Exporting high-growth enterprises, including gazelles, in Romania

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Abstract: *In our paper we analyse the most relevant aspects concerning the characteristics of a special category of SMEs, namely the so-called high-growth enterprises, which, in principle, are considered factors contributing to the sustainable development of national economy and to the convergence process, under certain restrictions. As far as the high-growth enterprises are considered, the following cumulative criteria have been used in order to identify them: average annualized growth, in terms of number of employees greater than 10% per year, over a three-year period; at least 10 employees at the beginning of the growth period. A gazelle is a high-growth enterprise that is up to 5 years old.*

The importance of this kind of enterprises derive from the contribution they should have to the economic growth and to the job creation in the country where are located. Achieving high growth rates in profitability is the reason why the decision-makers are focusing on the high-growth enterprises, including gazelles. The present paper analyses the impact of high-growth enterprises and gazelles on exports, turnover and employment, in the 2008-2015 period, under circumstances of two major events which marked the national economy – Romania's integration into the European Union, starting in 2007 also the international financial crisis, in 2009-2010. The study identifies several factors that explain the evolution of the high-growth enterprises, including the gazelles, and some recommendations to support their development in accordance with the importance they have for employment in the national economy.

Keywords: *high growth enterprise, gazelle enterprise, export, turnover, employment*

JEL Classification: F10, F16, M13, C15

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Introduction

In 2015, a number of around 157580 companies or almost 10% of all active enterprises with at least ten employees in the business economy (except activities of holding companies) of the European Union were recognized as high-growth enterprises, providing jobs for over 12 million employees, according to Eurostat. In the total number of high-growth enterprises at the EU level, the share of Romanian enterprises is only 0.7%, of which 34% exported in 2015.

The high-growth enterprises contribute to the convergence process by the "catching up" effect, poorer economies tending to grow more rapidly than developed ones, resulting that all economies, in time, will converge in terms of income per capita. The gazelle-type enterprises are a form of successful entrepreneurship, which is usually based on an innovative idea, possible to be used in the market, both at home and abroad. The large number of gazelles is not in the area of organizational innovation, but for process and product innovations. Of course, we agree that the products and process innovations are the most important for gazelles, without neglecting, at the same time, their relative importance in the domains of marketing and organizational improvements. However, a limited focus on marketing and organizational innovation can affect the content of the notion of "gazelles", which could artificially count only from statistical registration view point, but not in the real term of effective economy. An important characteristic of the high-growth enterprises and gazelles is their high capacity of labour force absorption and, consequently, their contribution to the employment rate. They have a great capacity of adaptation to the changes generated by the technological progress, being more flexible in terms of supply sources and sales channels.

1. Brief literature review

The high-growth enterprises and gazelles have been the subjects of multiple investigations. Different studies have shown that the high-growth enterprises and gazelles are major generators of high-skilled employment (Birch and Medoff, 1994). The factors that help these types of enterprises to achieve high growth rates in sales and profits (Serarols and Urban, 2007) are very important. There are researcher's opinions according to which gazelles are quite rare in most economies, representing less than 10% of all new companies in a country and having a lot of problems in sustaining growth over more than five years. According to Golovo and Valentini (2011), the evolution of high-growth enterprises is influenced mainly by the micro innovation, and the innovation and export within strategies for SMEs' growth.

One of the research questions is whether gazelles are more innovative than other firms (Hölzl Werner; Friesenbichler Klaus, 2008). Several studies analysed the most adequate

activities to promote gazelles in different countries (Cunningham Paul, 2008). The relationship between the growth of companies and the access to funding sources was analysed by some researchers, mostly concluding that the lack of financial resources hampered business growth, especially in the case of small or newly established companies (Cabral and Mata, 2003). A larger company does not face this type of difficulty to the same extent (Bechetti and Trovato, 2002). Different studies considered that high-growth enterprises and gazelles were responsible for structural changes in the economy (Acs *et al*., 2008; Henrekson and Johansson, 2010). For this reason, the Europe 2020 Strategy refers to the support of high-growth enterprises and gazelles as public policy targets (Commission, 2010), while the OECD call for governmental initiatives to encourage the creation of more high-growth enterprises.

In the literature review on this subject, the high-growth enterprises, including gazelles, are considered as a driving force of technological change and a prerequisite of taking-off process of the economies. Nevertheless, the written works on this subject are not very well-represented and widespread in Romania, at the present moment.

2. High-growth enterprises and gazelles impact on export, turnover and employment

According to the generally accepted definition, the high-growth enterprises have at least 10 employees in the year xx-3 and an annual average growth greater than 10%, over a three-year period[1]. The growth can be measured by the number of employees or by the turnover. In this paper, we identify the high-growth enterprises by on the number of employees, using the following formula:

$$\sqrt[3]{\frac{\text{employees}_{(xx)}}{\text{employees}_{(xx-3)}}} - 1 > 0.1 \qquad [1]$$

Generally, the young high-growth enterprises up to 5 years old, the so-called “gazelles”, are subject to distinct economic analyses, considering that they are seen as potential large employers and promoters of sustainable development in the future. Gazelles are the results of very active entrepreneurships finding social and economic opportunities, under the conditions of existing skilled labour force and adequate general economic and financial and legal framework.

