Regional Determinants of Small
Business Survival during the Crisis in Romania

Anca Dachin[1], Alexandru Rusei[2]

Abstract: The economic crisis in Romania has increased the business vulnerability since 2009. The recessionary gap and the high uncertainty of the economic environment have determined many companies to leave the market. The regional differences in the entrepreneurial performance suggest that the regional dimension should be included in the firm demography analysis. Most studies refer to the favorable conditions which stimulate the entry of new firms. However, during the crisis, for many small businesses the main problem has been the survival. The paper focuses on the analysis of adjustment processes within the SME´s sector in terms of changes in number of enterprises and turnover. The regional differences in the three-year survival rate (2008-2011) show the structural particularities of the economic activity. The paper aims at identifying the empirical relationship between economic determinants and entrepreneurial performance at regional NUTS2 level in Romania.

Keywords: business vulnerability; survival rate of enterprises; firm size; regional competitiveness

JEL Classification: R12; D22; M13

1. Introduction

Small and medium-sized enterprises (SMEs) are economically and socially important for the economy. The debate about the impact of large firms compared to that of SMEs started in the inter-war period, as a result of the capital market development and the awareness of the advantages of economies of scale. The influential economist J. Schumpeter wrote in 1943 that the large-scale establishment became the most powerful engine in progress, while an important argument was its capacity to innovate. The changes that occurred in the late 1960s in the capacity of SMEs to innovate and to take the advantage from the globalization process renewed the interest of scientists and policy-makers in small firms. However, the survival ability of SMEs and the capacity of a new business to employ more than 100 people in the medium term are still in discussion. For these

---
[1] Professor, PhD, Bucharest University of Economic Studies, Address: 6, Piata Romana, 010374 Bucharest, Romania, Tel.: +4.021.319.19.00, Fax: +4.021.319.18.99, Corresponding author: ancadachin@yahoo.com.
[2] PhD candidate, Bucharest University of Economic Studies, Address: 6, Piata Romana, 010374 Bucharest, Romania, Tel.: +4.021.319.19.00, Fax: +4.021.319.18.99, e-mail: alexrusei@yahoo.com.

reasons the net advantages of small firms may be less than it is commonly supposed. (Griffith & Wall, 2012, pp. 77)

The importance of SMEs to the EU economy indicates the need to assess their performance both in stable macroeconomic environment and in recession. The development of an enterprise is related to its opportunities and risks. The long-term existence of an enterprise depends on its ability to be efficient and create profit. The ability of the enterprise to function in a coordinated and systemic manner, without losing capacity of performance in indefinite future is connected to sustainable development (Ciemleja & Lace, 2011)

The economic crisis has increased the business vulnerability. The recessionary gap and the high uncertainty of the economic environment have determined many companies to leave the market. The concept of vulnerability has a multidimensional character and provides a useful framework for the analysis of consequences of these changes on human societies (Brauch, 2011, pp. 70-71). One aspect is the economic vulnerability which has various definitions and interpretations. In the simplest sense this term is associated with a disturbance affecting any form of economic activity as a result of exposure to different factors which occur as external shocks.

The downturn of the economy which started in 2009 was a shock for most companies in the EU, as well as in Romania. As the demand decreases and it becomes unpredictable it is leading to vulnerabilities determined by the customer behavior. Therefore, the business has fewer opportunities to react to changes in demand. The unpredictable demand requires flexibility and good business planning so that timely actions can be taken to face volatility. Business experience can contribute to the business stability. Previous self-employment experience presents a positive and statistical significant relation to self-employment duration (Millán et. all, 2012), as well as to SMEs survival and development.

The location for starting a new firm in connection with the regional characteristics of economic and social environment influences the decision regarding SMEs. There is a relationship between the factors which shape the attraction of a region and the entry and exit rate of firms (Nyström, 2005).

There is a vast literature which refers to the positive influence of factors such as education, innovation potential and technology transfer intensity which stimulate new firm entry. According to more recent literature, incumbent firms do not fully exploit new ideas and knowledge spills over to the potential entrants (Acs & Sanders, 2011, pp. 143). Therefore the hypothesis that entrepreneurs will localize in regions with high level of R&D and knowledge creation in related industries is reliable for countries with dynamic entrepreneurial activity. It has been also demonstrated that a higher level of general education is important as pre-condition for small business development. (Griffith & Wall, 2012, pp. 77)

The question about the characteristics which make firms more or less vulnerable during a recession is still open. The paper focuses on the empirical relationship between economic determinants and entrepreneurial performance at regional NUTS2 level in Romania, measured in terms of survival behavior.

