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# Competitiveness of Central and Eastern European countries

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## 1 Introduction

In the economic literature one may find about 400 different definitions of competitiveness and a countless number of related notions. There are several causes of such an abundance. Firstly, competitiveness is being considered on all levels of the economy - micro (enterprise level), meso (industry level), macro (of the total economy), as well as in the systemic approach. Secondly, it is derived from different economic theories. Thirdly, within the frames of each theoretical school, there are many researchers dealing with the issue of competitiveness. Every one of them, according to his or her own understanding of competitiveness is decomposing the studied notion to other concepts of lower levels of abstraction. A complete review of this is neither possible nor justified here. In the second part of this bulletin the attention will be focussed exclusively on definitions of macro competitiveness, in order to emphasize the basic economic categories important in each of them.

This will facilitate the presentation of the idea of comprehensive measurements of competitiveness with the help of synthetic indices. Such indices are being developed by several international bodies, focused on evaluating economies and creating global competitiveness rankings. The results of the newest ranking of the World Economic Forum (WEF), published at the beginning of September 2014, will be analysed in the third and next paragraphs of the study, with special focus on the economies of Central and Eastern European (CEE) countries.

## 2 What is – and how to measure – the competitiveness of the economy?

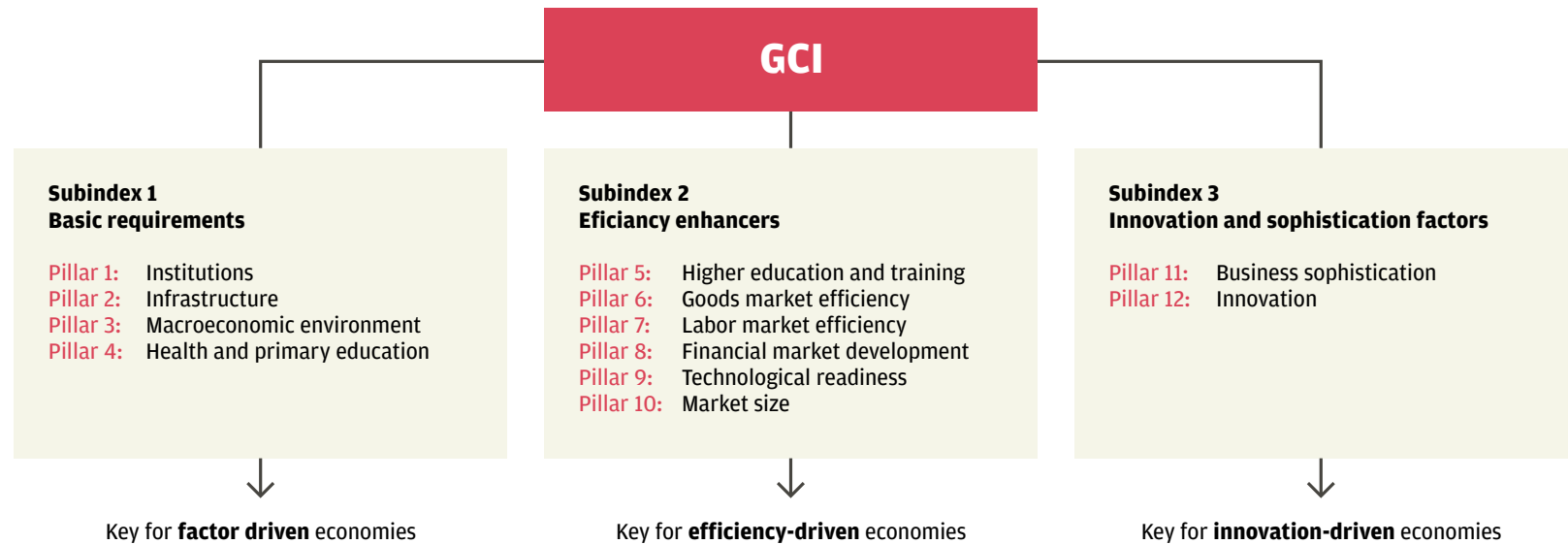
The majority of traditional approaches to defining macrocompetitiveness refer to the results in **foreign trade**. The basic measures to judge the trade competitiveness of a given country are (among others) the value and balance of exports and imports, the share in world trade, indicators of specialization, as well as price-cost relations. However, while using such measures of competitiveness, one should remain cautious and conduct a parallel analysis of the welfare of citizens. A surplus in trade (the advantage of exports over imports) must not automatically be considered as the sole factor indicating an increase in the competitiveness of an economy. On the other hand, a trade deficit can become a tool of stimulating an increase in the standard of living. A good example of the effectiveness of such a solution was the policy of the United States in the 90s of the 20th century and of the first half of the past decade.

