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Competitiveness and wellbeing of Central Eastern European economies in the last decade

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**Competitiveness and wellbeing of Central Eastern European
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Malgorzata Runiewicz-Wardyn

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Competitiveness and wellbeing of Central Eastern European economies in the last decade

Malgorzata Runiewicz-Wardyn¹

Abstract

The goal of the current research is to review the competitiveness position of the Central Eastern European (CEE) countries of the EU in the last decade on the national (macro-), sectoral/industry (mezzo-) and companies (micro-) levels. For the purpose of the study the concept of international competitiveness was defined as the country's ability to grow and compete with other countries, shaped by the level of its productivity and the increase of value-added, so as high-tech and highly innovative services sectors. Furthermore, the paper attempts to explore how competitiveness and wellbeing interlink: to which degree the improving competitiveness contributes to the overall levels of wellbeing in these countries. Finally, the paper draws a number of conclusions and suggestions for the further policy debate.

1. Introduction

The past 25 years have seen a dramatic transformation in the Central and Eastern European (CEE)² countries, resulting in their reintegration into the global economy and in most cases, rise in living standards. While most CEE countries experienced the processes of reform and restructuring, each country did it in a distinctive way. The latter depended on the direction and a pace of policies adopted by their governments. The policies, especially linked to the privatisation processes, quality of the institutions and investment climate had its effect on local companies' ability to adjust to the new legal, institutional, market and technological conditions in the world economy. The goal of the current research is to discuss the international competitiveness of the CEE economies in the last decade, as well as draw some conclusions concerning their future challenges and policies. For this purpose the research analysis identifies several levels at which competitiveness is measured, such as national (macro), sectoral/industry

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² Central and Eastern European Countries (CEECs) is an OECD term for the group of countries comprising Albania, Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic, Slovenia, and the three Baltic States: Estonia, Latvia and Lithuania.

(mezzo-) and companies (micro-) levels. The paper applies the subject literature review and identifies the two groups of competitiveness factors: “hard” and “soft” factors. The first group includes such factors as market size, macroeconomic stability, infrastructure, market efficiency, labour market efficiency, technological progress, whereas the second group includes such factors as social and environmental, education and training, institutions and systems of innovations, good governance and national well-being. Based on the existing data and literature the paper proposes the multilevel, interdisciplinary approach to the competitiveness of the CEE economies, suggesting strong and mutually dependent relationship between “hard” and “soft” factors of their competitiveness. The findings further enhance active discussion on the modern concept of competitiveness and the related policies.

2. Introducing the concept of competitiveness

International competitiveness by its definition can be measured in, at least, several ways. The OECD (1992) links competitiveness to an ability of a country to produce goods and services which meet the test of foreign competition while simultaneously maintaining and expanding the real income of its people’. The World Economic Forum (WEF) defines competitiveness as the “set of institutions, policies and factors that determine the level of productivity of a country”. The International Institute for Management Development’s (IMD) World Competitiveness Yearbook (WCY 2016) defines competitiveness similarly, but more broadly, as how an “economy manages the totality of its resources and competencies to increase the prosperity of its population”. Finally, Director of Harvard’s Institute of Competitiveness prof. Michael Porter states that “the only meaningful concept of competitiveness at the national level is productivity.” Most recent competitiveness literature, emphasize that the country’s ability to maintain its international competitiveness is equally determined by its institutional environment, which include infrastructure, laws and market regulations. For example, monopoly rights and quotas, can reduce innovation potential, while the well protected intellectual rights can strengthen it (*see more on structural competitiveness in ECB, 2005*). The ability of a country to innovate and provide differentiated products in international markets constitutes an important source of international competitiveness. For the purpose of this study international competitiveness is defined as the country's ability to grow and compete with other countries, shaped by its level of productivity, value-added and overall economic upgrading from a labour-intensive to knowledge-intensive, highly innovative sectors. The latter allows lower income economies

such as CEE to acquire the necessary capabilities to catch up. Moreover, technology and innovation make production processes more efficient, competitive and thereby reduce their vulnerability to market fluctuations. Likewise, high-tech and knowledge-intensive industries are important because they are less polluting than other industries.

