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THE IMPACT OF DEVELOPMENT RESOURCES OF HUNGARIAN SMES IN DISADVANTAGED AREAS

The Hungarian micro, small and medium enterprises (SMEs) has the possibility to have access to development resources. The Economic and Competitiveness Operational Programme and The Economic Development Operational Programme (EDOP) support SME's with billions of EU and national non-refundable funds. In our quantitative research, we made a database using data of medium enterprises who received funds between 2004 and 2013 (EDOP founds), the database was completed using data from the enterprises' annual reports. We used the balance sheet to obtain data on company assets, income statement to obtain income, expenses and earnings before taxes data. We collected all listed data for the previous years and following periods (between 2006 and 2013). In this study, we analyzed performance indicators based on assets and profitability of company, for periods following the financial fund get from the above-named programs. The research enabled to map the growth path following the grants. This study confirmed the necessity of direct funds for SME companies following their strategical growth path, and gives advice for the future resource allocation. These advices may be integrated as criteria for resource award in the future.

Keywords: SME, growth, EU funds, performance

Introduction

Micro, small and medium-sized enterprises (SMEs) play a significant social and economic role in all countries of the world: in OECD countries, the number of SMEs represents 98% of the total. Of these, the proportion of micro enterprises is almost 90%. In addition to the large number of employees, these companies have a strong impact on GDP production and job creation. The perception of SMEs is important for all national governments (OECD, 2002), even though its significance is explained by various reasons (Mészáros et al., 2001). Szerb (2000) emphasizes the diversification and flexibility of the market to meet the needs. Another important aspect is the role of SMEs in strengthening competition for market players who can react dynamically and flexibly to changes in demand. In some regions, including Hungary, they also offer alternatives to less developed areas and different social groups (e.g. women, minorities, young people) for employers and primarily self-employed (Futó, 2000). In the European Union and also in Hungary, the SME

classification is based on the total assets, the annual turnover and the number of employees *(Tab 1.)*. Accordingly, a micro-enterprise is an undertaking with less than 10 employees and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million. By 2014, the number of enterprises was 21,564,380, of which 21,521,080 (99.8%) were SMEs. SMEs also play an important role in employment; almost 140 million employees employ 90 million workers (EU28).

Table 1: SME classification factors (Source: own editing)

Company category	**Staff headcount**	**Turnover** or	**Balance sheet total**
Micro	< 10	≤ € 2 m	≤ € 10 m
Small	< 50	≤ € 10 m	≤ € 10 m
Medium-sized	< 250	≤ € 50 m	≤ € 43 m

Accordingly, the development of small businesses in the EU is of the utmost importance. In March 2000, the Lisbon Agenda was adopted, aiming to achieve a 3% growth and 20 million jobs by 2010 (Euractiv, 2004). At the same time, the European Charter on Small Enterprises was adopted and made proposals to improve business conditions.

However, these measures did not produce the desired results. The differences between the EU and the US have not been reduced. Moreover, the emergence of Asian economies threatened to bring the EU economy to the third place. In response to negative trends, the Green Paper has been published, which contrasts with the Charter with a bottom-up approach in order to reach the widest possible range of action areas. The two proposed topics are 1) the growth of entrepreneurial willingness and 2) the growth of enterprises (EC, 2003a). With regard to these issues, the Commission has issued a business action plan which provided a strategic framework for the two topics covered in the Green Paper (EC, 2004).

The Europe 2020 Strategy will show how the social market economy will emerge over the next ten years and is based on the three areas mentioned above (US, Asia, EU). In order to achieve the set objectives, the Commission recommends the Europe 2020 program, which organizes tasks organized around flagship initiatives.

In the implementation of the strategy, EU management approaches are in place to ensure that effective policy measures are taken. The Commission is constantly monitoring the progress made.

In order to increase coherence, the reporting and evaluation of the Europe 2020 Strategy and the Stability and Growth Pact will take place at the same time. Thus, these two strategies will try to implement the efforts of similar reforms while continuing to act as separate tools (EC, 2010).

Micro, small and medium-sized enterprises in Hungary

The vast majority of businesses in Hungary belong to the SME category, with fewer than 249 employees. They play a significant role in the country's income generation, investment and employment. According to the 2013 figures, the number of registered businesses was 598,000, down by 46,000 compared to 2012. This 15% decline was mainly due to small and private enterprises, while corporate enterprises showed stagnation during this period. The number of small and medium-sized enterprises did not change significantly, but micro-enterprises fell by 6.8% (KSH, 2014).

