Of course, in reality things are more complex. Although in theory a clear distinction can be made between the factors explaining the *level* of economic prosperity as opposed to those that drive economic *growth*, in practice this proves substantially more difficult. One important problem stems from the fact that some of the same institutions, regulations, attributes, and practices affect both level and growth. The intensity of rivalry, for instance, drives current productivity, but it also fosters innovation and technological progress and hence productivity growth.

In actual economies, technological change and capital deepening are highly complex processes. The capital stock of an economy includes not just the accumulated physical capital of machinery, structures, and physical infrastructure (roads, ports, telecommunications), but also the level of education, workforce skills and attitudes, managerial talent, and social capital. Moreover, the stock of capital encompasses a country's set of legal institutions and regulatory practices governing businesses. In the same way, the conditions that lead to rapid economic growth include not just the aggregate investment or saving rates in an economy, but also the mix of public and private institutions that support innovation, the diffusion of ideas across sectors, and the inflows of ideas from foreign companies into the domestic economy. Similarly, technology and technological progress include multiple dimensions, going beyond the technological know-how embedded in a nation's scientific and technological institutions to also include the technology rooted in firms, which is embodied in every activity they perform and in the strategy they employ to compete.

Understanding the factors that explain current levels of economic prosperity and growth requires employing a data set that reflects the complexity of the development process in a large cross-section of countries. Using publicly available information and statistics is not enough. Therefore, our competitiveness assessments also include Survey evidence. This evidence appears particularly important in areas where no reliable hard data sources exist for many of the most important aspects of an economy, such as the efficiency of government institutions, the sophistication of local supplier networks, or the nature of competitive practices. But even where hard data exist, the data often do not cover all the countries in our sample. The Executive Opinion Survey, conducted annually by the World Economic Forum with the assistance of a large number of partner institutes, reflects the perspectives of business leaders around the world by asking them to compare aspects of their local business environment with global standards. This year, more than 4,800 respondents participated in the Survey. Given that these business leaders actually make many of the investment decisions that drive economic growth, their responses provide an invaluable source concerning the current state of economic affairs in 80 countries.

The Growth Competitiveness Index

The Growth Competitiveness Index is based on three broad categories of variables that are found to drive economic growth in the medium- and long-term: technology, public institutions, and the macroeconomic environment. Without technological progress, countries may achieve a higher standard of living, for example, through a higher rate of capital accumulation, but they will not be able to enjoy continuously high economic growth. Institutions are crucial for their role in ensuring the protection of property rights, the objective resolution of contract and other legal disputes, efficiency of government spending, and transparency in all levels of government. In the absence of good governance, the division of labor is likely to be impeded and the allocation of resources inefficient. Monetary and fiscal policies, and the stability of financial institutions, have important effects on short-term economic dynamics as well as on the long-term capacity to grow.

These drivers play a critical role at all stages of economic development. As far as technology is concerned, however, the way this driver affects economic growth varies according to the level of economic prosperity a country has already achieved. At early stages of economic development, a country's ability to launch its economy on a steeper growth path depends primarily on the transfer of

technology from abroad. Countries that have experienced rapid economic growth are typically those that are successful in adopting and adapting a technology that has been developed abroad, a process known as *technological diffusion*. At more advanced stages of economic development, however, it becomes increasingly important that a country itself *innovate* new technologies in order to sustain rapid economic growth. In the high-income countries, each new technological innovation triggers yet further innovation, in a kind of chain reaction that fuels long-term economic growth.

Taking into account the different channels through which technology affects economic growth at different stages of development, in this *Report* we continue to distinguish between two groups of countries. The group of *core innovators* (a term introduced last year, and in no way to be construed as a value judgment) includes those countries whose companies have registered at least 15 US utility patents per million population in 2001. This criterion is met in 24 economies. All other countries are said to be *non-core innovators*. Empirical tests find that technology plays a particularly critical role in the core innovating countries, which is reflected in the weights we attach to the different growth drivers. In these countries, technology has a weight of 50 percent in the overall GCI, compared with 25 percent each for public institutions and the macroeconomic environment. By contrast, equal weights of one third are attached to the three drivers in the case of the non-core innovators.

For the core economies, the technology index is a simple average of an innovation subindex and an information and communication technology subindex, both of which are comprised of hard and soft data (note that the innovation subindex is different from the "innovative capacity index" constructed by Michael E. Porter and Scott Stern in Chapter 3.1. While the innovation subindex seeks to explain the elements of innovation that are linked to economic growth, the innovative capacity index seeks to explain the underlying factors that contribute to innovation). In the case of non-core innovators, by contrast, technology transfer plays a considerably more important role than innovation, which is reflected in relative weights of three eighths versus one eighth in the innovation subindex. Information and communication technology represents the other subindex of the technology index, with a weight of one half.

This year's *Report* includes one important adjustment: the technology transfer subindex includes new Survey evidence on the licensing of foreign technology as an important source of new technology. This evidence replaces a variable that was created to measure the extent of manufacturing technology in the export structure of non-core countries. The reasoning behind that variable was that countries with a technology-based export sector may be expected to be more adept at absorbing technologies from abroad than economies with a primarily commodity-based export structure. Empirical tests suggest that the new variable has significant explanatory power.

The composition of the public institutions index and the macroeconomic environment index has remained unchanged. The public institutions index consists of two subindexes, one that reflects the perceived degree of corruption and one that focuses on the role of contracts and law. Both subindexes have equal weights and are based solely on Survey evidence. The macroeconomic environment index includes a subindex on macroeconomic stability (mirroring, among other things, inflation, national savings, and real exchange rate developments) as well as country credit ratings and general government expenditure.