Some researchers while defining macrocompetitiveness refer to the concept of **productivity**. Among others, the famous economist Michael Porter practices such an approach. For him, productivity is a basic determinant of the competitiveness of an economy, because the ability of enterprises to raise productivity is the key welfare influencing factor. Noble prize winner – Paul Krugman – quoting conclusions of the study on the living standard of Americans between 1973 and 1990, also treats the productivity as the basic determinant of competitiveness. The close relation between both categories is also stressed in the definition of the World Economic Forum, according to which competitiveness is determined by the quality of a country's institutions, its policies and a bundle of other factors affecting the levels of productivity. Simplifying, more competitive economies are able to produce higher income levels for their citizens and guarantee higher returns on investment (with reference to the real capital, human capital, as well as technology). And higher rates of return result in the fact that more competitive economies in the medium and long term have a higher growth rate.

In recent years, researchers in defining the macrocompetitiveness put more emphasis on **innovations and innovativeness**. In the modern world the importance of untransferable traditional resources is clearly decreasing, and the significance of the innovative infrastructure, high technologies and human capital is rising. This presents challenges for the economic policy of states aiming to stimulate research processes, generating innovation, and acquiring foreign technologies, in order to induce increases of competitiveness. Amongst researchers these aspirations are reflected in the way of defining the concept of competitiveness, as well as in the way of measuring it.

All currently used indices of competitiveness, constructed according to the principle of aggregating different parameters of the national economy into one synthetic measure (with the application of which it is possible to rank countries in terms their competitiveness) are taking into account not only the results in foreign trade and levels of productivity, but also include indicators related to the innovativeness of the given economy. The authors of the most commonly cited competitiveness ranking of the World Economic Forum use the **Global Competitiveness Index (GCI)**, calculated by including twelve areas (in the WEF nomenclature called “pillars”), from which two are directly linked with innovativeness. They are ninth pillar (called “technological readiness”), taking into account the abilities of the economy for absorbing new technologies, irrespective of the their source (home or foreign) and the twelfth pillar (called “innovation”) in the frames of which endogenous innovative abilities are assessed. In other pillars, issues related to technical progress also influence the evaluation, like for example in the second pillar (“infrastructure”), where among others the telecommunication infrastructure is being assessed, or in the fifth (“education at higher education institutions”).

Figure 1. World Economic Forum's Global Competitiveness Index (GCI)



Source: [The Global Competitiveness Report 2014-2015](#), The World Economic Forum, Geneva 2014, p. 9.

The structure of the Global Competitiveness Index is portrayed synthetically in Figure 1. The GCI covers 12 pillars of competitiveness, grouped into three sets. Each of them has its own importance depending on the degree of the development of the analysed economy. In traditional economies, basing the above all on the exploitation of raw materials and cheap labour force, the competitiveness is to a large extent affected by the quality of institutions (both public and private), the development of infrastructure, the stability of the macroeconomic environment, level of public health, as well as the prevalence and effectiveness of elementary education.

As the development progresses and the wage level rises, more and more effective production processes are being used and the quality and complexity of products increase. Of growing importance become higher education, the goods market size and its efficiency, the efficiency of labour and financial markets, as well as the ability of using available production technologies.

On highest levels of the economic development, to maintain high wages and the accompanying standard of living, it is crucial to diversify the product offer and innovate, meaning the introduction of new or significantly improved products and/or production technologies.

Taking into account the level of GDP per capita of a given country and identifying crucial pillars of its competitiveness, the WEF assigns each of the evaluated economies to the appropriate stage of development: factor-driven (stage 1), efficiency-driven (stage 2) and innovation-driven (stage 3). It also indicates which countries are currently moving from a lower to a higher stage of development, meaning those that are in transition from stage 1 to stage 2, and the second group in the transition from stage 2 to stage 3.

Quantitative data used to assess each pillar of competitiveness and being then combined to the synthetic measure of competitiveness - GCI - are derived by the WEF from international organizations, such as departments of the United Nations Organisation (e.g. UNESCO), the International Monetary Fund (IMF) or the World Health Organization (WHO). Apart from quantitative data from different sources, quality data is also collected. These are obtained from Executive Opinion Surveys conducted every year by the WEF.

