SPOTLIGHT ON:

Serbia's competitiveness: Measuring competitiveness and country rankings in the World Economic Forum Global Competitiveness Report

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This paper analyzes Serbia's international competitiveness as outlined in the World Economic Forum (WEF) *Global Competitiveness Report 2011*, focusing on the main factors behind Serbia's poor showing. In this context, the paper examines the issue of measuring national competitiveness using the Global Competitiveness Index (GCI), which predominantly relies on the results of a standardized survey carried out by the WEF in all countries covered by its report. Analysis will thus focus on the structure of the GCI in an attempt to separate the impact of structural shortcomings of the Serbian economy from any bias depending on the source of data. If "soft" sub indexes (i.e. those obtained using the survey) are separated from the "hard" ones (obtained from internationally-comparable databases), markedly different assessments can be obtained of Serbia's competitiveness relative to its neighbour countries. In addition to the obvious structural shortcomings affecting Serbian competitiveness, this can partly explain the fact that Serbia is currently ranked relatively low as 95th of 142 countries. If the bias present in soft ranking indicators were neutralized, Serbia could improve its ranking by up to 30 places. In addition to identifying the causes behind the poor competitiveness of the Serbian economy as presented in the *Global Competitiveness Report,* the paper will provide recommendations for their elimination, which could make it possible for Serbia to advance in the WEF rankings.

1. Introductory remarks

This paper deals with multiple aspects of national competitiveness at the global level. The aim of this paper is to clarify the often confused issue of measuring competitiveness and ranking countries using the methodology employed by the World Economic Forum (WEF), and to thus explain the reasons underlying Serbia's poor showing in these rankings, as well as to recognize potentials for improving competitiveness in the future. Before we proceed to achieve this aim, a brief overview of the methodology used to measure competitiveness is required.

Research into various aspects of national competitiveness in the global context is predominantly associated with the World Economic Forum and its Global Competitiveness Index (GCI). This is a composite index based on twelve (key) pillars of competitiveness that are divided into three groups. The first group is made up of the so-called *Basic Requirements*, which include pillars (1) Institutions, (2) Infrastructure, (3) Macroeconomic environment, (4) Health and Primary education. The second group is composed of the so-called *Efficiency Enhancers*: pillars (5) Higher education and training, (6) Goods market efficiency, (7) Labour market efficiency, (8) Financial market development, (9) Technological readiness, and (10) Market size. The third group comprises *Innovation and Sophistication Factors*, and is made up of the last two pillars, (11) Business sophistication and (12) Innovation.[1] These pillars cover the macroeconomic and microeconomic factors, as well as institutional development factors, that together define the competitiveness of a nation's economy.

The GCI, as a composite index, is established using the weighted average score for each of these pillars. Each pillar, in turn, is another composite index established using the weighted average score for each subindex, which may be obtained from either of two types of sources – primary and secondary.

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1 More information on the various aspects of economic growth and competitiveness of the Serbian economy, as well as the structure of the Global Competitiveness Index analyzed in this paper, can be found in Vasiljević, D. (2009), *Quarterly Monitor* 18.

Primary data are obtained based on standardized surveys carried out every year in countries covered by the report and responded to by top executives of companies that make up a representative sample. These data are also called "soft data".[2] The number of companies that form the sample varies from country to country and primarily depends on country size. The sample is made up of small, medium-sized and large companies. The ratios of various sizes of companies are precisely defined by WEF guidelines. It is important to note that half of each year's sample is composed of companies sampled the previous year, while the other half is selected at random from a defined sampling pool. Results of the analysis are made more stable by the retention of one half of the sampling elements used in the previous year's survey, which confers greater validity on the numerous panel analyses carried out. Primary data obtained using the survey are necessary to calculate those subindexes for which no bases of secondary quantitative data exist for all countries covered by the WEF rankings. As a Partner Institute of WEF, the Foundation for the Advancement of Economics (FREN) administered the survey in Serbia. The survey questionnaire covered a wide range of questions dealing with conditions for doing business, regulation, market environment, political situation, etc. (for instance, "To what extent is the press free in your country?", "How would you rate the level of financial market sophistication in your country?", "To what extent does anti-monopoly policy in your country promote competition?"). The survey is the *only* means of collecting data for these questions – as well as for many others we did not cite (but that are important for establishing the global competitiveness profile of a country). This is exactly where the potential bias lies in the scoring of subindexes, and, consequently, in a country's position in the rankings. We will cover this topic in more detail later.

Secondary data – Data from internationally comparable databases (such as the IMF, World Bank, World Trade Organization, United Nations, etc.) are used to calculate competitiveness subindexes such as taxation levels, inflation rate, budget deficit, number of telephone lines, time needed to start a business, etc. These data are what is termed "hard data".[3] Secondary data from the previous year are generally used to calculate subindexes for the current year, as databases for the current year are generally unavailable at the time the report is prepared. Thus, secondary data for 2010 were used to prepare the 2011 report. In this sense, data obtained using the survey are representative of the current level of competitiveness.

All data, both primary and secondary, are scored on a scale from 1 to 7 (with 1 being worst and 7 best); this is, at the same time, the scale of scores for all subindexes, pillars of competitiveness and the Global Competitiveness Index itself. Most survey questions do not need to be normalized, since a balanced seven-point Likert scale is used. In calculating the GCI the share of survey data is approximately 70%, while the share of secondary data is approximately 30%.

The importance of pillars within a particular group for an individual country varies by its stage of development. A relatively precise and simple criterion, based on *per capita* GDP denominated in US dollars, is used to group countries by stage of development. Countries are grouped into three basic and two transitional stages. Weights assigned to groups of pillars used to calculate the index value for any given country will depend on the stage the country is in.[4]

For instance, according to its GDP *per capita*, Serbia is considered to be in the *efficiency-driven* stage of development (the middle band), where competitiveness is primarily affected by pillars in the *efficiency enhancers* category. Thus, when the GCI composite value is calculated, basic requirements and efficiency enhancers have shares of 40% and 50%, respectively, while *innovation and sophistication factors* have a share of 10%. Consequently, the values for the pillars in the *efficiency enhancers* category have the greatest proportional impact on the total GCI score for Serbia.

This paper is divided into five chapters. Following an introduction that provides an overview of the basic elements of the WEF methodology used to measure competitiveness, *part two* analyzes Serbia's competitiveness ranking in the WEF report, while *part three* presents the fundamental reasons underlying the ranking. *Part four* reflects on the key consequences that a country's low WEF ranking can have, while *part five* summarizes the key results of analysis and provides recommendations for improving Serbia's competitiveness ranking, which, if implemented, could prevent any adverse consequences from occurring.

