Economic Performance of the SME sector in CEE Countries: an Empirical Investigation

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Abstract: Small and medium enterprises are an important part of a country's economy and are a significant source for creating value added, employment, innovation and economic growth. Because of this improving their performance is a major concern of the specialists in the field. Through this paper we intend to evaluate the evolution of the SMEs performance between 2008 and 2014, but also to determine the factors that are influencing the growth of the value added of SMEs in the Central and Eastern European countries. In order to achieve the objectives proposed we use as methods the comparison of indicators and multiple linear regression models. The results obtained show that a part of the considered macroeconomic performance indicators, such as: total tax rate, exports of goods and services and private final consumption are statistically significant and have a strong influence on the SMEs performance. Also we observe important differences according to firm size.

Keywords: SME; performance; value added; employment; CEE

JEL Classification: C33; G01; L25

1 Introduction

Small and Medium Enterprises represent an important part of all the European economies and are a significant source from creating value added, employment, innovation and economic growth. They produce considerably more than half of the European Union's GDP, being the biggest sector of the EU economy, with 23 million enterprises employing around 75 million people. The SMEs are responsible for the creation of one in every two new jobs. So, results the need of sustaining the growth and development of this sector. Growth and development of SMEs is influenced by several factors, as shown in the specialized literature. Modelling of the economic performance aims to increase the efficiency by improving the interventions and adaptability of SMEs in different economic cycles (Campbell et

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al., 2001). There aren't numerous studies on the factors that influence financial performance only on SMEs. Even if these companies have certain particularities, however financial factors influence does not differ much from those observed among large companies. (Hakinson et al., 1997; Woldie et al., 2008). But, in their study, Popa and Ciobanu (2014) show that the macroeconomic factors (inflation, unemployment, economic crises, changes in GDP etc.) have an important influence on the profitability of the SMEs, besides the microeconomic factors. Also, recent studies use regression analysis to shape the company's performance using as functional dependency the economic and financial indicators.

The objective of this paper is to analyze the evolution of the SMEs performance compared to 2008, and also to identify the factors that affect the SMEs performance in the Central and Eastern European countries. There aren't many studies on this matter, so the models that we propose for the analysis are new. There are, for example, for Romania, some econometric models that analyze the performance of the companies listed on the Bucharest Stock Exchange. They emphasize the relationship between intangible assets and the company's performance expressed by the average annual market price, price earnings ratio and earnings per share (Purcarea and Stancu, 2011).

In our analysis, we consider seven countries from the Central and Eastern European region (Bulgaria, Estonia, Hungary, Lithuania, Latvia, Poland and Romania) and we start from the macroeconomic performance as being the important factor of determination of the SMEs performance. Moreover, we have to keep in mind that in conditions of financial crisis, the SME sector performance is more affected, and this sector needs to be sustained because these companies can bring an important contribution to national economic recovery.

In order to achieve the proposed objective, we have structures our paper as follows: *the first part* contains introductory remarks regarding key characteristics of the SME sector in the CEE considered countries; *the second part* is devoted to analysis of the evolution of the performance of SMEs between 2008 and 2014, in the CEE countries; *the third part* represents an empirical analysis of the influence of macroeconomic performance on the value added growth of the SMEs. The study ends with conclusions.

The *research methodology* used in this paper is based on the indicators calculated by the World Bank, the World Economic Forum surveys, the European Commission and on the information provided by some empirical studies. The methods used are comparison of the indicators and multiple linear regressions.

2 Characterization of the SME sector in CEE countries

The European Commission classifies the enterprises by size taking into account the number of employees and the turnover or balance sheet total. The Commission counts companies with less than 250 workers and a turnover of less than 50 million euro annually as SME. On the other hand, the companies that have a balance sheet total or more than 43 million euro cannot be considered as SME. Because they have a small size and lean structures, SMEs are potentially more dynamic than big enterprises, fact that makes them to be very important for job creation. But, in the same time, they are also more vulnerable, often being faced with the lack of access to capital and to financing resources. Beck, Demirgüç-Kunt, Laeven and Maksimovic (2006) show that access to finance and credit costs are much more important obstacles for SMEs, in comparison with large enterprises, and that these factors affect their performances.

In the post crisis period, although the economies from CEE are starting to recover, the SMEs are still facing serious problems in accessing external financing. The willingness of banks, to provide loans, is still reduced (European Central Bank, 2014), so the CEE countries have to take measures in order to stimulate SME's financing.