To determine the country's competitiveness one cannot use single measures but crosscheck as many indicators as possible. Sticking to only few selected measures, such as productivity or innovation, may end up in the inaccurate or usually too narrow assessment of competitiveness. For example, while the development of a new technology enables better weather prediction and improve quality of life, it does not directly affect productivity. Moreover, development of technological capabilities do not only require investing in human capital but also quality institutions, goods and labor markets efficiency, financial market development, as well as upgrading the industrial clusters and supporting social networks to fit better the global value chains. Finally, competitiveness, especially in the long-term, is the ability to turn the economic prosperity into the broader measures of the country's wellbeing. The social wellbeing is also an important driver of productivity. Studies examining the relationship between productivity and wellbeing suggest that happier people are more productive (Boehm and Lyubomirsky, 2008; Oswald et al., 2015). And vice versa higher productivity and a strong international competitiveness enable improvements in the investments into living standards such as health, education, transport infrastructure and other areas, which further on improve the competitiveness.

3. Macroeconomic competitiveness

The data delivered by UNCTAD (2017) for the countries of Central and Eastern Europe (CEE) show that the CEE region lost steam in the second half of the last decade. As a result they have significantly narrowed the gap towards the high-income or developed economies, however saw economic growth and the process of convergence slow down since 2010. Looking at the result for the last year, real GDP growth improved slightly the CEE economies as compared to the period 2011-2014. In terms of individual countries, preliminary data show that Czech republic's, Bulgaria's, Croatia's, Slovakia's and Romania's economies expanded at the quickest pace since 2011.

Table 1. Real GDP growth, y-on-y, %

	2005	2008	2011	2014	2016*
Bulgaria	7.24	5.65	1.58	1.55	2.90
Croatia	4.16	2.05	-0.28	-0.36	2.60
Czech Republic	6.44	2.71	2.0	1.98	2.80
Estonia	9.37	-5.42	7.60	2.91	1.50
Hungary	4.35	0.89	1.74	3.67	2.00
Latvia	10.7	-3.81	6.21	2.36	1.50
Lithuania	7.73	2.63	6.05	3.03	2.00
Poland	3.55	4.25	5.02	3.33	2.60
Romania	4.17	8.46	1.06	2.78	4.90
Slovakia	6.4	5.63	2.82	2.52	3.40
Slovenia	4	3.30	0.65	3.05	2.50

*estimated

Source: UNCTAD Statistics 2016.

Similarly, but to lesser extent Hungary picked up bit, after having seen slow growth since 2010. Although some CEE economies, such as Baltic States, Slovenia and Croatia, are fully integrated with European economies and have adopted Euro as their currency they have income levels substantially below those in the Western European EU countries (at some 60 percent of the EU15 average and around 55 percent of the level in North European countries) (Eurostat 2017). As a result these and other CEE countries remain largely competitive in terms of wage costs, making it an attractive destination for foreign direct investments (FDIs) as well as reducing significantly their unemployment rates and causing wage rises, which supports domestic demand. As after Thomson Reuters Datastream (2017) Romania registered the highest annual increases in hourly labour costs in the EU in 2016: 12 per cent. It is not an isolated case: labour costs rose by more than 8 per cent in Lithuania, Latvia and Bulgaria. In Hungary the minimum wage rose by an impressive 15 per cent. Conversely, in the EU hourly labour costs increased by a mere 1.6 per cent.

4. Trade performance and FDI attractiveness

Over the last decade the share of CEE countries' exports of goods in world exports nearly doubled, despite considerable appreciation of their real effective exchange rates (Tables 2 and 3). The positive merchandise trade balance was recorded only in case of few CEE countries Poland, Hungary, Slovenia, Slovakia, Czech Republic and Russia, whereas services trade balance showed positive values for nearly all countries of the CEE region (with exception to Russia).

Table 2. Merchandise trade and services balance of CEE countries

Merchandise trade balance					Service trade balance			
years	2005	2010	2014	2015	2005	2010	2014	2015
Bulgaria	-6 424	-4 883	-5 413	-3 608	-	3 510	3 357	2 999
Croatia	8773	11806	13858	12903	10253	11945	13602	12510
Czech Rep.	1 598	6 330	20 720	17 684	2 799	4 029	2 700	3 045
Estonia	-2 523	-696	-2 249	-1 604	1 216	1 768	2 229	1 836
Hungary	-3 616	7 305	5 696	5 978	1 107	3 505	6 723	5 829
Latvia	-3 536	-2 159	-3 093	-2 258	865	1 723	2 315	1 955
Lithuania	-3 742	-2 655	-2 030	-2 705	967	1 475	2 173	1 985
Poland	-12 201	-18 325	-3 522	5 641	2 462	4 338	11 346	10 859
Romania	-12 831	-12 530	-8 053	-9 281	4 170	1 984	7 783	7 690
Slovakia	-2 760	-363	4 507	2 074	816	-866	113	96
Slovenia	-1 089	-893	2 025	2 243	1 165	1 604	2 303	2 277

Source: UNCTAD Statistics 2016.

