Lecturer Ionela DUMITRU
The Faculty of Business Administration
E-mail: ionela_jianu@yahoo.com
Professor Ionut DUMITRU, PhD
E-mail: ionut.dumitru@fin.ase.ro
Faculty of Finance, Insurance, Banking and Stock Exchange
The Bucharest University of Economic Studies

ENTREPRENEURSHIP DETERMINANTS IN CENTRAL AND EASTERN EUROPE. THE CASE OF ROMANIA

Abstract. *Romania's level of entrepreneurship was in recent years one of the lowest among Central and Eastern Europe (CEE) and Baltic countries, only higher than in Hungary and Bulgaria. Based on panel data regressions, our estimations show that there are institutional factors which explain why Romania is underperforming. The successful transition economies such as Slovakia, Czech Republic and Poland seem to have almost all the necessary ingredients that are positive for entrepreneurship - regulatory quality, government effectiveness, political stability, control of corruption, voice and accountability, rule of law, and labor market flexibility. The most effective way to increase Romania's entrepreneurship level will be to improve the weaknesses we identified at the institutional level, as institutional variables are the most significant drivers for entrepreneurship based on our results, and at the same time, their week values seems to be the main explanation why Romania has a low entrepreneurial level.*

Key Words: *Entrepreneurship, Business Environment, Institutions, Regulatory quality, Rule of Law.*

JEL Classification: E02, G38, K20, L26, L51, M13

1. Introduction

It is widely accepted that entrepreneurship is an important driver of economic growth in any economy (Schumpeter 1950 and 1961, Audretsch 2007, Acs2006, Acs et al 1999, Acs and Szerb 2007).In developing economies, behavioralapproaches define a more important role for entrepreneurship in economic development (Kirzner, 1973). For transition economies, entrepreneurs are particularly important as they start businesses in sectors that did not exist or they were inefficient under communism (Berkowitz and DeJong, 2011). For the transition countries from CEE, the huge need for real convergence led to a high reliance on foreign direct investments and dependency on foreign capital inflows. However, without a much higher contribution from domestic capital and domestic entrepreneurial forces,a long term sustainable convergence cannot be achieved.

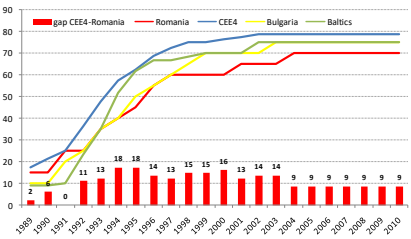
There are some similar factors influencing entrepreneurship development in transition economies (Aidis, 2003), such as economic environment, the role of

the state and business owner characteristics. The transition environment was characterized by a switch from a centrally planned economy to a market oriented one, with huge consequences on socio-economic and political conditions and on the ownership of the enterprises. Also, the absence of a business infrastructure and culture impeded on the entrepreneurship development. The state was interfering negatively in many cases with the private sector, increasing the tendency for corruption (Dallago 1997, Bartlett & Bukvic 2001) and the business owner were lacking appropriate managerial skills to manage their companies.

In the transition economies from CEE, the private sector has increased spectacularly since 1989, in part due to privatization process of former state-own enterprises (SOEs), but also due to the expansion of new private companies, the former being the most important driver not only for GDP, but also for job creation. After 1989, the artificial legal barriers for private initiative were removed and private businesses started to grow (Kornai 1992). Supply shortages disappeared suddenly and new private businesses started to play an important market role in the early years of transition (Tyson et al. 1994).

Romania was a laggard in creating the private sector compared with the CEE4 countries, the gap between Romania and the average of these countries being quite high (figure 1).As a share of the economy, the private sectors of the Czech Republic, Hungary, Poland and the Slovak Republic (CEE4) are the largest, all around 80 percent of GDP, while Romania and Latvia have the smallest private sectors, at 70 percent of GDP.

Figure 1 - Share of private sector in GDP



Source: EBRD Transition Reports. Note: Baltics: Estonia, Latvia, Lithuania

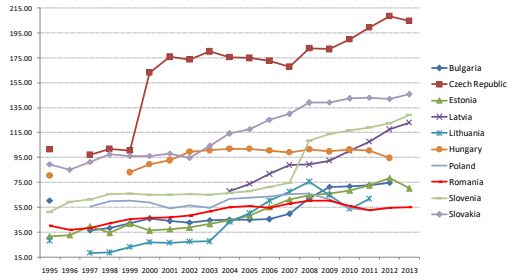
Table 1 - Necessity and opportunity driven entrepreneurship (2001-2013 average)

