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BCI 2007-2008

Overall

Global Competitiveness Index 2007-2008

Country/Economy	Rank	Score
United States	1	5.67
Switzerland	2	5.62
Denmark	3	5.55
Sweden	4	5.54
Germany	5	5.51
Finland	6	5.49
Singapore	7	5.45
Japan	8	5.43
United Kingdom	9	5.41
Netherlands	10	5.40
Korea, Rep.	11	5.40
Hong Kong SAR	12	5.37
Canada	13	5.34
Taiwan, China	14	5.25
Austria	15	5.23
Norway	16	5.20
Israel	17	5.20
France	18	5.18
Australia	19	5.17
Belgium	20	5.10
Malaysia	21	5.10
Ireland	22	5.03
Iceland	23	5.02
New Zealand	24	4.98
Luxembourg	25	4.88
Chile	26	4.77
Estonia	27	4.74
Thailand	28	4.70
Spain	29	4.66
Kuwait	30	4.66
Qatar	31	4.63
Tunisia	32	4.59
Czech Republic	33	4.58
China	34	4.57
Saudi Arabia	35	4.55
Puerto Rico	36	4.50
United Arab Emirates	37	4.50
Lithuania	38	4.49
Slovenia	39	4.48
Portugal	40	4.48
Slovak Republic	41	4.45
Oman	42	4.43
Bahrain	43	4.42
South Africa	44	4.42
Latvia	45	4.41
Italy	46	4.36
Hungary	47	4.35
India	48	4.33
Jordan	49	4.32
Barbados	50	4.32
Poland	51	4.28
Mexico	52	4.26
Turkey	53	4.25
Indonesia	54	4.24
Cyprus	55	4.23
Malta	56	4.21
Croatia	57	4.20
Russian Federation	58	4.19
Panama	59	4.18
Mauritius	60	4.16
Kazakhstan	61	4.14
Uzbekistan	62	4.13
Costa Rica	63	4.11
Morocco	64	4.08
Greece	65	4.08
Azerbaijan	66	4.07
El Salvador	67	4.05
Vietnam	68	4.04
Colombia	69	4.04
Sri Lanka	70	3.99
Philippines	71	3.99

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Business Competitiveness Index 2007-2008

Country/Economy	Business Competitiveness Index 2007-2008	Sophistication of company operations and strategy	Quality of the national business environment
United States	1	1	1
Germany	2	2	2
Finland	3	3	9
Sweden	4	4	3
Denmark	5	5	5
Switzerland	6	6	4
Netherlands	7	7	7
Austria	8	9	8
Singapore	9	8	14
Japan	10	12	6
United Kingdom	11	11	11
Hong Kong SAR	12	10	16
Norway	13	13	15
Canada	14	14	17
Belgium	15	16	13
Iceland	16	17	19
France	17	18	12
Australia	18	15	24
Korea, Rep.	19	19	10
Israel	20	21	21
Malaysia	21	22	20
New Zealand	22	20	25
Taiwan, China	23	23	18
Ireland	24	24	22
Tunisia	25	25	33
Estonia	26	26	35
Spain	27	27	30
United Arab Emirates	28	28	37
Chile	29	30	28
Portugal	30	29	40
India	31	33	27
Czech Republic	32	32	31
Qatar	33	31	43
South Africa	34	35	26
Slovenia	35	34	29
Indonesia	36	40	23
Thailand	37	36	36
Oman	38	41	38
Lithuania	39	43	39
Malta	40	38	60
Barbados	41	37	61
Italy	42	45	32
Bahrain	43	42	53
Slovak Republic	44	44	45
Cyprus	45	39	66
Turkey	46	48	41
Hungary	47	46	56
Jordan	48	49	51
Kuwait	49	47	59
Costa Rica	50	53	34
Saudi Arabia	51	50	47
Sri Lanka	52	54	44
Greece	53	52	57
Latvia	54	51	62
Mauritius	55	55	50
Poland	56	56	55
China	57	57	54
Panama	58	58	58
Brazil	59	63	42
Croatia	60	61	63

2006-2007

Executive Summary

AUGUSTO LOPEZ-CLAROS, World Economic Forum

The global economy has been transformed in recent years by the fall of international barriers to the flow of goods, services, capital and labor, and a marked acceleration in the pace of technological and scientific progress. Technological advances have created new opportunities for businesses against the background of an increasingly complex global economy, while reductions in the cost of transport and communication are making location less important, spurring companies to move operations to lower cost environments. This, in turn, has made governments far more sensitive to the need to create a friendly business climate, supportive of private sector activity.

Against this backdrop of rapid systemic change in the key parameters that underpin the evolution of the global economy, we have seen shifts in the relative importance of those critical factors which determine the evolution of productivity, and hence, growth. At the World Economic Forum, we understand national competitiveness as that set of factors, policies, and institutions which determine the level of productivity of a country. Raising productivity—i.e., making better use of available factors and resources—is the driving force behind the rates of return on investment which, in turn, determine the aggregate growth rates of an economy. Thus, a more competitive economy will be one which will likely grow faster in the medium and long term. Identifying those factors which help to explain the differences in the evolution of per capita income in countries such as Finland, Russia, and Chile is very much at the center of the work we do.

It is clear that the factors determining the underlying competitiveness of nations are as diverse as they are numerous. For example, there is a broad body of theoretical work and empirical evidence highlighting the importance of a sound macroeconomic environment for growth. Mismanagement of the public finances and high inflation, one of its frequent by-products, greatly complicates the business environment, undermining incentives for investment based on long-term planning. But the presence of macroeconomic stability is not enough to increase productivity. Also important is the institutional environment within which economic actors operate, including the protection of property rights, the quality of the judicial system, even-handedness in the political process, and the reining in of corruption.

As well as institutional factors, many others are also known to play a role in enhancing productivity. Education and training have emerged as key drivers of competitiveness, ensuring that the labor force has access to new knowledge and is trained in new processes and the latest technologies.

As numerous as these factors may be, they will matter differently for different countries, depending on their particular starting conditions or stage of development. Curtailing the appetite of the state for private savings

by implementing more cautious fiscal policies may be important everywhere for creating the conditions for productivity growth, but it is relatively less important in countries with a well established track record of responsible fiscal management than in countries with long histories of budgetary instability, where the move to address these problems is likely to benefit growth.

It is also clear that the factors that are critical for improving competitiveness will themselves evolve over time, given the rapid pace of change in the global economy alluded to above. For example, today we focus on the growing importance of the latest technologies in enhancing productivity growth through improved processes and management practices, in contrast to past decades when the expansion of resource endowments was still sufficient to drive world economic growth.

Over the years, the World Economic Forum has continually updated its methodology for measuring competitiveness to keep pace with the changing international environment. For the past five years, we used the Growth Competitiveness Index developed by Jeffrey Sachs and John McArthur to assess the competitiveness of nations. Although it was cutting edge at the time it was developed, more recent advances in economic research and the rising importance of the international dimension, as well as the increasing diversity of countries covered by the *Report*, call for an adjustment in methodology. With the aim of incorporating many factors driving productivity into a broader measure of competitiveness, we will now be using an index developed for the World Economic Forum by Professor Xavier Sala-i-Martin, a leading expert on growth and economic development. The new Index — representing nearly two years of collaboration with him and involving dozens of presentations by Forum staff aimed at eliciting feedback from a broad set of users— extends and deepens the concepts and ideas underpinning the earlier Sachs-McArthur index. With this year's *Report*, we have moved to the Global Competitiveness Index (GCI) as the main competitiveness indicator to be used by the World Economic Forum. The results are presented in Chapter 1.1. For reference and the sake of historical continuity we also present the rankings associated with the Growth Competitiveness Index in the back of this *Report*.

Professor Michael Porter's Business Competitiveness Index, presented in Chapter 1.2 in this volume, highlights in detail the microeconomic underpinnings of competitiveness, with its special emphasis on a range of company-specific factors conducive to improved economic efficiency and productivity.

The Global Competitiveness Index

The GCI, albeit simple in structure, provides a holistic overview of factors that are critical to driving productivity and competitiveness, and groups them into nine pillars:

Institutions
Infrastructure
Macroeconomy
Health and primary education
Higher education and training
Market efficiency
Technological readiness
Business sophistication
Innovation

The selection of these pillars and the factors underlying them is based on the latest theoretical and empirical research. It is important to note that none of these factors *alone* can ensure competitiveness. The value of increased spending on education will be undermined if rigidities in the labor market and other institutional weaknesses make it difficult for new graduates to gain access to suitable employment opportunities. Attempts to improve the macroeconomic environment—e.g., bringing public finances under control—are more likely to be successful and receive public support in countries where there is reasonable transparency in the management of public resources, as opposed to widespread corruption and abuse. Innovation or the adoption of new technologies or upgrading management practices will most likely not receive broad-based support in the business community if protection of the domestic market ensures that the returns on rent-seeking are higher than those for new investments. Therefore, the most competitive economies in the world will typically be those where concerted efforts have been made to frame policies in a comprehensive way, that is, those which recognize the importance of a broad array of factors, their interconnection, and the need to address the underlying weaknesses they reveal in a proactive way.

Beyond these pillars, which capture a more comprehensive set of growth factors, the GCI has a number of other important distinguishing features. One is the formal incorporation of the notion that countries around the world are functioning at different stages of economic development. The relative importance of particular factors for improving the competitiveness of a country will be a function of the starting conditions, that is, those institutional and structural features which characterize a country in comparison with others in terms of development, as measured by per capita income. For example, what presently drives productivity in Sweden is necessarily different from what drives it in Ghana. Thus, the GCI separates countries into three specific stages: factor-driven, efficiency-driven, and innovation-driven, each implying a

growing degree of complexity in the operation of the economy.

The pillars are organized into three subindexes, each critical to a particular stage of development: a) the *basic requirements* subindex groups those pillars most critical for countries in the factor-driven stage (institutions, infrastructure, macroeconomy, health and primary education); b) the *efficiency enhancers* subindex includes those pillars critical for countries in the efficiency-driven stage (higher education and training, market efficiency, technological readiness); c) the *innovation and sophistication factors* subindex includes all pillars critical to countries in the innovation-driven stage (business sophistication, innovation). The exact methodology underlying the construction of the GCI is described in Chapter 1.1.

The Competitiveness Rankings for 2006

The rankings from the GCI for the 125 countries covered in this year's *Report* are presented in Table 1, with comparisons to the results for those countries covered last year. Tables 2, 3, and 4 show the rankings within each subindex and individual pillar.

Switzerland takes the leading position as the world's most competitive economy in 2006–2007, overtaking Finland and Sweden, and replacing the United States, which dropped to sixth position. Switzerland's top ranking reflects a combination of a world class capacity for innovation and the presence of a highly sophisticated business culture. The country has a well developed infrastructure for scientific research, with close collaboration between the leading research centers and industry. Companies spend generously on research and development. Intellectual property protection is strong and this has helped spur high levels of technological innovation, as measured by per capita patents registration, for which the country is ranked sixth in the world. Business activity in the country benefits from a well-developed institutional framework, characterized by respect for the rule of law, an efficiently working judicial system, and high levels of transparency and accountability within public institutions. Flexible labor markets and excellent infrastructure facilities are two healthy features of the business environment.

The Scandinavian countries remain among the top performers, with Finland, Sweden, and Denmark occupying second, third and fourth places, respectively. They share with Switzerland a broadly similar institutional and structural profile. The Nordic countries have better ranks on the macroeconomy pillar of the GCI, since they are all running budget surpluses and have lower levels of public indebtedness than Switzerland and, indeed, much of the rest of Europe. Finland and Sweden have the best institutions in the world (ranked 1 and 2, respectively) and occupy places in the top ten ranks in health and primary education. These three Nordic countries also occupy the top three positions in education and training, where Finland's rank of 1 is remarkable for its durability over time. They lag behind Switzerland in the areas of labor market flexibility and, to a lesser extent, in indicators of business sophistication. The Nordic countries show that transparent institutions and excellent macroeconomic management, coupled with world class educational attainment and a focus on technology and innovation are a successful strategy for maintaining competitiveness in small, highly developed economies.

The United States is ranked sixth this year. It remains a world leader in a number of key categories assessed by the GCI, such as market efficiency, innovation, higher education and training, and business sophistication. However, growing imbalances have dented a number of macroeconomic indicators, and the levels of efficiency and transparency underpinning its public institutions do not match those of the most developed industrial countries.

Overall, the picture in the other European Union countries remains relatively stable, with only a few countries registering significant moves in the rankings. Germany and the United Kingdom continue to hold privileged positions, ranked eighth and tenth, respectively. There are interesting contrasts in the performance of both economies from the perspective of the GCI pillars. Both countries have excellent institutional underpinnings, and in some areas namely, the property rights environment and quality of the judicial system, Germany is second to none. The United Kingdom excels in market efficiency indicators, with the most efficient financial markets in the world. The flexibility of the UK labor market and its low levels of unemployment stand in sharp contrast to that of Germany, where the business community is saddled with cumbersome labor regulations. But Germany does somewhat better than the United Kingdom in innovation indicators and the sophistication of its business community, which are among the best in the world.

Italy's competitive position has continued the downward trend observed over the past few years, and the country dropped four places in this year's *Report*. The list of problems is long, beginning with the poor underlying macroeconomic environment. Italy has been running budget deficits without interruption for the past 20 years. The fiscal situation has deteriorated significantly since 2000, with Italy's public debt well over 100 percent of GDP, among the highest in the world. The poor state of Italy's public finances may itself reflect more deep-seated institutional problems, which are reflected in low rankings for such variables as the efficiency of government spending, the burden of government regulation, and, more generally, the quality of public sector institutions. The market efficiency pillar does not deliver very good results either, with particular weaknesses in the areas of labor market flexibility and financial market sophistication and openness.

As in previous years, Poland remains the worst performer among the EU countries, with a rank of 48, right behind Greece (47) and well behind Estonia (25), the Czech Republic (29), and Slovenia (33), Central and Eastern Europe's top performers. Particular weaknesses in Poland stem from the highly protected and rigid labor markets, particularly harmful in a country where unemployment is close to 18 percent. Deeper institutional reforms will be necessary if Poland is to increase productivity and stay competitive in the face of rising labor costs.

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

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

India's overall rank of 43 demonstrates remarkably high scores in capacity for innovation and sophistication of firm operations. This is especially true of the quality of scientific research and the number of scientists and engineers, which are increasingly supplying highly skilled professionals to the private sector. Firm use of technology and rates of technology transfer are high, although penetration rates of the latest technologies are still quite low by international standards, reflecting India's still low levels of per capita income and high incidence of poverty. However, weaknesses in the coverage of educational opportunities and poor-quality infrastructure limit the more equitable distribution of the benefits of India's high growth rates.

China's ranking has fallen from 48 to 54. Consistent with the cautious macro-economic management of its authorities, the macroeconomy pillar of the GCI shows a very high rank, sixth overall in the world. This reflects China's low inflation, one of the highest savings rates in the world, and manageable levels of public debt. Like India, China has low penetration rates for the latest technologies and because these are expanding more quickly in other countries, China's ranks in these indicators are actually falling behind. Secondary and tertiary school enrolment rates are better than they are in India, but still low by international standards. Further progress is needed in improving various components of the institutional environment, including reducing the burden of government regulation, improving the climate for the protection of property rights, as well as safeguarding the independence of the judiciary.

Once again, at 27th and unchanged with respect to 2005, Chile has the highest ranking overall in Latin America and the Caribbean. Chile's competitiveness position reflects not only solid institutions—already operating at levels of transparency and openness above the average for the EU—but also the presence of efficient markets, relatively free of distortions. The state has played a supportive role in the creation of a credible, stable regulatory regime. Competent macroeconomic management has been a critical element in creating the conditions for rapid growth and sustained efforts to reduce poverty.

Continuing reductions in public debt levels, supported by a fiscal policy that targets an overall government budget surplus have also played a pivotal role in buttressing the credibility of government policy. Given Chile's strong competitive position, the authorities will have to focus attention on upgrading the capacities of the labor force, with a view to rapidly narrowing the skills gap with respect to Finland, Ireland and New Zealand, the relevant comparator group for Chile.

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

A lack of sound and credible institutions remains a significant stumbling block in many Latin American countries. Bolivia (97), Ecuador (90), Guyana (111), Honduras (93), Nicaragua (95), Paraguay (106), and Venezuela (88) achieve low overall rankings and are among the worst performers in the GCR sample for the absence of the basic elements of good governance, including reasonably transparent and open institutions. All these countries suffer from poorly defined property rights, undue influence in decision making, inefficient government operations, as well as unstable business environments, making it difficult for the business community to compete effectively, either within the region or in the world.

Table 1: Global Competitiveness Index rankings and 2005 comparisons

Country/Economy	GCI 2006 Rank	GCI 2006 Score	GCI 2005 Rank
Switzerland	1	5.81	4
Finland	2	5.76	2
Sweden	3	5.74	7
Denmark	4	5.70	3
Singapore	5	5.63	5
United States	6	5.61	1
Japan	7	5.60	10
Germany	8	5.58	6
Netherlands	9	5.56	11
United Kingdom	10	5.54	9
Hong Kong SAR	11	5.46	14
Norway	12	5.42	17
Taiwan, China	13	5.41	8
Iceland	14	5.40	16
Israel	15	5.38	23
Canada	16	5.37	13
Austria	17	5.32	15
France	18	5.31	12
Australia	19	5.29	18
Belgium	20	5.27	20
Ireland	21	5.21	21
Luxembourg	22	5.16	24
New Zealand	23	5.15	22
Korea, Rep.	24	5.13	19
Estonia	25	5.12	26
Malaysia	26	5.11	25
Chile	27	4.85	27
Spain	28	4.77	28
Czech Republic	29	4.74	29
Tunisia	30	4.71	37
Barbados	31	4.70	—
United Arab Emirates	32	4.66	32
Slovenia	33	4.64	30
Portugal	34	4.60	31
Thailand	35	4.58	33
Latvia	36	4.57	39
Slovak Republic	37	4.55	36
Qatar	38	4.55	46
Malta	39	4.54	44
Lithuania	40	4.53	34
Hungary	41	4.52	35
Italy	42	4.46	38
India	43	4.44	45
Kuwait	44	4.41	49
South Africa	45	4.36	40
Cyprus	46	4.36	41
Greece	47	4.33	47
Poland	48	4.30	43
Bahrain	49	4.28	50
Indonesia	50	4.26	69
Croatia	51	4.26	64
Jordan	52	4.25	42
Costa Rica	53	4.25	56
China	54	4.24	48
Mauritius	55	4.20	55
Kazakhstan	56	4.19	51
Panama	57	4.18	65
Mexico	58	4.18	59
Turkey	59	4.14	71
Jamaica	60	4.10	63
El Salvador	61	4.09	60
Russian Federation	62	4.08	53
Egypt	63	4.07	52
Azerbaijan	64	4.06	62
Colombia	65	4.04	58
Brazil	66	4.03	57
Trinidad and Tobago	67	4.03	66
Romania	68	4.02	67
Argentina	69	4.01	54
Morocco	70	4.01	76
Philippines	71	4.00	73
Bulgaria	72	3.96	61
Uruguay	73	3.96	70
Peru	74	3.94	77
Guatemala	75	3.91	95
Algeria	76	3.90	82
Vietnam	77	3.89	74
Ukraine	78	3.89	68
Sri Lanka	79	3.87	80
Macedonia, FYR	80	3.86	75
Botswana	81	3.79	72
Armenia	82	3.75	81
Dominican Republic	83	3.75	91
Namibia	84	3.74	79
Georgia	85	3.73	86
Moldova	86	3.71	89
Serbia and Montenegro	87	3.69	85
Venezuela	88	3.69	84
Bosnia and Herzegovina	89	3.67	88
Ecuador	90	3.67	87
Pakistan	91	3.66	94
Mongolia	92	3.60	90
Honduras	93	3.58	97
Kenya	94	3.57	93
Nicaragua	95	3.52	96
Tajikistan	96	3.50	92
Bolivia	97	3.46	101
Albania	98	3.46	100
Bangladesh	99	3.46	98
Suriname	100	3.45	—
Nigeria	101	3.45	83
Gambia	102	3.43	109
Cambodia	103	3.39	111
Tanzania	104	3.39	105
Benin	105	3.37	106
Paraguay	106	3.33	102
Kyrgyz Republic	107	3.31	104
Cameroon	108	3.30	99
Madagascar	109	3.27	107
Nepal	110	3.26	—
Guyana	111	3.24	108
Lesotho	112	3.22	—
Uganda	113	3.19	103
Mauritania	114	3.17	—
Zambia	115	3.16	—
Burkina Faso	116	3.07	—
Malawi	117	3.07	114
Mali	118	3.02	115
Zimbabwe	119	3.01	110
Ethiopia	120	2.99	116
Mozambique	121	2.94	112
Timor-Leste	122	2.90	113
Chad	123	2.61	117
Burundi	124	2.59	—
Angola	125	2.50	—

(cont'd.)

Table 2: Global Competitiveness Index: Basic requirements

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

(cont'd.)

Table 2: Global Competitiveness Index: Basic requirements *(cont'd.)*

	Basic requirements		1st pillar: Institutions		2nd pillar: Infrastructure		3rd pillar: Macroeconomy		4th pillar: Health and primary education	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Latvia	41	4.90	50	4.07	39	4.33	34	4.93	79	6.27
Lesotho	103	3.68	86	3.40	119	1.99	52	4.64	109	4.69
Lithuania	45	4.80	59	3.86	44	4.14	41	4.82	70	6.37
Luxembourg	10	5.73	14	5.45	15	5.63	19	5.28	46	6.56
Macedonia, FYR	70	4.37	103	3.15	82	2.83	30	5.03	54	6.47
Madagascar	110	3.56	92	3.28	116	2.03	115	3.39	100	5.53
Malawi	117	3.26	63	3.78	115	2.06	124	2.31	106	4.89
Malaysia	24	5.44	18	5.12	23	5.09	31	4.97	42	6.58
Mali	120	3.14	70	3.66	112	2.09	113	3.48	122	3.34
Malta	39	4.98	31	4.59	37	4.37	76	4.26	32	6.69
Mauritania	114	3.40	64	3.77	111	2.09	120	2.82	105	4.91
Mauritius	49	4.70	44	4.26	42	4.17	104	3.79	44	6.58
Mexico	53	4.61	69	3.68	64	3.41	54	4.63	31	6.71
Moldova	88	4.09	101	3.18	85	2.77	67	4.41	92	6.01
Mongolia	97	3.91	105	3.13	106	2.24	60	4.46	95	5.82
Morocco	65	4.44	57	3.87	59	3.57	78	4.24	87	6.07
Mozambique	119	3.21	107	3.09	99	2.41	112	3.50	117	3.85
Namibia	69	4.40	49	4.07	43	4.15	43	4.79	111	4.58
Nepal	106	3.65	99	3.20	122	1.83	59	4.47	102	5.09
Netherlands	8	5.94	9	5.60	8	6.09	22	5.16	13	6.90
New Zealand	16	5.65	8	5.65	27	4.88	25	5.12	6	6.93
Nicaragua	95	3.93	102	3.15	101	2.34	89	4.07	83	6.16
Nigeria	112	3.53	94	3.26	105	2.26	55	4.62	116	3.98
Norway	6	5.96	6	5.71	19	5.41	5	5.80	10	6.93
Pakistan	93	3.96	79	3.51	67	3.36	86	4.19	108	4.79
Panama	46	4.72	65	3.77	46	4.10	75	4.27	27	6.76
Paraguay	102	3.81	122	2.66	109	2.15	90	4.07	68	6.38
Peru	76	4.28	96	3.25	91	2.69	49	4.66	48	6.53
Philippines	84	4.19	88	3.38	88	2.73	62	4.45	82	6.20
Poland	57	4.59	73	3.62	57	3.64	70	4.34	26	6.76
Portugal	34	5.22	28	4.83	26	4.93	80	4.23	16	6.88
Qatar	20	5.51	16	5.16	41	4.22	3	6.03	37	6.64
Romania	83	4.19	87	3.40	77	3.05	97	3.94	69	6.38
Russian Federation	66	4.43	114	2.97	61	3.52	33	4.95	77	6.29
Serbia and Montenegro	99	3.87	97	3.24	90	2.72	106	3.76	97	5.74
Singapore	2	6.13	4	5.90	6	6.16	8	5.67	20	6.81
Slovak Republic	47	4.70	53	4.03	47	4.08	68	4.37	74	6.31
Slovenia	36	5.17	43	4.27	32	4.51	29	5.08	19	6.83
South Africa	58	4.58	36	4.49	49	4.04	46	4.74	103	5.07
Spain	25	5.42	39	4.37	22	5.22	24	5.13	5	6.94
Sri Lanka	80	4.22	82	3.48	76	3.07	110	3.66	36	6.66
Suriname	91	4.06	89	3.37	100	2.36	94	4.01	51	6.50
Sweden	7	5.95	12	5.51	9	5.97	15	5.40	9	6.93
Switzerland	5	6.02	5	5.73	2	6.34	18	5.28	29	6.72
Taiwan, China	21	5.50	32	4.56	16	5.58	27	5.10	25	6.77
Tajikistan	94	3.94	77	3.53	108	2.20	96	3.94	85	6.09
Tanzania	111	3.54	56	3.88	93	2.65	100	3.88	118	3.76
Thailand	38	4.98	40	4.37	38	4.36	28	5.10	84	6.09
Timor-Leste	116	3.27	119	2.90	124	1.66	82	4.22	114	4.31
Trinidad and Tobago	63	4.49	85	3.41	70	3.29	38	4.88	64	6.39
Tunisia	31	5.27	19	5.09	36	4.39	37	4.91	33	6.69
Turkey	72	4.34	51	4.05	63	3.46	111	3.58	78	6.28
Uganda	118	3.22	100	3.18	118	1.99	66	4.42	123	3.29
Ukraine	86	4.15	104	3.14	69	3.30	74	4.27	94	5.88
United Arab Emirates	26	5.41	20	5.05	25	4.99	4	5.92	99	5.67
United Kingdom	14	5.67	15	5.38	14	5.74	48	4.67	14	6.89
United States	27	5.41	27	4.84	12	5.82	69	4.37	40	6.60
Uruguay	61	4.51	42	4.29	58	3.59	109	3.73	59	6.41
Venezuela	85	4.19	125	2.38	84	2.78	26	5.11	53	6.48
Vietnam	71	4.37	74	3.62	83	2.79	53	4.63	56	6.43
Zambia	113	3.43	67	3.72	87	2.75	119	3.07	115	4.17
Zimbabwe	122	2.96	120	2.88	98	2.44	125	2.20	113	4.32

Table 3: Global Competitiveness Index: Efficiency enhancers

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

(cont'd.)

Table 3: Global Competitiveness Index: Efficiency enhancers *(cont'd.)*

	Efficiency enhancers		5th pillar: Higher education and training		6th pillar: Market efficiency		7th pillar: Technological readiness	
Country/Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Latvia	36	4.48	28	5.01	40	4.44	43	3.98
Lesotho	119	2.80	115	2.52	119	3.40	110	2.48
Lithuania	38	4.44	29	4.97	45	4.35	42	3.99
Luxembourg	24	5.00	45	4.42	18	5.11	9	5.47
Macedonia, FYR	80	3.47	66	3.96	91	3.74	91	2.71
Madagascar	112	2.92	113	2.55	103	3.62	99	2.58
Malawi	116	2.87	119	2.46	88	3.77	118	2.37
Malaysia	26	4.89	32	4.80	9	5.24	28	4.64
Mali	118	2.83	118	2.48	102	3.62	117	2.38
Malta	33	4.57	47	4.36	46	4.35	22	5.00
Mauritania	111	2.94	121	2.33	101	3.62	84	2.86
Mauritius	61	3.86	68	3.94	67	4.11	54	3.55
Mexico	59	3.91	71	3.88	48	4.35	56	3.51
Moldova	85	3.38	73	3.78	92	3.73	96	2.62
Mongolia	86	3.37	70	3.89	100	3.62	97	2.60
Morocco	75	3.58	85	3.45	74	4.08	67	3.22
Mozambique	121	2.62	122	2.30	122	3.29	119	2.27
Namibia	90	3.28	105	2.82	79	4.00	78	3.00
Nepal	117	2.87	109	2.63	105	3.58	116	2.39
Netherlands	9	5.45	8	5.67	12	5.23	11	5.45
New Zealand	21	5.15	22	5.33	15	5.17	23	4.94
Nicaragua	95	3.15	93	3.23	98	3.65	98	2.59
Nigeria	89	3.31	100	3.04	70	4.10	87	2.79
Norway	13	5.38	9	5.64	16	5.16	15	5.32
Pakistan	91	3.27	104	2.82	54	4.23	89	2.77
Panama	62	3.86	74	3.75	42	4.41	59	3.41
Paraguay	115	2.89	102	2.93	121	3.33	115	2.40
Peru	67	3.70	72	3.79	66	4.12	69	3.21
Philippines	63	3.85	63	4.02	57	4.21	61	3.32
Poland	48	4.17	33	4.79	64	4.16	51	3.56
Portugal	37	4.47	37	4.63	38	4.61	37	4.18
Qatar	39	4.41	46	4.36	30	4.77	39	4.10
Romania	55	3.99	50	4.34	76	4.03	49	3.59
Russian Federation	60	3.91	43	4.44	60	4.20	74	3.10
Serbia and Montenegro	72	3.63	61	4.09	97	3.66	73	3.16
Singapore	3	5.63	10	5.59	4	5.62	2	5.69
Slovak Republic	34	4.56	38	4.52	34	4.66	30	4.50
Slovenia	30	4.58	26	5.07	63	4.17	29	4.51
South Africa	46	4.19	56	4.17	33	4.67	45	3.72
Spain	28	4.62	31	4.86	36	4.63	33	4.38
Sri Lanka	79	3.51	81	3.56	71	4.10	83	2.87
Suriname	107	3.01	99	3.08	117	3.41	107	2.53
Sweden	2	5.65	3	5.85	19	5.11	1	6.01
Switzerland	5	5.59	6	5.77	5	5.44	5	5.57
Taiwan, China	14	5.36	7	5.67	22	5.07	14	5.32
Tajikistan	103	3.07	98	3.09	108	3.56	102	2.57
Tanzania	94	3.16	112	2.56	75	4.07	82	2.87
Thailand	43	4.29	42	4.44	31	4.76	48	3.67
Timor-Leste	122	2.57	111	2.62	125	2.95	123	2.15
Trinidad and Tobago	64	3.82	65	3.97	69	4.11	60	3.40
Tunisia	42	4.31	36	4.72	35	4.65	53	3.56
Turkey	54	4.02	57	4.15	47	4.35	52	3.56
Uganda	98	3.12	107	2.78	84	3.90	94	2.67
Ukraine	69	3.68	48	4.35	80	3.96	90	2.71
United Arab Emirates	35	4.55	58	4.13	23	5.05	31	4.47
United Kingdom	7	5.59	11	5.57	3	5.63	6	5.56
United States	1	5.66	5	5.82	2	5.67	8	5.49
Uruguay	73	3.63	55	4.19	116	3.42	63	3.27
Venezuela	84	3.40	78	3.63	110	3.53	77	3.02
Vietnam	83	3.45	90	3.39	73	4.10	85	2.85
Zambia	106	3.01	117	2.48	85	3.87	93	2.67
Zimbabwe	104	3.02	96	3.10	113	3.48	109	2.48

Table 4: Global Competitiveness Index: Innovation factors

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

(cont'd.)

