Competitiveness, Entrepreneurship and Economic Growth

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Abstract In this chapter we explored country competitiveness and entrepreneurship as drivers of economic growth. The research was carried out on a sample of Central and Eastern European (CEE) member states of the European Union (EU). The analysis shows that economic growth as measured by GDP per capita growth rates, and global competitiveness of a country as measured by the World Economic Forum's (WEF) Global Competitiveness Index scores' growth rates, are positively related to each other. The comparative analysis also reveals that efficiency-driven and certain transition CEE EU Member States have made the highest progress at various competitiveness pillars, which is reflected in their economic growth. The opposite has been found for two innovation-driven CEE EU Member States. When testing the hypothesis on the relationship between the average growth of quality of early-stage entrepreneurship indices and average growth of GDP per capita, no significant relationship was found. This finding is in accordance with the general thesis that entrepreneurial activity supports economic growth only as part of a favourable broader business environment. The research results constitute a preliminary analytical framework for policymakers and managers in the analysed countries.

Keywords Competitiveness • Entrepreneurship • Economic growth • Central and Eastern Europe

Introduction

There is a broad ongoing debate among politicians and scholars alike about the meaning and components of the concept of competitiveness. Boltho (1996) explains it as an ability of an economy to secure a higher standard of living than comparable economies, whilst Porter (1998) argues that the only meaningful concept of competitiveness is national productivity. The World Economic Forum's (WEF) Global Competitiveness Index (GCI), which has been extensively referenced as a credible

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metric instrument of national competitiveness, is based on Porter's (1998) definition. According to this definition, a country's competitiveness is a set of macroeconomic and microeconomic factors that determine its productivity and economic growth, respectively (WEF 2014).

There is no doubt that the developed entrepreneurial sector has a critical effect on economic growth and the success of national economies (Acs and Szerb 2009; Baumol 1990; Bosma and Levie 2010; Leibenstein 1968; Rebernik et al. 2015; Schumpeter 1934; Von Mises 1949; etc.). Two basic drivers of economic growth through entrepreneurship can be distinguished: the existence of major established firms and the entrepreneurial process taking place in new and growing enterprises—the early-stage entrepreneurship (Reynolds et al. 2002). Early-stage entrepreneurs are identified as those individuals who are personally involved in the creation of a new venture and are at the same time employed as owners/managers of a new firm that is less than 3½ years old (Reynolds et al. 2005). The dynamic entrepreneurship sector is crucial for economic growth, regardless of the stage of economic development—although entrepreneurial characteristics, as well as characteristics of the impact of entrepreneurship sector on economic growth, vary. In this chapter we explore the relationship between national competitiveness, as defined by WEF (2014), and entrepreneurship and economic growth, as measured by gross domestic product (GDP) per capita growth rates. The existing studies on the relationship between competitiveness and economic growth have predominantly focused on one dimension of competitiveness (e.g. Harrison 1996), or on a specific region (e.g. Gardiner et al. 2004). Our empirical analysis is conducted on a sample of Central and Eastern European (CEE) European Union (EU) member states that had a similar political heritage and hence also comparable opportunities of socio-economic development. The latter have been increased by the transformation of political systems in the beginning of the 1990s and by the stepwise accession of these countries to the EU in the past two decades. Authors variously define Central and Eastern European region. According to OECD's (2014) definition, this region comprises Albania, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia. The empirical analysis of our chapter is conducted on the sample of 11 CEE EU member states. The existent analyses of CEE countries' competitiveness focus on one or two competitiveness dimensions (e.g. Petrariu et al. 2013; Wilinski 2012), discuss competitiveness in one particular year (e.g. European Commission 2014), or evaluate competitiveness for selected CEE countries (e.g. Niessner 2013). There is no comprehensive insight into the progress and regression of all competitiveness dimensions in a longer period and their possible impacts on CEE EU member states' economic growth rates.

Since the entrepreneurial activity is not directly included in the WEF's Global Competitiveness Index, and due to its confirmed impact on economic growth by several empirical studies, we tested this relationship on a sample of CEE EU member states. There are several studies analysing the impact of the quantity of entrepreneurial activity on economic growth (usually measured by GDP per capita) (Wennekers et al. 2010), which show that the level of entrepreneurial activity and

GDP per capita have a U-shaped relationship. Since the characteristics of entrepreneurial activity on average differ depending on the stage of economic development, the quality of entrepreneurial activity may play a potentially crucial role. This is the reason why, instead of focusing on volume or quantity of entrepreneurship in the economy, we focused on the quality of entrepreneurial activity.

This chapter is structured as follows: in section "Theoretical Background and Hypotheses" we conceptualise a country's competitiveness and describe the impacts of competitiveness pillars on economic growth; we then formulate hypotheses for our research. Section "Methodology and Data" provides a detailed explanation of the methodology and data gathering. In section "Empirical Analysis", the empirical analysis is conducted and the hypotheses are tested. In section "Conclusion", we discuss the empirical findings and state the limitations of our research.

Theoretical Background and Hypotheses

According to WEF (2014), a country's competitiveness is a set of 12 pillars, structured into three groups. The first group is related to the basic requirements of institutions, infrastructure, macroeconomic stability, health and primary education. The second group represents the sources of efficiency—higher education, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size and business sophistication. The third group includes innovation and business sophistication factors. All 12 pillars tend to reinforce each other, and a weakness in one area often has a negative impact in others (WEF 2014). All of the pillars matter to a certain extent for all economies; however, due to different stages of countries' development, they affect them in different ways. The basic requirements are critical for countries still in the factor-driven stage, and the efficiency enhancers are important for countries that had progressed towards the efficiency-driven stage. The innovation and sophistication factors affect the countries in the innovation-driven stage. All countries falling in between two of the three stages can be considered to be in transition. For each of the 12 pillars of a country's competitiveness, there exists empirical evidence about their impact on economic growth.

