

The Examination of the Level of Entrepreneurship in Eight Central Eastern European Countries

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Abstract: Since the start of the Global Entrepreneurship Monitor (GEM) research of 1999, the TEA index, that measures the percentage of those who are in the nascent phase of the business or owners and managers of a young firm in the 18-64 age population, has been applied as the most important indicator of entrepreneurship activity in GEM related studies. However, the general use of TEA has been widely criticized mainly because it captures just only one, though very important, aspect of entrepreneurship. Based on a newly created Complex Entrepreneurship Context index developed by Acs and Szerb (2008), I provide the analysis of the level of entrepreneurship in eight Central Eastern European countries. Based on the investigation of the three sub-indexes and 14 indicators of entrepreneurial activity, strategy and attitudes, I am providing tailor-made entrepreneurship policy suggestions for the eight CEE countries of Croatia, Czech Republic, Hungary, Latvia, Romania, Russia, Serbia, and Slovenia.

1 Introduction

Just recently, David Audretsch, one of the leading scholars in entrepreneurship research, published a book titled as “The entrepreneurial society” (Audretsch 2007). In this summary book, partially based on own personal examples and experiences, Audretsch provides a comprehensive view and explanation how America has become the leading force in the globalized world moving from the managed economy to the entrepreneurial society. Several other studies reinforce that entrepreneurship is a major source of economic growth, new job creation and innovation (Acs 1996, Acs and Audretsch 1990, Acs et al 1999, Acs and Szerb 2007). At the same time, when the European Union (EU) experienced low growth rates and continuously high unemployment, the American economy was booming. This success created a second “golden age” in the history of the United States, making attractive for other countries to follow the American example (Acs and Phillips 2002, Thomas and Mueller 2000, Fu-Lai Yu 1998). No doubt that the EU has no other choice but to enhance the level of entrepreneurship.

Should this way be followed by the former Central-Eastern European (CEE) socialist countries? Could these countries do that at all? Under the pressure to raise the standard of living to the level of Germany or Austria in a relatively short time period, one group of CEE countries rely mainly on foreign direct investment (FDI). While FDI has several advantages, without the involvement of the domestic entrepreneurial forces, long term development cannot be achieved. Just giving an example: the amount of FDI was about the same in Ireland and Hungary in the mid 1990s, but in ten years, from a low developed country, Ireland became the leading economy in the European Union. At the same time Hungary, a former leading country in economic transition, after a few years of relatively high growth period, basically felt to stagnation. Of course, bad economic and fiscal policies can be blamed, but the basic problem is that Hungary ignored what Ireland learnt: that is the development of the local entrepreneurial sector and the foundation of the entrepreneurial society (Acs et al 2007). The Irish miracle did not happen from one day to another: The creation of the entrepreneurial society lasted for twenty years and involved the attraction of knowledge-based FDI, the support of new venture creation, the restructuring of the education system as well as the wise use of the European Union funds. Hungary's entrepreneurial activity is low and the cultural embeddings of entrepreneurship is even lower than other former socialist countries (Tominc and Rebernik 2007).

In order to provide a suitable way of entrepreneurship development for the CEE countries, a careful examination of the present situation is necessary. In the next, based on the 2006-2007 data from the Global Entrepreneurship Monitor, I review and investigate the level entrepreneurship of eight CEE countries (Croatia, Czech Republic, Hungary, Latvia, Romania, Russia, Serbia, Slovenia). In order to conduct the analysis I apply a newly developed Complex Entrepreneurship Context (CEC) index that is based on 26 variables, 14 indicators, and three sub-indexes of entrepreneurial activity, entrepreneurial strategy and entrepreneurial attitudes (Acs and Szerb 2008). For proper and tailor-made policy recommendation I apply 14 indicators. The contextual feature of entrepreneurship of different countries is provided by the configuration approach.

2 The Level of Entrepreneurship of the CEE Countries, Compared Internationally

Entrepreneurship in the former socialist, planned economies is a relatively new concept. While some forms of small business mainly in the services as craftsmanship or in agriculture did exist, private business ownership was basically banned or at the best tolerated for a long time. Larger scale private business activity or the employment over a few persons was forbidden because it would have endangered the planning principle as well as the egalitarian idea of the

ruling communist parties by causing unaccepted wealth differences. Even if the shortage economy provided a plenty of good opportunities mainly in the household consumption sector, resources were not allowed to exploit these opportunities. As another consequence, an important aspect of entrepreneurship, risk taking could not evolve. For example, Hungarian business owners are willing to work hard for long hours, but they think twice to risk their own money. Even today, most CEE “entrepreneurs” expect the state to provide financial allowances to private businesses and to decrease the financial risk of individual decision making. Paternalism is further strengthened by politicians and populists.