	Necessity-Driven Entrepreneurial Activity: Relative Prevalence	Improvement-Driven Opportunity Entrepreneurial Activity: Relative Prevalence
Czech Republic	27	59.3
Hungary	27.6	42.2
Poland	41.7	31.7
Romania	30	36.3
Slovakia	34.7	39
Slovenia	14.9	62.8
Estonia	16.5	49.5
Latvia	25.3	50
Lithuania	6	51
Developed European countries	13.4	50.9

Source: The Global Entrepreneurship Monitor database. Improvement-Driven Opportunity Entrepreneurial Activity- Percentage of those who (i) claim to be driven by opportunity as opposed to finding no other option for work; and (ii) who indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income. Necessity-Driven Entrepreneurial Activity: Percentage of those who are involved in entrepreneurship because they had no other option for work.

There are 2 main motives for an entrepreneur to set up a business. The first one is specific to developed countries and it is related to the opportunity the entrepreneur is looking for in order to become independent and to explore an idea and to implement a technology which creates value for the society. The second one is specific to developing countries and it is related to the survival and needs based motives, the entrepreneur being willing to earn the income necessary for living or to have a decent income if there are no other opportunities (a job or appropriate social benefits). The first type of motives are much more beneficial for economic growth potential. According with the Global Entrepreneurship Monitor database, in CEE countries at least twice as much entrepreneurs compared with developed European countries are driven by needs-based motives (Table 1).

Figure 2 - Development of business density



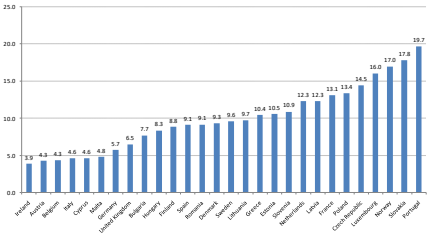
Source: Own calculations based on National Institutes of Statistics data

Note: Business density= number of active businesses (firms and private entrepreneurs) as a percentage of the country's working age population (ages 15-64), normalized by 1,000.

Entrepreneurship development has been uneven across CEE countries. CEE4 countries and Slovenia lead over Romania and Bulgaria and Baltic countries (excepting Latvia), entrepreneurship level being measured in number of active businesses (firms and private entrepreneurs) as a percentage of the country's working age population (ages 15-64), normalized by 1,000 (figure 2). Moreover, in the most recent years Romania posted the lowest density of active businesses per working age population among the CEE countries.

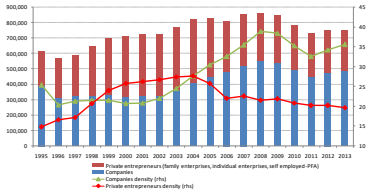
In terms of newly registered businesses, Romania had one of the lowest business density rate among the New Member States, on average being just slightly above the level from Bulgaria and Hungary during 1995-2012 period. At the European Union level, Romania had in 2012 a density of new registered businesses below the average (Figure 3).

Figure 3 - Density of new businesses in European Union countries, 2012



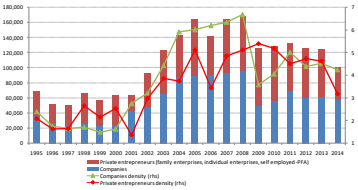
Source: Own calculations based on National Institutes of Statistics data
Note: Business density= number of new businesses as a percentage of the country's working age population (ages 15-64), normalized by 1,000.

Figure 4 - Number and density of active businessesin Romania by legal status



Source: Own calculations based on National Institute of Statistics data
Note: Business density= number of active businesses as a percentage of the country's working age population (ages 15-64), normalized by 1,000.

Figure 5 - Number and density of new businesses in Romania by legal status



Source: Own calculations based on National Institute of Statistics data
Note: Business density= number of new businesses as a percentage of the country's working age population (ages 15-64), normalized by 1,000.

In terms of active registered businesses in Romania (Figure 4), there was a significant acceleration of growth in business density starting 2001, when the perspective of the NATO membership and of the EU accession triggered more FDIs. By legal status, the driver of growth was the companies sector, the private entrepreneurs sector (family enterprises, individual enterprises, self-employed having a downward trend in terms of both number, but also in terms of density to active population. It is important to note that the international crisis started in 2008 affected significantly the number of active businesses in Romania, the adjustment of the economy leading to a decrease of 15% during 2009-2011 in number of active businesses, driven mainly by the decrease in number of companies (-18%). This cut in number of active businesses was driven by a decrease of number of annual newly registered businesses of 40% in 2014 compared with 2008 (figure 5), but also by a high incidence of insolvency[1].

[1] According to Coface (2014), Romania had the highest insolvency rate during the crisis among the New Member States countries.