The SME sector is of critical importance for economic and social development of a country because these firms through their dynamism are considered a driver of innovation and growth and contribute to poverty reduction because they are an important source of job creation (World Economic Forum, 2010, p. 49).

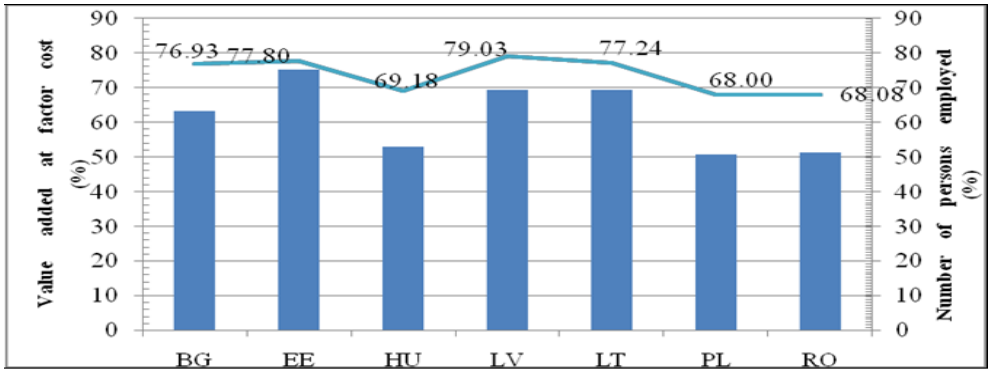

Figure 1 The role of the SME sector in the studied countries, 2015

Source: processed data from European Commission, 2015b

In the case of the studied countries, the importance of the SME sector is resulting from its significant contribution to creating added value and providing jobs, but with some differences between countries (see figure 1). Regarding the contribution to the creation of added value, we remark especially the countries that are far

below the EU28 average (58.07%), namely Latvia (69.21%), Lithuania (69.27%) and Estonia (75.14%). Regarding employment, it appears that SMEs sector uses over two-thirds of the workforce in the four countries that are well above the EU28 average (67%), namely: Bulgaria (76.93%), Lithuania (77.24%), Estonia (77.80%), and Latvia (79.03 %).

The importance of SME sector in the national economies highlights the need to ensure their easy development by easy access to finance which is of crucial importance, because it conditions their creation, survival and development, and, eventually, the economic growth and the creation of workplaces. The general economic conditions faced SMEs improved somewhat in 2014, fact also confirmed by the latest survey of financing conditions faced by SMEs (European Commission, 2015a).

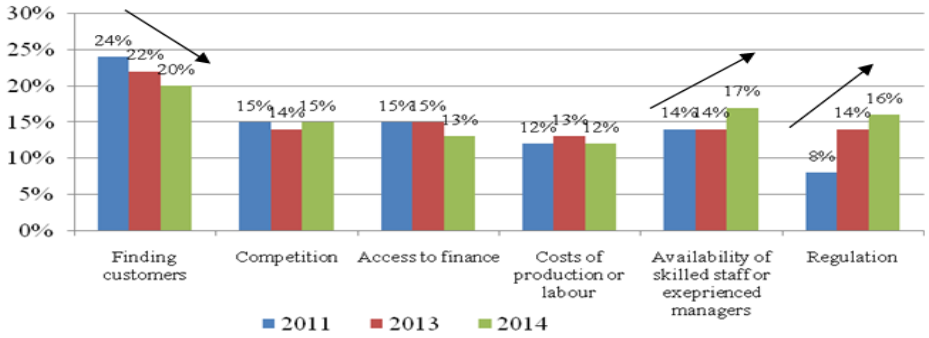

Figure 2 Most pressing problems faced by SME, a comparison

Source: processed data from European Commission, 2011, 2014, 2015

The survey results show that compared to the previous 2011 and 2013 surveys (see figure 2) finding customers remained the most pressing problem for SMEs. But, the respondents highlighted the fact that this issue has been decreasing over time. This may help explain, in some cases, why the firms are hesitant to invest and add on new employees even if they have sufficient cash for these operations. The comparison between the three surveys also shows that the access to finance also decreased in importance. Only 13% of respondents have chosen this problem as being the most pressing one in 2014. On the other hand, a higher proportion of firms chose the availability of skilled staff or experienced managers, and regulation, as being the most pressing problem. Also, market conditions: lack of customers and competition were the most frequently cited problems by SMEs across the EU. These two issues combined have been identified by at least 30% of respondents in all the countries. While the responses of the SMEs as a group showed differences across countries, there were no major differences in the way SMEs of different sizes perceive problems.

