



GDP AND BUSINESS CREATION RELATIONSHIP IN ROMANIAN DEVELOPMENT REGIONS

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Abstract

The relationship between economic growth, most commonly measured by Gross Domestic Product (GDP), and the rate of business creation is central to understanding how new businesses contribute to economic development and how economic conditions influence entrepreneurial activities. The literature emphasizes the significant role of small and medium-sized enterprises (SMEs) in economic growth, highlighting the importance of the type of entrepreneurship (opportunity or necessity), the economic context, the role of support measures, and entrepreneurial education. New businesses contribute to innovation, productivity, and job creation but the quality and intensity of these contributions significantly varies across regions. Countries and regional disparities affect the rate of business creation and economic growth. Moreover, innovative regions demonstrate greater resilience to economic crises and possess an enhanced ability to resume economic growth and diversification swiftly. In this research, we

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set out to identify a unidirectional or bidirectional long-term and short-term relationship between GDP variables and the rate of establishment of companies at the level of Romania, respectively at



the component development region, based on the statistical data available for the period 2006-2021. We found a long-term relationship between GDP and the establishment rate of companies in Romania and most of the component regions. This relationship is not statistically significant in the short term. While the rate of new firm establishment does impact economic growth in certain areas over the short and long term, our findings indicate that economic growth more significantly influences the establishment of new firms in the long term. However, the varied results suggest that further analysis is needed.

Keywords: GDP, Business Creation, Economic Growth, Entrepreneurship, Regional Disparities, SMEs, Innovation

1 INTRODUCTION

The relationship between the evolution of GDP and the firms' formation rate has been intensively studied in the economic literature, revealing a complex interaction between economic growth, entrepreneurial activity, and business creation. Studies have shown that new companies contribute to GDP growth by stimulating innovation, creating jobs, and increasing productivity. Audretsch and Keilbach (2003) highlight that regions with higher levels of entrepreneurial activity tend to experience faster economic growth due to either the spillover effects of innovation and increased competition (Aparicio, Urbano, & Gomez, 2023) or institutional structures of support (Bosma & Levie, 2010). Similarly, Acs & Audretsch (2010) emphasize the importance of entrepreneurial ecosystems and the spillover effects of knowledge and innovation from new ventures to wider economic structures (Munyo & Veiga, 2024). Several studies on the relationship between economic growth and business creation, whether at the European level (European Commission, 2023) or specifically in Romania (Dianu, Gavriliuț, Badulescu, Simut, & Herte, 2019; International Finance Corporation, 2023), indicate a complex, bidirectional relationship, often influenced by various factors, varying and uneven across different regions.

This paper investigates the connection between economic growth and business formation rates in Romania, both at the regional and national levels, to identify specific trends and characteristics of the SME sector's contribution to economic growth, thereby providing valuable insights for effective policy-making and supporting entrepreneurship and business creation.

2 LITERATURE REVIEW

Most of the studies of the last decades coherently emphasize the significant role of entrepreneurial activity in stimulating economic growth, also

highlighting the significance of the type of entrepreneurship and the economic context in which it occurs. For example, fast-growing startups, often referred to as "gazelle", have a more substantial impact on economic growth compared to small businesses (Abdinnour & Adeniji, 2023), where the founder rather wants to ensure a certain level of income and image in the community (life-style entrepreneurship) or those severely constrained by the access to financing, hostile economic environment or lack of growth prospects (Badulescu & Badulescu, 2014). This distinction is crucial because it underscores the importance of supporting high-potential businesses that can drive significant economic change. Interpreting the empirical evidence on the relationship between private initiative and economic growth, Carree & Thurik (2010) highlight that the impact varies depending on the type of entrepreneurial activity and the stage of economic development. Stam & van Stel (2011) find that opportunity entrepreneurship has a significant positive impact on GDP growth compared to necessity entrepreneurship. Opportunity entrepreneurship prevails in developed countries reinforcing the contributions of Wennekers et al. (2005), according to which all types of entrepreneurship contribute to economic growth. However, the contribution of new, dynamic enterprises to GDP growth is better highlighted in developed countries.