(e) estimated; '- 'missing data

The CEE countries have successfully joined global markets offering their intermediate goods within the international value chains, especially strongly concentrated on EU markets. The expansion of the international trade of the CEE countries in the European and global value chains has been due to two factors: their price/cost competitiveness (low labour costs) and direct proximity of the largest European markets. Consequently, exports of the CEE countries that belong to the EU are dominated by intra-industry trade, whereas the other CEE region countries have rather developed inter-industry trade linkages with the EU. In fact, approximately two-thirds of

the value of the CEE countries exports goes to the EU, in particularly Germany. The product structure of the CEE export reflects the general international division of the production process with the dominance of manufacturing products, followed by fuels and minerals. The share of agricultural and food products remains enough high, especially in the Balkan region and Baltic states, whereas in majority of CEE manufactured goods consist the dominant position in their export, with the lowest share in Bulgaria (57%) and the highest in Czech Republic (89%), Slovenia (84%) and Slovakia (89%). The share of high-tech manufacturing exports remains low for most of the CEE region. The highest export shares in the high-tech manufacturing (as for 2015) were recorded in Czech Republic (14%) and Latvia (14%), followed by Hungary (13%) and Estonia (12%).

Table 4. Export structure by product group in 2015 (as % of total exports)

	All food items	Agricultural goods	Ores and metals	Fuels	Manufactured goods		Other
					as % of total export	high-tech as % of manufactured exports	
Bulgaria	16	3	15	11	57	7.6	1
Croatia	13	5	-	11	67	9	4
Czech Rep.	5	-	-	-	89	14	6
Estonia	11	6	-	12	69	12	2
Hungary	8	-	-	-	87	13	4
Latvia	18	12	-	6	61	14	3
Lithuania	19		-	17	60	12	4
Poland	13	-	4	0	79	9	5
Romania	11	-	-	5	80	7	4
Slovakia	4	-	-	4	87	3	2
Slovenia	4	-	4	5	84	2	2

Source: UNCTAD Statistics 2016. ('- 'missing data). *World Bank 2016

The successful economic reforms launched since late 90s. resulted in the sound macroeconomic environment, low inflation, trade and investment openness as well as relatively low unit labor costs. The latter attracted substantial amount of foreign direct capital (FDI), which became a

driver of capital stocks accumulation, know-how and technology in the CEE countries (Table 5). FDI stock makes up a high share of the GDP of individual CEE countries, characteristically between 60 and 80% (Hunya 2015). The latter became the chief motivators of vertical FDI inflows by multinational firms. The EU enlargement is a substantial driver of FDI inflows to both EU and non-EU CEE countries. Foreign investment enterprises provide a major share of the exports in the region; they tend to have higher productivity and pay higher wages than the national or branch level average (Hunya 2015).

Table 4. FDI inflows in millions of US\$

	2005	2010	2014	2015
Bulgaria	3 919.97	1 549.13	1 776.59	1 773.86
Croatia	1 785.65	1 153.24	3 678.16	173.93
Czech Republic	11 653.25	6 140.58	5 492.00	1 223.12
Estonia	2 799.17	1 508.54	507.03	207.74
Hungary	7 708.96	2 192.81	7 489.95	1 269.92
Latvia	706.19	379.39	595.2	643.49
Lithuania	1 028.09	799.6	-156.71	863.44
Poland	8 203.22	12 796.27	12 531.02	7 489.40
Romania	6 152.30	3 041.04	3 211.41	3 388.88
Slovakia	3 109.64	1 769.76	-331.49	802.51
Slovenia	561.65	105.37	1 060.92	993.34

Source: UNCTAD Statistics 2016.

Attracting FDI is more significant matter for the CEE and Baltic economies. The latter countries compete for the FDIs for the purpose of intensifying their transition process, decreasing unemployment and integrating their economies into the EU markets. Poland, Romania, Czech Republic and Bulgaria retain their high investment positions in the past few years. These countries are especially attractive for big labor-intensive projects. Poland, in particular, has become a 'tough rival' in attracting FDIs, that aim at benefiting from the market size, and large public infrastructure projects. The Baltic states holding their strong links to Scandinavia, maintain their investment positions, with exception to Estonia. The latter country witnessed a significant

drop in FDI inflows. It partially explained by its relatively small labour pool, which make it difficult to sign large-scale projects.