2 We will hereinafter use the term "soft subindexes" to refer to subindexes based on soft data.

3 We will hereinafter use the term "hard subindexes" to refer to subindexes based on hard data.

4 Development stage thresholds and the structure of weights used to calculate the GCI are outlined in WEF (2011), *The Global Competitiveness Report* 2011-2012, p. 10.

Box 1. Competitiveness vs. Competition

Bearing in mind the complex structure of the GCI, the competitiveness it represents could roughly be defined as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of competitiveness is expressed as the capacity of a nation's economy to generate medium-term sustainable economic growth at its current level of development. Starting from the definition of competitiveness, we will clarify the terminological difference between the terms *competitiveness* and *competition*, since the Serbian general public, as well as both print and broadcast media, make the mistake of using them interchangeably, thereby wrongly equating improvements to competitiveness with improvements to competition. Competition, as a market phenomenon, denotes the intensity of rivalry between players in a market on both the side of supply and the side of demand for goods and services. Fostering competition in partial markets should result in lower prices, greater quality and diversity of products and services, and frequent supply-side innovations, all of which have positive implications for consumer surplus. Due to its positive effects on the welfare of partial markets, protecting and fostering competition are key issues for all market economies. Increasing competition between players in the market, *ceteris paribus*, leads to an improvement in a country's competitiveness, but the opposite does not always hold true. Competition factors are considered under only one of the twelve pillars of competitiveness (*goods market efficiency*), which makes *competitiveness* a far broader and comprehensive term than *competition*. The roots of the confusion of the two terms lie in their relatively brief presence among both professionals and the broader public in Serbia. Countries have been ranked using the Global Competitiveness Index since 2005. Although factors affecting national competitiveness and its measurement were first considered long before this date, this phenomenon achieved world wide recognition only with the Global Competitiveness Index. The year 2005 also saw the introduction of regulation designed to safeguard competition in Serbia, with the adoption of the Competition Law and the establishment of the Competition Commission.

2. Serbia's competitiveness ranking in the *Global Competitiveness Report*

According to the 2011 *Global Competitiveness Report*, Serbia was ranked 95th of a total of 142 countries, with a Global Competitiveness Index score of 3.88.[5] In comparison with last year, Serbia progressed by one place, increasing its GCI score by 0.04. This obviously makes for only slight progress, even if we added the fact that the improvement was made in parallel with an extension of the list (from 139 countries in 2010 to 142 in 2011). The two following figures show Serbia's position by value of GCI in relation to South-Eastern Europe and Western Balkans averages. Graph L1-1 shows movements to composite GCI values from 2007 to 2011, while Graph L1-2 provides disaggregated values of individual pillars of competitiveness for 2011.

If we compare the rankings and composite values of Serbia's GCI for the period from 2007 to 2011 with the average for Western Balkan countries, two discrete periods will become apparent (Table L1-1). The first period comprises 2007 and 2008, when Serbia was approximately at the level of the Western Balkan average, both by ranking and by GCI score. The second period, covering the past three years, has seen a widening gap emerge between Serbia and other nations of the Western Balkans. After the global economic crisis struck, in 2009 and 2010 Serbia dropped first by eight, and then by three more places, although its index score rose from 3.77 to 3.84 in 2010. Over the same period, notwithstanding the crisis, Western Balkan averages improved by nine places in relation to 2008. In short, there are two possible explanations for these differences: either the crisis had a substantially greater impact on Serbia's real competitiveness parameters, or the issues were caused by the structure and quality of the data used to calculate the GCI. We will explore these factors in greater detail in the next chapter.

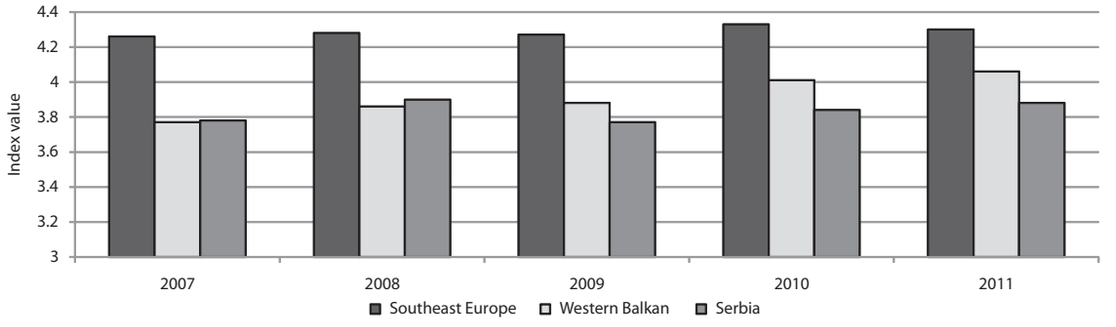
Graph L1-1. GCI and Ranking, 2007-2011: South-Eastern Europe,[1] Western Balkans[2] and Serbia

	2007		2008		2009		2010		2011	
	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index
SIE	54	4.26	57	4.28	54	4.27	54	4.33	58	4.3
WB	90	3.77	86	3.86	85	3.88	79	4.01	77	4.06
Serbia	91	3.78	85	3.9	93	3.77	96	3.84	95	3.88

1) The average GCI score for South-Eastern European countries was obtained as the simple arithmetic mean of the scores for Bulgaria, the Czech Republic, Hungary, Poland, Romania and Slovakia.
2) The average GCI score for Western Balkan countries was obtained as the simple arithmetic mean of the scores for Croatia, Macedonia, Bosnia and Herzegovina, Montenegro and Albania.

5 The highest GCI score (5.74) and the first place in the WEF rankings for 2011 was recorded by Switzerland, while the lowest score (2.87) was seen by Chad, ranked 142nd. To reiterate, GCI theoretically ranges between 1 and 7.

Graph L1-2. Index Scores: South-Eastern Europe, Western Balkans and Serbia, 2007-2011



Source: WEF (2011), *The Global Competitiveness Report*.