2. Methodology and Data

The definitions and indicators used in the statistical analysis of small business behavior are those recommended by the OECD-Eurostat methodology (OECD-Eurostat, 2008). Active enterprises are all enterprises that had either turnover or employment at any time during the reference period. Employer enterprises are enterprises with at least one employee. In order to analyze the survival behavior of firms, we used several specific indicators for the business demography. The n-year survival rate for a particular year (t) refers to the number of n-year survival enterprises as a percentage of all enterprises with at least one employee for the first time in year (t-n). Enterprise birth rates are newly born enterprises as proportion of all active enterprises, while enterprise death rates are enterprise death as proportion of all active enterprises.

For the enterprise survival analysis we used the public data offered by the National Office of Trade Register – Recom online. We used this database to gather information about the state of operation of the companies and the distribution of active companies by development region (NUTS2).

In order to have a data series for recent years (2007-2011), we estimated the active enterprises registered at the National Office of Trade Register from the database in two steps: a) we selected only those enterprises which declared they are operational; b) we excluded all enterprises which declared a status from the following list: radiant, temporary interruption of work, liquidation, dissolution, is subject to Law no. 85/2006, bankruptcy, insolvency, reorganization, prosecution, partial division, open procedure open for Law no. 64/1995 republished, closing procedure cf. Article 117 of Law no. 64/1995, insolvent, covered law no. 359/2004, criminal conviction, total spin, mother company insolvency, mother company in dissolution, registration rejected. Each company was identified based on the unique tax code.

The number of active SMEs was selected according to the number of employees and turnover (up to 250 employees and up to 50 million turnover) officially declared in the annual balance sheet. We added information on function indicator for each year at the tax code level and we established how many of the companies with the status "running" in 2008 kept the same status in the following years.

3. Small Business Demography during the Crisis in Romania

As an emerging economy, Romania had a high dynamic of the small business sector during the economic growth period. After the accession to the European Union in 2007 the birth rates of the SMEs continued to be high, reaching the lowest level in 2009 (table 1). Major changes occurred in the exit of enterprises from the market. The death rate has significantly increased in 2009 and 2010 due to the effects of the crisis. An important factor that contributed to the higher proportion of exits was the introduction of the fixed tax for the micro-enterprises as an alternative to 16% tax on profit during the period 2009-2010. This fiscal measure has worsened the impact of the economic crisis.

Table 1. Enterprise birth rate and death rate of SMEs, 2007-2011

%

	2007	2008	2009	2010	2011
Enterprise birth rate	29	26	22	25	28
Enterprise death rate	7	20	34	36	28

*Enterprise birth rates are newly born SMEs as proportion of all active SMEs; enterprise death rates are SMEs death as proportion of all active SMEs

Source: Calculation based on data from the National Office of Trade Register – Recom online

According to the White Charta of the Small and Medium sized Enterprises in Romania, the major challenge for the SMEs in 2011 and 2012 was still the reduction of the internal demand, which was mentioned on the first position by 80% of the respondent firms (White Charta of SMEs, 2012). The next positions in the hierarchy of major difficulties were connected to the non-friendly business environment: bureaucracy, excessive fiscality, inflation, corruption and excessive control. These major difficulties were mentioned by 40-53% of the respondents.

The high enterprise birth and death rates in table 1 reflect an important volatility of the markets. But the immediate recovery of the birth rate in 2010 indicates that small business is an attractive employment alternative.

The vulnerability of SMEs in Romania is also a result of the firms´ lack of medium and long-term vision. In 2011 about half of the SMEs had no plans and only about 11.5% of them had a 3-5 years strategy. They rely mostly on self-financing and about 80% of the SMEs did not take any action to use structural EU funds (White Charta of SMEs, 2012). The lack of development vision is a sign of entrepreneurial weakness rather than adaptation to high uncertainty conditions.

4. Regional Determinants of the Differences in the Survival Rate

The total number of enterprises in Romania which were active in the reference year 2008 were abruptly reduced by 28.4% in 2009. In the following years the process continued, but at a smaller rate.

By the end of 2011 the 3-years survival rate of active firms in 2008 was 62.7% (table 2). There are some regional differences in this respect. The extreme values in 2011 show a survival rate of 69.6% of the number of enterprises active in 2008 in Bucharest-Ilfov region and 58.5% - 58.8% in South-West Oltenia, North-East and North-West. Actually there are no important differences between the regions other than Bucharest-Ilfov.