5. Labour productivity

Dynamic growth in the period before and after EU enlargement and up to the crisis certainly created a favourable environment for productivity increases in the CEE region. An analysis of labour productivity per person employed in real terms, based on Eurostat database for over the 10-year period from 2006 to 2016 shows increases for most activities in the CEE economies. The largest productivity gains were recorded for lower-tech sectors such as agriculture, forestry and fishing, as well as information and communication services (ICT) and industry in general. In 2016, the highest level of labour productivity was observed in Slovenia, Estonia and Czech Republic. Further data on the development of real labour productivity shows the highest growth in Poland, Slovakia and Romania (in percentage terms as compared to 2006). In the most of CEE contributions to output growth derive mainly from capital investments, natural resources and energy, in fewer CEE countries, i.a. Estonia, Latvia and Czech Republic, they come from productivity (*More from less*, 2016). These countries seem to apply both qualified labour and resource-saving technology, which allow them to increase output without significantly increasing factor inputs. The inflowing FDIs and cross-border labour mobility to western Europe are the other important factors affecting productivity. Furthermore, still limited access to financial services may constrain the expansion opportunities for small, but productive firms.

Table 5. Labour productivity in the CEE economies

	Labor productivity*				Median gross hourly earnings
	2006	2010	2014	2016	2014
Bulgaria	8.0	6.5	9.9	10.5	1.7
Croatia	25,0	-	18.2	23.3	-
Czech Republic	26.8	17.7	27.3	29.7	4.6
Estonia	22.0	18.7	20.0	24.3	4.9
Hungary	20.9	15.4	29.3	21.4	3.6
Latvia	17.6	-	16.2	21.2	3.4
Lithuania	18.0	10.7	15.8	22.0	3.1

Poland	18.4	12.6	23.8	23.6	4.3
Romania	11.2	7.5	13.4	15.6	2.0
Slovakia	24.5	14.0	24.5	30.6	4.4
Slovenia	32.2	26.7	36.5	34.8	7.3
EU-28	50.5	45.5	57.0	53.2	13.2

*(in EUR thousand per head); “-“ no data.

Source: Eurostat 2017.

The future productivity trends in the CEE countries will be determined by the technological, financial and demographical factors. In the past decade the CEE economies have been experiencing some of the worst declines in the working age population due to unfavourable demographics and emigration. The latter trend was partially offset with inflowing immigrants from Ukraine and the Balkan region. The important question remains to investigate the relationship between the immigration, productivity and local wage formation. For one thing, further investment inflows are essential for the continuing the wage gap catching up, skill upgrading and technological know-how.

6. Mezzo competitiveness and the Global Competitiveness Index

Since the early 90. producers in the CEE countries, particularly in Poland, Hungary, Czech Republic, Slovakia and Bulgaria began producing under contract for manufacturing and retail companies in the EU and the US (Lane and Probert 2009; Pickles and Smith 2011, 2016). The CEE countries companies were usually located further downstream in the global value chains in comparison to their euro area partners. Normally they would import industrial equipment and higher value-added components from the western EU countries and used them to produce additional components and assemble intermediate goods or final products. The latter would be shipped along the value chain to their final consumers around the globe. Since the early reforms some CEE countries exporters, in particularly Hungarian (with Latvian and Bulgarian close behind), have made progress in moving their activities further downstream in global value chains. Whereas the upstream position of Romania and Poland relative to the other CEE countries comes from their specialisation in industrial equipment and intermediate goods as well as from their natural resources (which account for a significant share of their exports).

Furthermore exporters from some bigger CEE countries have started to set up their own value chains within the region. Poland and Czech Republic stand out from the other CEE countries, as they occupy an upstream positions in global value chains. For example, the Czech Republic is located upstream of Bulgaria and provides it with sizeable FDI flows. The latter points to the ability of Polish and Czech exporters, including subsidiaries of euro area multinational companies, to set up regional value chains (Iossifov, 2014). Among the other companies such IT technology giants as Microsoft and Intel have invested in CEE technology scene. In electronics, General Electric took a pioneering stake in the Hungarian lighting producer Tungsram, the in 1989, which further attracted other western consumer electronics groups such as Philips of the Netherlands, Germany's Siemens, and Samsung and LG of South Korea. In the automotor industry, some western investors established greenfield plants, others took over existing sites, rebuilding them and retraining staff. For example. Czech automaker Skoda was over taken by VW group and transformed into a world-class manufacturer. French Renault acquired Dacia of Romania and turned it into the popular, low-cost Logan model. In sum, in the last decades the CEE economies became one of the leading production and technological hubs in EU markets.