Table L1-3. Serbia: Pillars of Competitiveness in the Period from 2007 to 2011

	2007		2008		2009		2010		2011	
	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index
Serbia	91	3.78	85	3.90	93	3.77	96	3.84	95	3.88
Basic requirements	78	4.19	88	4.15	97	3.90	93	4.15	88	4.28
1. Institutions	99	3.37	108	3.40	110	3.24	120	3.19	121	3.15
2. Infrastructure	92	2.72	102	2.68	107	2.75	93	3.39	84	3.67
3. Macroeconomic environment	88	4.61	86	4.72	111	3.88	109	4.05	91	4.18
4. Health and primary education	31	6.04	46	5.79	46	5.71	50	5.95	52	5.82
Efficiency enhancers	88	3.56	78	3.82	86	3.77	93	3.75	90	3.73
5. Higher education and traning	82	3.65	70	3.91	76	3.83	74	4.01	81	3.98
6. Goods market efficiency	114	3.53	115	3.68	112	3.70	125	3.57	132	3.49
7. Labor market efficiency	111	3.53	66	4.36	85	4.18	102	4.06	112	3.94
8. Financial market development	98	3.73	89	3.94	92	3.87	94	3.84	96	3.74
9. Technological readiness	57	3.34	61	3.45	78	3.38	80	3.41	71	3.63
10. Market size	75	3.23	65	3.59	67	3.69	72	3.60	70	3.61
Inovation and sophistication factors	88	3.30	91	3.30	94	3.21	107	3.04	118	2.99
11. Business sophistication	95	3.53	100	3.51	102	3.45	125	3.15	130	3.08
12. Innovation	78	3.08	70	3.09	80	2.98	88	2.93	97	2.90

Source: WEF (2007, 2008, 2009, 2010, 2011), *The Global Competitiveness Report*.

To be able to have a clearer insight into the factors that affected Serbia's position in the rankings, we will examine movements in the 12 pillars of competitiveness between 2007 and 2011, and will then focus on subindexes within each pillar that are substantially below the score of the pillar as a whole and the overall GCI score.

In 2008, Serbia saw poorer results relative to the preceding year in most of the *basic requirements* and *innovation and sophistication factors* (Graph L1-2). However, the increase in the value of the *efficiency enhancers* was sufficient for the final GCI to rise by 0.12 and for the country to improve its ranking by six places. By way of a reminder, it would not be amiss to note that the segment in which Serbia recorded the greatest improvement in 2008 also had the greatest weight (50%) attached to it in calculating the overall GCI score for Serbia. Historically, Serbia achieved its highest GCI score and best place in the rankings in 2008, when it was ranked 85th with a GCI score of 3.9. However, all three groups of factors deteriorated in 2009, driving Serbia down to its lowest-ever GCI score of 3.77; the scores are covered in 2010 and 2011.

Graph L1-4. Pillars of Competitiveness, 2011: South-Eastern Europe, Western Balkans and Serbia

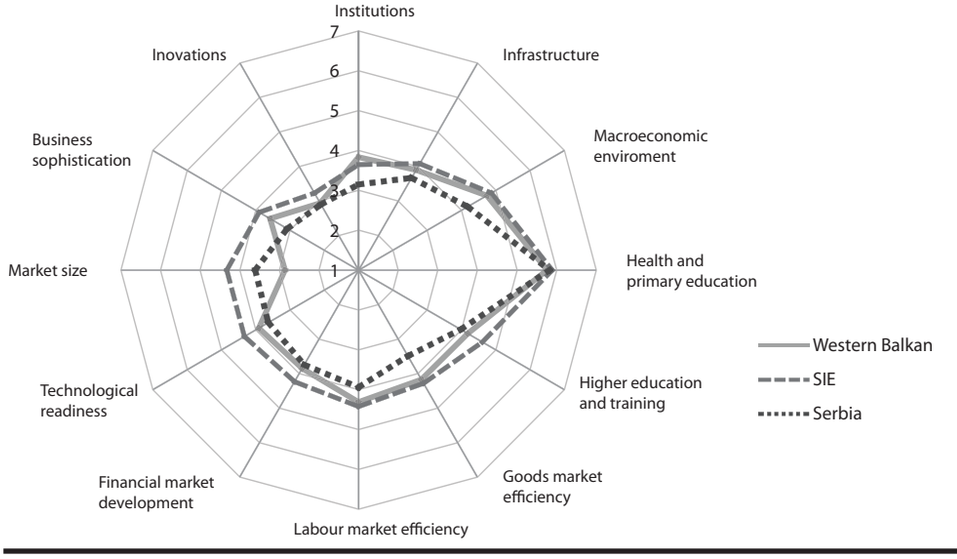


Table L1-5. Share of Soft and Hard Subindexes in GCI Structure[1)]

Groups of pillars of competitiveness	Number of indicators		
	Total	Hard	Soft
Basic requirements	46	16 (34.78%)	30 (65.22%)
Efficiency enhancers	52	18 (34.62%)	34 (65.38%)
Inovation and sophistication factors	18	1 (5.56%)	17 (94.44%)

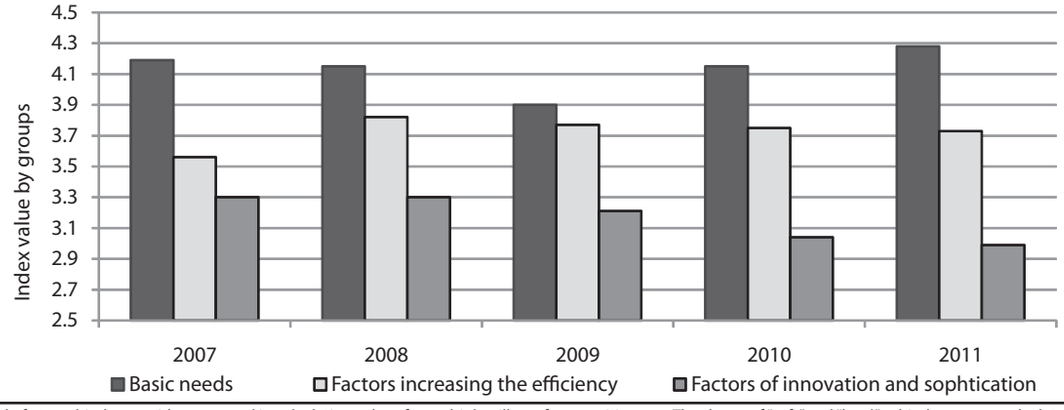
Source: WEF (2007, 2008, 2009, 2010, 2011), *The Global Competitiveness Report*.

Notwithstanding the downward trend for the pillar groups of *efficiency enhancers* and *innovation and sophistication factors*, the upward trend of the total GCI score over the last two years was caused by substantial progress made by Serbia with respect to *basic requirements*. The fact that *innovation and sophistication factors* have a share of only 10% in the overall GCI value indicates that Serbia's poor showing in 2011 was in the main caused by the deterioration of its grades in the *efficiency enhancers* group.