Table 2. The total number of active enterprises with in 2008 and their survival until 2011, by development regions

Region	Number of active enterprises 2008	Number of survival enterprises 2009	Number of survival enterprises 2010	Number of 3-year survival enterprises in 2011	The 3-year-survival rate in 2011 (%)
North-West	107932	72599	64670	63472	58.8
Center	91261	61884	56266	54586	59.8
North-East	85663	58099	52399	50384	58.8
South-East	87695	61915	55114	53017	60.5
South-Muntenia	81559	58961	54261	52759	64.7
Bucharest-Ilfov	188444	149390	134808	131187	69.6
South-West Oltenia	55630	37825	33830	32537	58.5
West	73645	51916	47275	45710	62.1
Grand Total	771829	552589	498623	483652	62.7

Source: National Office of Trade Register – Recom online

In Romania the SMEs represent over 99% of the total number of enterprises. The separate analysis of the SMEs survival (Table 3) shows that the employer SMEs had a higher chance to survive (74,3 % was the 3-years survival rate) compared to enterprises with 0 employees (50 % was the 3-years survival rate). It is remarkable that in three regions the gap between the survival rates of the two categories of firms is below the average: Bucharest-Ilfov, South-Muntenia and West.

Table 3. Survival of employer SMEs and self-employment in the period 2008- 2011, by development regions

Region	Number of employer SMEs 2008	Number of self-employment (zero employees) 2008	The 3-year-survival rate of employer SMEs in 2011 (%)	The 3-year-survival rate of self-employment in 2011 (%)
North-West	57630	50120	71.5	44.1
Center	50465	40558	72.9	43.4
North-East	42926	42559	72.3	45.1
South-East	46785	40722	72.8	46.1
South-Muntenia	40810	40557	75.0	54.2
Bucharest-Ilfov	93349	94533	79.3	60.0
South-West Oltenia	27766	27741	73.1	43.7
West	39666	33802	72.2	50.1
Grand Total	399397	370592	74.3	50.0

Source: National Office of Trade Register – Recom online and own calculations

The analysis reveals the special position of three regions:

• Bucharest-Ilfov region, with a leading position in Romania, dominating both number of enterprises and survival rates;

• South-Muntenia, the next best region in survival performance;

• South-West Oltenia, with the lowest number of active enterprises and the lowest 3-years survival rate.

We assume that the survival capacity is strongly connected to the economic performance. Fig.1 presents several regional characteristics which are supposed to enable the small business performance. The scale indicates 0 for the lowest performing region and 1 the maximum value for the best performing region in the EU.
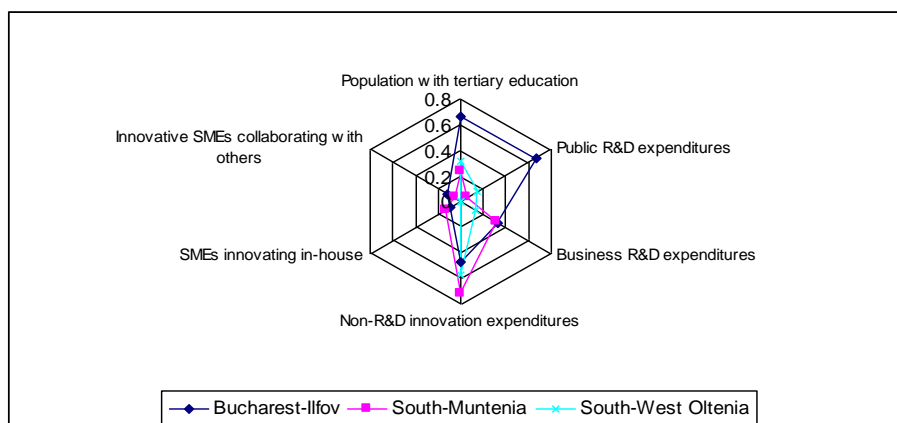
Figure 1. Regional performance characteristics in 2011

Source: Graph based on data from the Regional Innovation Scoreboard 2012

It is obvious that we find the three regions mentioned above with a well defined profile from the point of view of the performance enablers.

• Bucharest-Ilfov region benefits of the high concentration of population with tertiary education and of R&D expenditures, while high public R&D expenditures are mainly justified by the concentration of research institutes in the capital city. This region has also a high concentration of industrial activities and therefore also consistent business R&D expenditures.

• South-Muntenia includes many companies which activate in connection with the business around the manufacture of motor vehicles (Automobile Dacia Group Renault, Argeş County) and around oil extraction and manufacturing and tourism (Prahova county). With the business R&D ranking comparable with Bucharest-Ilfov region, South-Muntenia has a better position regarding non-R&D innovation expenditures.

• South-West Oltenia is a region where mining and quarrying, energy industry and chemical industry are the main industrial activities which faced constant decline in the last years and did not stimulate the business development. With the new vehicle production plant in Craiova the Ford Motor Company gives a new chance for industrial development.