This year's rankings are presented in Table 1. The United States leads the Growth Competitiveness Index, swapping positions with Finland, last year's number 1 and now ranked number 2. Taiwan, Singapore, and Sweden follow. While Singapore has retained its fourth rank, Taiwan and Sweden enjoy a significant improvement of three and four positions, respectively. An even greater improvement in its relative position concerns Switzerland, however, a country that is being ranked sixth this year (see Chapter 2.3 in this *Report*, which contains a case study on Switzerland).

The United States owes its position mainly to its stellar performance on technology-related factors (see Table 2). Research and development, collaboration between universities and businesses, the level of tertiary education, and a sophisticated and innovative business and academic community all contribute to the high ranking of the United States. The United States also receives high scores for its venture capital markets, receptivity to innovation, and leadership in information and communication technology. In addition, during the 1990s, fiscal consolidation helped the United States, contributing to a second place on the macroeconomic environment index. By contrast, the respondents to the Executive Opinion Survey perceive public institutions to be in need of reform, an area where the United States is ranked only 16. However, this relatively poor reading does not jeopardize the country's top position on the overall Index, given its strong performance in technology and the macroeconomic environment.

Finland also enjoys a very high level of technological sophistication, being ranked third in this dimension of competitiveness. In addition, Finland's public institutions are perceived to be the best in the world. On the other hand, Finland has slipped slightly in terms of its macroeconomic environment. Taiwan's high overall score also results primarily from its very high position on the technology index, whereas Singapore's strengths are found especially in the macroeconomic area.

Table 1: Overall competitiveness rankings

GROWTH COMPETITIVENESS INDEX RANKINGS

Country	Growth Competitiveness Ranking 2002	Growth Competitiveness Ranking 2002 among GCR 2001 countries*	Growth Competitiveness Ranking 2001
United States	1	1	2
Finland	2	2	1
Taiwan	3	3	7
Singapore	4	4	4
Sweden	5	5	9
Switzerland	6	6	15
Australia	7	7	5
Canada	8	8	3
Norway	9	9	6
Denmark	10	10	14
United Kingdom	11	11	12
Iceland	12	12	16
Japan	13	13	21
Germany	14	14	17
Netherlands	15	15	8
New Zealand	16	16	10
Hong Kong SAR	17	17	13
Austria	18	18	18
Israel	19	19	24
Chile	20	20	27
Korea	21	21	23
Spain	22	22	22
Portugal	23	23	25
Ireland	24	24	11
Belgium	25	25	19
Estonia	26	26	29
Malaysia	27	27	30
Slovenia	28	28	31
Hungary	29	29	28
France	30	30	20
Thailand	31	31	33
South Africa	32	32	34
China	33	33	39
Tunisia	34	—	—
Mauritius	35	34	32
Lithuania	36	35	43
Trinidad and Tobago	37	36	38
Greece	38	37	36
Italy	39	38	26
Czech Republic	40	39	37
Botswana	41	—	—
Uruguay	42	40	46
Costa Rica	43	41	35
Latvia	44	42	47
Mexico	45	43	42
Brazil	46	44	44
Jordan	47	45	45
India	48	46	57
Slovak Republic	49	47	40
Panama	50	48	53
Poland	51	49	41
Dominican Republic	52	50	50
Namibia	53	—	—
Peru	54	51	55
Morocco	55	—	—
Colombia	56	52	65
El Salvador	57	53	58
Croatia	58	—	—
Sri Lanka	59	54	61
Jamaica	60	55	52
Philippines	61	56	48
Bulgaria	62	57	59
Argentina	63	58	49
Russian Federation	64	59	63
Vietnam	65	60	60
Romania	66	61	56
Indonesia	67	62	64
Venezuela	68	63	62
Turkey	69	64	54
Guatemala	70	65	66
Nigeria	71	66	74
Paraguay	72	67	72
Ecuador	73	68	68
Bangladesh	74	69	71
Nicaragua	75	70	73
Honduras	76	71	70
Ukraine	77	72	69
Bolivia	78	73	67
Zimbabwe	79	74	75
Haiti	80	—	—