According to WEF methodology, countries in the second phase of development – such as Serbia – should strive to improve the efficiency of their production processes and improve the quality of their goods and services. To achieve this aim, action is needed to foster market competition, increase investment into higher education, strengthen and deepen financial markets, and invest more into research and the development of new technologies. These competitiveness factors are part of the second group of pillars of competitiveness, *efficiency enhancers* (Table L1-3).

To be able to adequately quantify the degree of success in the development of these processes and include them in the GCI, the World Economic Forum uses a combination of primary and secondary data, where primary data, obtained using a survey questionnaire, have a share of some 65% in the overall value of the index for the group carrying the greatest weight at Serbia's current stage of development (Table L1-5). Bearing this fact in mind, we can conclude that the drop in Serbia's position in the rankings after the emergence of the global economic crisis can be accounted for, to the extent of about two thirds, by the deterioration in the scores of subindexes obtained on the basis of primary data, since scores of subindexes obtained using hard data did not see significant change. We would be able to confirm this conclusion if we took into account sources of data used in measuring aspects of competitiveness that place Serbia among the most poorly ranked countries in the WEF list.

Graph L1-6. Index Scores for Individual Pillars of Competitiveness, 2007-2011[1)]



There are a total of 111 subindexes, with some used in calculating values for multiple pillars of competitiveness. The shares of "soft" and "hard" subindexes were calculated using the absolute number of "soft" and "hard" subindexes in each of the three groups of pillars of competitiveness, irrespective of the fact that some subindexes are used in calculating values for multiple different pillars of competitiveness.

In general, of the 111 subindexes in total that are used in calculating GCI scores (across all three groups of pillars of competitiveness), the only hard subindexes that show Serbia as ranking lower than its neighbours are inflation (106th place in the WEF rankings) and gross national savings as percentage of GDP (103rd place in the WEF rankings), both belonging to the *basic requirements* group. On the other hand, the scores for the 25 soft subindexes place Serbia at the very bottom of the 142-place list.

A comparison of index scores for the pillars in the *efficiency enhancers* group (Table L1-2) shows that the following pillars recorded deterioration between 2008 and 2011:

(6) Goods market efficiency;

(7) Labor market efficiency;

(8) Financial market development, and

(10) Market size.

Table L1-7. Worst-Rated Soft Subindexes, 2011

	Value	Rank
Basic requirements		
Protection of minority shareholders interest	2.8	140
Quality of roads	2.4	131
Quality of railroad infrastructure	1.6	102
Quality of port infrastructure	2.7	133
Quality of air transport infrastructure	3.1	132
Efficiency enhancers		
Intensity of local competition	3.6	136
Extent of market dominance	2.5	139
Effectiveness of anti-monopoly policy	2.8	137
Buyer sophistication	2.2	136
Cooperation in labor-employer relations	3.3	136
Brain drain	1.8	139
Financing through local equity market	2.7	112
Venture capital availability	2.0	121
Regulation of securities exchanges	3.3	121

Source: WEF (2011), The Global Competitiveness Report.

The market size pillar is scored on the basis of secondary data obtained from international statistical databases. Any rise or fall in this pillar generally means an increase or decline in domestic and/or foreign demand. Thus the drop in the index score of this pillar after 2008 was a logical consequence of the major fall in domestic demand, which is still below pre-crisis levels. The remaining three pillars are scored using a combination of primary and secondary data, where data obtained in the survey have a 70-80% share in the determination of the score awarded for each factor. Responses to survey questions have clearly played a significant role in the deterioration of the scores for these three pillars, which has in turn had a decisive influence on Serbia's relatively poor showing in the WEF rankings irrespective of its continuing progress in the *basic requirements* category.

Some of the worst-rated factors affecting Serbia's competitiveness in the *efficiency enhancers* and *basic requirements* groups in 2011, according to responses to survey questions, are shown in Table L1-7.

The values of all soft subindexes shown in the table above are below the overall GCI score, and as such Serbia's ranking in these categories is far lower than the 95th place it occupies in the overall WEF rankings. Although Serbia has been seeing continued progress in the *basic requirements* group, the improvement would clearly be substantially greater if the values of some of the soft subindexes listed above improved as well, since they have an extremely negative influence on the average values of the group as a whole. This is why we included the worst-rated soft subindexes from the *basic requirements* group, as well as those grouped under *efficiency enhancers.* Considering the results that have had a decisive influence on Serbia's unsatisfactory showing, we will now proceed to explain the main reasons we believe caused the country to under perform in the World Economic Forum rankings.

3. Reasons for underperformance

We will divide the reasons underlying Serbia's relatively low 95th place in the WEF rankings into two key categories. The first category comprises all real shortcomings affecting the country's competitiveness, which were reflected on low subindex values and, consequently, on the composite GCI score. The second category of reasons has to do with bias in scoring certain soft subindexes based on data obtained in a standardized survey carried out in all countries covered by the report. It is owing to this potential bias that real progress that has been achieved could still remain unverified. Serbia has underperformed, therefore, owing to a mix of both of these factors. While the scope for remedying shortcomings in the first category is rather broad, the same could certainly not be said of the second group. The following two chapters present possible explanations as to why Serbia is placed as it is in the WEF rankings.

3.1. Real shortcomings

As already mentioned, we have grouped all aspects of competitiveness where Serbia deservedly saw low subindex scores into the first category of reasons for its poor showing in the WEF rankings. The preceding chapter underlined the fact that the only two hard subindexes in which Serbia performed below average in 2011 were inflation and gross national savings as percentage of GDP. It should be borne in mind that the scores for these subindexes are obtained from secondary data contained in internationally comparable databases. Thus the only way for Serbia to improve its ranking where these subindexes are concerned is to have a lower inflation rate at the end of this year relative to the previous year, as well as for the ratio of gross national savings to GDP to also increase in relation to last year. Therefore, both of these categories are measurable, and consequently objective, not dependent on the opinion of anyone but, rather, exclusively on the real progress of a country in these areas. If price growth in the last quarter of this year does not cause any significant increase in underlying inflation, it would not be unrealistic to expect Serbia to become more competitive in this aspect when the final tally is made at the end of the year. A further impetus could certainly be made to this by the relatively successful cooperation between Serbia and the International Monetary Fund in 2011. As for the ratio of gross national savings to GDP, progress could be expected if savings in local currency were promoted in parallel with strengthening the stability of the banking sector and boosting the confidence of both businesses and households in banks. Savings would also increase if the state managed to cut the budget deficit in the near future. National savings, as the sum of private and public savings, would thus grow, with a portion of private savings currently used to cover the deficit being freed up. Of course, as inflation and national savings are both part of the *basic requirements* group, any improvements to these two subindexes would not affect the overall GCI score as much as changes to subindexes in the *efficiency enhancers* group would.