[1] Eurostat definition: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:High-growth_enterprise

Of course, for the specific needs of the economic analysis, the 10% magnitude of the gazelle growth rate could be considered a feature of the special case of Romania as a developing economy. In the case of the more developed countries, as it is mentioned in the specific literature, a growth rate threshold of 15% or 20% could be used for gazelle's selection. This is the reason why we consider that aspects related to the optimum magnitude of the percentage threshold for gazelles identification remains an open question for further discussion.

2.1. Number and turnover of the exporting high-growth enterprises and gazelles

It is unanimously recognized the direct functional relationship between the level of the economic development of a country and the number of high-growth enterprises in the respective country. In Romania, as we can see in Table 1 below, the number of gazelles and high-growth enterprises decreased from 319 in 2008 to 175 in 2015 and from 1472 to 1038 respectively, which can be explained by the following factors: a relatively higher volatility and vulnerability of gazelles, low resilience to crises impact and specificity of the vital cycle of the economic sectors, the lack of both entrepreneurial behaviour and funding.

Table 1 - Number and turnover of HGEs and gazelles in the total business economy of Romania, in the period 2008-2015

	Number			Turnover (million Euro)		
Year	**HGE**	**Gazelles**	**%**	**HGE**	**Gazelles**	**%**
2008	1472	319	21.7	23.751	5.021	21.1
2009	608	166	27.3	9.055	2.938	32.4
2010	498	158	31.7	8.563	2.169	25.3
2011	589	178	30.2	10.495	2.604	24.8
2012	869	181	20.8	11.646	2.520	21.6
2013	946	157	16.6	12.294	1.525	12.4
2014	881	149	16.9	12.970	1.480	11.4
2015	1038	175	16.9	13.228	1.666	12.6

Source: own calculation based on data of Romanian National Institute of Statistics.

The number of high-growth enterprises and gazelles has sharply decreased during the 2009-2010 period showing a low economic resilience to the international financial crisis

impact. The extent of their decline in number was so considerable that the pre-crises level was not reached until 2015.

2.2. Exports and employment by high-growth enterprises and gazelles

The export of the gazelles, over the period taken into consideration, shows the vulnerable behaviour and the weaknesses of gazelles in Romania, while the evolution of such firms in the other developed countries registered an upward tendency.

Table 2 – Employment and export of HGEs and gazelles in Romania's total business economy, 2008-2015

	Employment (number of persons)			Export (million Euro)		
year	HGEs	Gazelles	%	HGEs	Gazelles	%
2008	282.215	64.011	22.7	2.758	958,8	34.8
2009	98.862	25.055	25.3	2.230	1584,7	71.1
2010	89.102	27.362	30.7	1.938	940,9	48.5
2011	112.344	33.073	29.4	3.492	856,7	24.5
2012	145.247	28.209	19.4	3.488	747,5	21.4
2013	154.983	23.218	15.0	3.628	318,3	8.8
2014	153.523	20.735	13.5	4.403	378,7	8.6
2015	172.249	26.500	15.4	4.193	376,0	9.0

Source: own calculation based on data of Romanian National Institute of Statistics.

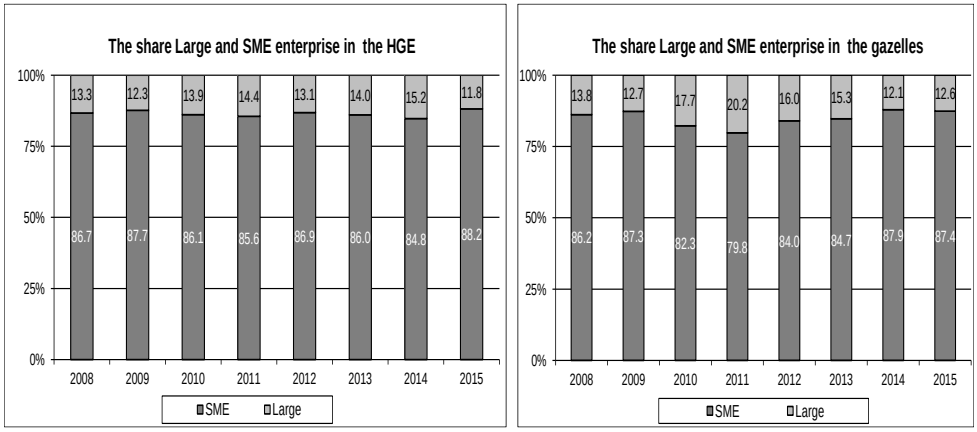
As we can see, the gazelles are not the strong point of the Romanian exports. Gazelles - which are up to five year old - are less exports-oriented than the other high-growth enterprises. Considering the unfavourable situation of gazelles as regards both their number and their export strength, the policy mix of Romania's decision-makers intends, in the future, to promote start-ups, venture capital, spinoff, spill over, blue angels, and capital seeds units. All of them have in common the necessity to implement the entrepreneurial and creative initiatives and ideas in order to improve profitability and competitiveness throughout the national economy.

As regards the number of employees, we notice a magnitude almost constant in the case of gazelles, while in the case of high-growth enterprises, the growth tendency was manifest especially over the 2011-2015 period, considered as a "recovery period" after the crisis.

