

Entrepreneurship Evolution in Terms of Economic Development Stages. Retrospective Analysis

ELENA MIHAELA ILIESCU
Economic Sciences Department
Nicolae Titulescu” University
185 Calea Văcărești, 4th District, Bucharest
ROMANIA
mag_mihaela@yahoo.com

Abstract: *Entrepreneurship and economic competitiveness are intensely debated subjects being both in economic analysts’ and decisions makers’ attention, being promoted at a national, European and global stages by creating, coordinating and implementing a favorable strategic, legislative and financial framework.*

From this perspective, the purpose of this paper is to highlight and promote the entrepreneurship’s role as a fundamental source for enhancing growth potential and national and regional development on the long run, but also to identify based on compared experiences of some additional levers in order to efficiently implement the national and European entrepreneurial strategies.

Furthermore, considering that theorists, practitioners and decision makers focus on highlighting the crucial role entrepreneurship plays in ensuring a sustainable economic growth, the current paper approaches the correlation between entrepreneurship and economic competitiveness from a reverse perspective. Thus, the main objective of the study is to promote the influence that the economic competitiveness has (determining factor, alongside with GDP in establishing the development stages of the member states) on the entrepreneurial activities dynamic.

Key-Words: *entrepreneurship, economic development, competitiveness, the overall rate of entrepreneurship, Global Competitiveness Index, correlation, fluctuations*

1. Introduction

Economic growth, sustainability, sustainable development, as determinant drivers of the humanity’s general progress, through positive changes seen both from the point of view of the macroeconomic results and the social structure, national institutions and population behavior, represents an indispensable instrument for fighting against the current economic, social and environmental issues (social inequalities, poverty, global warming).

From this perspective, entrepreneurship as a lever to achieving these objectives, represent the main focus of policies, programs and national, regional and global strategies. This is because, the studies, based on empirical data, reflect the same conclusion: the volume, the structure, the quality and the intensity of entrepreneurial activities decisively influence the national economies’ competitiveness and the increase in competitiveness represents a fundamental factor of the economic development.

If, from a theoretical point of view the positive correlation between entrepreneurship and the evolution of the economic development stage is clear and undeniable, the reality reflects the fact that, in practice, between the two there isn’t always a linear relationship nor a generally valid one.

In order to illustrate the viability of this standpoint, we shall make the transition from theory to practice through a retrospective analysis of the correlation between the entrepreneurship evolution rate and the evolution of competitiveness of national economies.

Therefore, we shall analyze the indicators published in one of the most known annual reports in terms of entrepreneurship, The Global Entrepreneurship Monitor, the only one that relates also to the development stage of national economies. Considering that the reference point for grouping countries by stages of development is represented by the Global Competitiveness Report, which starting with 2008 introduced the classification of countries following Michel Porter’s model, we shall analyze further on the correlation between

the entrepreneurship rate and the global competitiveness index, as a determining factor of the economic development stage, along with GDP/capita.

For this purpose, the evolution of the two indicators will be analyzed, in the period 2008-2015, based on data published in the two annual reports.

2. The analysis of the correlation entrepreneurship-competitiveness

2.1. Methodological classifications

The inter-conditional relationship between the entrepreneurship rate and the global competitiveness index shall be illustrated using scatterplot diagrams created with Microsoft Office Excel 2010, considering the following technical aspects:

- to synthesize entrepreneurship evolution, it shall be analyzed considering the prism of the entrepreneurship total rate (ER), calculated as a sum between the early stage entrepreneurship rate and the consecrated entrepreneurship rate.
- to ensure the comparability of the two variables, the Global Competitiveness Index, was also expressed as a percentage, as a share of the index of each analyzed country, in the total maximum score;
- considering that the analysis on development stages according to the Porter model was introduced in reports starting with 2008, the period under analysis is comprised between 2008 and 2015;
- since the GEM reports do not comprise the same countries each year and the need to include in this study only the countries for which we have available data for each year of the concerned period, the analysis is narrowed to a small sample of 30 countries.
- having in view the small number of countries included in this study and the fact that the analysis of the correlation between the two indicators is made based on the national economies development stage, in order to ensure, from a statistical point of view, a sufficient number of countries, for each group, reference is made only at the three main levels of development- factors driven economies, efficiency driven economies and innovation driven economies (economies under transition at a superior stage, were included in the core group).
- the evolution in time of the two variables has been stated synthetically, by computing the total average rate of entrepreneurship and the average rate of the global competitiveness index of each national economy subject to this analysis.
- data on the evolution of the total average rate of entrepreneurship and the average rate of the global competitiveness index is presented in Table no.1.

