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# How Competitive are Europe's Economies?

## Findings of the Global Competitiveness Report 2002-2003

*The annual Global Competitiveness Report provides comprehensive information about the comparative strengths and weaknesses of national economies throughout the world. Based on the findings of the latest report, this article evaluates the current competitiveness and medium-term growth prospects of European countries relative both to the rest of the world and to each other.*

Since 1979, the World Economic Forum in Geneva has annually published the Global Competitiveness Report.<sup>1</sup> The objective of the annual report is to provide information on the comparative strengths and weaknesses of national economies in terms of competitiveness and prospects for sustainable growth. The methodologies and approaches on which the studies are based have continuously been refined. Jeffrey Sachs and Michael Porter are the most prominent researchers involved in this development. Starting in 2000, the Global Competitiveness Report has regularly examined the development and the determinants of competitiveness by using two independent index rankings, the Growth Competitiveness Index (GCI) and the Microeconomic Competitiveness Index (MICI). These two distinct but complementary rankings try to express differences between countries in the prospects of future competitiveness and in the current level of competitiveness. They combine a number of different aspects and, through sub-indices, highlight the areas in which the individual countries exhibit particularly strong or weak economic features. The rankings use both data published by the national statistical offices and survey data collected by the World Economic Forum in cooperation with currently 75 regional institutions.<sup>2</sup> The country scope has continuously grown and, in 2002-2003, the report evaluates 80 economies. Six new countries are covered by the most recent report. These are Botswana, Croatia, Haiti, Morocco, Namibia, and Tunisia. Egypt had to be dropped due to the lack of data availability.

### The Growth Competitiveness Index (GCI)

The GCI refers to the capability of a country to achieve sustainable growth in terms of per capita GDP over the next five to eight years. As Figure 1 shows, the GCI takes into account three areas of the economy

to generate this index: technology, public institutions and the macroeconomic environment.<sup>3</sup> All three indices are, in turn, broken down into several sub-indices. For technology, aspects of innovations (e.g., R&D spending, patents, and tertiary education enrolment), technology transfer (measured indirectly, for example by foreign direct investment), and information and communication (e.g., school access to internet, enforcement of IT-related laws, relative density of telephone lines and computers) are treated as the most important components. Likewise, an assessment of the level of corruption and the system of contracts and law (e.g., judiciary independence, fair bidding on public contracts and the impact of organised crime on business) are the basis for the public institutions index. Finally, macroeconomic stability (especially inflation, the level of budget deficits, and the national saving rates), country risk (according to ratings issued by Moody's and Standard & Poor's), and the level of general government expenditure (measured as a ratio to GDP) are combined in the macroeconomic environment index.

Most of the information on which the evaluation for the GCI is based stems from the survey of the Global Economic Forum among 4,800 business leaders. Official statistical data are used, for example, for government expenditure levels and the number of innovations.

The importance of the sub-indices and, thereby, the weight with which they enter the three main indices depends on how the World Economic Forum classifies a particular country with respect to its innovation ca-

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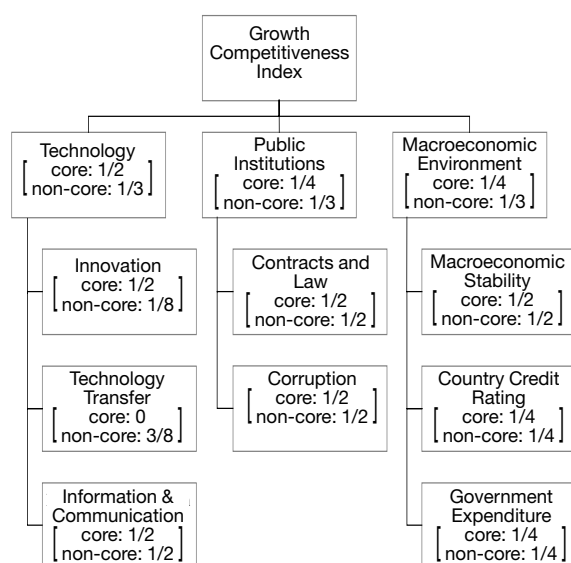
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<sup>1</sup> The Global Competitiveness Report 2002-2003, New York 2002, Oxford University Press.