### 3 Leaders of competitiveness according to the World Economic Forum

The World Economic Forum's newest report on the competitiveness of economies, published 3 September 2014, presents the results of the examination of 144 countries worldwide. The assessment of twenty leaders in the competitiveness ranking are shown in Table 1.

In comparison to the previous year, some countries have significantly changed their position in the ranking. Generally, however, the top of the most competitive economies remains fairly stable. It is dominated by the west's economies, as well as a few "Asian tigers". For six years in a row Switzerland has won the ranking, followed by Singapore, sustaining its position for four years. The United States regains third place in the ranking. The Global Competitiveness Index of this country, lowered due to the crises of the economy, picked up up last year, allowing the USA to climb two spots. Japan went up three places - posting the largest improvement among the top ten economies. While in the USA the GCI increase was related to the post-crisis increase in productivity, Japan owed its success to the high assessments under pillar 11 (business sophistication) and 12 (innovation).

**Table 1. Twenty most competitive economies in the world according to the World Economic Forum**

<b>Rank 2014</b>	<b>Country</b>	<b>GCI</b> (score: 1 to 7)	<b>Rank 2013</b>	<b>Stage of development</b>
1	Switzerland	5.70	1	3
2	Singapore	5.65	2	3
3	USA	5.54	5	3
4	Finland	5.50	3	3
5	Germany	5.49	4	3
6	Japan	5.47	9	3
7	Hong Kong	5.46	7	3
8	Netherlands	5.45	8	3
9	Great Britain	5.41	10	3
10	Sweden	5.41	6	3
11	Norway	5.35	11	3
12	United Arab Emirates	5.33	19	2 → 3
13	Denmark	5.29	15	3
14	Taiwan	5.25	12	3
15	Canada	5.24	14	3
16	Qatar	5.24	13	3
17	New Zealand	5.20	18	3
18	Belgium	5.18	17	3
19	Luxembourg	5.17	22	3
20	Malaysia	5.15	24	2 → 3

Important conclusions may be drawn from the last column in Table 1. The vast majority of top competitive economies in the world are currently in the last (the third) stage of their economic development, basing on innovations. Only two countries - the United Arab Emirates and Malaysia - are in transition from the second (efficiency-driven) to third stage of development. This confirms the importance of advanced production technologies - the ability and willingness to implement new products and production techniques - as key characteristics of economies with the highest levels of competitiveness.

The lack of any CEE country among the leaders allows to suspect that deficits in the area of innovation may constitute one of the main causes of a specific competitive gap of the countries in question.

The following sections show the results of a detailed analysis of the height and dynamics of the Global Competitiveness Index of CEE countries. The individual components of this measure are examined in order to identify the areas deciding about filling distant positions in the rankings of competitiveness.

## 4 The evolution of competitiveness of the CEE economies

The lack of representatives of the CEE countries in the top 20 of the WEF ranking indicates that their economies are characterised by significantly lower levels of competitiveness than the world leaders. The CEE countries constitute, however, a strongly diversified group. The most competitive of them - Estonia - locates itself at the end of the third ten in the ranking from 2014.

The most poorly assessed, Croatia and Slovakia, stay appropriately in the 77th and 75th places. The data in Table 2 show the GCI from 2014, as well as the rankings from the same and previous years.

Figure 2 illustrates the formation of the GCI in the CEE countries in each year of the period between 2007 and 2014. Due to the change of the methodology of index counting, making comparisons with previous assessments becomes difficult. However, the last eight years, do constitute a period long enough to capture some trends in the competitiveness of the economies in question. The data shown in Table 3 enable further diagnosis of success factors, as well as the barriers of enhancing the competitiveness of the CEE economies.