The quality of subindexes whose scores are obtained by reference to internationally comparable databases stems from the quantitative nature of such data and the fact that these data are collected using identical methodology in all countries. Thus, even if the methodology is inaccurate, it is the same for all countries, making it possible to draw valid international comparisons. Generally, it can be said that there is less bias in comparisons made using hard data than in those made with the use of soft data obtained using the survey.

The soft subindexes shown in Table L1-7, which put Serbia at the very bottom of the 142-strong list, point to the conclusion that problems with the country's competitiveness as measured by the WEF are primarily due to lower-than-average scores in the *efficiency enhancers* group, but also owing to poor performance as measured by some of the soft subindexes from the *basic requirements* group. By way of a reminder, for Serbia *basic requirements* have a weight of 0.4 in the calculation of the GCI value, while *efficiency enhancers* are weighted by 0.5. Infrastructure issues (roads, railways, ports, air transport) clearly dominate the *basic requirements* group, while *efficiency enhancers* are dominated by issues relating to competition in partial markets and problems in the functioning of financial markets.

Serbia's infrastructure issues are obviously disproportionate to its stage of development as measured using GDP *per capita*. In other words, although its GDP levels mean that Serbia is categorized as a moderately developed country, overall infrastructure development does not justify this assessment. Serbia has evidently been investing substantial efforts and funds into development, mainly of road infrastructure: projects in progress include the construction of Corridor X and its ancillary roads; the completion of the Belgrade bypass road; the construction of the new bridge spanning the Sava River in Belgrade, the so-called Ada Bridge, a strategic link between Corridors X and IV and Romania; the reconstruction of the Gazela Bridge in Belgrade; and numerous smaller-scale projects. As the northern arm of Corridor X is expected to be complete early in 2012, as are repairs to the Gazela Bridge and the construction of the new bridge across the Sava with its access roads (significantly facilitating motor vehicle traffic on Corridor X), it would be only logical to expect an improvement to the quality of roads subindex. This outcome is all the more likely as the largest proportion of executives surveyed live in Belgrade, the city expected to benefit the most from improvements in road infrastructure. Again, the weight assigned to *basic requirements* is lower than that given to *efficiency enhancers*, meaning that progress in the field of infrastructure will not affect the GCI score as much as improvements to competition or financial market development would. This seems paradoxical when one considers the significant funds and efforts invested into these complex infrastructural endeavours. Serbia owes this paradox to the fact that economic growth as measured using GDP *per capita* (a large share of which can be ascribed to primary production and the services sector) was not accompanied by the development of the required infrastructure.

Two measures are key in the field of safeguarding and strengthening competition in partial markets. The first is greater engagement by the government in strengthening competition by attracting investment and promoting a positive

climate of competition between businesses, coupled with liberalization and deregulation wherever justified from the standpoint of welfare of the society as a whole. The second is improving the efficiency and effectiveness of the Competition Commission as an independent body in charge of implementing the current Competition Law. Both of these groups of measures need to be put into place in a transparent fashion, so that the public can be acquainted with their results in improving and protecting competition. Specifically, where the Competition Commission is concerned, its activities and results must be made more transparent for the broader public to gain access to information about the aim and purpose of protecting competition, as public pressure is considered a significant ally of the Commission in its endeavour to combat against contaminating of competition in partial markets. Generally, transparency of operations is required, as is the dissemination of information to the broader public, both on issues of competition and on the concept of competitiveness (a substantially broader term), if Serbia is to advance in the WEF rankings. This is particularly true of all aspects of competitiveness scored using the survey questionnaire. Further, in addition and in parallel to infrastructure development and improvement of competition, Serbia should also strengthen its financial markets to broaden the range of financing options available to companies doing business in the country. The dominant role of the Belgrade Stock Exchange as a privatization mechanism, where virtually no shares are traded once controlling interest is established, and where daily trading rarely exceeds €1mn, makes this aspect of competitiveness fall short of what is required. Linked to this is Serbia's extremely low rating with respect to the protection of minority shareholders' interests (where the country is ranked as low as 140th place). When corporate practice does not entail raising funds by issuing shares, dividend policy is absent too. This in turn means that stock held by minority shareholders ceases to have virtually any value once a controlling interest is established, as any interest in trading shares in the market will evaporate.

Remedying the deficiencies in Serbia's competitiveness (outlined above) could have a positive influence on the composite GCI score, which should also reflect on Serbia's position in the WEF rankings. However, when reasons are sought for Serbia's poor showing, it must be borne in mind that ranking is a relative phenomenon, and that it depends on both the GCI score of a nation and on the scores recorded by all other countries in the list. Impartial ranking entails managers from selected countries providing objective assessments of performances of their economies in the survey, bearing in mind the importance of the survey when the overall GCI score is obtained.

3.2. Bias of scores obtained using the survey questionnaire

An issue to do with real ranking arises in circumstances where respondents in some countries consistently underestimate their performance, while those in other countries overestimate theirs. Due to this, scores in the survey significantly deviate from secondary data obtained from internationally-comparable databases. Upward bias in one group of countries, coupled with downward bias in another group, could result in an unrealistic gap between these groups. Why is the survey prone to biased results?

Three main sources of bias can be identified: (*i*) lack of understanding by respondents (executives) of the context in which the response needs to be given, (*ii*) lack of understanding of questions by respondents, and (*iii*) respondents who deliberately give untrue responses, a phenomenon we will not analyze.

Therefore, one of the main issues identified is the fact that the context in which a question is asked is often neglected when a response is provided. The context is an assessment of international competitiveness. Let us underline "international" as the operating word in the previous sentence. To be able to objectively assess a particular factor of competitiveness, a respondent needs to have at least some knowledge of conditions in other countries. In that sense, if the response to the question "To what extent does antimonopoly policy promote competition in your country?" is 1 on a bipolar scale from 1 to 7, then the respondent should be taken to mean that the level of development of antimonopoly policy in that country is at the lowest level in relation to all countries covered by the survey. On the other hand, if the respondent gives a score of 7, then he should most certainly be taken to mean that his country is tackling the issue of protecting competition as well as the most developed nations in the WEF rankings. Specifically, the arithmetical mean of all answers given to this question is 2.84,[6] which is used, together with responses to several other questions, to establish the score of the effectiveness of anti-monopoly policy subindex at a level of 2.8, placing Serbia in 137th place out of a total of 142 countries. Let us note that some African and Asian nations ranked above Serbia currently lack anti-monopoly laws and regulatory bodies in this area, and thus have no history whatsoever of promoting antimonopoly policies, unlike Serbia (for instance, Burundi, ranked 134th; Chad, ranked 129th; Bangladesh, ranked

6 World Economic Forum (WEF, 2011), *Executive Opinion Survey 2011.*

105th; and Kenya, ranked 59th). Policies that do not exist can hardly be expected to be effective. On the other hand, antimonopoly policies present in some smaller countries where market sizes do not enable the development of effective competition can also not be expected to yield substantial results. For instance, Montenegro, which had enacted legislation governing competition soon after Serbia, yet is still far from establishing a functional regulatory body for this area, is as many as 59 places above Serbia, being ranked 79th. Further, Serbia is ranked 131st by quality of road infrastructure, substantially below many African nations where there are hardly any quality roads to speak of. This subindex is also scored based on survey data.