<sup>2</sup> For example, in Germany the WHU Koblenz, Otto Beisheim Graduate School of Management, is the cooperation partner of the World Economic Forum.

<sup>3</sup> A detailed description of the GCI can be found in J. W. McArthur, J. D. Sachs: The Growth Competitiveness Index: Measuring Technological Advancement and the Stages of Development, in: The Global Competitiveness Report 2001-2002, New York 2002, Oxford University Press.

**Figure 1**  
Composition of the Growth Competitiveness Index\*



\* Weights of the sub-indices are given in parantheses. The terms “core” and “non-core” refer to the groups of core innovators and non-core innovators.

pabilities. Two groups of countries are distinguished: the core innovators and the non-core innovators. Core innovators are countries whose companies registered at least 15 US utility patents per one million of population in 2001. As shown in Table 1, 24 countries meet this criterion. All other countries are classified as non-core innovators. The Global Competitiveness Report emphasises the role of technology for core innovating countries because innovation of new technologies plays a central role in the process of future economic growth rather than adopting new technologies via technology transfer. Thus, for core innovators, the weight of the technology index is one half and the weight of both the public institutions index and the macroeconomic environment index is one fourth. For non-core innovators, all three main indices carry the same weight of one third. Likewise, technology transfer is not an aspect taken into account for core innovators, while it is an important component of the technology index for non-core innovators.

**The Microeconomic Competitiveness Index (MICI)**

The MICI<sup>4</sup> aims at identifying microeconomic fundamentals behind the contemporaneous prosperity of a country. This prosperity can be interpreted as per capita GDP and is determined by the productivity level of the economy. In contrast to the GCI, the MICI is not concerned with expected future developments, but with the current situation. This also explains why the

**Table 1**  
Core Innovators

Core Innovators	Rank 2001	US Utility Patents Granted in 2001 per Million of Population	Rank in the 1980s	Average Annual US Utility Patents Granted per Million of Population 1980-1990	Improvement (+)/Deterioration (-) in Ranking in 2001 compared to the 1980s
United States	1	314.43	2	165.90	1
Japan	2	260.99	3	101.30	1
Taiwan	3	239.78	19	12.80	16
Switzerland	4	195.65	1	189.70	-3
Sweden	5	195.62	4	94.40	-1
Israel	6	163.32	10	42.20	4
Finland	7	140.21	12	37.10	5
Germany	8	135.73	5	85.50	-3
Canada	9	115.90	7	50.40	-2
Denmark	10	89.55	13	31.80	3
Netherlands	11	83.27	6	52.00	-5
Korea	12	73.99	28	1.30	16
Austria	13	72.43	11	40.40	-2
Singapore	14	72.12	25	2.40	11
Belgium	15	70.25	14	26.50	-1
France	16	68.15	9	43.00	-7
United Kingdom	17	66.44	8	43.30	-9
Iceland	18	63.33	21	9.00	3
Norway	19	58.82	15	22.70	-4
Australia	20	44.99	16	21.50	-4
Ireland	21	37.24	22	9.00	1
Hong Kong SAR	22	34.34	23	5.40	1
New Zealand	23	32.28	18	15.20	-5
Italy	24	29.64	17	16.50	-7

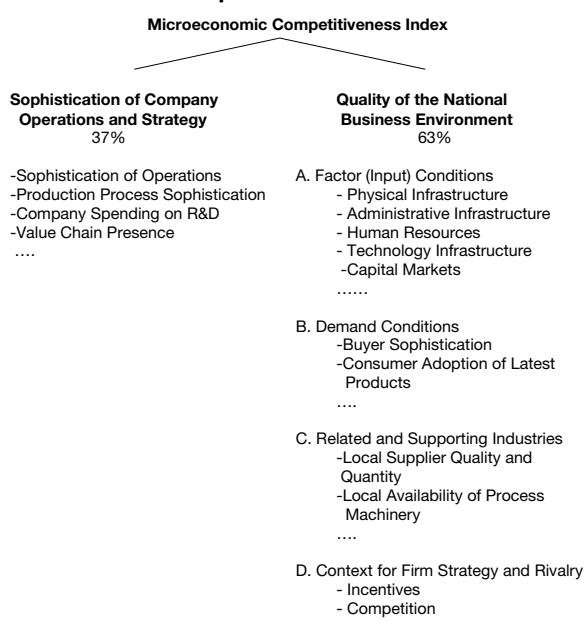
MICI was called “Current Competitiveness Index” until last year’s report.