The quality of a country's *institutions*, which can be determined by the legal and administrative framework within which individuals, firms, and governments interact to generate wealth, has been proven as a factor of economic growth by several studies (e.g. Acemoglu et al. 2002; North 1989; Rodrik et al. 2002). According to Miller et al. (2014), public institutions can impose significant economic costs on businesses and slow the process of economic development (e.g. excessive bureaucracy and red tape, overregulation, corruption, dishonesty in dealing with public contracts, lack of transparency, inability to provide appropriate services for the business sector, improper management of public finances and political dependence of the judicial system). Besides public institutions, good governance of private

institutions and maintenance of investor and consumer confidence is also an important element of the process of wealth generation (see Zingales 1998).

The quality and extensiveness of *infrastructure* networks integrate the national market and connect it at low cost to markets in other countries, enable businesses to get their goods and services to market in a secure and timely manner, allow for a rapid and cheap flow of information, determine the location of economic activities, facilitate the movement of workers, prevent interruptions and shortages of energy supplies, etc. Their impact on economic growth has been identified, for example, by Canning and Pedroni (1999) and Calderon and Serven (2004).

Although extant research (e.g. Fischer 1993) finds only weak effects of *macroeconomic stability* on productivity and growth, there exists clear evidence about its impact on short-term economic activity. For example, the impacts of low and moderate levels of inflation are studied by Goodfriend (2007) and Temple (2000), the impacts of public debt levels are examined by Reinhart and Rogoff (2010), and the impacts of the level of taxes, structure of taxation and the way government spends money are studied by Johansson et al. (2008), among others.

Healthy employees are vital to a country's productivity. Thus, investment in the provision of *health services* is a critical factor of economic development and growth, respectively (see Sachs 2001). The quantity and quality of the *basic education* received by the population increases the workers' efficiency and contributes more to devising or executing innovations, which eventually helps businesses to move up the value chain by producing more sophisticated or value-intensive products (see WEF 2014).

Secondary and tertiary enrolment rates, as well as the quality of *higher education*, are also key factors for economies that want to move up the value chain (see Krueger and Lindahl 2001).

Goods market efficiency is related to the production of the right mix of products and services, given a country's particular supply-and-demand conditions, as well as to the effectiveness of trading with these goods (WEF 2014). The best possible environment for the exchange of goods requires a high level of market competition and a minimum of government intervention that impedes business activity (see Branstetter et al. 2010). Openness to international competition via trade and investment enables a country to improve productivity, expand the most productive local industries and access more advanced knowledge and technology from abroad (Delgado et al. 2012). A positive relationship between openness and prosperity has been found by several researchers (e.g. Alesina et al. 2005; Baldwin 2003; Dollar and Kraay 2003), as well as the positive influence of trade on the transfer of knowledge and firm innovation in a country (e.g. Branstetter 2006). Market efficiency also depends on demand conditions, such as customer orientation and buyer sophistication (see Porter 1998). More demanding customers force companies to be more innovative and customer-oriented and thus impose the discipline necessary for market efficiency.

To achieve *labour market efficiency*, the workers have to be allocated to their most effective use in the economy and provided with incentives to invest their best effort in their jobs. Thus, the labour market supports economic growth if it is

flexible enough to shift workers from one economic activity to another one rapidly and at a low cost, and allows for wage fluctuations without much social disruption (see Kaplan 2009).

Efficient access to capital is important for companies to make long-term investments needed to raise productivity levels (see Levine 2005). Thus, *financial market development* is reflected in the allocation of financial resources to those entrepreneurial or investment projects with the highest expected rates of return, rather than to the politically connected ones. Furthermore, it is reflected in its sophistication, which enables the provision of capital from various sources (WEF 2014). In order to fulfil all those functions, financial markets need appropriate regulation to protect investors and other actors in the economy.

For an economy to prosper, it is important to be agile in adopting existing technologies to enhance the productivity of its industries (see Barro and Sala-i-Martin 2003). Thus, contemporary *technological readiness* is reflected in the information-communication technology (ICT) access and usage.

Market size, as one of a country's endowments, affects productivity through the opportunities for achieving economies of scale. In the era of globalisation, international markets have become a substitute for domestic markets, especially for small countries. Thus, exports and the membership in the regional integration (which allows cheaper and simpler access to other markets) can be thought of as a substitute for domestic demand in determining the size of the market for the firms of a country. The effects of a country's international markets are shown in studies such as that of Parteka and Wolszczak-Derlacz (2013).

Business sophistication is concerned with the quantity and the quality of local suppliers, service providers and associated institutions in a particular field and the extent of their interactions. It raises productivity due to higher efficiency, creates greater opportunities for innovation in processes and products and reduces entry barriers for new firms (see Delgado et al. 2010). Furthermore, the firms' advanced operations and strategies (branding, marketing, distribution, advanced production processes, and the production of unique and sophisticated products) spill over into the economy and lead to sophisticated and modern business processes across the country's business sectors, which contributes to higher productivity (see WEF 2013). Several empirical studies confirm the importance of companies operations and strategies for productivity (e.g. Bloom and Van Reenen 2007).