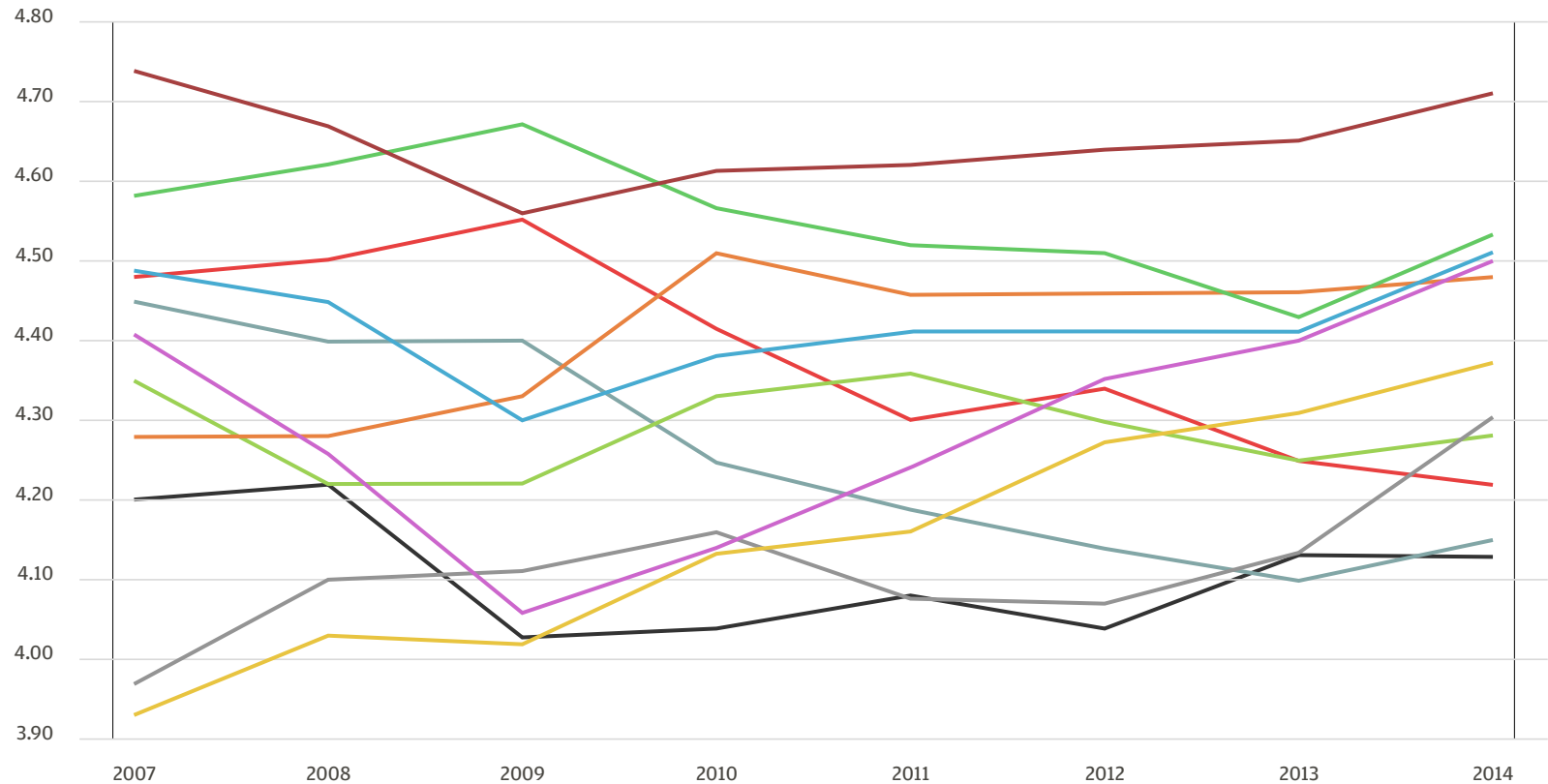
**Table 2. Competitiveness of the CEE economies in 2014 according to World Economic Forum**

Country	GCI (score: 1 to 7)	Rank 2014	Rank 2013	Rank 2010	Rank 2007	Stage of development
Estonia	4.71	29	32	33	27	3
Czech Republic	4.53	37	46	36	33	3
Lithuania	4.51	41	48	47	38	2 → 3
Latvia	4.50	42	52	70	45	2 → 3
Poland	4.48	43	42	39	51	2 → 3
Bulgaria	4.37	54	57	71	79	2
Romania	4.30	59	76	67	74	2
Hungary	4.28	60	63	52	47	2 → 3
Slovenia	4.22	70	62	45	39	3
Slovak Republic	4.15	75	78	60	41	3
Croatia	4.13	77	75	77	57	2 → 3

Source: own study based on [The Global Competitiveness Report 2014-2015](#), The World Economic Forum, Geneva 2014 and earlier editions from 2013, 2010 and of 2007.