Table 4: Global Competitiveness Index: Innovation factors *(cont'd.)*

	Innovation factors		8th pillar: Business sophistication		9th pillar: Innovation	
Country/Economy	Rank	Score	Rank	Score	Rank	Score
Latvia	58	3.74	54	4.28	66	3.19
Lesotho	120	2.59	122	2.80	117	2.37
Lithuania	44	3.96	41	4.56	50	3.35
Luxembourg	23	4.81	21	5.27	23	4.36
Macedonia, FYR	87	3.24	88	3.50	86	2.98
Madagascar	89	3.23	99	3.39	77	3.07
Malawi	109	2.93	113	3.16	103	2.70
Malaysia	22	4.91	20	5.29	21	4.53
Mali	94	3.17	107	3.29	80	3.04
Malta	53	3.79	51	4.32	62	3.26
Mauritania	105	2.98	102	3.36	108	2.60
Mauritius	47	3.84	44	4.44	65	3.23
Mexico	52	3.80	52	4.30	58	3.29
Moldova	98	3.09	93	3.46	100	2.72
Mongolia	110	2.92	118	2.98	94	2.86
Morocco	72	3.54	78	3.82	61	3.26
Mozambique	115	2.86	114	3.13	110	2.58
Namibia	86	3.25	83	3.60	88	2.91
Nepal	111	2.90	108	3.26	112	2.54
Netherlands	11	5.35	7	5.80	11	4.90
New Zealand	25	4.65	26	5.06	25	4.23
Nicaragua	107	2.94	109	3.23	106	2.64
Nigeria	69	3.60	74	3.87	52	3.33
Norway	21	4.95	19	5.30	18	4.59
Pakistan	60	3.66	66	4.05	60	3.27
Panama	62	3.64	53	4.29	85	2.99
Paraguay	117	2.68	112	3.16	123	2.20
Peru	68	3.61	47	4.35	92	2.86
Philippines	66	3.63	59	4.20	79	3.05
Poland	51	3.80	63	4.13	44	3.47
Portugal	37	4.14	43	4.47	32	3.81
Qatar	55	3.78	69	4.04	41	3.51
Romania	73	3.52	73	3.89	68	3.14
Russian Federation	71	3.55	77	3.83	59	3.28
Serbia and Montenegro	83	3.27	94	3.44	71	3.11
Singapore	15	5.11	23	5.17	9	5.04
Slovak Republic	43	3.96	45	4.41	42	3.51
Slovenia	34	4.18	36	4.64	34	3.71
South Africa	29	4.35	32	4.79	29	3.92
Spain	30	4.34	27	5.00	35	3.68
Sri Lanka	67	3.61	71	3.90	53	3.32
Suriname	114	2.86	111	3.18	113	2.54
Sweden	5	5.66	5	5.87	6	5.44
Switzerland	2	5.89	3	6.06	3	5.72
Taiwan, China	9	5.38	15	5.45	8	5.31
Tajikistan	103	3.02	110	3.19	95	2.85
Tanzania	76	3.49	81	3.68	56	3.30
Thailand	36	4.15	40	4.57	33	3.74
Timor-Leste	125	2.36	124	2.58	124	2.14
Trinidad and Tobago	63	3.63	64	4.10	67	3.17
Tunisia	28	4.42	31	4.80	27	4.05
Turkey	42	3.96	39	4.58	51	3.35
Uganda	82	3.30	90	3.49	72	3.11
Ukraine	78	3.47	76	3.84	73	3.11
United Arab Emirates	40	4.08	37	4.63	40	3.52
United Kingdom	10	5.36	6	5.82	12	4.89
United States	4	5.75	8	5.78	2	5.72
Uruguay	80	3.41	80	3.71	74	3.10
Venezuela	96	3.14	91	3.48	96	2.80
Vietnam	81	3.32	86	3.55	75	3.10
Zambia	124	2.43	125	2.51	118	2.35
Zimbabwe	92	3.18	89	3.50	93	2.86

As in previous years, Venezuela's overall performance continues to deteriorate, reflecting a sharp deterioration in the quality of Venezuelan institutions, especially in combating corruption, undue influence in decision-making, and in reducing government intervention. For all the talk about the social dimension of the government's "benign" revolution, school enrolment rates are either mediocre or poor, with Venezuela ranking 85, just behind Vietnam, Suriname, and China at the secondary school level. Venezuela's infant mortality rate of 16 per 1,000 live births is on a par with Albania, and actually higher than that of Russia or the Ukraine, two countries still recovering from decades of public health neglect.

The competitiveness landscape in the Middle East and North African region has generally seen an improvement since last year's *Report*. Among the larger economies, Algeria and Morocco moved up six places each, to ranks 76 and 70, respectively, while Tunisia, the most competitive economy of the region, reached rank 30, up seven places from last year, closely followed by the United Arab Emirates at rank 32. The smaller Gulf States also did well: Kuwait was up five places to rank 44, Qatar leaped eight places to rank 38 and Bahrain achieved rank 49. Israel also saw a notable improvement, moving up eight places to rank 15. Only Egypt (rank 63) and Jordan (rank 52) lost significant ground, dropping ten and nine ranks respectively.

Although sub-Saharan Africa has experienced high growth over the past few years, the results of the Global Competitiveness Index suggest that this trend may not be sustainable. In terms of competitiveness, the region lags far behind the rest of the world. Out of the 24 countries from Sub-Saharan Africa included in this year's sample, 19 rank among the 25 weakest performers occupying rank 100 or below. The seven newcomers to the Report from the region (Angola, Burkina Faso, Burundi, Cameroon, Lesotho, Mauritania, and Zambia) are no exception. All rank below 100 and suffer from a weak performance in most of the nine pillars. Only a few countries are taking advantage of the global boom in commodity prices to build a strong institutional basis for long-term growth.

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

Nigeria shows a very different picture. Weak and deteriorating institutions, including a serious security problem, lower scores in the areas of infrastructure and basic health and education, and a very significant change for the worse in macroeconomic management have depressed the country's rank to 101, from 83 last year. Despite its huge revenues from record high oil prices, the large majority of the population remains very poor and without access to basic healthcare and education. Botswana has been relatively successful, ranking 81st, the third best performance in sub-Saharan Africa after South Africa and Mauritius (55th). The government succeeded in using its wealth from key natural resources to boost the country's growth rate. Key to Botswana's success were reliable public institutions and the country is known to have one of the lowest levels of corruption in Africa.

The Business Competitiveness Index

Competitiveness finds its ultimate expression in the prosperity that countries can sustain over time. Prosperity is sustainable, if it is based on the productivity companies can reach given the conditions they face in an economy. While most discussion of competitiveness remains focused on the macroeconomic, political, legal, and social circumstances that underpin a successful economy, progress in these areas is necessary but not sufficient. Reflecting this view, the Business Competitiveness Index (BCI) ranks countries by their microeconomic competitiveness, identifies competitive strengths and weaknesses in terms of countries' business environment conditions and company operations and strategies, and provides an assessment of the sustainability of countries' current levels of prosperity.

This year's BCI rankings, calculated for 121 countries, are shown in Table 5. The first column shows the overall rankings, while the second two columns show the rankings in each of the two subindexes: company operations and strategy and the quality of the national business environment. As in previous years, the authors estimate that the BCI explains more than 80 percent of the variation of GDP per capita across the wide sample of countries covered, a confirmation of the critical importance of microeconomic factors for prosperity.

The United States remains in the leading position in competitiveness, ahead of Germany and Finland. The United States' strength is greatest in the business environment, including domestic rivalry (rank 1 on "intensity of local competition" and "effectiveness of antitrust policy"), financial markets (rank 1 on "venture capital availability," "local equity market access," and "financial market sophistication"), and innovative capacity (rank 1 on "university/industry research collaboration," "company R&D spending," "local availability of specialized research and training services," and "quality of scientific research institutions").

High-income nations improving their rankings the most include Hong Kong (up 7 ranks after a decline last year), registering strong improvements in management education, the efficacy of government boards, and local availability of process machinery; and Norway, (up 5 ranks) benefiting from increasing intensity of local competition, the availability of venture capital, and efficiency of the

Table 5: The Business Competitiveness Index

Country/Economy	BCI ranking	Quality of the national business environment ranking	Company operations and strategy ranking
United States	1	1	1
Germany	2	2	2
Finland	3	3	8
Switzerland	4	4	4
Denmark	5	6	6
Netherlands	6	5	7
Sweden	7	8	3
United Kingdom	8	7	9
Japan	9	9	5
Hong Kong SAR	10	10	12
Singapore	11	11	21
Austria	12	14	10
Iceland	13	12	19
Norway	14	13	20
Canada	15	16	18
France	16	18	11
Belgium	17	17	13
Australia	18	15	23
Israel	19	19	15
Malaysia	20	20	14
Taiwan, China	21	22	16
Ireland	22	23	17
New Zealand	23	21	24
Estonia	24	24	35
Korea, Rep.	25	29	22
Tunisia	26	25	33
India	27	27	25
Portugal	28	26	40
Chile	29	28	29
Spain	30	31	31
United Arab Emirates	31	30	39
Czech Republic	32	32	28
South Africa	33	34	27
Qatar	34	33	44
Indonesia	35	38	26
Slovenia	36	36	34
Thailand	37	37	30
Italy	38	42	32
Hungary	39	35	43
Slovak Republic	40	39	45
Malta	41	40	63
Barbados	42	41	60
Lithuania	43	45	37
Kuwait	44	44	59
Cyprus	45	43	67
Turkey	46	46	41
Latvia	47	48	47
Mauritius	48	49	46
Greece	49	47	53
Costa Rica	50	52	36
Bahrain*	51	50	64
Jordan	52	51	70
Poland	53	53	49
Jamaica	54	55	52
Brazil	55	58	38
Croatia	56	54	56
Mexico	57	56	42
Panama	58	57	58
Colombia	59	59	54
El Salvador	60	60	61
Guatemala	61	66	50
Uruguay	62	61	71
Trinidad and Tobago	63	64	65
China	64	65	69
Sri Lanka	65	68	68
Morocco*	66	62	80
Pakistan	67	67	72
Kenya	68	72	57
Botswana	69	63	86
Kazakhstan	70	70	74
Peru	71	75	51
Philippines	72	76	48
Tanzania	73	71	75
Romania	74	73	73
Namibia	75	69	83
Egypt	76	74	76
Azerbaijan*	77	78	66
Argentina	78	79	62
Russian Federation	79	77	78
Nigeria*	80	84	55
Ukraine	81	80	82
Vietnam	82	83	77
Bulgaria	83	81	95
Dominican Republic	84	86	79
Algeria	85	82	112
Serbia and Montenegro	86	85	110
Macedonia, FYR	87	87	90
Uganda*	88	90	87
Burkina Faso*	89	88	98
Moldova	90	91	91
Mali*	91	89	100
Gambia	92	92	85
Venezuela	93	94	81
Armenia	94	93	101
Benin	95	95	94
Bosnia and Herzegovina	96	96	107
Madagascar	97	99	99
Tajikistan*	98	97	108
Mongolia	99	98	104
Georgia	100	101	97
Mauritania*	101	102	88
Nicaragua	102	100	109
Zimbabwe	103	104	84
Malawi	104	103	93
Ecuador	105	105	89
Honduras	106	106	92
Cambodia	107	107	96
Bangladesh	108	110	105
Suriname	109	108	115
Mozambique	110	111	103
Nepal	111	113	106
Kyrgyz Republic	112	112	114
Cameroon	113	114	102
Guyana	114	115	111
Lesotho	115	116	116
Zambia	116	109	123
Bolivia	117	117	120
Ethiopia	118	118	121
Albania	119	120	113
Paraguay	120	119	118
Chad*	121	121	124

(cont'd.)

Note: *Survey data for these countries have high within-country variance; until the reliability of survey responses improves with future educational efforts and improved sampling in these countries, their rankings should be interpreted with caution.

legal framework. High-income economies falling in the rankings include Cyprus, the Czech Republic, Taiwan, and France. France (down 6 ranks), failed to maintain last year's progress, driven especially by weaker assessments of the ease of access to loans, university/industry research collaboration, and the quality of public schools.

Middle-income nations improving their competitiveness ranking include Guatemala, Indonesia, the Dominican Republic, and Morocco. Indonesia (up 24 ranks), registered a major rebound after the large drop last year following concerns about the effectiveness of the new government. This year's gains were driven by easier access to loans, decreased power of business groups, and more effective anti-trust policy. Middle-income countries falling in competitiveness rank include Argentina, Botswana, the Ukraine, China, Jordan, and Poland. Argentina (down 15 ranks), Botswana (down 13 ranks), and Poland (down 8 ranks) all fell back after gains last year proved unsustainable. Argentina was dragged down by worsening local supplier quality and quantity and increasing centralization of economic policy-making.

Among low-income countries, China (down 9 ranks) continues the downward trend beginning in 2002. This year's decline was driven especially by higher levels of corruption, weaker assessment of buyer sophistication, and concerns about labor relations. Euphoria about China is moderating as the realities of its competitiveness become more apparent. Among other low-income countries, Benin (up 7 ranks), Kenya (up 6 ranks), and Tanzania (up 6 ranks) made the largest improvements. Malawi (down 18 ranks), Zimbabwe (down 15 ranks), Cameroon (down 10 ranks), and Mozambique (down 10 ranks) experienced the largest drops among low-income countries. Zimbabwe's political problems seem increasingly to be feeding through to the microeconomic foundations of its economy.

This year the chapter includes a new analysis of the relationship between the productivity attainable in a country – measured by its BCI score – and the prevailing wage levels. The analysis on a sub sample of 42 countries with comparable data confirms that competitiveness has a major impact on sustainable wage levels. Many western European countries register actual wages above the level justified by their competitiveness, a cause for concern. Five Asian countries and the Baltic Tigers instead report wages below the level indicated by their competitiveness, explaining why these countries are widely seen as attractive locations to do business. The United States and Japan are notable as high-wage economies that still provide good value given their competitiveness.

The chapter also includes a new section ranking countries on their dynamism in upgrading competitiveness. Competitiveness is a dynamic concept where progress depends on continuous improvements in those dimensions of company sophistication and business environment quality that matter most given a country's current stage of development. Among low-income countries, India, followed by Pakistan, registers the highest rate of dynamism, while Vietnam and Malawi lost ground. Among middle-income countries, Malaysia and Turkey registered the highest rate of dynamism. Among high-income countries, Norway is a surprising leader in dynamism while Italy has lost ground; Finland, and to a smaller degree Sweden, have also moved backwards.

Finally, the chapter provides an analysis of contextual factors. Political stability, location—a prosperous neighborhood and a beneficial geography with access to trade routes—, and natural resource wealth help to explain why countries' actual prosperity can deviate from the level predicted by their competitiveness. Overall, high-income countries benefit from a better context than middle- and especially low-income countries.

The *Report* also includes specific profiles for the 125 countries covered, outlining the index rankings for each, as well as their relative competitive advantages and disadvantages. In addition to the country profiles, detailed data tables give an account of country rankings on the variables utilized to compute the indexes, as well as others. Guidelines on how to read the country profiles and data tables are included at the end of the Report, along with technical notes on data sources, and the full definition of certain variables.

Selected Issues of Competitiveness

As in previous *Reports*, this year's edition features several outstanding contributions from eminent scholars and experts, dealing with specific competitiveness issues or broader development themes. All are concerned with the conditions for sustained growth and development and represent a very insightful reading for policymakers, business and the general public. Each addresses a different aspect of competitiveness, and provides in-depth analysis of some of the central questions at the heart of the work we do at the World Economic Forum, on such topics as the role of good governance in fostering an attractive investment climate, and the importance for the development process of what professor Huang calls the soft infrastructure of growth. These special studies are highly business relevant, and complement the competitiveness indexes, country profiles and data tables elsewhere in the *Report*.

Global imbalances

Richard Cooper and Ken Rogoff present two contrasting interpretations of the threat global imbalances represent for global prosperity. For Cooper, the US current account deficit is a natural feature of a globalized economy, reflecting matching surpluses in countries with aging, high-saving populations, shrinking labor markets, declining

investment, and low returns. Excess savings in some of these large countries, such as, Germany and Japan, manifest themselves in budget deficits and current account surpluses at home and investment abroad. The United States, the world's center of technological innovation, with extremely well developed financial markets, produces secure, high-yielding financial assets that attract a reasonable share of global world savings and foreign official investment, equivalent to the current account deficit, which can thus be sustained for many years. What is unsustainable is the present growth of the US deficit as a share of GDP. Maintaining a constant share deficit may require some depreciation of the dollar and a reduction in the trade deficit. It will also require greater effort on the part of the United States to reduce fiscal imbalances.

For Rogoff, the US deficit represents government borrowing and no longer supports high real investment. The United States is presently consuming 70 percent of the world's net savings. Historically, current account deficits have tended to collapse at relatively low levels. A housing slump would slow the US economy, while other countries are growing, reducing the US deficit. The overvalued dollar could drop up to 40 percent on a trade-weighted basis, reducing global output and precipitating a financial market crisis, soaring interest rates, with a concomitant severe impact on Europe and Japan. Budget deficits are ballooning, with rising costs for the elderly and for security. High government debt to GDP ratios and rising interest rates could precipitate emerging market debt crises and defaults. Accumulating global imbalances are now a substantial risk to the world economy, which only multilateral policy consultations could reduce. There has to be a massive appreciation in emerging Asia, and an immediate effort to balance the US budget.

The fight against corruption

In her thoughtful paper "Looking Under Every Stone: Transparency International and the Fight Against Corruption," Juanita Olaya provides a compelling account of the history and achievements of Transparency International (TI) in fighting corruption in the world and of the challenges remaining to be addressed.

The author begins by briefly describing the pathology of corruption—the abuse of entrusted power for private gains—highlighting its typologies and degree in both private and public sectors, and in developing and developed countries. Corruption has been estimated by the World Bank to account for as much as 3 percent of global GDP (2004). Olaya describes the negative impact of corruption on many of the factors enabling socio-economic development, significantly slowing the growth of corrupt countries.

In view of these facts, TI was founded in 1993 to deal with systematic change and prevention of corruption at the national and international level. The paper provides a comprehensive picture of TI's projects and accomplishments up to the present, the most notable of which was its success in inserting the fight against corruption into national and global agendas and raising awareness of the important role to be played in combating corruption by both the private sector and civil society.

Notwithstanding the signal achievements of TI, Ms. Olaya argues that corruption remains endemic, due to its endogeneity and varied typologies, the slow pace of institutional change, and the limited application and enforcement of anti-corruption legislation. Among the challenges in the years to come she cites the need to move from regulation and rule-making to actual implementation, to ensure that appropriate checks are in place in international transactions, and to set up cooperative and information-sharing mechanisms among the many stakeholders in the fight against corruption.

Economic growth, employment, and competitiveness

The paper "Economic Growth, Employment, Competitiveness, and Labor Market Institutions," by Peter Auer and Rizwanul Islam, of the International Labour Organization, illustrates how high employment intensity of growth can help tackle unemployment and contribute to poverty reduction. The authors make a strong case for the vital importance of understanding the link between output and employment growth and its relevance to economic policy-making.

The underlying identity that links these concepts states that, in general, the rate of employment growth is inversely related to labor productivity growth. However, the paper argues that although there may be a trade-off between employment and productivity in the short-run, employment-intensive growth does not necessarily compromise productivity, which is essential for maintaining competitiveness.

Using a large set of cross-country comparable data, the paper finds that over the last decade there has been an increasing global trend toward economic growth without significant employment growth. It also shows that there can be a considerable amount of variation in the degree of employment intensity between various sectors and subsectors of an economy. Thus, the overall employment intensity can actually increase if the labor-intensive sectors grow at higher rates.

The paper also argues that labor market flexibility is necessary in order to adapt to changing market circumstances, and supports the employment intensity of growth when it leads to efficient reallocation of labor. But, they argue, too much flexibility might be detrimental to worker security and also productivity. Because employment protection legislation and tenure support investment in training and increases in productivity, they also have positive effects. Taken together, the authors suggest that, rather

than flexibility of the labor market alone, it is preferable to have optimal combinations of labor market flexibility, employment stability, and security, in order to have good labor market performance and a robust growth-employment link.

A competitiveness perspective on China and India

In his insightful contribution "Are China and India Performing Well Relative to their Competitive Potential?" Yasheng Huang compares the development paths of China and India and questions the current perception that China, due to its overwhelming success, should serve as a model for India. He makes the point that by focusing on improving governance and fostering private sector development India created a better base for future growth than the Chinese investment-led approach.

In support of his argument, Huang looks at those factors which cast doubt on the widely held perception of China's relative success and explains why its performance deteriorated, relative to that of India, in the late 1990s. In the 1990s, India achieved levels of growth similar to those of China despite the latter's advantages of geographical location, a better educated and healthier population, and a more mobile social system. Moreover, China performs poorly on a number of microeconomic indicators, including those contained in the Business Competitiveness Index published in this *Report*, which show that the health of China's enterprises has been declining since the late 1990s while India's business sector has been thriving and achieving significantly higher productivity growth over the same period. China's progress in reform stalled after government-led investment and spending took the pressure off reform, while India continued to focus on productivity-enhancing measures.

Huang dismantles another argument for China's relative supremacy, namely the significantly higher FDI inflows into China. Until the mid 1990s, FDI inflows into China mainly came from diaspora Chinese and were not grounded in better growth prospects. Today, India's Western FDI inflows surpass what China has received at a similar stage by a large margin, and have a greater technological component. He contends that "soft infrastructure" factors which matter for economic growth in the long term—such as the quality of the financial system, good political and corporate governance, and the rule of law—are less developed in China than in India. This is illustrated by the financial sector. While India's companies face financing constraints similar to those in more advanced emerging markets such as Malaysia or Thailand, Chinese companies operate under severe financing constraints similar to those in such former transition economies as Russia and Romania. Huang believes that hard infrastructure, widely perceived as one of China's advantages over India contributed less to Chinese development than it might appear.

2005 - 2006

Executive Summary

AUGUSTO LOPEZ-CLAROS, World Economic Forum

The World Economic Forum's definition of competitiveness goes beyond notions of exchange rate competitiveness, and links the concept to productivity. Thus, competitiveness is defined as that collection of factors, policies and institutions which determine the level of productivity of a country and that, therefore, determine the level of prosperity that can be attained by an economy. However, productivity is also the key driver of the rates of return on investment, which, in turn, determine the aggregate growth rates of the economy. Thus, a more competitive economy is one that is likely to grow faster over the medium to long term.

Much of the work at the World Economic Forum in the area of competitiveness is aimed at highlighting the factors, policies, and institutions that determine the sharply different growth experiences of over 100 economies. What explains the differences in the evolution of per capita income in, say, Argentina, Ghana, and Taiwan over the last five decades?

Perhaps few questions are more pertinent in the area of comparative development. There are at least three key insights that emerge from the Forum's work in this field: first, that the significant factors are many, and wide-ranging. The quality of the macroeconomic environment is certainly crucial: how many countries can we point to which have shown sustained growth while *mismanaging* the public finances or pursuing misguided or inconsistent exchange rate policies?

But cautious management of the macroeconomy is not the only concern of the public sector. One must also ask: Does the government maintain an arm's-length relationship with respect to the private sector, or does it play favorites? Does the judicial system allow for the reasonable, expeditious, transparent, and low-cost settlement of disputes, or is justice for sale? Is tax revenue channeled back into the economy through productivity-enhancing investments in human capital and infrastructure, or is the money wasted on inefficient projects, or, what is worse, mostly stolen? Is the regulatory environment hampered by unnecessary layers of bureaucracy and red tape, reducing competitiveness and raising the costs of transactions and operations? How efficiently are new technological innovations absorbed, and is attention being paid to constantly upgrading the country's educational system? Does the country engage with the outside world with openness and self confidence, or with fear and ambivalence? What is the role of property rights and institutions?

The answers to the above questions will vary greatly across countries and, not surprisingly, will have an important bearing on whether the economy grows in a predictable and sustained way (e.g., Taiwan), fails to fulfill its potential (e.g., Argentina), or whether it stagnates, and actually suffers a reduction in per capita income (e.g., Ghana).

Second, these factors matter differently for different countries, depending on their stage of development. Management of the public finances in Finland is less of a concern than in India or Turkey, both of which have a long history of fiscal indiscipline. On the one hand, putting many large European countries to shame, Finland is facing the aging of its population by running surpluses now to pay for future pension liabilities. India and Turkey, on the other hand, are running budget deficits, although the latter, it must be said, has made remarkable progress recently in abandoning irresponsible fiscal policies, which resulted in the accumulation of large levels of public debt. In Finland, the pace of technological innovation is absolutely central to the country's future growth prospects. Whether Nokia is able to maintain its technological edge over its Asian rivals is a far more important determinant of the future evolution of per capita income in Finland, than whether there is a slight rise in inflation.

Third, the importance of these factors changes over time, a trend enhanced by the forces of globalization. Inflation—on a downward trend worldwide, and fallen to some of the lowest levels in the post-war period—is not as much of a worry as it used to be in the 1970s and 1980s, when even the United States suffered from double-digit inflation. But, with increasing capital mobility and skittish financial markets, countries that do not manage their public finances well do so at increasing risk, as Argentina found out in late 2001. Education, the acquisition of relevant skills, and the level of training of the labor force have acquired growing importance in recent years, as swift reductions in the costs of transport and communications have made it easier for global corporations to shift production to places in the world which are capable of bringing together the right combination of skills and low labor costs with political and social stability. This has become evident during the past decade in Central and Eastern Europe, whose economies have been growing at twice the average of the rest of Europe.

The Growth Competitiveness Index

The World Economic Forum has been measuring national competitiveness and producing Competitiveness *Reports* for well over two decades. Over the years, the specific methodology used to measure competitiveness has necessarily evolved, as we have taken into account the latest thinking about what drives the underlying productivity, critical to a country's ability to ensure sufficient and rising prosperity for its citizens. Since 2001, our methodology has been based on a model developed for the World Economic Forum by Jeffrey Sachs and John McArthur, called the Growth Competitiveness Index (GCI).

The GCI brings together a number of complementary concepts aimed at providing a quantified framework for measuring competitiveness. In formulating the range of factors that go into explaining the evolution of growth in a country, it identifies "three pillars": the *quality of the macroeconomic environment,* the *state of the country's public institutions,* and, given the importance of technology and innovation, the *level of its technological readiness.* The GCI uses a combination of hard data—e.g., university enrollment rates, inflation performance, the state of the public finances, the level of penetration of new technologies, such as mobile telephones and the Internet—and data drawn from the World Economic Forum's Executive Opinion Survey (Survey). The latter helps to capture concepts for which hard data are typically unavailable, but which are, nevertheless, central to an appropriate understanding of the factors fuelling economic growth. Examples of the latter might include such concepts as judicial independence, the prevalence of institutionalized corruption, or the extent of inefficient government intervention in an economy.

These various pieces are brought together under different subindexes, each capturing a different aspect of the growth process (e.g., the importance of contracts and law, the stability of the macroeconomic environment) and are aggregated to give an overall competitiveness "score." A second concept introduced by Sachs and McArthur is the notion that, while technology matters a great deal, it matters in different ways for different countries, depending on their stage of development. Innovation will be key in Switzerland, but the adoption of foreign technologies and technology transfer may be relatively more important in Chile, a distinction that led them to separate countries into two sets, called *core innovators* and *non-core innovators,* based on the number of US utility patents (patents for invention) per capita registered in the most recent year. Table 1 lists the core innovators, all with at least 15 patents per million population in 2004. A third concept was the idea that the factors which explain a nation's competitiveness will vary in importance across these two sets of countries. So, macroeconomic stability is likely to be a more important factor in Turkey than in Sweden. The exact methodology underlying the construction of this index is described in Chapter 1.1.

The Competitiveness Rankings for 2005

The rankings from this year's GCI are presented in Table 1. Finland maintains its position at the top of the ranking. The country owes its strong showing to one of the most innovative business environments in the world, particularly critical to driving productivity in the country, given its advanced stage of development. This is coupled with a very healthy macroeconomic environment, at a time when many other industrial countries are struggling in this area. The willingness of Finnish governments to run budget

surpluses, so as to be able to meet future social commitments linked to the aging of the population is particularly impressive. This approach to macroeconomic policy highlights a degree of political maturity in Finnish society worthy of emulation. Furthermore, Finland has an institutional environment that is among the world's finest: the business community operates in a climate of respect for the law, unusually low levels of corruption, and an openness and transparency which other countries would do well to study.

The United States is ranked second, its strong performance attributable to its continuing technological supremacy, and a pipeline of innovation second to none in the world. The US has companies that are aggressive in adopting new technologies, and spend heavily on research and development. However, the country's technological prowess is offset by its significantly weaker performance in other areas measured by the index, in particular aspects of the macroeconomic environment. This is not surprising in the context of intensifying international concern regarding macroeconomic imbalances in the country, especially in the area of the public finances.

As has been the case in recent years, the other Nordic countries continue to do very well in the competitiveness rankings. After Finland and the United States, Sweden and Denmark take the next two places in the ranking at 3rd and 4th places, respectively. Iceland and Norway follow closely behind, still among the top ten, at 7th and 9th places, respectively. These countries share a number of characteristics that make them extremely competitive, including very healthy macroeconomic environments and public institutions that are highly transparent and efficient. There is no evidence that relatively high tax rates are preventing these countries from competing effectively in world markets, or from delivering to their respective populations some of the highest standards of living in the world.

The United Kingdom (13th) and Germany (15th) continue to occupy relatively privileged positions in the overall rankings. Both countries have world-class public institutions, although the German business community views the property rights environment in their country and the functioning of their judicial system as being second to none in the world. Both countries have particularly strong scores on such variables as spending on R&D, collaboration between academia and the business community, and a broad range of variables which capture the use of various new technologies. Germany's overall GCI rank would be higher, were it not for the pessimism of its business community about the short-term economic growth outlook, and the presence of a large public sector deficit. Italy's performance (47th) is analyzed in detail in a special box in Chapter 1.1.

Among the ten countries recently acceding to the EU, Estonia leads the pack, at 20th place, ahead of several of the wealthier original EU15 members. Estonia's ranking is impressive, having bridged the gap between the inefficiencies of central planning and competent economic performance in less than 15 years. The worst performer among the accession countries continues to be Poland. However, on a positive note, some progress in Poland's performance is visible, with the country moving up 9 places to 51st since 2004. This is in line with a trend we see among many of the new accession countries, where there is a measured improvement in levels of competitiveness over recent years, likely due in large part to the general benefits of EU membership, and the incentives it provides for a proactive stance on the part of the government in the area of economic reform.

Unlike some other regions, where countries often cluster behind one or two top performers, Asian economies are spread throughout the full range of the index, pointing to their very different levels of development and growth potential. Leading within the region are Asian tigers, notably Taiwan and Singapore, ranked 5th and 6th respectively, several places ahead of the next Asian country covered by the GCI, Japan, ranked 12th. Japan's rank has been adversely affected by the deterioration of its public finances. However, what Japan lacks in fiscal discipline is more than compensated for by the country's impressive technology performance, with extremely high rankings in R&D, firm-level technology absorption, and patent registration, where the scores are second only to the United States, by a small margin.