Kallay et al. (2005) characterized the SME sector as follows: *'...for the current situation of the domestic small and medium enterprises is true that a catching-up process can be observed in a number of important areas (financing, self-organization, management, the use of information and communication technologies), however, compared with the small and medium-sized enterprises in the developed countries, a significant backlog can be observed'*. Despite the fact that this statement was born more than ten years ago, it is still valid, although the catching-up process continues.

By 2013, the performance of SMEs could not be recovered from the 2008 crisis, since 2009 the sector performance has weakened. In recent years, many financial indicators fluctuate significantly – 90% of 2008 values – such as SMEs, Employment or Value Added.

The number of Hungarian small and medium-sized enterprises significantly exceeds the EU average and as a result they employ fewer people but have a significant employment impact. The EU average for employment is 4.2/company, in Hungary this figure is 3.1. For micro-enterprises the average number of employees is 1.6, for small businesses 19.1, for medium-sized enterprises 97.9, and for large companies 834.7 (EU, 2011).

The performance of the SME sector in terms of gross added value is significantly below the EU average. According to the 2011 figures, the value creation of the domestic sector is 5% lower, since then the performance of the Hungarian sector has deteriorated continuously.

SMEs are characterized by a strong territorial concentration: the most significant is the Central Hungarian region, where 40% of all enterprises, while in the other regions, is similar to the distribution (KSH, 2014) *(Fig 1.)*.

The average turnover of SMEs was lower than that of any business, and spatial distribution was significant due to organizational structure. According to the 2012 data, SMEs achieved an average turnover of HUF 70 million, while the partnerships reached 112 million. The difference is the smallest in Southern Transdanubia and in

the Southern Great Plain, while the biggest difference is observed in the Central and Western Transdanubia and Central Hungary regions.

Although the vast majority of SMEs were micro-enterprises, only 36% of sales revenue, while 28% of small enterprises and 4.1% of medium-sized enterprises were realized. In Southern Transdanubia and Northern Hungary, micro-enterprises played a major role, the ratio of small enterprises to Southern Transdanubia and Southern Great Plain was highest, while Central and Northern Hungary, Central Transdanubia and Northern Great Plain (KSH, 2014).

Balaton Region is part of three NUTS II regions: Central Transdanubia, Southern Transdanubia and Northern Hungary. All three regions are disadvantaged regions.

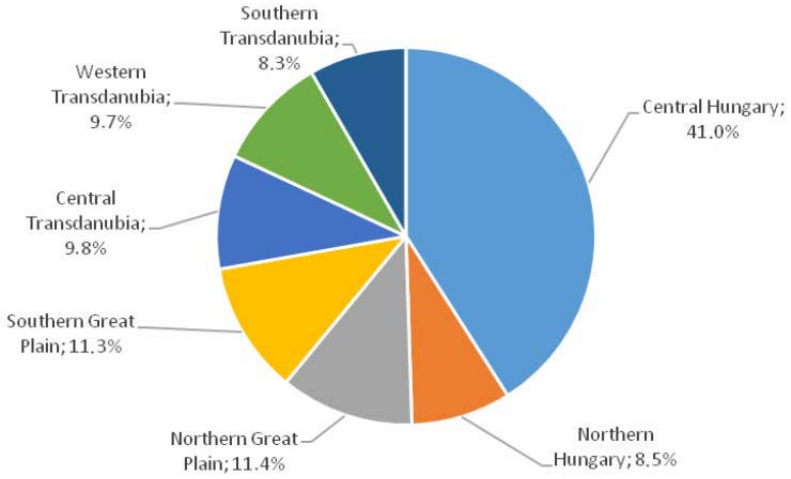

Figure 1: The geographical distribution of SMEs (Source: own editing based on HCSO data)

Business development within the EU

In line with the Lisbon process, the European Council published the European Charter for Small Enterprises in 2000. The Charter is nothing but the distribution of the objectives of the Lisbon process at the level of SMEs. When the renewed Commission revised the strategic policy, government support was becoming less and less targeted. The goal was to achieve a more predictable economic environment and better procedural efficiency by improving implementation, transparency and sharing of responsibilities (Evaluation Report, 2010).

Government interventions aimed at SME development in Hungary were covered by the Széchenyi Enterprise Development Program (2003–2006) during the EDOP (Economic Development Operational Programme) planning phase. The main

objectives were to increase the competitiveness of businesses, to prepare for integration into the European Union, to facilitate access to resources, and to create the necessary conditions for mobilizing funding sources.

Amin-Tomaney (1995) states that: *'the cohesion policies are intended to compensate for the negative effects of restructuring derived from the neoliberal growth theory, embodied for example by the implementation of the European Common Market and the European Economic and Monetary Union'* (Eperjesi, 2013).