3. Analysis of the Evolution of the Performance of SMEs between 2008 and 2014

The performance of SMEs is measured by three indicators: increase of the value added, increase in employment and number of SMEs (European Commission, 2015b). So, in order to analyze the evolution of the SMEs performance between 2008 and 2014 we will analyze these three indicators and the relationship between them.

Analyzing the evolution of the SME value added for the seven CEE countries considered we observe that it has grown in 2014 with 4.31% compared to 2013, and compared to 2008 it has registered an increase of 8%. SME employment for CEE countries has registered a growth of 1.68% in 2014 compared to the precedent year, but compared to 2008 it has decreased by 6.89% (see figure 3). We consider 2008 the base year, because it was the year before the effects of the crisis begun to be felt in CEE countries.

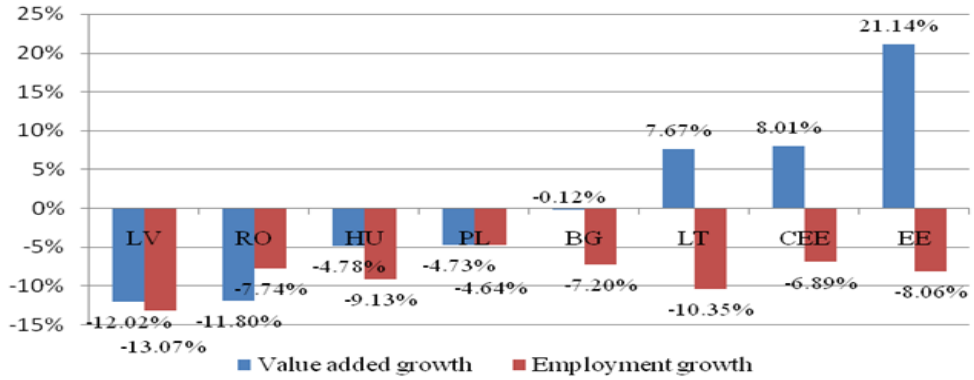

Figure 3 The evolution of SMEs value added and employment in 2014 compared to 2008

Source: processed by the authors after data from European Commission, 2015b

In 2014, SMEs in Romania registered the strongest combined performance in value added and employment growth. In contrast SMEs in Latvia, Poland and Estonia showed the weakest performance. Overall, across the CEE countries a *positive* relationship exists between SME *value added* growth and SME *employment* growth (see figure 4).

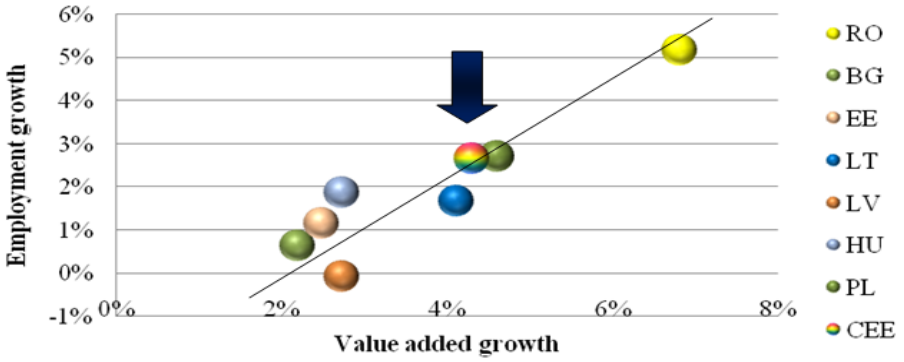

Figure 4 SME value added and employment growth (in %) in 2014, by CEE country
Source: processed by the authors after data from European Commission, 2015b

The level of SME activity and employment is heavily dependent on the overall level of economic activity and demand for goods and services, so the lack of full economy recovery in 2014 in the CEE region explains why the SME performance was also weak in these countries. We also consider of big importance the analysis of the evolution of the three indicators by economic sectors. Analyzing separately the evolution of the three indicators of the SMEs performance between 2008 and 2014, by sectors, we observe that are sectors that have registered a full recovery, or even more than full recovery in some countries, and others have registered less than full recovery (see table 1, 2 and 3 below).