2.3. Size of exporting high-growth enterprises and gazelles

In spite of some disputes regarding the determinant role of the size of enterprises in the economic recovery and growth, our analyses shows that the underperformance of gazelles is caused by the predominance of small enterprises, the most of them belonging to the tertiary non-productive sector, mainly to trade, financial services, real estate activities, etc. The share of large enterprises, as well as, of SMEs in both HGEs and gazelles number was relatively constant over the 2008-2015 period, without significant fluctuations.

Figure 1 - Share of large enterprises and SMEs in the HGEs and gazelles number (%) in Romania



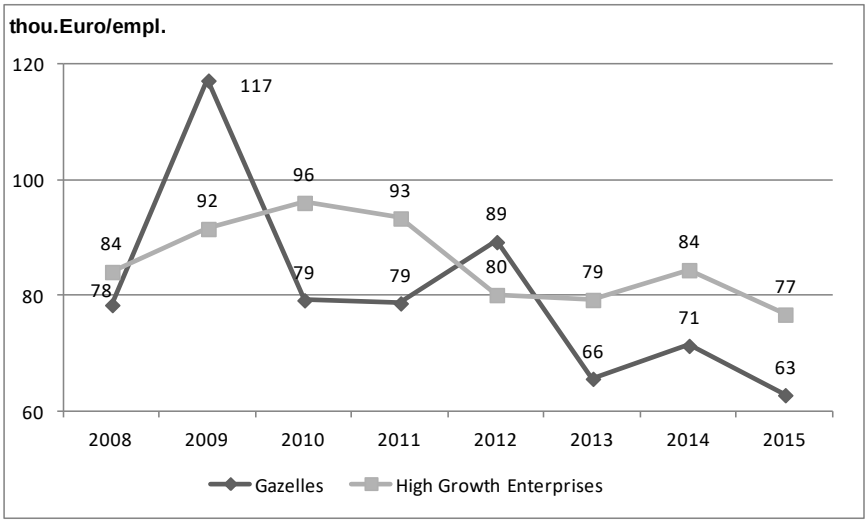
Note: SMEs – small and medium enterprises; HGE - high-growth enterprises.

Source: own calculation based on data of Romanian National Institute of Statistics.

2.4. Labour productivity of exporting high-growth enterprises and gazelles

Productivity of exporting high-growth enterprises and gazelles have, as well, decreased in the last years crisis, as we can see in Figure 2, below. The high increase in productivity for gazelles in 2009, the year of the crisis peak in Romania, can be explained by an extremely high decrease in the number of employees (-60.9% in 2009 as against 2008), while the decrease in turnover was lower (-41.5%). The gazelles high productivity in 2009 was due not to secured economic growth of output, but to an exceptional reduction in employment (from an average of 192 to 151 employees by enterprise).

Figure 2. Labour productivity* evolution per exporting HGE and gazelles in Romania in the 2008-2015 period



Note: labour productivity is calculated as turnover to employee.

Source: own calculation based on data of Romanian National Institute of Statistics.

The main disadvantages of gazelles belonging to the speculative tertiary sectors are related to unhealthy and unsustainable perception of "carpe diem" or to "enjoy the momentum" interfering with "après moi le déluge"!

The number of employees per exporting high-growth enterprise (or gazelles) is between 150 and 200 employees for the whole 2008-2015 period, with some exceptions.

2.5. The correlation between the labour productivity and the export of high-growth enterprises and gazelles

In this section, we investigate the labour productivity implication for the evolution of the HGE and gazelles. To associate export growth of high-growth enterprises and gazelle with productivity we construct a regression equation, considering the export as a dependent variable and the productivity as an independent one.

The relation between export and productivity of high-growth enterprises, as it results from the model reveals the flowing:

- the ANOVA test indicates the validity of the selected model (F-statistic = 31.2839 and Prob (F-statistic) = 0.00139 <0.05). We notice that the adjusted R^2 is about

0.84 for this equation, which means that productivity of HGEs determines 84% of their export, being close to 1 and suggesting a strong link between variables.

$$Export\ of\ HGEs = 0.14 * productivity\ of\ HGEs - 6.7 \quad [2]$$

- all coefficients are significant (Annex 1).
- the high value of the free term indicates a strong influence of the other export determinant factors, not included in the model.

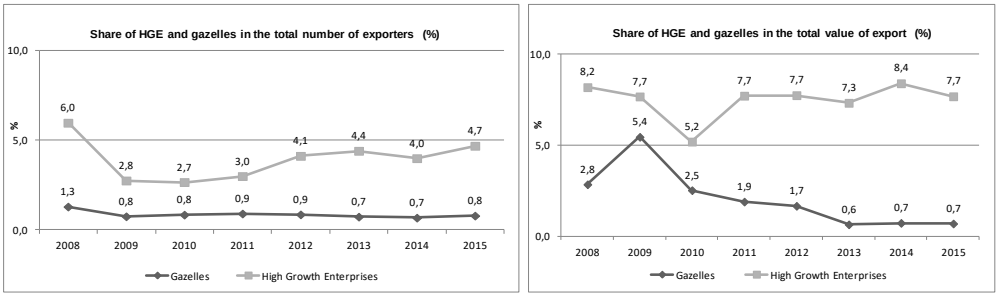
In fact, this strong correlation is quite understandable because the high level of labour productivity is the most important factor of export competitiveness.

The simple correlation model between exports and labour productivity does not fit statistical data in the case of gazelles. This shows that most of gazelles in Romania belong to the tertiary sector where, usually, the labour productivity is not a very important factor of export competitive capacity.