The use of state resources for development in the European Union is governed by cohesion policy, and its resources are a major part of Community spending. Member States represent different levels of development and are consequently eligible for different rates of assistance (Nyikos, 2013).

The essence of cohesion policy was to contribute to the eradication of socio-economic disparities between the Member States of the European Union and to create real convergence. This requires improving the economic performance of the regions, in particular as regards GDP, employment, foreign trade balance and investment (Nyikos, 2013).

Convergence policy, in the interpretation of Nagy – Heil (2013), represents a system of institutions with complex objectives that includes absorption, regularity and efficiency.

The European Union's cohesion policy seeks to eliminate inequalities by promoting economic growth. To sum up, the aim of cohesion policy is to promote economic, social and territorial cooperation of the community, to promote harmonious development, to reduce the differences between the different regions and to develop disadvantaged areas.[1] The Structural and Cohesion Funds are responsible for the resources required for implementation (Nyikos, 2013).

Cohesion policy has changed significantly in the 2007–2013 programming period compared to the 2000–2006 period. The independent operation of the Cohesion Fund between 2007 and 2013 ceased, but remains part of the convergence objectives. The three new objectives included the first three objectives and the tasks of Interreg III, Equal and Urban II. The latter two programs are among the objectives of convergence, regional competitiveness and employment (EURP, 2007).

Based on the experience of previous periods, five ambitious targets for employment, innovation, education, poverty reduction and climate policy/energy issues in the Europe 2020 strategy (smart, sustainable and inclusive growth) have been set in the Europe 2020 strategy. Three financial instruments are maintained

1 NUTS 2 regions with a gross domestic product (GDP) per capita in purchasing power standards (PPS) that is equal to or less than 75% of the EU-27 average.

(ERDF, ESF, Cohesion Fund), but these regional categories also appear. The main objectives can be divided into two groups, including investments for growth and job creation, and the other for European territorial cooperation (Cohesion Policy, 2015).

Hungarian regional policy

Prior to joining the EU, there was also a regional policy in Hungary, but the legal bases only existed in the 1996 XXI. The Law on Regional Development and its 1999 amendments. At that time, regional policy was operating at the county level, this change was triggered by the NUTS II level, which resulted in the creation of regions (Szabó, 2007).

Although the European Union recognizes Hungary's successes, namely that only our country succeeded in establishing a law on regional development between the transition countries, only low compatibility with the European Union was established. The 1999 amendment created more regions for the regions, obliging them to set up their own regional development councils. This was in line with international practice and the councils were not only related to national and local government institutions, but also participated in the development of domestic small and medium-sized enterprises (Szabó, 2007).

In the 1990s, Hungary received three non-repayable funds for PHARE, ISPA and SAPARD. The pre-accession fund aims to reduce regional disparities within the EU and to develop an appropriate institutional framework to achieve the resources of the Structural and Cohesion Funds (Szabó, 2007).

Hungary's objectives – Operational Programs 2014–2020

Some of the funds granted by the European Union can be accessed through the operational programs of the National Development Plan (NDP). The SME sector was entitled to apply for unprovable funding, mainly under the Economic Competitiveness Operational Program (ECOP). Within these two outstanding programs we should mention: 2.1.1. 'Supporting the technical and technological background of small and medium-sized enterprises' and 2.2.2. 'Special advice for micro, small and medium-sized enterprises'. These programs were characterized by the creation and promotion of fast growing enterprises (Csapó, 2009).

The primary objective of the Economic Development Operational Program was primarily the development of SMEs. The goal of GOP 2.1 was to improve the technical and technological background of SMEs. These include technological upgrading, upgrading their innovative capacity, upgrading technical and technological management, building quality management systems. Its objective is to

promote the market position of SMEs, improve competitiveness through their innovative capacity and technological upgrading, and to provide the necessary conditions for building a quality assurance system (2010 Evaluation Report). Businesses may request resources for technical machinery and equipment, real estate development or expansion to purchase production, trade and/or services, and know-how or licenses.

34.9% of total applications were submitted for GOP offers. Of this number 40.7% were supported projects and the funds received were 13.6% of the total. GOP priorities at regional level were 42,462 applications, 60.1% of which were awarded. Total funding was 1.702 billion forints, 61.4% and 59.3% paid (Hutkai, 2014).

Material and methods

As a first step in the creation of the database, we defined five call for proposals (GOP 2.1.1/A, 2007–2010), and the winners of these tenders formed the studied base population. The next step was to collect the application data for these businesses. Accordingly, the names of the applicants, the projects they carried out, the location of the investments (region, county or municipal level), the resources acquired and spent, and the intensity of the funding for which we calculated the actual financing requirement of the project was available. It was also possible to collect the date of commencement and completion of the execution.