**Figure 2.**  
The CEE countries  
GCI changes  
(2007-2014)

- Estonia
- Czech Republic
- Lithuania
- Latvia
- Poland
- Bulgaria
- Romania
- Hungary
- Slovenia
- Slovak Republic
- Croatia



Source: own study based on The Global Competitiveness Report 2014-2015, The World Economic Forum, Geneva 2014 and earlier editions from years from 2007 to 2013.

Estonia, a leader of competitiveness in the CEE group, retained its leading position throughout the entire period (except for the year 2009). Comparing the GCI value in 2014 for Estonia and Switzerland, one can see that the assessment of Estonia is a whole point lower of the seven grades given than the assessment of a world leader. This ensures the Estonian economy scarcely 29th place in the global competitiveness ranking. Analysis of changes in the Estonian GCI allows to grasp its significant reduction in 2008 and 2009. Competitiveness worsening triggered by the economic crisis can also be observed in six other CEE

countries - Lithuania, Latvia, Hungary, Romania, Slovakia and Croatia. In the last two, decreases of indices of competitiveness were the strongest in the entire examined group. As a consequence of this, in spite of the improvement of the situation after 2010, Slovakia and Croatia didn't return to the level of GCI from before the crisis. The situation is very similar with reference to the Czech Republic and Slovenia. The GCI of these countries started deteriorating later (after 2009), but the scale of falls was also significant.



Table 3. GCI 2014 components

	<b>Bulgaria</b>		<b>Croatia</b>		<b>Czech Rep.</b>		<b>Estonia</b>		<b>Hungary</b>		<b>Latvia</b>		<b>Lithuania</b>		<b>Poland</b>		<b>Romania</b>		<b>Slovak Rep.</b>		<b>Slovenia</b>	
	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score
<b>GCI (overall index)</b>	<b>54</b>	<b>4.4</b>	<b>77</b>	<b>4.1</b>	<b>37</b>	<b>4.5</b>	<b>29</b>	<b>4.7</b>	<b>60</b>	<b>4.3</b>	<b>42</b>	<b>4.5</b>	<b>41</b>	<b>4.5</b>	<b>43</b>	<b>4.5</b>	<b>59</b>	<b>4.3</b>	<b>75</b>	<b>4.1</b>	<b>70</b>	<b>4.2</b>
<b>Basic requirements</b> (subindex 1)	<b>59</b>	<b>4.7</b>	<b>63</b>	<b>4.7</b>	<b>39</b>	<b>5.0</b>	<b>21</b>	<b>5.5</b>	<b>60</b>	<b>4.7</b>	<b>34</b>	<b>5.1</b>	<b>37</b>	<b>5.1</b>	<b>55</b>	<b>4.8</b>	<b>77</b>	<b>4.5</b>	<b>70</b>	<b>4.6</b>	<b>49</b>	<b>4.9</b>
Institutions	112	3.3	87	3.6	76	3.8	26	5.0	83	3.7	51	4.1	58	4.0	56	4.0	88	3.6	110	3.3	75	3.8
Infrastructure	74	4.1	44	4.7	41	4.7	38	4.8	50	4.6	47	4.6	43	4.7	63	4.2	85	3.7	64	4.2	35	4.9
Macroeconomic environment	36	5.4	91	4.4	40	5.4	20	6.0	61	4.8	32	5.5	42	5.3	63	4.8	46	5.2	45	5.2	98	4.3
Health and primary education	51	6.0	60	5.9	37	6.2	26	6.3	64	5.8	31	6.3	35	6.2	39	6.2	88	5.5	84	5.5	12	6.5
<b>Efficiency enhancers</b> (subindex 2)	<b>52</b>	<b>4.3</b>	<b>68</b>	<b>4.1</b>	<b>34</b>	<b>4.6</b>	<b>27</b>	<b>4.7</b>	<b>53</b>	<b>4.3</b>	<b>36</b>	<b>4.6</b>	<b>38</b>	<b>4.5</b>	<b>32</b>	<b>4.6</b>	<b>50</b>	<b>4.3</b>	<b>51</b>	<b>4.3</b>	<b>64</b>	<b>4.2</b>
Higher education and training	63	4.5	53	4.7	35	5.0	20	5.5	52	4.7	31	5.1	26	5.3	34	5.0	58	4.6	56	4.6	25	5.3
Goods market efficiency	63	4.4	105	4.1	50	4.5	26	4.9	65	4.4	36	4.7	47	4.6	51	4.5	89	4.2	66	4.4	61	4.4
Labor market efficiency	67	4.2	106	3.9	62	4.3	11	5.0	75	4.2	17	4.8	53	4.3	79	4.1	90	4.0	97	3.9	99	3.9
Financial market efficiency	60	4.2	74	3.9	44	4.5	29	4.7	73	3.9	33	4.6	65	4.1	35	4.6	64	4.1	39	4.5	133	2.9
Technological readiness	41	4.7	44	4.6	36	5.0	29	5.3	50	4.4	32	5.1	28	5.4	48	4.5	47	4.5	52	4.4	33	5.0
Market size	63	3.9	79	3.6	42	4.5	100	3.1	53	4.3	95	3.2	77	3.6	19	5.1	45	4.4	58	4.0	81	3.5
<b>Innovation and sophistication factors</b> (subindex 3)	<b>106</b>	<b>3.3</b>	<b>87</b>	<b>3.5</b>	<b>36</b>	<b>4.1</b>	<b>34</b>	<b>4.1</b>	<b>67</b>	<b>3.6</b>	<b>61</b>	<b>3.7</b>	<b>44</b>	<b>4.0</b>	<b>63</b>	<b>3.7</b>	<b>78</b>	<b>3.5</b>	<b>73</b>	<b>3.6</b>	<b>50</b>	<b>3.9</b>
Business sophistication	105	3.6	83	3.8	35	4.5	48	4.3	92	3.8	61	4.1	49	4.3	63	4.1	90	3.8	65	4.0	59	4.1
Innovation	105	2.9	93	3.1	39	3.7	30	4.0	50	3.5	70	3.3	44	3.6	72	3.3	66	3.3	78	3.2	42	3.6