New businesses play an important role in the economy by introducing new products and services and increasing competition, productivity, and innovation, which are essential for economic growth. Probably the most visible and expected contribution of new firms is the creation of (new) jobs. They come not only to solve a pressing economic-social and political challenge (reducing unemployment) but the employment opportunities and individual incomes generated by these businesses can lead to an increase in consumer spending, which in turn stimulates economic growth (Munyo & Veiga, 2024). However, the

contribution of the employment of new companies, and especially of their majority, usually less innovative, should not be overestimated. Along with the creation of fresh positions in emerging firms, an equally important number of jobs disappear due to the discontinuation of many small firms lacking experience and resources. (Aga, Francis, & Meza, 2015). The quality of jobs created by new businesses also matters. High-quality jobs that offer good wages and careers, with a substantial impact on economic growth, are generated by a small fraction of new entrants.

Startups and new businesses often bring innovative products and services to market, driving productivity improvements and economic expansion. The rate of technology adoption and the ability to scale innovations are critical factors that determine the impact of new ventures on GDP growth (Munyo & Veiga, 2024). A stable environment, supportive policies, and favorable regulations that reduce barriers to entry and support enterprises in their diversity can enhance the positive impact of new ventures on economic growth and stimulate the desire to establish new companies (Aparicio, Urbano, & Gomez, 2023). Streamlined business registration processes, access to finance, and protection of intellectual property rights are essential components of such an environment. The regulatory environment and business regulation associated with the labor market (Loayza, Oviedo, & Serven, 2005), (Jalilian, Kirkpatrick, & Parker, 2007), tax burden, trade barriers, bankruptcy and contract enforcement, reforms in the economy (Haidar, 2012) are undoubtedly important factors in the growth or stagnation of the SMEs sector, affecting the new entrants flow (Badulescu, Badulescu, Sipos-Gug, Herte, & Gavrilut, 2020), (Munyo & Veiga, 2024).

Finally, different cultural attitudes towards entrepreneurship and the availability of entrepreneurship education and training can influence, positively or negatively, the rate of new business establishment and its impact on economic growth (Walter & Block, 2016), (Ndofirepi, 2020), (Patrício & Ferreira, 2024). Research has shown that the impact of new businesses on GDP growth can vary across sectors – high-tech and knowledge-intensive ones often have a more significant contribution to GDP from new enterprises compared to traditional sectors, highlighting the effects of agglomeration

and location economies (Bosma, van Stel, & Suddle, 2008), and the importance of local and regional factors (Audretsch & Fritsch, 1994), (Reynolds, Storey, & Westhead, 1994).

The relationship between the evolution of GDP and the firms' creation rate varies significantly across regions and is influenced by local economic conditions, institutional frameworks, and innovation capacities (Badulescu, et al., 2024). Studies highlight that regions with robust entrepreneurial ecosystems tend to experience higher GDP growth rates due to the positive impact of new business formation on job creation, innovation, and productivity (Capello, 2019). Research indicates that regional disparities, influenced by factors such as access to capital, infrastructure, and skilled labor, affect the rate of new business creation and economic growth (Floerkemeier, Spatafora, & Venables, 2021). For example, regions identified as innovation leaders in Europe recovered faster after the financial crisis of 2007-2008 (Bristow & Healy, 2018), and this resilience is attributed to the ability of innovative regions to adapt and reinvent their economic structures.

3 DATA AND METHODOLOGY

Romania is divided into eight development regions (NUTS2 level, see Figure 1) (Eurostat, 2021), ranked by GDP per capita as follows: the capital region, Bucharest-Ilfov, with over 28,400 EUR per capita, followed by the West Region (12,200 EUR per capita), Center Region (11,600 EUR per capita), North-West Region (10,500 EUR per capita), South-East Region (10,100 EUR per capita), South-West Region (9,400 EUR per capita), South-Muntenia Region (9,390 EUR per capita), and North-East Region (7,900 EUR per capita) (National Institute of Statistics (Romania), 2024).

The number of enterprises has grown steadily but slowly over the analyzed period, from around 555,000 in 2008-2010 to approximately 671,900 in 2022. Nearly a quarter of all companies registered in Romania (24.1%) are in the capital region, Bucharest-Ilfov, followed by the North-West Region (15%), Center, North-East, South-East, and South regions (each between 11% and 12%), while the South-West and North-East regions have the lowest percentages, between 7% and 9% each (National Institute of Statistics (Romania), 2024).