In order to establish our hypothesis, besides the basic information on subsidies, information on the financial situation and profitability of the applicants is also needed. These data are freely available in companies' published financial statements. These reports are available only to companies because the reporting obligations are provided in the Accounting Act and individual entrepreneurs are not subject to the Accounting Act (C. Act of 2000).

Accordingly, we had to exclude companies from the database that are not covered by the Accounting Act. Following the exclusion of self-employed persons, the final sample contains 4977 companies, typically limited-liability companies (4265) and limited partnership companies (535). Out of the remaining 177 enterprises, 49 cooperatives, 10 general partnerships and 118 limited liability companies. The sample includes 3632 micro-enterprises, 1075 small businesses and 270 medium-sized enterprises.

In addition to the existing and purified data of the applicants in the third part of our database, besides the classification of the enterprises in the SME categories, we had to examine the financial situation and the profitability of each undertaking. This study was based on data from financial statements. These data are accessible to the public in the Company Information System of the Ministry of Justice through the Accounting Act and are accessible to everyone.

After collecting data, we determined the time required for the analysis. As projects were implemented between 2007 and 2010, we chose an analysis of the 2006–2013 period, so the period under review is eight years. According to our hypothesis, we needed the financial statements of the companies. We were downloaded the financial data every year from the balance sheet. Further analysis is required for classification. For the purposes of the capital structure analysis, we examined the company's equity, its long-term and short-term liabilities. To compute absolute and relative numbers with the indicators, we collect annual revenue, financial and personnel expenses, depreciation and amortization in the income statement. In addition to the aforementioned sales revenues and expenses, we collected the following revenue categories: operating income, extraordinary income, pre-tax profit, post-tax profit.

As outlined above, in each of the eight years selected, each company received 12 data a year, a total of 96. The collection has started downloading the downloadable format financial reports at http://e-beszamolo.im.gov.hu. We have collected 4 reports for each business. Since each report must contain the data for the previous year, it was enough to download the report every two years. Separate parts of the report or reports (balance sheet, profit and loss statement) can be downloaded annually, depending on the type of uploads chosen by the company, the system is not consistent in this respect. Number of documents downloaded (except annexes to the profit and loss account) 28,093. The number of data extracted was 477,792. The number of data extracted was 477,792. For the sake of comparison, the data were deflated for the base year 2006 with the help of the official inflation index in order to eliminate inflationary impacts.

The financial and economic crisis has had a significant impact on our country and therefore on SMEs. The database presented above has improved as a result of the crisis. A second database was created to adjust the data on the impact of the change in GDP, similarly to adjusting the effects of inflation. In this case, we also used the official statistics of the Hungarian Central Statistical Office.

The structure of the definitive database

The raw database contains the bidder's offer (business name, project name, region, county government, funding, intensity of support, execution time), micro, small and medium enterprises) and the above-mentioned accounting records. Accordingly, the complete database had 522,585 input data.

During the hypothesis, we had to reconcile the application years (periods) before and after the implementation of the projects. This has allowed the correlation between the results of businesses receiving support at different times. When setting the time intervals we would have to analyze short-term and long-term effects.

After determining the periods and intervals, the indicators designed for testing the hypotheses (derived data) were determined. Accordingly, we calculated the value-added index to validate the first three hypotheses to measure changes in the value added of businesses. This uses variable income data and summarizes pre-tax results for the period, personnel expenses and amortization costs. The value of value added (AV) was determined by the following formula (Chikán – Wimmer, 2004): pre-tax profit + employee costs + depreciation expense.

The correlation between data correlation was performed using SPSS 22.0. Correlation calculations were performed when we had to investigate interaction between different variables (interaction). This paper presents the direction and proximity of the relationship between different variables (Molnár, 2015). The relationship between the different variables is shown by the correlation coefficient, while the correlation coefficient is represented by the absolute value of the coefficient (Sajtos, 2007).

Results and debates

In order to examine the utilization used at regional level, we first listed the individual regions. The ranking was based on the per capita GDP of 2007. The first places of the ranking are occupied by the Transdanubian regions, while in the second half of the list we find the regions of Eastern Hungary. The EDOP 2.1.1 call for proposals, which we have examined, has appeared uniformly in convergence regions. This means that, unlike the call for proposals, there were no separate quotas or targeted resources to support disadvantaged regions. In our hypothesis, we suppose that the difference in the aid intensity of the disadvantaged regions in the proposals for proposals is insufficient to provide these regions with proportionally more resources.