 Source: own study based on [The Global Competitiveness Report 2014-2015](#), The World Economic Forum, Geneva 2014 (country profiles)

In two countries - Poland and Bulgaria - the Global Competitiveness Index grew in spite of the global crisis. As far as Poland is concerned, after the sharp increase in 2010, its GCI lowered slightly and remained then at a stable level. Strong resistance to the crisis phenomena caused a relative strengthening of Poland's position in the ranking, while the other CEE countries worsened their ranks. The Bulgarian GCI grew systematically and dynamically year after year (executing a total improvement of nearly half a point in comparison to its 2007 value), because of which Bulgaria climbed 25 spots in the WEF ranking - abandoning the position of the least competitive CEE country for good.

Accordingly to the WEF estimates only four from eleven CEE countries has reached the third stage of economic development driven by innovations, five stay in the transitional phase between the second (efficiency-driven) and the third stage. The last two - Bulgaria and Romania - remain still at the second stage.

As indicated above, while calculating the GCI for countries at various stages of development, different weights are used for each subindices. Although efficiency enhancers (subindex 2) have the same weight for all CEE countries (50%), the ones which have not reached the third stage are being assessed in such a way in which, with reference to the two remaining factors, the greater weight is being attached to basic requirements (subindex 1) than to innovation and sophistication factors (subindex 3). From Table 3, which contains detailed evaluations of individual pillars of the CEE countries competitiveness, it can be seen that the majority of economies, inclusive with the ones which already reached the highest stage of development, basic requirements were rather poorly assessed (they received lower scores in pillars from 1 to 4 than their overall GCI).

The assessment of institutions seems particularly unfavourable. Only in Estonia is the score in the first pillar higher than overall GCI of this country. In the remaining countries, lower scores are to a large extent due to the burden of government regulation and wastefulness of government spending. Among all 144 economies assessed in 2014 by the WEF, with regard to the listed parameters the CEE countries occupy positions in the second half of the ranking. The majority of them stays in places even more distant than the hundredth.

Apart from Slovakia, for all the CEE countries ranks calculated using the subindex 3 (pillar 11th and 12th) are significantly lower than ranks calculated with the use of their overall GCI. This confirms the earlier supposition that it may be shortcomings in the area of innovativeness that make the CEE economies perform worse in the ranking. In turn, positively might be seen the scores in the area of technological readiness (pillar 9), though, pillar 9 remains among the efficiency enhancers, but (as already emphasised) it is also a measure of openness towards innovations. Indeed, it reflects the ability of the economy to absorb new technologies and the availability of new production techniques on the enterprise level. Within this pillar, technology transfers through foreign direct investments are assessed, as well as the scope of using the broadband Internet. The scores in the ninth pillar, significantly higher than the overall GCI, prove that the CEE countries may be judged as ready to implement new technical solutions. However, in combination with low values of subindex 3 (innovation and sophistication factors), this demonstrates the orientation for the acquisition of technology from abroad rather than its self-creation. Temporarily, this is not a bad strategy, but in the longer period one should not expect it to bring a significant increase in the competitiveness of the CEE countries.