China and India, 49th and 50th, respectively, ranked much more closely than in previous years. While China dropped three ranks, India moved up five places. The Chinese authorities have been trying to rein in the growth of credit, and the strength of demand has resulted in an acceleration of inflation in 2004. India's improved rank mirrors the country's somewhat higher position in the technology index. The increasing inflows of FDI to skill and technology-intensive sectors observed over the past few years have certainly succeeded in boosting the mood of the business community. Remaining worries in India, however, stem from the slight progress made in fiscal adjustment, the low penetration rates of new technologies and low enrollment rates for higher education. The latter two are also a problem in China. Both countries continue to suffer from institutional weaknesses, which, unless addressed, are likely to slow down their ascension to the top tier of the most competitive economies in the world. Chapter 1.1 features a box providing a detailed analysis of India's situation.

As in previous years, Chile, ranked 23rd, leads the way in Latin America by a wide margin. Indeed, the gap with respect to the next best performer in the region has

widened from 26 places in 2004 to 31 places in 2005, a characteristic not seen in any other region of the world. The country continues to benefit from a combination of remarkably competent macroeconomic management, and public institutions which have achieved EU levels of transparency and efficiency. Indeed, only eight of the 25 EU members have higher ranks on the public institutions subindex.

Mexico has fallen seven places since last year to 55th, ceding its second spot in the regional ranking to Uruguay, while Brazil fell by eight places to 65th place. Both Mexico and Brazil suffered drops in those indicators which capture the quality of their public institutions. In Mexico, the political uncertainties in the run-up to the 2006 presidential election, and the resulting paralysis in policymaking, considerably soured the mood of the business community. In Brazil business confidence may have been adversely affected by a weakening of the ruling party's coalition in the wake of bribery scandals and other events, which have cast the underlying strength of the country's public institutions in an unfavorable light.

Venezuela, which had a ranking of 62 in 2001, continues its precipitous decline to the bottom of the rankings, falling another four places to 89th position overall this year. Venezuela's performance is quite extraordinary from a number of perspectives: notwithstanding huge terms of trade gains from high oil prices, the government has managed to run budget deficits for a number of years, suggesting massive waste. It has one of the worst inflation performances in the world (115th) and has the distinction of having *the* worst property rights climate in the world (117th).

Within the Middle East and North Africa region, the small Gulf States perform quite well in the overall GCI rankings, including two new entrants to the index from the region this year: Qatar and Kuwait. The United Arab Emirates (UAE) and Qatar are ranked 18th and 19th, respectively. These countries are going through a particularly good phase. Terms-of-trade gains have boosted growth rates and reinforced already high levels of confidence in the business community, resulting from ongoing institutional modernization and improvements in macroeconomic management. The authorities have proven reasonably adept at not squandering the gains from higher oil prices, but, rather, are using these resources to reduce debt, to invest, and to save.

While most of the countries of the sub-Saharan African region are not very competitive, the region does have a number of relative success stories, including South Africa (42nd), Botswana (48th), and Mauritius (52nd). Zimbabwe, however, is a particularly sad case, whose quick descent to the bottom of the world's competitiveness rankings reflects the continued deterioration of the institutional climate, including the disappearance of property rights, the corruption of the rule of law, and the implications these and other factors have had for macroeconomic management. The country has the world's worst ranking (117th) for the quality of its macroeconomic environment. Table 2 contains the rankings for the three component indexes of the GCI for the 117 countries covered in this year's *Report*.

The Business Competitiveness Index

The Business Competitiveness Index (BCI) focuses on the underlying *microeconomic* factors which determine economies' current sustainable levels of productivity and competitiveness, thus providing a complementary approach to the forward-looking macroeconomic approach of the GCI described in the section above. The BCI rests on the idea that microeconomic factors are critical for national competitiveness, since wealth is actually created at the level of firms operating in an economy. The BCI specifically measures two areas that are critical to the microeconomic business environment in an economy: the sophistication of company operations and strategy, as well as the quality of the overarching national business environment in which they are operating.

This year's BCI rankings are shown in Table 3. The first column shows the overall rankings, while the second two columns show the rankings in each of the two subindexes: company operations and strategy and the quality of the national business environment.

The United States remains the leader in fundamental competitiveness ahead of Finland, the two countries occupying the number one and two spots since 1998. The United States benefited in 2005 from improvements relative to its peers in telecommunication infrastructure, the quality of electricity supply, and, notably, the quality of the education system.

High-income nations improving their rankings the most include Cyprus (up 8 ranks, with all rank changes referring to a constant sample of countries), based especially on improvements in foreign ownership related to EU accession, the Czech Republic (up 7 ranks), owing to more effective corporate boards, less corruption and bureaucratic red tape, and better availability of scientists and engineers, Austria (up 6 ranks), for improvements in the extent of bureaucratic red tape and several indicators of financial market strengths, and Singapore (up 5 ranks), for improvements in the intensity of local competition and the availability of scientists and engineers.

Advanced countries falling in the rankings include Hong Kong, Sweden, and Italy. Hong Kong (down 9 ranks) lost the ground it gained last year, due to increasing concerns over favoritism by government officials and growing bureaucracy. Sweden (down 8 ranks) dropped, due to concerns over judicial independence, and erosion

Table 1: Growth Competitiveness Index rankings and 2004 comparisons

Country	GCI 2005 Rank	GCI 2005 Score	GCI 2004 Rank
Finland	1	5.94	1
United States	2	5.81	2
Sweden	3	5.65	3
Denmark	4	5.65	5
Taiwan	5	5.58	4
Singapore	6	5.48	7
Iceland	7	5.48	10
Switzerland	8	5.46	8
Norway	9	5.40	6
Australia	10	5.21	14
Netherlands	11	5.21	12
Japan	12	5.18	9
United Kingdom	13	5.11	11
Canada	14	5.10	15
Germany	15	5.10	13
New Zealand	16	5.09	18
Korea, Rep.	17	5.07	29
United Arab Emirates	18	4.99	16
Qatar	19	4.97	—
Estonia	20	4.95	20
Austria	21	4.95	17
Portugal	22	4.91	24
Chile	23	4.91	22
Malaysia	24	4.90	31
Luxembourg	25	4.90	26
Ireland	26	4.86	30
Israel	27	4.84	19
Hong Kong SAR	28	4.83	21
Spain	29	4.80	23
France	30	4.78	27
Belgium	31	4.63	25
Slovenia	32	4.59	33
Kuwait	33	4.58	—
Cyprus	34	4.54	38
Malta	35	4.54	32
Thailand	36	4.50	34
Bahrain	37	4.48	28
Czech Republic	38	4.42	40
Hungary	39	4.38	39
Tunisia	40	4.32	42
Slovak Republic	41	4.31	43
South Africa	42	4.31	41
Lithuania	43	4.30	36
Latvia	44	4.29	44
Jordan	45	4.28	35
Greece	46	4.26	37
Italy	47	4.21	47
Botswana	48	4.21	45
China	49	4.07	46
India	50	4.04	55
Poland	51	4.00	60
Mauritius	52	4.00	49
Egypt	53	3.96	62
Uruguay	54	3.93	54
Mexico	55	3.92	48
El Salvador	56	3.86	53
Colombia	57	3.84	64
Bulgaria	58	3.83	59
Ghana	59	3.82	68
Trinidad and Tobago	60	3.81	51
Kazakhstan	61	3.77	—
Croatia	62	3.74	61
Namibia	63	3.72	52
Costa Rica	64	3.72	50
Brazil	65	3.69	57
Turkey	66	3.68	66
Romania	67	3.67	63
Peru	68	3.66	67
Azerbaijan	69	3.64	—
Jamaica	70	3.64	65
Tanzania	71	3.57	82
Argentina	72	3.56	74
Panama	73	3.55	58
Indonesia	74	3.53	69
Russian Federation	75	3.53	70
Morocco	76	3.49	56
Philippines	77	3.47	76
Algeria	78	3.46	71
Armenia	79	3.44	—
Serbia and Montenegro	80	3.38	89
Vietnam	81	3.37	77
Moldova	82	3.37	—
Pakistan	83	3.33	91
Ukraine	84	3.30	86
Macedonia, FYR	85	3.26	84
Georgia	86	3.25	94
Uganda	87	3.24	79
Nigeria	88	3.23	93
Venezuela	89	3.22	85
Mali	90	3.22	88
Mozambique	91	3.19	92
Kenya	92	3.19	78
Honduras	93	3.18	97
Gambia	94	3.18	75
Bosnia and Herzegovina	95	3.17	81
Mongolia	96	3.16	—
Guatemala	97	3.12	80
Sri Lanka	98	3.10	73
Nicaragua	99	3.08	95
Albania	100	3.07	—
Bolivia	101	3.06	98
Dominican Republic	102	3.05	72
Ecuador	103	3.01	90
Tajikistan	104	3.01	—
Malawi	105	3.00	87
Ethiopia	106	3.00	101
Madagascar	107	2.95	96
East Timor	108	2.93	—
Zimbabwe	109	2.89	99
Bangladesh	110	2.86	102
Cameroon	111	2.84	—
Cambodia	112	2.82	—
Paraguay	113	2.80	100
Benin	114	2.74	—
Guyana	115	2.73	—
Kyrgyz Republic	116	2.62	—
Chad	117	2.37	104

(cont'd.)

Table 2: Growth Competitiveness Index components

Growth Competitiveness Index (GCI)

Country	GCI 2005 Rank	GCI 2005 Score	Country	GCI 2005 Rank	GCI 2005 Score
Finland	1	5.94	Kazakhstan	61	3.77
United States	2	5.81	Croatia	62	3.74
Sweden	3	5.65	Namibia	63	3.72
Denmark	4	5.65	Costa Rica	64	3.72
Taiwan	5	5.58	Brazil	65	3.69
Singapore	6	5.48	Turkey	66	3.68
Iceland	7	5.48	Romania	67	3.67
Switzerland	8	5.46	Peru	68	3.66
Norway	9	5.40	Azerbaijan	69	3.64
Australia	10	5.21	Jamaica	70	3.64
Netherlands	11	5.21	Tanzania	71	3.57
Japan	12	5.18	Argentina	72	3.56
United Kingdom	13	5.11	Panama	73	3.55
Canada	14	5.10	Indonesia	74	3.53
Germany	15	5.10	Russian Federation	75	3.53
New Zealand	16	5.09	Morocco	76	3.49
Korea, Rep.	17	5.07	Philippines	77	3.47
United Arab Emirates	18	4.99	Algeria	78	3.46
Qatar	19	4.97	Armenia	79	3.44
Estonia	20	4.95	Serbia and Montenegro	80	3.38
Austria	21	4.95	Vietnam	81	3.37
Portugal	22	4.91	Moldova	82	3.37
Chile	23	4.91	Pakistan	83	3.33
Malaysia	24	4.90	Ukraine	84	3.30
Luxembourg	25	4.90	Macedonia, FYR	85	3.26
Ireland	26	4.86	Georgia	86	3.25
Israel	27	4.84	Uganda	87	3.24
Hong Kong SAR	28	4.83	Nigeria	88	3.23
Spain	29	4.80	Venezuela	89	3.22
France	30	4.78	Mali	90	3.22
Belgium	31	4.63	Mozambique	91	3.19
Slovenia	32	4.59	Kenya	92	3.19
Kuwait	33	4.58	Honduras	93	3.18
Cyprus	34	4.54	Gambia	94	3.18
Malta	35	4.54	Bosnia and Herzegovina	95	3.17
Thailand	36	4.50	Mongolia	96	3.16
Bahrain	37	4.48	Guatemala	97	3.12
Czech Republic	38	4.42	Sri Lanka	98	3.10
Hungary	39	4.38	Nicaragua	99	3.08
Tunisia	40	4.32	Albania	100	3.07
Slovak Republic	41	4.31	Bolivia	101	3.06
South Africa	42	4.31	Dominican Republic	102	3.05
Lithuania	43	4.30	Ecuador	103	3.01
Latvia	44	4.29	Tajikistan	104	3.01
Jordan	45	4.28	Malawi	105	3.00
Greece	46	4.26	Ethiopia	106	3.00
Italy	47	4.21	Madagascar	107	2.95
Botswana	48	4.21	East Timor	108	2.93
China	49	4.07	Zimbabwe	109	2.89
India	50	4.04	Bangladesh	110	2.86
Poland	51	4.00	Cameroon	111	2.84
Mauritius	52	4.00	Cambodia	112	2.82
Egypt	53	3.96	Paraguay	113	2.80
Uruguay	54	3.93	Benin	114	2.74
Mexico	55	3.92	Guyana	115	2.73
El Salvador	56	3.86	Kyrgyz Republic	116	2.62
Colombia	57	3.84	Chad	117	2.37
Bulgaria	58	3.83			
Ghana	59	3.82			
Trinidad and Tobago	60	3.81			

(cont'd.)

Technology Index

Country	Rank	Score	Country	Rank	Score
United States	1	6.19	Bulgaria	61	3.31
Finland	2	6.02	Trinidad and Tobago	62	3.25
Taiwan	3	5.85	Uruguay	63	3.19
Sweden	4	5.78	China	64	3.18
Denmark	5	5.30	Panama	65	3.17
Switzerland	6	5.29	Indonesia	66	3.13
Korea, Rep.	7	5.26	Dominican Republic	67	3.13
Japan	8	5.24	Serbia and Montenegro	68	3.12
Iceland	9	5.16	Ghana	69	3.11
Singapore	10	4.93	El Salvador	70	3.09
Netherlands	11	4.88	Kenya	71	3.04
Israel	12	4.87	Venezuela	72	3.03
Norway	13	4.87	Russian Federation	73	3.01
Australia	14	4.82	Colombia	74	3.01
Canada	15	4.79	Peru	75	3.01
Germany	16	4.78	Botswana	76	2.99
United Kingdom	17	4.66	Kazakhstan	77	2.99
Estonia	18	4.62	Morocco	78	2.96
New Zealand	19	4.47	Namibia	79	2.95
Portugal	20	4.39	Pakistan	80	2.94
Austria	21	4.35	Mongolia	81	2.93
Czech Republic	22	4.31	Uganda	82	2.93
Malta	23	4.29	Mozambique	83	2.91
France	24	4.26	Georgia	84	2.84
Malaysia	25	4.22	Ukraine	85	2.82
Hong Kong SAR	26	4.21	Tanzania	86	2.81
Spain	27	4.21	Azerbaijan	87	2.79
Belgium	28	4.18	Sri Lanka	88	2.79
Luxembourg	29	4.11	Moldova	89	2.76
Hungary	30	4.08	Nigeria	90	2.74
Ireland	31	4.07	Macedonia, FYR	91	2.73
Slovenia	32	4.07	Vietnam	92	2.72
United Arab Emirates	33	4.04	Albania	93	2.69
Slovak Republic	34	3.99	Armenia	94	2.69
Chile	35	3.93	Honduras	95	2.68
Cyprus	36	3.87	Guatemala	96	2.67
Greece	37	3.85	Gambia	97	2.65
Latvia	38	3.83	Zimbabwe	98	2.62
Poland	39	3.77	Bosnia and Herzegovina	99	2.61
Qatar	40	3.76	Ecuador	100	2.61
Bahrain	41	3.73	Bangladesh	101	2.60
Lithuania	42	3.70	Nicaragua	102	2.52
Thailand	43	3.69	Mali	103	2.52
Italy	44	3.68	Tajikistan	104	2.52
Jamaica	45	3.64	Cambodia	105	2.51
South Africa	46	3.62	Madagascar	106	2.48
Mauritius	47	3.57	Malawi	107	2.46
Kuwait	48	3.56	Bolivia	108	2.42
Romania	49	3.53	East Timor	109	2.42
Brazil	50	3.51	Cameroon	110	2.36
Croatia	51	3.48	Paraguay	111	2.35
Jordan	52	3.46	Guyana	112	2.34
Turkey	53	3.45	Kyrgyz Republic	113	2.34
Philippines	54	3.43	Algeria	114	2.29
India	55	3.42	Ethiopia	115	2.22
Costa Rica	56	3.39	Benin	116	2.09
Mexico	57	3.39	Chad	117	1.80
Egypt	58	3.36			
Argentina	59	3.35			
Tunisia	60	3.35			

(cont'd.)

Table 2: Growth Competitiveness Index components *(cont'd.)*

Public Institutions Index

Country	Rank	Score
New Zealand	1	6.35
Denmark	2	6.35
Iceland	3	6.33
Singapore	4	6.25
Finland	5	6.19
Norway	6	6.13
Luxembourg	7	6.08
Germany	8	6.04
Switzerland	9	6.02
Australia	10	6.01
Austria	11	6.00
United Kingdom	12	5.98
Ireland	13	5.93
Japan	14	5.84
Portugal	15	5.83
Netherlands	16	5.83
Sweden	17	5.82
United States	18	5.77
Qatar	19	5.75
France	20	5.72
Canada	21	5.67
Chile	22	5.58
Hong Kong SAR	23	5.58
United Arab Emirates	24	5.52
Estonia	25	5.51
Taiwan	26	5.47
Cyprus	27	5.44
Belgium	28	5.38
Malaysia	29	5.36
Israel	30	5.35
Jordan	31	5.28
Malta	32	5.23
Uruguay	33	5.19
Hungary	34	5.15
Slovenia	35	5.14
Spain	36	5.13
Kuwait	37	5.11
Bahrain	38	5.10
Botswana	39	5.08
Tunisia	40	5.02
Thailand	41	4.88
Korea, Rep.	42	4.78
Greece	43	4.77
Lithuania	44	4.73
Slovak Republic	45	4.73
Italy	46	4.70
South Africa	47	4.63
Czech Republic	48	4.63
Colombia	49	4.55
Latvia	50	4.55
Ghana	51	4.54
India	52	4.52
Egypt	53	4.46
El Salvador	54	4.45
Mauritius	55	4.41
China	56	4.41
Namibia	57	4.38
Costa Rica	58	4.32
Peru	59	4.27
Tanzania	60	4.25
Turkey	61	4.25
Bulgaria	62	4.23
Moldova	63	4.20
Poland	64	4.14
Jamaica	65	4.14
Armenia	66	4.11
Azerbaijan	67	4.09
Malawi	68	4.08
Serbia and Montenegro	69	4.07
Brazil	70	4.06
Mexico	71	4.03
Mali	72	4.00
Croatia	73	3.99
Argentina	74	3.96
Panama	75	3.90
Kazakhstan	76	3.89
Gambia	77	3.88
Romania	78	3.84
Ethiopia	79	3.79
Zimbabwe	80	3.79
Algeria	81	3.77
Nicaragua	82	3.74
Trinidad and Tobago	83	3.73
Bolivia	84	3.71
Morocco	85	3.69
Bosnia and Herzegovina	86	3.67
Georgia	87	3.65
Honduras	88	3.61
Indonesia	89	3.58
Ukraine	90	3.56
Russian Federation	91	3.55
Mozambique	92	3.54
Mongolia	93	3.53
Kenya	94	3.50
Uganda	95	3.49
Macedonia, FYR	96	3.47
Vietnam	97	3.43
Nigeria	98	3.43
Madagascar	99	3.39
Sri Lanka	100	3.34
Tajikistan	101	3.33
Albania	102	3.32
Pakistan	103	3.31
Philippines	104	3.30
Dominican Republic	105	3.24
Venezuela	106	3.23
Guatemala	107	3.22
East Timor	108	3.20
Guyana	109	3.10
Benin	110	3.06
Cameroon	111	3.05
Paraguay	112	2.97
Ecuador	113	2.93
Cambodia	114	2.90
Kyrgyz Republic	115	2.89
Chad	116	2.64
Bangladesh	117	2.55

(cont'd.)

Macroeconomic Environment Index

Country	Rank	Score
Singapore	1	5.82
Norway	2	5.76
Denmark	3	5.64
Finland	4	5.52
United Arab Emirates	5	5.43
Qatar	6	5.40
Ireland	7	5.38
Hong Kong SAR	8	5.34
Luxembourg	9	5.30
Netherlands	10	5.26
Iceland	11	5.24
Sweden	12	5.24
Switzerland	13	5.23
Australia	14	5.21
Chile	15	5.20
Canada	16	5.16
Taiwan	17	5.15
United Kingdom	18	5.13
Malaysia	19	5.12
New Zealand	20	5.10
Kuwait	21	5.09
Austria	22	5.07
United States	23	5.07
Spain	24	5.07
Korea, Rep.	25	4.98
Thailand	26	4.94
France	27	4.90
Germany	28	4.81
Belgium	29	4.76
Estonia	30	4.73
South Africa	31	4.68
Bahrain	32	4.62
China	33	4.61
Tunisia	34	4.59
Slovenia	35	4.57
Botswana	36	4.55
Portugal	37	4.51
Latvia	38	4.48
Lithuania	39	4.47
Trinidad and Tobago	40	4.44
Kazakhstan	41	4.42
Japan	42	4.40
Mexico	43	4.35
Algeria	44	4.33
Cyprus	45	4.33
Czech Republic	46	4.31
Italy	47	4.26
Israel	48	4.25
Slovak Republic	49	4.23
India	50	4.17
Greece	51	4.16
Jordan	52	4.10
Poland	53	4.09
Malta	54	4.09
Egypt	55	4.07
Azerbaijan	56	4.05
El Salvador	57	4.03
Russian Federation	58	4.02
Mauritius	59	4.01
Vietnam	60	3.96
Colombia	61	3.95
Bulgaria	62	3.95
Hungary	63	3.91
Indonesia	64	3.89
Namibia	65	3.84
Ghana	66	3.82
Morocco	67	3.82
Croatia	68	3.76
Pakistan	69	3.74
Peru	70	3.71
Philippines	71	3.69
Tanzania	72	3.65
Romania	73	3.65
Panama	74	3.60
Macedonia, FYR	75	3.58
Nigeria	76	3.54
Armenia	77	3.53
Ukraine	78	3.52
Brazil	79	3.50
Ecuador	80	3.50
Guatemala	81	3.47
Costa Rica	82	3.44
Bangladesh	83	3.43
Uruguay	84	3.40
Venezuela	85	3.39
Argentina	86	3.37
Turkey	87	3.34
Uganda	88	3.30
Honduras	89	3.25
Georgia	90	3.25
Bosnia and Herzegovina	91	3.23
Albania	92	3.20
East Timor	93	3.18
Sri Lanka	94	3.17
Tajikistan	95	3.17
Moldova	96	3.14
Mali	97	3.13
Mozambique	98	3.13
Jamaica	99	3.13
Cameroon	100	3.12
Benin	101	3.08
Paraguay	102	3.07
Bolivia	103	3.05
Cambodia	104	3.04
Mongolia	105	3.03
Kenya	106	3.01
Gambia	107	3.01
Ethiopia	108	2.99
Madagascar	109	2.98
Nicaragua	110	2.96
Serbia and Montenegro	111	2.95
Dominican Republic	112	2.78
Guyana	113	2.77
Chad	114	2.67
Kyrgyz Republic	115	2.62
Malawi	116	2.47
Zimbabwe	117	2.25

(cont'd.)

along a number of different measures of educational quality. Italy fell despite improvements in its absolute BCI score, overtaken by the Czech Republic, Cyprus, Hungary, and Thailand, all of which recorded a faster rate of improvement.

Middle-income nations improving their competitiveness ranking include Poland, Argentina, Croatia, Botswana, El Salvador, Hungary, and Bosnia and Herzegovina. Poland jumped by 5 ranks, driven by strong improvements in many areas of business environment quality; most pronounced in the effectiveness of antitrust policy and improving financial market sophistication. The country is now back at its 2001 level when it suffered a decline. Argentina, benefiting especially from improving measures of innovative capacity, and its neighbor Uruguay, with reductions in bureaucracy and improvements in the reliability of police services, jump by 13 and 10 ranks respectively. Both are still below their 2001/02 levels, however. Finally, Croatia improved by 12 ranks, regaining the ground lost last year based on a stronger assessment of the business environment, especially in the areas of fewer foreign ownership restrictions, better reliability of police services, and improving overall infrastructure quality.

Middle-income countries falling in competitiveness rank include Morocco, Namibia, the Dominican Republic, Russia, Brazil, Romania, and China. Morocco registered a large drop (down 29 ranks), dragged down by lower assessments especially in bureaucracy, foreign ownership restrictions, and corruption. Namibia dropped by 19 ranks after having registered a stable ranking since entering the GCR in 2002, driven especially by lower assessments of bureaucracy, favoritism of government officials, and corruption. The Dominican Republic (down 11 places) continues its downward trend.

Among low-income countries, Ghana, Tanzania, and Pakistan made the largest improvements. Ghana benefited especially from improved public schools and less corruption, with Tanzania and Pakistan both reporting better labor-employer relations.

Gambia and Indonesia experienced the largest drops among low-income countries. Indonesia lost almost all the ground gained last year when a change in government had created high expectations about imminent improvements. A sharply lower assessment of physical infrastructure and financial markets were key reasons for the drop.

Since both macroeconomic and microeconomic factors are critical for driving productivity, the BCI and the GCI provide complementary perspectives on national competitiveness. Not surprisingly, the results of the two indexes are highly correlated, as shown in Figure 1.

The latest in competitiveness research: The Global Competitiveness Index

The GCI described in the foregoing was a major step forward in the Forum's efforts to present a quantified framework for the analysis of the key determinants of growth. When it was created, it represented an intelligent compromise between the need for complexity, reflecting the multiplicity of factors affecting the evolution of growth, and the need for a structure that was transparent and simple enough that it could be estimated for a large number of countries. Thus, the GCI has served its purpose well, providing important insights into a number of the key areas central to the growth process. In particular, it provides a useful linkage with the past, especially relevant for countries wanting to see the evolution of a key competitiveness indicator in an inter-temporal perspective.

However, it has become increasingly apparent to us that we need a more comprehensive vehicle, one that better reflects changes in the nature of the global economy and the relative importance of key factors in explaining the evolution of growth in a large number of countries, with a considerable degree of institutional and structural diversity.

A few examples will suffice. It is difficult to make a meaningful analysis of the sluggish growth performance of the EU15 without entering into a discussion of structural weaknesses and the slow pace of reform in a number of areas, be it the prevalence of labor market rigidities, or delays in the completion of key elements of the single market, which have prevented the European economies from benefiting from the economies of scale associated with a large, single, truly unified market. The GCI does not address the issue of labor market rigidities, nor does it look more broadly at the issue of efficiencies in the operation of various markets.

The poor growth performance seen in most of the African continent during the past quarter century cannot be divorced from public health considerations; as important as good management of the public finances is for assessing the macroeconomic environment in African countries, it is not appropriate to analyze competitiveness trends in the region, without taking into consideration the impact on business of HIV/AIDS, or of other major epidemics. The GCI is silent on these issues, not because its original authors did not see these as being central to an understanding of development in Africa or other parts of the world, but rather because coverage of Africa in the Forum's competitiveness work in 2001 was still limited, and there was no compelling reason to include factors that were not essential to explaining growth in places other than Africa.

Education and the extent to which countries are able to upgrade the skills and training of the labor force have acquired growing importance as indicators of a country's

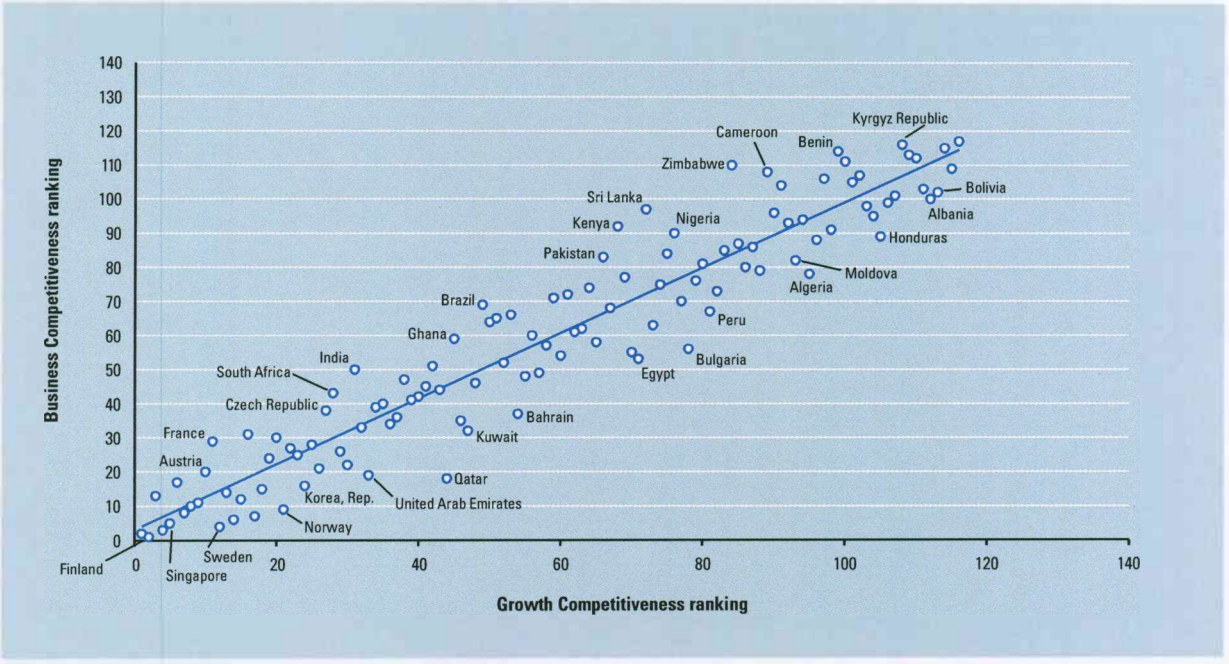
Table 3: The Business Competitiveness Index

Country	BCI ranking	Company operations and strategy ranking	Quality of the national business environment ranking
United States	1	1	2
Finland	2	9	1
Germany	3	2	4
Denmark	4	4	3
Singapore	5	14	5
United Kingdom	6	6	6
Switzerland	7	5	7
Japan	8	3	10
Netherlands	9	8	8
Austria	10	11	9
France	11	10	11
Sweden	12	7	14
Canada	13	18	13
Taiwan	14	13	15
Australia	15	23	12
Belgium	16	12	17
Iceland	17	15	18
New Zealand	18	21	16
Ireland	19	16	20
Hong Kong SAR	20	20	19
Norway	21	22	21
Israel	22	19	22
Malaysia	23	24	23
Korea, Rep.	24	17	24
Spain	25	25	26
Estonia	26	33	25
Czech Republic	27	29	27
South Africa	28	26	30
Chile	29	31	29
Portugal	30	39	28
India	31	30	31
Slovenia	32	27	35
United Arab Emirates	33	36	33
Hungary	34	40	32
Tunisia	35	46	34
Cyprus	36	48	36
Thailand	37	35	37
Italy	38	28	39
Slovak Republic	39	47	38
Greece	40	42	40
Lithuania	41	41	41
Poland	42	43	46
Jordan	43	59	42
Qatar	44	64	43
Ghana	45	56	47
Malta	46	61	44
Kuwait	47	63	45
Latvia	48	51	48
Brazil	49	32	52
Costa Rica	50	34	53
Turkey	51	38	51
Mauritius	52	45	49
Jamaica	53	54	54
Bahrain	54	67	55
Botswana	55	76	50
Colombia	56	49	57
China	57	53	58
El Salvador	58	57	56
Indonesia	59	50	59
Mexico	60	55	62
Panama	61	37	68
Kazakhstan	62	72	60
Croatia	63	70	61
Argentina	64	52	64
Trinidad and Tobago	65	62	63
Pakistan	66	68	65
Romania	67	69	67
Kenya	68	60	69
Philippines	69	44	78
Uruguay	70	79	66
Egypt	71	58	74
Sri Lanka	72	73	73
Namibia	73	75	72
Russian Federation	74	77	70
Ukraine	75	71	76
Nigeria	76	65	79
Azerbaijan	77	74	80
Bulgaria	78	82	71
Morocco	79	80	75
Vietnam	80	81	77
Peru	81	66	82
Tanzania	82	93	81
Macedonia, FYR	83	89	83
Zimbabwe	84	78	84
Uganda*	85	91	87
Serbia and Montenegro	86	108	86
Mali*	87	109	85
Armenia	88	87	90
Cameroon*	89	84	92
Gambia	90	100	89
Malawi	91	86	93
Venezuela	92	85	97
Moldova	93	90	94
Bosnia and Herzegovina	94	101	91
Algeria	95	111	88
Georgia	96	94	95
Madagascar	97	102	96
Mozambique	98	97	99
Benin*	99	106	98
Bangladesh	100	99	101
Dominican Republic	101	88	103
Tajikistan	102	107	100
Guatemala	103	83	104
Mongolia	104	98	102
Honduras	105	95	105
Nicaragua	106	110	106
Ecuador	107	96	108
Kyrgyz Republic	108	92	111
Cambodia	109	103	107
Guyana	110	105	109
Ethiopia	111	113	110
Albania	112	104	113
Bolivia	113	115	112
Paraguay	114	112	114
East Timor*	115	114	115
Chad*	116	116	116

(cont'd.)