From the banned or the tolerated category, small business ownership became a wishful and supported concept almost from one day to another when the Berlin wall fell down. The artificial legal barriers of new venture creation were removed and millions of private businesses started to flourish (Kornai 1992). Shortages disappeared quickly and new businesses played an important market supplementation role in the early years of economic transition (Tyson et al. 1994). Privatization, especially the small scale one, helped to strengthen private ownership too. By examining the performance of the transitional countries Ovaska and Sobel (2004) found that private enterprises and new venture creation was a major determinant of economic growth after 1995. While the leading countries the Czech Republic, Hungary or Poland proved to be successful in new venture creation and support, another essential factor for further development, innovation was a weak point of entrepreneurial activity fostering.

The situation changed in the 2000s. By that time, the main transformation changes to set up the basic institutions of a market economy were over, economies were liberalized, and the wave of privatization ended. For most of the CEE countries, the European Union accession became the primary aim of economic policy. However, this accession required a further opening of their economy. Under the increased pressure of foreign competition and saturated domestic markets new venture creation slowed down and the weaknesses of the quality related features of entrepreneurship become more prevailed.

Before going into details about the level of entrepreneurship of the CEE countries, we should define entrepreneurship. While entrepreneurship has become an emerging field in business and economic research over the last three decades, there is still a disagreement amongst scholars even about the definition and the conceptualization of entrepreneurship (Gartner 1989, Low and Macmillan 1988, Shane and Ventakamaran 2000, Ucbasaran et al 2001). While early theory development focused to identify a single factor of entrepreneurship - that is particularly true for the entrepreneurial trait theory (see e.g. Chell et al 1991) – recent developments are more multidimensional considering several aspects of entrepreneurship (Davidsson and Wiklund 2001, Timmons 1999, Wiklund and Shepherd 2005). According to Wennekers and Thurik (1999) entrepreneurship has remained a “dim” or at best, a multidimensional concept. As a consequence,

several directions of research exist. Moreover, there is a lack of internationally comparable data and empirical research.

It was in 1999, when the Global Entrepreneurship Monitor (GEM) research started aiming to fulfill the increasing need of reliable internationally comparable entrepreneurial data. Comparability requires a uniform application of the concept of entrepreneurship. GEM defines entrepreneurship as "any attempt at new business or venture creation, such as self employment, a new business organization, or the expansion of an existing business organization by an individual, teams of individuals, or established businesses" (Reynolds et al 2001). Based on this definition, GEM derives an entrepreneurial indicator, the Total Entrepreneurial Activity Index now called Early Phase Entrepreneurial Activity Index (TEA), as the proportion of individuals aged between 18 and 64 that are either in the process of starting a nascent business or are the owner-managers of a new operating business that is less than 42 months old (Minniti et al 2005). This index is then calculated for each country independently. While this definition is easy to operationalize and examine over different countries, and early phase businesses play a very important role in the economy it should be emphasized that the TEA index does not captures all aspects of entrepreneurship (Hindle, 2006). The most problematic point with TEA is that developing countries lead the rank of nations implying that Peru, Thailand or Uganda is more entrepreneurial than the US, Australia or the Scandinavian countries.

Over years there has been several attempts to improve the TEA index, involving the distinction making between higher quality opportunity and necessity start-up motivations (Reynolds et al 2002) or the explanation of the TEA in terms of economic development (Acs et al 2005, Acs 2006). The recent GEM executive report (Bosma et al 2008) is a clear indication to deviate form the level related TEA index: It discusses about other quality related characteristics of the early phase activity such as innovation, high growth potential, business discontinuation and the environmental factors of entrepreneurship perception. However, even this report could not handle the contradiction between the pressure to construct a one number super entrepreneurship index and the incapability of TEA to meet with this requirement. This challenge called the attention of Acs and Szerb (2008) to create a more applicable and acceptable index. The new approach broke away the previous level related approach and defined entrepreneurship as a dynamic interaction of entrepreneurial activity, entrepreneurial strategy and entrepreneurial attitudes. The new superior normalized CEC index involves 26 variables, 14 indicators and three sub-indexes. In the following analysis I rely on this index.