The adjusted R2 is about 0.06 in the case gazelle model, suggesting that there is a weak link between dependent and independent variables (Annex 2). This could be one of the reasons why, in the case of Romania, for the time being, gazelles as enterprises up to five year old with high rate of growth, in fact, are not based on high growth productivity but on price speculative business. In this context, the relative high dynamics in the period under consideration is rather a result of factors of conjuncture, not being sustainable.

2.6. Share of HGEs and gazelles measured as a percentage in total number of exporters and value of export (%)

Figure 3 – Shares (%) of HGEs and gazelles in total number of exporters and exports value in Romania



Note: HGE - high-growth enterprises.

Source: own calculation based on data of Romanian National Institute of Statistics.

Figure 3 above highlights the unfavourable trend of the gazelle export share in comparison with the evolution of the HGEs export share, both in terms of number and value. The improvement of gazelle export shares in the total value of exports in the year 2009 reflects, in reality, a higher decline in Romania's total exports as compared to the decrease in export of the high-growth enterprises and gazelles.

Table 3 – Shares of HGEs and gazelles in Romania, by NACE rev2 sections, in 2015

NACE rev.2 section	Description	Turnover		Employment		Export		Number	
		HGE	Gazelle	HGE	Gazelle	HGE	Gazelle	HGE	Gazelle
		%	%	%	%	%	%	%	%
B	Mining and quarrying	0.2	0.7	0.1	0.5	0.0	0.0	0.6	1.1
C	Manufacturing	39.8	28.7	47.1	43.1	86.1	91.5	31.6	30.3
D	Electricity, gas, steam and air conditioning supply	2.7	0.0	0.0	0.0	0.7	0.0	0.2	0.0
E	Water supply, sewerage, waste management and remediation activities	0.2	0.3	0.5	0.3	0.1	0.5	1.0	1.1
F	Construction	3.4	2.3	3.5	5.2	0.2	0.0	7.6	9.1
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	33.9	35.3	18.2	14.0	12.6	6.7	23.7	17.7
H	Transportation and storage	9.9	21.3	9.3	15.0	0.1	0.5	17.1	13.1
I	Accommodation and food service activities	0.5	1.3	1.3	3.0	0.0	0.0	2.9	5.7
J	Information and communication	4.5	3.3	7.8	4.8	0.0	0.0	6.8	6.3
L	Real estate activities	0.0	0.3	0.1	0.6	0.0	0.0	0.2	1.1
M	Professional, scientific and technical activities	1.8	2.1	2.7	2.8	0.1	0.1	3.9	5.7
N	Administrative and support service activities	2.6	2.0	8.9	8.5	0.0	0.0	4.0	7.4
S	Other service activities	0.4	2.4	0.4	2.3	0.1	0.6	0.4	1.1
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: own calculation based on data of Romanian National Institute of Statistics; HGE - high-growth enterprises.

High-growth enterprises are practically found in all economic sectors. Their share vary substantially across sectors and regions. Even at the EU level, there is no consistent pattern across countries showing what sectors host the largest share of high-growth enterprises. However, in most EU member-states, there is a relative high share of HGEs and gazelles.

The sectoral proportion of gazelles among total young firms, at the European level, shows the following hierarchical distribution: knowledge-intensive market services; knowledge-intensive high-tech services; high-tech manufacturing; low knowledge-

intensive services and other knowledge-intensive services. The knowledge-intensive gazelles are characterized by high content of R&D and intensity human capital. High knowledge-intensive market sectors, including market services, refer to management services architecture and engineering activities. High-tech services include telecom and computer programming, financial services, public administration, education and social activities. The high-tech manufacturing industries usually include pharmaceutical, computer, nano-technologies and spacecraft products.

The analyses of turnover and export recovery after the crises, by economic sectors, show that it was not the gazelles that had the determinant role in crisis exit, but large sized high-growth enterprises, especially those in the manufacturing sector.

Moreover, it is important to have in mind that the majority of HGEs is represented by foreign direct investment affiliates and subsidiaries of multinational enterprises, with higher export capacity and competitive power in Romania.

The sectoral distribution of the main indicators characterizing the economic and financial performance of Romanian high-growth enterprises and gazelles, as shown in Table 3, reveals the following:

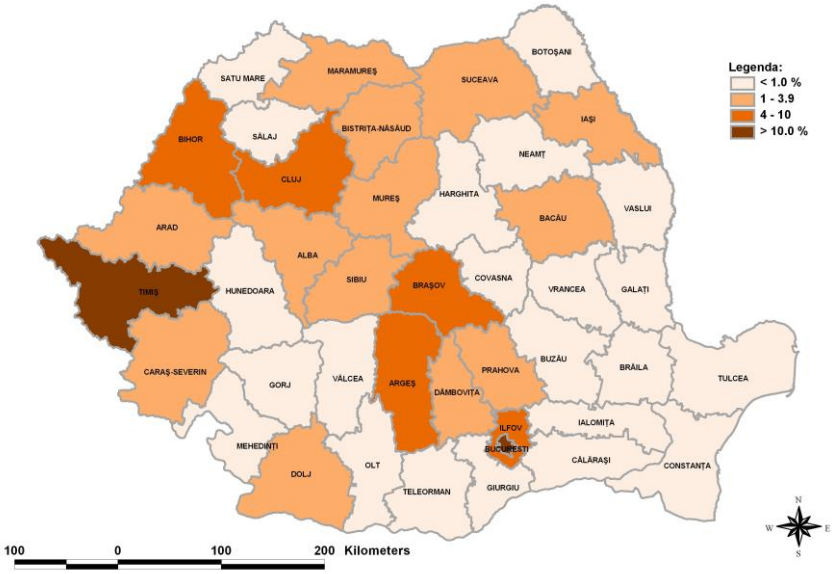
- the main percentage share of turnover, both for high-growth enterprises and gazelles, is hold by the service sectors, *i.e.* 51.4% in the case of high-growth enterprises and 64.5% of gazelles, which means that a predominant feature of the Romanian macroeconomic structure is dominated by the tertiary sector, the contribution of which to Romania's exit from crisis was modest or even non-existent;
- as for manufacturing, it worth mentioning that, in the case of high-growth enterprises, the share exceeds by 10.1 percentage points the share of gazelles, showing a relative advantage of high-growth enterprises in comparison with gazelles.
- sectors such as information, communication and constructions hold modest shares, between 3.4 % and 4.5%, of the total turnover, at macro level.
- the employment absorption capacity is higher in manufacturing, wholesale and retail trade, and the high-growth enterprises are superior to gazelles in the case of manufacturing; for the wholesale and retail trade, transportation and storage sectors the gazelles have a higher share in the total employment, in comparison with the high-growth enterprises;
- it is worth mentioning that gazelle sectors is characterized by a very high share of export in the manufacturing sector, higher than the HGEs, 91.5% against 86.1%.

- taking into consideration the total number of employees, there are many similarities between HGEs and gazelles, excepting wholesale and retail trade, transportation and storage, information and communication.

Number of enterprises and their turnover, employment and export, broken down by Romanian counties, as presented in Annex 3, have been used in order to obtain some peculiarities of the territorial distribution of the high-growth enterprises, including gazelles and to evaluate the linkage between these variables and the economic development stage at the county level.

Figure 4 – The HGE's turnover share, by Romanian counties, in 2015

- percentage size -



Note: HGE - high-growth enterprises.

Source: own calculation based on data of Romanian National Institute of Statistics.

The classification analysis of Romania's counties by intervals of turnover share magnitude of HGEs (Figure 4) shows the following conclusions:

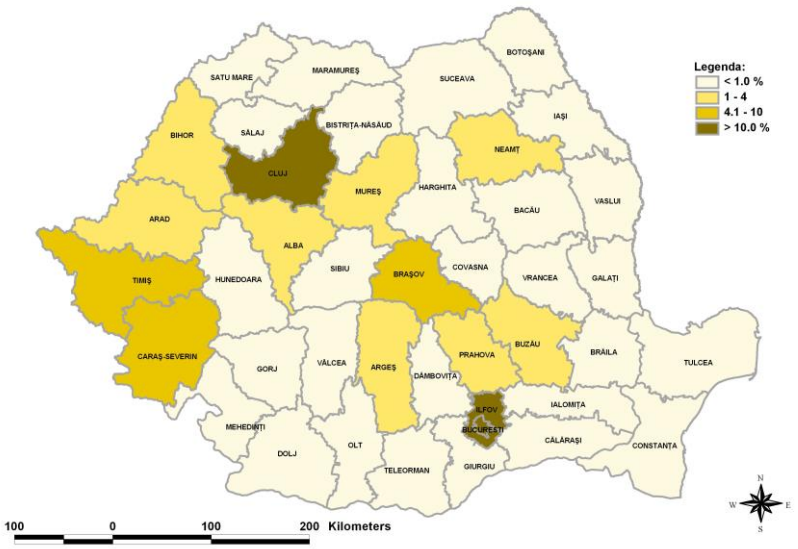
- **shares below 1%** in the total turnover are registered in the counties: Buzau, Constanta, Galati, Satu-Mare, Neamt, Vrancea, Hunedoara, Harghita, Tulcea,

Ialomita, Mehedinti, Braila, Olt, Calarasi, Covasna, Salaj, Vilcea, Gorj, Vaslui, Giurgiu, Teleorman and Botosani; the relative low levels of economic development and standard of living are common features of these counties;

- **counties with shares from 1% to 3.9%** are: Arad, Sibiu, Bistrita-Nasaud, Mures, Dimbovita, Dolj, Prahova, Alba, Iasi, Caras-Severin, Suceava, Bacau and Maramures; these counties are considered as having a medium level of economic and social development, most of them being situated in Transylvania;
- **counties having a 4% to 10% share of turnover** are what we call "developing counties", including: Brasov, Ilfov, Cluj, Arges and Bihor;
- **counties with a high development level, with an over 10%** share in total turnover of Romania, are Bucuresti and Timis. In the case of Bucharest, it is explained by the economic and social opportunities offered by the status of the capital city. In the case of Timis, the main cause of relatively high development is explained by the geographical proximity to western countries, which offers offering more opportunities for economic sustainable growth and higher standard of living.