Responses provided by executives collected in the surveys carried out between 2008 and 2011 indicate that the key issue is the lack of understanding of the principle of competitiveness, coupled with poor knowledge of some market segments that the respondents commented on. For instance, it turns out that scores for survey questions covering the financial market sophistication pillar have fallen. As some of these questions relate to the ease of access to bank financing, this drop is not surprising as banks substantially tightened their lending requirements after the outbreak of the crisis. However, we must ask the question of whether one is justified to give a poorer score in response to these questions if one knows that banks in other countries were behaving identically or similarly. In that case, a lower score would be justified only if borrowing conditions and bank procedures had worsened to a greater extent in Serbia relative to other economies. Some answers appear not to have direct correlations with market trends. For instance, the average score given in the survey question of ease of access to finance through the local equity market declined by 1.1 points, or 30%, over a period of three years. This figure would seem to indicate either a substantial deterioration in access to finance, or, at the very least, stagnation at a time when other neighbouring economies advanced. However, Serbian companies never really employed new share issues as means of raising finance. The main reasons for this, as already mentioned, are the underdeveloped financial market and the reluctance by holders of controlling interests to water down company ownership. Similar patterns can be found in Bosnia and Herzegovina, Macedonia, Montenegro and Croatia, countries whose scores for financial market sophistication declined to a much lower extent than Serbia's did in the same period.

Finally, we will underline an area with one of the lowest scores in the survey, and one that belongs to the labor market efficiency segment. Serbia's executives believe that the country's capacity to retain young, educated and talented people is exceptionally low, even seeing constant decline. Over the past eight years, the answer to the question of "Does your country retain and attract talented people?" was approximately 2 on a scale from 1 to 7; the score given in the latest survey was 1.8. This value should be an approximation of the phenomenon known as "brain drain", as a rule more pronounced in the first years of transition. This effect is certainly present even in developed economies, but to a lesser extent than in underdeveloped and developing nations. As an alternative to the classical approach that assumes brain drain hurts national competitiveness, over the last two decades new research[7] has emerged that indicates brain drain could actually benefit an economy, as know-how and new technologies spill over from more developed nations through workers who opt to return to their home country. "Brain drain" is a soft subindex used to calculate the GCI score, and according to it Serbia is ranked 139th of the 142 countries in the latest WEF report, in the company of countries such as Yemen, Burundi, Haiti and Algeria. Conversely, all countries in the region with similar development levels and similar historical heritage scored much better than Serbia (e.g. Montenegro is ranked 49th), although the number of its nationals who permanently immigrated into EU15 countries rose between 2000 and 2007,[8] while emigration from Serbia declined over the same period.

Considering these contradictory findings, the question needs to be asked of whether Serbia's competitiveness environment is truly, as poor as can be concluded from some of the soft subindexes obtained in the survey, as well as whether some of the drastic differences in the rankings are indeed realistic.

Any bias shown in the subindexes obtained from primary sources that indirectly spills over into the GCI score through pillars of competitiveness can have a major influence on a country's standing in the rankings. To this should be added the fact, already mentioned, that survey data dominate the GCI structure in relation to secondary data sources. It would be only logical to expect survey results not to differ too much from purely quantitative measures of competitiveness obtained using secondary databases. It is perfectly clear that significant disproportion between results obtained by using these two types of sources could introduce bias into the rankings. Annual leaps or falls made by some countries (of more than 10 places) that are not accompanied by equivalent progress in the hard categories are an evident source of bias in the surveyed managers' evaluation of competitiveness.

7 Lundborg and Rechea (2002), "Will Transition Countries Benefit or Lose from the Brain Drain?", IJED, Vol. 5 No. 3.
8 Gligorov *et al.* (2011), "Assessment of the Labour Market in Serbia", The Vienna Institute for International Economic Studies, Research Reports 371.

We will disaggregate the GCI into hard and soft data to run a simulation of GCI scores for both categories using the weights as outlined in the WEF methodology. The intention is to show what the GCI score would be if calculated using only hard or only soft subindexes. The simulation will show scores for both Serbia and its immediate neighbours, as these Western Balkan nations (Montenegro, Albania, Croatia, Bosnia and Herzegovina, and Macedonia) are not EU member states but do aspire to membership. Serbia will also be compared with averages for these countries.[9]

All Western Balkan nations, except Serbia and Macedonia, can be observed to have recorded higher GCI scores when soft subindexes are considered than when internationally comparable statistics are used (Graph L1-8). The greatest divergences seen in the case of Croatia and Albania, while the two GCI scores for Montenegro calculated using soft and hard subindexes match to the third decimal. At the same time, Serbia's GCI measured using the soft subindexes is some 20% lower than that calculated on the basis of hard subindexes (Table L1-9). Of all of these countries, only Macedonia has a soft index score lower than that of the hard index, although the difference is substantially less than that seen for Serbia. The GCI score obtained for Serbia using only the soft subindexes is the lowest of the entire group, yet the figure calculated using the hard subindexes is the highest of all countries covered by the simulation. As a result, we would reach the same conclusion if we compared the figure for Serbia with the average value for this group of countries – Serbia's soft GCI score is substantially lower than the Western Balkans average, while the hard score is, conversely, much higher.