Table no. 1: Average total rate of entrepreneurship and the Global Competitiveness Index average for the period 2008-2015¹

NO.	Country	Average rate GCI %	Average ER %	NO.	COUNTRY	Average rate GCI %	Average ER %
1	Belgium	73,98	8,76	16	France	72,57	8,16
2	Finland	76,89	14,41	17	Columbia	58,62	30,40
3	Germany	74,75	9,78	18	Argentina	55,72	27,83
4	Greece	59,14	21,01	19	Brazil	62,20	31,36
5	Italy	64,55	8,40	20	Chile	68,00	28,69
6	Holland	76,72	16,75	21	Croatia	58,64	10,93
7	Norway	73,20	13,74	22	Hungary	60,57	14,25
8	Slovenia	61,93	10,69	23	Latvia	62,45	18,67
9	Spain	65,71	13,60	24	Peru	60,46	30,74
10	Great Britain	77,07	13,64	25	Uruguay	62,46	19,70
				26	South Africa	61,61	10,58
11	USA	75,23	18,98				

¹ The table includes only the countries for which data was available for this period, countries that belong only to two of the three development stages- innovation driven economies, denoted with grey and efficiency driven economies. Factor driven economies

12	South	71,95	19,61	27	Romania	57,77	12,63
	Korea			28	China	67,80	26,27
13	Japan	77,84	11,29	29	Malaysia	71,18	11,49
14	Ireland	69,86	15,74				
15	Switzerland	81,43	16,21	30	Russia	60,67	6,96

Source: Personal processing, based on available data in "Global Entrepreneurship Monitor" Annual Reports 2009 -2016 and "The Global Competitiveness Report" Annual Reports 2009 -2016.

Analysing the relationship between the overall rate of entrepreneurship and the global competitiveness index we conclude firstly that it implies establishing the existence of this relationship but also determining the intensity and sense of this relation. With this purpose, the Data Analysis function is used from the Excel spreadsheet program, function that provides the value of the "r" linear correlation coefficient. A positive value of this coefficient shows a direct correlation, positive between the two indicators, while a negative value reflects the negative relation, in reverse in terms of their evolution.

To establish the correlation intensity, although specialized statistical papers do not have a unified approach, they do relate to the interpretation proposed in 2000 by Professor Will G. Hopkins. In his view, interpreting the value of the correlation coefficient "r", in absolute value, can be categorized as follows [1]:

- Between 0.0 and 0.1- negligible correlation between variables
- Between 0.1 and 0.3 - minor correlation;
- Between 0.3 and 0.5 – medium correlation, moderate;
- Between 0.5 and 0.7 – high correlation;
- Between 0.7 and 0.9 – very high correlation, elevated;
- Between 0.9 and 1.0 –almost perfect correlation.