The positive impact of *technological innovation* (including institutions and policies supporting innovation) on productivity has been empirically proven by studies such as those of Grossman and Helpman (1991) and Furman et al. (2002). According to Romer (1990), technological innovation is particularly important for economies that can no longer improve their productivity only by integrating and adapting exogenous technologies.

Based on the theoretical background and evidence from the literature, where we have explained the concept of a country's competitiveness and the impact of each competitiveness pillar on economic growth, we formulated the following hypothesis:

Hypothesis H1. The growth of a national economy's GDP per capita and the growth of a national economy's competitiveness are positively related to each other.

Our chapter focuses also on the analysis between the quality of entrepreneurial activity and economic growth. The existing research results support the idea that the relationship between the level of entrepreneurial activity in the economy and economic growth follows the U-shape (Wennekers et al. 2010). The upward trend of the U-shaped relationship is due to the quality of entrepreneurial activity. In fact, the solo self-employed at the lower end of the entrepreneurial spectrum and ambitious innovative entrepreneurs at the upper end should be distinguished. In innovation-driven economies, a positive correlation between the prevalence rates of business start-ups and average per capita income may be predominant; on the other hand, in factor- and efficiency-driven economies the correlation may even be negative, with the regime switch somehow depending on the qualitative characteristics of entrepreneurship. A similar situation is found regarding the relationship between the entrepreneurship levels and the competitiveness of economies. Recent publications (see WEF 2015) revealed that as the competitiveness of an economy increases, lower proportions of the working-age population start with entrepreneurial activity. As the authors explain, several hypotheses exist to explain this situation: "In highly competitive economies, there are a larger number of attractive existing employment opportunities than in less competitive economies, which raises the opportunity costs of starting a business in these highly competitive economies. Also the higher skill level required to start a business that can compete in a highly competitive market environment raises the barrier to entry for new entrepreneurs in highly competitive economies" (WEF 2015:10).

However, scant research exists about the impact of quality of entrepreneurial activity, which is in the focus of our research. Therefore, our hypothesis H2 posits that the quality of early-stage entrepreneurial activity in the economy and the growth of national economy's GDP per capita are related, but the sign of their relationship is not hypothesised.

Hypothesis H2. The growth of a national economy's GDP per capita and the growth of quality of early-stage entrepreneurial activity are related to each other.

Methodology and Data

This chapter is a macroeconomic dynamic research, based on secondary data. The calculations of average growth rates of competitiveness indices and GDP per capita for each of the CEE EU member states are followed by comparative analyses of these variables for the discussed countries and by the exploration of relations between variables. The data for the period 2008–2014 we collected from the World Economic Forum's Global Competitiveness Reports and Eurostat Database. The research on the impact of quality of early-stage entrepreneurial activity on economic growth is based on the Global Entrepreneurship Monitor (GEM) indicators.

GEM is a project carried out since 1999 by a research consortium dedicated to understanding the relationship between entrepreneurship and national economic development. GEM enables research and analyses of characteristics, relationships and interdependencies at the level of individuals, as well as at the aggregated country level. It also explores the characteristics of early-stage entrepreneurs and their start-ups, which was utilised in the present study. The data collected and assembled as part of the GEM research programme are consistent with the current technical standards in social science research. The GEM research provides cross-national harmonised datasets on several components and aspects of entrepreneurship. The methodology of GEM research and survey are described in more detail in Reynolds et al. (2005).

CEE EU member states did not all participate in Global Entrepreneurship Monitor (GEM) in the same years: Romania, Croatia, Hungary, Latvia and Slovenia participated in GEM every year from 2008 to 2015; Czech Republic, Lithuania, Poland and Slovak Republic participated 2011–2013; Estonia participated in 2012 and 2013 and Bulgaria first participated in 2015. With the purpose of making the analysis comparable, a time period of 3 successive years was taken into account: ten countries analysed participated in years 2011–2013 (Czech Republic, Croatia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia). Estonia, however, participated only in 2012 and 2013.

Empirical Analysis

In the first part of the empirical analysis, we compared the average Global Competitiveness Index (GCI) scores of 11 CEE EU member states and the average growth of these scores in the period of 2008–2014. The goal of this comparative analysis was to reveal the state of competitiveness of these countries after the beginning of the financial and economic crisis, and establish each country's record of improvement or deterioration regarding the pillars of competitiveness in the observed period of time. To achieve detailed insight into each country's competitiveness, we have analysed each group of pillars—basic requirements, efficiency enhancers and innovation and sophistication factors.

Figure 1 shows that the highest average levels of competitiveness in the period from 2008 to 2014 were achieved by Estonia and Czech Republic. It is also evident that some transition countries (Lithuania and Poland) achieved higher average levels of competitiveness than some countries at the innovation-driven stage of development (Slovenia and Slovak Republic). According to WEF (2014), Bulgaria and Romania are classified as countries at the efficiency-driven stage of development; Croatia, Hungary, Latvia, Lithuania and Poland as countries in the transition stage of development; and Czech Republic, Estonia, Slovak Republic and Slovenia as countries at the innovation-driven stage of development.