2. Methodology and data

The estimation is based on econometric models with panel data. The basic framework for the panel data model we used is a regression model of the form (Greene, 2003):

$$Y_{it} = X'_{it}\,\beta + Z'_i\alpha + \varepsilon_{it}$$

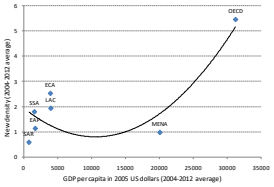
where Y - the dependent variable, X - the explanatory variables, Z is the individual effect (which comprises a constant term and a set of individual or group specific variables, which are constant over time), and ε- the error term. If Z contains only a constant term, then we have consistent and efficient estimates of the common α and slope β. If Z is unobserved and correlated with X, then the OLS estimator for β is biased and inconsistent. In this case the model is(Greene, 2003):

$$Y_{it} = X'_{it}\,\beta + \alpha_i + \varepsilon_{it}$$

where$\alpha_i = Z'_i\alpha$contains all the observable effects and this ***fixed effects*** **(**the term does not vary over time) approach takes $\alpha_i$to be a group-specific constant term in the regression model. If the unobserved individual effects are uncorrelated with the other variables, then the model is with ***random effects***.

As for the dependent variable in our estimations, due to data limitations our measure of entrepreneurship is the number of companies with limited liability (LLC), a measure which can be applied for heterogeneous legal regimes and economic systems in different countries. This is the same definition used by the World Bank's Doing Business report, LLC being also the most common business organization around the world. The source of the data for number of new registered businesses and their density to total working age population is the World Bank Doing Business. The data covers de 2004-2012 period. We include in this definition only the firms from the formal economy (due to lack of data on informal sector), newly registered (to avoid counting the inactive companies still registered), and with limited liability.

Figure 6 - Business density by geographical regions and GDP per capita



Source: World Bank data

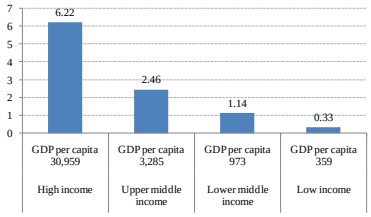
Note: MENA - Middle East and North Africa, ECA - Europe and Central Asia, LAC -Latin America and Caribbean, OECD - Member countries of the Organisation for Economic Co-operation and Development, EAP - East Asia and Pacific, SAR - South Asia, SSA - Sub-Saharan Africa.

The entry density is calculated as the number of newly registered limited-liability firms in the corresponding year as a percentage of the country's working age population (ages 15-64), normalized by 1,000.

The data on new businesses registered show significant differences by geographical regions, ranging from an entry density of 0.58 in South Asia (SAR)

countries to 5.45 in OECD countries (Figure 6).There is also a large variation in business entry density across income groups as well. The low income countries have a business density of only 0.33 companies to 1,000 working age population, and the high income countries have 6.22 business density, almost 19 times higher, with a GDP per capita higher on average by 86 times (Figure 7).

Figure 7 - Business density by income groups



Source: World Bank data
Note: 2004-2012 average GDP per capita in 2005 US dollars

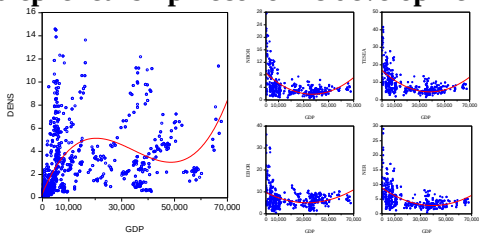
The relationship between entrepreneurship and the level of development is a long debated subject in the literature. Rostow (1960) suggested five stages of economic growth: (1) the traditional society; (2) the preconditions for take-off; (3) the take-off; (4) the drive to maturity; and (5) the age of high mass consumption. However, when former Soviet Union did not go through to the mass consumption society stage, the Rostow approach of economic growth stages became obsolete. More recently, Porter, Sachs, and McArthur (2002)identified three stages of development: (1) a factor-driven stage; (2) an efficiency-driven stage; and (3) an innovation-driven stage. They focused their theory on the innovation-driven stage, taking into account the latest changes in innovation and knowledge and their impact on economic development through higher value added.

There should be a S-shaped relationship between entrepreneurship and economic development as in the first stage entrepreneurship plays a low role in productive entrepreneurship, but it will increase in the efficiency-driven stage. When moving from the efficiency-driven stage to the innovation-driven stage, entrepreneurship has a much more important role to the economic development and then will flattenwhen the economy will become very developed.