* Survey data for these countries have high within-country variance; until the reliability of survey responses improves with future educational efforts and improved sampling in these countries, their rankings should be interpreted with caution.

Figure 1: Growth and Business Competitiveness rankings



future growth potential. A country's ability to absorb new technologies, to produce goods and services that can reach standards of quality and performance acceptable in international markets, to engage with the rest of the world in ways that are value-creating, is intimately linked to the quality of its schools, to the priority given to training in mathematics and science, and to the existence and accessibility of specialized research and training centres. The GCI brought in some concepts in this area, but we feel there is an obvious need to do more.

In the interest of taking the Forum's competitiveness work further, and in order to capture a broader set of factors crucial to a clear understanding of the determinants of economic growth, we have worked closely for the past two years with Professor Xavier Sala-i-Martin, a leading expert on the process of economic growth at Columbia University. In last year's *Report,* we provided a preliminary version of a new and more comprehensive competitiveness index, which we called the *Global Competitiveness Index*. This new index allows us to measure and benchmark many critical factors, absent from the Growth Competitiveness Index described in the previous section.

The new Global Competitiveness Index is built around nine different pillars, each of which is critical to driving productivity and competitiveness in national economies. The pillars include all of the elements that were previously included in the GCI, as well as many other factors discussed earlier.

Beyond these pillars, which capture a more comprehensive set of growth factors, the Global Competitiveness Index has a number of other important distinguishing features. One is the formal incorporation, from its conception, of the notion that countries around the world are functioning at different stages of economic development. The relative importance of particular factors for improving the competitiveness of a country will be a function of its particular stage of development. What presently drives productivity in the United States is necessarily different from what drives it in Brazil. Thus, the Global Competitiveness Index separates countries into three specific stages, adding degrees of complexity at each stage, called *factor driven, efficiency-driven,* and *innovation-driven*. A fuller description of the index is provided in Chapter 1.1

The Global Competitiveness Index is a logical extension of the Forum's competitiveness work. It builds on the strengths of the GCI, by widening the scope of analysis through the introduction of concepts not previously considered. Our strategy—already announced last year upon publication of *The Global Competitiveness Report 2004–2005*—is to make the Global Competitiveness Index the centerpiece of our analytical work. The conceptual framework upon which this index has been built and its methodological underpinnings are strong, and its

Table 4: Top performers in the nine pillars of the Global Index

Country	Institutions	Infrastructure	Macroeconomy	Health and primary education	Higher education and training	Market efficiency	Technological readiness	Business sophistication	Innovation
Singapore	1	5	9	69	8	4	1	20	9
Denmark	2	1	16	23	3	5	2	4	10
Chile	27	34	1	25	42	24	36	31	41
Japan	26	9	93	1	16	16	17	1	2
Finland	3	10	10	10	1	12	12	12	4
United States	16	8	62	47	2	1	5	3	1

broader coverage of factors central to a proper study of the growth process is yet another attractive feature. Both the Growth and the Global indexes will co-exist for a while longer. The former, because it provides a useful link to the past; the latter, because it represents a deepening of the Forum's competitiveness work. However, the Global Competitiveness Index is expected to become the main analytical tool in our competitiveness work, and in 2006, it will be the results of this index that will be featured. Table 4 presents the top performers among the 117 countries covered in each of the nine pillars of the Global Competitiveness Index.

The *Report* also includes specific country profiles for all 117 countries covered, outlining the index scores for each country, as well as their relative competitive advantages and disadvantages. In addition to the country profiles, detailed data tables give an account of countries' rankings on the variables utilized to compute the indexes, as well as others. Guidelines on how to read the country profiles and data tables are included in an Appendix at the end of the *Report,* together with technical notes on data sources, and the full definition of certain variables.

Selected issues of competitiveness and special topics

As in previous *Reports,* this year's edition features several outstanding contributions from eminent scholars and experts, dealing with specific competitiveness issues or broader development themes. While some of them build on the findings of the Survey for their analysis, and others explore the facets of competitiveness highlighted by the Forum indexes, all are concerned with the conditions for sustained growth and development and represent a very insightful reading for policymakers, business, and the general public. Each addresses a different aspect of competitiveness, and provides in-depth analysis of one or another of the central questions at the heart of the work we do at the World Economic Forum. These special studies are highly business relevant, and complement the competitiveness indexes, country profiles and data tables elsewhere in the *Report.*

On governance and corruption

Daniel Kaufmann's challenging chapter "Myths and Realities of Governance and Corruption," counters some of the prevailing misconceptions about concepts which scholars, aid agencies, the NGO community, and governments themselves have begun to take more and more seriously in recent years. Many questions remain unresolved, and the author helps us sift through the issues, by highlighting eight "myths" about governance and corruption, and offering insightful explanations of why each is mistaken.

For example, answering myth #1, that *governance and anti-corruption are synonymous,* he points out the broader scope of governance, and the fact that corruption is not limited to those who govern, but implicates the private sector as well. To those who say that *governance and corruption cannot be measured,* myth #2, he describes the variety and scale of impressive and comprehensive measures, which have become available, and are in wide use for monitoring performance. Kaufmann answers those who *dismiss the importance of governance and anti-corruption as "overrated,"* by sharing the results of exhaustive research on the impact of governance on development, and explaining the "development dividend" that results from better governance. He points out the crucial importance of governance practices on the success or failure of aid projects, and debunks the notion that donors can somehow "ringfence" development projects, insulating them from a surrounding corrupt environment.

The chapter concludes with a call for a bolder approach to improving governance and reducing corruption. Basing his suggestions on the innovative work at the World Bank on transparency reforms, Kaufmann lists some highly practical and specific reforms which countries can implement to enhance freedom of the press and further gender equality.

Managing exchange rates

"Rethinking Exchange Rate Competitiveness" by Kenneth Rogoff is a welcome contribution to the debate on the role of exchange rate policy for a country's overall competitiveness. Rogoff argues that the importance of

maintaining competitive exchange rates is enshrined in the "Washington consensus," which firmly warns against maintaining grossly overvalued exchange rates. Nevertheless, the days are gone when one could simply look at black (or "parallel") market premia, and instantly have a sense of whether a country's exchange rate was grossly overvalued. Today, with fewer countries imposing heavy-handed currency conversion restrictions, exchange rates are increasingly driven by market forces. Monetary policy still reacts to exchange rates—at a minimum through their influence on inflation—but today intervention is more likely to involve market-based instruments. As a result, identifying cases of large exchange rate misalignments has become more subtle, and must typically involve assessing a country's overall macroeconomic stance. The mercantilist view that countries should maintain low (competitive) real exchange rates in order to run trade balance surpluses is as misguided as ever. Despite these caveats, Rogoff insists that it is still important to try to assess the real purchasing value of a country's currency, and discuss in detail the practical challenges involved in constructing real exchange rate indices to make international comparisons.

Safeguarding property rights in Africa

In her thoughtful, carefully researched paper "Securing Land and Property Rights in Africa: Improving the Investment Climate," Camilla Toulmin makes the case for secure property rights as the key to promoting investment in Africa, and examines options for securing land rights, particularly for the more vulnerable poor. In many areas, land, which once seemed a virtually inexhaustible asset in Africa, has succumbed to market development and population growth, resulting in mounting competition, especially in urban and peri-urban areas. Toulmin highlights the obstacles and costs involved not only in acquiring and registering property itself, but for safeguarding land use rights, for both small and large investors, and especially for farmers, herders, and women, and the importance of preserving and protecting common resources, such as grazing, wetlands, and woodlands, which are best managed at the community level.

Governments across the continent, traditionally the sole "owners" of African land, are revising land law and administration, and experimenting with new ways to register land rights, with both positive and negative results, which Toulmin describes. Historical experience shows that in the transition from oral to written culture, those who stand to lose most are those with secondary rights, who rely on common resources, such as women, pastoral herders, urban squatters, and migrants. Past experience with titling in Africa shows that many hoped-for benefits were not achieved, with land registers becoming rapidly out of date, the most vulnerable dispossessed, and rights made less, rather than more, secure. On the basis of her exhaustive experience on the African continent, and her close familiarity with its many cultures, Toulmin concludes with a proposal for the phased design of institutions for managing rights, answerable and relevant to the needs and capacities of local populations, and giving priority to areas of greatest contest.

Can we protect the environment competitively?

In his intriguing paper "The Environment as a Source of Competitive Advantage," Allen Hammond offers interesting counter arguments to the prevailing idea that environmental regulations place a potential constraint on, or worse, pose risks for business. Increasingly, he explains, environmental and social development issues are also coming to be understood as a source of opportunity for new products and services, new technology, and new markets. It is only when both risk and opportunity are taken into account, that the full implications for business can be evaluated. Hammond reports on the broader perspective of the environment and sustainable development as sources of competitive advantage, and draws on a number of analyses, surveys, and reports, including the results of the Executive Opinion Survey for 2005. The Survey results show that, in the opinion of business leaders, economic development and performance in environmental and social responsibility are reasonably well correlated. Although the responses also show that major improvements are needed, there is significant consensus, even among low-income respondents, that complying with environmental standards improves long-term competitiveness, that lack of clean water hinders business expansion, and that clean production and waste reduction are important to company success. In addition to the Survey results, the paper looks at some of the business opportunities offered by global environmental problems—principally climate change and ecosystem degradation—and by critical global social and sustainable development challenges—principally poverty. The author examines in considerable detail the competitiveness implications of climate policies, and how they are playing out in the auto sector. He also considers the competitive implications of disturbing new data on the degradation of ecosystem services, and the impact on economic sectors dependent on fresh water, timber, fisheries, or other severely stressed natural resources. Finally, he offers some thought-provoking ideas about how the private sector can approach low-income markets in ways which will help to alleviate poverty.

The case for Europe

In a timely contribution entitled "Can Europe Compete? The International and Technological Competitiveness of Europe," Beatrice Weder di Mauro argues, contrary to much current perception, that Europe is actually outperforming its main competitors in terms of international competitiveness. However, although European exporters have by far the largest share in world trade and have been gaining market shares, she concedes that Europe is, indeed, underperforming in terms of "technological" competitiveness, as shown by most conventional indicators of technological performance, and also by the evidence from the 2005 Survey. However, Weder di Mauro argues that the technological gap may be overstated, since it can be explained, in part, by differences in industrial composition. For instance, she finds no significant differences between the EU and the United States, when restricting the sample to the manufacturing sector. Relative specialization patterns may explain why industrial composition matters more than country characteristics: Europe specializes in chemical products, machinery and cars. These are conventionally classified as medium-tech products, even if they are highly differentiated and research intensive. Moreover, world demand for these particular products has been robust, and in some cases stronger, than for so-called high-tech products. Finally, a role can also be found for country characteristics: high labor market rigidities, and, in particular, the ease of hiring and firing contribute to explaining why Europe lags behind US performance. The author recommends, by way of policy implication, that improving the flexibility of labor markets should be high on Europe's reform agenda.

What does Russia's future look like?

In "Russia: Competitiveness, Growth, and the Next Stage of Development," Augusto Lopez-Claros examines the factors that are likely to play a key role in enhancing the productivity of the Russian economy, and improving its levels of competitiveness. He argues that there is no intrinsic reason why the Russian economy could not enter a period of high, sustained growth in coming years, and points to a number of structural features which create the conditions for rapid growth: gains in efficiency from the continued elimination of distortions, the country's impressive natural resource endowment (likely to spur the continued interest of foreign investors), and its human capital stock, which—weaknesses in the public sector notwithstanding—can be considered a competitive advantage. While the brain drain has dealt a severe blow to Russia's ability to return to the outer limits of the technology frontier, her impressive tradition of world-class research in the basic sciences, especially mathematics and physics, provide the foundation for a comeback.

Tight conditions in the global oil markets suggest that the external environment is likely to remain favorable to Russia, creating an ideal opportunity to push ahead with structural and institutional reforms. Particular attention will have to be paid to reforms to improve Russia's woefully inadequate public institutions, to improve the judicial and legal climate, to safeguard property rights, and reduce the prevalence of corruption and crime. He notes that Russian policymakers will have their hands full in the period ahead, dealing with large inflows from record high energy prices, which, indeed, create opportunities, but which also pose important challenges. Liquidity management has now moved to the centre of macroeconomic policy. A loosening of fiscal policy, particularly one aimed at boosting public sector wages and pensions, not investments in education, public health, and infrastructure, all of which would boost productivity, will need to be avoided. But beyond these issues, it is incumbent on the authorities to broaden their focus, and deal with a broad range of emerging stresses. Foremost among these are how to arrest the disturbing demographic trends, how to better utilize surplus public resources to enhance the economy's capacity for innovation, and how to put the country back on a path of world-class scientific and technological achievement, so that Russia may join the ranks of the most competitive economies in the world.

The Washington Consensus

In a thoughtful contribution John Williamson poses the question "Should There Be a Development Consensus?" He traces the history of the "Washington consensus," speculates about the possibility of a global development consensus, and outlines in detail—under the three main themes of macroeconomic discipline, microeconomic liberalization, and globalization—the ten policy pillars, which in 1989 were widely regarded as necessary to achieve economic modernization in most Latin American countries. The paper also identifies two alternative meanings given to the term, namely (a) the set of policies urged on developing countries by "official" Washington (especially the international financial institutions) and (b) "neoliberalism" or "market fundamentalism." When first applied, the first alternative meaning came close to Williamson's original meaning, but diverged in the 1990s as a result of the enthusiasm—questionable, he feels—of the IFIs for capital account liberalization, and the bipolar solution to the exchange rate issue, as well as their increasing focus—highly desirable, he argues—on institutional issues and financial sector stability.

While most of the policies summarized in the author's original version of the Washington consensus remain relevant, time has moved on, and several additional issues should be taken into consideration in any policy

agenda designed to address the needs of Latin America today. The author concludes that the current agenda should emphasize the importance of macroeconomic policies which will minimize the dangers of crises (and their costs), continue rather than reverse, the efforts to liberalize the economy, build and strengthen institutions and frame policies appropriately, and pay closer attention to improving income distribution, and accelerating the rate of economic growth.

Impending aging in the developing world

Readers may be shocked by the findings in Nicholas Eberstadt's exhaustively researched essay "Aging in Low-Income Countries: Looking to 2025," in which the author convincingly demonstrates that over the coming decades a dramatic graying of much of the "third world" lies in store. Although the phenomenon of population aging has become a topic of sustained policy analysis and concern in the already-affluent OECD societies, the subject has attracted relatively little attention in low-income regions of the world. This neglect is not only surprising, but dangerous, for, as the author shows, the burdens of pronounced population aging are unlikely to be borne as easily by poor countries as by rich ones, since they have vastly fewer, and much less attractive, options for dealing with the resulting problems.

In considerable, insightful detail, Eberstadt describes the economic and cultural situations of three countries, China, Russia and India, and compares their growth, income-per-capita, and fertility replacement patterns with those of Japan, the United States, and various European countries, and projects the likelihood that by 2025, a large proportion of their populations will have to cope with aged populations on income levels far lower than those yet witnessed in any society with comparable degrees of graying. Referring to the "slow motion humanitarian tragedy," Eberstadt describes what he calls China's "triple bind": sub-replacement fertility rates, the "son deficit," and ill health, Russia's unnaturally high mortality rates and disastrous health problems, and India's non-existent retirement/pension provisions and inadequate educational base. For such countries, although differing in the details, the social and economic consequences of aging could be harsh, and the options for mitigating the adverse effects of population aging limited. In all of them, aging may emerge as an important constraint on long-term growth and development. As Eberstadt's compelling analysis demonstrates, rapid and pronounced population aging represents a highly uneven, largely unappreciated, and, as yet, almost entirely undiscounted long-term risk for the world's emerging markets.

Lessons from market crises

In "Emerging Market Crises and Crisis Resolution: A Decade of Experience," Nouriel Roubini and Brad Setser provide a thorough examination of the recurring severe crises in emerging market economies in the last ten years. Major emerging economies have proved vulnerable to sudden swings in capital flows, which have led to severe crises and steep falls in output. Sustained and stable growth in emerging market economies depends, above all, on the ability of emerging economies themselves to maintain sound macroeconomic policies and debt structures that protect them against sudden shifts in capital flows. Countries that get into trouble usually have important policy weaknesses, weaknesses that are exposed when market conditions change, and, as the authors remind us, the current, rather favorable, conditions for emerging markets are unlikely to be permanent. The IMF, the G7, and others who have a stake in the health of the global financial system should expect that emerging economies will continue to experience occasional crises, and must be ready to ensure that the right policies and institutions are in place to handle future ones. In the authors' judgment, although the basic tools needed to respond to a wide range of crises generally exist, the main challenge is to use those available tools better, and map them more adequately to different types of crises. Thus, what is needed is better "software," rather than new "hardware."

The authors argue that it is unrealistic to expect that sovereign governments or, for that matter, the banking system of a major emerging-market economy, can go under without drawing the IMF into either the country's decision to default or into the often messy restructuring process that follows. Thus, they argue, IMF financial support, combined with appropriate policy adjustment, remains an essential element of crisis resolution. Because the nature of financial crises differs from one country to another, simply giving all countries access to large amounts of emergency financing to avoid a debt restructuring, or, on the other hand, denying all countries access to it, is unwise. Although large IMF-led rescue packages can work in the right circumstances, the odds of success, they say, are far greater when the crisis country's problems stem primarily from having too few reserves relative to their short-term debts, not too much debt. For countries with higher levels of debt, the right approach may not be to use IMF funds to try to avoid any form of debt restructuring, but rather to use IMF borrowing to soften the blow.

Unemployment and happiness

In his thoughtful paper on "Full Employment for Europe," Richard Layard maintains that unemployment, not productivity or general economic weakness, is the problem in Europe. Many European countries have reduced their

unemployment rates to US levels or below, including some, such as Denmark, which have very high tax rates. It is precisely the variation of experience among the different countries, in terms of policy and the treatment of the unemployed, which helps us to understand what must be done by those large continental countries where unemployment remains so shockingly high. By the early 1990s there was clear evidence that the keys to reducing unemployment were welfare-to-work policies and more flexible wages. Countries such as Denmark, the Netherlands, and Britain, which acted on this evidence, have halved their unemployment since then. Those which did not, such as France and Germany, have continued to have high unemployment, even at the peak of the European boom in 2000. In that year, both had record levels of vacancies, despite massive unemployment, demonstrating that the main reason for unemployment was a failure to mobilize the unemployed.

On the basis of his intriguing research on happiness, Layard reminds us that almost any job is better than being unemployed, and that being out of work has as devastating an effect on a person's happiness as divorce, and is three times worse than losing a third of one's income. So he maintains that unemployed people, after a while, should be expected to fill most types of vacancy. They should also automatically receive offers of activity, which they are required to accept, rather than staying at home on benefits. This *activation* principle has been a major factor in lowering unemployment in many countries, but must be accompanied by an active and energetic service, which combines job search assistance and benefit monitoring. Wage flexibility is also vital in regions where productivity is low, and should be adequately reflected in lower wages. This applies to East Germany, southern Italy, and southern Spain. The lessons learned from elsewhere in Europe and the United States apply equally to the transition countries, where high unemployment will only be reduced through more flexible relative wages across regions, and better policies toward the unemployed themselves.

What's good about globalization?

In "Globalization as an Agent of Prosperity" Jagdish Bhagwati makes an engaging and insightful contribution to our understanding of how globalization makes nations more prosperous. Drawing on his recently-published book *In Defense of Globalization,* Bhagwati gives examples of how globalization has advanced gender equality, helped to alleviate poverty and child labor, promoted better governance, and enabled economies to reap the benefits of freer trade and growth. He introduces his subject by describing the nature of the anti-globalization arguments and their origin, and exposing the misconceptions underlying the anti-capitalist, anti-corporation mindset driving most anti-globalization protest. Focusing on economic—as differentiated from cultural—globalization, he carefully illustrates his conviction that, despite the contentions of its critics, globalization has a human face, that its effects are benign, not malign, and that social agendas creating such concern are, in fact, advanced by it.

He cites compelling evidence to support his views, such as a study showing how peasant Vietnamese parents responded to increased income from liberalized rice exports by sending their children to school. On the topic of gender equality, he cites the work of Harvard researchers, who found that increased competition through trade contributed to the improvement in female wages in traded industries. In discussing the economic benefits of freer trade, Bhagwati warns of the dangers of advising poor countries to seek protectionism for themselves, while demanding that rich countries lower *their* trade barriers, citing the disastrous history of non-reciprocity. Finally, on the topic of growth—which he defines as an active, *pull-up,* as opposed to a *trickle-down* strategy—he looks at the experience of India and China, both of which have moved from insular policies to outward-oriented trade regimes over the past two decades, and dramatically reduced poverty. Bhagwati speaks eloquently of the importance of coupling economic globalization with social policies, that will ensure the wise allocation of increased economic resources, and argues forcefully for the implementation of policy interventions which "preserve, celebrate and enhance the good effects" of globalization, while addressing its occasional downsides.

2004 - 2005

Executive Summary

AUGUSTO LOPEZ-CLAROS, World Economic Forum

For well over two decades the World Economic Forum has been trying to shed light on the question of why some countries are able to grow on a sustained basis for prolonged periods of time, in the process pulling large segments of the population out of poverty, while others remain stagnant or, worse, actually see an erosion of living standards. Through its flagship publication, *The Global Competitiveness Report*, the World Economic Forum has led the way in assessing the competitiveness of nations.

The Forum may be in a singularly advantageous position, for at least two reasons, to contribute meaningfully to the debate on the key building blocks of successful economic development and improved competitiveness. First, it brings key representatives from the private sector and the corporate world together with a broad spectrum of senior policymakers in government, creating opportunities for the thoughtful exchange of ideas and experiences on best practices. This exchange may be an important catalyst in identifying the most critical factors in the development process. The role of corruption in delaying the development process, the central importance of women's education for boosting per capita incomes, the interplay between political and civil rights and the willingness of the public to engage in economic activity, the role of a free press, and the type of safety net arrangements that governments put in place to enhance the ability of economic agents to participate in the life of the nation, are but some of the topics that have been at the centre of the agenda in many of the summits and other interactions organized by the World Economic Forum.

Second, the Forum has developed a vehicle, the Executive Opinion Survey (EOS), which annually conveys a wealth of information about the obstacles to growth in more than 100 countries, accounting for the lion's share of global GNP. Through the Survey, business executives in these countries assess the importance of a broad range of factors central to creating a healthy business environment in support of successful and productive economic activity. The tax and regulatory environment, labor market legislation, the overall macroeconomic environment, the prevalence of corruption and other irregular practices in the economy at large, the quality of the country's infrastructure and education are but a few of the areas covered by the EOS. Over the years, the Survey has continued to deliver a treasure trove of information about both country-specific strengths and weaknesses, and the challenges faced by the business community. On the basis of the information provided by the EOS, the Country Profiles prepared by the Forum offer extremely valuable information for policymakers, aid agencies and others, working to improve economic performance and the quality of people's lives.

The methodology used by the Forum to assess national competitiveness has evolved over time, taking into account the latest thinking on the factors driving competitiveness and growth. The Forum first introduced the *Growth Competitiveness Index* (GCI) three years ago, in collaboration with Professors Jeffrey Sachs and John McArthur, in the *Global Competitiveness Report 2001–2002*. The GCI aims specifically to gauge the ability of the world's economies to achieve sustained economic growth over the medium to long term. It primarily assesses the impact of those factors that economic theory and the accumulated experience of policymakers in a broad range of countries have shown to be critical for growth, whether narrowly focused on elements of the macroeconomic environment or, reflecting the latest insights in the economics literature, institutional and other factors.

Professor Michael Porter's *Business Competitiveness Index*, presented in Chapter 1.2 in this volume, is an especially useful complement to the GCI, with its special emphasis on a range of company-specific factors conducive to improved efficiency and productivity at the micro level.

The Growth Competitiveness Index

The GCI is composed of three "pillars," all of which are widely accepted as being critical to economic growth: the quality of the macroeconomic environment, the state of a country's public institutions, and, given the increasing importance of technology in the development process, a country's technological readiness. Using a combination of publicly available hard data, and information provided in the Forum's Executive Opinion Survey—which provides more textured qualitative information on difficult-to-measure concepts—these three pillars are brought together in the three indexes of the GCI: the macroeconomic environment index, the public institutions index, and the technology index.

Sachs and McArthur strongly emphasized that the role of technology in the growth process differs for countries, depending on their particular stage of development. It is widely understood that technological innovation is relatively more important for growth in countries close to the technological frontier. Innovation will be key in Sweden, but the adoption of foreign technologies, or the kind of technology transfer frequently associated with foreign direct investment will be relatively more important in a country such as the Czech Republic. For this reason, in estimating the GCI, economies are separated into two groups: the *core* economies, i.e. those for which technological innovation is critical for growth, and *non-core* economies, i.e. those which can still grow by adopting technologies developed abroad.

The critical importance of technological innovation for core economies is taken into account in the technology index. Specifically, more weight is given to innovation, by means of the innovation subindex, for the core economies, than for the non-core. To make a further distinction, an additional measure is used of the ability of non-core economies to adopt technology from abroad: the technology transfer subindex. Finally, since the determinants of economic competitiveness vary for core and non-core economies, the weighting of the three indexes in the overall GCI differs between the two groups. For the non-core economies, more weight is given to the quality of institutions and the macroeconomic environment, since these countries can still make progress in achieving higher growth by getting their fundamentals in order.

On the other hand, for the core economies that are closer to the technological frontier, more weight is placed on technology. It is, of course, important for these countries to have a sound macroeconomic environment and strong institutions, but these economies will typically have long ago entered a period characterized by "institutional stability." For these countries to continue to grow they must innovate. This is why more weight is placed, for the core innovators, on technology, than on the other two pillars. Chapter 1.1, by Jennifer Blanke and Augusto Lopez-Claros provides specific details on the composition and construction of the GCI, which this year covers a total of 104 countries.

The Competitiveness Rankings for 2004

Table 1 presents the rankings from this year's GCI. For the third time during the last four years Finland tops the rankings. The country is extremely well managed at the macroeconomic level, and scores very high in those measures which assess the quality of its public institutions. Moreover, Finland has very low levels of corruption and its firms operate in a legal environment in which there is widespread respect for contracts and the rule of law. Finland's private sector shows a proclivity for adopting new technologies, and nurtures a culture of innovation. Especially noteworthy is the fact that, for several years, Finland has been running budget surpluses, in anticipation of future claims on the budget associated with the aging of its population. The United States is ranked second, with overall technological supremacy, and especially high scores for such indicators as companies' spending on R&D, the creativity of its scientific community, personal computer and internet penetration rates. However, these are partly offset by a weaker performance in those areas which capture the quality of the macroeconomic environment and its public institutions.

As compared to the results of 2003, nine out of ten of the top performers remain in this category. Among these

Table 1: Growth Competitiveness Index rankings and 2003 comparisons

Country	GCI 2004 rank	GCI 2004 score	GCI 2003 rank*
Finland	1	5.95	1
United States	2	5.82	2
Sweden	3	5.72	3
Taiwan	4	5.69	5
Denmark	5	5.66	4
Norway	6	5.56	9
Singapore	7	5.56	6
Switzerland	8	5.49	7
Japan	9	5.48	11
Iceland	10	5.44	8
United Kingdom	11	5.30	15
Netherlands	12	5.30	12
Germany	13	5.28	13
Australia	14	5.25	10
Canada	15	5.23	16
United Arab Emirates	16	5.21	—
Austria	17	5.20	17
New Zealand	18	5.18	14
Israel	19	5.09	20
Estonia	20	5.08	22
Hong Kong SAR	21	5.06	24
Chile	22	5.01	28
Spain	23	5.00	23
Portugal	24	4.96	25
Belgium	25	4.95	27
Luxembourg	26	4.95	21
France	27	4.92	26
Bahrain	28	4.91	—
Korea	29	4.90	18
Ireland	30	4.90	30
Malaysia	31	4.88	29
Malta	32	4.79	19
Slovenia	33	4.75	31
Thailand	34	4.58	32
Jordan	35	4.58	34
Lithuania	36	4.57	40
Greece	37	4.56	35
Cyprus	38	4.56	—
Hungary	39	4.56	33
Czech Republic	40	4.55	39
South Africa	41	4.53	42
Tunisia	42	4.51	38
Slovak Republic	43	4.43	43
Latvia	44	4.43	37
Botswana	45	4.30	36
China	46	4.29	44
Italy	47	4.27	41
Mexico	48	4.17	47
Mauritius	49	4.14	46
Costa Rica	50	4.12	51
Trinidad and Tobago	51	4.12	49
Namibia	52	4.11	52
El Salvador	53	4.10	48
Uruguay	54	4.08	50
India	55	4.07	56
Morocco	56	4.06	61
Brazil	57	4.05	54
Panama	58	4.01	59
Bulgaria	59	3.98	64
Poland	60	3.98	45
Croatia	61	3.94	53
Egypt	62	3.88	58
Romania	63	3.86	75
Colombia	64	3.84	63
Jamaica	65	3.82	67
Turkey	66	3.82	65
Peru	67	3.78	57
Ghana	68	3.78	71
Indonesia	69	3.72	72
Russian Federation	70	3.68	70
Algeria	71	3.67	74
Dominican Republic	72	3.63	62
Sri Lanka	73	3.57	68
Argentina	74	3.54	78
Gambia	75	3.52	55
Philippines	76	3.51	66
Vietnam	77	3.47	60
Kenya	78	3.45	83
Uganda	79	3.41	80
Guatemala	80	3.38	89
Bosnia and Hercegovina	81	3.38	—
Tanzania	82	3.38	69
Zambia	83	3.36	88
Macedonia, FYR	84	3.34	81
Venezuela	85	3.30	82
Ukraine	86	3.27	84
Malawi	87	3.24	76
Mali	88	3.24	99
Serbia and Montenegro	89	3.23	77
Ecuador	90	3.18	86
Pakistan	91	3.17	73
Mozambique	92	3.17	93
Nigeria	93	3.16	87
Georgia	94	3.14	—
Nicaragua	95	3.12	90
Madagascar	96	3.11	96
Honduras	97	3.10	94
Bolivia	98	3.09	85
Zimbabwe	99	3.03	97
Paraguay	100	2.99	95
Ethiopia	101	2.93	92
Bangladesh	102	2.84	98
Angola	103	2.72	100
Chad	104	2.50	101

(cont'd)

* Note that these are the published rankings from 2003. The three countries not covered this year (Cameroon, Haiti, and Senegal) are not shown.

leaders, the largest improvement has been registered by Norway, which has moved up from ninth to sixth place since 2003. Norway improved in all three areas of the Index, most particularly with regard to its public institutions, driven by a much better score in the area of contracts and law. Indeed, the Nordic countries all occupy privileged positions in the GCI ranking.