Figure 2 reveals the average growth levels of total competitiveness and the average growth levels of three groups of competitiveness pillars for CEE EU
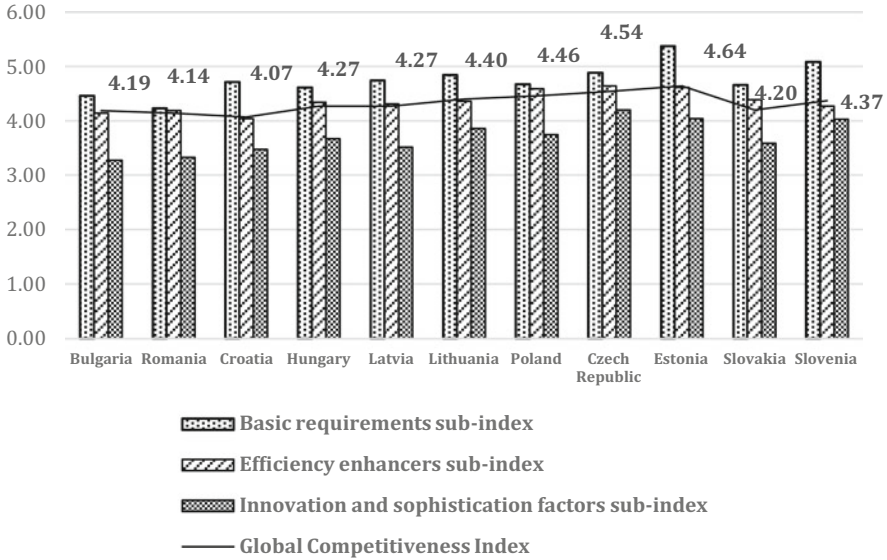
Fig. 1 Average global competitiveness of CEE EU member states (scores, 2008–2014). *Sources of data*: WEF (2008, 2009, 2010, 2011, 2012, 2013, 2014) and authors' calculations. *Notes*: see WEF (2013:10) for the explanation of countries' classification according to their level of development and for the sub-indices weights in the GCI according to the stage of development
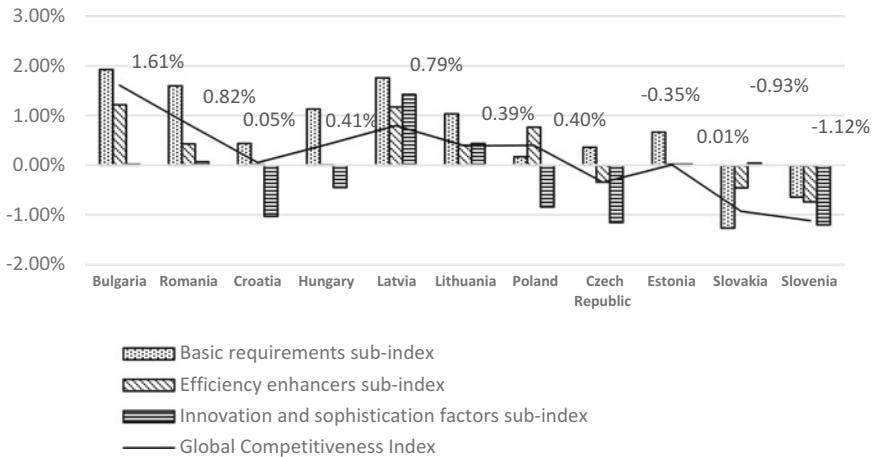

Fig. 2 Average growth of global competitiveness scores of CEE EU member states (%, 2008–2014). *Sources of data*: WEF (2008, 2009, 2010, 2011, 2012, 2013, 2014) and authors' calculations

member states. Herewith we gain an insight into the main fields of progress and regression in competitiveness of CEE EU member countries in the observed period of time. Slovenia's position worsened in all three groups of competitiveness factors;

the highest decrease was seen within the group of innovation and sophistication factors, which endangers Slovenia's future growth prospects with regard to its achieved stage of development. Similar observations are valid for Czech Republic, which recorded high deterioration in the most important group of competitiveness pillars according to its level of development. Slovakia, classified among innovation-driven countries as well, recorded the highest deterioration of basic requirements, even though they represent the foundations for ending a country's transition period.

Among the transition countries, the data show that the worst position was held by Croatia. The other transition countries achieved better positions regarding their average growth of global competitiveness, although Poland and Hungary deteriorated competitiveness in the field of innovation and sophistication factors. According to the data, Bulgaria—one of the two CEE EU member countries at the efficiency-driven stage of development—outperformed all other countries in the field of average competitiveness growth in the observed period of time.

A more detailed picture of a country's position regarding basic factors of competitiveness is shown by Fig. 3. All CEE EU member states managed to improve their total competitiveness in this field, with the exception of Slovakia and Slovenia. These two countries recorded the highest rates of regression in the field of institutions and macroeconomic environment. The deterioration of institutional environment has been observed also for Croatia, Hungary, Lithuania, Poland and Czech Republic. The highest levels of competitiveness in the field of basic requirements were recorded by Bulgaria, Latvia and Romania. Bulgaria, Romania, Latvia and Croatia made the highest progress in the field of infrastructure. Estonia, however, is the leading country in terms of progress in the field of institutional environment.

Figure 4 shows that the lowest positions with regard to efficiency enhancers were achieved by some countries at the innovation-driven stage of development—Slovenia, Slovakia and Czech Republic. The other countries managed to improve their competitiveness in this group of factors. Most of the countries under study had witnessed a deterioration of competitiveness levels in the field of financial development, with Slovenia faring the worst in this pillar. The deterioration of labour market efficiency was the second-most important reason for the decline of overall competitiveness in this group of pillars. However, most of the CEE EU member states recorded progress in the field of technological readiness development; the best results in this field were achieved by Croatia, Bulgaria, Latvia and Lithuania.