## 5 Barriers to doing business and providing an increase in the competitiveness of the CEE economies

An important element in the WEF assessments of the competitiveness of economies is the results of an Executive Opinion Survey. The survey is repeated every year in order to monitor the most problematic factors for doing business in each of the evaluated economies.

Respondents receive the list of potential barriers to doing business, out of which they select in their opinion the five most problematic, and rank them starting from relatively the heaviest one.

Among the crucial barriers in the CEE economies inefficient government bureaucracy is highlighted as one of them. In five countries (Slovakia, Lithuania, Latvia, in Czechs and Croatia) it was listed as the severest of all the problematic factors for doing business, and in another two (Slovenia and Bulgaria) it was in the second spot (see Table 4).

**Table 4. Five most problematic factors for doing business in CEE countries** – ranked between 1 (most problematic) and 5

Factor	Country	Bulgaria	Croatia	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Slovak Republic	Slovenia
access to financing		3				2	3		5	1		1
corruption		1	3	2		3	4	4		4	2	5
inadequate supply of infrastructure										3		
inadequately educated workforce		5			1		5					
inefficient government bureaucracy		2	1	1	3	5	1	1	3	5	1	2
insufficient capacity to innovate					4							
policy instability		4	2	3		1						
poor work ethic in national labour force					5							
restrictive labour regulations				4				2	2		3	4
tax rates			5		2			3	4	2	4	3
tax regulations			4	5		4	2	5	1		5	

Corruption constituted another frequently indicated problematic factor. Only in Poland and Estonia was this phenomenon regarded as relatively less disseminated.

Two barriers, associated with the fiscal policy of the state – tax regulations and tax rates – were also often identified. Tax regulations constitute the most problematic factor for doing business in Poland. In four countries (Poland, Croatia, Slovakia and Lithuania) respondents pointed to tax rates and tax regulations as the most troublesome impediments out of five major ones for doing business.

Another barrier that significantly hinders business activity in many of the CEE countries is the limited access to financing.

The insufficient capacity to innovate in the majority of cases wasn't indicated as one of the barriers which should count among the most important ones. Only with reference to Estonia it was listed among the first five obstacles to doing business. Apparently the expectations towards the CEE country with the highest level of development and competitiveness of its economy is more far-reaching than towards the others. In Estonia respondents expected also a more adequately trained workforce and stronger work ethics.

A positive conclusion that can be drawn from the results of the Executive Opinion Survey is that the barriers associated with government instability, inflation, currency convertibility, crime and theft or a threat to public health were all assessed as relatively less important. This reflects the achievement of a certain level of socio-economic maturity of the CEE countries that two decades ago remained but in the sphere of brave dreams.

## 6 Summary

As far as their competitiveness is concerned, the CEE countries stay in quite low positions in the world ranking. One should seek the causes of such a state of affairs in the underdeveloped propensity to innovate – a feature which is definitely lower than expected in contemporary times, characterised by rapid technological change. Only full and active involvement in the technological race may guarantee an increase in the attractiveness of the market offer. Raising the innovative potential of the CEE economies should become a field of particular care for the creators of the economic policy of these countries. Though the insufficient innovativeness was not listed among the most problematic factors for doing business, policymakers have to stay alert, because this factor indicates only lowered expectations towards business conditions in the CEE. It is definitely a disappointing observation.

A detailed analysis of the World Economic Forum's Competitiveness Report sheds light on some other urgent issues influencing the competitiveness of the CEE economies. These are, namely, the still severe shortcomings in basic requirements. Although in the last decades of systemic transformation, the CEE countries have managed to improve significantly many of their socio-economic parameters, their weak institutions, wastefulness of government spending and overregulation of markets remain areas still calling for more attention. The list of the most problematic factors for doing business in the CEE countries contains such factors as their excessive fiscal stringency, and above all inefficient government bureaucracy. With such a burden, stimulating innovativeness will be difficult for a long time if not indeed impossible.

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