MICROECONOMIC COMPETITIVENESS INDEX RANKINGS

Country	Microeconomic Competitiveness Ranking 2002	Microeconomic Competitiveness Ranking 2002 among GCR 2001 countries*	Microeconomic Competitiveness Ranking 2001**
United States	1	1	2
Finland	2	2	1
United Kingdom	3	3	7
Germany	4	4	4
Switzerland	5	5	5
Sweden	6	6	6
Netherlands	7	7	3
Denmark	8	8	8
Singapore	9	9	9
Canada	10	10	12
Japan	11	11	10
Austria	12	12	11
Belgium	13	13	15
Australia	14	14	14
France	15	15	13
Taiwan	16	16	21
Iceland	17	17	16
Israel	18	18	17
Hong Kong SAR	19	19	18
Ireland	20	20	22
Norway	21	21	19
New Zealand	22	22	20
Korea	23	23	26
Italy	24	24	23
Spain	25	25	24
Malaysia	26	26	37
Slovenia	27	27	32
Hungary	28	28	27
South Africa	29	29	25
Estonia	30	30	28
Chile	31	31	29
Tunisia	32	—	—
Brazil	33	32	30
Czech Republic	34	33	34
Thailand	35	34	38
Portugal	36	35	33
India	37	36	36
China	38	37	43
Costa Rica	39	38	48
Lithuania	40	39	50
Dominican Republic	41	40	60
Slovak Republic	42	41	40
Greece	43	42	46
Trinidad and Tobago	44	43	31
Latvia	45	44	41
Poland	46	45	42
Sri Lanka	47	46	58
Morocco	48	—	—
Mauritius	49	47	51
Panama	50	48	49
Namibia	51	—	—
Croatia	52	—	—
Jordan	53	49	47
Turkey	54	50	35
Mexico	55	51	52
Colombia	56	52	57
Botswana	57	—	—
Russian Federation	58	53	56
Jamaica	59	54	39
Vietnam	60	55	62
Philippines	61	56	53
Uruguay	62	57	45
El Salvador	63	58	64
Indonesia	64	59	55
Argentina	65	60	54
Peru	66	61	63
Romania	67	62	61
Bulgaria	68	63	68
Ukraine	69	64	59
Zimbabwe	70	65	65
Nigeria	71	66	66
Venezuela	72	67	67
Guatemala	73	68	69
Bangladesh	74	69	73
Nicaragua	75	70	71
Paraguay	76	71	70
Ecuador	77	72	72
Honduras	78	73	74
Bolivia	79	74	75
Haiti	80	—	—

* Only 74 countries out of the 75 covered last year are shown, as Egypt is not included in this year's *Report*. ** Using 2002 formula

Table 2: Rankings on growth competitiveness component indexes

Country	GCI Ranking	Technology Index Ranking	Public Institutions Index Ranking	Macroeconomic Environment Index Ranking
United States	1	1	16	2
Finland	2	3	1	14
Taiwan	3	2	27	6
Singapore	4	17	7	1
Sweden	5	4	15	34
Switzerland	6	6	8	5
Australia	7	9	5	4
Canada	8	8	9	12
Norway	9	10	12	7
Denmark	10	11	2	31
United Kingdom	11	15	6	16
Iceland	12	16	3	24
Japan	13	5	25	29
Germany	14	12	14	22
Netherlands	15	19	10	19
New Zealand	16	27	4	17
Hong Kong SAR	17	32	13	3
Austria	18	23	11	23
Israel	19	7	17	62
Chile	20	33	19	13
Korea	21	18	32	10
Spain	22	24	26	15
Portugal	23	13	21	40
Ireland	24	31	18	9
Belgium	25	22	22	26
Estonia	26	14	28	46
Malaysia	27	26	33	20
Slovenia	28	25	23	50
Hungary	29	21	30	49
France	30	28	29	28
Thailand	31	41	39	11
South Africa	32	38	34	30
China	33	63	38	8
Tunisia	34	60	24	37
Mauritius	35	45	35	36
Lithuania	36	40	36	45
Trinidad and Tobago	37	42	43	25
Greece	38	30	44	47
Italy	39	39	37	27
Czech Republic	40	20	50	59
Botswana	41	61	31	48
Uruguay	42	50	20	73
Costa Rica	43	37	46	43
Latvia	44	29	52	55
Mexico	45	47	58	21
Brazil	46	35	45	67
Jordan	47	51	40	57
India	48	57	59	18
Slovak Republic	49	34	53	64
Panama	50	49	55	42
Poland	51	36	61	54
Dominican Republic	52	48	60	41
Namibia	53	59	41	66
Peru	54	64	49	52
Morocco	55	62	56	44
Colombia	56	58	54	51
El Salvador	57	69	48	33
Croatia	58	43	57	70
Sri Lanka	59	67	42	60
Jamaica	60	46	51	74
Philippines	61	52	70	32
Bulgaria	62	56	47	75
Argentina	63	44	66	65
Russian Federation	64	66	65	35
Vietnam	65	68	62	38
Romania	66	55	67	58
Indonesia	67	65	77	53
Venezuela	68	53	73	72
Turkey	69	54	63	78
Guatemala	70	74	74	56
Nigeria	71	71	78	61
Paraguay	72	76	71	63
Ecuador	73	70	75	69
Bangladesh	74	79	79	39
Nicaragua	75	73	64	79
Honduras	76	78	76	71
Ukraine	77	72	72	77
Bolivia	78	77	69	76
Zimbabwe	79	75	68	80
Haiti	80	80	80	68

As far as emerging-market economies are concerned, China and India register substantial improvements in their relative positions, to 33 and 48, respectively. The world's two most populous countries—but especially China—have outperformed most other countries in terms of economic growth in recent years. Much of the countries' overall rankings is owed to their stable macroeconomic environment, although in the case of China potential risks have been flagged more recently with regard to contingent liabilities for the budget stemming from problems in the banking sector.

Conversely, the overall rankings of Argentina and Turkey decline substantially, to 63 and 69, respectively. Both countries have suffered from severe financial crises that have caused real output to shrink dramatically. Relative to their overall position, both countries do moderately well on the technology dimension. Major problems are identified in the areas of public institutions and the macroeconomic environment, however.

Tunisia is the highest new entrant at number 34. Further down the list are Botswana at number 41, Namibia at number 53, Morocco at number 55, Croatia at number 58, and Haiti at 80. Tunisia owes its ranking to moderately good performance on macroeconomic environment variables and especially to good public institutions. Botswana is also perceived to perform well with regard to its public institutions relative to its overall position on the Growth Competitiveness Index, whereas its position on the technology index is sub-par, given its overall competitiveness score. Haiti, at the bottom, is known to be going through one of the most difficult periods in its history. Its competitiveness suffers from rock-bottom scores on technology and public institutions and only a slighter better position regarding the country's macroeconomic environment.