The group of business sophistication and technological innovation factors (including institutions and policies supporting innovation) substantially worsened in two countries that compete on this basis—Slovenia and Czech Republic—and in Croatia, as well as in Poland and Hungary, where this factor could contribute to the faster progress of the innovation-driven stage of development (see Fig. 5).

Table 1 is the synthesis of the state of competitiveness of CEE EU member states in the period from 2008 to 2014. The findings are the following: Bulgaria and Latvia have recorded improvement at the highest number of competitiveness pillars
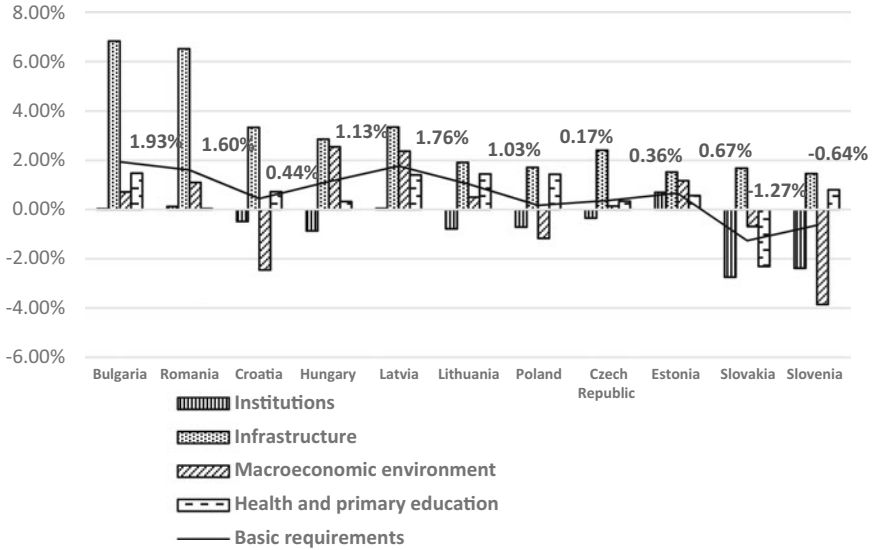
Fig. 3 Average growth of global competitiveness of CEE EU member states in the field of basic requirements (%, 2008–2014). *Sources of data*: WEF (2008, 2009, 2010, 2011, 2012, 2013, 2014) and authors' calculations

(11), Estonia and Romania have each improved at 9 pillars, Poland and Lithuania improved at 8 pillars, Hungary has improved at 7 pillars, Slovakia and Czech Republic improved at 6 pillars and Croatia and Slovenia have each improved at 5 pillars.

In the second part of the empirical analysis, we calculated average GDP per capita and average growth of GDP per capita of CEE EU countries in the period from 2004 to 2013 (see Fig. 6). We found that the highest growth of GDP per capita were recorded in two efficiency-driven countries (Romania and Bulgaria) and two transition countries (Latvia and Lithuania), which also displayed the lowest average levels of GDP per capita. Two innovation-driven countries—Slovenia and Czech Republic—achieved the lowest average growth of GDP per capita. This was not the case for the other two innovation-driven countries with the highest average level of GDP per capita—Slovakia and Estonia.

With the intention to test the Hypothesis 1 of our research, we have ranked the observed countries according to average GDP per capita, average growth of GDP per capita, average GCI scores and average growth of GCI scores (Table 2).

The relationship between the growth of a national economy's GDP per capita and the growth of a national economy's competitiveness was tested using the Spearman non-parametric correlation coefficients, since we wanted to establish the relationship between rankings rather than between values themselves. While the correlation between average GDP per capita ranks and average GCI ranks is not significant, the important result supporting our Hypothesis 1 is that growth of GDP
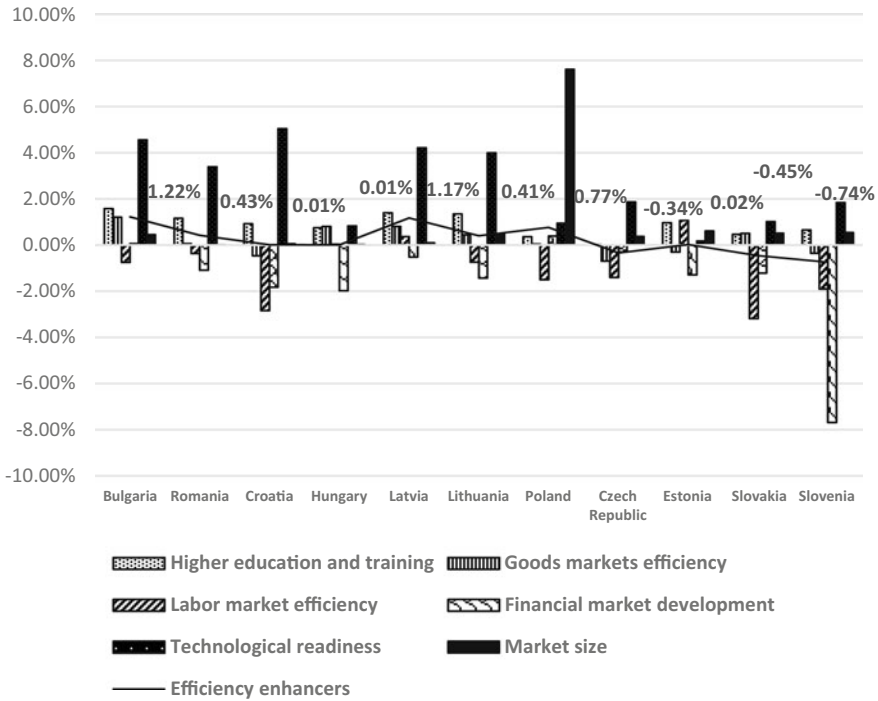
Fig. 4 Average growth of global competitiveness of CEE EU member states in the field of efficiency enhancers (%, 2008–2014). *Sources of data*: WEF (2008, 2009, 2010, 2011, 2012, 2013, 2014) and authors' calculations

per capita ranks and growth of GCI ranks are statistically significantly positively related (Correlation coefficient $= 0.649$; $p < 0.05$), thus supporting Hypothesis 1.