At the same time improvements in the institutional environment and in the overall regulatory environment resulted in the advancement in technical and allocative efficiencies of the CEE countries as well as significantly contributed to better competitiveness performance of the CEE countries. *The Global Competitiveness Report 2016–2017* assesses the competitiveness landscape of 138 economies, including the CEE region, providing insight into the drivers of their productivity and prosperity. The GCI combines 114 indicators that capture concepts that matter for productivity. These indicators are grouped into 12 pillars (Figure 1): institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation. These organized into three subindexes (three main stages of country's development) basic requirements, efficiency enhancers, and innovation& sophistication factors. The three subindexes are given different weights in the calculation of the overall Index, depending on each economy's stage of development, as proxied by its GDP per capita and the share of exports represented by raw materials.

Although the CEE countries are pushing the frontier in almost all areas, there is wide dispersion in regional performance on several pillars. Estonia and the Czech Republic take up top positions amongst the CEE countries in the chart in the Global Competitiveness Index (GCI) 2016-2017,

followed by the Baltic States and Poland, whereas Romania and Balkan countries are staying behind. Overall, among the CEE countries Estonia offers the highest quality of the institutional environment. The healthcare and macro environment were Estonia's and Czech Republic strongest pillars. Estonia has also the most competitive financial market from the CEE countries, with rank 22 at a distance of 5 place from the next country (Czech Republic) (Table 6). Whereas bureaucracy is one of the weakest points in case of the latter country. The other problem of this country in achieving competitiveness is on market size (were in ranked 100th from 144 countries) and improve its business sophistication (business networks and the quality of individual firms' operations and strategies) (the lowest of all its ranks – 44). One of the biggest challenges of the other two Baltic states – Latvia and Lithuania - is in the area of market size, innovation and business sophistication. Poland, on the other hand, faces the challenge in enhancing labour market efficiency. One of the challenges for the Poland's upgrading in the Global Competitiveness Index 2016/2017 is Polish tax law. The latter, according to the investors, is the biggest barrier for conducting business operations. Similarly, in order to maintain its relatively high competitiveness rank (36) Poland needs to accelerate its innovation and business sophistication efforts. Slovakia, has gained high rank in the financial market this country (ranked the third from the CEE countries), however, has important problems in the areas such as institutions, labour market efficiency, health and primary education and innovation. Finally, the biggest challenges of Bulgaria and Romania lay in the institutional, business sophistication, health and primary education, as well as innovation areas. Most of the CEE countries perform well in the higher education pillar and technological readiness pillar. The latter means that they fully leverage information and communication technologies (ICTs) in their daily activities and production processes (with exception to Romania). In sum, the CEE countries have successfully managed to launch their transition and reintegration processes into the EU markets and global markets. Most of the CEE countries were described by GCI 2016-2017 as efficiency driven economies, only Romania and Bulgaria remain in the efficiency driven stage of development.

Table 6. Global Competitiveness Index 2016/2017: Rank/138 of sub-indexes and pillars

Global Competitiveness Index 2016/2017	Bulgaria	Croatia	Czech	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia
Rank/138	50	74	31	30	69	49	35	36	93	65	56
Subindex A: Basic requirements	60	68	31	20	69	41	35	45	62	54	38
1st pillar: Institutions	97	89	54	23	114	64	51	65	72	102	58
2nd pillar: Infrastructure	70	46	43	33	62	51	45	53	92	61	39
3rd pillar: Macroeconomic environment	42	84	19	12	47	24	34	45	88	37	58
4th pillar: Health and primary education	57	66	25	12	78	42	32	38	28	55	16
Subindex B: Efficiency enhancers	44	68	27	28	56	42	36	34	88	47	54
5th pillar: Higher education and training	56	49	26	18	72	39	26	37	55	61	22
6th pillar: Goods market efficiency	57	95	36	20	59	49	39	47	67	53	42
7th pillar: Labor market efficiency	54	100	44	15	80	34	59	79	80	93	85
8th pillar: Financial market development	59	95	27	22	70	52	60	46	88	33	118
9th pillar: Technological readiness	38	47	29	32	54	34	27	46	86	44	35
10th pillar: Market size	65	78	46	100	53	96	77	21	48	61	84
Subindex C: Innovation and sophistication factors	71	92	35	33	97	58	43	55	42	57	37
11th pillar: Business sophistication	79	80	32	44	113	58	42	54	100	55	48
12th pillar: Innovation	65	103	37	28	80	64	39	60	104	68	33