The Microeconomic Competitiveness Index

Whereas the GCI strives to estimate the underlying conditions for growth over the medium term, the Microeconomic Competitiveness Index (MICI) examines the underlying conditions defining the sustainable level of productivity in each of the 80 countries covered in the *Report*.[2] Productivity and the creation of wealth are rooted in the sophistication of companies and operating practices as well as in the quality of the microeconomic business environment in which a nation's firms compete. As important as the macroeconomic, political, and legal contexts are, unless there is appropriate improvement at the microeconomic level, other reforms will not bear full fruit. Accordingly, the MICI is composed of two subindexes: one that reflects the degree of company sophistication and another that mirrors the quality of the national business environment. Both subindexes draw on a complex array of variables with demonstrated statistical relationships to GDP per capita (PPP) using common factor analysis. The weights for the two subindexes are determined from the coefficients of a multiple regression of the subindexes on GDP per capita and are 0.37 and 0.63, respectively.

This year's MICI rankings are shown in Table 1, while subrankings on the sophistication of company operating practices in each country and the quality of the business environment are presented in Table 3. The United States retakes the leading position over Finland after two years of being ranked second. Consistent with its top position on the GCI, the United States appears to be in an excellent position to return to a sustained growth path. Other advanced nations improving their MICI rankings include the United Kingdom, Canada, Belgium, Taiwan, and Ireland. Of these, the improvement of the United Kingdom's position is particularly remarkable, with its jump from 7 in 2001 to 3 this year, reflecting, inter alia, notable improvements in venture capital availability, intellectual property rights protection, the effectiveness of antitrust policy, and buyer sophistication. By contrast, the Netherlands, France, and New Zealand are found to have become relatively less competitive in terms of their foundations of productivity and economic prosperity. The drop of the Netherlands from 3 to 7 is particularly significant, where deteriorations relative to other nations were found in both the business environment and company sophistication, including financial market sophistication, the context for firm strategy and rivalry, public administrative effectiveness, R&D spending, and marketing.

Of the countries newly added to the sample, Tunisia is the top-ranked performer, coming in 32nd. Morocco, Namibia, and Croatia all enter at around 50. Although the increase in the number of countries make intertemporal comparisons difficult, these three new entrants appear significantly less competitive than, say, Lithuania, which jumped from 49 in 2001 to 40 this year. Other developing nations whose competitiveness improved significantly include Slovenia, the Dominican Republic, and Sri Lanka. The largest increase, however, has been achieved by Malaysia, reflecting improvements in a number of dimensions including cluster vitality, the rules governing competition, value chain presence, branding, and the nature of competitive advantage.

Conversely, several developing countries have suffered from a decline in their competitiveness as mirrored in a lower position in the MICI. Apart from the Philippines and Indonesia, this group includes Argentina and Turkey, two countries that have experienced major financial crises. Turkey's drop by 19 ranks is particularly sharp; Argentina's fall is slightly less, but ranked 65th now, it is clear that the country faces enormous challenges in most dimensions of competitiveness.

Table 3: Rankings on microeconomic competitiveness component subindexes

Country	MICI Ranking	Company Operations and Strategy Ranking	Quality of the National Business Environment Ranking
United States	1	1	1
Finland	2	4	2
United Kingdom	3	3	3
Germany	4	2	4
Switzerland	5	5	6
Sweden	6	6	8
Netherlands	7	8	10
Denmark	8	9	9
Singapore	9	14	5
Canada	10	13	7
Japan	11	7	17
Austria	12	12	12
Belgium	13	11	15
Australia	14	19	11
France	15	10	21
Taiwan	16	16	13
Iceland	17	17	14
Israel	18	20	18
Hong Kong SAR	19	24	16
Ireland	20	15	22
Norway	21	23	19
New Zealand	22	25	20
Korea	23	21	23
Italy	24	18	24
Spain	25	22	25
Malaysia	26	27	26
Slovenia	27	26	27
Hungary	28	29	29
South Africa	29	31	33
Estonia	30	36	28
Chile	31	35	31
Tunisia	32	37	30
Brazil	33	28	36
Czech Republic	34	34	34
Thailand	35	33	35
Portugal	36	41	32
India	37	40	37
China	38	38	38
Costa Rica	39	32	47
Lithuania	40	39	39
Dominican Republic	41	30	53
Slovak Republic	42	43	40
Greece	43	47	41
Trinidad and Tobago	44	44	44
Latvia	45	48	42
Poland	46	46	45
Sri Lanka	47	52	43
Morocco	48	50	46
Mauritius	49	42	50
Panama	50	54	52
Namibia	51	58	49
Croatia	52	53	54
Jordan	53	59	48
Turkey	54	56	55
Mexico	55	45	60
Colombia	56	51	57
Botswana	57	64	51
Russian Federation	58	62	56
Jamaica	59	60	59
Vietnam	60	67	58
Philippines	61	49	67
Uruguay	62	63	61
El Salvador	63	61	62
Indonesia	64	55	65
Argentina	65	57	68
Peru	66	65	66
Romania	67	69	64
Bulgaria	68	72	63
Ukraine	69	66	69
Zimbabwe	70	68	70
Nigeria	71	71	71
Venezuela	72	73	72
Guatemala	73	70	73
Bangladesh	74	76	74
Nicaragua	75	75	76
Paraguay	76	77	75
Ecuador	77	74	77
Honduras	78	78	79
Bolivia	79	79	78
Haiti	80	80	80

In general, there exists a fairly close correlation between company sophistication and the quality of the business environment in which the firms operate. But there are some interesting outliers. Countries whose company development is ahead of the business environment include four G-7 countries: Japan, Germany, France, and Italy. In these countries, significant changes in public policy are necessary to improve the environment for competition. Unless such improvements are implemented, companies will be prone to move operations or make new investments outside the countries. However, significant deficits relative to the degree of firm-level sophistication are also found in several emerging-market economies, including Argentina, the Dominican Republic, and Indonesia.