As we can see from the three examples, small business is developing systematically around industrial agglomerations, but the existence of large companies is not a sufficient condition (see South-West Oltenia). Small business is stimulated by dynamic industries, which externalize services, spill-over knowledge and contribute to household income increase in the area. Therefore the SMEs depend highly on development poles and on the purchasing power of the

population able to buy consumer goods and services produced locally by the SMEs. The scaling procedure used in the Regional Innovation Scoreboard 2012 allows also the ranking of the regions according to the regional performance characteristics (table 4).

Table 4. Ranking of regions regarding the survival rate of employer SMEs and the innovation potential (Ranks from 1 to 5, best rank = 1)

	Survival rate of employer SMEs	Population with tertiary education	Public R&D expenditures	Business R&D expenditures	Non-R&D innovation expenditures	SMEs innovating in-house	Innovative SMEs collaborating with others
North-West	5	3	2	4	3	5	4
Center	3	5	6	6	4	3	1
North-East	4	6	3	6	7	2	1
South-East	3	6	6	3	1	1	2
South-Muntenia	2	7	7	2	2	4	3
Bucharest-Ilfov	1	1	1	1	7	6	1
South-West Oltenia	3	4	5	5	5	8	6
West	4	2	4	4	6	7	5

Source: Own ranking based on data from table 3 and European Commission – Regional Innovation Scoreboard 2012, p. 64

The small business development in Romania is lagging behind other EU countries because of several general characteristics:

- low level of entrepreneurial education;
- sporadic innovative activities, of which the most are new products (new to the firm);
- lack of collaboration between innovative SMEs and others. The ranking in table 4 must be completed with information about the EU regional ranking: the three best positions in Romania (Bucharest-Ilfov, North-East and Center) have only 0.11 from the maximum level of 1 in the EU best region.

5. Conclusions

The high enterprise birth and death rates reflect business vulnerability during the crisis, due to uncertainty of demand fluctuations and to lack of strategic planning. The analysis shows a strong link between the capacity of small enterprises to survive during the economic crisis, on one hand, and the existence of development poles and a favorable business environment generated by the critical mass of higher education and innovation expenditures, on the other hand. However the paper does not present enough arguments to demonstrate the hypothesis that entrepreneurs will

localize in regions with high level of innovation potential. The demand-side shock in 2009 and 2010 with prolonged demand deficit in 2011 and 2012 does not discourage new entries even in less developed regions. There is room for small business development in activities where R&D and innovation are not priorities and where people are not prepared for this stage of development.

6. Bibliography

Acs, Z. & Sanders, M. (2011). *A theory of entrepreneurial rents in endogenous growth: implications for regional innovation policies*. Published in Stimson, R., Stough, R., Nijkamp, P. (editors). Endogenous Regional Development. Perspectives, Measurement and Empirical Investigation, Edward Elgar, Cheltenham, UK, Northampton, USA.

Brauch, Hans Günter et al. (eds.) (2011). Coping with Global Environmental Change, Disasters and Security. *Hexagon Series on Human and Environmental Security*, Vol. 5, Springer Verlag Berlin, Heidelberg.

Ciemleja, G. & Lace, N. (2011). The Model of Sustainable Performance of Small and Medium-sized Enterprise. Inzinerine Ekonomika – *Engineering Economics*, 22(5), pp. 501-509.

De Groot, H.; Nijkamp, P. & Stough, R. (2004). *Entrepreneurship and Regional Economic Development*. Edwar Elgar, Cheltenam, UK, Northampton, USA.

Dijkstra, L.; Annoni P. & Kozovska, K. (2011). A New Regional Competitiveness Index: Theory, Methods and Finding. *Working Paper no*. 2/2011, EU Directorate General for Regional Policy.

European Commission (2012). *Annual report on small and medium-sized enterprises in the EU 2011/2012*.

European Commission (2012). Regional Innovation Scoreboard 2012.

Griffiths, Alan & Wall, Stuart (editors). (2011). *Applied Economics*. 12th edition. Harlow: FT Prentice Hall.

Millán, J.M.; Congregado, E. & Román, C. (2012). Determinants of self-employment survival in Europe. *Small Business Economics*, 38, pp. 231-258.

(2012). National Council of Small and Medium-sized Private Enterprises in Romania (CNIPMMR). *White Charta of the Small and Medium sized Enterprises in Romania*.

Nyström, Kristina (2005). Determinants of Regional Entry and Exit in Industrial Sectors. *Working Paper* no. 33, The Royal Institute of Technology, Sweden, Centre of Excellence for Science and Innovation Studies (CESIS).

OECD- Eurostat (2008). Measuring Entrepreneurship. A digest of indicators. *OECD – Eurostat Entrepreneurship Indicators Program*.