
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

- ⁱ 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.