The GCI does a reasonably good job not only of ranking countries vis-à-vis each other, but also of tracking shifts in rank over time. This is perhaps not surprising in the case of the macroeconomic environment index, which is made up overwhelmingly of hard data variables—Norway, Estonia, and New Zealand get credit for running budget surpluses, while Turkey, India, and Japan are penalized for running large deficits—but applies to other components of the GCI as well.

Those countries showing the largest drops in rankings in 2004—Bolivia, the Dominican Republic, Pakistan, Peru, Philippines, Poland, Vietnam, to name some—are all countries that have witnessed significant deteriorations in one or more areas tracked by the Index. Others, such as Venezuela and Zimbabwe, already low last year, have dropped even further. Indeed, all of these countries have been prominent in the pages of the international press. Highly visible instances of official corruption, a crackdown on press freedoms and other civil liberties which contribute to capital outflows and harden the mood of the business community, political instability linked to domestic infighting in some cases leading to civil unrest, a weakening in the rule of law have, to a greater or lesser degree, been prominent in some of the above cases.

The reverse is also true: countries may move up in the rankings, when they show not only improvements in the macroeconomic environment—e.g. Argentina in 2003, following the country's harrowing experiences the previous year—but some other factors, directly or indirectly reflected in those variables tracked by the index. We are not puzzled by the significant improvement in the rankings of Bulgaria and Romania, for instance. These countries have an appointment to keep with the EU in 2007, and are gradually gearing up to meet EU accession criteria. In Latin America, we note that Chile improved its performance significantly, moving up from 28th to 22nd place in the overall rankings. Chile not only has the highest ranking in Latin America, but the gap with respect to its nearest rival (Mexico) is a full 26 places; there is no other continent in the world where we can observe this symbolic "migration" from the region, in terms of performance. Chile's case is featured separately in Chapter 2.3 of this Report.

In Asia, the rankings are quite stable, with some small improvements—notably Indonesia and, more significantly, Japan, the latter by two places—and some small drops in the rankings, as with Malaysia and Thailand. There are two countries in the region, which stand out for their significant drop in the rankings: Korea and Vietnam, the latter noted above. Korea's drop is linked to a significant decline in the macroeconomic environment subindex, falling from 23rd last year to 35th this year; moreover, Korea also experienced declines in the other two areas measured by the GCI. Vietnam's decline is linked to significant drops in all three areas, particularly with regard to public institutions and technology.

Countries in sub-Saharan Africa continue to hold places primarily at the bottom of the rankings, with a few bright exceptions. South Africa improved its performance somewhat, continuing to lead the region in competitiveness, with an overall rank of 41, incidentally, well ahead of all countries in Latin America, except Chile. Likewise, while it did slip somewhat in the rankings, Botswana continues to outperform most of the other sub-Saharan African countries, with a relatively strong performance, particularly in its public institutions, and a relatively healthy macroeconomic environment. Still, three of the five bottom-ranked countries are from this region, including Angola and Chad, which take the last two places in the ranking. It is clear that much work remains to be done to improve competitiveness in Africa. Table 2 provides more detailed information on the components of each of the three subindexes of the GCI for all 104 countries in 2004.

The Business Competitiveness Index

The Business Competitiveness Index (BCI) is a complement to the medium-term, macroeconomic approach of the Growth Competitiveness Index. It evaluates the underlying microeconomic conditions defining the *current* sustainable level of productivity in each of the countries covered, the underlying concept being that, while macroeconomic and institutional factors are critical for national competitiveness, these are necessary but not sufficient factors for creating wealth. Wealth is actually created at the microeconomic level by the companies operating in each economy. The BCI evaluates two specific areas, critical to the business environment in each country: the sophistication of the operating practices and strategies of companies, and the quality of the microeconomic business environment in which a nation's companies compete. The idea is that, without these microeconomic capabilities, macroeconomic and institutional reforms will not bear full fruit.

This year's BCI rankings are shown in Table 3. The first column shows the overall rankings, while the second and third columns show the two interrelated subindexes: company operations and strategy, and the quality of the national business environment.

The table shows that the United States has taken over the leading position from Finland, after dropping to

second place last year. The United States benefited from improvements in the sophistication of marketing, the availability of venture capital, the intensity of local competition, local supplier quality, and local supplier quantity. Other advanced economies improving their rankings include Hong Kong, by reflecting more sophisticated financial markets and improvements in management practices, Japan, by improving financial market sophistication and improving quality of administrative services, and Portugal, by improving cluster strength. Japan registered the highest absolute improvement of its BCI score, followed by Hong Kong and Norway.

Advanced countries, which *dropped* in the rankings include Italy, Malta, and Iceland. Italy dropped by a disappointing nine ranks, almost entirely driven by a deteriorating business environment, now evaluated on a par with that of Portugal and the Czech Republic. Italy deteriorated especially in areas related to innovative capacity, such as university-industry research collaboration, foreign technology licensing, government procurement of advanced technology, company R&D spending, and venture capital availability.

Middle-income nations *improving* their business competitiveness rankings this year include Romania, Lithuania, the Slovak Republic, Russia, Namibia, and the Ukraine. Romania jumped by a remarkable 22 ranks, driven by strong across-the-board improvements, especially in the area of company sophistication. Romania's improvement comes after repeated slippage in the ranking since the country became part of *The Global Competitiveness Report* in 2001.

Middle-income countries which have experienced a fall in ranking include Latvia, the Dominican Republic, Poland, and Mauritius. Other countries with significant absolute drops in BCI scores include Thailand and Mexico. Latvia has moved back to a level consistent with its longer-term trajectory; last year's strong improvement proved to be unsustainable optimism. The Dominican Republic, down 13 places, continues the trend set by a large drop last year, driven particularly by a decline in openness to imports, and in the sophistication of its financial market.

Among low-income countries, Indonesia made the greatest improvement, jumping a remarkable 18 ranks. After years of turmoil, the country is now back to its 2000 business competitiveness level. While improvements were registered in areas across the board, they were strongest in measures of company sophistication. Another low-income country with large improvements is India, up 8 ranks, showing the benefits of increased company sophistication and strengthened clusters. Vietnam slipped significantly, down 23 places, after a number of years of steady improvement. Conditions worsened most in areas related to technology and government administration.

As explained above, the GCI and the BCI measure complementary dimensions of competitiveness. Figure 1 compares the two rankings for 2004, revealing their high correlation.

A look ahead—the new Global Competitiveness Index

Over the last several years the *Growth Competitiveness Index* has been a useful tool in thinking about key macroeconomic and institutional elements, critical to the growth process. The present rankings continue to provide policymakers, businesses and organizations of civil society with valuable insights into areas where further progress is called for, in order to improve the environment for private sector economic activity, and generate sustainable growth.

The considerable utility of the GCI notwithstanding, the vertiginous pace of change of the global economy has brought into sharper focus the increasing role played by a number of other factors in enhancing the ability of countries to grow. The swift pace of innovation in information and communications technology, and the concomitant fall in the costs of communication is leading to an acceleration in the pace of integration of the world economy. The increasingly global perspective of businesses in formulating their strategies and decision making—already manifesting a global reach in the search for new markets and sources of supply—has now extended to the location of production, and resulted in the increasing internationalization of the labor force of the typical multinational corporation. Innovations in transportation, which have reduced the cost of freight, mean that location is less of a factor than in the past, and businesses are now looking for the right combination of labor costs—coupled, ideally, with flexible labor markets—skills, infrastructure, and the support provided by a good macroeconomic and institutional environment to reduce production costs.

Against the backdrop of these changes, countries are being forced to be increasingly creative, in order to maintain their competitive edge. The role of multi-country alliances in bringing together better combinations of capital, labor, skills and regulatory frameworks for particular projects is becoming more important. Countries with the nimbleness demanded for such cross-border arrangements are reaping the benefits of higher economic growth rates and improvements in living standards. Countries which are not allocating sufficient resources to improve the quality of their educational systems or to address major public health concerns, or which are otherwise engulfed in internal conflicts and instability, are rapidly falling behind. The net effect of these trends is the growing complexity in the economic, social and political underpinnings of the environment faced by policymakers and business leaders everywhere. This is not only putting enormous stress on the institutions that sustain and support the global economy,

Table 2: Growth Competitiveness Index components

Growth Competitiveness Index (GCI)

Country	GCI 2004 rank	GCI 2004 score	Country	GCI 2004 rank	GCI 2004 score
Finland	1	5.95	Bulgaria	59	3.98
United States	2	5.82	Poland	60	3.98
Sweden	3	5.72	Croatia	61	3.94
Taiwan	4	5.69	Egypt	62	3.88
Denmark	5	5.66	Romania	63	3.86
Norway	6	5.56	Colombia	64	3.84
Singapore	7	5.56	Jamaica	65	3.82
Switzerland	8	5.49	Turkey	66	3.82
Japan	9	5.48	Peru	67	3.78
Iceland	10	5.44	Ghana	68	3.78
United Kingdom	11	5.30	Indonesia	69	3.72
Netherlands	12	5.30	Russian Federation	70	3.68
Germany	13	5.28	Algeria	71	3.67
Australia	14	5.25	Dominican Republic	72	3.63
Canada	15	5.23	Sri Lanka	73	3.57
United Arab Emirates	16	5.21	Argentina	74	3.54
Austria	17	5.20	Gambia	75	3.52
New Zealand	18	5.18	Philippines	76	3.51
Israel	19	5.09	Vietnam	77	3.47
Estonia	20	5.08	Kenya	78	3.45
Hong Kong SAR	21	5.06	Uganda	79	3.41
Chile	22	5.01	Guatemala	80	3.38
Spain	23	5.00	Bosnia and Hercegovina	81	3.38
Portugal	24	4.96	Tanzania	82	3.38
Belgium	25	4.95	Zambia	83	3.36
Luxembourg	26	4.95	Macedonia, FYR	84	3.34
France	27	4.92	Venezuela	85	3.30
Bahrain	28	4.91	Ukraine	86	3.27
Korea	29	4.90	Malawi	87	3.24
Ireland	30	4.90	Mali	88	3.24
Malaysia	31	4.88	Serbia and Montenegro	89	3.23
Malta	32	4.79	Ecuador	90	3.18
Slovenia	33	4.75	Pakistan	91	3.17
Thailand	34	4.58	Mozambique	92	3.17
Jordan	35	4.58	Nigeria	93	3.16
Lithuania	36	4.57	Georgia	94	3.14
Greece	37	4.56	Nicaragua	95	3.12
Cyprus	38	4.56	Madagascar	96	3.11
Hungary	39	4.56	Honduras	97	3.10
Czech Republic	40	4.55	Bolivia	98	3.09
South Africa	41	4.53	Zimbabwe	99	3.03
Tunisia	42	4.51	Paraguay	100	2.99
Slovak Republic	43	4.43	Ethiopia	101	2.93
Latvia	44	4.43	Bangladesh	102	2.84
Botswana	45	4.30	Angola	103	2.72
China	46	4.29	Chad	104	2.50
Italy	47	4.27			
Mexico	48	4.17			
Mauritius	49	4.14			
Costa Rica	50	4.12			
Trinidad and Tobago	51	4.12			
Namibia	52	4.11			
El Salvador	53	4.10			
Uruguay	54	4.08			
India	55	4.07			
Morocco	56	4.06			
Brazil	57	4.05			
Panama	58	4.01			

(cont'd.)

Technology Index

Country	Rank	Score	Country	Rank	Score
United States	1	6.24	Bulgaria	59	3.82
Taiwan	2	6.04	Dominican Republic	60	3.80
Finland	3	5.92	Philippines	61	3.72
Sweden	4	5.80	China	62	3.72
Japan	5	5.68	India	63	3.72
Denmark	6	5.34	Botswana	64	3.70
Switzerland	7	5.25	Egypt	65	3.68
Israel	8	5.25	Namibia	66	3.66
Korea	9	5.18	Russian Federation	67	3.65
Norway	10	5.17	Colombia	68	3.60
Singapore	11	5.11	El Salvador	69	3.60
Germany	12	5.08	Venezuela	70	3.60
Canada	13	5.05	Peru	71	3.45
Iceland	14	5.05	Kenya	72	3.31
Estonia	15	5.01	Indonesia	73	3.31
Netherlands	16	4.98	Morocco	74	3.30
Australia	17	4.93	Serbia and Montenegro	75	3.30
United Kingdom	18	4.92	Macedonia, FYR	76	3.26
Czech Republic	19	4.88	Uganda	77	3.22
Spain	20	4.86	Ghana	78	3.21
Malta	21	4.85	Guatemala	79	3.18
Austria	22	4.85	Georgia	80	3.18
Portugal	23	4.78	Sri Lanka	81	3.17
New Zealand	24	4.76	Bosnia and Hercegovina	82	3.15
United Arab Emirates	25	4.71	Ukraine	83	3.15
Slovenia	26	4.71	Tanzania	84	3.12
Malaysia	27	4.67	Gambia	85	3.12
Slovak Republic	28	4.67	Zimbabwe	86	3.04
Hungary	29	4.66	Pakistan	87	3.02
France	30	4.65	Ecuador	88	3.01
Belgium	31	4.59	Nigeria	89	2.99
Chile	32	4.55	Zambia	90	2.98
Lithuania	33	4.51	Paraguay	91	2.94
Hong Kong SAR	34	4.49	Vietnam	92	2.92
Bahrain	35	4.47	Honduras	93	2.89
Latvia	36	4.46	Mozambique	94	2.89
Ireland	37	4.43	Bolivia	95	2.81
Greece	38	4.42	Nicaragua	96	2.78
Cyprus	39	4.36	Malawi	97	2.74
South Africa	40	4.33	Algeria	98	2.67
Luxembourg	41	4.28	Madagascar	99	2.64
Brazil	42	4.24	Bangladesh	100	2.62
Thailand	43	4.24	Mali	101	2.52
Mauritius	44	4.19	Angola	102	2.30
Poland	45	4.19	Ethiopia	103	2.17
Croatia	46	4.15	Chad	104	1.81
Romania	47	4.13			
Mexico	48	4.13			
Jamaica	49	4.12			
Italy	50	4.08			
Jordan	51	4.02			
Turkey	52	4.01			
Panama	53	4.00			
Trinidad and Tobago	54	3.98			
Costa Rica	55	3.97			
Uruguay	56	3.92			
Argentina	57	3.87			
Tunisia	58	3.87			

(cont'd.)

Source: World Economic Forum

Table 2: Growth Competitiveness Index components *(cont'd.)*

Public Institutions Index

Country	Rank	Score
Denmark	1	6.59
Iceland	2	6.58
Finland	3	6.48
New Zealand	4	6.41
Norway	5	6.35
Sweden	6	6.31
United Kingdom	7	6.23
Switzerland	8	6.22
Hong Kong SAR	9	6.22
Singapore	10	6.21
Germany	11	6.21
Australia	12	6.10
Netherlands	13	6.08
Luxembourg	14	5.99
Austria	15	5.99
Japan	16	5.88
Ireland	17	5.87
Canada	18	5.84
United Arab Emirates	19	5.82
Chile	20	5.77
United States	21	5.74
Belgium	22	5.71
Portugal	23	5.69
Israel	24	5.64
France	25	5.62
Estonia	26	5.59
Taiwan	27	5.56
Bahrain	28	5.56
Jordan	29	5.43
Malta	30	5.39
Slovenia	31	5.28
Uruguay	32	5.23
Cyprus	33	5.18
Spain	34	5.16
South Africa	35	5.15
Tunisia	36	5.14
Hungary	37	5.07
Malaysia	38	5.06
Botswana	39	4.98
Namibia	40	4.92
Korea	41	4.81
Morocco	42	4.75
Lithuania	43	4.75
Greece	44	4.74
Thailand	45	4.71
El Salvador	46	4.71
Costa Rica	47	4.69
Italy	48	4.64
Slovak Republic	49	4.64
Brazil	50	4.62
Czech Republic	51	4.56
Latvia	52	4.55
India	53	4.45
Ghana	54	4.44
China	55	4.39
Bulgaria	56	4.36
Gambia	57	4.30
Peru	58	4.28
Mexico	59	4.28
Panama	60	4.26
Colombia	61	4.25
Turkey	62	4.22
Malawi	63	4.20
Trinidad and Tobago	64	4.18
Mauritius	65	4.16
Zambia	66	4.16
Algeria	67	4.13
Indonesia	68	4.12
Jamaica	69	4.11
Egypt	70	4.10
Dominican Republic	71	4.08
Sri Lanka	72	4.08
Zimbabwe	73	3.99
Romania	74	3.94
Kenya	75	3.87
Croatia	76	3.86
Ethiopia	77	3.80
Bosnia and Hercegovina	78	3.80
Argentina	79	3.77
Poland	80	3.70
Nicaragua	81	3.68
Vietnam	82	3.66
Mali	83	3.66
Guatemala	84	3.61
Serbia andMontenegro	85	3.61
Uganda	86	3.61
Bolivia	87	3.55
Tanzania	88	3.54
Russian Federation	89	3.54
Ecuador	90	3.42
Venezuela	91	3.41
Macedonia, FYR	92	3.41
Angola	93	3.38
Mozambique	94	3.36
Madagascar	95	3.32
Nigeria	96	3.31
Ukraine	97	3.29
Paraguay	98	3.24
Philippines	99	3.21
Honduras	100	3.19
Georgia	101	3.17
Pakistan	102	2.87
Chad	103	2.61
Bangladesh	104	2.47

(cont'd.)

Macroeconomic Environment Index

Country	Rank	Score
Singapore	1	5.79
Norway	2	5.54
Finland	3	5.47
Denmark	4	5.36
Switzerland	5	5.24
Luxembourg	6	5.23
Netherlands	7	5.13
United Kingdom	8	5.11
Taiwan	9	5.11
Austria	10	5.11
United Arab Emirates	11	5.09
Iceland	12	5.09
Hong Kong SAR	13	5.05
Australia	14	5.04
United States	15	5.04
Spain	16	4.99
Sweden	17	4.99
Canada	18	4.97
Belgium	19	4.92
Malaysia	20	4.91
Ireland	21	4.85
New Zealand	22	4.80
Thailand	23	4.79
China	24	4.78
France	25	4.78
Germany	26	4.77
Chile	27	4.71
Bahrain	28	4.70
Japan	29	4.67
Estonia	30	4.65
Greece	31	4.52
Tunisia	32	4.52
Lithuania	33	4.46
Portugal	34	4.42
Korea	35	4.41
Jordan	36	4.29
Latvia	37	4.27
Italy	38	4.27
Slovenia	39	4.26
Algeria	40	4.23
Czech Republic	41	4.22
Botswana	42	4.21
Israel	43	4.20
Trinidad and Tobago	44	4.20
Cyprus	45	4.14
Morocco	46	4.13
Malta	47	4.11
South Africa	48	4.11
Mexico	49	4.09
Mauritius	50	4.08
Poland	51	4.05
India	52	4.05
El Salvador	53	3.99
Slovak Republic	54	3.98
Hungary	55	3.95
Russian Federation	56	3.87
Egypt	57	3.86
Vietnam	58	3.82
Croatia	59	3.81
Bulgaria	60	3.77
Panama	61	3.76
Namibia	62	3.76
Indonesia	63	3.74
Costa Rica	64	3.72
Ghana	65	3.68
Colombia	66	3.67
Pakistan	67	3.63
Peru	68	3.60
Philippines	69	3.59
Mali	70	3.55
Romania	71	3.50
Tanzania	72	3.47
Sri Lanka	73	3.46
Bangladesh	74	3.42
Uganda	75	3.41
Ukraine	76	3.39
Macedonia, FYR	77	3.37
Madagascar	78	3.36
Guatemala	79	3.36
Brazil	80	3.28
Mozambique	81	3.26
Honduras	82	3.23
Jamaica	83	3.23
Turkey	84	3.22
Bosnia and Hercegovina	85	3.19
Kenya	86	3.18
Nigeria	87	3.17
Gambia	88	3.13
Ecuador	89	3.10
Uruguay	90	3.10
Chad	91	3.08
Georgia	92	3.07
Dominican Republic	93	3.00
Argentina	94	2.96
Zambia	95	2.96
Bolivia	96	2.90
Nicaragua	97	2.90
Venezuela	98	2.89
Ethiopia	99	2.81
Malawi	100	2.79
Paraguay	101	2.77
Serbia and Montenegro	102	2.77
Angola	103	2.46
Zimbabwe	104	2.07

(cont'd.)

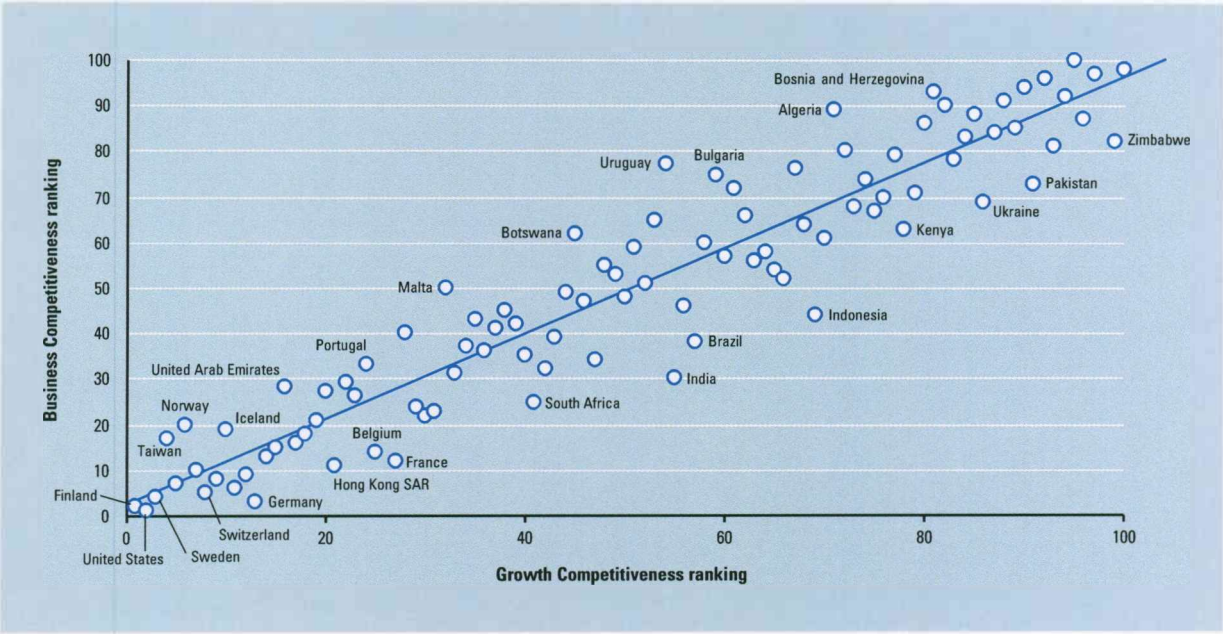
Table 3: The Business Competitiveness Index

Country	BCI ranking	Company operations and strategy ranking	Quality of the national business environment ranking
United States	1	2	2
Finland	2	7	1
Germany	3	1	5
Sweden	4	5	6
Switzerland	5	4	7
United Kingdom	6	8	4
Denmark	7	9	3
Japan	8	3	11
Netherlands	9	6	9
Singapore	10	13	8
Hong Kong SAR	11	15	10
France	12	10	16
Australia	13	19	12
Belgium	14	11	19
Canada	15	16	13
Austria	16	14	17
Taiwan	17	12	20
New Zealand	18	20	15
Iceland	19	17	18
Norway	20	23	14
Israel	21	18	21
Ireland	22	22	22
Malaysia	23	28	23
Korea	24	21	28
South Africa	25	24	25
Spain	26	25	27
Estonia	27	34	24
United Arab Emirates*	28	32	26
Chile	29	33	29
India	30	30	32
Slovenia	31	27	33
Tunisia	32	43	30
Portugal	33	42	31
Italy	34	26	43
Czech Republic	35	31	37
Lithuania	36	37	35
Thailand	37	36	36
Brazil	38	29	44
Slovak Republic	39	41	39
Bahrain*	40	53	34
Greece	41	40	42
Hungary	42	48	38
Jordan	43	54	40
Indonesia	44	38	46
Cyprus	45	59	41
Morocco	46	45	45
China	47	39	47
Costa Rica	48	35	50
Latvia	49	51	48
Malta	50	60	49
Namibia	51	63	51
Turkey	52	44	55
Mauritius	53	49	54
Jamaica	54	52	53
Mexico	55	46	56
Romania	56	61	57
Poland	57	47	64
Colombia	58	58	61
Trinidad and Tobago	59	55	62
Panama	60	66	58
Russian Federation	61	62	60
Botswana	62	73	52
Kenya	63	56	63
Ghana	64	71	59
El Salvador	65	65	65
Egypt*	66	57	68
Gambia*	67	70	66
Sri Lanka	68	69	67
Ukraine	69	64	71
Philippines	70	50	77
Uganda*	71	75	69
Croatia	72	72	70
Pakistan	73	67	75
Argentina	74	68	78
Bulgaria	75	86	72
Peru	76	77	74
Uruguay	77	80	76
Zambia*	78	85	73
Vietnam	79	81	79
Dominican Republic	80	74	83
Nigeria*	81	76	80
Zimbabwe	82	79	84
Macedonia, FYR	83	84	82
Malawi	84	83	85
Serbia and Montenegro	85	87	81
Guatemala	86	78	90
Madagascar	87	88	88
Venezuela	88	82	91
Algeria	89	93	86
Tanzania	90	92	87
Mali*	91	95	89
Georgia	92	89	93
Bosnia and Hercegovina	93	96	92
Ecuador	94	90	95
Bangladesh	95	97	94
Mozambique	96	94	98
Honduras	97	91	100
Paraguay	98	98	96
Ethiopia	99	101	97
Nicaragua	100	100	99
Bolivia	101	99	101
Chad*	102	103	102
Angola*	103	102	103

*Survey data for these countries have high within-country variance. Until the reliability of survey responses improves, with future educational efforts and improved sampling in these countries, their rankings should be interpreted with caution.

(cont'd.)

Figure 1: Growth and Business Competitiveness rankings



but is also changing our understanding of what are emerging as the key factors determining a country's growth performance.

To address some of these challenges, we have been working with Xavier Sala-i-Martin and Elsa Artadi to develop a more comprehensive competitiveness index. Reflecting the need to broaden our scope and look at a larger set of factors, the new index will bring into focus a much richer set of pillars: human capital, labor and financial markets efficiency, openness and market size, quality of infrastructure, to name a few of the new ones being incorporated; in this spirit, it will be called the *Global Competitiveness Index*. Chapter 1.3 of this *Report* is an excellent presentation of the work that has been done to date. 2004 therefore constitutes a transition year between the presentation of two indexes, the GCI and the BCI, and the subsequent consolidation of the World Economic Forum's competitiveness work into a single index—the *Global Competitiveness Index*.

Selected issues of competitiveness and special topics

This year's *Report* contains a number of studies which address different aspects of competitiveness and, more generally, themes which emanate from the World Economic Forum's deep concern with growth and development and the state of the world. Some of these studies draw directly from the Executive Opinion Survey for their analysis and insight. Others are concerned with a broader set of issues at the heart of the development agenda. All are business relevant, and highlight a range of issues which are variously shaping the global economic and business environment.

Selected issues of competitiveness

Daniel Kaufmann's "Corruption, Governance and Security: Challenges for the Rich Countries and the World" is an important addition to the literature in an increasingly important field. Traditionally, governance and corruption challenges have been seen as especially daunting in poorer countries, with the richer ones viewed as good examples, with their relative law and order, and well developed institutions. Others might view them as public sector problems, divorced from global governance or security issues. Using an empirical approach, based on this year's EOS, Kaufmann challenges these notions, and shows us a more complex reality, revealing more subtle, yet costly manifestations of misgovernance, afflicting not only poor, but rich countries as well. The traditional definition of corruption as the commission of an illegal act, such as outright bribery, is here broadened to include new measures of "legal corruption," seen as the collusion of at least two parties, typically from the public and private sectors, and where the rules of the game, laws and institutions are used, via influence peddling and even capture, to benefit vested interests.

By analyzing the interaction between rich country transnationals and the public sectors in emerging countries, Kaufmann finds that ethics and corruption pose a serious challenge for many rich countries, and that they represent key determinants of a country's competitiveness, shaping its investment climate. Kaufmann ends his chapter with an insightful analysis of the governance data from the EOS, separating the issues of national governance and global and domestic security, and challenging the notion that security issues—common crime, organized crime, money laundering, and the threat of terrorism—are not subject to measurement. The evidence suggests that some rich countries are faced not only with domestic challenges of undue influence, as regards many key public policies, laws and regulations, but with a new set of security threats as well; even with their well-developed institutions, the G-7 and other rich countries must face the challenge of guaranteeing level playing fields and mitigating the cost of terrorist threats.

In his paper "The Competitive Edge in Environmental Responsibility," Arthur Dahl argues that the environment has for too long been seen as an impediment to business, since environmental regulations have increased costs. A review of global environmental problems reveals not only challenges and risks for the private sector that cannot be ignored, but also opportunities for businesses that can work to their competitive advantage. Dahl highlights the significant potential for business leadership in the field of environment and sustainable development at each stage of the development process. By taking a positive, proactive view, the private sector can ensure supplies of raw materials, increase efficiency, and generate new technologies to respond to these problems, thus opening up new markets, reducing costs, and allowing more time for adaptation, with phased investments and reduced write-offs or special charges.

The 2004 Executive Opinion Survey evaluates the views of business leaders on environmental and social responsibility issues, and demonstrates both the importance of governmental leadership in providing an effective regulatory climate, and the key role of business leadership in addressing environmental and social issues proactively. In Dahl's analysis, countries are rated not on their present environmental status, but on the efforts of both business and government to improve that status, and to anticipate and address emerging problems. Nine countries received high ratings, another 34 were positive on balance, while 24 showed progress in some areas, and 38 were making little or no effort to be environmentally responsible. Some emerging economies and developing countries scored well, driven perhaps by dynamic business sectors and enlightened governments, while some industrialized countries were ranked far below their peers, suggesting a need for greater efforts to remain competitive. The results strongly suggest that combined efforts by business and government to facilitate corporate social and environmental responsibility do, indeed, generate a competitive edge.