Country differences in the quality of early-stage entrepreneurial activity were measured by five indicators:

- Percentage within the early-stage entrepreneurs in a country that believe that their products/services are new to all or at least some of the potential customers;
- Percentage within the early-stage entrepreneurs in a country that believe that regarding their products/services, there are only a few or even zero competitors in a country's market;
- Percentage within the early-stage entrepreneurs in a country that use the latest technologies for producing their products/services (technologies not older than a year);
- Percentage within the early-stage entrepreneurs in a country that believe that they will employ at least 10 employees in the next 5 years (at least 50 % growth);
- Percentage within the early-stage entrepreneurs in a country that intend to export their products/services (at least 1 % of their potential customers come from abroad).
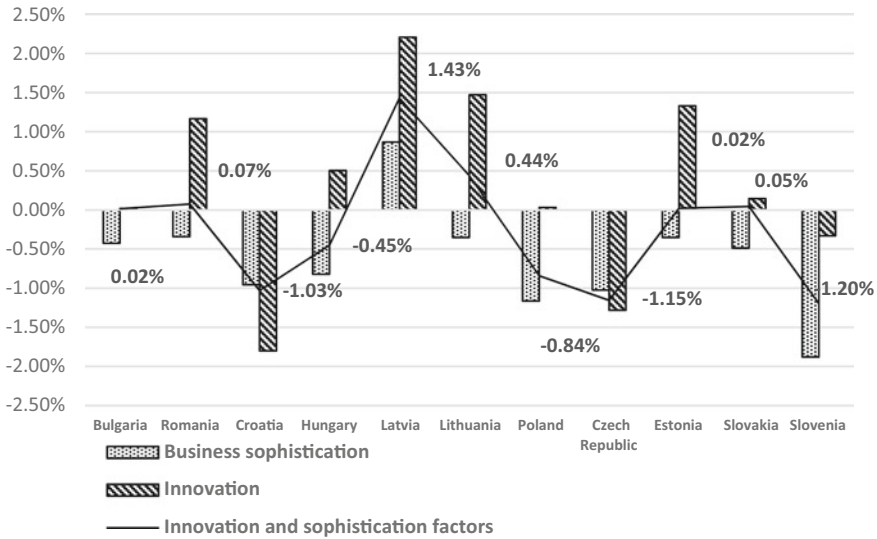
Fig. 5 Average growth of global competitiveness of CEE EU member states in the field of innovation and sophistication factors (%, 2008–2014). *Sources of data*: WEF (2008, 2009, 2010, 2011, 2012, 2013, 2014) and authors' calculations

Figure 7 shows that in all ten countries, the growth of all entrepreneurial indices is very modest, except regarding the percentage within the early-stage entrepreneurs in a country that use the latest technologies for producing their products/services. In that category, all countries except Czech Republic and Slovakia recorded positive average rates. Results have to be interpreted with caution, since the assessment of period of availability of technologies depends on the level of technological development (for example, something assessed as a new technology in an efficiency economy is probably not assessed as new in an innovation-driven economy). Similar caution in interpretation is necessary regarding the assessment of novelty of product/services produced, where efficiency-driven Romania recorded the highest average growth rate.

In almost all countries, the average rate of growth of start-ups that would operate in an identified market niche with few or none competitors is negative—only in Estonia and Slovenia positive values were recorded (in both cases 1.12 %). Similarly, the average growth rates of expected new employment were mainly negative.

Three countries recorded the positive growth rates regarding the export. In Estonia, Slovenia and Slovak Republic, the growth of percentage of early-stage entrepreneurs who expected that at least 1 % of their (potential) customers came from abroad was positive.

Altogether, the Czech Republic reported zero non-negative growth rates of entrepreneurial indices. Croatia, Hungary and Latvia each reported one out of five growth rates as non-negative. Romania recorded three and Slovenia recorded five.

Table 1 The synthesis of the state of competitiveness of CEE EU member states (2008–2014)

Country	Basic requirements					Efficiency enhancers							Innovation and sophistication factors		
	Tc	Ins	Inf	Me	Hpe	Tc	Het	Gme	Lme	Fmd	Tr	Ms	Tc	Bs	In
Bulgaria	Im	+	+	+	+	Im	+	+	+	+	+	+	Im	–	+
Romania	Im	+	+	+	+	De	+	+	–	–	+	+	Im	–	+
Croatia	Im	–	+	–	+	De	+	–	–	–	+	+	De	–	–
Hungary	Im	–	+	+	+	Un	+	+	Un	–	+	Un	De	–	+
Latvia	Im	+	+	+	+	Im	+	+	+	–	+	+	Im	+	+
Lithuania	Im	–	+	+	+	De	+	+	–	–	+	+	Im	–	+
Poland	Im	–	+	–	+	Im	+	+	–	+	+	+	De	–	+
Slovakia	De	–	+	–	–	De	+	+	–	–	+	+	Im	–	+
Estonia	Im	+	+	+	+	De	+	–	+	–	+	+	Im	–	+
Czech Republic	De	–	+	+	+	De	+	–	–	–	+	+	De	–	–
Slovenia	De	–	+	–	+	De	+	–	–	–	+	+	De	–	–

