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Performance of Entrepreneurship and its Effects on Economic Development: The Case of Romania and Poland

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Abstract: The entrepreneurship is significant for stimulating the economic development of countries. The policy makers from countries around the world joined forces, in recent years, to find the appropriate measures that can stimulate and support entrepreneurship. Moreover, given that the economic turmoil caused in recent years by various crises (financial, now health) have significantly affected the business environment and the economies of all countries, the attention of decision makers but also of researchers for identifying measures to help entrepreneurship has increased. In this context, our paper analysis the effects the relation between entrepreneurial performance and economic development for two countries: Romania and Poland, focusing on a comparative assessment. We try to identify if increased entrepreneurial performance could improve the economies of the two countries considered. For the empirical analysis we use two dependent variables as proxy for the level of economic development, and a set of eight indicators that measure the entrepreneurial performance. The analysis comprises in graphical, comparative and also panel-data estimation techniques and targets the period between 2008 and 2016. Our results show that entrepreneurial performance can sustain and stimulate competitiveness of the two considered countries but also their economic growth. Our results could be of interest to decision makers from Romania and Poland that intend to increase economic development through the entrepreneurial sector.

Keywords: performance; economic growth; panel data

JEL Classification: C33; L26

1. Introduction

The development of economies and ranking them in the most advantageous positions compared to other countries at the international level in terms of competitiveness and the level of economic growth is a major concern at present for decision makers. Moreover, researchers are concerned with identifying ways in which economic growth can be achieved and have turned their attention to entrepreneurship as a factor in stimulating and sustaining the economy. All this because, entrepreneurship is seen as a significant influencing factor for economic development and growth, by the fact that it creates new jobs and stimulates competition.

Thus, starting from this idea, in this paper we set out to analyse the relations between entrepreneurial performance and economic development in the case of two countries, from Central and Eastern Europe, developing countries, Romania and Poland. For measuring the entrepreneurial performance, we resort

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to a set of indicators used by OECD-Eurostat Entrepreneurship Indicators Program (OECD 2010). For measuring the economic development of the EU countries we have considered two indicators: the national competitiveness and the economic growth. We planned to carry out a comparative analysis between the two countries included in the study, by graphical and numerical methods. On the other hand, we also consider an empirical analysis that involves multiple linear regression analysis adapted to panel data. The analysis period is nine years (2008-2016).

This paper is divided into several parts, in the first part we consider the analysis of the main studies which address the main issue of this paper, in the second part we describe the methodology involved by the econometric analysis. The third section focuses on describing the main results and discusses them with special emphasis on comparison between countries. Our analysis ends with a set of concluding remarks.

2. Short Review of the Theoretical Context

Entrepreneurship is seen in the literature as being the heart of innovation, job creation, productivity growth, economic growth and competitiveness (Wennekers & Thurik, 1999; Audretsch & Keilbach, 2004; Thurik & Wennekers, 2004; Grilo & Thurik, 2004; Amorós et al. 2013) motives that supports its inclusion between the key policy issues for a country (Wennekers et al., 2010) and also between main directions of the agenda of European Commission.

However, we must pay attention to the fact that not only the size of the business base matters for an economy, that is, not only how many entrepreneurs are on the market is important, but, moreover, the quality of these entrepreneurs matters. Therefore, we focus our attention in this study more on indicators that measure the quality or performance of entrepreneurship and their effects on the economy. Therefore, the literature shows that the entry of new firms on the market can generate positive significant effects on the economy (Porter, 1990; van Steel & Storey, 2002; Fainshmid et al., 2016) but can also have negative effects (Greene et al., 2004) precisely because the quality matters more than the quantity of new enterprises. The same happens in the case of companies leaving the market, which can generate positive effects if those who leave are non-performing companies, but also negative effects in cases where large companies go bankrupt, companies which offered many jobs or which had important turnovers. Survival rates can also be indicators that measure performance, because usually resist on the market the high-performing companies, which face competition.

Starting from all these ideas in the following we will move on to the empirical analysis of the sample data but also to the discussion of the obtained results.