The intersection of the S-curve with the vertical axis is explained by the observation that entrepreneurship is a resource distributed between productive, unproductive, and destructive entrepreneurship (Baumol 1990). This was investigated in empirical papers on transition countries which emphasized the presence of productive (Wennekers and Thurik, 1999) but also non-productive (related mostly to corruption) entrepreneurial businesses (Smallbone&Piasecki 1995, Roberts & Zhou 2000, Chilosi 2001). Baumol assumed the supply of entrepreneurial talent to be roughly constant, and consequently the rate of economic growth is influenced by entrepreneurship' distribution across productive,

unproductive, and destructive entrepreneurship. Moreover, this distribution is determined by the institutional setup (the incentive structure). In order to change the incentive structure we just need to strengthen institutions, and to strengthen institutions we need to fix government (Acs, 2010).

Figure 8 - Entrepreneurship - economic development relationship



Source: Own calculations
Note: DENS=new business density. GDP=GDP per capita in 2005 US dollars
NBOR - New Business Ownership Rate, EBOR - Established Business Ownership Rate, NER - Nascent Entrepreneurship Rate, TESEA - Total early-stage Entrepreneurial Activity (Global Entrepreneurship Monitor, GEM)

The S-curve suggests that in the factor-driven stage of the economy just a small part of entrepreneurship is productive (creates economic and social value). If supply of entrepreneurship is constant, then most entrepreneurs are involved in destructive entrepreneurship or unproductive entrepreneurship, such as those entrepreneurs involved in the black economy, rent seeking, and illegal businesses that destroy social and economic value.

The empirical form of the relationship between economic development and entrepreneurship depends on the measure of entrepreneurship used. There were authors finding an L-shaped (Carree et al. 2007), or a U-shaped relationship between entrepreneurship and development (Wennekers, 2010, Carree et al. 2002, Acs, Audretsch and Evans 1994). In our paper, we find a S-shaped relationship between economic development and entrepreneurship (figure 8).

We use in our estimations the following explanatory variables:

I. Control variable -*GDP* -GDP per capita, constant US dollars 2005 - source of data World Bank World Development Indicators;

II. Institutional variables:

a)*LF*- labor freedom from Heritage Foundation - a quantitative measure that considers various aspects of the legal and regulatory framework of a country's labor market, including regulations concerning minimum wages, laws inhibiting layoffs, severance requirements, and measurable regulatory restraints on hiring and hours worked.**b) *VA* -** Voice and Accountability – from Worldwide Governance Indicators (World Bank): capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.**c) *PS* -** Political Stability and Absence of Violence/Terrorism – from Worldwide Governance Indicators (World

Bank): capturing perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.**d)** ***GE*** - Government Effectiveness – from Worldwide Governance Indicators (World Bank): capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.**e)*RQ*** - Regulatory Quality – from Worldwide Governance Indicators (World Bank): capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.**f)*RL*** - Rule of Law – from Worldwide Governance Indicators (World Bank): capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.**g)*CC*** - Control of Corruption – from Worldwide Governance Indicators (World Bank): capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.**h)*TTR*** - total tax rate - from World Bank Doing Business report - measures the amount of taxes and mandatory contributions payable by businesses after accounting for allowable deductions and exemptions as a share of commercial profits. **i)** ***FF*** - fiscal freedom from Heritage Foundation - Fiscal freedom is a measure of the tax burden imposed by government.**j)** ***BF*** - business freedom from Heritage Foundation - Business freedom is an overall indicator of the efficiency of government regulation of business.**k)** ***LMF*** - labor market flexibility from World Economic Forum.**l)** ***EAL*** - ease of access to loans from World Economic Forum.**m)** ***QMS*** - quality of management schools from World Economic Forum.**n)** ***VCA*** - Venture capital availability from World Economic Forum.

III. Barriers to firm entry - we use 3 World Bank Doing Business indicators and one from Heritage: **a)*SC***- Starting Costs - all official fees and additional fees for legal and professional services involved in incorporating a business, and is measured as a percentage of the economy's income per capita.**b)*NP*** - Number of Procedures necessary to incorporate a business. **c)*T*** - Starting Days, measures the time required to start a business, which is defined as the number of days that incorporation lawyers indicate is necessary to complete all required procedures with minimum follow-up with government agencies and no extra payments.

IV. Demographic/human capital variables:

a) ***FEM***- Female share in labor force - from World Bank's database.**b)** ***SES*** - Secondary school enrollment rate - from the World Bank's database EdStats.**c)** ***SET*** -Tertiary school enrollment rate - from the World Bank's database EdStats.