Figure 5 – The gazelle turnover share, by Romanian counties, in 2015

- percentage size -

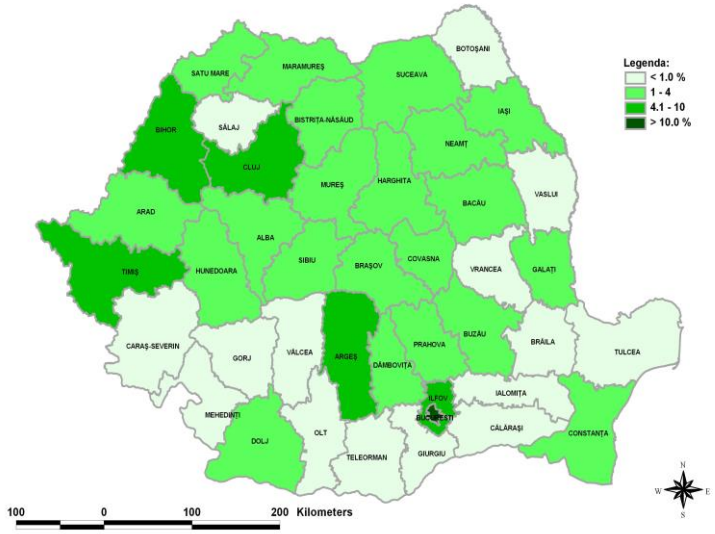


Source: own calculation based on data of Romanian National Institute of Statistics.

The territorial distribution of gazelles, by the size of turnover share, using the same magnitude of percentage intervals, shows that most of counties are below 4% (36 counties),which means the predominance of gazelles in developed counties; in the other words, we can say that from the point of view of the turnover magnitude, the developed counties are preferred places for gazelles, that is a potential of quick development, in the future, for these counties.

Figure 6 – The HGEs share in the total number of enterprises by counties, in 2015

- percentage size -

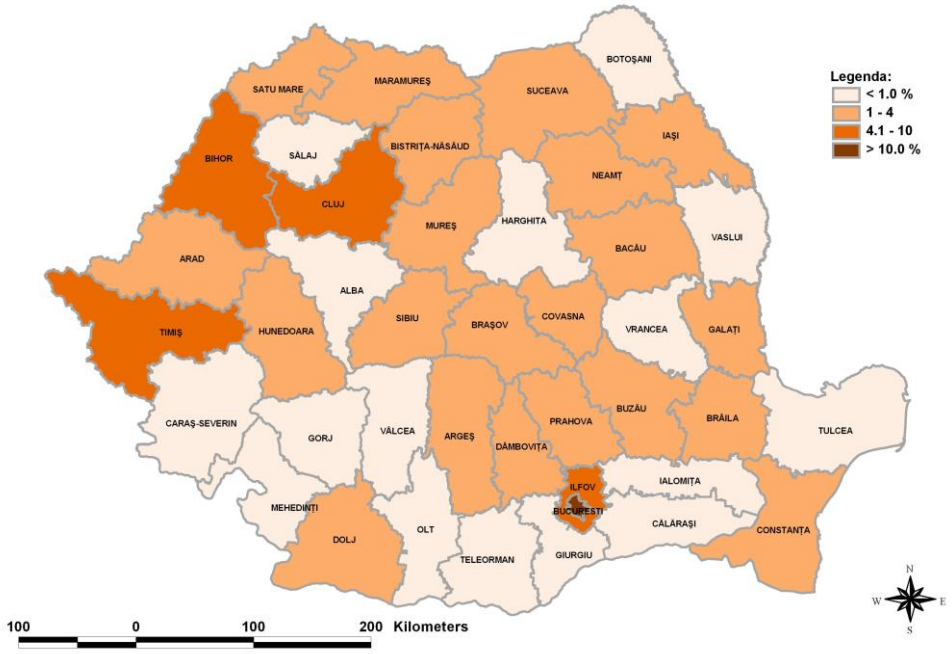


Note: HGE - high-growth enterprises.

Source: own calculation based on data of Romanian National Institute of Statistics.

The shares by counties, for both high-growth enterprises and gazelles in 2015, show an extended distribution in the majority of counties, excepting Bucuresti, Arad, Bihor and Salaj. There are 15 counties with less than 1% high-growth enterprises in 2015, namely: Botosani, Braila, Caras-Severin, Gorj, Ialomita, Mehedinti, Olt, Salaj, Teleorman, Tulcea, Vaslui, Valcea, Vrancea, Calarasi and Giurgiu. These counties are mainly situated in the southern part (Oltenia) and the eastern part (Moldova) of the country.

Figure 7 – The percentage share of gazelles in the total number of enterprises, by Romanian counties in 2015, percentage size



Note: HGE - high-growth enterprises.

Source: own calculation based on data of Romanian National Institute of Statistics.

In the case of gazelles, the territorial distribution is more irregular than in the case of high-growth enterprises. We outline the fact that 6 counties had no gazelles in 2015 (Botosani, Ialomita, Mehedinti, Teleorman, Valcea and Calarasi) and 10 counties had only one gazelle (Alba, Caras-Severin, Gorj, Harghita, Olt, Salaj, Tulcea, Vaslui, Vrancea and Giurgiu). Only Bucharest had 37 gazelles, the rest of the counties having less than 15 gazelles in that year. The distribution of gazelles by counties reveals that they are not sufficiently well developed in Romania until now, from both sectoral and regional viewpoints.