2.2. The empirical analysis of the competitiveness-entrepreneurship correlation

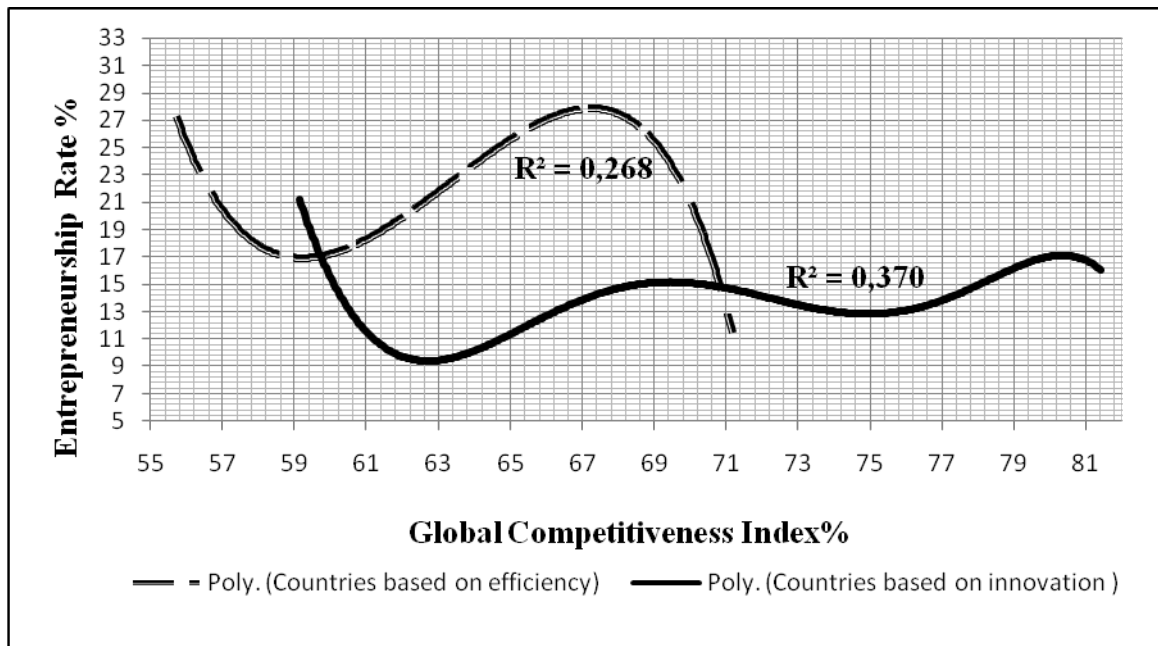
An initial analysis of the correlation between the total rate of entrepreneurship and the global competitiveness index considered grouping the national states on levels of economic development, according to Porter's model. This reflects the fact that between the two indicators doesn't exist a linear correlation, the correlation coefficient being null for the countries based on efficiency and negligible for the countries based on innovation ($r=-0.02$).

Thus, uneven distribution of data and the Pearson correlation coefficient with a negligible value proves that between the two indicators there is no linear relationship. Thus considering this aspect, the analysis of the graphical representation of the linear function and the coefficient of determination (R^2) no longer has statistical significance. But, given the fact that the lack of linear connection doesn't exclude any relationship between the variables under analysis, continuing the analysis for identifying a different time of correlation is fully justified.

Scatterplot graphical representation of the two indicators' values for each of the two group of countries, reflect the existence of a polynomial trend, although it also has low intensity, as it can be seen in Chart no.1 ($R^2=26.8\%$ for the countries based on efficiency, $R^2=37\%$ for countries based on innovation). We should also bear in mind that for the nonlinear correlations the R^2 coefficient doesn't reflect the determination degree as it usually does, but only the intensity of the analyzed trend. Also, according to the graphical representation rules, the ordinate is used to represent the dependent variable and on the abscissa the independent variable (predictor variable). In order to create the correlation curve for the two indicators, the total entrepreneurship rate has been considered as a dependent variable, and the index for global competitiveness the predictor variable, for the following reasons:

- considering that the positive impact of entrepreneurship on national economies but also on the society in general is already very well known, publicized and generally agreed upon, an increased interest, currently, is shown for the identification of factors and conjunctures that encourage the positive dynamic of the entrepreneurial initiatives, so as to ensure the favorable levers to their potentiation.
- if the effects of the entrepreneurial process on macroeconomic indicators (employment rate, GDP, inflation rate, commercial balance, etc.) are reflected in the macroeconomic results starting with the first year of the entrepreneurial initiative, the impact of this process on the qualitative factors which generates the increase in global competitiveness and consequently economic development is felt in time. This aspect makes irrelevant the analysis of the correlation between the values recorded by the two indicators during the same year.

Chart no.1: Innovation driven economies vs. efficiency driven economies seen from the perspective of the relationship between the total entrepreneurship rate and the global competitiveness index between 2008 and 2015



Source: Personal processing, based on pooled data from table. 1

The analysis of graphical representation between the two variables reflects the fact that for both development levels, the trend is fluctuating, the entrepreneurship dynamic being influenced both positively and negatively by the global competitiveness index. But, because the established trend has a low intensity, in order to better analyze more precisely the entrepreneurial cycle phases in light of the national competitiveness evolution level, the countries included in each of the two development levels under analysis shall be grouped in smaller clusters, according to the average index of the global competitiveness of each level.