V. Macroeconomic conditions

a) ***U*** - Unemployment. **b)** ***SER***- Services share in employment - from World Bank's database.**c)** ***CPI*** - Consumer price index- from World Bank's database.**d)** ***CRED*** - domestic credit provided to the private sector as a percentage of GDP-

source of data World Bank World Development Indicators. Firm creation seems to be higher in countries with higher financial intermediation.

Our dataset includes up to 1144 observations (depending on the data series) from 115 countries over the nine-year period 2004 to 2012. Based on unconditional correlations, new business density is positively correlated with GDP per capita, domestic credit provided to the private sector, labor freedom, Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption, ease of access to loans, quality of management schools, venture capital availability, business freedom, labor market flexibility, secondary and tertiary school enrolment, female share in labor force and negatively correlated with Starting Costs, Number of Procedures, Starting Days, total tax rate, services share in employment and inflation. As most of the explanatory variables are correlated with each other and to avoid multicolliniarity issues, we will estimate regressions only between the explanatory variables one by one and the dependent variable. As most of the explanatory variables are also correlated with GDP per capita, we control for GDP per capita in all regressions.

3. Estimations results

In our estimations we will test initially if a better business environment, a stronger governance and institutional sector, a better macroeconomic environment and improving demography and human capital are associated with more businesses registered.

We estimate the impact of explanatory variables on new business creation. To reduce endogeneity problems, we include in the estimations one year lag of business environment and governance variables (table 2 and table 3).

Excepting starting costs, business freedom, labor freedom, and quality of management schools, all the other explanatory variables have a statistically significant impact on business registration. All the variables have the impact on business registration as predicted by the economic theory. The most significant positive impact on firm registration comes from regulatory quality, rule of law, government effectiveness, voice and accountability, political stability, labor market flexibility, control of corruption, ease of access to loans and availability of venture capital. On the negative side, the most negative for business registration is number of procedures to start a business and number of starting days.

Table 2 - Estimation results

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Institutional variables														
Voice and accountability	0.98 [7.22]*													
Political stability		0.69 [5.58]*												
Government effectiveness			0.99 [2.14]*											
Regulatory quality				1.57 [8.46]*										
Rule of law					1.09 [6.82]*									
Control of corruption						0.62 [4.06]*								
Fiscal freedom							0.03 [1.99]**							
Business freedom								0.02 [1.55]						
Labor market flexibility									0.66 [2.74]*					
Labor freedom										0.05 [0.8]				
Total tax rate											-0.01 [-2.46]*			
Ease of access to loans												0.35 [1.66]***		
Quality of management school													0.05 [0.21]	
Venture capital availability														0.33 [1.65]***
GDP per capita	0.47 [5.80]*	0.60 [7.71]*	0.44 [3.78]*	0.11 [1.02]	0.32 [3.07]	0.55 [5.40]*	0.99 [9.78]*	0.80 [6.88]*	0.89 [8.80]*	0.89 [12.98]*	0.85 [12.75]*	0.78 [6.48]*	0.87 [6.77]*	0.78 [6.57]*
Constant	-1.57 [-2.32]**	-2.49 [-5.76]*	-1.35 [-1.44]	1.20 [1.37]	-0.27 [-0.31]	-2.24 [-2.64]*	-7.19 [-4.9]*	-5.23 [-6.80]*	-7.69 [-5.76]*	-5.34 [-8.14]*	-4.22 [-6.85]*	-4.88 [-5.49]*	-4.83 [-5.27]*	-4.82 [-5.44]*
No of observations	750	745	748	750	750	750	547	565	446	586	543	439	439	439
R- squared	0.3	0.29	0.28	0.32	0.3	0.27	0.17	0.18	0.18	0.25	0.25	0.2	0.16	0.17
Adjusted R-squared	0.3	0.28	0.27	0.31	0.29	0.27	0.17	0.18	0.17	0.24	0.25	0.19	0.16	1.16

Note: * Statistically significant at 1% confidence level. ** Statistically significant at 5% confidence level. ***Statistically significant at 10% confidence level.T-statistic in brackets [].