In evaluating the productivity level, the MICI looks at the foundations of productivity at the microeconomic level. In this context, an important factor for a firm’s competitiveness is the business environment. For the MICI, the assessment of this environment is linked to Michael Porter’s concept of the competitive advantage of nations.<sup>5</sup> Therefore, the four factors describing Porter’s diamond represent the building blocks of the national business environment index. More specifically, these are the factor market conditions, demand conditions, related and supporting industries, and firm strategy and rivalry. As in the case of the GCI, several sub-indices are used to generate the values for these

<sup>4</sup> See M. E. Porter: Building the Microeconomic Foundation of Prosperity: Findings from the Microeconomic Competitiveness Index, Chapter 1.2 of the Global Competitiveness Report 2002-2003, op. cit.

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**Figure 2**  
**Composition of the Microeconomic Competitiveness Index**



factors. In addition to the factors included in Porter's diamond, the sophistication of company strategies and operations is taken into account. This aspect accounts for one third of the MICI, while two thirds are related to the national business environment.

As in the case of the GCI, the calculation of the MICI is based on both the results of the survey of the World Economic Forum and on published statistical data. A crucial feature of the variables taken into account in the context of the various factors is that a significant economic relationship could be established in 2001 between such factors and per capita GDP. On this basis, the MICI can be interpreted as a measure of current competitiveness.

### European Countries in the Overall Competitiveness Ranking

Table 2 presents the Growth Competitiveness Index and the Microeconomic Competitiveness Index for the two most recent Global Competitiveness Report and the two preceding years.<sup>6</sup> The USA leads the ranking

<sup>5</sup> See M. E. Porter: The Competitive Advantage of Nations, New York 1990, Free Press.

<sup>6</sup> See M. E. Porter: Building the Microeconomic Foundation of Prosperity: Findings from the Microeconomic Competitiveness Index, op. cit.; P. K. Cornelius, J. Blanke, F. Paua: The Growth Competitiveness Index: Recent Economic Developments and the Prospects for a Sustained Recovery, Chapter 1.1. of the Global Competitiveness Report 2002-2003; and M.E. Porter, J. D. Sachs, J. W. McArthur: Competitiveness and Stages of Economic Development, Executive Summary of the Global Competitiveness Report 2001-2002, New York 2002, Oxford University Press.

**Table 2**  
**Overall Competitiveness Ranking**

MICI Ranking			Country	GCI Ranking		
2002-2003	2001-2002	2000-2001		2002-2003	2001-2002	2000-2001
1	2	2	United States	1	2	1
2	1	1	Finland	2	1	6
3	7	8	UK	11	12	9
4	4	3	Germany	14	17	15
5	5	5	Switzerland	6	15	10
6	6	7	Sweden	5	9	13
7	3	4	Netherlands	15	8	4
8	8	6	Denmark	10	14	14
9	9	9	Singapore	4	4	2
10	12	11	Canada	8	3	7
11	10	14	Japan	13	21	21
12	11	13	Austria	18	18	18
13	15	12	Belgium	25	19	17
14	14	10	Australia	7	5	12
15	13	15	France	30	20	22
16	21	21	Taiwan	3	7	11
17	16	17	Iceland	12	16	24
18	17	18	Israel	19	24	19
19	18	16	Hong Kong SAR	17	13	8
20	22	22	Ireland	24	11	5
21	19	20	Norway	9	6	16
22	20	19	New Zealand	16	10	20
23	26	27	Korea	21	23	29
24	23	24	Italy	39	26	30
25	24	23	Spain	22	22	27
26	37	30	Malaysia	27	30	25
27	32	-	Slovenia	28	31	-
28	27	32	Hungary	29	28	26
29	25	25	South Africa	32	34	33
30	28	-	Estonia	26	29	-
...	...	...	...	...	...	...
34	34	34	Czech Republic	40	37	32
...	...	...	...	...	...	...
36	33	28	Portugal	23	25	23
...	...	...	...	...	...	...
40	50	-	Lithuania	36	43	-
41	45	-	Latvia	44	47	-
42	40	36	Slovak Republic	49	40	39
43	46	33	Greece	38	36	34
...	...	...	...	...	...	...
46	42	41	Poland	51	41	35
...	...	...	...	...	...	...
67	61	-	Romania	66	56	-
68	68	55	Bulgaria	62	59	58