Therefore, for each development level, the countries shall be grouped into two categories- under and above the average global competitiveness index of the group.

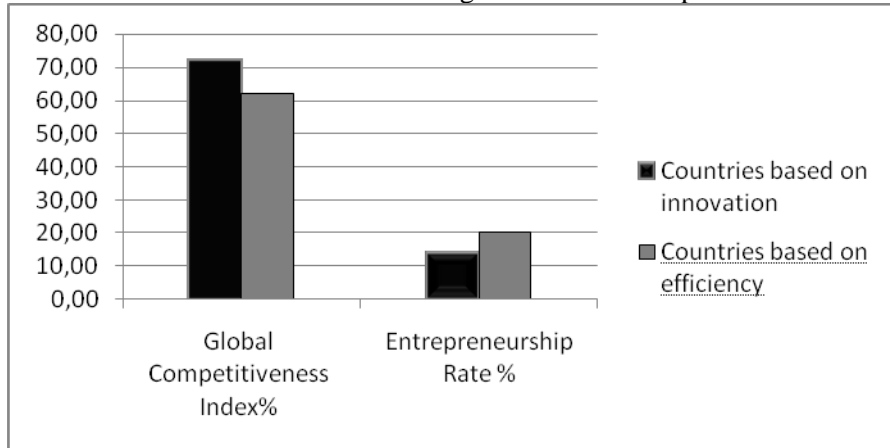
Based on available data for the period 2008-2015, chart no.3 illustrates the relationship between the stage of the total entrepreneurship rate and the stage of the global competitiveness index for the most developed economies, innovation driven economies and we would expect that at this superior level of competitiveness, the entrepreneurship rate to record the lowest levels.

Table no. 2. ER and GCI on development levels

Group	GCI – average group	ER – average group
Innovation	72,05	13,80
Efficiency	61,99	20,03

Indeed, as it can be seen in Table no.2 and as it is illustrated by Chart no.2, an overview, only on the average of each development level, confirms this point of view, - the average entrepreneurship rate is lower for the lower for the group comprising the more developed countries (based on innovation), compared to the total average entrepreneurship rate for the countries with a lower degree of development (countries based on efficiency).

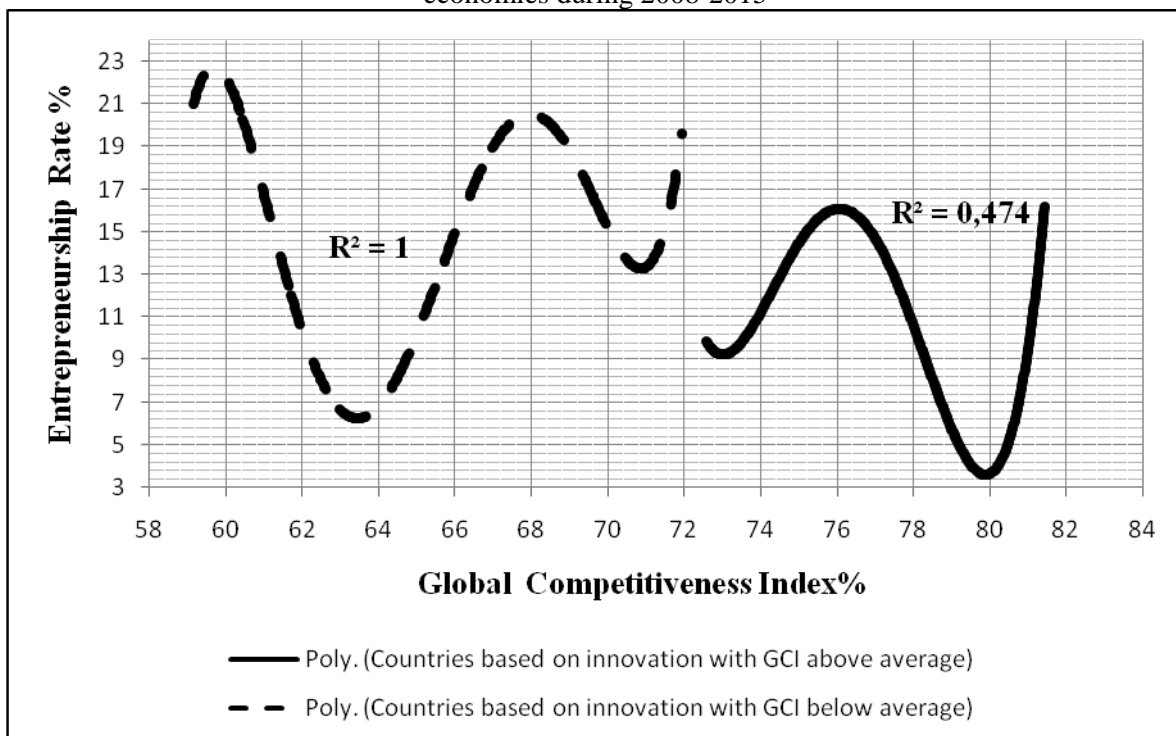
Chart no. 2 ER and GCI average mean on development levels