Table 3 - Estimation results -continued

	15	16	17	18	19	20	21	22	23	24
Barriers to firm entry										
Number of procedures	-1.11 [-5.36]*									
Starting days		-0.24 [-2.36]**								
Starting costs			-0.01 [-1.36]							
Demography										
Female share in labor force				0.05 [5.73]*						
Secondary school enrollment rate					0.07 [6.16]*					
Tertiary school enrollment rate						0.03 [3.44]*				
Macroeconomic conditions										
Unemployment							0.06 [2.64]*			
Services share in employment								-0.017 [-3.51]*		
Consumer price index									-0.13 [-4.48]*	
Credit to GDP										0.01 [3.84]*
GDP per capita	0.74 [12.15]*	0.82 [13.22]*	0.84 [14.05]*	0.91 [11.5]*	0.03 [0.16]	0.62 [4.27]*	0.94 [8.68]*	0.68 [5.63]*	1.12 [10.99]*	0.67 [7.77]*
Constant	-1.46 [-1.86]***	-3.68 [-5.20]	-4.62 [-8.78]*	-5.21 [-7.3]*	-2.75 [-3.21]*	-3.81 [-3.74]*	-5.79 [-5.34]*	-2.24 [-1.91]***	-7.34 [-7.14]*	-3.75 [-5.92]*
No of observations	717	717	717	580	469	414	490	450	586	719
R- squared	0.29	0.26	0.26	0.23	0.25	0.25	0.15	0.15	0.2	0.26
Adjusted R-squared	0.28	0.26	0.25	0.22	0.24	0.25	0.15	0.15	0.2	0.25

Note: * Statistically significant at 1% confidence level. ** Statistically significant at 5% confidence level. ***Statistically significant at 10% confidence level. T-statistic in brackets [].

Based on our results, an increase in regulatory quality in terms of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development is the most significant factor in promoting entrepreneurship. The quality of regulatory environment is of particular and top importance for businesses and for economy as a whole. This result is similar with other estimations in literature. In their firm-level analysis countries, Scarpetta et al. (2002)

confirm the importance of regulations for entrepreneurship, showing that entry rates are significantly lower with stricter administrative regulations and stricter sector specific product market regulations. Parker (2007) shows how various aspects of excessive business regulation impose costs on entrepreneurs and hamper entrepreneurial activity. In the case of rule of law, we find a significant and strong relation with business entrepreneurship, being in line with Nyström (2008), who finds a positive relation with legal structure and security of property rights. Rule of Law facilitates business entry and economic growth. Government effectiveness has also a positive and very significant impact on firm entry, capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Also, voice and accountability, which capture perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media, is positive for entrepreneurship according with our estimations. This is valid also for political stability indicator, capturing perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. As expected, the sign of labor market flexibility coefficient is also positive, consistent with earlier studies by Ardagna and Lusardi (2009) and Van Stel, Storey and Thurik (2007).A very significant factor for stimulating entrepreneurship seems to be the control of corruption. This result is similar with Aidis and Mickiewicz (2006), they arguing that corruption is damaging to entrepreneurial activity and expansion as it increases the level of uncertainty and reduces entrepreneurial gains. Aidis and Mickiewicz (2006) find evidence showing that corruption has been an important obstacle to business expansion in transition economies. Also, Desai et al.(2003) show that firm entry rates are not significantly affected by corruption in their overall sample and the Eurozone, while corruption significantly reduces entry in Central and EasternEuropean countries. Ovaska and Sobel (2004) find also corruption to significantly reduce the number of new enterprises. Also, access to financing seems to be a significant factor for entrepreneurship, as coefficients for ease of access to loans, availability of venture capital and credit to private sector are positive. The importance of credit availability for entrepreneurship has been stressed as early as in Schumpeter (1950) and Knight (1921).Empirical evidence is provided also in Ovaska and Sobel (2004), and Stephen et al. (2004). Ovaska and Sobel find credit availability to robustly increase the number of new enterprises. The impact of economic freedom variables on entrepreneurship are positive, as expected. Sound government policy together with low tax burden, higher efficiency of government regulation of business (difficulty of starting, operating, and closing a business) are significant and positively related to entrepreneurship. Our result

is similar with other empirical studies of entrepreneurship, such as Kreft&Sobel (2003) who find that economic freedom is important in explaining entrepreneurship differences across U.S. states. Education exerts a positive influence on entrepreneurship. We find that both secondary and tertiary education positively influences entrepreneurship. Also, taxes have a consistently negative sign in our estimations as taxes in general seem to negatively influence entrepreneurship.

Table 4 - Estimation results 3

Dependent Variable: DENS; Method: Panel Least Squares; Sample (adjusted): 2004 2012; Total panel (unbalanced) observations: 893				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUMMY09	-0.176177	0.092077	-1.91337	0.0561
TREND	0.061341	0.012197	5.02916	0
C	2.087539	0.067283	31.02645	0
Cross-section fixed (dummy variables)				
R-squared	0.910621	Mean dependent var		2.373742
Adjusted R-squared	0.897787	S.D. dependent var		2.743754
S.E. of regression	0.877199	Akaike info criterion		2.693622
Sum squared resid	600.1934	Schwarz criterion		3.300328
Log likelihood	-1089.702	Hannan-Quinn criter.		2.925475
F-statistic	70.95423	Durbin-Watson stat		0.9779
Prob(F-statistic)	0			