In "Chile: The Next Stage of Development," Augusto Lopez-Claros notes that Chile has managed to grow faster than many other countries in the developing world, boosting per capita incomes, and making further progress to reduce poverty levels. It has done so against a backdrop of fiscal discipline and rapidly declining public debt levels, while maintaining an admirably open trade and foreign investment regime, and improving to a remarkable degree the quality of its public institutions, which have played a stabilizing and pivotal role in the country's recent evolution. By a wide margin, Chile is the most competitive economy in Latin America.

The author identifies a number of areas where challenges remain, however, if Chile is to make a successful transition to the next stage of its development. This phase will require a combination of comparative advantages and the adoption of new technologies to facilitate the emergence of clusters, centered mainly on the natural resource sectors and the upstream development of supporting industries with higher value added. Critical to this process of development will also be a substantial upgrading in the quality of Chile's educational system, which remains surprisingly inefficient, given the country's income levels. Lopez-Claros also raises the question of whether the country—and in particular its political leadership—have reached the right balance, as regards the role of the state in the economy. Without doubt, the country has benefited from a system that has built in a number of safeguards to protect the public interest from the short-term interests of passing politicians, and from various forms of abuse. But this approach may need to make room for a more active role for the state, as has been done in Finland, with regard to the support for new ventures, aimed at enhancing the country's potential for innovation.

Chile aside, in "The Future of Competitiveness-Enhancing Reforms in Latin America," Mario Blejer argues that despite a recent pickup in growth, the region continues to confront important challenges and faces serious struggles ahead. The difficulties concern the uncertainty regarding the sustainability of macroeconomic recovery and, more importantly, the capacity of the region to address long-term structural weaknesses. A significant problem in Latin America is the incomplete nature of the reforms, evidenced by deficiencies in institutional development, and reflected in the loss of competitiveness. Indeed, Latin America is falling behind, not only with respect to the economies of East Asia but, more significantly, with respect to the transition economies of central and eastern Europe.

In answer to the question what explains this worrisome trend, Blejer suggests that in most cases, reforms

have remained incomplete and their economic benefits have not been fully realized. Some of the successes in creating a more stable macroeconomic environment have not been complemented by more broad-based "second generation" reforms. He points out that any assessment of the current political and social realities in the region suggests that the short term prospects for further implementation of market-oriented reforms would seem bleak. Reforms have not had the anticipated effects on growth and employment and, against a groundswell of the anti-globalization movement, the entire concept of structural reform—with the exception of Chile—has been systematically maligned and discredited across Latin America. In such an environment, it is clear that there is a widespread lack of enthusiasm for further reforms. In practice, the design and introduction of a realistic reform agenda would require two key elements: *compensation* for those who are bound to be negatively affected from the process, and a better set of *international incentives* for governments and countries willing to swim against the current of public opinion, and take the necessary steps to improve their economy.

In "International Productivity Comparisons: the Importance of Hours of Work," Andrew Warner challenges the traditional measures of productivity, by highlighting the importance of hours worked. He demonstrates that while growth of GDP or GDP *per capita* puts the United States clearly ahead of most industrial countries during the boom years of the new economy (1995–2000), this supremacy is not quite so obvious when data on growth of GDP *per hour* is used to quantify productivity growth. Warner also questions the common notion that productivity has suffered a serious decline in Europe over the last decade. Using GDP per hour calculations, he shows the clear lead of some European countries over the United States, and implies that the European "productivity slowdown" may be more myth than reality, when we focus on per hour data.

Given uncertainties about the reliability and comparability of existing data on hours worked, as well as lack of coverage of poorer countries, questions were introduced into the 2004 Executive Opinion Survey on the extent of hours worked. Warner uses this unique dataset to reveal interesting differences between the trends observed in industrial countries and those in developing nations. Wage labor in low-income countries work particularly long hours, whereas in rich countries as a whole, there is a trend for executive workers to put in more hours than hourly labor.

Warner also uses the Survey data to highlight differences in productivity barriers and to show how these vary across countries and income levels. Four barriers to productivity are examined: labor practices, business regulations, labor skills, and poor infrastructure. While the perception of labor practices and business regulations as barriers to productivity does not appear to be directly related to income level, lack of skilled labor appears to be a hindrance in high-income countries, while the lack of infrastructure is typically, but not surprisingly, perceived as a productivity barrier in most low-income countries.

Special topics

By analyzing trends in population growth, per capita income, and the effects of the IT revolution, Richard Cooper, in "A Glimpse of 2020," offers an insightful perspective on what the world will look like two decades from now. Cooper paints contrasting demographic scenarios for 2020: low-income countries will see rapid population increase, placing heavy pressures on energy demand and urban infrastructure; rich countries will experience population decline, and a much higher ratio of elderly to working age, severely taxing governments' abilities to maintain the high social benefits to which their citizens have grown accustomed.

Dramatically decreased costs of communication will increase mobility, reduce economic and cultural differences between the regions of the world, but increase international cooperation, not only in areas such as financial regulation, tax and law enforcement and technology exchange, but also in the willingness of nations to intervene where national governments have failed. Despite the natural attraction of familiar languages and social environments, businesses are becoming "footloose," increasingly driven by competition to outsource offshore, with headquarters and production centers often situated at great distances from each other. NGOs as well as criminal business and terrorism will become increasingly international in scope, and repressive governments will find it more difficult to insulate their populations from access to information. Cooper points out that by 2020, while there is bound to be uncertainty following the inevitable demise of current dictators, more "South Koreas" will arise, i.e. developing countries which grow rapidly, democratize and join the ranks of the rich, forming new market opportunities. Particular attention is paid to China, whose GDP by 2020 could make it the world's third largest economy, and where, although still poor, the high ratio of wage earners to dependents will enable the country to become a major world player. Forecasting the future is hazardous business, but Cooper presents a cogent, business-relevant, vision of 2020.

A number of challenges to the well-being of our societies—demographic, technological, climatological, and geopolitical—are visible on the long-term horizon. In "Confronting Long-Term Fiscal Challenges: Why it Matters for the Global Economy," Peter Heller takes up an issue raised by Cooper in his own article, and perceptively explains why some of these challenges are predictable,

while others are vague and uncertain. Even when clearly anticipated, uncertainty still surrounds developments whose horizon may be measured in decades. Some, such as aging populations, pose a threat to the financial solvency of national governments, raising the prospect of vastly increased future public outlays, whether for pensions, health care, long-term chronic care, infrastructure, or security. Accentuating these fiscal risks is the fact that the future resources of governments are already precommitted to an unprecedented extent. Not surprisingly, political economy factors work against efforts to address these challenges.

Heller contends that governments must do much more, now, to prepare for the fiscal consequences of the developments that their countries face over the next several decades. The agenda for action will depend on the country, on the preferences and capacities of its people and institutions, on the extent of its existing policy commitments, and on the specific challenges it faces. Uncertainty does not absolve fiscal policymakers from the burden of addressing long-term issues. What they do, or fail to do, will critically influence both the welfare of current and future generations, and the role and capacity of the state itself. Delay in addressing these changes will only increase their costs, some of which will be borne by those living today. What to do? Heller suggests that no single policy reform will suffice to meet long-term challenges. Reform must proceed on many fronts, utilizing additional analytic techniques, strengthening institutions to clarify and monitor evolving budget trends, introducing detailed policy reforms, the sustained strengthening of the aggregate fiscal position, and working with other countries on areas where collective action is required.

In a compelling contribution to this year's *Report*, entitled "Agricultural Policies in OECD Countries: an Agenda for Reform," Stefan Tangermann makes a number of fundamental points, which cast refreshing light on a complex and politically charged subject. To begin with, there is an apparent inconsistency between the rapidly declining importance of agriculture among the 30 Member countries of the OECD—whether measured in terms of the sector's contribution to total GDP or total employment—and the considerable attention devoted to it in the public debate. The resources transferred to farmers—an impressive US$257 billion in 2003, a full three quarters of which taking the form of production-linked transfers—seriously distort markets and competition in international trade. Tangermann shows that, despite long-standing discussions about the need for reforms, the level of support during 2001–2003 is only marginally lower than during the period 1986–1988. However, within the OECD as a whole, there is considerable diversity across countries, with New Zealand and Australia having essentially eliminated farm support as a result of comprehensive reforms, and others, such as Norway and Switzerland, still providing levels of producer support more than twice the average in the EU, and hardly changed during the past 15 years.

Tangermann examines the reasons for these massive transfers to farmers. Their motivation stems from a desire to address equity concerns in societies at large, and deal with market failures associated with the interaction between agriculture and the environment. However, he provides compelling data to show that, in fact, incomes of farm households in OECD countries are in line with, if not higher than, household incomes in the overall economy. Thus, broad-based support measures such as price and output support are unnecessary. Worse still, only 25 cents out of every dollar of support provided to farmers actually ends up in farmers' pockets, with a large share of the rest going to large landowners. As regards the environment, the harsh effects of overproduction on the quality of farmland and wildlife are well known. Finally, the extra output generated by farm policies in OECD countries depresses prices for farm products in international trade, and has been a contributing factor in the difficulties encountered in promoting further multilateral trade liberalization. The author concludes this important paper with some specific suggestions for reform.

In his paper "Can Foreign Aid Make Poor Countries Competitive?" William Easterly offers insightful answers to the question why foreign aid has not been more successful at promoting competitiveness. In his review of the evidence on foreign aid and economic growth, the effectiveness of aid conditionality, and the bureaucratic nature of aid agencies, Easterly questions and then examines the results of the regression analysis published in 2000 by Craig Burnside and David Dollar, which investigated the relationship between foreign aid, economic policy and the growth of per capita GDP. Because of its conclusion, viz. that aid only works in a good policy environment, this study was widely cited by media, governments and aid agencies, as a basis for increasing foreign aid. By expanding the dataset, extending the time line and using alternative definitions of "aid," "policy," and "growth," Easterly comes to some different and thought-provoking conclusions, to the effect that the interaction term of aid and good policy is no longer statistically significant. Easterly also critically examines the "financing gap" approach to aid, by which it is assumed that aid increases investment and investment increases economic growth, finding it both theoretically questionable and empirically deficient, leading him to question why the international community has not held agencies responsible for the failure of large flows of aid to generate growth.

After discussing the detailed findings, Easterly analyzes how aid agencies actually function, citing the excessive, dysfunctional bureaucracy of agencies, the fact that they

are answerable to the rich donors, rather than their voiceless recipients, the assumption of capital projects without maintaining them, and the pernicious tendency to overmeet, overextend and overstate. He saves particularly trenchant criticism for the failure of aid agencies, despite the presence of obviously well-intentioned and capable minds, to understand the deeper implications of and truly practice "grassroots" development. The result of this failure, he concludes, has been not only the continued presence of unalleviated misery, but the loss of support for aid on the part of the rich countries most able to provide it. He ends in a positive tone, pointing to a successful project in Ethiopia, by making a number of serious and realistic proposals for aid agencies, governments and development practitioners, to assist them in revising expectations, methods, and, hopefully, outcomes.

The *Report* ends with a section containing detailed country profiles for each of the 104 economies covered in our competitiveness indexes, as well as data tables for the variables that are used as inputs in their construction. A brief Annex, explaining how best to interpret the information contained in the country profiles and the data tables, is an essential companion to this section, as are technical notes clarifying the meaning of many variables, and listing relevant data sources.

2003-2004

Executive Summary

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The fundamental objective of the *Global Competitiveness Report* (GCR) is to evaluate the economic competitiveness of a large sample of countries. Traditionally, the GCR has focused on two complementary approaches to analyzing competitiveness. The first, called the *Growth Competitiveness Index (GCI)*, was developed by Jeffrey D. Sachs of Columbia University and John W. McArthur of The Earth Institute and was presented in *The Global Competitiveness Report 2001–2002*. The second index, now labeled the *Business Competitiveness Index (BCI)*, was developed by Michael Porter of Harvard University and was first introduced in *The Global Competitiveness Report 2000*.

The two indexes combine available hard data and data from the Executive Opinion Survey (Survey) conducted annually by the World Economic Forum (see Chapter 3.1 for additional analysis of Survey results and methodology). The Survey is conducted in the first half of every year. Input is contributed exclusively by leading business executives and entrepreneurs whose current perceptions of the business environment in which they work are captured in their responses to a comprehensive and scientifically constructed questionnaire. By participating, respondents are also provided with the opportunity to identify key obstacles to economic growth in their own countries and thus contribute to assessing the quality of the business environment in the countries where their companies operate. This, in turn, may help precipitate an internal debate within the country between government officials, business leaders, organizations of civil society and the academic community on key problem areas and how best to address them.

The Survey was carried out this year in collaboration with 104 Partner Institutes of the World Economic Forum's Global Competitiveness Programme. Partner Institutes are typically leading national research or academic institutes committed to contributing to the growth potential of their respective economies. Under the direction of the World Economic Forum, their collaboration involves conducting the Survey according to common guidelines in order to ensure that the sample of respondents is representative of the economies in question and that the Survey method used remains consistent across all countries.

The number of countries surveyed this year increased significantly, from 80 to 102. The countries added are mainly from the developing world, especially Africa. The coverage in that region of the world has increased from 8 to 25, and now also includes Algeria, Angola, Cameroon, Chad, Egypt, Ethiopia, Gambia, Ghana, Kenya, Madagascar, Malawi, Mali, Mozambique, Senegal, Tanzania, Uganda, and Zambia. Newly added countries also embrace non-African nations, including Luxembourg, Macedonia, Malta, Pakistan, and Serbia. The countries included in this year's *Report* account for 97.8 percent of

world's GDP. *The Global Competitiveness Report 2003–2004*, therefore, provides comprehensive coverage of the global economy.

The Growth Competitiveness Index

The GCI's main goal is to analyze the potential for the world's economies to attain sustained economic growth over the medium and long term. The index is based on economists' current understanding of the determinants of the complex process of economic growth and development. It summarizes the set of institutions, policies, and structures driving the growth process of 102 heterogeneous countries.

The GCI is founded on three central ideas. The first one is that the process of economic growth can be analyzed within three important broad categories: the macroeconomic environment, the quality of public institutions, and technology.

Although it is certainly not true that macroeconomic stability alone can increase the growth rate of a nation, it is no less true that macroeconomic disarray kills its growth prospects. Informed decisions cannot be made in environments where the inflation rate is in the hundreds. The banking system cannot function if the government runs gigantic deficits. The government cannot provide services efficiently if it has to pay enormous interest rates on its past debts. And wasted taxation hurts the business sector unnecessarily. In sum, sustained growth is hard to achieve in nonfavorable macro environments.

The second pillar underlying the GCI relates to public institutions. In a market economy, wealth is ultimately created by private businesses. However, these businesses have to operate within a country and have to deal with its institutions. It is important, for example, that property rights are guaranteed by a legal and judicial system. It is hard for private companies to operate efficiently in countries where the rule of law is nonexistent or where contracts cannot be enforced. Firms may find it too expensive to do business where corruption is rampant. Thus, the GCI measures the soundness of the public institutions and it introduces this soundness as the second of the three pillars of economic growth and development.

The third channel is technological progress. Perhaps the main lesson of neoclassical growth theory is that the ultimate source of long-run economic growth is technological progress. The reason for this is that the other potential determinants of growth must run into diminishing returns. For example, institutions and the macroeconomic policy can have important effects on growth in countries with terrible environments. But once institutions are more or less right, and once the macroeconomy is more or less stable, additional improvements along these lines will probably have little or no effect on economic growth. This is not true for technological progress: there do not seem to be good reasons that would suggest that there are diminishing returns to ideas. In fact, the contrary might be true, given that humanity seems to generate new ideas at accelerating rates.

The GCI uses both hard (publicly available) data and data from the World Economic Forum's Survey to estimate three "component indexes" that capture the three pillars of growth mentioned above. The three components are called the "technology index," the "public institutions index," and the "macroeconomic environment index." The three components are then combined to calculate the overall GCI.

The second idea underlying the GCI is that, although technological advance is the ultimate source of growth, its origin may be different across countries. In particular, for economies that are already close to the technological frontier, innovation is the main source of technological improvements. For those that are far away from the frontier, technological improvements can be achieved partly through innovation and partly by copying or adopting the knowledge previously developed in one of the leading economies.

To capture this second idea, the GCI separates the sample of countries into two groups: the "core" and the "non-core" innovators. Core innovators are those economies whose growth is largely driven by their capacity to innovate because they are close to the technological frontier. "Non-core" innovators are those that depend more on technological adoption from abroad. The threshold of 15 patents per million population was chosen to separate the countries into these two groups. Countries above this threshold are defined as the core group, and all others as non-core.

To reflect the fact that innovation is more important than adoption for core innovators, the technology index of the GCI puts a larger weight on innovation for the core innovators than for the non-core innovators. Technological adoption, on the other hand, receives a positive weight for non-core countries and zero weight for core innovators. Technological adoption is captured by the technology transfer subindex.

The third central idea underlying the GCI is that the importance of the determinants of economic competitiveness varies for core and non-core innovators. Getting the fundamentals right in terms of the macroeconomic environment and institutions is still extremely critical for the non-core innovators, whereas core innovators will have these fundamentals largely in place, and for them technological innovation has become the deciding factor for growth. Along these lines, the GCI assigns a larger weight to the technology index for core innovators than it does to the public institutions index and the macroeconomic

environment index. On the other hand, equal weights are assigned to these three indexes for non-core innovators.

Although we have maintained the basic structure and overall logic of the GCI as developed by Sachs and McArthur, this year we have made one significant change to the methodology. In the macroeconomic environment index, we have replaced a previously used variable, the "government expenditure as a percentage of GDP," with a composite subindex aimed at capturing government spending waste. We decided to reconsider the role of government expenditure as a percentage of GDP because, implicitly, its inclusion assumed that economic growth would be maximized at zero government expenditures. We do not think that this is a good assumption, since many public expenditures are productive and contribute positively to the competitiveness of a nation. The index should capture public waste rather than public spending. After testing a number of candidate variables, three were selected:

- Extent of distortive government subsidies
- Diversion of public funds
- Public trust in the financial honesty of politicians

We think that this "composite waste subindex" captures waste through government favoritism and corruption. This should account for a large part of overall government wasteful spending. Statistical analysis of these variables indeed showed that they have strong explanatory power with regard to medium- to long-term growth. This solution was thus retained. The second change, less important in its implications, affects the innovation component of the technology index—the details are presented in Chapter 1.1.

Last year's rankings

Of course, altering the model as described in the section above necessarily has an impact on the rankings of the index. Table 1 compares last year's published rankings (Column 4) with those that would have been obtained using the current formula (Column 3). We see that there would have been a number of differences in last year's rankings if we had made the two substitutions described in the section above. A first notable point is that Finland, rather than the United States, would have topped the rankings. This can be traced to the fact that the US government spends a relatively low percentage of GDP compared to Finland. And although US spending is not seen as particularly wasteful, Finland's is seen as even less so. The combined effect of these two forces is that Finland is ranked ahead of the US once government expenditure is replaced by government waste.

Finland's relative improvement is indicative of a more general trend we see in the data: many western European countries would have been higher in the rankings last year using the new formula. These countries have governments that spend a high proportion of GDP (which was "penalized" by last year's formula), but that, as captured by the waste composite, are not seen as spending wastefully. In fact, all western European countries have either the same or higher rankings following the introduction of government waste to the index: not one of them is lower following this change.

The other side of the same coin is that many countries in Asia and Latin America would have had lower ranks last year if we had been using the waste variable rather than government expenditure. These are countries that have relatively low overall government spending, which pushed them higher in the rankings last year. However, once the wastefulness of the spending they do have is taken into account, many of these countries do less well, therefore coming in lower in the rankings.

Competitiveness Rankings 2003–2004

Column 1 of Table 1 reports the results of this year's 2003 Growth Competitiveness Index rankings using the full sample of 102 countries. In order to establish comparability between last year's rankings (Column 3) and this year's, we also report this year's rankings when only the countries that participated in last year's study are included. This is done in Column 2.

A quick comparison of Columns 2 and 3 reveals striking similarities with last year's top ten rankings. The first four ranks are identical, with Finland in the first place, followed by the United States, Sweden, and Denmark, respectively. Taiwan and Singapore maintain their rankings relative to each other, but both moved higher by one position, to 5th and 6th respectively, sliding Switzerland from the 5th to the 7th position. Norway declined by one rank to 9th place, making way for Iceland at the 8th place. Canada, previously at 9th place, falls off the top 10 list while Australia remains in 10th position.

The top two newcomers are Malta (19th) and Luxembourg (21st). The new countries from the developing world all lie at the bottom half of the table. Gambia (55th) is the highest rank newcomer, whereas Chad (101st) is the lowest. Egypt (58th) comes back to the rankings after being eliminated last year because of problems in the data collection process. Tanzania (69th), Ghana (71st), Pakistan (73rd) and Algeria (74th) are the next highest rank newcomers, followed by Malawi (76th), Serbia (77th), Senegal (79th), Uganda (80th), Macedonia (81st), Kenya (83rd), Zambia (88th), Cameroon (91st), Ethiopia (92nd), Mozambique (93rd), Madagascar (96th), Mali (99th), and Angola (100th).

Table 1: Growth Competitiveness Index rankings and 2002 comparisons

Country	GCI 2003 Rank (among 2003 countries)	GCI 2003 Rank (among 2002 countries)	GCI 2002 Rank (revised*)	GCI 2002 Rank (original)
Finland	1	1	1	2
United States	2	2	2	1
Sweden	3	3	3	5
Denmark	4	4	4	10
Taiwan	5	5	6	3
Singapore	6	6	7	4
Switzerland	7	7	5	6
Iceland	8	8	12	12
Norway	9	9	8	9
Australia	10	10	10	7
Japan	11	11	16	13
Netherlands	12	12	13	15
Germany	13	13	14	14
New Zealand	14	14	15	16
United Kingdom	15	15	11	11
Canada	16	16	9	8
Austria	17	17	18	18
Korea	18	18	25	21
Malta	19	—	—	—
Israel	20	19	17	19
Luxembourg	21	—	—	—
Estonia	22	20	27	26
Spain	23	21	20	22
Hong Kong	24	22	22	17
Portugal	25	23	19	23
France	26	24	28	30
Belgium	27	25	21	25
Chile	28	26	24	20
Malaysia	29	27	30	27
Ireland	30	28	23	24
Slovenia	31	29	26	28
Thailand	32	30	37	31
Hungary	33	31	29	29
Jordan	34	32	44	47
Greece	35	33	31	38
Botswana	36	34	35	41
Latvia	37	35	43	44
Tunisia	38	36	32	34
Czech Republic	39	37	36	40
Lithuania	40	38	39	36
Italy	41	39	33	39
South Africa	42	40	34	32
Slovak Republic	43	41	46	49
China	44	42	38	33
Poland	45	43	50	51
Mauritius	46	44	41	35
Mexico	47	45	53	45
El Salvador	48	46	60	57
Trinidad and Tobago	49	47	42	37
Uruguay	50	48	40	42
Costa Rica	51	49	49	43
Namibia	52	50	47	53
Croatia	53	51	48	58
Brazil	54	52	45	46
Gambia	55	—	—	—
India	56	53	54	48
Peru	57	54	55	54
Egypt	58	—	—	—
Panama	59	55	51	50
Vietnam	60	56	62	65
Morocco	61	57	52	55
Dominican Republic	62	58	56	52
Colombia	63	59	61	56
Bulgaria	64	60	58	62
Turkey	65	61	65	69
Philippines	66	62	63	61
Jamaica	67	63	57	60
Sri Lanka	68	64	59	59
Tanzania	69	—	—	—
Russian Federation	70	65	66	64
Ghana	71	—	—	—
Indonesia	72	66	69	67
Pakistan	73	—	—	—
Algeria	74	—	—	—
Romania	75	67	67	66
Malawi	76	—	—	—
Serbia	77	—	—	—
Argentina	78	68	64	63
Senegal	79	—	—	—
Uganda	80	—	—	—
Macedonia	81	—	—	—
Venezuela	82	69	68	68
Kenya	83	—	—	—
Ukraine	84	70	74	77
Bolivia	85	71	71	78
Ecuador	86	72	73	73
Nigeria	87	73	72	71
Zambia	88	—	—	—
Guatemala	89	74	75	70
Nicaragua	90	75	70	75
Cameroon	91	—	—	—
Ethiopia	92	—	—	—
Mozambique	93	—	—	—
Honduras	94	76	78	76
Paraguay	95	77	76	72
Madagascar	96	—	—	—
Zimbabwe	97	78	79	79
Bangladesh	98	79	77	74
Mali	99	—	—	—
Angola	100	—	—	—
Chad	101	—	—	—
Haiti	102	80	80	80

(cont'd.)

*Applying the 2003 Formula
Source: World Economic Forum

Table 2 breaks down the GCI into its three main subcomponents: the macroeconomic environment index, the public institutions index, and the technology index. In Table 2 we see, for instance, that Finland is ranked first overall because it scored well in all areas. Unlike Finland, the United States maintained its position in the second place of the GCI amid varying levels of achievement in the different components. For instance, the country's overall performance is weakened by the quality of its public institutions. And although the United States still leads in the technology index, its overall score dropped, reflecting a reduction in the tertiary enrolment rate and a decline in the number of patents granted.

In Europe, France, at 26th place, received a boost in its rankings due to higher scores in public institutions and technology, which offset a decline in the macroeconomic environment. Unlike France, Ireland fell to the 30th position due to widespread declines in the different components of the index. Similarly, Italy, at the 41st position, also lost ground in the rankings, reflecting across-the-board declines in the major components of the index, particularly its macroeconomic environment.

Among central and eastern European countries, Estonia maintains its leadership at 22nd place in the overall rankings, enjoying the highest technology, public institutions, and macroeconomic environment scores in the region. Latvia is most notable for posting one of the most improved performances across the various components. Although Ukraine, at 84th place, has the lowest rank in Europe, the country has posted improvements in certain areas.

In Asia, Korea posted one of the most notable ascents in the GCI rankings, moving from the 25th to the 18th position. Korea's rise in the rankings was driven by improvements in its macroeconomic environment, increased public trust in politicians, a better score in the area of diversion of public funds, and a remarkable improvement in its technology performance with one of the highest increases in patent activity. Like Korea, Thailand and Vietnam registered notable improvements in overall rankings. Although Indonesia declines in the overall rankings, the country posts one of the most significant increases in its actual score. Its macroeconomic environment score is the 5th most improved, marked by significantly better scores in the area of government waste. Malaysia and India both derived gains from improvements in the area of technology. Among the most notable downward shifts in the rankings was experienced by China. The country's drop in the rankings was marked by a deterioration in the perceived quality of public institutions.

In Latin America, Chile continues to have the highest rank in the region, followed, at a considerable distance, by Mexico. Although Chile has the highest scores in the region in all three index components, the country has experienced notable deterioration in the area of government waste, exhibiting the worst decline in the indicator measuring public trust of politicians. The lowest ranking in the region is held by Haiti, which also occupies the 102nd position in the GCI. Brazil and Argentina both posted significant declines in the macroeconomic environment. Technology offers a bright spot for both countries: tertiary enrollment increased significantly and diffusion of ICT continues at a very fast pace in Brazil, while government prioritization of ICT and success of government ICT promotion both received higher ratings in Argentina. Among the countries in the region, the biggest declines in the rankings were experienced by Uruguay and Jamaica. Uruguay fell due to drastic deterioration of its macroeconomic environment as evident in the region's largest decline in credit rating. Lower scores in the macroeconomic environment also pushed Jamaica lower in the rankings. At the opposite extreme, Mexico and El Salvador experienced the most notable improvements in performance.

In the Middle East, Jordan and Turkey both post dramatic improvements in the quality of public institutions. Jordan, in particular, showed the largest score and rank increase in this area, driven by gains in control of corruption and greater independence of the judiciary. The country also posted better ratings relating to public trust in politicians, diversion of public funds, and the extent of distortive subsidies. Likewise, but to a lesser extent, Turkey exhibited significant improvements in the control of corruption and the independence of the judiciary.

In Africa, Botswana enjoys the highest ranking in the GCI. It has the highest public institutions and macroeconomic environment rankings in the region. Botswana's ranking in technology is lower than its ranking in other components; despite increases in ICT diffusion, significant drawbacks in technology remain. South Africa leads the region in the area of technology. However, South Africa's overall growth competitiveness ranking is lower than last year's because of a deterioration in some of the components that assess the quality of public institutions, particularly the prevalence of payments irregularities and the incidence of crime.

Table 2: Growth Competitiveness Index components

Growth Competitiveness Index (GCI)

Country	Rank	Country	Rank
Finland	1	Bulgaria	64
United States	2	Turkey	65
Sweden	3	Philippines	66
Denmark	4	Jamaica	67
Taiwan	5	Sri Lanka	68
Singapore	6	Tanzania	69
Switzerland	7	Russian Federation	70
Iceland	8	Ghana	71
Norway	9	Indonesia	72
Australia	10	Pakistan	73
Japan	11	Algeria	74
Netherlands	12	Romania	75
Germany	13	Malawi	76
New Zealand	14	Serbia	77
United Kingdom	15	Argentina	78
Canada	16	Senegal	79
Austria	17	Uganda	80
Korea	18	Macedonia	81
Malta	19	Venezuela	82
Israel	20	Kenya	83
Luxembourg	21	Ukraine	84
Estonia	22	Bolivia	85
Spain	23	Ecuador	86
Hong Kong	24	Nigeria	87
Portugal	25	Zambia	88
France	26	Guatemala	89
Belgium	27	Nicaragua	90
Chile	28	Cameroon	91
Malaysia	29	Ethiopia	92
Ireland	30	Mozambique	93
Slovenia	31	Honduras	94
Thailand	32	Paraguay	95
Hungary	33	Madagascar	96
Jordan	34	Zimbabwe	97
Greece	35	Bangladesh	98
Botswana	36	Mali	99
Latvia	37	Angola	100
Tunisia	38	Chad	101
Czech Republic	39	Haiti	102
Lithuania	40		
Italy	41		
South Africa	42		
Slovak Republic	43		
China	44		
Poland	45		
Mauritius	46		
Mexico	47		
El Salvador	48		
Trinidad and Tobago	49		
Uruguay	50		
Costa Rica	51		
Namibia	52		
Croatia	53		
Brazil	54		
Gambia	55		
India	56		
Peru	57		
Egypt	58		
Panama	59		
Vietnam	60		
Morocco	61		
Dominican Republic	62		
Colombia	63		

(cont'd.)