Source: Personal processing, based on pooled data from Table no.2.

But, the detailed analysis of the available data series, for each country included in the study and illustrated by graphs no.3 and 4, shows that entrepreneurship is not in a decreasing slope as the competitiveness is growing, but it has a fluctuant trend compared to the stage of global competitiveness.

Chart no 3.The total entrepreneurial rate and the global competitiveness index, for the innovation driven economies during 2008-2015



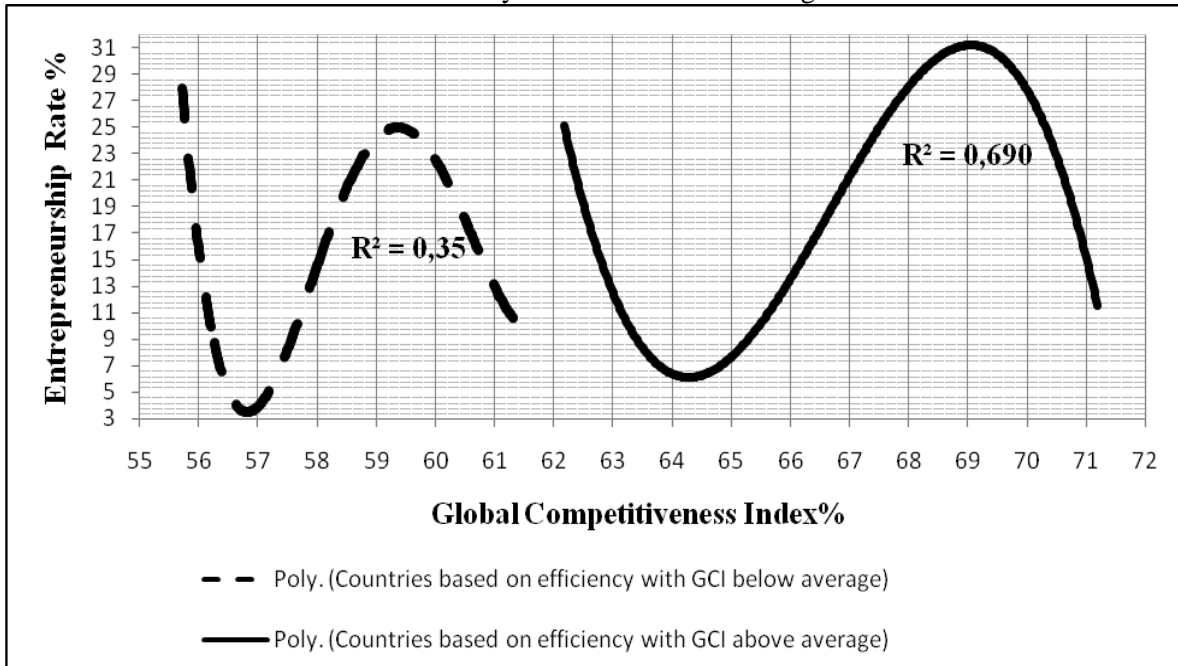
Source: Personal processing, based on pooled data from Table no.1