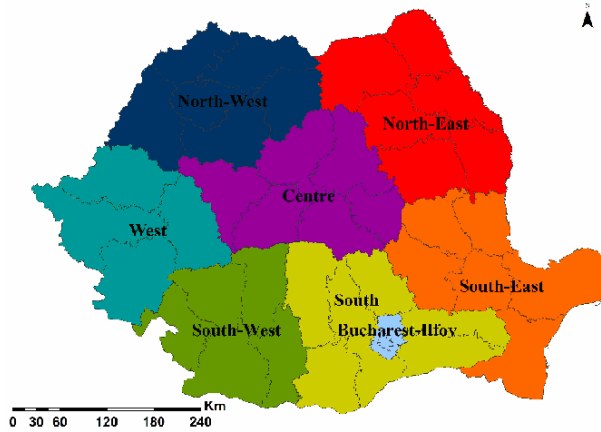


Fig. 1 The Development Regions of Romania (Muntean, Caranfil, & Ilovan, 2021)

This study investigates whether a unidirectional or bidirectional relationship exists, in both short-term and long-term contexts, between GDP and the rate of company creation across Romania and its development regions. For this, we used the annual data provided by Eurostat/ National Institute of Statistics (Romania) for the period 2006-2021 (Eurostat, 2024), (National Institute of Statistics (Romania), 2024). Given that the two variables have different measurement units, to process and interpret the results, the statistical data were logarithmized.

To analyze the relationship between the two variables, we tested their stationarity using the Augmented Dickey-Fuller (ADF) test (Dickey &

Fuller, 1979, p. 427). We applied Johansen's cointegration method to assess the existence of a long-term equilibrium relationship. Based on these

results, we used the appropriate model and tested for Granger causality between the variables.

As long as there is at least one unit root, the model is non-stationary, and we proceed with the cointegration tests application, such as the Johansen test. Otherwise, a VAR (Vector Autoregression) model will be used to explain the relationship between the variables. If the variables are cointegrated, the most appropriate model is the VECM (Vector Error Correction Model), which captures both the short-term dynamics and the long-term equilibrium relationship. Then, causality between the variables can be tested using the Granger causality test within this framework. If there is no cointegration relationship between the variables, the VAR model in first differences (VARD) will be applied, and subsequently, the Granger causality test will be performed. To investigate the presence of a long-term relationship, we will begin by testing the stationarity of the variables using the ADF (Augmented Dickey-Fuller) test. Identifying non-stationarity is essential to proceed with cointegration analysis and establish long-term equilibrium relationships.

4 RESULTS AND DISCUSSION

In Table 1, we presented the results obtained after applying the ADF test for the two logarithmic variables, GDP and the rate of establishment of companies, at the level of Romania and each region.

Table 1. Testing the stationarity of the variables

Variable	Test for a unit root in Level		Test for a unit root in the first difference	
	t-statistic (ADFcalc)	Test critical value	t-statistic (ADFcalc)	Test critical value
Romania				
LGDP	-1.901457	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-1.684449	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.740895	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-6.556934	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)
București – Ilfov Region				
LGDP	-2.078852	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-1.993195	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.374950	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-4.458577	1% (-4.200056) 5% (-3.175352) 10% (-2.728985)

Variable	Test for a unit root in Level		Test for a unit root in the first difference	
	t-statistic (ADFcalc)	Test critical value	t-statistic (ADFcalc)	Test critical value
Centre Region				
LGDP	-3.101218	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-1.976044	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.965717	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-6.913363	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)
North-East Region				
LGDP	-2.693614	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-1.979014	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.991062	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-6.718423	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)
North-West Region				
LGDP	-1.364899	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-2.055575	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.714270	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-5.977316	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)
South-East Region				
LGDP	-1.040191	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-3.390554	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.679612	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-6.924296	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)
South-Muntenia Region				
LGDP	-0.925052	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-3.994241	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.605983	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-6.723960	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)
South-West Region				
LGDP	-1.257590	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-1.654585	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.771612	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-5.478159	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)
West Region				
LGDP	-0.241383	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)	-1.996789	1% (-2.771926) 5% (-1.974028) 10% (-1.602922)
LSetup Rate	-2.920577	1% (-4.004425) 5% (-3.098896) 10% (-2.690439)	-6.758486	1% (-4.057910) 5% (-3.119910) 10% (-2.701103)

Based on the results presented in Table 1, it can be concluded that, in the level form of the variables LGDP and LSetup Rate, the null hypothesis of a unit root cannot be rejected at any of the three significance levels (1%, 5%, or 10%). Given the non-stationarity of the series, their first differences were computed to ensure stationarity, both in the case of Romania (total) and the case of the 8 regions. This time, in the case of the variables studying the rate of establishment of companies, it is observed that the null hypothesis (H_0) is rejected both for 1% ($|ADF_{calc}| > |ADF_{tab}| = 4.057910$) and for 5% ($|ADF_{calc}| > |ADF_{tab}| = 3.119910$), respectively 10% ($|ADF_{calc}| > |ADF_{tab}| = 2.701103$). For the other variables, the null hypothesis is only rejected for 10% or 5%. Thus, regarding the LGDP variable at the level of