in both indices of the new report, and hence replaces Finland, which was ranked first in both indices in the 2001-2002 report. The top group mainly consists of industrialised countries, i.e. Western Europe, Canada, Australia, Japan and New Zealand. In addition it includes a few emerging economies in Asia, such as Singapore, Taiwan, Hong Kong and Korea. All of these four Asian economies perform better on the GCI than on the MICI implying that their growth prospects are even better in relative terms.

Focusing first on current competitiveness, we find all EU countries with two exceptions among the top 25 countries. The two exceptions are Greece and Portugal, with ranks 43 and 36 in the MICI, respectively. Ranked second only after the United States, Finland remains the most competitive European country, fol-

lowed by the UK (no. 3) and Germany (no. 4). Among the Central and Eastern European countries (CEECs), for which data on a wider range are now included for the second year, Slovenia (no. 27), Hungary (no. 28) and Estonia (no. 30) are found to be the most competitive countries. By contrast, Bulgaria and Romania are assessed to have the least competitive economies among the CEECs. In the MICI ranking, they are ranked 68 and 67, respectively. At the same time, Romania is the European country that suffered the greatest loss in its current competitiveness ranking. Looking at developments over time, Lithuania enjoys the largest improvement over the past three years, moving up from number 50 to number 40 in the MICI.

With respect to the growth prospects as indicated by the GCI, Finland is placed second, as it is in the MICI. Switzerland shows the largest improvements among European countries moving up from number 15 in the 2001-2002 report to number 6 in the 2002-2003 report. Among the CEECs, Lithuania improved its growth prospects the most (43 in 2001-2002; 36 in 2002-2003). By contrast, several European countries dropped considerably in the assessment of their growth competitiveness. In particular, Italy and Ireland both lost 13 places and France, Poland and Romania all lost ten places. Ranked 39, Italy is now the least competitive economy within the European Union, while Greece and France are ranked 38 and 30, respectively. France, Greece, and Italy are now lower ranked in the GCI than several Central and Eastern European countries, namely Estonia (no. 26), Slovenia (no. 28) and Hungary (no. 29). Together with Lithuania and Latvia, these three CEECs were recently able to improve their ranking in the GCI. However, this does not apply to all CEECs. For example, the Czech Republic, the Slovak Republic, Poland, Bulgaria and Romania all moved downwards in the ranking of the GCI. Particularly alarming is the poor performance of Bulgaria and Romania which are ranked 62 and 66, respectively. This could be interpreted as consistent with the fact that the EU does not consider them ready to become EU members in 2004.

All Scandinavian countries perform remarkably well in the evaluation of the growth prospects. Sweden now ranks fifth in the GCI, Norway ninth and Denmark tenth. Interestingly, with the exception of Finland, all EMU countries are outperformed by the six Western European countries that do not belong to the Euro zone, i.e. Sweden, Switzerland, Norway, Denmark, the UK and Iceland.

Comparing the GCI and MICI index, the current competitiveness of European countries tends to be better than the future outlook. Among the EU member

countries, only Greece, Portugal, Spain and Sweden are better ranked in the GCI than in the MICI. As Greece, Portugal and Spain are currently the three least competitive countries within the EU, the relatively better growth position seems promising. Several countries moved up in the ranking of one index and moved down in the ranking of the other index. For example, Ireland shows better current competitiveness, moving up from 22 to 20 (MICI), but is now only number 24 in the GCI, while it was eleventh a year previously and fifth two years previously. Thus, with regard to the growth prospects, Ireland slipped the most among European countries.