3. Conclusions

The values generated in HGEs and gazelles entities are of crucial importance for labour productivity growth and sustainable development. HGEs are rare, showing some special

characteristics as against the rest of firms. They are very heterogeneous, when compared to each other (Delmar *et al.*, 2003). It is important to understand such exceptional enterprises, not only for identifying their characteristics at a certain time, but for determining how firms grow and perform over a significant period and across industries, as the nature of their economic growth is more complex than that of other companies.

Usually, in the developed countries, gazelles are the promising type of relatively small enterprises, based on entrepreneurial capacity of the manager to implement and develop progressive and, in some cases, ”disruptive” technologies and innovations, which ensures higher dynamics of economic and financial performance in comparison with the rest of economic agents.

In the case of Romania, the gazelles as enterprises with high rate of growth and up to five year old, in fact, are not very long lasting. Their relative high dynamics in the period under consideration is rather a result of conjuncture factors, not being sustainable. Practically, the structure of gazelles by sectors of national economy reveals a majority of small and medium enterprises, which belong to tertiary sectors, mainly characterized by speculative behaviour and temporary “success story”.

Romania performed not very well in generating high growth innovative enterprises, if compared to European leaders. This is the reason why the understanding of effective policies for high growth innovative enterprises in Romania is to emphasis particular foci on: access to private equity finance and loans for venture capitals, start-ups, SMEs and other growing businesses and effective public schemes to support innovative small firms as an important component of country’s economic strategies.

Taking into account that gazelles in Romania are concentrated especially in the tertiary sector, the large number of newly created entities simultaneously coincides with a large number of failures, particularly during and after the crises and recession periods.

From our analyses it results that it is preferable a moderate, but continuous growth of gazelles and HGEs in comparisons with a high unsustainable growth. A gazelle, in order to be successful, has to last a necessary and sufficient period of life, taking into consideration the impossibility to maintain a steady high growth rate for a very long time period, their low capacity of resilience to crisis impact needed special incentives and policy actions on short, medium and long terms.

According to a more in-depth analysis, the main factors triggering the growth of gazelles in different countries are the following:

- adoption of new product and process technologies and new organization structures;
- fostering the social capital of entrepreneurs as a unique opportunity used by them;

- inner abilities of cost reduction and rapid firms' response to the most recent market trends.

Although gazelles are, so far, a relatively modest job-creation factor in Romania, we have to recognize their promising multiplier effect for labour force market, taking into consideration the exceptional characteristics of labour absorbtion entrepreneurship, as well as the fast and widespread spillovers (economic, social, financial, technological and environmental propagation effects).

The recent measures taken by decision-makers in Romania, in the sector of HGEs and gazelles, are focused on:

- financial and economic support to start-ups and other types of knowledge-based entrepreneurship;
- an easier access to bank credits and interest rate incentives;
- fiscal facilities and support for writing and submitting good quality projects in order to get a better access to European structural and cohesion funds;
- providing a better understanding and use of EU Directives and opportunities for small and medium enterprises, based on the principle "first think small".

It goes without saying that gazelles usually are small enterprises and, in the rare cases, medium-sized ones.

The attractiveness of gazelles consists in a large variety of spillovers and propagation effects mainly in the "niches" of high-tech domain, IT&C and digital economy, under the requirement of the Fourth Industrial Revolution the "case" of which are digitalization and knowledge-based industrialization.

Without any doubt, each gazelle (*i.e.* small enterprise) is dreaming to become, one day, a large one. A very small number of them are eager to maintain the status of small entity for their life. This target could be a contaminating behaviour for other entrepreneurs who could operate as to networking myriad of SMEs in relationships with large enterprises.

In order to realize this dream, our gazelle have to become real and genuine ones, just as they are functioning in developed countries. This is a very challenging and ambitious target, more or less difficult, but not impossible.

It is worth mentioning that the gazelle core is made of new ideas, new technologies and management expertise and techniques, in primary, secondary and tertiary sectors, excluding the "falling stars" or "bubbles", mainly based on speculative and toxic appearances.

The 2009-2010, international financial crises in Romania, affected the capacity of the gazelles not only to create new firms, but to soundly increase businesses. Among the

main obstacles revealed by the surveys in the field of entrepreneurship, including the gazelles segment, we mention the following: lack of starting working capital; difficulty to obtain bank loans (bankers fear not to recover money from SMEs); inability to create and grow new firms (lack of new ideas); unwillingness to take the risk of becoming entrepreneur, to lose money and wealth. (European Commission, 2012).

For our future research we intend to analyse the correlation between gazelles' job-creation (employment) and incomes of firms, the differentiation between reactivation and creation of enterprises that could be included under the notion of gazelle.