Romania, respectively at the level of the 8 regions, we can state the following: the first-order differenced series of the LGDP variable achieves stationarity across all three significance levels (1%, 5%, and 10%) for the South-Muntenia and South-East regions. For the Bucharest-Ilfov, Center, North-East, North-West, and West regions, the first-order differenced series becomes stationary at the 5% and 10% significance levels. In contrast, for the South-West region and Romania as a whole, stationarity is achieved only at the 10% significance level.

Using the results of the ADF test, we can determine the order of integration (I) for these variables by identifying the presence or absence of unit roots. In this context, Table 2 has been constructed to present the findings.

Table 2. The order of integration of the model variables

	LGDP	LSetup Rate
1% critical value	$I = 1$ (South-East Region and South Muntenia Region)	$I = 1$ (Romania and the 8 component regions)
5% critical value	$I = 1$ (Bucharest -Ilfov, Center, North-East, North-West, West, South-East and South Muntenia Regions)	$I = 1$ (Romania and the 8 component regions)
10% critical value	$I = 1$ (Romania and the 8 component regions)	$I = 1$ (Romania and the 8 component regions)

We notice that the variables LSetup Rates have the order of integration equal to 1 at the 1%, 5%, and 10% significance levels. The variables LGDP have the order of integration equal to 1 at the level of Romania and the level of the 8 regions only at a 10% significance level. If the variables have the same order of integration, the possibility of co-integration relationships exists within the models to be estimated.

To identify the relationship between GDP and the rate of establishment of firms, we will develop two models for each region. The first model will contain the rate of establishment of firms as the dependent variable and the GDP as the independent variable. The second model will include GDP as the dependent variable, while the rate of

establishment of companies represents the independent variable. Thus, we will continue to apply the Johansen integration test to identify a possible long-term relationship within the models for the 8 regions of Romania, and respectively for Romania as a whole. Depending on the results of the Johansen integration test, we can decide whether the application of the VEC model is optimal for each region. The presence of cointegration between variables indicates a long-term relationship between them. Therefore, the Error Correction Model (VECM) can be applied. In Tables 3 and 4 we have presented the long-term relationship and the short-term relationship between the two variables, GDP and the rate of establishment of firms.

Table 3. VECM and Granger Causality – Firm establishment rate (dependent variable)

Causality direction	Error correction term (long-term) (EC) [t-statistic] (std. error)	Coefficient of the independent variable (short-term) [t-statistic] (std. error)	Coefficient of the first-order lag [t-statistic] (std. error)	R-squared (F-statistic)
GDP → RATE OF ESTABLISHMENT OF COMPANIES				
Romania (total)	-0.764815 (0.50239) [-1.52235]	-0.191053 (1.88425) [-0.10140]	-0.187930 (0.33532) [-0.56045]	0.51043 (3.1279)
Center Region	-0.644878 (0.44953) [-1.43455]	2.239538 (2.25896) [0.99140]	-0.299243 (0.32878) [-0.91015]	0.51660 (3.206132)
North-East Region	-0.760796 (0.45766) [-1.66236]	0.182799 (1.80743) [0.10114]	-0.221649 (0.32776) [-0.67625]	0.51753 (3.218025)
North-West Region	-1.050595 (0.48255) [-2.17717]	0.152224 (1.40546) [0.10831]	-0.001311 (0.33110) [-0.00396]	0.53485 (3.449581)
Bucharest-Ilfov Region	-1.044215 (0.30473) [-3.42670]	-0.574532 (0.75655) [-0.75941]	0.152147 (0.25816) [0.58934]	0.66909 (6.066021)
South-East Region	-0.075284 (0.17951) [-0.41938]	-1.890721 (0.96835) [-1.95251]	-0.545287 (0.24278) [-2.24603]	0.57815 (4.11598)
South-Muntenia Region	-0.546116 (0.41249) [-1.32394]	-1.724174 (1.18919) [-1.44987]	-0.358362 (0.30177) [-1.18754]	0.58597 (4.2459)
South-West Region	-0.943080 (0.46513) [-2.02754]	0.640993 (1.62567) [0.39429]	0.012259 (0.33574) [0.03651]	0.45748 (2.52977)
West Region	-0.699374 (0.42412) [-1.64902]	2.116935 (2.00081) [1.05804]	-0.370720 (0.32318) [-1.14710]	0.53691 (3.47827)