Regarding the CEECs, Bulgaria, Estonia, Lithuania and Romania perform better on the GCI index than on the MICI index. With respect to the EFTA countries, the picture looks somewhat different: while Switzerland is ranked nearly in the same position in both indices (sixth in the GCI and fifth in the MICI), Iceland and Norway show relative growth potential exceeding their relative current competitiveness.

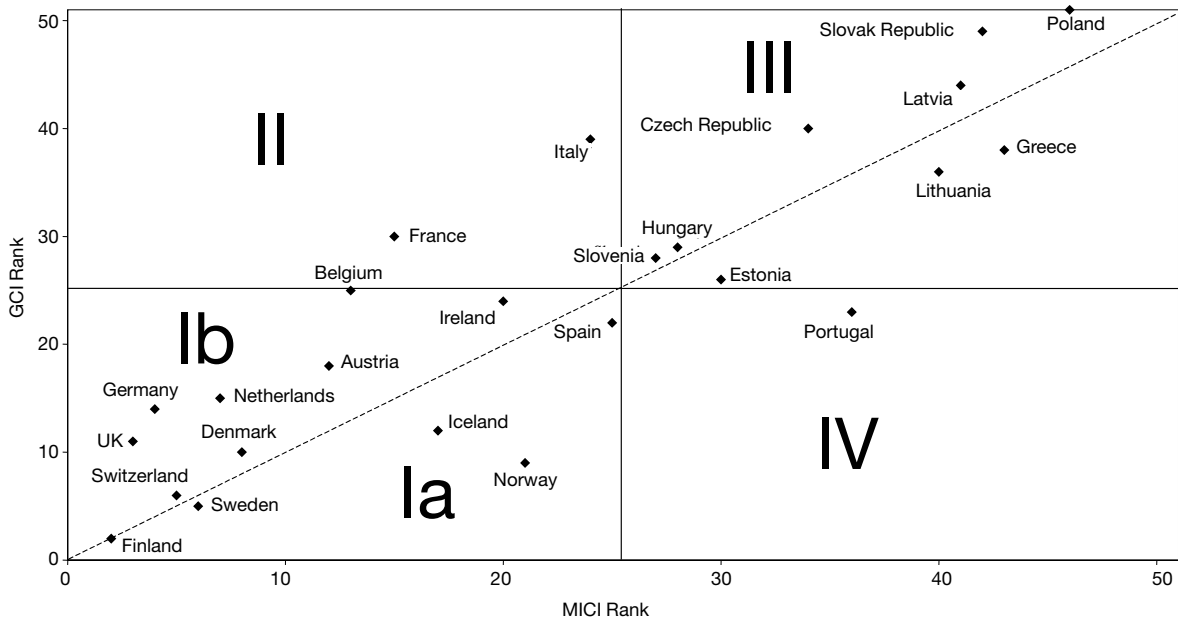
#### **A Closer Look at the Expected Dynamics of Competitiveness**

Since the Microeconomic Competitiveness Index focuses on current competitiveness and the Growth Competitiveness Index focuses on growth or future competitiveness, a comparison of the two rankings for a country implicitly indicates whether or not a particular country is expected to move up the ranking over time. To this end, Figure 3 presents the implications of the Global Competitiveness Report 2002-2003 for the European countries by showing the MICI on the horizontal axis and the GCI on the vertical axis. The objective of this exercise is to find out which economies are expected to move up over time and which are expected to move down. Leaving out the clear outliers Bulgaria and Romania, all European economies have rankings between 2 and 51 on both indices. We divide each range into two groups: 2 to 25 and 26 to 51. The separation between the two groups is shown in Figure 3 for the MICI by the vertical line and for the GCI by the horizontal line. This separation yields four different categories of countries.