A proper application of the CEC index is to view it in terms of economic development, measured by the per capita purchasing power parity GDP that is shown in Figure 1.

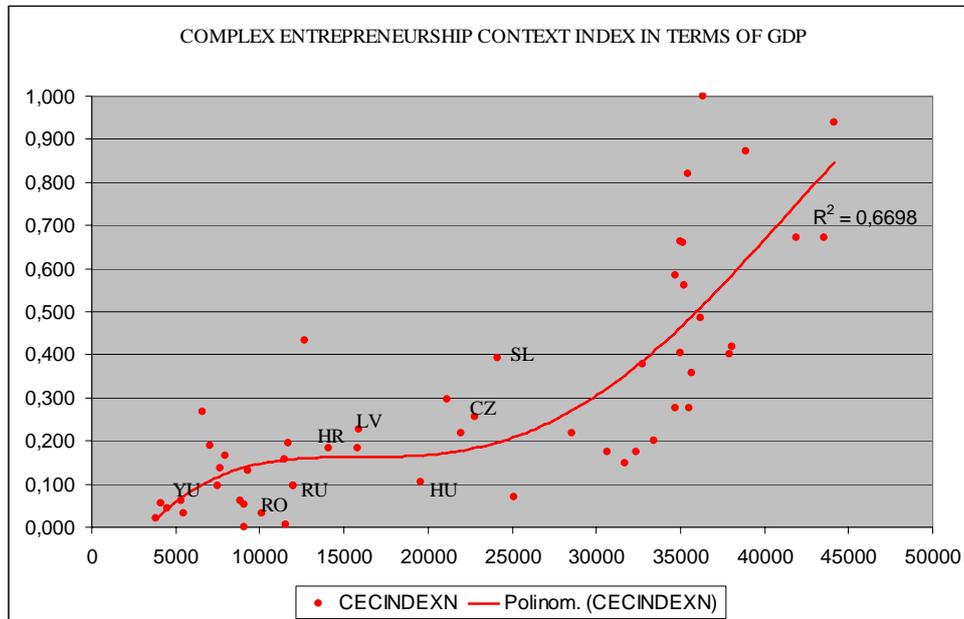


Figure 1

The CEC index of the GEM countries in 2065-2007 in terms of GDP PPP

It is clear from Figure 1, and entrepreneurship and economic development is closely related, the fourth-degree polynomial fit of goodness is 0,67. The S-shape of the curve is in along the way of implication of the endogenous growth theory: Entrepreneurship increases first at a decreasing rate as a country moves to the managed economy then remains relatively stable. Over about \$22,000 entrepreneurship increases at an increasing rate as the country is taking steps from the innovation imitation dominated managerial economy to the innovation creation entrepreneurial economy (Acs and Szerb 2008). The examined CEE countries' entrepreneurship level fits mainly to their economic development, however, there are substantial variations can be observed. Serbia is on the trend line, Romania, Russia and Hungary are below the trend, while Latvia, the Czech Republic and Slovenia are above the trend. The best performer is Slovenia implying that they are already on a good way to move to the entrepreneurial economy. However, the examination of the CEC index does not provide us the necessary details to view the strengths and the weaknesses of these countries; therefore we should look at the building blocks of the CEC index.

3 The Entrepreneurial Sub-Indexes and Indicators in Configuration

The CEC index is the first dynamic rank-index that involves not only the different indicators but also takes into consideration the mutual interdependencies of the indicators. The basis of the analysis is provided by the configuration theory. Following Miller's (1987, 1996), Dess et al (1993) defines configurations as they "...represents a number of specific and separate attributes which are meaningful collectively rather than individually... Configurations are finite in number and represent a unique, tightly integrated, and therefore relatively long-lived set of dynamics" (pp. 775-776). An innovative application of the configuration theory to entrepreneurship is presented by Korunka et al (2003).