3. Data and Methods

The main purpose of the econometric investigation that we carry on in the following is to identify the relation between entrepreneurial performance and economic development for two countries with accents on comparing the situation for these countries. We use a sample of two Central and Eastern European countries, Romania and Poland and a period of ten years, 2008-2016. This choice was determined by the availability of data.

As dependent variables of our models we consider two indicators that are used often as proxies to express the economic development of countries: The Global competitiveness index and the Gross Domestic

Product (GDP) per capita growth. The data for these variables were gathered from the World Bank's data bases (TC data 360 and World Development Indicators).

The independent variables are in fact a set of indicators that are measuring the performance of entrepreneurship. The data for these variables is obtained from Eurostat data base. The eight indicators considered are:

- Birth rate which is calculated as the number of firm births in the reference year reported to the number of active firms (%);

- Death rate which is calculated as the number of firm deaths in the reference year reported to the number of active firms (%);

- Net business population growth which is calculated as the increase in the number of the firms in the reference year reported to previous year (%);

- Survival rate at 3 years, calculated as the number of firms in the reference year that were established 3 years ago and survived reported to the number of firms that were established 3 years ago (%);

- Employment share of 3-year-old enterprises, calculated as the number of persons employed in firms that were established 3 years ago reported to the total number of persons employed in the reference year (%);

- 3-year-old enterprises' share of the business population, calculated as the number of surviving firms established 3 years ago reported to the total number of firms in the reference year (%);

- Average size of 3-year old enterprises, calculated as number of persons employed in firms aged 3 years reported to the number of surviving firms established 3 years ago (number);

Starting from the main goal pursued in our paper, we formulated a series of hypotheses that we set out to test in the empirical analyses.

Hypothesis 1: The level of entrepreneurial performance depends on the characteristics of the economic environment of the country

Hypothesis 2: Entrepreneurial performance has a positive influence on national competitiveness.

Hypothesis 3: Entrepreneurial performance has a positive influence on economic growth.

To test these hypotheses but also to achieve the main objective of our paper we used both graphical methods, comparative methods and econometric methods. The graphical methods used help us to better perceive the differences or similarities between the two countries considered in the analysis, but also make it easier to make comparisons. Regarding the econometric analysis, we used multiple linear regression models by adapting them to panel data models. Equation for the considered models is:

$$y_{it} = \beta_1 eperformance_{it} + \mu_{it} \ (1)$$

where: i represents the country (Romania or Poland) and t is time (from 2008 to 2016); y_{it} is the dependent variable (in our case it is in turn represented by GCI or GDP per capita growth); $eperformance_{it}$ represents the indicators measuring entrepreneurial performance; β_1 is the regression coefficient; μ_{it} the error term.

4. Discussions of the Main Results

In order to observe more clearly the evolution of the indicators considered in the analysis for measuring the economic development of the 2 countries, we made the graphical representation of their evolution. Thus, in figure 1 we notice that in the whole period considered the Global competitiveness index of Poland was above that of Romania. For both countries, the evolution of the index has been fluctuating over the period.
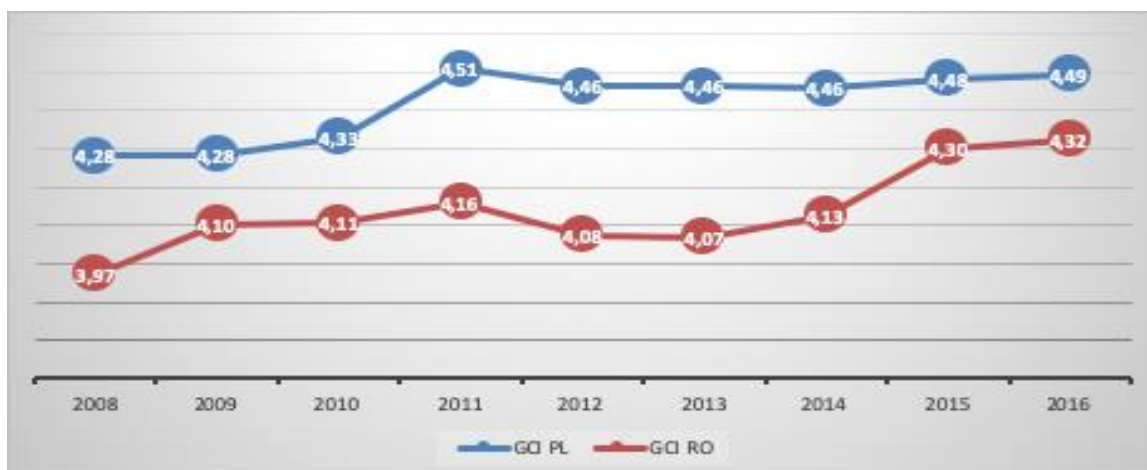