The results show that the causal effect of GDP on the rate of establishment of firms is significant in the long term in Romania, the error correction term being statistically significant at 10% significance level. Moreover, the negative sign of this coefficient indicates that the relationship between the mentioned variables is characterized by a long-term equilibrium. The value of the estimated coefficient (EC) indicates that approximately 76% of the imbalance is corrected in a year. Therefore, the results confirm a long-term relationship between GDP and the rate of establishment of firms. On the other hand, regarding the short-term causal effect, it is observed that, at the level of

Romania, this relationship is not supported, as the coefficient is not statistically significant (t-statistic = 0.10140). Also, the results show that the establishment rate of firms in period t-1 does not influence the establishment rate in period t. At the level of the 8 development regions of Romania, a relatively similar evolution can be observed. Thus, in the Center, North-East, North-West, Bucharest Ilfov, South-West, and West regions, the causal effect of GDP on the rate of establishment of companies is significant in the long term, at the 10% significance level. We also note that the sign of the coefficients is negative, which confirms a long-term relationship. However, the results show

that in the South-East Region and the South-Muntenia Region, this long-term relationship is not confirmed for the total population, as the t-statistic value is lower than the critical value from the statistical table. However, the short-term coefficients indicate convergence and significant results from GDP to the establishment rate of firms in the two regions. In the other areas analyzed, the coefficients are not statistically significant. Therefore, in the Center, North-East, North-West, Bucharest Ilfov, South-West, and West regions, we did not identify a short-term relationship between GDP and the rate of establishment of

companies. Moreover, based on the coefficients of the independent variable (in the short term), we can conclude that GDP has a negative relationship with the rate of firm establishment in the two regions. Thus, when the GDP increases by 1%, the establishment rate of companies decreases by 1.89% in the South-East Region and by 1.72% in the South-Muntenia Region. As in the case of Romania, at the level of the 8 regions, it can be observed that the establishment rate of firms in period t-1 does not influence the establishment rate of firms in period t, except for the South-East Region.

Table 4. VECM and Granger Causality – GDP (dependent variable)

Causality direction	Error correction term (long-term) (EC) [t-statistic] (std. error)	Coefficient of the independent variable (short-term) [t-statistic] (std. error)	Coefficient of the first-order lag [t-statistic] (std. error)	R-squared (F-statistic)
RATE OF ESTABLISHMENT OF COMPANIES → GDP				
Romania (total)	-0.100250 (0.05495) [-1.82432]	0.095021 (0.06654) [1.42796]	0.654133 (0.37392) [1.74938]	0.343103 (1.56692)
Center Region	-0.075686 (0.04456) [-1.69838]	0.075307 (0.05254) [1.43326]	0.627991 (0.36100) [1.73958]	0.334685 (1.509144)
North-East Region	-0.044877 (0.03770) [-1.19023]	0.057775 (0.06016) [0.96033]	0.500168 (0.33176) [1.50763]	0.281658 (1.176282)
North-West Region	-0.044730 (0.05183) [-0.86299]	0.102876 (0.08479) [1.21323]	0.413648 (0.35993) [1.14923]	0.202869 (0.76499)
Bucharest-Ilfov Region	-0.054463 (0.02790) [-1.95217]	0.128941 (0.11366) [1.13444]	0.282824 (0.33308) [0.84911]	0.365226 (1.726090)
South-East Region	-0.214334 (0.11013) [-1.94614]	0.082128 (0.07596) [1.08120]	0.079573 (0.30298) [0.26264]	0.304346 (1.312487)
South-Muntenia Region	-0.072361 (0.06385) [-1.13337]	0.121812 (0.08140) [1.49647]	-0.175944 (0.32078) [-0.54849]	0.249234 (0.9959)
South-West Region	-0.053617 (0.05400) [-0.99286]	0.041884 (0.07470) [0.56072]	0.410512 (0.36168) [1.13500]	0.171425 (0.620675)
West Region	-0.106416 (0.04637) [-2.29490]	0.042594 (0.05869) [0.72578]	0.648384 (0.36333) [1.78456]	0.433606 (2.29667)