Here, the optimum configurations here are defined as the not too different levels of the entrepreneurship variables in a particular country. The higher the variance of different entrepreneurial features in that particular country, the more problematic it is to be able to exploit the advantage of the high entrepreneurial feature. It means that high level of entrepreneurship activity should come together with high level of strategy and high level of attitudes. Bad performance in one feature can have a negative effect on other better features. Therefore I apply the Penalizing for Bottleneck Method (PBM) as in Acs and Szerb (2008) for adjusting the higher level of indicators to a lower level according to the following equation:

$$x_{i,j} = \min y_i(j) + \ln(1 + y_{i,j} - \min y_i(j)) \quad (\text{equation 1})$$

where $x_{i,j}$ is the modified, after penalty value of the entrepreneurship feature k of country i

$y_{i,k}$ is the normalized value of the original entrepreneurship feature k of country i

$i = 1, 2, \dots, m$, (the number of countries)

$j = 1, 2, \dots, n$ (the number of entrepreneurial features)

$x_{i,j} = 0$ if the lowest value is 0, and $x_{i,j} = \ln 2 = 0,693$ if the difference is the maximum 1, and this is the largest penalty a country can have.

The entrepreneurial activity (EAC) sub-index consists of the following elements, called indicators:

- TEADOINGBUS – is the percentage of the population who is a nascent entrepreneur or owns and manages a baby businesses (TEA) multiplied with the normalized value of the "Ease of doing business" rank.
- TEAEDUCS – The percentage of TEA businesses established by entrepreneurs with at least post secondary education degree.
- OPPERC - The percentage of opportunity entrepreneurship in TEA.

- **CHURNING** – The churning effect combines the entry of the new and the exit of the businesses as compared to the total business activity: (TEA – the percentage of the population discontinued business)/the percentage of those who have any business ownership (start-up and established business) in the population.

Altogether six variables serve to build the EAC index taking into consideration the bottleneck problem. All are from the original GEM data except the Ease of doing business that is from the World Bank survey.

The entrepreneurial strategy EST sub-index involves the following indicators

- **NEWPRODCOMP** (product innovation) - is the percentage of TEA businesses where product new to at least some customers multiplied with the level of competition, as the percentage of TEA businesses where not too many competitors offer the same product.
- **TECHGERD** (Technology innovation) – is the percentage of TEA businesses where technology is less than 5 year old multiplied with R&D% of GDP (GERD).
- **HIGHGROW** Percentage of high-growth businesses in TEA (employing 10+ persons and over 50% growth in 5 years).
- **INTERNAT** – Internationalization measure, the percentage of TEA businesses exporting at least 1% of product multiplied by the percentages of TEA businesses that are in the medium or high tech sector.
- **FINANCE** - A combined finance indicator of the availability of formal and informal venture capital in a country.

Altogether ten variables are applied to construct the EST sub-index. All data are from the GEM Master data set except two important indicators: The GERD (Research & Development as a percentage of GDP) and the venture capital availability are originated from UNESCO and the World Economic Forum, respectively.

The entrepreneurial attitudes (EAC) sub-index contains the following five indicators:

- **OPPORTPOT** – opportunity perception potential: Percentage of population seeing good opportunity multiplied with the per capita GDP.
- **STARTUPSK** – start-up skill possession: Percentage of population having proper start-up skills multiplied by the percentage of the proper age population enrolled in post secondary education (World Bank).
- **NONFEAR** - Percentage of population not having fear of failure to start a business.

- KNOWENTNET – networking potential: The percentage of the population knowing an entrepreneur personally multiplied with the Network readiness index 2006-07 reported by World Economic Forum.
- CARSTATCOR – The average percentage of population who say that entrepreneurship is good career choice and high status multiplied with the Corruption Perception Index (Transparency International).

Altogether ten variables are used to construct EAT, and four of them are from outside GEM resources: GDP PPP and tertiary education enrollment variables are from World Bank, Network readiness index is from the World Economic Forum, and the Corruption Perception Index is from the Transparency International.

The further analysis of the eight CEE countries is based on the 14 indicators and the three sub-indexes.

4 The Examination of the Three Sub-Indexes and Indicators of the CEE Countries

In this part of the paper, I am focusing on the detailed analysis of the sub-indexes and indicators. The aim of this investigation is to show a suitable way of entrepreneurship development for the eight CEE countries, and to make some policy suggestions. All the indicators as well as the sub-indexes are normalized over the 53 countries in the data set: 1 is the highest and 0 is the lowest value. Here, only the eight CEE country values are reported.

Figure 2 shows the EAC sub-index and the four indicators.