* The GCI includes statistical data from internationally recognized agencies, notably the International Monetary Fund (IMF); the United Nations Educational, Scientific and Cultural Organization; and the World Health Organization. It also includes data from the World Economic Forum's annual Executive Opinion Survey

Source: <https://www.weforum.org/reports/the-global-competitiveness-report-2016-2017-1>

7. Turning economic growth into wellbeing

The wellbeing can be measured using a range of alternative objective and subjective indicators. One of the most modern indicators include growth-to-well-being and wealth-to-well-being coefficients based on the Sustainable Economic Development Assessment (SEDA) measure. The SEDA measure of well-being based on three elements that comprise ten dimensions with 43 indicators coming from publicly available sources. They are: economics (comprising income, economic stability, employment measures), investments (comprising health, education, infrastructure measures) and sustainability (comprising income equality, civil society, governance, environment measures). The growth-to-well-being coefficient indicates country's recent progress with the score that would be expected given its GDP growth rate. The expected score is calculated based on the average relationship between recent-progress scores and GDP growth rates during the period of analysis for all countries worldwide. The indicator thus shows how well a country has translated income growth into well-being coefficient, countries that are situated above the solid line, with coefficient greater than 1.0, have improvements in the wellbeing beyond what would be expected given their GDP growth rate in the period 2006-2014.

Poland has one of the highest growth-to-well-being coefficient in 2015 and 2016. Some CEE countries like Poland, Slovakia and Slovenia made in particularly good progress in the sustainability part of SEDA's index.

Table 7. CEE countries SEDA scores and coefficients

Country	Current-level score	Recent-progress level score	Wealth to-well-being coefficient	Growth-to-well-being coefficient
Bulgaria	56.9	49.6	1.11	0.95
Croatia	64.0	61.9	1.11	1.40
Czech Republic	75.1	53.3	1.11	1.06
Estonia	75.6	48.9	1.16	1.00
Hungary	71.6	35.5	1.15	0.79
Latvia	67.0	37.2	1.08	0.80
Lithuania	71.3	65.4	1.09	1.25
Poland	71.6	94.8	1.15	1.55
Romania	54.5	61.3	1.00	1.15

Slovakia	70.9	61.6	1.06	1.06
Slovenia	77.8	49.7	1.13	1.06

Source: <https://www.bcgperspectives.com/2017>

The country's current performance within ten different dimensions of SEDA shows above median scores for the rest of world, with economic stability and environment standing out in particular high. In the latter dimensions Poland outpacing its peer group countries (other CEE countries). Poland's lesser progress is noted in the weak infrastructure and its below-par recent progress in education. Romania, however, shows the highest position among its peers in the investments dimension, whereas Bulgaria has demonstrated significant progress in the general economics element.

Summary and policy implications

In order for CEE economies to maintain their international competitive positions further investments, especially by the international venture capital groups, and technology giants are needed. The participation of CEE economies in global value chains have important "learning-by-doing" effect, which improves their productivity levels and export competitiveness of local companies. Promoting social inclusiveness as well as the greener and more sustainable economy is equally important in order to sustain their growth and shift their specializations from labour-intensive to more capital- and technology-intensive sectors. In fact, a relatively low share of the high-tech sectors and, in some cases, a still sizable share of agriculture places CEE economies shifts them further away from the frontier. Furthermore, upgrading their institutions, labour market efficiency, health and primary education as well as business sophistication will improve technical and allocative efficiencies of the CEE countries. In case of technical efficiency, the biggest improvement could be achieved by upgrading institutions (legal systems), while in the case of allocative efficiency, the largest benefits would stem from greater affordability of financial environment, which will support small, innovative companies. Additionally, improving allocative efficiencies, especially with the more flexible labor market policies, could help offset some of the negative effects of demographic changes and emigration. More flexible labor markets tend to be also positively associated with aggregate productivity growth. Finally, further efforts in the CEE education policies are also needed to reduce skill mismatches and increase labor force.

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