Starting from the results obtained following the application of the model (GDP as the dependent variable, it can be concluded that the long-term causal effect of the rate of company establishment on GDP is statistically significant at the 10% significance level for Romania, the Central Region, the Bucharest-Ilfov Region, the South-East Region, and the West Region. In the other regions, North-East, North-West, South Muntenia, and South-West, although we obtained a negative coefficient, these coefficients are not statistically significant. Therefore, we can state that in Romania, the relationship between the rate of establishment of companies and GDP is characterized by a long-term equilibrium and the value of the estimated coefficient (EC) indicates that approximately 10% of the imbalance is corrected in a year. Regarding the short-term relationship, we observe that both at the level of the entire country and the level of the Center and South-Muntenia regions, the establishment rate of companies significantly influences the GDP. Thus, when the rate increases by 1%, the GDP increases by 0.9% at the country level, 7% in the Center Region, and 12% in the South-Mountain Region.

5 CONCLUSIONS

The literature suggests a strong and positive relationship between the evolution of GDP and the creation rate. However, this relationship is more complex and influenced by various factors, including the type of entrepreneurial activity, the institutional context, and the level of economic development. The regional perspective on the relationship between the evolution of GDP and the rate of establishment of companies underlines the importance of local conditions and targeted policies in stimulating economic growth and reducing disparities.

In this paper, we aimed to analyze the relationship between economic growth and business formation rates in Romania, from a regional and national perspective to highlight possible particularities and trends regarding the contribution of the SME sector to economic growth. We tried to answer an important question in economic theory and practice, namely, does GDP evolution determine the pace of new firm formation or, conversely, does the formation of new firms influence GDP

evolution? We were interested in finding out, in the case of Romania and its component regions:

- if the relationship between these variables exists,
- what is the meaning of this relationship,
- how it behaves in the short or long term, and
- if there are regional particularities within these relationships.

We found that the causal effect of GDP on the firm formation rate is significant and balanced in the long term at the national level. In the short term, however, this relationship does not hold. At the level of Romania's development regions, the evolution is somewhat similar to the national level. Thus, in six of the eight regions (Center, North-East, North-West, Bucharest Ilfov, South-West, and West) the GDP evolution significantly influences the long-term company formation rate. In the South-East and South Muntenia regions, this long-term relationship is not confirmed. In the short term, in the Center, North-East, North-West, Bucharest-Ilfov, South-West, and West regions, we did not identify a relationship between GDP and the company formation rate, and, surprisingly, in the South-East Region and Sud-Muntenia Region, we found that GDP growth has a negative relationship with the rate of company creation.

On the other hand, when researching whether the companies' formation rate influences economic growth, we found that the causal effect is significant in the long term in the case of Romania, and, respectively, in the case of the Central, Bucharest - Ilfov, South-East and West Regions. In the other regions (North-East, North-West, South Muntenia, and South-West), we obtained a negative coefficient, but not statistically significant. In the short term, we observe that, both at the national level and in the Center and South-Muntenia regions, the rate of company establishment significantly influences GDP. Its effect is not statistically significant in the other six.

As an overall conclusion, we can say that, rather, economic growth determines, in the long term, the availability of launching new firms, and not the contrary (that the new firms' creation would stimulate, directly and noticeably, economic growth). This statement must be discussed and accompanied by exemptions or particular behaviors. Consistent with other our previous research on this topic (Dianu, Gavriliuț, Badulescu,

Simut, & Herte, 2019), (Simut, Badulescu, & Dianu, 2021), (Badulescu, Badulescu, Simut & Dianu, 2025) we can observe several differences between Romania's regions in terms of their potential and orientation towards sustained economic growth. However, these differences are not significant enough to suggest expressively divergent development paths or a notably faster progression for any particular region toward European averages compared to others. However, the metropolitan Region (i.e. Bucharest-Ifov) stands out as an exception, exhibiting a significantly higher growth rate. Our forecasts indicate that this trend will persist, further widening the gap between this region and the other regions of Romania.

Practical and theoretical utility and economic policy recommendations derived from this research could be focused on the imperative effective regional policies supporting entrepreneurship, innovation, and infrastructure development to reduce regional disparities and promote balanced economic growth. Location-based policies that address the specific needs of lagging regions can help promote a more inclusive economic environment (Floerkemeier, Spatafora, & Venables, 2021), and policymakers concerned with stimulating economic growth should consider these factors to create proper environment support and nurture entrepreneurial activity.

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