Figure 1. Comparative evolution of the Global competitiveness index for Poland and Romania, 2008-2016

Source: authors own elaboration

GDP growth per capita had the largest fluctuations in Romania, its significant reduction in 2009 highlighting the major negative effects of the financial crisis felt in this country. The recovery was slow, in 2010 still recording negative values, then starting with 2011 positive values, but they failed to reach the increase recorded in 2008. Poland also recorded a decrease in 2009 but not of the same intensity, having a return in 2010, and in 2011 even exceeding the growth at the beginning of the period.
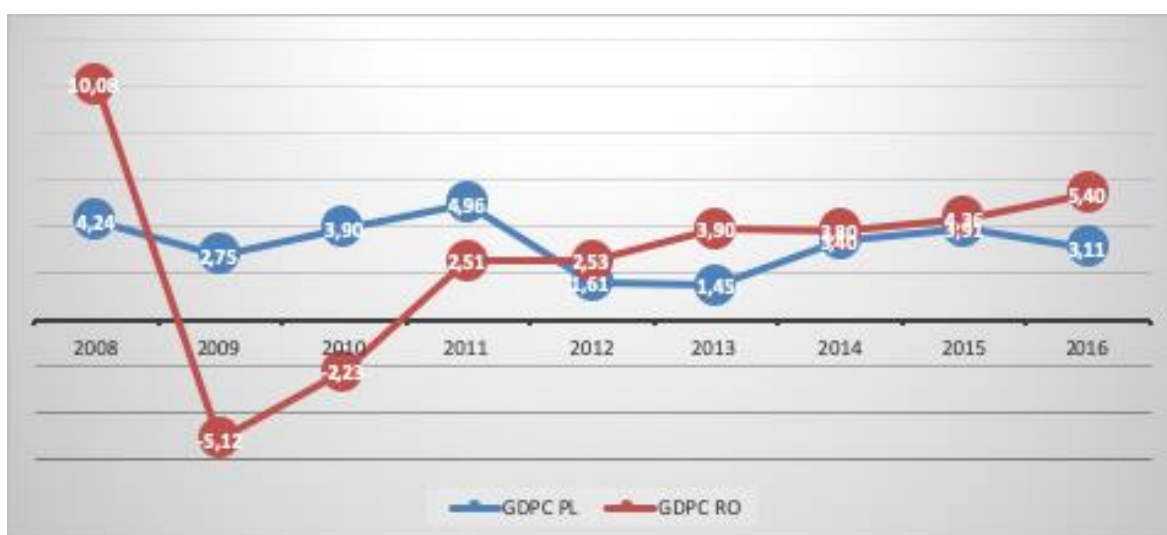

Figure 2. Comparative evolution of the Gross domestic product per capita for Poland and Romania, 2008-2016

Source: authors own elaboration

Descriptive statistics of the variables included in the empirical analysis are described in Table 1. These results show that the GCI varied between a minimum of 3.97 (in Romania, in 2008) and a maximum of 4.50 (in Poland, in 2011). On the other hand, Gross domestic product per capita growth had a higher variation between countries and in the 10 years analysed, thus, between a minimum of -5% (in Romania, in 2009) and a maximum of 10% also in Romania (in 2008). These results highlight the significant impact that the financial crisis of that period had on the Romanian economy.

Table 1. Descriptive statistics of the all the variables included

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
Global competitiveness index	4.277	4.292	4.508	3.971	0.175	18
GDP per capita growth	3.030	3.597	10.079	-5.123	3.111	18
Birth rate	12.176	12.365	15.920	8.710	1.759	18
Death rate	12.027	10.820	20.690	8.740	3.599	17
Net business population growth	3.076	1.315	35.470	-9.630	9.431	16
Survival rate at 3 years	60.725	55.900	90.550	51.990	11.366	18
Employment share of 3-year-old enterprises	3.837	3.700	5.910	3.110	0.701	18
3-year-old enterprises' share of the business population	7.120	6.720	9.850	5.150	1.360	18
Average size of 3-year old enterprises	3.215	3.070	5.330	2.090	0.898	18

Source: authors own elaboration.