Sources of data: WEF (2008, 2009, 2010, 2011, 2012, 2013, 2014) and authors' calculations

Tc total competitiveness, *Ins* institutions, *Inf* infrastructure, *Me* macroeconomic environment, *Hpe* health and primary education, *Het* higher education and training, *Gme* goods market efficiency, *Lme* labour market efficiency, *Fmd* financial market development, *Tr* technology readiness, *Ms* market size, *Bs* business sophistication, *In* innovation, *Im* improvement, *Un* unchanged, *De* deterioration
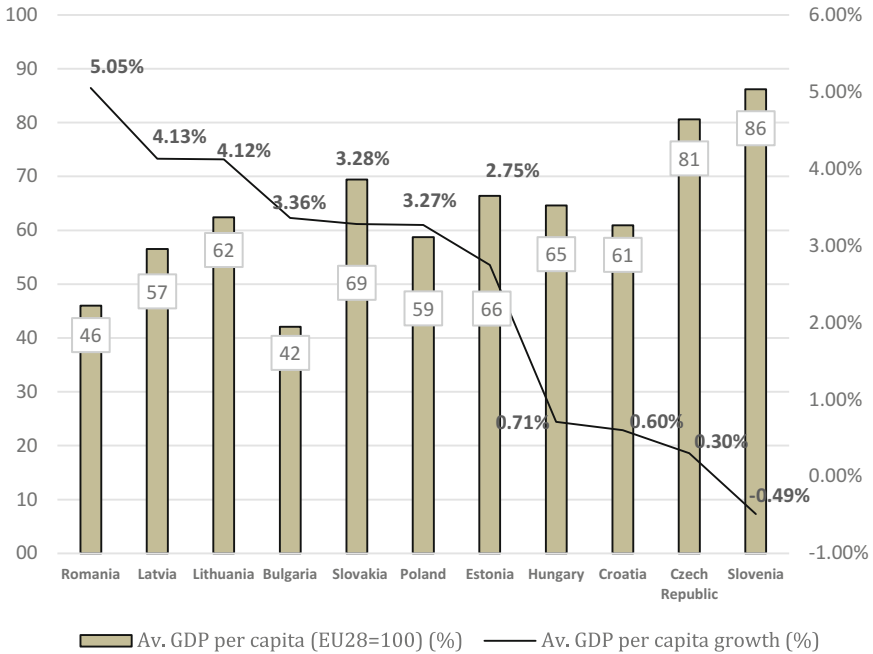
Fig. 6 Average GDP per capita EU28 = 100 and average growth of GDP per capita EU28 = 100 (%, 2004–2013). *Sources of data*: Eurostat (2015) and authors' calculations

When testing the significance of relationship between average growth of quality of the early-stage entrepreneurship indices and average growth of GDP per capita, no significant relationship was found. Moreover, some correlation coefficients indicated positive and some indicated negative signs of a relationship, thus providing no support for Hypothesis 2. These results were generally consistent with some previous findings of studies, which investigated the commonly assumed relationship that innovation and entrepreneurship were positively related to each other, and that both of them drove economic growth. However in their study, Anokhin and Wincent (2012) found that this was not always true. They explored the joint effect of country-level start-up entrepreneurship rates, relative wealth (GDP per capita) and R&D per capita on country-level patents and total factor productivity (TFP). Their results suggested that the quality and impact of entrepreneurial activity could vary significantly across countries. High start-up rates and high-aspiration-entrepreneurs contributed positively to country-level innovation and Total Factor Productivity only when the right framework conditions were in place. The important point was that policy investments in new firm creation alone would not advance economic growth; they would have to be accompanied by investments in education and innovation in general. The main conclusion was that entrepreneurship could support economic growth, but only as part of a broader policy toolset.

Table 2 Countries' ranks according to GDP per capita and GCI scores

Country	Av. GDP per capita EU28 = 100 (%)	Av. GDP per capita EU28 = 100 (ranks)	Av. GDP per capita EU28 = 100 growth (%)	Av. GDP per capita EU28 = 100 growth (ranks)	Av. GCI (scores)	Av. GCI (ranks)	Av. GCI growth (%)	Av. GCI growth (ranks)
Bulgaria	42.1	11	3.36	5	4.19	10	1.61	2
Croatia	60.9	7	0.60	12	4.07	12	0.05	9
Czech Republic	80.6	2	0.30	13	4.54	2	−0.35	12
Estonia	66.4	4	2.75	9	4.64	1	0.01	11
Hungary	64.6	5	0.71	11	4.27	7	0.41	6
Latvia	56.5	9	4.12	3	4.27	6	0.79	4
Lithuania	62.4	6	4.13	2	4.40	4	0.39	8
Poland	58.7	8	3.27	8	4.46	3	0.40	7
Romania	46.0	10	5.05	1	4.14	11	0.82	3
Slovakia	69.4	3	3.28	7	4.20	9	−0.93	13
Slovenia	86.2	1	−0.49	14	4.20	5	−1.12	14