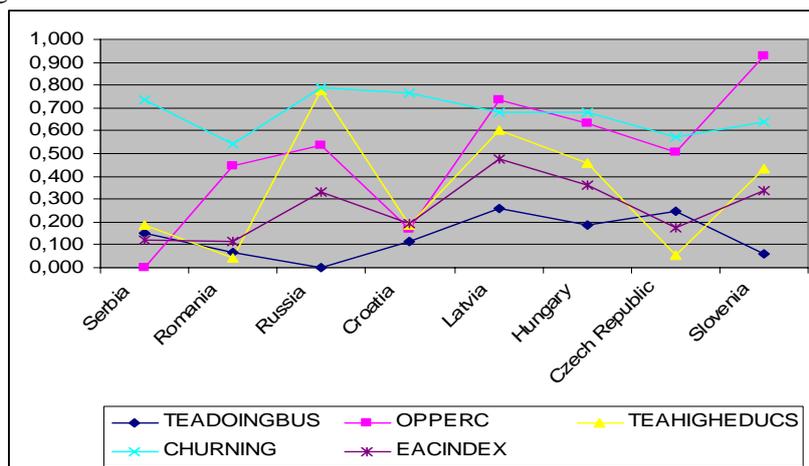


Figure 2

The EAC sub-index and its four indicators in the CEE countries

It is clear, that the indicator values vary significantly both over the countries and within a particular country. The new business set-up variable TEADOINGBUS has generally the lowest value that is consistent with the generally low value of TEA in these countries. The CHURNING variable that is a measure of the business stability as well as the potential push of the competitive forces on existing businesses shows that the performance of the CEE countries are relatively good in this category. Two indicators, OPPERC and TEAHIGHEDUCS serve to examine the quality context of the start-ups, namely the opportunity start-ups motives and those start-ups that are established by highly-educated entrepreneurs. The performances of Serbia, Romania and Croatia imply that mainly necessity motivated, lower educated start-ups dominate in these countries. Latvia and Hungary are relatively good performers, while the Czech Republic has a problem with highly-educated start-ups. Whereas Slovenia's TEA is low, the quality related indicators are good: In terms of opportunity motives Slovenia is the best in the CEE country group. The variance of the EAC sub-index over the countries is much lower than the indicator variances. Latvia performance is the best, about half compared to the leader Australia, followed by Hungary, Slovenia and Russia. The Czech Republic and Croatia is in the middle and Serbia and Romania are at the bottom of the ranking.

Figure 3, below represents the level of entrepreneurial strategy.

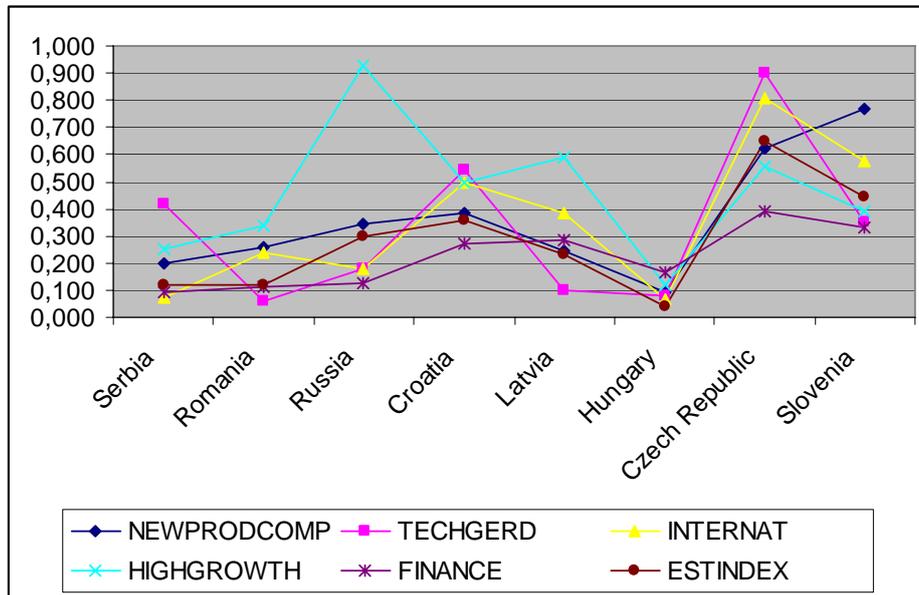


Figure 3

The EST sub-index and its five indicators in the CEE countries

The variation of the strategy related indicators within the countries is much less than the variances in the activity related indicators. However, the differences amongst the countries is very high: Hungary's performance is the worst, 50th position in the overall 53 countries, while the Czech Republic has an outstanding performance leading in the CEE country group and possessing the 5th place in the overall rank. Slovenia's position fits well to its development and the same is true for Croatia, Russia and Latvia. A note that the percentage of high growth businesses is extremely high in Russia, but it is not really associated with high performances in other strategy related indicators of innovation, internationalization or finance. While Hungary is extremely weak in every strategy related indicators, other countries have some bottlenecks too. Serbia is weak in internationalization that is associated with the long embargo, Russia should progress in finance and internationalization, Romania, Latvia and Slovenia should improve in technology innovation, and there is relatively few high growth businesses in the Czech Republic.