Analyzing the indicators that define the independent variables, we notice that the largest variation was registered at the survival rate level, so this indicator took values between a minimum of almost 52% (in Poland, in 2016) and a maximum of almost 91% (in Romania, in 2013). Another indicator with a significant variation was net business population growth which took values between -9.5% (signifying in fact a decrease, in Romania, in 2010) and 35.4% (also Romania, in 2011). The death rate also varied between a minimum of 8% (in Romania, in 2015) and a maximum of 20% (in Romania, in 2009). All these important changes in values, sometimes even from one year to another, show that the entrepreneurial environment was subject to significant tensions during the period analyzed in both countries but more pronounced in Romania. The other variables that measure entrepreneurial performance had much smaller variations than those analyzed so far.

For identifying the differences between the two countries, we have compared the means for all the indicators included in the analysis. Table 2, emphasize that the two countries considered for the analysis registered important differences for certain categories of indicators. As regards the indicators measuring the level of economic development we observed that Poland has registered higher values for both Global competitiveness index and Gross domestic product per capita growth, thus showing that Poland has, in average, higher levels of economic development compared with Romania. Regarding the indicators that measure entrepreneurial performance, we notice that in Romania there are in average lower levels of birth rate but at the same time higher levels of death rate of the enterprises. Net business population has grown in average with almost 5% while in Poland with only 1%. Survival rates at 3 years are higher on average, in Romania by over 10% compared to Poland. Also, the percentage of young enterprises is on average slightly higher in Romania compared to Poland. The size of young enterprises is also larger in Romania compared to Poland.

Table 2. Average values of indicators by country.

Variable	Romania	Poland
Global competitiveness index	4.137	4.417
GDP per capita growth	2.803%	3.258%
Birth rate	11.781%	12.571%
Death rate	13.218%	10.686%
Net business population growth	4.960%	1.193%
Survival rate at 3 years	66.381%	55.068%
Employment share of 3-year-old enterprises	4.204%	3.471%
3-year-old enterprises' share of the business population	7.626%	6.614%
Average size of 3-year old enterprises	3.895	2.535

Source: authors own elaboration.

The results of the panel data analysis (see table 3) show that a number of indicators considered to measure the performance of entrepreneurship have significant effects on the economic development of Romania and Poland. Thus, Global competitiveness index is significantly and positively related to net business population growth and survival rate at 3 years and negatively to the size at 3 years, while GDP per capita growth is significantly and negatively related only by death rate.

The net business population growth resulted to be positively and statistically significant related to the competitiveness at national level of Romania and Poland point out that the continuous increase of the business base on the market leads to an increase in the number of competitors, motivating companies to become innovative, to apply new techniques and methods so as to face this increased competition, creating at the same time new jobs on the market. Our findings are similar with those of other studies from the literature (Wennekers & Thurik, 1999; Dejardin, 2000; Acs, 2006; Ivanović-Djukić et al. 2018).

The survival rate of start-ups, 3 years ago, has positive effects on national competitiveness. This result can usually be translated into the fact that young entrepreneurs are motivated, confident, eager for positive results and to achieve performance, so an increase in business survival rates after 3 years of establishment actually shows that these surviving businesses are qualitative and performant. It is very difficult to stay alive for new companies on the market, especially considering the current economic situation and the fact that the period we analysed included the period of financial crisis but also the economic downturn that followed after this. Thus, in the period of economic turmoil, an increase in the survival rates of start-ups can only have beneficial effects on the economy and on national competitiveness.