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Annex 1 - The high-growth enterprise's export correlation with productivity

Export of HGEs – dependent variable; productivity of HGEs - independent variable						
SUMMARY OUTPUT						
Regression Statistics						
Multiple R	**0.92**					
R Square	**0.84**					
Adjusted R Square	0.81					
Standard Error	1.1					
Observations	8					
ANOVA						
	df	*SS*	*MS*	*F*	*Significance F*	
Regression	1	37.85	37.8508	31.2839	0.00139	
Residual	6	7.259	1.20991			
Total	7	45.11				
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	**-6.65**	1.991	-3.3404	0.0156	-11.5226	-1.77889
productivity	**0.14**	0.024	5.5932	0.00139	0.07644	0.195337

Annex 2 - The gazelle's export correlation with productivity

Export by gazelles – dependent variable; productivity of gazelles - independent variable						
SUMMARY OUTPUT						
Regression Statistics						
Multiple R	**0.250353**					
R Square	**0.062677**					
Adjusted R Square	-0.09354					
Standard Error	1.210581					
Observations	8					
ANOVA						
	df	*SS*	*MS*	*F*	*Significance F*	
Regression	1	0.58797	0.58797	0.401206	0.549834	
Residual	6	8.793042	1.465507			
Total	7	9.381012				
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	**0.550155**	5.512573	0.0998	0.923754	-12.9386	14.03894
productivity	**0.040593**	0.064086	0.633408	0.549834	-0.11622	0.197405

Annex 3 - The share of HGEs* and gazelles, measured, by Romania's counties

Counties	**Turnover**		**Employment**		**Export**		**Number**	
	HGE	**Gazelle**	**HGE**	**Gazelle**	**HGE**	**Gazelle**	**HGE**	**Gazelle**
	%	**%**	**%**	**%**	**%**	**%**	**%**	**%**
ALBA	1.3	1.0	1.2	0.6	2.3	3.7	1.2	0.6
ARAD	3.2	2.5	2.5	1.2	5.7	0.8	3.4	2.9
ARGES	4.3	3.1	6.7	2.2	5.1	4.0	4.5	4.0
BACAU	1.1	0.5	1.3	0.8	0.5	0.8	1.5	1.7
BIHOR	4.0	3.0	3.6	4.0	4.4	1.9	6.2	7.4
BISTRITA-NASAUD	2.6	0.6	4.4	0.5	6.7	0.6	1.7	1.1
BOTOSANI	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
BRASOV	9.0	6.9	8.6	6.2	19.1	18.8	4.0	4.0
BRAILA	0.3	0.2	0.6	1.9	0.0	0.3	0.9	1.1
BUZAU	0.9	1.3	0.5	0.6	0.1	1.3	1.1	1.7
CARAS-SEVERIN	1.2	7.1	3.0	17.2	2.9	31.4	0.7	0.6
CLUJ	5.6	14.5	6.9	13.4	2.7	1.8	7.0	8.0
CONSTANTA	0.9	0.5	1.3	1.8	0.1	0.0	3.2	2.3
COVASNA	0.2	0.3	0.4	1.1	0.2	0.2	1.1	1.7
DIMBOVITA	2.2	0.4	1.8	0.9	3.2	0.0	2.0	1.7
DOLJ	1.7	0.8	2.2	0.8	0.9	1.0	2.0	1.7
GALATI	0.7	0.2	0.9	0.2	0.8	0.0	2.1	1.1
GORJ	0.1	0.1	0.2	0.3	0.0	0.0	0.6	0.6
HARGHITA	0.4	0.3	0.6	0.6	0.2	0.0	1.5	0.6
HUNEDOARA	0.5	0.2	0.6	0.5	0.1	0.0	1.3	1.1
IALOMITA	0.4	0.0	0.3	0.0	0.2	0.0	0.4	0.0

Counties	Turnover		Employment		Export		Number	
	HGE	Gazelle	HGE	Gazelle	HGE	Gazelle	HGE	Gazelle
	%	%	%	%	%	%	%	%
IASI	1.2	0.3	3.1	0.8	0.5	0.6	2.8	2.3
ILFOV	6.5	16.3	4.4	10.4	1.4	0.7	4.1	8.6
MARAMURES	1.1	0.5	1.7	0.4	2.8	0.9	2.0	1.7
MEHEDINTI	0.3	0.0	0.1	0.0	0.0	0.0	0.3	0.0
MURES	2.2	2.4	1.1	0.6	2.5	0.7	2.0	1.7
NEAMT	0.5	1.7	0.7	0.7	0.2	1.5	1.3	1.1
OLT	0.3	0.0	0.3	0.1	0.0	0.0	0.6	0.6
PRAHOVA	1.5	1.5	2.0	2.3	1.0	1.5	3.5	3.4
SATU-MARE	0.5	0.8	0.7	1.2	0.7	2.9	2.2	2.3
SALAJ	0.2	0.0	0.3	0.1	0.3	0.0	0.4	0.6
SIBIU	2.7	0.7	2.7	0.9	5.7	1.9	3.2	1.1
SUCEAVA	1.2	0.9	1.2	1.1	0.0	0.0	3.2	1.7
TELEORMAN	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.0
TIMIS	11.7	6.9	10.4	4.7	14.1	7.8	5.2	7.4
TULCEA	0.4	0.3	0.2	0.2	0.0	0.0	0.5	0.6
VASLUI	0.1	0.3	0.1	0.2	0.0	0.0	0.5	0.6
VALCEA	0.1	0.0	0.3	0.0	0.1	0.0	0.5	0.0
VRANCEA	0.5	0.2	0.9	0.1	0.9	0.0	0.6	0.6
BUCURESTI	28.0	23.8	21.8	21.2	14.3	15.0	19.2	21.1
CALARASI	0.3	0.0	0.3	0.0	0.1	0.0	0.8	0.0
GIURGIU	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: * HGEs - high-growth enterprises.

Source: own calculation based on data of Romanian National Institute of Statistics.