Along with the distribution of the companies in the sample, we examined the average amount of aid received by each company. According to the analysis, the three most disadvantaged regions are outstanding, while the average aid (AT) in developed regions is below HUF 13 million, while the average of the three least developed regions is HUF 15 million.

Then, in addition to the above, we examined that a relationship can be quantified between the sources of financing and the level of development of the regions. For each of the bidding periods and proposals for proposals we have examined the level of development of the region (per capita GDP-GDPFO) and the amount of grant awarded. We used a correlation calculation to test the connection. The results for each year can be found in the following tables:

Table 2: The relation between regional development (per capita GDP-GDPFO) and the size of the average grant (AT) awarded (Source: own editing)

Correlations

		AT2007	GDPFO2007
AT2007	Pearson Correlation	1	,031
	Sig. (2-tailed)		,954
	N	6	6
GDPFO 2007	Pearson Correlation	,031	1
	Sig. (2-tailed)	,954	
	N	6	6

Correlations

		AT2008	GDPFO2008
AT2008	Pearson Correlation	1	-,870*
	Sig. (2-tailed)		,024
	N	6	6
GDPFO 2008	Pearson Correlation	-,870*	1
	Sig. (2-tailed)	,024	
	N	6	6

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		AT2009	GDPFO2009
AT2009	Pearson Correlation	1	-,880*
	Sig. (2-tailed)		,021
	N	6	6
GDPFO 2009	Pearson Correlation	-,880*	1
	Sig. (2-tailed)	,021	
	N	6	6

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		AT2010	GDPFO2010
AT2010	Pearson Correlation	1	-,848*
	Sig. (2-tailed)		,033
	N	6	6
GDPFO 2010	Pearson Correlation	-,848*	1
	Sig. (2-tailed)	,033	
	N	6	6

*. Correlation is significant at the 0.05 level (2-tailed).

As we can see, except for 2007 data, the connection is significant and has a strong negative connection. The explanation is contained in the calls for proposals: because of the four financing cycles, 2007 was the year when the level of development of the regions was not a discriminating factor for businesses, and the proportion of subsidies was uniform throughout. Beginning in 2008, regions with a greater number of disadvantaged sub-regions have a higher aid intensity.

We would therefore like to demonstrate that the relationship between the resources received and the resources used and the added value of the winning companies are independent from the level of development of the regions. In examining our assumption, we tried to look at the value-added changes of the underlying companies compared to the results of all the companies in a given region. However, this analysis was hampered by the fact that data on the performance of SMEs were not available at regional level. In such circumstances, we could only compare the added value of all the companies in the regions (including large companies).

During the study, we calculated the value added of the companies in the sample in the end of 2013 (end of the test cycle) and the 2006 base year and then the same calculations were made for all enterprises in a given region. The ratio of these two values shows that the dynamics of growth are different between enterprises from the sample and all enterprises in that region. Based on the results we came to the

conclusion that in the three least developed regions (Northern Hungary, Northern Great Plain, Southern Great Plain) this dynamics is significantly higher (112.69%, 109.67%, 97.64%) than in economically developed regions. In economically developed regions, the result remained below 90%.

Table 3: The relation between per capita GDP (GDPFO) and the rate of change of the value added dynamics (Source: own editing)

Correlations

		GDPFO	Dynamics
GDPFO	Pearson Correlation	1	–,835*
	Sig. (2-tailed)		,038
	N	6	6
Dynamics	Pearson Correlation	–,835*	1
	Sig. (2-tailed)	,038	
	N	6	6

*. Correlation is significant at the 0.05 level (2-tailed).

The difference in the dynamics of growth is clear from the above data, but we also examined whether there is a verifiable relationship between ranking the regions on this dynamics and per capita GDP. To verify the connection, we performed a 5% significance level correlation calculation and found a strong negative (–0.835) connection. The above facts clearly show our hypothesis, and we can also conclude that funding sources have led to more dynamic economic growth in less developed regions.

Conclusion

In our research we examined the regional impact of the projects. We demonstrated that enterprises in the disadvantaged statistical regions received a larger share of the aid, and the average amount received was also higher. By correlation calculation, we proved that the higher aid intensity resulted in an increase in the amounts granted so that the higher aid intensities in the call for proposals have a positive effect on the absorption capacity of the given region.

We have also examined whether enterprises in disadvantaged areas are able to take advantage of the subsidies received or their results are below the performance of businesses in the more developed regions. During the investigation, we found that the added value of enterprises in the less developed regions was higher than in the developed regions. The analysis showed a strong negative significant relationship between the per capita GDP of the regions and the added value of the subsidized

enterprises, so we came up with the fact that the aid granted resulted in a more dynamic growth in the less developed economic regions.

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