Macroeconomic Environment Index

Country	Rank	Country	Rank
Singapore	1	Indonesia	64
Finland	2	Sri Lanka	65
Luxembourg	3	Colombia	66
Norway	4	Senegal	67
Denmark	5	Ghana	68
Switzerland	6	Dominican Republic	69
Australia	7	Ukraine	70
Sweden	8	Uganda	71
Netherlands	9	Bangladesh	72
Austria	10	Bulgaria	73
Canada	11	Nigeria	74
United Kingdom	12	Brazil	75
New Zealand	13	Tanzania	76
United States	14	Kenya	77
Hong Kong	15	Cameroon	78
Iceland	16	Madagascar	79
Spain	17	Macedonia	80
Taiwan	18	Romania	81
Belgium	19	Turkey	82
France	20	Bolivia	83
Germany	21	Ethiopia	84
Ireland	22	Guatemala	85
Korea	23	Jamaica	86
Japan	24	Serbia	87
China	25	Honduras	88
Thailand	26	Uruguay	89
Malaysia	27	Ecuador	90
Italy	28	Mali	91
Malta	29	Paraguay	92
Botswana	30	Argentina	93
Portugal	31	Venezuela	94
Tunisia	32	Mozambique	95
Greece	33	Chad	96
Estonia	34	Zambia	97
Chile	35	Malawi	98
Latvia	36	Haiti	99
Slovenia	37	Nicaragua	100
Hungary	38	Angola	101
Czech Republic	39	Zimbabwe	102
South Africa	40		
Lithuania	41		
Jordan	42		
Morocco	43		
Israel	44		
Vietnam	45		
Gambia	46		
Trinidad and Tobago	47		
El Salvador	48		
Poland	49		
Slovak Republic	50		
Algeria	51		
India	52		
Namibia	53		
Mexico	54		
Croatia	55		
Egypt	56		
Mauritius	57		
Peru	58		
Panama	59		
Philippines	60		
Russian Federation	61		
Pakistan	62		
Costa Rica	63		

(cont'd.)

Source: World Economic Forum

Table 2: Growth Competitiveness Index components *(cont'd.)*

Public Institutions Index

Country	Rank	Country	Rank
Denmark	1	Dominican Republic	64
Finland	2	Ghana	65
Iceland	3	Algeria	66
Australia	4	Croatia	67
New Zealand	5	Morocco	68
Singapore	6	Zambia	69
Sweden	7	Jamaica	70
Switzerland	8	Panama	71
Germany	9	Sri Lanka	72
Hong Kong	10	Ethiopia	73
Netherlands	11	Pakistan	74
United Kingdom	12	Senegal	75
Luxembourg	13	Indonesia	76
Austria	14	Serbia	77
Israel	15	Nicaragua	78
Norway	16	Bolivia	79
United States	17	Ecuador	80
Malta	18	Russian Federation	81
Chile	19	Mozambique	82
Jordan	20	Mali	83
Taiwan	21	Uganda	84
Portugal	22	Philippines	85
France	23	Romania	86
Canada	24	Guatemala	87
Ireland	25	Argentina	88
Botswana	26	Venezuela	89
Belgium	27	Zimbabwe	90
Estonia	28	Angola	91
Uruguay	29	Kenya	92
Japan	30	Macedonia	93
Spain	31	Ukraine	94
Tunisia	32	Cameroon	95
Hungary	33	Madagascar	96
Malaysia	34	Paraguay	97
Slovenia	35	Nigeria	98
Korea	36	Honduras	99
Thailand	37	Bangladesh	100
Malawi	38	Chad	101
Gambia	39	Haiti	102
El Salvador	40		
Lithuania	41		
Greece	42		
South Africa	43		
Mauritius	44		
Latvia	45		
Italy	46		
Czech Republic	47		
Namibia	48		
Costa Rica	49		
Mexico	50		
Slovak Republic	51		
China	52		
Brazil	53		
Peru	54		
India	55		
Trinidad and Tobago	56		
Egypt	57		
Poland	58		
Tanzania	59		
Colombia	60		
Vietnam	61		
Bulgaria	62		
Turkey	63		

(cont'd.)

Technology Index

Country	Rank	Country	Rank
United States	1	India	64
Finland	2	China	65
Taiwan	3	Serbia	66
Sweden	4	El Salvador	67
Japan	5	Egypt	68
Korea	6	Russian Federation	69
Switzerland	7	Macedonia	70
Denmark	8	Morocco	71
Israel	9	Sri Lanka	72
Estonia	10	Vietnam	73
Canada	11	Kenya	74
Singapore	12	Zimbabwe	75
Norway	13	Ecuador	76
Germany	14	Uganda	77
Iceland	15	Indonesia	78
United Kingdom	16	Guatemala	79
Malta	17	Gambia	80
Netherlands	18	Tanzania	81
Australia	19	Nigeria	82
Malaysia	20	Pakistan	83
Czech Republic	21	Ukraine	84
Portugal	22	Nicaragua	85
New Zealand	23	Ghana	86
Slovenia	24	Honduras	87
Spain	25	Bolivia	88
Latvia	26	Senegal	89
Austria	27	Zambia	90
France	28	Paraguay	91
Belgium	29	Mozambique	92
Greece	30	Cameroon	93
Chile	31	Malawi	94
Hungary	32	Bangladesh	95
Slovak Republic	33	Algeria	96
Poland	34	Madagascar	97
Brazil	35	Angola	98
Lithuania	36	Mali	99
Hong Kong	37	Ethiopia	100
Ireland	38	Haiti	101
Thailand	39	Chad	102
South Africa	40		
Croatia	41		
Luxembourg	42		
Mexico	43		
Italy	44		
Argentina	45		
Costa Rica	46		
Trinidad and Tobago	47		
Jordan	48		
Mauritius	49		
Panama	50		
Uruguay	51		
Dominican Republic	52		
Jamaica	53		
Turkey	54		
Romania	55		
Philippines	56		
Tunisia	57		
Venezuela	58		
Botswana	59		
Colombia	60		
Peru	61		
Namibia	62		
Bulgaria	63		

(cont'd.)

The Business Competitiveness Index

Stable political, legal, and social institutions and sound macroeconomic policies create the potential for improving national prosperity. But wealth is actually created at the microeconomic level—in the ability of firms to create valuable goods and services using efficient methods. Only in this way can a nation support high wages and the attractive returns to capital necessary to support sustained investment. The *Business Competitiveness Index (BCI)* presented in this volume is based on a conceptual framework and statistical approach which follows that of the previous reports and the findings are fully comparable with previous Microeconomic Competitiveness Index results.

The microeconomic foundations of productivity rest on two interrelated areas: (1) the sophistication with which domestic companies or foreign subsidiaries operating in the country compete, and (2) the quality of the microeconomic business environment in which they operate. The productivity of a country is ultimately set by the productivity of its companies. An economy cannot be competitive unless companies operating there are competitive, whether they are domestic firms or subsidiaries of foreign companies. However, the sophistication and productivity of companies is inextricably intertwined with the quality of the national business environment. More productive company strategies require more highly skilled people, better information, more efficient government processes, improved infrastructure, better suppliers, more advanced research institutions, and more intense competitive pressure, among other things. This is what the BCI tries to capture.

The BCI is constructed from measures drawn primarily from the Executive Opinion Survey. Quantitative measures are utilized for patenting rates and Internet and cellular telephone penetration. For all of the other dimensions, quantitative data for many countries are unavailable. Thus, the Survey offers many unique measures and captures the informed judgments of thousands of business leaders and decision makers in the economies examined.

To derive the overall BCI, two subindexes are computed. The subindexes measure (1) the *sophistication of company operations and strategy* and (2) the *quality of the national business environment*, respectively. Many of the dimensions of company sophistication and the quality of the business environment tend to move together. Moreover, the sample of countries is relatively small and the number of relevant variables is high. Thus, the impact of individual variables is difficult to distinguish statistically. Hence common factor analysis is used to compute the subindexes. The two subindexes are then averaged to estimate the overall BCI. The weights are determined from the coefficients of a multiple regression of the subindexes on GDP per capita.

The BCI rankings for 2003 are shown in Table 3. Column 1 shows the overall rankings. Columns 2 and 3 display the two subindexes: the company operations and strategy subindex and the quality of the national business environment subindex, respectively.

In the overall BCI, Finland retakes the leading position, after dropping to second place behind the United States last year. Finland remains one of the world's most remarkable success cases over the last decade. The United States was pulled down by concerns about rising trade protection, tightening capital availability, and weakening cluster vitality. Other advanced nations improving their rankings include France, Denmark, Sweden, Australia, and New Zealand. France gained five positions, mainly due to an improving business environment, regaining its pre-2000 ranking. Heartening for France are improvements in local competition, governance, and reductions in government distortions. Denmark and New Zealand gained four ranks, mainly based on improvements in the business environment. Australia continued its upward trend, while Sweden reached the third position based on company and business environment improvements.

Advanced countries slipping in the rankings include Austria, based on a deteriorating business environment. The United Kingdom also slipped several places after strong gains last year. Other advanced nations that are slipping are Switzerland, Canada, and Japan. Japan, while still sliding, registered strong improvements in corporate governance and cluster collaboration. Germany's rank falls only one place, but the quality of its business environment dropped precipitously. Labor-management relations are a growing concern in Germany, along with creeping subsidies and a hollowing of clusters.

Middle-income nations improving their competitiveness rankings this year include Latvia, Jordan, Vietnam, Mexico, Colombia, Indonesia, Mauritius, Greece, and Thailand. One new country, Malta, entered the middle-income group, ranked at 42. Egypt reentered the rankings at 58, showing a significant decline compared with its ranking in the 1998–2001 period. Latvia jumped by a remarkable 16 ranks, driven by strong perceived across-the-board improvements in the business environment and company sophistication. Whether this large jump is a temporary event reflecting positive near-term sentiment or a sustainable trend will become more evident in subsequent years.

Middle-income countries losing rank in competitiveness include the Dominican Republic, Hungary, Sri Lanka, Trinidad and Tobago, Croatia, and China. The Dominican Republic (down 18 places) and Sri Lanka (down 9 places) fall back after strong jumps last year, signaling that last year's rankings might have been anomalies. The Dominican Republic's ranking was led down by concerns about the state of local companies. Hungary (down 10) and Croatia (down 8) appear to be suffering from increasing competition from other transition countries.

Table 3: The Business Competitiveness Index

Country	BCI ranking	Company operations and strategy ranking	Quality of the national business environment ranking
Finland	1	4	1
United States	2	2	2
Sweden	3	3	5
Denmark	4	7	3
Germany	5	1	9
United Kingdom	6	8	6
Switzerland	7	5	8
Singapore	8	12	4
Netherlands	9	10	11
France	10	9	14
Australia	11	18	7
Canada	12	14	10
Japan	13	6	20
Iceland	14	15	12
Belgium	15	11	17
Taiwan	16	16	16
Austria	17	13	18
New Zealand	18	23	13
Hong Kong SAR	19	22	15
Israel	20	20	19
Ireland	21	17	22
Norway	22	21	21
Korea	23	19	25
Italy	24	24	23
Spain	25	25	26
Malaysia	26	26	24
South Africa	27	28	28
Estonia	28	36	27
Latvia	29	29	31
Slovenia	30	27	34
Thailand	31	31	32
Chile	32	34	30
Tunisia	33	38	29
Brazil	34	30	39
Czech Republic	35	33	38
Portugal	36	46	33
India	37	40	36
Hungary	38	45	37
Greece	39	39	40
Lithuania	40	41	41
Jordan	41	59	35
Malta	42	47	42
Slovak Republic	43	44	43
Mauritius	44	35	46
Costa Rica	45	32	47
China	46	42	44
Poland	47	43	45
Mexico	48	37	51
Morocco	49	49	49
Vietnam	50	53	48
Colombia	51	50	54
Turkey	52	51	55
Trinidad and Tobago	53	54	53
Botswana	54	67	50
Namibia	55	64	52
Jamaica	56	56	56
Sri Lanka	57	52	59
Egypt	58	55	62
Panama	59	60	60
Indonesia	60	62	61
Dominican Republic	61	57	63
Croatia	62	65	58
Ghana*	63	66	57
El Salvador	64	58	65
Philippines	65	48	74
Russian Federation	66	69	64
Kenya	67	61	72
Tanzania	68	68	67
Argentina	69	63	73
Gambia*	70	80	66
Uruguay	71	77	68
Malawi	72	71	76
Ukraine	73	72	77
Uganda*	74	78	69
Pakistan	75	81	70
Romania	76	84	71
Bulgaria	77	85	75
Zimbabwe	78	70	81
Serbia	79	75	79
Nigeria	80	73	80
Peru	81	83	78
Macedonia*	82	79	83
Cameroon*	83	86	82
Zambia	84	82	85
Venezuela	85	74	87
Guatemala	86	76	88
Senegal	87	94	84
Algeria	88	93	86
Ecuador	89	87	92
Madagascar	90	88	90
Bangladesh	91	91	91
Mali*	92	98	89
Mozambique	93	90	95
Nicaragua	94	92	93
Honduras	95	89	96
Ethiopia	96	96	94
Paraguay	97	95	98
Bolivia	98	97	97
Chad	99	99	99
Haiti	100	101	100
Angola	101	100	101

(cont'd.)

*Survey data for these countries have high within-country variance. Until the reliability of survey responses improves with future educational efforts and improved sampling in these countries, their rankings should be interpreted with caution.

Finally, Trinidad and Tobago has experienced declining competitiveness since its entry into the ranking in 2001. China, which showed a strong gain last year, has reverted back to its ranking of previous years. A surge in confidence about China's prospects proves not to have been sustainable. China was pulled down by concerns about red tape, corruption, judicial independence, and trade barriers, among other factors, though Chinese companies were judged to be making positive progress. Russia continues a slow downward trend, while Argentina's position seems to have stabilized.

Among low-income countries, rankings compared with last year's were quite stable. Peru slipped significantly (down 5 places), continuing a negative trend. Ecuador moved up 3 places. Of the low-income countries ranked for the first time, Ghana entered at 63, Kenya at 67, and Tanzania at 68. Pakistan entered at 75 and Serbia at 79. Angola became the lowest ranked country at 101.

The GCI and the BCI measure different dimensions of competitiveness. Figure 1 compares the two rankings for this year. Despite the different methodologies used in their construction, and although the two indexes are meant to capture different (although complementary) aspects of competitiveness, they are highly correlated. Finland ranks first on both indexes. The two indexes also coincide in the ranks of second, third, and fourth: the United States, Sweden, and Denmark, respectively. Moreover, the two indexes agree that the three lowest-ranked countries are Haiti, Chad, and Angola. Of course, the two rankings are not perfectly correlated, which means that some countries are ranked higher by one index than they are by the other. At the top, Taiwan is ranked 5th by the GCI and 16th by the BCI. Other countries that are ranked higher by the GCI than the BCI include Norway, Malta, Portugal, Botswana, El Salvador, Uruguay, Gambia, Perú, Bulgaria, Algeria, and Bolivia. Countries that are ranked lower by the GCI than the BCI include France, Germany, the United Kingdom, Italy, South Africa, India, Kenya, and Zimbabwe.

Structure of the *Report*

The first part of the *Report* includes two chapters. The first one, by Jennifer Blanke and Fiona Paua (of the World Economic Forum) and Xavier Sala-i-Martin (of Columbia University and Universitat Pompeu Fabra), describes the methodology and analyzes the various rankings behind the Growth Competitiveness Index. In the second chapter, Michael Porter (of Harvard University) presents the details of the construction and analyzes the results of the Business Competitiveness Index.

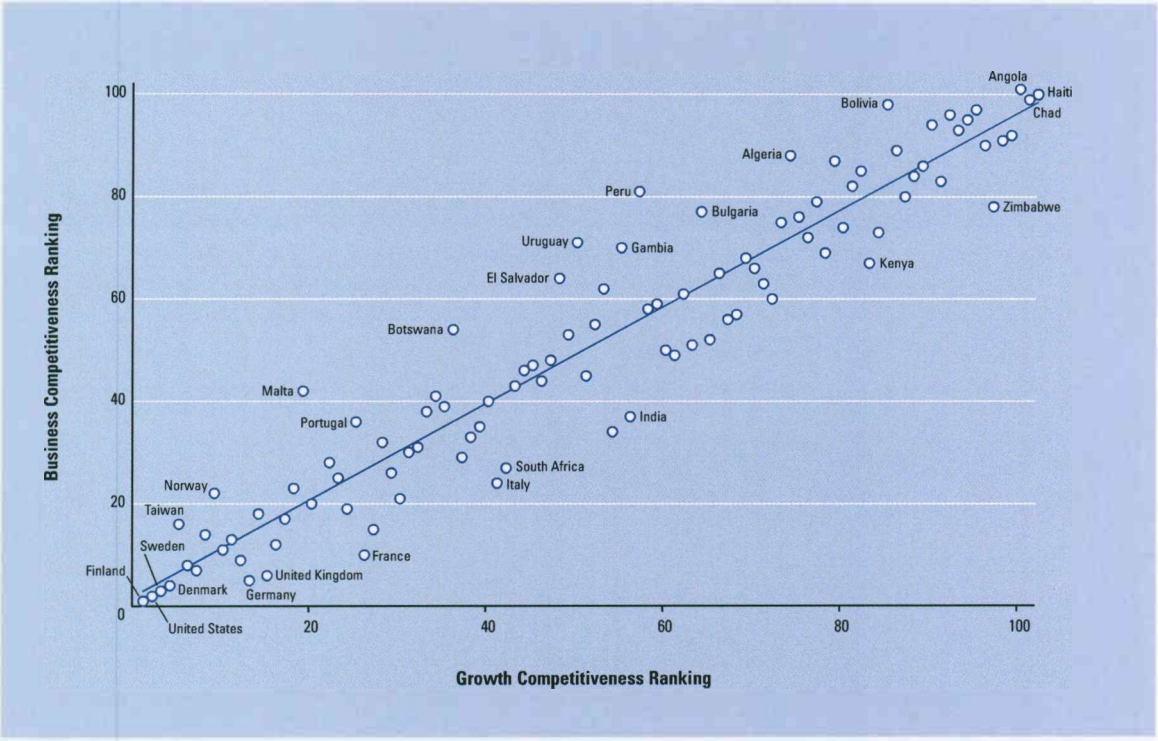
The second part of the *Report* includes five chapters describing various issues related to competitiveness and economic performance. In his chapter "The Year in Review," Martin Baily (of the Institute for International Economics in Washington, DC) looks at some of the important issues and challenges facing the world economy that have emerged or been at center stage this past year. First, there is a look at the impact of the war in Iraq and whether or not this will sour international relations. The war was the central political and military event of the past year, and it has indeed soured international relations. But, surprisingly, so far its economic consequences do not seem to have been all that large.

Next he turns to the issue of exchange rate adjustment and the rebalancing of global trade patterns. The United States has been running a massive trade deficit that continues to grow. Many policymakers have judged that at some point there would have to be a downward adjustment in the value of the dollar and in the current account deficit. This past year that adjustment seems to have started, with a substantial swing in the euro/dollar exchange rate. A particular concern now is to figure out how the world economy can return to sustainable growth while adjusting to a still lower dollar and lower US deficit, when these occur. The adjustment process must be seen in a global context, not just in a US context.

The review then looks at the steps being taken toward economic reform in Europe, where considerable momentum for a reform agenda has emerged this past year. The 2000 Lisbon EU council meeting was an important landmark. Implementation seems to be taking place, although with some resistance. The fourth topic is an examination of deflation, an issue that has been around for a while as part of Japan's economic difficulties, but has assumed increased importance over the past year, with concerns that deflation could spread to the United States, Germany, and possibly other countries.

The implications of rapid growth in China have been a hot topic for a while, but have become a much hotter topic in the past year. As the rest of the world economy turned sluggish, the Chinese surged ahead, increasing their exports at a very rapid pace. From Tokyo to Milan, from Mexico City to Chicago, everyone is wondering whether China can continue to grow so fast and how their own jobs and businesses will be affected if it does. The discussion of China is followed by a short review of the economic effects of SARS outbreak of the past year. Finally Baily turns to Africa where there have been important developments, both in the evaluation of the dangers of AIDS to the economy of the region and in the local and international response to the disease.

Figure 1: Growth and Business Competitiveness rankings



In "Varieties of Economic Experience in the Developing World," Augusto Lopez-Claros (of the World Economic Forum) outlines some of the key challenges facing policymakers in the developing world. He focuses his attention on two sets of countries, a small but representative sample of those ranked by the *Global Competitiveness Report*. The first set is made up of Argentina, Russia, and Turkey—countries that have had serious financial crises in the recent past and offer a treasure trove of insights in terms of the causes of such crises, their consequences, and the policy responses to them, to say nothing of the effectiveness of existing international institutional mechanisms to cope with them. Lopez-Claros explains that, although the causes behind the crises in these three countries have been many, there is a thread common to all three countries: the lack of fiscal discipline combined with poor public debt management. In Russia, the problem was essentially on the revenue side. A persistent output drop during much of the 1990s contributed to the erosion of the tax base and this process was made worse by tax exemptions granted by the authorities to influential lobby groups. In Turkey, the problems were largely on the expenditure side: a combination of enormous claims on the budget associated with an overly generous pension system, an extensive network of agricultural subsidy schemes and other quasi-fiscal operations, and the fiscal burden of a public debt overhang. Argentina's crisis reflected the authorities' ultimate failure to maintain adequate control over the public finances. By end-2000 the debt-to-GDP ratio had risen to 50 percent of GDP, not unusually high by international standards, but extremely high for an economy with a very low revenue ratio, an external debt to exports ratio in excess of 400 percent, and a contracting economy.

Another common aspect of these three economies is that the currencies had been pegged in some fashion. Lopez-Claros argues that the authorities in all three countries failed to recognize that successful pegs are usually underpinned by suitably tight fiscal policies. Moreover, lack of fiscal discipline over a number of consecutive years makes the country a captive to its creditors, including bondholders. The pattern is well known: persistent fiscal deficits result in their financing at increasingly higher interest rates, which inevitably worsen the deficit. The fiscal problem then leads to an external crisis when nonresident debt holders refuse to rollover the outstanding debt. Russia and Argentina defaulted on their external obligations; Turkey did not, but only due to massive IMF financial assistance. Lopez-Claros then analyzes the role of the IMF in its various principal roles of financier, advisor,

and overall crisis manager. He argues that although the Fund played—with varying degrees of success—each one of these roles in all three countries, the crisis in Argentina has forced the organization to recognize that there has to be a better way of dealing with unsustainable debt burdens than the present ad-hoc arrangements, involving a broad range of economic, social, and political dislocations. He then looks at several aspects of the ongoing debate on the need to develop formal mechanisms for sovereign debt restructuring.

The second set of countries analyzed in this paper consists of the transition economies of central and eastern Europe, eight of whose members are scheduled to join the European Union (EU) in May of 2004: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. These countries have had a good growth performance during the past decade and some of its members have the potential to join in the medium-term the upper ranks of the most competitive economies in the world. Quite aside from having benefited from reasonably competent macroeconomic management, as a group they have moved farther along than virtually any other set of economies in the world in implementing broad ranging structural reforms. Lopez-Claros argues that, the impressive achievements notwithstanding, policymakers in these countries will continue to face a number of challenges. Countries expected to grow more rapidly and to experience real appreciation of their currencies may continue to attract substantial capital inflows which could put further upward pressures on currencies, generate higher current account deficits and foreign debt accumulation by the private sectors. The question which policymakers will want to ask is whether the above set of factors imply any particular risks as the countries join the EU and, subsequently, cope with the challenges of a much more competitive environment. One possible scenario to this policy environment sees the authorities managing the pressures identified above through a combination of cautious fiscal policies and structural reforms.

The chapter on "Ranking National Innovative Capacity: Findings from the National Innovative Capacity Index" by Michael Porter and Scott Stern (of Northwestern University) analyzes the conditions that allow countries to innovate. In this chapter, the authors use the 2003 Executive Opinion Survey to assess the innovative capacity of 78 countries for which the required data are available. They examine a wide range of national characteristics suggested by the national innovative capacity framework and available from the Survey data to construct a National Innovative Capacity Index (NICI). They then rank countries on the NICI as well as five subindexes measuring important components of innovative vitality. The statistical findings reveal the striking degree to which measures of the national environment for innovation affect innovative output. They also find that the bar for innovation is rising; even countries with an *absolute* increase in innovative capacity over 2001 sometimes register a *relative* decline because of their inability to improve local conditions as fast as other nations. They find that some countries have aggressively invested in innovative capacity ahead of that expected given current income in an effort to enhance competitiveness and prosperity. Conversely, in other nations, innovative capacity lags overall productivity and income rankings, raising concerns about the sustainability of their competitiveness.

In "Five Puzzles in the Behavior of Productivity, Investment, and Innovation," Robert Gordon (of Northwestern University) analyzes the recent behavior of productivity growth. The behavior of productivity growth in the United States has surprised experts: instead of fading after the economy's peak in mid-2000, US nonfarm business productivity growth has actually accelerated from a 2.45 percent annual rate during 1995–2000 to a stunning 3.34 percent annual growth rate in the three years between 2000:Q2 and 2003:Q2. As US productivity performance has become even stronger over the past three years, some puzzles have emerged regarding the revival, its causes, and the performance of the United States relative to the rest of the world. Gordon's paper analyzes five of these puzzles.

The first puzzle is: *Whatever happened to the cyclical effect?* Using data through mid-2003, it is clear that there was only a negligible cyclical effect for 1995–99 but a temporary "bubble" in 2002. The author argues that this pattern of similar temporary blips was repeated in three previous business cycles.

The second puzzle is: *Why did productivity growth accelerate after 2000 when the ICT investment boom was collapsing?* Gordon analyzes a number of arguments proposed in the academic literature. He then concludes that the most persuasive argument points to "hidden" intangible investments in the late 1990s that required labor input but were not counted in measured output; after 2000, the delayed benefits of intangible investments boosted output, while much of the labor input that created them was laid off. In short, productivity growth was understated in the late 1990s but has been overstated since then.

The third puzzle reads: *What aspects of innovation caused productivity growth to take off?* To deal with this puzzle, Gordon draws an analogy between computers and electricity. In the case of electricity, miniaturization was the key step in making small electric motors practical, and complementary investments, especially roads, were necessary to reap benefits. For computers the key steps were miniaturization in the form of the PC, followed in the 1990s by the "marriage" of computer hardware with software and communication technology.

The fourth puzzle is: *How can ICT investment revive if innovations are second-rate?* First-rate inventions in the 1990s, notably the web and user-friendly business productivity software, are being followed by second-rate inventions in the current decade, such as web-enabled mobile phones, wi-fi enabled laptops, and a host of innovations providing incremental improvements in consumer entertainment but not fundamental changes in business productivity. Gordon argues that innovation is the fundamental driver of the demand for investment (rather than the other way around). Given that, the question is: what does the rise and fall of ICT investment since 1995 tell us about the pace of innovation for the near future? The author speculates about the future path of innovation in the entertainment and medical industries.

The last puzzle is: *Why has Europe failed to experience a productivity growth revival?* Gordon argues that US institutions foster creative destruction and financial markets that welcome innovation, while Europe remains under the control of corporatist institutions that dampen competition and inhibit new entry. He also argues that Europe lacks a youth culture like that of the United States, which fosters independence: US teenagers work after school and US college students must work to pay for much of their educational expense. There is a chasm of values across the Atlantic, as Americans facilitate the development of high-productivity "big-box" retail formats while Europeans are disdainful of overly dispersed American metropolitan areas with their traffic congestion, waste of energy, and starvation of public transit.

In his chapter "Governance Redux: The Empirical Challenge," Daniel Kaufmann of the World Bank Institute argues that governance is still at a crossroads, its underperformance evident in most regions and across a vast number of countries within such regions. This contrasts with the significant strides that have been made in many countries in improving the content of macroeconomic policies for well over a decade. In this sense, Kaufmann argues, there is a growing "governance gap," since improvements in governance are far from keeping pace with the progress attained in economic policy and some other areas. Such a gap implies that public governance is nowadays a central binding constraint to growth and development.

Indeed, the enterprises from developing and transition economies included in this year's Survey single out corruption and excessive bureaucracy among the top constraints to their business operations, while the respondent firms from the OECD single out excessive bureaucracy and the tax regime. Relative to these and other institutional weaknesses, high inflation and distortions in the exchange rate regime are not ranked as important constraints by the firms.

More generally, with a recently constructed worldwide governance indicators dataset, the author shows the extent to which national governance matters: a country that significantly improves key governance dimensions such as the rule of law, corruption, the regulatory regime, and voice and democratic accountability can expect in the long run a dramatic increase on its per capita incomes and in other social dimensions. Specifically, if for instance the quality of rule of law were to improve by one standard deviation, from, say the current relatively low level of Ukraine to the "middling" level of South Africa, a fourfold increase in per capita incomes can be expected in the long run. A larger increase in the quality of rule of law (by two standard deviations) in Ukraine (or in other countries in the former Soviet Union), to the much higher level in Slovenia or Spain, would further multiply such income per capita increase. Similar results emerge from other governance dimensions: a mere one standard deviation improvement in voice and accountability from the low level of Venezuela to that of South Korea, or in control of corruption from the low level of Indonesia to the middling level of Mexico, or from the level of Mexico to that of Costa Rica, would also be associated with an estimated fourfold increase in per capita incomes, as well as similar improvements in literacy and in reducing child mortality.

In contrast to the major impact that improved governance can have on incomes and development, the findings show no reverse causality or feedback mechanism: higher incomes in themselves do not get automatically translated into improved governance. The fact that there is no automatic virtuous circle means that continuous political resolve and interventions are required to attain good governance. It also implies that a country exhibiting higher incomes than would be predicted by its current levels of governance can expect downward pressure on the sustainability of such incomes—given their governance level. Such shortfall in the country's actual quality of governance, as compared with the governance level required to support the country's income level, is described as the "governance deficit." The extent of the governance deficit may constitute a warning regarding the income and growth prospects of a country. For instance, the evidence suggests that by the late 1990s most countries in Latin America had a substantial governance deficit in that their actual per capita incomes were higher than would have been predicted by the prevailing levels of governance.

The author also reviews briefly recent work anchored in the new comparative economics, which compares different capitalist systems. In particular, he discusses some of the deeper historical determinants of current governance performance, and finds that the origins of a country's legal system—particularly whether it adopted common or civil law systems—may not be a central determinant of governance outcomes nowadays, especially for lower-income countries. Further inquiry into the deeper determinants of governance, including understanding the relevance of

historical patterns of settlement and of geography, seems to hold promise, however.

The empirical evidence also points to the fact that politics matter substantially in understanding good governance, and, within it, the corporate sector plays an active role in shaping such political (and thus policy) outcomes. Powerful firms are not mere passive "takers" of the overall investment climate (imposed by the public sector); instead such enterprises play a key role in shaping it. The database provided by the Survey also permits the empirical evaluation of political dimensions of governance traditionally regarded as non-measurable, such as the extent of "capture" and of undue influence by some politically connected powerful firms in shaping the regulations, laws, and policies of a country. Unequal distribution of influence on policy and regulatory outcomes (or "crony bias") are found to be closely associated with poor public and financial governance performance.

Finally, the empirical richness of the Survey data set provides a key input for the construction of an initial governance database at the city level. This database and research-in-progress is to be expanded over the coming year, yet the early results support the observation that governance performance at the city level is aided by the extent of the country's globalization and urbanization path (controlling for income levels). Further, the city's relative size and its status as a capital or a port do not appear to have a deleterious effect on the quality of city-level governance.

The findings emphasize the need to revisit conventional advice on strategies to improve public governance. Such advice has focused excessively on attempts to reform the internal functioning of public institutions, often drawing from standard templates from industrialized countries. Instead, further focus is needed on aspects that do contain a political dimension. In particular, addressing the nexus between corporate strategies and public governance (mediated by the "institution of influence") is of particular interest. And specifically, the findings on undue influence and state capture point to the limits of traditional public-sector measures (such as incessant legal drafting and codes of ethics manuals, creating new Anti-Corruption agencies, or launching another anticorruption campaign). By contrast, this chapter's findings underscore the need for far more focus on external accountability, on transparency mechanisms, and on prevention. It is emphasized that such enhanced focus on governance matters is also warranted at the subnational level.