Indeed, from the comparative analysis of entrepreneurship evolution within the 30 countries comprised in the two development levels, we can note that when making the transition to a superior development stage (from factor-driven economies to efficiency driven economies - Chart no.4 and from efficiency driven economies to innovation driven economies - Chart no.3) the entrepreneurship rate decreases. The process can be interpreted from the perspective of the impact of the standard of living (GDP/capita) increase and of competitiveness of the entrepreneurial behavior of the active population (financial comfort is rising, satisfaction concerning the standard of living and confidence in its stability, which leads to a reduction of the interest for risk taking, inherent in any business). But a continuation of the competitiveness gradual increase requires an

improvement of the socio-economic and politic context (aspects pursued by sub-indices included in the evaluation of the global competitiveness index), creating thus a favourable framework for a growing trend of entrepreneurial initiatives. Under these circumstances, the total entrepreneurship rate increases, leading to increased competition and consequently to a “natural selection” of the entrepreneurial activities. This pressure will generate a downward path of the entrepreneurial activities.

Of course, the impact is lower for the countries based on innovation because, in their case, the sophistication degree from an economic, legislative, educational, institutional and especially entrepreneurial point of view is higher, allowing thus a smooth adaptation to the requirements of an efficient competitive economy.

Chart no. 4: The relationship between the overall rate of entrepreneurship and the global competitiveness index for the efficiency driven economies during 2008-2015



Source: Personal processing, based on pooled data from Table no.1

Also from the comparative analysis of the trends that estimate the relationship between the two analyzed variables, we can note that, for approximately similar intervals of the competitiveness level the countries based on efficiency and those based on innovation have the same trend (increasing or decreasing) but, the extent of the reaction is stronger for the countries based on efficiency, which means that the latter will be more reactive to the policies of sustaining and encouraging entrepreneurial activities. For example, an increase in competitiveness from 64% to 69% (of the 7 points) in the countries based on efficiency it generates an increase in entrepreneurship from 5 to 31%, while in the countries based on innovation (with CGI below average), an enhancement of competitiveness from 63.5% to 68% determines an increase of the entrepreneurship rate from 6.5 to 21%. The situation is similar for the decrease of the entrepreneurship rate, thus: the increase in competitiveness from 69 to 71.5% for efficiency driven economies causes a tendency to reduce the rate of entrepreneurship from 31% to about 11%, while in innovative countries, increasing competitiveness from 68 to 71% imparts a downward trajectory of the entrepreneurship rate from 21 to 13%.

We note that, a rate of competitiveness over 73% is common only to countries based on innovation, with a CGI above average. Moreover, although we would expect the trend to downswing it appears that the ascending trend is resumed when the global competitiveness index exceeds the 80% threshold (CGI > 5.6 of the maximum of 7 points score). Of course, we are considering innovative, competitive and efficient investments.

Another interesting aspect revealed by the comparative analysis of the available data and illustrated using graph no.3 and 4 is that, if for the countries based on efficiency the lowest stage of the entrepreneurship rate (3%) corresponds to a low competitiveness (approximately 57%), for the countries based on innovation this stage is attained at a higher competitiveness (80%). This aspects leads to the conclusion that entrepreneurial activities have different determinants. Thus, in countries based on efficiency entrepreneurship is

mainly determined by the necessity to obtain supplementary financial resources, and in more developed countries, innovative, the entrepreneurial initiatives are generated predominantly by the opportunities and facilities available in the socio-economic environment.

The highest stage of the entrepreneurship rate for the efficiency driven economies (approximately 31%) could be reached at a competitiveness stage of 69%, while, for countries based on innovation the maximum stage of entrepreneurship (approximately 21%) could be achieved, as the prediction line suggests, at a competitiveness stage of 68%. Therefore, for a similar competitiveness stage more developed countries, based on innovation, although they reach a lower maximum stage than of those based on efficiency, they ensure a higher quality of life. This aspects confirms the truth in the saying “It’s not the quantity, but the quality that matters”.