Advanced countries whose business environment ranks ahead of current company sophistication include Portugal, New Zealand, Australia, Hong Kong, and Singapore. This constellation is also found in several developing nations and transition economies, such as Tunisia, Botswana, and Estonia. Many leading companies in these countries still rely on natural resource extraction or are local subsidiaries of foreign multinationals that are not competing with sophisticated enough strategies. In some cases, it appears that the rapid improvements in the business environment have not yet been taken advantage of by companies that remain focused on traditional ways of competing. In these, improvements in entrepreneurship, strategic thinking, managerial practice, and business education seem particularly crucial.

A time-series analysis confirms that there has been a clear upgrading in national business environments since 1998, when the MICI was introduced. The bar is rising, and countries need to make considerable progress just to maintain position vis-à-vis other countries. Areas where particular improvements have been registered over the last five years include, for instance, infrastructure, financial markets, import tariffs, and the reduction of red tape. This year's data, however, reveal an interesting development. Developing countries were less successful in improving their business environments than advanced countries. In company operations and strategy, there are also clear areas where companies in many countries are progressing but also signs that the growing intensity of competition is making it hard to keep up. For example, companies in many countries report difficulties in mastering the full value chain. While companies in developing countries seem to be struggling with developing brands, those in advanced countries report greater difficulties in innovating on the global knowledge frontier.

Finally, in constructing the MICI, it is recognized that in the short- and medium-term, nations can overperform their microeconomic fundamentals, for example, because of surges of inbound foreign direct investment or natural

resource windfalls. However, unless the microeconomic fundamentals are improved, countries will find it difficult to sustain their levels of prosperity when these special factors disappear. Conversely, a country may underperform in the sense that it has not fully achieved the level of GDP per capita that would appear reachable given the country's microeconomic foundations. A positive gap between the MICI and GDP per capita signals upside potential; a negative gap indicates vulnerability. Countries with upside potential include the United Kingdom, Malaysia, Brazil, Chile, Estonia, Lithuania, and India. Norway, Iceland, Ireland, Canada, Greece, Portugal, Bolivia, and Haiti are countries, in contrast, whose current GDP per capita exceeds that predicted by their microeconomic competitiveness.

Structure of the *Report*

The second part of this *Report* discusses competitiveness issues from a global and regional perspective. In his chapter "The Year in Review," Martin Baily (Institute for International Economics) provides the background for analyzing the challenges the world economy is facing today. Specifically, Baily examines the global slowdown among the main industrial economies of Europe, the United States, and Japan, which have been remarkably synchronized. Discussing the role of equity markets in perpetuating this slowdown, the chapter also focuses on the importance of corporate governance issues that have profoundly affected investors' confidence. As Baily argues, Enron, WorldCom, and other corporate scandals, further fueled by financial crises in several emerging markets, have led to a backlash against market liberalization and American-style capitalism. At the same time, as Baily notes, companies have begun to reassess the potential benefits of a business strategy of full-tilt globalization. Today it appears that an increasing number of executives view the imperative of global expansion as less compelling, and the terrorist attacks have left companies even more aware than before of the political risks of cross-border activities. Although it is imperative to restore investor confidence in the information they have available, Baily argues that overregulation must be avoided since this could discourage risk taking and new ventures.

Another threat hanging over the United States and the world economy is the impending war with Iraq. Although a short war could help lift some of the clouds currently hanging over the markets, a protracted war would clearly have negative effects on economic growth. Although in the short term it cannot be ruled out that, even under these optimistic assumptions, economic growth in the United States will remain sluggish, in the longer term, according to Baily the US economy looks set to recover, given an expansionary financial policy stance and the overall resilience of the economy. The "new economy" is alive and well, and although productivity growth is less than initially thought, its trend does appear to be continuing at a faster rate than it did in the 1970s and 1980s. As Baily emphasizes, however, microeconomic evidence suggests that faster productivity growth has not come simply from the contribution of IT capital, but rather from successful business innovations.

By comparison, the longer-term outlook for Europe and especially Japan appear, in Baily's view, less sanguine. Short term, a relatively tighter monetary policy stance appears less supportive of a recovery, and the stability pact severely limits the room for maneuvering. In the longer term, the key challenge in the core European countries remains making their economies more flexible. In Japan, these challenges are even greater, especially with regard to financial restructuring, and macroeconomic policies have become largely impotent. Finally, Baily discusses recent financial crises in emerging-market economies, especially in South Korea, Argentina, and Brazil, taking into account both macroeconomic and microeconomic factors. For the microeconomic factors, Baily finds that institutional failures and policy interventions have seriously distorted incentives and created barriers to growth in several sectors.

One of Baily's main conclusions is that the market economy remains the best system available. Although the market economy works well with good stabilization policies and with legal and regulatory systems that provide accurate information to market participants, problems almost inevitably arise if screwball restrictions are put in place with an incoherent rationale behind them. The market-based system works worse, however, if fiscal and monetary policies follow paths that are unsustainable over the long run and if policies are implemented that prevent industries from evolving and old firms from dying.