The *Report* ends with a comprehensive section that contains country profiles for each of the individual economies covered. This part also includes data tables for the variables that are used as inputs into the calculations of the competitiveness indexes, as well as a primer on how best to glean the information contained in the country profiles and the data tables, including some of the underlying assumptions. In addition, technical notes elucidate individual variables and the results of the World Economic Forum's Executive Opinion Survey.

2002-2003

Executive Summary

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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. 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 judging 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. The terrorist attacks were not the only shock to the world economy, however. 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 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. 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 dataset 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 4,700 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. For 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 innovators, the technology index is a simple average of the innovation subindex and the 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 index. 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.

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,

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	12
Netherlands	15	15	8
New Zealand	16	16	10
Hong Kong SAR	17	17	13
Austria	18	18	17
Israel	19	19	24
Chile	20	20	31
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	61
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	12	3	1
Sweden	5	4	15	34
Switzerland	6	6	8	8
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	30
Japan	13	5	25	29
Germany	14	12	14	22
Netherlands	15	19	10	19
New Zealand	16	17	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	38
Hungary	29	21	30	49
France	30	28	29	28
Thailand	31	41	39	11
South Africa	32	38	34	36
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	50
Botswana	41	61	31	48
Uruguay	42	50	20	33
Costa Rica	43	37	46	43
Latvia	44	29	52	55
Mexico	45	47	58	21
Brazil	46	35	48	53
Jordan	47	51	40	57
India	48	57	59	18
Slovak Republic	49	34	53	64
Panama	50	49	44	44
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	39
Sri Lanka	59	67	42	60
Jamaica	60	68	51	76
Philippines	61	52	70	32
Bulgaria	62	56	47	71
Argentina	63	44	66	65
Russian Federation	64	66	65	70
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	76	68
Nicaragua	75	73	64	79
Honduras	76	78	79	71
Ukraine	77	72	72	77
Bolivia	78	77	80	67
Zimbabwe	79	75	68	80
Haiti	80	80	81	74

Namibia at number 53, Morocco at number 55, Croatia at number 58, and Haiti at number 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 GCI, 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.

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

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

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 Larrain 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 Larrain 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, Larrain 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, Larrain 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' *Reports*, 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*, 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," Robert E. Lipsey writes 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 systematic 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 World Economic 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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Executive Summary: Competitiveness and Stages of Economic Development

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This year's *Global Competitiveness Report* appears in the aftermath of the September 11 terrorist attacks in the United States. Although this *Report* was already at the editor on that watershed date, we felt it important to supplement the medium-term (five-year) analysis that is contained in the annual *Report* with a separate, shorter-term analysis of the world economy, which is included in the new Introduction. The *Report*'s underlying medium-term analysis is still relevant in the high likelihood that the world economy and the globalization process continue apace, despite the shock of this tragedy and the short-term uncertainties and dislocations created in its wake. Indeed, we regard the potential gains from globalization, if properly managed, as so vital to world welfare that we urge the international community to do all in its power to preserve the peaceful and deepening economic linkages around the world, and to best ensure that they serve to benefit all countries rich and poor.

The *Global Competitiveness Report* focuses on two distinct but complementary approaches to the analysis of economic competitiveness. The first, led by Professor Jeffrey D Sachs of the Center for International Development at Harvard University, focuses on global competitiveness as "the set of institutions and economic policies supportive of high rates of economic growth in the medium term." Prior to 2000, the *Report* presented an overall index based on this approach that was known simply as the Competitiveness Index. Starting with the 2000 *Report*, this measure was relabeled the Growth Competitiveness Index, or GCI. Building on the foundations of theoretical and empirical macroeconomics, the GCI represents a best estimate of 75 economies' underlying prospects for growth over the coming five years. This year's *Report* assesses the growth prospects in 17 countries not previously covered, including Bangladesh, Nigeria, Romania, Slovenia, Sri Lanka, and the three Baltic countries, as well as nine economies in Latin America and the Caribbean.

The *Report*'s second approach to competitiveness, led by Professor Michael E Porter of the Institute for Strategy and Competitiveness at the Harvard Business School, is embodied in the Current Competitiveness Index, or CCI, as first presented in last year's edition. The CCI 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. This Index thus assesses the current productive potential of the same 75 economies. Together the GCI and CCI present distinct yet highly complementary insights into sources of national competitiveness.

Both the GCI and CCI combine hard data and unique survey data to assess competitiveness in a large sample of countries. Central to both Indexes is the Executive Opinion Survey, conducted annually by the World Economic Forum. The Survey is indispensable to the *Report*, since 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. Even where hard data are available, the data often do not cover all the countries in our sample. The Executive Opinion Survey records the perspectives of business leaders around the world by asking them to compare aspects of their local business environment with global standards, this year including more than 4,600 respondents. The business leaders surveyed actually make many of the investment and policy decisions that drive economic growth and development, so by recording their perspectives we obtain an incomparable, up-to-date knowledge base concerning the current state of economic affairs in each of the 75 countries assessed.

Transitions in economic development

This year's *Global Competitiveness Report* emphasizes an increasingly important theme confronting many nations: Countries face very different challenges and priorities as they move from resource-based to knowledge-based economies.[1] As an economy develops, so do its structural bases of global competitiveness. At low levels of development, economic growth is determined primarily by the mobilization of primary factors of production: land, primary commodities, and unskilled labor. As economies move from low- to middle-income status, global competitiveness becomes Investment-Driven, as economic growth is increasingly achieved by harnessing global technologies to local production. Foreign direct investment, joint ventures, and outsourcing arrangements help to integrate the national economy into international production systems, thereby facilitating the improvement of technologies and the inflows of foreign capital and technologies that support economic growth. In most economies, the evolution from middle-income to high-income status involves the transition from a technology-importing economy to a technology-generating economy, one that innovates in at least some sectors at the global technological frontier. For high-income economies at this Innovation-Driven stage of economic development, global competitiveness is critically linked to high rates of social learning (especially science-based learning) and the rapid ability to shift to new technologies.

The principal factors that contribute to global competitiveness, and thereby improve living standards, will therefore differ for economies at different levels of development. For some low-income economies, the main challenge is to get the basic factor markets—for land, labor, and capital—working properly. As countries advance, the basic challenge is to make connections with international production systems by attracting sufficient flows of FDI. Once reaching high-income status, the basic challenge facing countries is typically to generate high rates of innovation and commercialization of new technologies. The critical institutions in a country, and its barriers to continued growth, will therefore differ depending on that country's current position.

Successful economic development is thus a process of successive upgrading, in which businesses and their supporting environments co-evolve, to foster increasingly sophisticated ways of producing and competing. Seeing economic development as a sequential process of building not just macroeconomic stability but also interdependent factors such as quality of governance, societal capacity to advance its technological capability, more advanced modes of competition, and evolving forms of firm organizational structure, helps to expose important potential pitfalls in economic policy. To evolve successfully through different levels of development, key parts of the economic environment must change at appropriate times. Lack of improvement in any important area can lead to a plateau in productivity and stalled economic growth.

At low levels of development, government's main job is to provide overall political and macroeconomic stability and sufficiently free markets to permit the effective utilization of primary commodities and unskilled labor both by indigenous firms and through attracting foreign investment. Firms produce commodities or relatively simple products of long-standardized technology designed in other more advanced countries. Technology is assimilated through imports, foreign direct investment, and imitation. In this stage, companies compete on price and often lack direct access to consumers. They have limited roles in the value chain, focused on assembly, labor-intensive manufacturing, and resource extraction. A Factor-Driven economy is highly sensitive to world economic cycles, commodity price trends, and exchange rate fluctuations.

As development proceeds, government priorities need to focus increasingly on improvements in physical infrastructure (ports, telecommunications, roads) and regulatory arrangements (customs, taxation, company law) to allow the economy to integrate more fully with global markets. In this Investment-Driven phase, efficiency in producing standard products and services becomes a dominant source of global competitiveness. The products and services produced become more sophisticated, but technology and designs still largely come from abroad. Technology is accessed through licensing, joint ventures, foreign direct investment, and imitation. Nations in this stage not only assimilate foreign technology, however, but they also develop the capacity to improve on it. The national business environment supports investment in efficient infrastructure and modern production methods. Companies often produce under contract to foreign original equipment manufacturers (OEM), which control design and marketing. Gradually, companies extend capabilities more widely in the value chain. An Investment-Driven economy is concentrated on manufacturing and on outsourced service exports. It is susceptible to financial crises since it relies heavily on foreign capital flows, as well as external sector-specific demand shocks.

Perhaps the hardest transition is from technology-importing, efficiency-based development to innovation-based development. This requires a direct government role in fostering a high rate of innovation, through public as well as private investments in research and development, higher education, and improved capital markets and regulatory systems that support the start-up of high-technology enterprises. At this innovation stage, enterprises themselves become less hierarchical, with much more delegation of authority to sub-units within the enterprise. Buyers and suppliers and corporate sub-units are often linked together in flexible networking arrangements that facilitate innovations and rapid shifts in the division of labor within the organization. Firms invest heavily in the continual training and upgrading of their workforce. Compensation systems involve incentive payment schemes linked to the productivity of different parts of the enterprise. In the same way, the firms within an industry also become much more interactive, with deep industrial clusters characterized by a sophisticated division of labor, increasing flows of workers between enterprises, and a mix of fierce competition and cooperation among enterprises within an industry. Companies compete with unique strategies that are often global in scope. Such characteristics have been noted in American high-tech regions such as Silicon Valley, Route 128 in Boston, and the Research Triangle of North Carolina.

It is our hypothesis that many of the failures in economic development in recent years involve countries getting stuck at critical junctures of economic transition: Between Factor-Driven and Investment-Driven or between Investment-Driven and Innovation-Driven stages. For example, some countries successfully master the initial phase of Factor-Driven growth, but then fail to make the transition to technology imports and globalized production systems. Others effectively reach the investment phase of development, but then fail to progress to homegrown innovation. These transition points are indeed difficult to manage from both a macroeconomic and microeconomic perspective. The shift from one phase of development to the next often requires new ways of organizing governments, markets, and enterprises, so it is not altogether surprising therefore that many countries fail at making the appropriate transitions, or even fail to recognize that such a transition is needed. The transition from primary commodities to increased utilization of imported technologies to innovation requires changes in government priorities and spending patterns as well as in the internal structure and aims of business enterprises. Shifts in both macroeconomic policy and microeconomic business structure are necessary. Ironically, old strategies become the new weaknesses. A highly opportunistic corporate approach that worked well serving disparate OEM customers, for example, becomes a liability in making the long-term commitments required for advanced production processes and pursuing true innovations.

This framework helps to highlight why some countries enjoy significant economic progress for a period and then appear to stall in their development. When economies reach transition points, they require wholesale transformation of many interdependent dimensions. Successful Investment-Driven economies such as Taiwan and Singapore, for example, are finding that their reliance on sustained infrastructure investments, OEM manufacturing for multinationals, and government guidance of the economy to boost efficiency are insufficient to support very high levels of prosperity. Their current level of wages and domestic costs makes them vulnerable to competition from lower-wage countries such as China. Likewise Ireland, which has been tremendously successful in attracting foreign investment for manufacturing, now faces the need to justify higher wages and higher local costs without yet having developed a world-class innovative structure. In a more severe example, Argentina has become caught in the early Investment-Driven stage of development where it still has to compete on price, but its overvalued exchange rate and lack of technological sophistication and scientific innovative capacity are combining to keep the economy in crisis. The challenge for all these economies is to move to an Innovation-Driven economy with world-class technological capacities

and the presence of deep clusters. To do so, companies need to move to new types of strategies, investment priorities must change, higher education must take on even greater importance, and government's role in the economy needs to shift.

One of the principal goals of the *Global Competitiveness Report* is to identify the policy challenges that face governments at various levels of development. As suggested earlier, some tasks are common to all governments: macroeconomic stability, provision of basic medical and health care, openness of the economy, and a competitive exchange rate that supports export growth. Some tasks are critical for countries attempting to move beyond a traditional primary commodity base: improvements of infrastructure, universal secondary education, improved technical education, and flexibility of labor markets. Finally, special tasks are required for countries attempting to move from technology-using to technology-innovating economies: for example, a venture capital sector as well as other improved financial and legal arrangements for new startups, increased government spending on R&D, and improved legal tools for intellectual property rights. Reflecting their complementary perspectives, the Growth Competitiveness Index and Current Competitiveness Index aim to shed light on the respective macro and micro priorities at various phases of economic development.

The Growth Competitiveness Index

Building on the latest developments in economic growth research, as well as the results from recent years' *Global Competitiveness Reports*, the Growth Competitiveness Index methodology has been updated since last year to provide a ranking of the underlying potential for medium-term (five years) growth that better accounts for the widely varying levels of development of the included countries. As outlined in detail in Chapter 1.1 by John W McArthur and Jeffrey D Sachs, the GCI divides the *Report*'s sample of 75 countries into two main groups based on their level of technological capacity. Using patenting as a measure of innovative capacity, the Growth Competitiveness chapter identifies the 21 Innovation-Driven economies in the world today, for which it uses the shorthand term *core* economies (a term with no moral judgments intended, simply a statement about innovation as the source of growth!). It then attempts to identify the specific factors in technological advancement among these core economies. At the same time, the GCI includes an entirely separate measure of technological advancement for the non-innovating (or *non-core*) economies, one that puts more weight on technological diffusion as these economies absorb and adapt production practices developed mainly by the innovating economies.

The GCI not only incorporates the differing forms of technological advancement that are linked to growth in the core and non-core economies, but also stresses the differing importance of technological advancement for these two groups of economies. The GCI is comprised of three subindexes: the level of technology in an economy, the quality of public institutions, and the macroeconomic conditions related to growth. Among the world's core economies, statistical evidence indicates that innovation plays a dominant role in medium-term economic growth. For these economies, the GCI thus places a weight of 1/2 on the technology index against weights of 1/4 each on public institutions and macroeconomic environment. Among the non-core economies, technological advancement, measured largely by the economies' performance in skill-based manufacturing exports, appears to play a more limited role relative to the other two factors. Thus, the GCI places a weight of 1/3 on each component index when calculating overall scores for the non-innovating economies. For the three economies that appear to be at the cusp of innovation-driven growth—Hong Kong SAR, Ireland, and Singapore—GCI values are calculated as an average of those economies' scores using the core and non-core formulas.

The new GCI results are listed in Table 1, which shows this year's overall rankings as well as the change in rankings among only those countries included in this and last year's *Reports*. Finland, for the first time, ranks first in the world, indicating that it now has the best prospects for growth over the next five years. This country's remarkable turnaround over the past decade serves as evidence of how quickly an economy's prospects can be transformed by strong political institutions, a focus on technology, and sound macroeconomic management. The United States ranks second. Although the United States is currently at risk of a recession, it is still far and away the world's technological leader and engine of economic growth in the medium term. Canada, the sixth-ranked economy in the 2000 GCI, rounds out the top three places, having moved up in the growth rankings mainly due to this year's weight accorded to tertiary education as a key factor in technological innovation. Australia and New Zealand, two other countries with strong measures of university-educated human capital, have jumped significantly in the growth rankings from 11th to 5th and 19th to 10th spots, respectively. Notably, and reflecting their looming challenges in making the transition from investment-based to innovation-based growth, Singapore has dropped from 2nd to 4th place, Ireland has dropped from 4th to 11th, and Hong Kong SAR has shifted from 7th to 13th. Meanwhile, Japan's ongoing economic stagnation is reflected in its continuing low position at 21st, down one slot from last year.

Other notable GCI results include the strong growth prospects of new entries Estonia, at 29th, and Slovenia, at 31st. Estonia's ranking is well ahead of the results for Baltic neighbors Lithuania (43) and Latvia (47). Results lower down the list are generally more stable, with the important exceptions of Turkey, which dropped six spots compared with last year, and Indonesia, which tumbled 10 places. Of additional importance are the newly included Latin American economies, most of which scored in the lower quintile of the growth rankings, frequently reflecting their difficulty in emerging from a Factor-Driven to an Investment-oriented stage of development. Brazil, nonetheless, has moved up five spots, ranking 44th in the expanded sample, while Chile holds steady in 27th. Other relatively bright spots in Latin America include new entrants Uruguay at 46th and the Dominican Republic at 50th.

Bangladesh and Nigeria, the two poorest economies in our sample, are included in this year's *Report* for the first time ever and, perhaps not surprisingly, rank near the very bottom of the GCI scale. This should not, however, be taken as a sign of pessimism about these economies. Indeed, the avid willingness of business people in those economies to participate in the Executive Survey reflected a remarkable interest in policy dialogue and subsequent economic transformation. As this *Report*'s chapter on Growth Competitiveness also outlines, both Bangladesh and Nigeria have a tremendous opportunity for what economists call "catch-up" growth if those countries are able to continue to enhance their political and technological capacities under the auspices of stable macroeconomics.

The GCI's component indexes on technology, public institutions, and macroeconomic environment are reported within the same chapter and are presented here in Table 2. Careful assessment of these indexes and the variables they comprise reveals many of the relative strengths and weaknesses to growth within each economy. China and Korea provide two very brief examples. China ranks 6th on the macroeconomic environment index, but only 50th on the measure of public institutions and 53rd on the technology index, yielding an overall GCI ranking in 39th place. Korea, on the other hand, ranks 9th in technology and 8th for its macroeconomic environment, but 44th for its public institutions, producing a 23rd place score overall. Underlying these indexes are numerous subindexes that can be investigated in some detail, thereby providing policymakers and business leaders reading this *Report* with valuable information regarding how best to advance their economies' growth prospects.

Table 2. Rankings of growth competitiveness component indexes

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

The Current Competitiveness Index

Whereas the Growth Competitiveness Index strives to estimate the underlying conditions for growth over the coming five years, the Current Competitiveness Index (CCI) evaluates the underlying conditions defining the *current* level of productivity in each of the 75 economies covered. Using a microeconomic approach focusing on the detailed conditions that support a high level of sustainable productivity, measured by GDP per capita, the CCI aims to move beyond the examination of broad, aggregate variables characteristic of most economic growth models. Using common factor analysis, the Current Competitiveness Index (CCI) is an aggregate measure of microeconomic competitiveness. This chapter also reports two subindexes, one focusing on company sophistication and the other on quality of the national business environment drawing on a complex array of variables with a demonstrated statistical relationship to GDP per capita.

This year's CCI 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. For the second year, Finland edges out the United States to achieve the number one ranking. Advanced nations improving their current competitiveness ranking in 2001 include the Netherlands, Sweden, Australia, Austria, France, and Iceland. Advanced countries that experienced a decline in the rankings in 2001 include Germany, Denmark, and Belgium in Europe; and Singapore, Japan, and Hong Kong SAR in Asia. Developing nations that improved their current competitiveness rankings on a comparable sample basis include Hungary, India, Thailand, Poland, China, Russia, and Ukraine. Developing countries whose position has fallen include Chile, Malaysia, Turkey, the Czech Republic, Greece, Jordan, Mauritius, and Peru. As important as the overall ranking, however, is the subrankings and specific strengths and weaknesses presented in the *Report*. Taken together, they provide a concrete set of priorities for national action.

Table 3: Rankings on current competitiveness component indexes

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

The CCI measures the level of GDP per capita that is sustainable in the long term. However, in the short and medium run, nations can over- or underperform their microeconomic fundamentals because of surges of inbound FDI, natural resource windfalls, and the like. The chapter compares a country's *expected* GDP per capita, given its current microeconomic competitiveness, with its actual GDP per capita. A positive gap signals upside potential, while a negative gap indicates vulnerability. Finland leads the advanced countries in upside potential, which is consistent with its high GCI ranking. Finland's stunning turnaround in microeconomic competitiveness is still far from being fully realized in terms of reported prosperity. Conversely, Norway, Iceland, and Ireland all continue to enjoy a level of prosperity that exceeds their microeconomic fundamentals. This suggests a challenge for these countries in maintaining their current success. To a lesser extent this is also true for the United States and Canada.

Turkey, Brazil, and South Africa are among the middle-income countries that should be able to support a higher GDP per but are currently underperforming for various reasons. The converse is true for Greece, Argentina, Russia, and Slovenia, which are among a group of countries whose levels of income will be unsustainable without substantial microeconomic reform. India heads the list of low-income countries with upside potential that could be unlocked by governmental and political reform.

Our findings make it clear that micro reforms must go beyond reducing the role of government and abolishing market distortions. Government also has a range of positive roles that are fundamental to prosperity—such as investing in specialized human resources, building innovative capacity, facilitating cluster development, and stimulating advanced demand via regulatory standards. Many nations need to move beyond first stage micro reforms and address these agendas.

In keeping with the overall theme of this year's *Report*, our results highlight the need to set a nation's economic priorities to be consistent with its level of development. Especially challenging are the difficult transitions between competitive stages. At the Factor-Driven stage, our findings suggest the core challenge for firms is to increase their efficiency, for example, by improving production process sophistication and beginning to delegate authority. Improving transportation and communications infrastructure, upgrading public education and the training of management, liberalizing trade, and reducing corruption are essential. These steps create a foundation of efficiency, transparency, and competitive pressure necessary to improve the productivity of Factor-Driven competition.

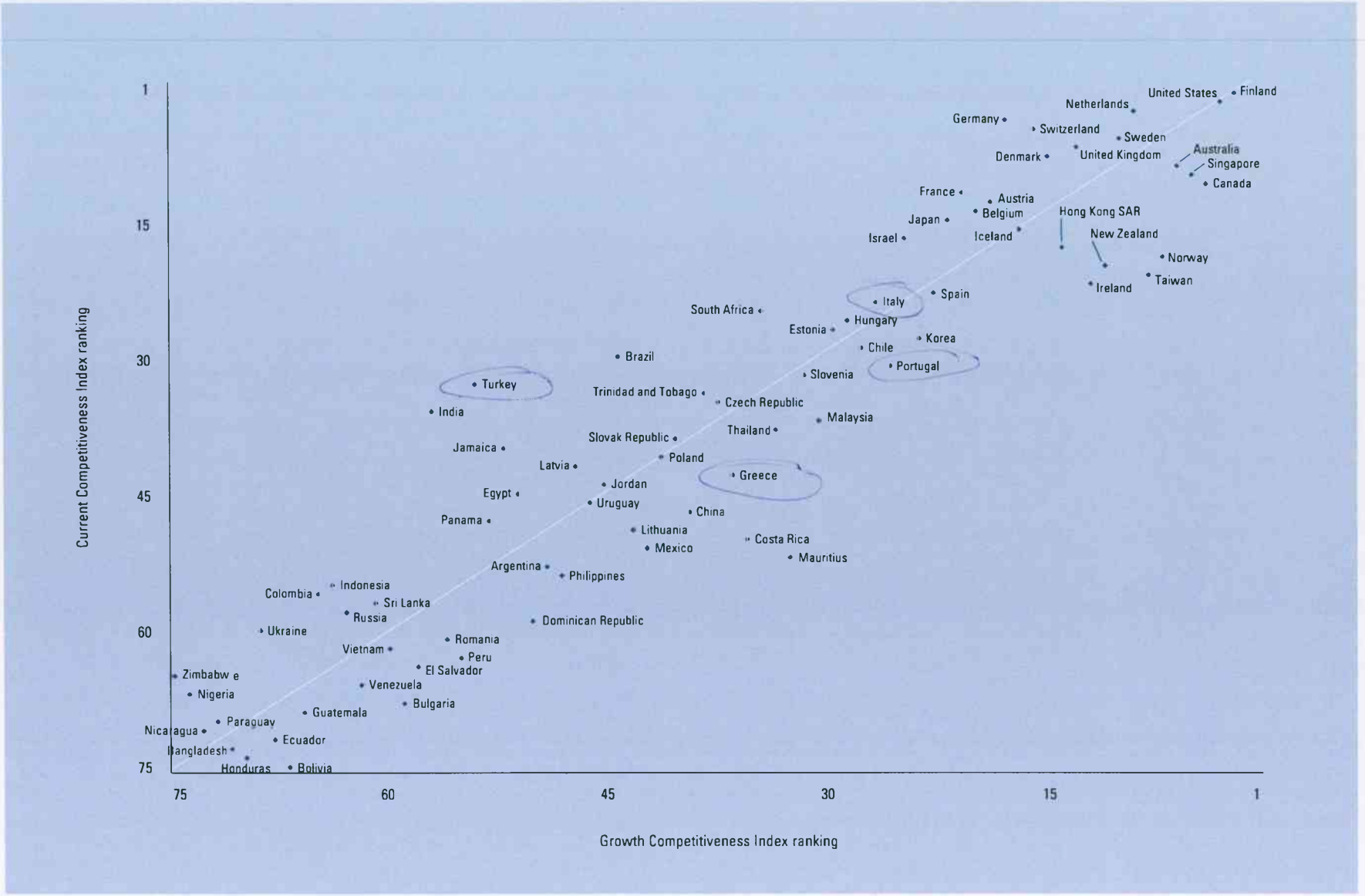
To move into middle income, the challenge is to make the transition to the Investment-Driven stage. The Investment-Driven stage depends on a high rate of investment in products, processes, and the acquisition of technology. Corporate priorities expand to include, for example, in-house product development, licensing the best foreign technology, connecting to foreign markets, and developing the capacity to improve technology. Among other things, reducing bureaucratic red tape and enhancing the legal system become important to enhance business efficiency, while local financial markets become much more necessary to mobilize debt and equity capital.

To reach high-income status, incremental improvements in quality and efficiency are no longer enough. To reach the Innovation-Driven stage, companies must innovate at the world technology frontier, develop unique product designs, sell globally, and create more decentralized and flexible organizational structures. Truly world-class research institutions must emerge, along with strong research collaboration with universities, venture capital availability, truly sophisticated demand conditions, and intense local competition.

The CCI and the GCI measure different but complementary dimensions of competitiveness. Figure 1 compares the two rankings for 2001 and reveals that they are highly correlated. Finland ranks first on both Indexes, while the United States ranks second. However, there are divergences in rankings that are potentially revealing about country economic prospects. Of the high-income countries, for instance, Norway and Ireland rank 10 or more positions higher on growth competitiveness than they do on current competitiveness. Significant micro reform will be a central challenge in these countries. Conversely, Germany and Switzerland rank 10 or more positions worse on growth competitiveness than they do on current competitiveness. Creating the vitality and assets required for growth looms as the fundamental challenge in already highly productive economies.

Of the medium-income countries, Mauritius, Costa Rica, Taiwan, and New Zealand rank significantly better on growth competitiveness than on current competitiveness. Turkey and Brazil, on the other hand, rank worse on growth competitiveness than on current competitiveness. Creating more dynamism and the capacity for change are the challenge for these countries. Of the low-income countries, Bulgaria, Bolivia, and the Dominican Republic are among the countries with higher ranks on growth competitiveness than on current competitiveness. India, Jamaica, Indonesia, Colombia, Ukraine, and Zimbabwe are facing lower growth prospects that lag their ranking on current competitiveness.

Figure 1: Growth and Current Competitiveness Index rankings



Structure of the Report

Just as the *Report* includes two distinct perspectives on competitiveness, it includes chapters on a range of other central issues relating to competitiveness and economic performance. In each case, authors have taken advantage of the Executive Opinion Survey's to inform their own research.

The chapter by Daniel Esty of Yale University and Michael E Porter on "Measuring National Environmental Regulation and Performance," explores the differences among countries in environmental performance and their link between environmental outcomes and national environmental policy choices. The chapter also explores the crucial question of whether environmental quality must come at the expense of competitiveness and economic development, as traditional economic theory has suggested. The findings are revealing: environmental performance varies systematically with the quality of a country's environmental regulatory regime. The statistical findings are then used to construct an index that ranks countries in terms of the quality of their environmental regulations. The research reveals that there is no evidence that higher environmental quality compromises economic progress. Environmental performance is positively and highly correlated to GDP per capita. The chapter presents preliminary evidence suggesting that countries with stricter environmental regulation than would be expected at their level of GDP per capita enjoy faster economic growth.

The chapter on "National Innovative Capacity" by Porter and Scott Stern of Northwestern University delves in detail into the conditions that allow a country to innovate at the global technology frontier. The findings reveal the striking degree to which the national circumstances actually explain differences across countries in innovative activity measured by US patenting. The statistical findings allow the construction of an overall innovative capacity ranking of the 75 countries, as well as comparisons across countries in important components of innovative capacity including availability of scientific and technical personnel, innovation-related policy choices, cluster vitality, and the quality of linkage mechanisms between basic research and the private sector.

The next chapter presents an update on "Economic Creativity" by Andrew M Warner of the Center for International Development at Harvard University. The concept of economic creativity was central to last year's overall Growth Competitiveness Index and moreover provided a methodological breakthrough that stimulated much of our research over the past year on how to quantify the distinct effects of innovation versus diffusion as contributors to economic growth.

The fourth chapter of Part 2 provides a new framework for assessing national trade performance at the sectoral level, as constructed by Cornelius along with International Trade Centre economists Friedrich von Kirchbach, Mondher Mimouni, Jean-Michel Pasteels, and Shilpa Phadke. Taking advantage of sophisticated United Nations data on the trade flows of all 75 GCR countries over the past five years, the authors are able to assess how countries' individual industries are performing compared with the same industries in other countries. They furthermore compare the future prospects for those industries, based on a range of factors that includes the current global demand trends for those industries.

In the next chapter of Part 2, Peter Cornelius and Yong Zhang of the World Economic Forum review recent developments in European labor markets and the context for ongoing structural reform in this area. Using questions from the Executive Opinion Survey, they then create a measure of labor market flexibility to compare countries across the European Union. The authors discuss how labor market restrictions have become an impediment to growth in the European Union, particularly since exchange rates have been removed as a macroeconomic adjustment mechanism.

The chapter on labor markets is followed by an update in which Warner joins Cornelius to assess the performance of the euro as of early 2001. Here the authors find some interesting shifts in European executives' assessment of the euro's prospects for stability.

Finally, Part 2 concludes with a review of the Executive Opinion Survey by Cornelius and McArthur, including a brief description of our surveying methodology, several descriptive statistics of our Survey sample, and a few key tests of the consistency and accuracy of the Survey results.

The third and final section of this *Report* is broken into two parts, country profiles and data tables. In the country profiles, we outline some key advantages and disadvantages drawn from the variables and methodologies used in constructing the Growth Competitiveness Index and the Current Competitiveness Index. We also include numerous strengths and weaknesses of each economy that are not directly included in the respective Indexes but might nonetheless be of interest to the reader. In the accompanying data tables, results are listed by country for most variables covered in the *Report*. These tables provide easy reference for the reader who wishes to look at each variable in detail. The data also provide a wealth of information for policymakers and business leaders who wish to compare their economies to others across a range of dimensions. For researchers and data enthusiasts hoping to gain a much deeper level of knowledge from the *Report*'s underlying data, a full electronic version of the Survey data is available as an accompaniment to this *Report*.

Notes

[1] We explored the stages of national competitive development in Michael E Porter, The Competitive Advantage of Nations. New York: The Free Press; London: Macmillan Press, 1990.