Sources of data: WEF (2008, 2009, 2010, 2011, 2012, 2013, 2014); Eurostat (2015) and authors' calculations
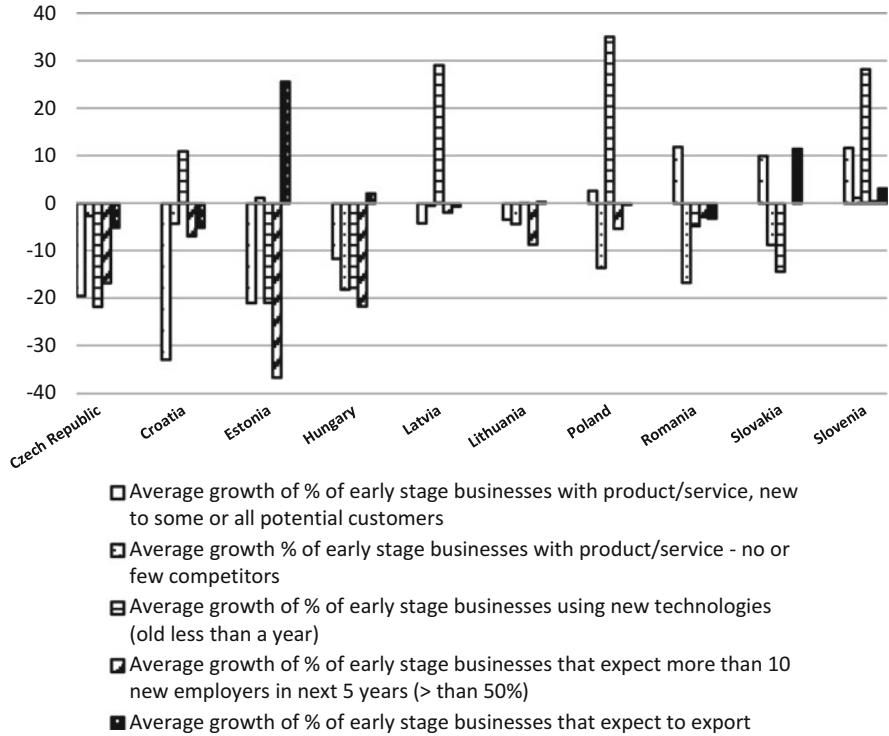
Fig. 7 Average growth of quality of early-stage entrepreneurship indicators (%, 2011–2013; for Estonia only 2012–2013). *Sources of data*: Amoros and Bosma (2014), Kelley et al. (2012), Xavier et al. (2013) and authors' calculations

Conclusion

A country's economic growth and consequently the standard of living of its population are related to many factors that are inside or outside the control of policymakers, institutions, companies and individuals. Although variously conceptualised and measured, a country's competitiveness comprises endogenous and exogenous variables of economic growth. The key goal of this chapter was to find out if a country's competitiveness and its economic growth are related. As a measure of competitiveness, we used the World Economic Forum's Global Competitiveness Index, as a measure of economic growth, however, GDP per capita was used. The research was conducted on a sample of Central and Eastern European EU Member States due to their similar political past and similar opportunities after their political transformations in the beginning of the 1990s. The observed period was partly the period from 2004 to 2013, when all of these countries became members of the EU, and partly the period from 2008, when the financial and economic crisis began.

Based on the calculations of average growth rates, determination of countries' ranks and calculations of their correlations, we supported Hypothesis 1 that the growth of a national economy's GDP per capita and the growth of a national economy's competitiveness are positively related. Similar observations were found in previous studies such as that of Dobrinsky and Havlik (2014). The findings show that particularly efficiency-driven and some transition CEE EU Member States recorded high growth of GDP per capita in the observed periods, which is accompanied by their higher competitiveness; on the other hand, some innovation-driven CEE EU Member States deteriorated in this regard. In general, each country has to emphasise the development of those competitiveness pillars that are the most important for that country's level of development. However, as all competitiveness pillars are mutually dependent, a country should not neglect the development of the others. Our research has shown main gaps in the competitiveness of each observed country and thus it can be used as an initial analytical foundation for the development of policies and managerial measures in the areas where significant changes are necessary. Some possible implications for policymakers and managers are evident from the theoretical background of our research, where each competitiveness pillar is described in detail. It is obvious that while the observed countries have established a record of growth and economic progress in the years before the global economic crisis (see Labaye et al. 2013:3), most of them need a new growth model that would enable them to finish the transition period and to fully modernise their economies. Other studies (see Gorzelak 2015:9) stress the importance of further institutional and industrial restructuring that leads to higher productivity and higher value-added segments in international markets, which would help to improve the self-funding capabilities of these economies and stimulate an endogenous growth pattern. Regarding foreign direct investment (FDI), economic policies should not only consider the quantity but also the structure of incoming FDI (ibid.:53).

We had to reject Hypothesis 2 (the growth of a national economy's GDP per capita and the growth of quality of early-stage entrepreneurial activity are related). This confirmed the findings of some previous studies, namely that entrepreneurial activity supports economic growth only as a part of a favourable broader business environment.

The key limitation of our research is that the Global Competitiveness Index is a composite indicator, composed also from proxy indicators, and according to a set methodology. Possible limitations can also be related to the short periods of observations and the small sample of observed countries.

Several extensions of our research are possible. When analysing the relationship between the growth of a national economy's GDP per capita and the growth of a national economy's competitiveness, we analysed only the composite index GCI. Future studies might go deeper into analysis of factors within each group of pillars that affect the country's competitiveness. Such analysis would be especially interesting for countries that have dramatically weakened or improved their competitiveness. Also, selection of other measures of competitiveness should be considered in subsequent studies.

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