Focusing on Baily's latter point, John Llewellyn and the Global Economics Team of Lehman Brothers discuss "Reinvigorating Structural Reform." Whereas there exists a nontrivial degree of risk that recent economic developments reduce policymakers' appetite for market-oriented reforms, Lewellyn and his team argue that a reinvigoration of supply-side policies is vital and overdue, mainly for two reasons: first, because they are the major determinant of economic performance over the medium to long term. To illustrate the importance of their argument, the authors reckon that adding just half a percent to a potential output growth rate of 2.5 percent per annum would mean that material living standards would double in 20 years rather than 40. Second, structural rigidities make it harder for economies to absorb shocks—resulting, for example, in high and more persistent unemployment than would otherwise be the case.

Llewellyn and his coauthors focus in their assessment of current structural impediments primarily on the major OECD countries. To this group belongs Switzerland, one of the richest countries in the world, whose economy, however, has not been growing much over the past decade. Given an average annual growth rate of just around 1.5 percent, Franz Jaeger (Research Institute for Empirical Economics and Economic Policy at the University of St. Gallen) asks what has held Switzerland back in a case study on the country. His analysis is broadly consistent with Llewellyn's. Although Switzerland enjoys an exceptional macroeconomic environment and many Swiss companies operate at the global frontier of innovation and technological progress, substantial parts of the domestic economy have remained highly protected. One immediate consequence, according to Jaeger, is Switzerland's comparatively low labor productivity. Against this background, Jaeger concludes that "a policy change toward more competition and structural changes in the domestic sector would help Switzerland grow faster."

The remaining chapters in this part of the *Report* focus primarily on emerging-market economies in different regions of the world. Depending on the stage of development, each region—and indeed, each country—face different challenges. A very poor country with rudimentary levels of education and health will generally not be competing on the basis of technological innovation. Rather, its goal should be to attract capital investment and use the proceeds of economic growth to invest in improved health, education, and infrastructure. As a country progresses further, it becomes increasingly important to speed up the process of technological diffusion into the country, in part by attracting high-tech foreign direct investment. Probably the most challenging transition, however, is the one from technological diffusion to technological innovation. Indeed, the group of countries identified in the *Report* as "core innovators" has remained small.[3] As our analysis in this and previous editions of the *Global Competitiveness Report* suggests, the transition through the different stages of economic development is not necessarily linear or gradual, nor does it happen automatically. Countries may get stuck if they are not able to achieve a wholesale transformation of many interdependent dimensions of competition.

This is, of course, not to say that non-core innovators cannot achieve rapid economic growth. On the contrary, it is often the countries in the earlier stages that achieve the world's highest growth rates, by rapidly absorbing the advanced technologies and capital of the advanced innovators. This process of "catch-up" growth has been very important for many developing countries. However, this process has its inherent limits. As the income gap between the technological leaders and followers narrows, the ability of the latter to narrow the gap still further tends to diminish; in order to close the gap fully, a country needs to become a core innovator itself. In other words, a country's competitive advantage must become the development of unique products at the global technology frontier.

Against this background, Chapter 2.4, "Africa: A Union Open for Growth, Trade, and Business?" written by Lisa D. Cook (Harvard University and Stanford University), discusses recent economic developments in Africa and policy challenges for the future that remain to be addressed if higher economic growth and better living standards are to be achieved. As a framework for discussion, Cook focuses on the New Partnership for Africa's Development (NEPAD), a much-discussed new initiative centering on a wide range of issues including economic growth, integration, peace, security, democracy, and human development. To be sure, the NEPAD goals are ambitious: importantly, poverty is to be reduced by 50 percent by 2015, a target whose achievement requires economic growth of 7 percent annually, as Cook emphasizes. Given the experience of a large sample of countries, Africa's further global integration through trade and investment will need to play a key role in the continent's development strategy. For this, an economic and business environment is needed that is conducive to private entrepreneurship. In her analysis, Cook focuses especially on two areas: physical infrastructure and financial sector development. As she stresses, however, these are just two examples that stand for the multidimensional challenges Africa is facing in upgrading the continent's long-term competitiveness.

Asia's emerging markets face different challenges. Many of them have already achieved a relatively high level of economic prosperity. However, that does not automatically guarantee that the Asian economies will continue to grow at rates many had enjoyed in the 1980s and the first half of the 1990s. Given that economic development represents a sequential process of building interdependent microeconomic capabilities, evolving the modes of competing, improving incentives, and increasing rivalry, lack of improvement in one area can lead to a plateau in productivity growth and stalled development. In her chapter entitled "Asia: The Productivity Imperative," Diana Farrell (McKinsey Global Institute) examines four economies whose stages of development and economic structures are highly diverse: India and Thailand, with per capita incomes (ppp basis) of around 2,500 and 6,500 US dollars; and South Korea and Japan, two of the richest OECD member countries in the world. But as different as they are, in each of these countries there are industries and services that are highly efficient, whereas others are found to be woefully inefficient. A key message that emerges from Farrell's assessment is that "the efficiencies engendered by international markets need to be emulated in the domestic, non-tradable sectors," which frequently continue to be burdened by overregulation and structural ossification.