Areas Ia and Ib show the top performers, i.e. countries that enjoy a high level of competitiveness today and that are expected to perform well in the future, i.e. they show evidence of a favourable growth environment. Among the top performers, two subgroups can be distinguished depending on whether a country lies below (area Ia) or above (area Ib) the 45-degree line. The group of countries in area Ia is almost exclusively composed of Nordic countries whose current competitiveness is ranked 21 or better and is expected to

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**Figure 3**  
**Current and Future Competitiveness**



further improve in the near future. This is particularly true for Iceland and Norway, which lie well below the 45-degree line. The positive outlook of Iceland is primarily based on its sound institutional framework as Iceland ranks second on the corruption sub-index and third on the contracts and law sub-index. The main reason for Norway's growth potential can be found in the stable macroeconomic environment. Here, Norway ranks second with Singapore ranking first. Countries that lie in area Ib will also retain a position in the top group. However, in contrast to Norway and Iceland, these countries are expected to cede some positions – possibly to Canada, Australia and New Zealand, or to some emerging countries such as Taiwan, Korea, Hong Kong, or Singapore – in the medium term. Among the top performers, Germany and Belgium display the weakest growth competitiveness. The difference between the GCI rank and the MICI rank for Germany and Belgium is 10 and 12, respectively. However, it should be noted that Germany has climbed up the GCI ranking over the past few years, while Belgium has fallen continuously.

Area II in Figure 3 includes countries that belong to the top group of European countries regarding their current competitiveness but, at the same time, belong to the lower group of European countries regarding their future competitiveness. This group consists only of France and Italy. Both countries are still among European countries with the highest current competitiveness as indicated by their MICI rank (15 for France and

24 for Italy). However, with respect to the growth prospects, both countries drop 15 ranks (France is number 30 and Italy number 39 in the GCI). One particular feature in which both countries perform very poorly is the government expenditure share (number 78 for France and number 64 for Italy). Compared to the 2001-2002 ranking, the situation of France worsened most notably with respect to the ability of companies to borrow from banks, recession expectations, innovation capabilities at the firm level, judicial independence, the level of organised crime, and the quality of property rights protection. The worsening of Italy's position in the ranking stems from similar factors. In addition, Italy also worsened its relative position with respect to the level of R&D spending at the firm level and the intensity of university and industry collaboration. It can be noted that the three large continental European economies, Germany, France and Italy, come out as having a significantly worse future outlook compared to current competitiveness. This contrasts with the fairly favourable evaluation of, for example, the smaller Scandinavian countries.

Area III represents countries that are among the less competitive countries of Europe today and are likely to remain in this group over the next 5 to 8 years. As Figure 3 shows, this area includes the CEECs and Greece. Surprisingly, most CEECs lie above the 45-degree line, implying that they are not expected to improve their competitive position in the near future. The situation is particularly disappointing for the Czech Republic, the

Slovak Republic and Poland. All three countries rank lower in the GCI than in the MICI by about 6 places. Bulgaria and Romania, although not shown in Figure 3, also belong to this group of countries.

Area IV includes the European countries that are ranked in the weaker group with respect to current competitiveness but are ranked among the top countries with respect to their growth prospects. On the basis of the Global Competitiveness Report 2002-2003, this group comprises only Portugal which is ranked 36 in the MICI and 23 in the GCI. Strong arguments in favour of Portugal that are responsible for the good growth competitiveness performance are, for example, prevalence of foreign technology licensing, foreign direct investment and technology transfer, absence of organised crime, and judicial independence.

**Sophistication of Companies versus Quality of Business Environment**

In Figure 4, the two sub-indices of the measure of current competitiveness (MICI) are plotted. While the horizontal axis shows the index of the sophistication of company operations and strategy, the vertical axis shows the quality of the national business environment. Comparing the position of individual countries with the 45-degree line suggests the following interpretation: if a country lies above the 45-degree line its firms – either domestic firms or subsidiaries of foreign firms – are more advanced than the surrounding business environment; as a consequence, either the business

environment will be improved or there remains the risk that firms move their operations to a more favourable location.