Finally, the entrepreneurial attitudes are examined according to Figure 4.

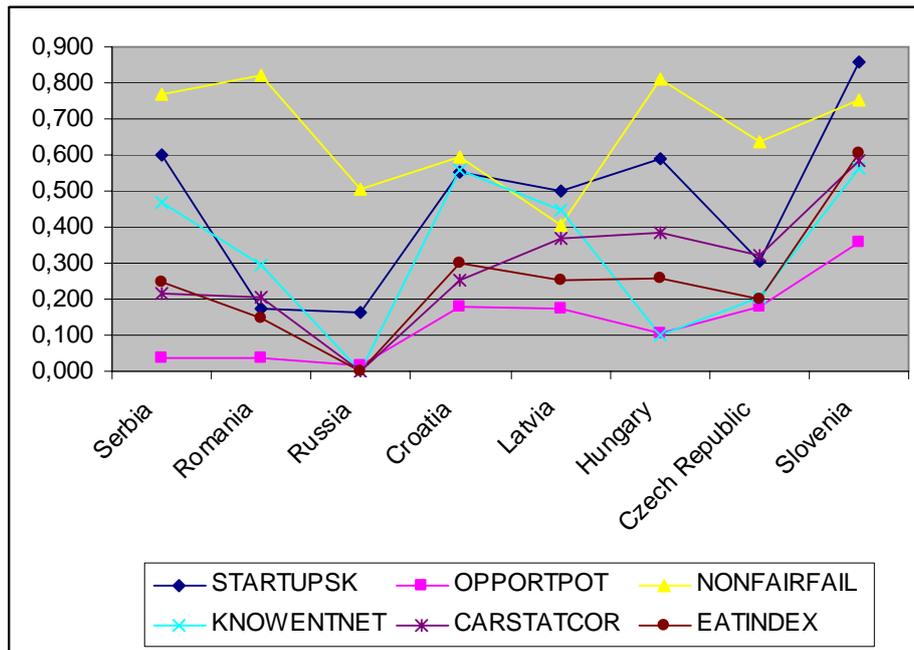


Figure 4

The EAT sub-index and its five indicators in the CEE countries

While the activity and the strategy indicators involved the characteristics of the start-ups and baby businesses, the attitudes include the whole country population position toward entrepreneurship involving skills, opportunity perception, fear of business failure as well as the support of culture and networking potential.

Although most people in the CEE region, excluding Latvia, do not fear about the bankruptcy of business start-up, it is a problem, that not too many people see good opportunities in the region they live. The combination of start-up skills and the associated education seems to be satisfactory, or even higher than the development, in Serbia, Croatia, Latvia, Hungary and Slovenia, while it is low in Romania, Russia and Czech Republic. The networking potential varies greatly over the countries, high in Serbia, Croatia, Latvia and Slovenia, but low in Romania, Russia, Hungary and the Czech Republic. Supporting culture toward entrepreneurship is generally low in the whole region except in Slovenia. Moreover, the overall performance of Slovenia seems to be very good, but all former Yugoslavian countries Serbia and Croatia performs better than the average. While the Czech Republic performed very well in the strategy it is much worse in the attitudes implying that it is not enough fuel to feed entrepreneurship.

Conclusion and Policy Recommendation

Entrepreneurship is a major force of growth and economic development, however different entrepreneurship contextual configurations fit to the different levels of economic development. The examined CEE countries are mainly belong to the developing country group except Serbia that has significantly lower GDP than the other countries. While the level of entrepreneurship, measured by the CEC index, fits well to the economic development of these CEE countries, substantial variations are noticed. The best performer is Slovenia, while Romania, Russia and Hungary are well below the development implied trend-line of entrepreneurship.