Although in some countries in central and eastern Europe economic growth has slowed noticeably in the wake of lower output growth in the world economy, others have proved remarkably resilient. As Barry W. Ickes (Pennsylvania State University), Jürgen von Hagen (Zentrum für Europäische Integration, University of Bonn; Indiana University; and CEPR), and Iulia Traistaru (Zentrum für Europäische Integration, University of Bonn) find, several countries that are now close to accession into the European Union have managed to reach a sustainable path of economic growth and macroeconomic stability. In their chapter on "Central and Eastern Europe: Economic Developments, Reforms, and Geography" the authors first examine the basic economic structures of the transition economies and the extent to which these have changed since the transformation process began in earnest. Achieving sustained economic growth requires, as the authors argue, first and foremost a stable macroeconomic environment. Noting that the real engines of growth are embedded in a business environment that is conducive to private risk taking and entrepreneurship, the chapter then discusses the state of economic reforms in the region. Against the background of the EU enlargement process, the chapter specifically examines the quality of institutions and governance, the business environment, and the location of industrial activity and the pattern of regional specialization in the accession candidates. Finally, the authors discuss macroeconomic and structural developments in Russia, whose economic performance has been quite remarkable since the financial crisis in 1998.

Arguably, the most vulnerable region right now is Latin America, where most countries are trying to cope with an environment of high economic fragility, partly resulting from the current global slowdown but also reflecting internal political trouble and policy mismanagement. As Felipe Larraín B. (Ponticifia Universidad Católica de Chile and Harvard University) argues in his chapter on "Lights and Shadows of Latin American Competitiveness," the latter set of factors suggests that the region's problems are of a more long-term nature than merely cyclical and therefore need to be tackled accordingly, taking into account country-specific circumstances. Although Latin America's large distance from world markets, the region's complicated topography, and the tropical climate pose particularly important challenges, one important policy conclusion Larraín B. draws from his analysis concerns the quality of domestic institutions. Cross-country variances notwithstanding, he argues, important deficits persist, holding back economic growth. On the macroeconomic front, Larraín B. notes that the fiscal policy stance has deteriorated significantly in several countries, sending them into a dangerous spiral of increasing debts and deficits despite important efforts to generate primary surpluses in the public budget. On a positive note, Larraín B. observes, however, that encouraging reforms have been implemented in some areas, notably regarding foreign trade and financial liberalization. As a result, exports have deepened and become more diversified, which bodes well when the external environment becomes more favorable again.

The third part of the *Report* deals with specific topics of economic development and competitiveness. This part opens with an assessment of "The Impact of Location on Global Innovation: Findings from the National Innovative Capacity Index" by Michael E. Porter (Harvard University) and Scott Stern (Northwestern University and National Bureau of Economic Research). Given that innovation measures provide the most important explanation of cross-country differences in economic prosperity among high-income countries, their analysis addresses the following two key questions: why does the intensity of innovation vary across countries and how does innovation depend on location? Extending their research from prior years' *Report*s, Porter and Stern stress that innovation output depends on the interaction between private-sector and public-sector policies and investments and rank 73 countries according to their "national innovative capacity." Their analysis finds striking evidence for the hypothesis that the national environment for innovation plays a very important role for innovative output. Consistent with Porter's analysis of the microeconomic foundations of competitiveness published in the present *Report*, the authors argue that countries that have aggressively invested in innovative capacity look set to become more competitive and achieve higher levels of prosperity. Conversely, Porter and Stern express concern that those countries in which innovative capacity lags behind overall productivity are likely to find it difficult to sustain their current levels of competitiveness.

According to Porter and Stern's analysis, the United States continues to enjoy the highest innovative capacity. Whether the US productivity miracle of the 1990s can be sustained is a different issue, however, and one that remains at the core of the policy debate. Employing a novel approach, Robert J. Gordon (Northwestern University, National Bureau of Economic Research, and Center for Economic and Policy Research) tackles this issue within a supply-demand framework. Specifically, Gordon asks: "High-Tech Innovation and Future Productivity Growth: Does Supply Create Its Own Demand?" This question is particularly relevant with regard to the computing power of a microprocessor chip that, according to Moore's Law, doubles in each cycle. But will the growth in demand be adequate to continue to keep up with the explosion in supply? Gordon provides a rich set of references to the real world that casts considerable doubt on the absorptive capacity of demand. His analysis is not confined to computing power, however. The huge overcapacity created in

particular by telecom investment, but also in other areas, argues Gordon, suggests that the 1990s boom was unique, implying that the productivity miracle does not appear sustainable.

Gordon's conclusions do not mean, of course, that innovation and new information and communication technology (ICT) do not matter for economic growth and development. They do matter substantially. Indeed, ICT has long been recognized as a catalyst for organizational transformation and change. At the firm level, ICT plays a key role in creating new products, exploiting new distribution channels, and delivering differentiated value-added services to customers. At the national level, ICT is found to serve as a catalyst for economic development, helping bridge existing divides in different areas and integrate a country into the global economy. But how ready are individual countries for the networked world? Building upon the work that the World Economic Forum, in collaboration with the Center for International Development at Harvard University, has previously undertaken, Soumitra Dutta and Amit Jain (INSEAD) explicitly consider the roles played by the major stakeholders—individuals, businesses, and governments (see World Economic Forum 2002). In their chapter entitled "The Networked Readiness of Nations," which represents a synopsis of a new edition of the *Global Information Technology Report 2002–2003*, Dutta and Jain examine the networked readiness of 80 economies according to three dimensions: first, the environment for ICT—that is, the market conditions, the political and regulatory framework, and the infrastructure for ICT. The second dimension is the readiness of individuals, the business community, and government. The third is the actual usage of ICT by the three stakeholders. Based on this framework, the authors develop a networked readiness index.[4]