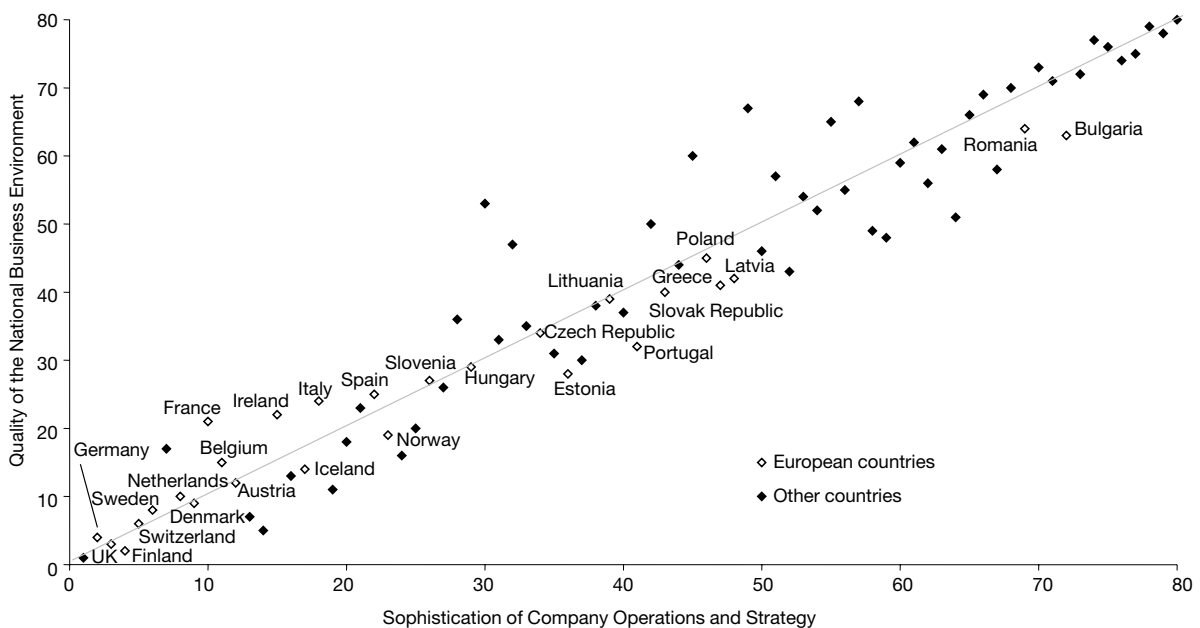
Most EU member countries lie above the 45-degree line in Figure 4. The divergence between the two sub-indices is particularly large in the cases of France, Ireland and Italy. This implies that in these countries, particular improvements in the business environment are called for. In France, the quality of the national business environment suffers from a lack of local competition (rank 51) and in Ireland the poor state of the overall infrastructure (rank 53) restrains the efficiency of companies. Italy performs particularly poorly with respect to the ease of establishing new businesses. The country ranks 50 in the cost of starting a business, 47 in the number of days to start a business and 53 in the administrative burden for start-ups.

Countries lying below the 45-degree line are those in which companies are less advanced relative to the national business environment. These countries include Portugal, Iceland and the CEECs.