We find that countries with higher female labour participation have more entrepreneurs, similar with the findings of van Steel and all (2010). As regards macroeconomic environment, as expected, there is a positive relation between services share in employment and entrepreneurship. The impact of unemployment to entrepreneurship is positive, probably due to the "refugee" effect. However, the literature addressing the relationship between unemployment and entrepreneurship has produced ambiguous results, both positive and negative (Van Stel, Storey and Thurik (2007)). The administrative burden has a significant negative impact on entrepreneurial activity. More procedures required to start a business, longer time to start a business and higher starting costs are detrimental to entrepreneurship. This result is similar with the one obtained by Klapper (2010) and Troilo (2011).

The entrepreneurship development seems to be affected by the international financial crisis started in 2008-2009. As seen in figure 6, the international financial crisis started in 2008 impacted the new firm registration in different countries. Moreover, it seems that the crisis affected more the developed countries. In estimations we introduced a linear trend and dummy variables for 2009 to capture the impact of the crisis (table 5). According with results, the crisis had a negative and statistically significant impact on new business registration. Also, the coefficient for the trend is positive, meaning that the positive trend in business registration was preserved.

4. Conclusions and policy recommendations for Romania

Romania's level of entrepreneurship (measured as new business density)was in recent years below the average at the European level and one of the lowest among CEEand Baltic countries, only slightly higher than in Hungary and Bulgaria. The top performer in this respect seems to be Slovakia, Czech Republic, and Poland. Based on the results of our estimations, there are some factors to explain why Romania is performing worse in terms of entrepreneurship compared with the other peer countries.

The successful transition economies seem to have almost all the necessary ingredients that are positive for entrepreneurship based on our estimations results from the previous section - regulatory quality, government effectiveness, political stability, control of corruption, voice and accountability, rule of law, and labor market flexibility. On the other hand, countries with low level of entrepreneurship, such as Romania, Bulgaria and Hungary have only few of these ingredients.

In the case of Romania, for the period covered by this study, the most important indicators which are positively impacting the entrepreneurship based on our results are at the lowest level among peer countries. For instance, the average level for 2004-2012 period of regulatory quality, political stability, voice and accountability, government effectiveness, control of corruption, total freedom, and secondary school enrollment are at the lowest level, and rule of law and quality of management schools are only higher than in Bulgaria. On the opposite side, the time to start a business in Romania is the lowest among peer group countries and the starting costs and number of procedures to start a business are among the lowest.

As a conclusion, in terms of indicators reflecting barriers to firm entry, Romania seems to have a comparative advantage compared with the other countries from the peer group, but this is more than offset by the week indicators reflecting the institutional quality needed for stimulating entrepreneurship and by those related to the macroeconomic environment and to demography/human capital.

Our conclusion is validated also by the Global Entrepreneurship Index (GEI) entrepreneurship index constructed by the Global Entrepreneurship Network (GEN) and by some surveys of the European Commission.

The Global Entrepreneurship Index combines individual data with institutional components and gives policymakers a tool for understanding the entrepreneurial strengths and weaknesses (Acs and all, 2014). The purpose of this index is to measure the quality and the scale of the entrepreneurial process in different countries and captures the contextual features of entrepreneurship by measuring entrepreneurial attitudes, abilities, and aspirations. According with GEI data, Romania has an entrepreneurship level only higher than in Hungary and Bulgaria, which is similar with our findings. In the latest GEI 2015 report, Romania's overall GEI score was 45.3%, a bit higher than would be expected given the country's level of GDP per capita.

Romania's average individual variable score on a 0-1 scale was 0.706 while its institutional score lags far behind at 0.553 on average. Out of the three sub-indices, entrepreneurial aspirations ranked the highest (56.1% vs 53.5% the European average). Romania's entrepreneurial attitude sub-index score was the lowest (the lowest among CEE and Baltic countries) and its entrepreneurial abilities score lower than European average (only higher than in Poland and Slovakia among the CEE and Baltic countries).