Graph L1-8. GCI Calculated Using Soft and Hard Subindexes, Selected Countries, 2011

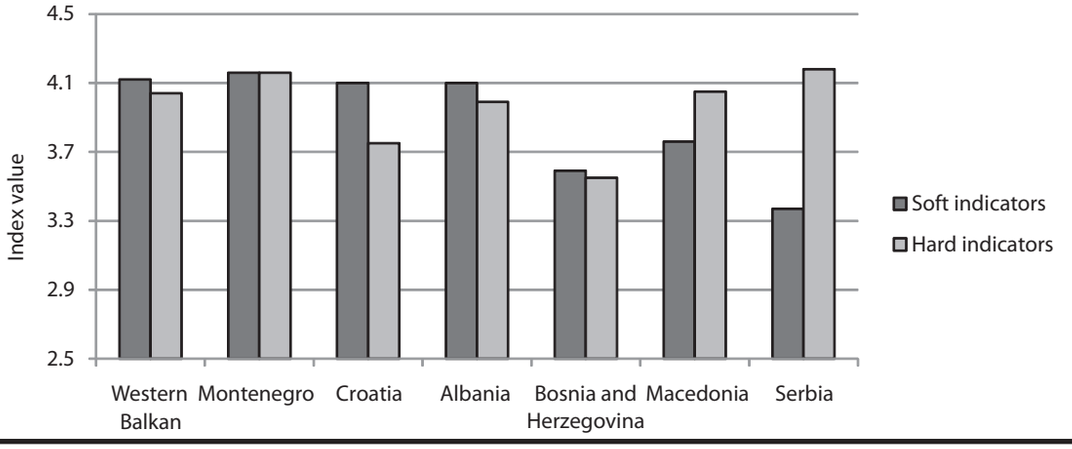


Table L1-9. GCI According to Soft and Hard Subindexes

	Western Balkan		Montenegro		Croatia		Albania		Bosnia and Herzegovina		Macedonia, FYR		SERBIA	
Pillars	M.I.	T.I.	M.I.	T.I.	M.I.	T.I.	M.I	T.I.	M.I.	T.I.	M.I.	T.I.	M.I.	T.I.
1	3.90	3.88	4.59	4.24	3.62	2.37	4.12	5.05	3.43	3.19	3.75	4.57	3.21	5.36
2	3.65	2.55	3.63	3.03	4.58	3.03	3.92	2.32	2.58	2.16	3.52	2.22	2.93	2.86
3	0.00	4.75	0.00	4.50	0.00	4.80	0.00	4.50	0.00	4.60	0.00	5.34	0.00	4.57
4	5.90	6.57	5.57	6.38	6.18	6.74	6.28	6.62	6.10	6.58	5.35	6.52	5.92	6.46
5	3.99	3.83	4.30	4.45	4.05	4.27	4.22	2.86	3.62	3.82	3.77	3.76	2.59	4.22
6	4.09	5.68	4.37	5.68	3.87	5.63	4.26	5.80	4.12	5.21	3.83	6.09	3.34	5.36
7	3.93	5.50	4.14	5.87	3.38	5.03	4.49	5.40	3.64	5.53	4.02	5.69	3.39	5.31
8	3.38	5.27	4.00	7.00	3.53	4.34	2.86	6.34	3.01	3.67	3.50	5.00	3.23	5.66
9	4.49	3.05	4.46	3.19	4.77	3.76	4.87	2.52	4.17	2.83	4.17	2.94	0.00	2.97
10	0.00	2.86	0.00	2.00	0.00	3.60	0.00	2.90	0.00	3.00	0.00	2.80	3.92	3.64
11	3.64	0.00	3.80	0.00	3.70	0.00	3.80	0.00	3.40	0.00	3.50	0.00	3.12	0.00
12	3.23	0.81	3.75	1.00	3.33	1.03	2.83	1.00	3.14	0.00	3.08	1.00	3.19	1.01
Total	40.19	44.75	42.61	47.43	41.01	44.31	41.65	45.31	37.21	40.59	38.49	45.93	34.69	47.42
Average	4.02	4.07	4.26	4.31	4.10	4.03	4.17	4.12	3.72	3.69	3.85	4.18	3.47	4.31
Index	4.12	4.04	4.16	4.16	4.10	3.75	4.10	3.99	3.59	3.55	3.76	4.05	3.37	4.18

Source: WEF (2011), Global Competitiveness Report

Based on the above simulation, we can note that Serbia considers its competitiveness to be much lower than its immediate neighbours, countries with which Serbia has historically compared itself in various fields, do. At the same time, comparable statistical data indicate that the opposite is true. For instance, if Serbia were to appraise its position using only hard data, it would rank up to 30 places higher (i.e. around 55th place).

9 Serbia is not included in the average score for Western Balkan countries.

This example inevitably raises the issue of the extent to which biased self-assessment of countries can affect the distribution of positions in the WEF rankings. Obviously, as two thirds of the GCI score are based on the results of the survey, such bias can go a long way towards explaining how countries are ranked in the WEF list. The rating system can be especially skewed when most respondents are aware of the consequences of being ranked low in the list most covered in the media in the past decade. Based on our results we can say that this is most definitely not the case with Serbia. In the following section we will attempt to present some of the key consequences a country can face when ranked low in the WEF list.

4. Consequences of being ranked low

Without a doubt, a country's degree of competitiveness is of crucial importance to its growth and development. However, measurements of competitiveness and international comparisons may be biased to some extent (as this analysis indicates), since some of its aspects are difficult to measure. Does this then mean that we should pay no attention to this, the most widely-known ranking of countries by competitiveness? The answer is a resounding no. Being ranked low, whether or not deservedly so, has certain consequences to a country; these we will attempt to present here. The root of all consequences is the gap in the level of information regarding competition among all actors, both economic and political, in the world stage that is at least formally removed by the World Economic Forum *Global Competitiveness Report*. Generally, being ranked low in the WEF rankings can have an adverse impact on a country's global image, and the results of this can be multiple – both directly and indirectly. A nation with European integrations as its primary aim stands out by having primarily African, and, to a lesser extent, Asian neighbors in the rankings, as well as by being rather distant from current European Union member states. We will outline two possible consequences of being ranked low, both based on the fact that a country's poor ranking according to the composite GCI score, as well as by individual indicators, is a bad sign for potential foreign investors and also makes foreign creditors demand greater interest rates for their investments.

Firstly, a country's low ranking is a bad sign for potential foreign investors deciding whether or not to invest in that particular country. Given the popularity of the WEF report, one could generally assume that it is probably one of the first pieces of information based on which investors form their expectations. It should also be noted that the complex structure of the GCI provides an overview of numerous elements of competitiveness that are of relevance to any business venture. The World Economic Forum report makes it possible for investors to quickly gain a degree of understanding of the competitiveness climate of the prospective destination for investment. Investors are often unable to obtain information on specific issues on their own, since this entails considerable and costly research in possibly several countries under consideration for the venture in question. This is primarily so for information not available in international comparative databases and generally difficult to quantify for inclusion into assessments of risk of investing in a particular country. For instance, property rights are ranked 126th, judicial independence 128th, protection of minority shareholder's interests 140th, quality of roads 131st, intensity of local competition 136th, effectiveness of anti-monopoly policy 137th, buyer sophistication 136th: these are just some of the negative signals that potential investors can take into account when considering the current situation in Serbia. It is worth mentioning that all subindexes listed above are obtained using primary data provided by the World Economic Forum survey, meaning that any bias encountered in the survey in Serbia (or any other country) can indirectly serve as a deterrent to foreign investment.