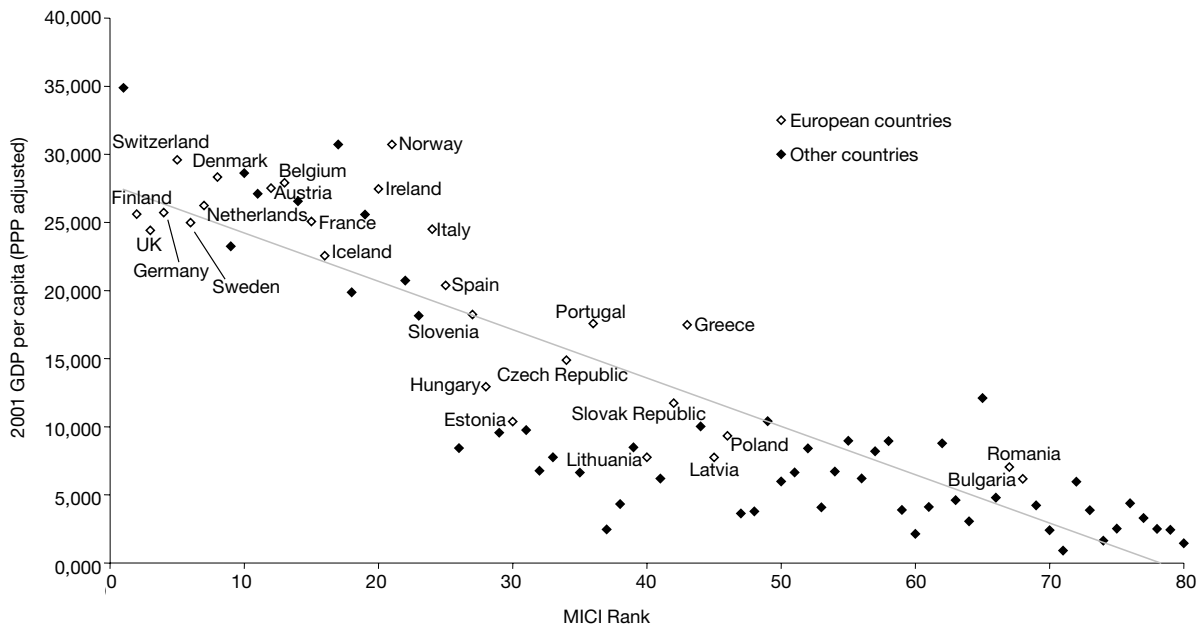
**The Sustainability of Competitiveness**

Comparing a country's microeconomic competitiveness and its current per capita income level indicates the sustainability of a country's standard of living. Figure 5 plots the MICI ranks against the 2001 per capita GDP levels. It also shows a regression line which has a negative slope. This reveals that high current competitiveness levels, i.e. a low rank in the MICI, is associated

**Figure 4**  
**The Relative Advancement of Companies and the Surrounding Business Environment**



**Figure 5**  
**Microeconomic Competitiveness and GDP per capita**



with high per capita GDP levels. Countries for which the combination of the two data points is above the regression line can be interpreted as countries in which the level of prosperity might not be sustainable in the future. By contrast, countries lying below the regression line are those in which microeconomic fundamentals are relatively strong compared to the current per capita GDP level. Most EU and EFTA countries currently enjoy a per capita GDP level that is fairly high compared to their microeconomic fundamentals indicating a lack of sustainability of prosperity. This constellation is particularly pronounced in the cases of Norway, Ireland, Italy and Greece. In the case of Norway this is mainly due to natural resource endowments and, hence, the prosperity level may well persist for many more years. In Ireland, the high per capita GDP level compared to the MICI may be more transitory, as the Global Competitiveness Report finds the prosperity level related to the boom in foreign investment inflows.

As Figure 5 reveals, the combination of current competitiveness (MICI) and per capita GDP level is below the regression line for most CEECs, suggesting that these countries have not yet taken full advantage of their prosperity potential. Estonia and Lithuania lead the CEECs that exhibit this upside potential, followed by Hungary and Latvia. The finding that, in these countries, the full potential has not yet translated into higher per capita GDP may be explained by the time lag with which prosperity adjusts to improved microeconomic conditions.

**Evaluation of the Study and Conclusions**

The Global Competitiveness Report combines a number of hard data on competitiveness with the results of an own survey conducted among business leaders for each country included in its study. One may always argue about the exact weights assigned to the various sub-indices included in the main indices and the selection of the particular aspects that contribute to the sub-indices, but it would be difficult to question the basic approach of the study in general. In addition, it seems to be very useful to distinguish between more current competitiveness aspects and more future related aspects as is the case by distinguishing between the Microeconomic Competitiveness Index and the Growth Competitiveness Index.

The report is also useful for evaluating the competitiveness of European countries relative both to the rest of the world and to each other. While the mature European economies show high current competitiveness and the economies of Central and Eastern Europe still lag behind, the assessment of the growth prospects indicated by the growth competitiveness index shows a much more differentiated picture. Especially the bigger advanced EU countries display a less favourable competitiveness outlook than their current competitiveness suggests. By contrast, many smaller economies in Europe seem to be currently much more flexible and, thus, can hope for an improvement in their relative competitiveness and relative prosperity in the medium term.