4. Conclusion

Identifying the ranges where competitiveness generates the change in entrepreneurship behavior, the magnitude and the reason for these oscillations, is very useful in choosing and using the encouragement instruments, respectively of sustaining the entrepreneurial activities, suitable for each stage and for each country’s particularity (economy state, standard of living, economic and social behavior characteristics, education and entrepreneurial culture levels, values, traditions and customs, etc.). Therefore, an important role in identifying and implementing the leverages for sustaining the entrepreneurial environment must be given to the national structures.

Thus, during the expansion phase of the entrepreneurial process, the regulatory framework must consider mainly the tools for sustaining the intensive development of the entrepreneurial sector.

In the recession phase of the entrepreneurial process, the policymakers should focus on creating a regulatory framework, that will encourage especially the extensive development of the entrepreneurial process by encouraging and supporting the competitive entrepreneurial initiatives.

A first step towards this direction is to identify the reasons for that led to entrepreneurial activities narrowing and the reduction of new initiatives, respectively, of the factors that generated an increase and the development of the entrepreneurial activities. In this context shaping the entrepreneurial profile of the active population may complement the overall picture of the entrepreneurial process. Valuable information regarding these aspects are available in numerous studies (within the current paper we only mention two of these- Annual Reports “The Global Entrepreneurship Monitor” and Annual Reports concerning Global Competitiveness, but being of reference and extremely useful in outlining a profile for the entrepreneurial environment within a country and the annual reports “Doing business” drawn up and published yearly by the World Bank, Gallup studies, EU studies regarding entrepreneurship). In GEM for example, are comprised for each country subject to this report (unfortunately, currently only 62 countries are included, and not always the same ones) information regarding the weight of entrepreneurial initiatives for each sector of economy, to reasons that led to withdrawal from business (loss, lack of financing, sale of the business, incidents, personal reasons, retirement, bureaucracy, the emergence of new opportunities), to reasons for entering the business world (necessity, opportunity), but also new aspects that make possible to outline the entrepreneurial environment in the respective country (social and cultural policies, market entry conditions, infrastructure, market dynamic, research-development, entrepreneurial education, financing, governmental support, taxes and bureaucracy).

All this information must however go beyond the realm of the academic and business environment and to form important premises in drawing up the strategies and programs designed to support entrepreneurship as a driver of the national economies.

In conclusion, regardless of the development stages of national economies, we must consider the fact that the evolution of the entrepreneurial process is fluctuating, that like the economic fluctuations, always after expansion periods follows the contraction, that we shouldn’t rely on the “laissez faire” principle and that the measures to support the entrepreneurial sector must be implemented, depending on activities trend, on the entrepreneurial profile of active population, on the economic, social and politic context in general..

References

- [1] Sticlaru Gabriel, *Statistical analysis using SPSS*, Cool Print Publishing, Bucharest, 2012, pp. 50-52
- [2] Global Entrepreneurship Monitor, *Rapoarte anuale 2009 – 2016*
- [3] Post Foundation, *Privatization, Innovation and entrepreneurship pillars of competitiveness*, 2013

- [4] Porter E. Michael, *Building the Microeconomic Foundations of Prosperity: Findings from the Microeconomic Competitiveness Index* , in Global Competitiveness Report 2002-2003, World Economic Forum, Geneva, Switzerland, 2003
- [5] Sanandaji Tino, Sanandaji Nima, *Super Entrepreneurs And how your country can get them*, Centre for Policy Studies, Printed by 4 Print, 138 Molesey Avenue, Surrey, April 2014
- [6] The Global Competitiveness Report, Annual Reports 2009 -2016
- [7] <http://ccir.ro/2015/09/30/raportul-competitivitatii-globale-2015-2016-2/>, accessed online on 1st April 2016

This paper has been developed with period of sustainability of the project entitled "**Horizon 2020 - Doctoral and Postdoctoral Studies: Promoting the National Interest through Excellence, Competitiveness and Responsibility in the Field of Romanian Fundamental and Applied Scientific Research**" contract number POSDRU/159/1.5/S/140106. This project is cofinanced by European Social Fund through Sectoral Operational Programme for Human Resources Development 2007-2013. **Invest in people!**