Secondly, there is the possibility of a country's low ranking reflecting on interest rates demanded by foreign creditors for their financial investments. Countries with low competitiveness ratings can become candidates for higher interest rates. Thus, for instance, according to the credit rating subindex – one of the more important pieces of information for creditors – Serbia is ranked 81st (substantially higher than by composite GCI value). Let us underline that this subindex is not a result of the survey and is calculated using secondary databases.

5. Conclusions and recommendations

To be able to analyze the reasons underpinning Serbia's poor showing in the World Economic Forum rankings and make recommendations for improving it, we had to present the methodology used to establish the composite Global Competitiveness Index, as well as aspects of competitiveness according to which Serbia has been seeing poor results for several years. By disaggregating the GCI into subindexes, which we divided into hard and soft ones, we identified all areas where Serbia was seen as being below-average and which contributed the most to the country being ranked

as low as 95th out of a total of 142 economies. We divided the reasons for the poor showing into two distinct groups: the first one comprised all real shortcomings of Serbia's competitiveness, while the second was based on the assumption that both a country's GCI score and its ranking depend to a large extent on the quality of the results of the survey. The issue of low ranking was identified in all aspects of competitiveness where Serbia recorded low values of the relevant subindexes. It can also be noted that real improvements to competitiveness will not, in some cases, lead to positive changes in some of the subindexes, unless those improvements are specifically identified by respondents in the survey. Unlike the first group of reasons, which can be affected by targeted measures, we consider the set of measures applicable to the second group as rather limited.

While there are only two relatively weak points as regards macroeconomic performance among the hard subindexes, obtained using international databases of secondary data, the 25 soft subindexes obtained using the survey place Serbia at the very bottom of the WEF rankings. In brief, Serbia is seeing the poorest results in the area of "weak" subindexes that relate to the intensity and protection of competition, operation of financial markets, lack of financing available to businesses (through the equity market), protection of minority shareholders' interests, lacking or inadequate infrastructure, etc. However, when hard subindexes are considered, the only weak points that could be singled out are inflation and share of gross national savings as percentage of GDP. At the same time, although Serbia is ranked lower than the overall GCI score (i.e. below 95th place) according to these two criteria, these results are by no means as much of a concern as most poor results based on soft subindexes.

There is without a doubt room for improvement in all of the above areas of competitiveness in which poor results were achieved; such improvement could in the future have a positive impact on Serbia's GCI score. This is particularly true of subindexes in the *efficiency enhancers* group, as they have the greatest bearing on calculating the GCI score for Serbia. However, any impact of real changes to these aspects of competitiveness on Serbia's GCI score will primarily depend on how those changes are perceived by the executives surveyed, as most changes are needed in areas covered by the soft subindexes.

This year saw the launch of yet another instrument designed to capture executive opinion, the Business Survey, a study carried out by USAID on a sample of 1000 businesses intended to be carried out annually. As this survey uses a lot bigger sample than the Executive Opinion Survey used in calculating the GCI score, it should be subject to less bias, and as it is designed to collect executive opinion on business environment, economic policy, access to finance, etc., most of this data could be used to verify the accuracy of the GCI with respect to the soft indicators. When a data series has been established over the coming several years, we will be able to establish whether individual segments of competitiveness and the overall GCI score for Serbia are appropriate or have been underestimated, as we believe to be the case at present.

To make responses to the WEF survey more representative, appropriate campaigns need to be launched through all media to provide education about what constitutes the international competitiveness of a country on the one hand, and, on the other, keep the broader public continuously informed about progress in all aspects of competitiveness. The terms "competition" and "competitiveness" need to be strictly delimited, as they are frequently confused. The concept and importance of competitiveness need to be clearly explained, as do the consequences of being ranked low in the WEF rankings, to reduce – if not outright eliminate – the downward bias obviously present in the responses provided by the executives surveyed. This paper identified such bias by enumerating many divergences between soft subindexes and real performance at the international level. The main problems faced by respondents when answering the survey questions could stem from a lack of understanding of the context in which the answer needs to be made, as well as of the issue to which the specific question relates. In the first case the fact needs to be taken into account that the answers serve for the purpose of international comparison, and that the response should be given on a scale from 1 to 7. For example, if a respondent believes that the quality of Serbia's road infrastructure is such that the country should be ranked among the twenty lowest-placed countries on the list, generally those with scant road networks – as most Serbian top executives seem to think – he or she should assign a score of 1 or 2 (Serbia ranks 131st according to this subcriterion). If the public were educated about various aspects of a country's global competitiveness and the importance of these rankings, both direct and indirect, to an economy.

To this we would have to add the fact that progress in the rankings depends both on the results achieved by a country and on progress made by all other countries covered. In that sense, the basis for ranking countries impartially is the assumption that all countries score themselves impartially in the survey. In an environment where executives from one group of countries overestimated their performance, while those from another group provided realistic asses-

sments or underestimated their results, a gap between these two groups would be unavoidable. In a situation such as this, it is to be expected that not all real improvements to individual aspects of competitiveness will lead to better results in the WEF rankings.

By disaggregating the GCI into hard and soft subindexes, we arrived at the conclusion that Serbia, compared to its immediate neighbours, had the lowest average scores for soft subindexes, while the situation was diametrically opposite when the hard subindexes were considered. A simulation of the GCI using both groups of subindexes also confirmed that Serbia's soft GCI was the lowest in relation to these countries, while its hard GCI was the highest.

Based on the above, it is obvious that measuring national competitiveness is an exceptionally complex endeavour, since it is impossible to find hard internationally comparable data for many elements of competitiveness. Survey responses have to be relied on when globally comparable data are needed for the purpose of measuring competitiveness. In that sense, a greater or lesser degree of bias is to be expected of any competitiveness rankings covering a large number of countries. The large number of countries surveyed, the comprehensive treatment of national competitiveness using the composite GCI, and the consequent major global media attention – all this makes progress in the WEF rankings an important aspect of any country's competitiveness development strategy, all the more so if the consequences of being ranked low on the list are considered.

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