Foreign direct investment (FDI) represents an important channel through which countries may gain access to technology developed abroad. An increasing number of developing countries, once hostile to the entry of FDI or inclined to restrict it severely, now compete to attract firms. "Something must have been observed in the last couple of decades to change attitudes in so many countries," as Robert E. Lipsey observes in his chapter on "Foreign Direct Investment, Growth, and Competitiveness in Developing Countries." This "something" is, first, that larger inflows of FDI have, in general, been associated with higher growth, especially in countries and industries not too far behind the most advanced economies. Second, as Lipsey finds, there is clear evidence that some countries have succeeded in using inward direct investment, especially investment oriented toward exports, effectively to promote their growth and the transition of their economies. As Lipsey cautions, however, openness to inward FDI is no magic potion that can eliminate the effects of poor policies or poor endowments. Rather, FDI needs to be embedded in a comprehensive development strategy.

Openness to trade can also play an important role in helping nations to achieve greater prosperity. However, one of the main difficulties in measuring the benefits of opening to trade is that, for the most part, trade performance has not been measured systematically. The chapter on "Export Performance and Stages of Development" by Jennifer Blanke of the World Economic Forum, along with International Trade Centre economists Friedrich von Kirchbach, Mondher Mimouni, and Jean-Michel Pasteels, aims to provide such an analysis, employing a framework for assessing national trade performance at the sectoral level. The authors find that while for the most part the rich industrialized countries presently outperform developing countries in practically all export sectors, developing and transition countries are seeing important improvements in their exports performance over time. Curiously, these improvements are not taking place in the sectors in which one might expect them based on trade theory, such as labor-based or low-technology goods. In fact, the authors find that improvements in performance are taking place at the higher end of the investment and technology ladder—in sectors with higher value added goods, such as IT and consumer electronics. These improvements seem to be driven in large part by increasing FDI flows. Since FDI can play a crucial role in inserting these countries into the production chain of higher value added export sectors, the authors conclude that lower-income countries should implement policies that foster economic environments attractive to such investment.

For countries to be an attractive location for FDI, certain governance standards need to be met. Countries that are well governed tend to attract more foreign capital. Conversely, where good public institutions are lacking and corruption is widespread, foreign investors will be discouraged. But FDI is just one channel through which governance affects economic growth. That institutional reforms need to be an integral part of any policy strategy is therefore becoming increasingly accepted. And yet, as Daniel Kaufmann (World Bank Institute) argues, there exist several misperceptions regarding governance and the way it affects economic development. Employing the results of the Executive Opinion Survey, Kaufmann challenges some popular views in his chapter on "Governance Crossroads." Unbundling corruption, he looks at intra-regional differences and examines corruption perceptions over time. A key finding of his analysis is that voice, oversight, and transparency matter—and not only in the public sector. Good governance in the public and private sectors are closely intertwined, and as Kaufmann argues, improvements require collective action through a system-

atic participatory and consensus-building approach involving all key stakeholders in society. The international community needs to play a critical role as well. Unless improved governance is made a paramount objective, grounded on political commitment from both national and international quarters, Kaufmann cautions that the Millennium Development Goals are unlikely to be met.

Finally, the *Report* recognizes that standards of living are inextricably tied to the quality of the environment. Previous editions of the *Global Competitiveness Report* included analyses that found that, both at the macro- and microeconomic levels, better environmental performance does not need to come at the expense of economic performance. Indeed, considerable empirical evidence was found that cross-country differences in environmental performance are associated with the quality of the environmental regulatory regime in place. Although these findings are good news, much work remains to be done in order to draw the right policy conclusions. One particularly pressing question concerns what *sustainability* really means—the focus of a chapter by Forest Reinhardt (Harvard Business School) entitled "Tests for Sustainability." His analysis begins with the various approaches that have been applied in the long tradition of economics at the national level. Reinhardt then discusses different ways in which conceptually similar sustainability tests may be conducted at the firm level, drawing on principles of financial accounting. He emphasizes that environmental sustainability at the firm level cannot be viewed in isolation from the business fundamentals of the firm. This applies also to the national level, where environmental sustainability must be considered in the context of a country's overall economic activity. In order for private and social costs to converge, argues Reinhardt, an appropriate regulatory regime is needed. Comprehensive compilations of potential externalities are equally important at the national level, in the absence of which tests for sustainability will remain elusive.

Part four of the *Report*, finally, contains country profiles for each individual economy covered. This part includes data tables for the individual variables used to assess national competitiveness. How the country profiles and the data tables work is explained in a separate section. Moreover, technical notes explain individual variables and the results of the Forum's Executive Opinion Survey.

Notes

1 This section follows Porter, Sachs, and Warner (2000).

2 Conceptually, the Microeconomic Competitiveness Index is identical with last year's Current Competitiveness Index. Although the latter has been renamed to emphasize its focus on micro- as opposed to macroeconomic issues, this year's results are comparable with those estimated last year and in previous years.

3 The concept of *core innovators* was introduced in last year's *Global Competitiveness Report* by John W. McArthur and Jeffrey D. Sachs in their chapter "The Growth Competitiveness Index: Measuring Technological Advancement and the Stages of Development" in *The Global Competitiveness Report 2001–2002* (McArthur and Sachs 2002). According to this concept, a country is defined as a *core innovator* if it has achieved at least 15 patents registered in the United States per million population.

4 Note that the index in this *Report* deviates slightly from the one in the forthcoming *Global Information Technology Report* in that it does not include Egypt and Luxembourg.

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