Table 3. The relationship between entrepreneurial performance and economic development

Variables	Dependent variable - GCI	Dependent variable – GDP per capita growth
Birth rate	0.025 (0.020)	0.581 (0.466)
Death rate	0.001 (0.007)	**-0.807*** (0.126)**
Net business population growth	**0.003* (0.001)**	0.041 (0.022)
Survival rate at 3 years	**0.004** (0.001)**	-0.019 (0.039)
Employment share of 3-year-old enterprises	0.060 (0.117)	-2.438 (2.812)
3-year-old enterprises' share of the business population	-0.011 (0.047)	1.439 (1.238)
Average size of 3-year old enterprises	**-0.163* (0.071)**	1.552 (1.514)
R-squared	0.862	0.886
R-squared adjusted	0.724	0.773
F-statistic	6.256***	7.813***

Note: *, ** and *** represents significant values at 1%, 5% respectively 10%.

Source: authors own elaboration.

The negative relation resulted between the average size of 3-year old enterprises and national competitiveness can be related to the findings of other studies that show that usually increasing the size of the firm is will negatively impact their future growth (Caves, 1998). Given that the countries of analysis (Romania and Poland) are countries in transition, we can explain these results by the fact that these countries are characterized by the presence of both regulatory and financial constraints for companies that can put more pressure as enterprises grow in size and can have negative effects on their competitiveness on the market. Finally generating negative effects on the international competitiveness of the national economy. Moreover, the study realized by Bartz and Winkler (2016) showed that small firms have a relative growth advantage compared to larger firms in both stable and crisis times, and this is considered to be a flexibility advantage of small size firms.

The other indicators considered for measuring entrepreneurship performance did not result to have statistically significant effects on the Global competitiveness index.

On the other hand, when we look at the results obtained when we consider GDP per capita growth as a dependent variable, we notice that only one indicator that measures entrepreneurial performance has a significant effect on economic growth. Thus, the indicator measuring death rate is negatively related to economic growth of Romania and Poland. This result can be justified by the fact that the death of the companies represents the fact that they leave the market thus reducing the number of competitors and some companies may consider it a relaxation, and no longer feel that they have to keep their guard up to be innovative and competitive, having negative effects on overall economic growth in the general economy.

The other indicators included in the category of independent variables did not result to have statistically significant effects on the GDP per capita growth.

The results of the R squared adjusted for both of the models considered are above 70% and the models are statistically significant, because the probability associated to F statistic in below 0.05. Thus, we can affirm that 72% of the variation of GCI from Romania and Poland can be explained by the variation of

the entrepreneurial performance, and by the three indicators that we found to be statistically significant. On the other hand, 77% of the variation of GDP per capita of Romania and Poland, in the period analysed, can be explained by the variation of entrepreneurial performance, measured especially by the death rate.

5. Conclusions

Our main objective was to test the relationship between entrepreneurial performance and economic development of two countries considered to be economies in transition: Romania and Poland. We also intended to compare the entrepreneurial performance from the two countries in order to find significant differences or similarities.

Our results confirmed the three formulated hypotheses and show that increased entrepreneurial performance in an economy can stimulated its competitiveness and economic growth. The empirical results pointed out that only 3 indicators measuring entrepreneurial performance are significantly influencing the competitiveness and only one indicator the economic growth of Romania and Poland. Thus, the competitiveness is positively influenced by net business population growth and survival rate at 3 years, and negatively influenced by average size of 3 years old enterprises. The economic growth is negatively related to death rate of the firms.

Moreover, our findings point out the existence of some differences between the level of the entrepreneurial performance of Romania and Poland, and also point out the existence of different evolutions of the economic development. We have to keep in mind that the period analysed also included the period of the recent financial crisis but also the period of economic downturn that followed it, therefore we consider this analysis as actually reflecting the particularities of the relationships tested in an unstable economic environment. The results obtained could be useful for both researchers and decision makers in that it shows them how they could stimulate the competitiveness and economic growth of countries through entrepreneurship in periods of economic instability. This study complements others in the literature that emphasize the need for decision-makers in developing countries, such as Romania and Poland, to adopt measures and policies that support start-ups, stimulate innovative entrepreneurs, and encourage or even reward in some way small and medium-sized enterprises.

This analysis is a starting point for the analysis of the relationship between entrepreneurial performance and economic development, and we intend to extend this analysis by including in the sample a larger number of countries and even group them according to the stage of economic development to see if occur significant differences in the tested relationships.

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