Romania's weakest pillars in GEI index and the most critical bottlenecks for entrepreneurship are:

- **Risk acceptance** (*risk perception*- percentage of the population who do not believe that fear of failure would prevent them from starting a business, and *business risk*- availability and reliability of corporate financial information, legal protections for creditors, and institutional support of intercompany transactions), **Opportunity perception** (*opportunity recognition* - the percentage of the population that can identify good opportunities to start a business, and *market agglomeration*- the size of the domestic market and urbanization), **Networking**(*know entrepreneurs* - entrepreneur's personal knowledge, and *internet usage* for business purposes), **Cultural support** (*career status* -how a country's inhabitants view entrepreneurs in term of status and career choice, and level of *corruption*), **Startup skills** (*skill recognition* - skill perception measures the percentage of the population who believe they have adequate start-up skills, and education - especially postsecondary education) - as ***attitude indicators***.
- **Human capital** (*staff training* and *high education*), **Technology absorption** (*technology level*- a measure of the businesses that are in technology sectors, and *tech absorption*- a measure of a country's capacity for firm-level technology absorption),**Competition**(*competition* - a measure of the uniqueness of a business's product or market, and *market dominance*), **Opportunity startup** (*opportunity* and *business freedom*- capturing the overall burden of regulation, and the regulatory efficiency of the government in influencing start-ups and operating businesses) - as ***abilities indicators.***
- **Product innovation**(new products - a measure of a country's potential to generate new products and to adopt or imitate existing products, and *technology transfer*- a measure of whether a business environment allows the application of innovations for developing new products), **Process innovation**(*new technology* - percentage of businesses whose principal underlying technology is less than five years old, and *Gross Domestic Expenditure on Research and Development*), **and Risk capital**(*informal investment* and the institutional *depth of capital market* - size and liquidity of the stock market, level of IPO, M&A, and debt and credit market activity) - as ***aspirations indicators.*** The strongest pillars are **high growth (***gazelle* - high-growth businesses that intend to employ at least ten people and plan to grow more than 50

percent in five years, and *business strategy*)**and internationalization**(*export* and *globalization*)- as ***aspirations indicators***.

According with the Flash Eurobarometer 354 (2012) survey requested by the European Commission, in Romania 48% of respondents say they favor self-employment, which is somewhat above the EU average of 37%. Almost half of the respondents in Romania (48%) say they do not consider self employment to be feasible on the grounds that they do not have enough capital or financial resources – far more than the 21% of people who give this answer at EU level. Less than one in 10 say that they lack the skills to be self-employed (7% vs. 8% at EU level), that they have no business idea (3% vs. 7%), that they would have difficulty reconciling self-employment with family commitments (5% vs. 6%), that they fear the risk of failure and its consequences (2% vs. 5%), and that they are put off by the burden of red tape (6% vs. 4%). Half of people in Romania regard self-employment as a desirable option, compared with only a third at EU level. A majority of respondents in Romania (56%) say they would be most afraid of the risk of going bankrupt if they were to set up a business today – more than the 43% of people at EU level who are afraid of bankruptcy. Also, according with the Survey on the Access to Finance of Enterprises (SAFE) conducted by European Commission, the regulatory environment is the most pointed out problem faced by SMEs as well. According with this survey, the most pressing problem of SMEs in Romania is the regulation, followed by competition, cost of production or labor, access to finance, finding customers and availability of skilled staff or experienced managers. This is a little bit different compared with the EU average where finding customers is the no 1 problem faced by SMEs, followed by availability of skilled staff or experienced managers, regulation, and competition, access to finance and cost of production or labor. Moreover, the burden of regulation seems to be increasing rapidly in the last years, this trend being in place for availability of skilled staff or experienced managers as well.

Based on our estimations, we can draw some policy recommendations for Romania intended to improve the entrepreneurship level of the country. The most effective way to increase Romania's entrepreneurship level will be to improve the weaknesses we identified at the institutional level, as institutional variables are the most significant for entrepreneurship in general based on our results, and at the same time, their week values seems to be the main explanation why Romania has a low entrepreneurial level.

Since Romania's aspiration pillar in GEI score is relatively good compared with Europe averages, the improvement effort should be focused on the attitude and a ability pillars. Taking a closer look at the institutional components of the weak pillars of GEI and based on our regressions results, it is very clear that Romania needs more institutional development, mainly in the areas of risk acceptance, opportunity

perception, human capital, technology absorption, product innovation, networking, competition, and cultural support. So, Romania should spend more efforts on:

✓ Improving predictability, quality and stability of regulatory environment by increasing the availability and reliability of corporate financial information, strengthening the legal protections for creditors, more institutional support of intercompany transactions, improving the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

✓ strengthening the control of corruption and rule of law, in particular the quality of contract enforcement, property rights, functioning of the courts.

✓ improving the education sector, especially the tertiary education, but also the vocational education.

✓ improving the technology absorption process and stimulating networking for entrepreneurs.

✓ stimulating research and development spending of companies.

✓ increasing the economic freedom of the economy, through lower burden of regulation and increasing regulatory efficiency of the government in influencing start-ups and operating businesses

✓ increasing the access to finance, especially through developing the stock exchange market and stimulating venture capital and risk capital funds.

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