In the third part of the paper I provide the theoretical background of the entrepreneurship index and its sub-indexes and indicators. Due to the novel dynamic index building technique it is possible not just to examine the weak and the strong points of a particular country entrepreneurship performance, but also to provide tailor made policy recommendations. In the forth part of the paper, I am presenting the analysis of the three sub-indexes of entrepreneurial activity, strategy and attitudes and of 14 indicators. Considering the best performer of a particular entrepreneurial indicator of the 53 countries in the whole sample as a benchmark it is clear, that every examined country have some weaknesses. Generally CEE countries have a problem with the low level of start-ups in the activity, under financing in the strategy and opportunity perception in the attitudes.

In the following I am making some policy suggestions on a country basis:

- Serbia's overall level of entrepreneurship is in accordance with the low level of its economic development. The entrepreneurial activity of Serbia is low; most start-ups are because of necessity motives, so improving opportunity entrepreneurship can be one focus of economic policy. The entrepreneurial strategy of Serbia is balanced but on a low level. The weakest point of strategy is the internationalization that is probably associated with the long lasting embargo of Serbia. Entrepreneurial finance is also on a low level.

Serbia's performance is relatively the best in attitudes, but opportunity recognition and weak cultural support could prevent to take advantage of the proper skills, networking and risk attitudes.

- Romania's level of entrepreneurship is the lowest in the examined CEE countries. The low level of TEA as well as the negative attitude of the educated people toward entrepreneurship undermines the relatively good position in opportunity motives and churning. The low level of technology innovation and R&D is the weakest point of the strategy. Moreover, finance should also require further development. The lack of opportunity perception as well as proper start-up skills cause the low performance in the case of attitudes, while networking and risk consideration are the strong points of Romania. Altogether, Romanian entrepreneurship policy should focus on fostering highly educated, high tech start-ups and should improve the opportunity perception of the population.
- Russia is the country of extremes. While Russia is good in opportunity motivated and highly educated start-ups and churning, it is only a few people who consider business launching. In the case of strategy, Russia is very good in high growth businesses, but other elements of the strategy including finance, internationalization and technology innovation are lacking. The entrepreneurial attitudes of the population are very weak except risk consideration. Altogether it seems that the Russian population has no really positive attitudes toward entrepreneurship, and new business start-up is just in a mind of a few educated people who can reach generally high growth even without being to innovative or possessing proper financial tools. New start-up enhancement as well as improved innovation are the key elements of Russian entrepreneurship policy.
- Croatia's entrepreneurial performance is above the trend line. The country has the worst performance in the activity: more high educated opportunity motivated start-ups are required. The entrepreneurial strategy of Croatian businesses seems to be relatively balanced. While finance should definitely be improved upon, the level of technology development is over the expectation. In the case of attitudes, opportunity perception and cultural support are the weakest points.
- Latvia, a former USSR state, performs relatively well. Latvia is the regional leader in activity. While highly educated opportunity start-ups seems to be fine the low level of start-ups, similar to Russia, is problematic. In the case of strategy, technology innovation is the weakest point that could undermine high growth potential. Opportunity perception is the most problematic in the case of the attitudes.
- Hungary's overall performance is not satisfactory; we are below the trend-line. The activity related factors seems relatively good except the low level of start-ups, but all factors of the strategy are critically low, so product,

technology innovation as well as internationalization and high growth should be improved. Relatively finance is the best in the strategy indicators. Attitudes show high variations, relatively good in risk and start-up skills but critically low in the cases of opportunity perception and networking. Altogether, Hungary's entrepreneurship policy should focus on strategy improvement.

- The Czech Republic performs relatively well. In the case of activity high education start-up is the problematic point besides the level of start-up. The strategy indicators of the Czech Republic is excellent except finance that has the lowest value. In the case of attitudes opportunity recognition, start-up skills, networking and supporting culture are all low. Therefore, the Czech Republic cannot take advantage on the good strategy formulation, because it is not supported properly by educated start-ups. Moreover, the general attitudes of the population toward entrepreneurship are not really good. While start-up activity can be improved by policy tools the enhancement of the attitudes requires long lasting commitment toward entrepreneurship.
- Finally, Slovenia seems to have the most balanced entrepreneurship context position compared to the other CEE countries. The improvement of the low level of entrepreneurship activity, especially that of start-ups can be the main task of Slovenian policy makers. Finance and technology innovations are the weakest points in the strategy. Attitudes are the strong point of Slovenia, except the opportunity perception potential that should be improved upon.

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L. Szerb

The Examination of the Level of Entrepreneurship in Eight Central Eastern European Countries

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