The business services sectors was the one that registered more than full recovery on the numbers of the enterprises in all seven considered countries from CEE, in 2014 compared to 2008. Estonia and Latvia were the only countries that have registered more than full recovery in the manufacturing and construction sectors, all the other analyzed countries have registered less than full recovery in these sectors.

Table 1. Number of enterprises – the degree of recovery by sector and by country, 2008-2014

	Manufacturing			Construction			Wholesale/ retail trade			Accommodation /food services			Business services			Other		
BG		=				-	+			+			+			+		
EE	+			+			+			+			+			+		
HU			-			-			-			-	+					-
LV	+			+			+			+			+			+		
LT			-			-	+			+			+					-
PL			-			-			-			-	+			+		
RO			-			-			-	+			+			+		

Note: '+' = more than full recovery, '=' =full recovery, '-'= less than full recovery.

Source: processed by the authors after European Commission, 2015b, p. 106

Hungary is the country that has registered less than full recovery on the number of enterprises in almost all the sectors (except business services). On the other hand, Latvia and Estonia have registered more than full recovery in all the economic sectors. The countries worst situated in the recovery of the number of enterprises are Hungary and Poland.

Table 2. Value Added – the degree of recovery by sector and by country, 2008-2014

	Manufacturing			Construction			Wholesale/ Retail trade			Accommodation/ food services			Business services			Other		
BG		=				-	+			+					-	+		
EE	+					-	+			+			+			+		
HU	+					-			-			-	+				=	
LV			-			-			-			-			-	+		
LT	+					-	+			+				=		+		
PL	+					-			-	+			+			+		
RO			-			-			-			-	+			+		

Note: '+' = more than full recovery, '=' =full recovery, '-'= less than full recovery.

Source: processed by the authors after European Commission, 2015b, p. 107

All the CEE countries have registered less than full recovery of the value added in the construction sector. Lithuania and Estonia were the countries with full or more than full recovery in almost all the economic sectors (except construction). The countries worst situated regarding the recovery of the value added are Latvia and Romania.

Regarding the recovery of the employment the situation is worst; the manufacturing, construction and wholesale/retail trade sectors have registered less than full recovery in all the countries. Employment has recovered in almost all the countries in the business services sector (except Estonia).

Table 3. Employment – the degree of recovery by sector and by country, 2008-2014

	Manufacturing			Construction			Wholesale/ Retail trade			Accommodation/ food services			Business services			Other		
BG			-			-		=		+			+			+		
EE			-			-			-	+					-	+		
HU			-			-			-			-	+					-
LV			-			-			-			-	+				=	
LT			-			-			-			-	+					-
PL			-			-			-			-	+			+		
RO			-			-			-	+			+			+		

Note: '+' = more than full recovery, '=' =full recovery, '-'= less than full recovery.

Source: processed by the authors after European Commission, 2015b, p. 108

Hungary and Lithuania are the countries worst situated regarding the recovery of the employment. The table 4 shows, for each of the three performance indicators,

the number of CEE countries where full or more than full recovery has been achieved.

Table 4 Number of countries in which the level of the SME performance indicator in 2014 is higher than in 2008

	SME performance indicator		
Sector	**Value added**	**Employment**	**Number of SMEs**
Manufacturing	5	0	3
Construction	0	0	2
Wholesale/retail trade	3	1	4
Accommodation/food services	4	3	5
Business services	5	6	7
Other	7	5	5

Source: processed by the authors based on data from European Commission, 2015b

We observe that the sectors that have registered the biggest improvement of the SME performance indicator in CEE are Business services, and other sectors. And the ones where the SME performance indicator did not registered an improvement are construction and manufacturing.

4 The Relationship between Value Added Growth and Macroeconomic Performance

From the above analysis we observe that the evolution of the SME performance differs depending on the CEE country considered, so, in this section we discuss the underlying factors that can explain the differences in SME performance. Differences in macroeconomic performances explain the differences in the performance of SMEs, but also the differences in SMEs value added since 2008. From the three indicators measuring the SME performance we consider the growth of value added as the dependent variable. The value added of the SMEs can be affected by a series of macroeconomic indicators, indicators that we have choose as the explanatory variables of our models (see figure 5).

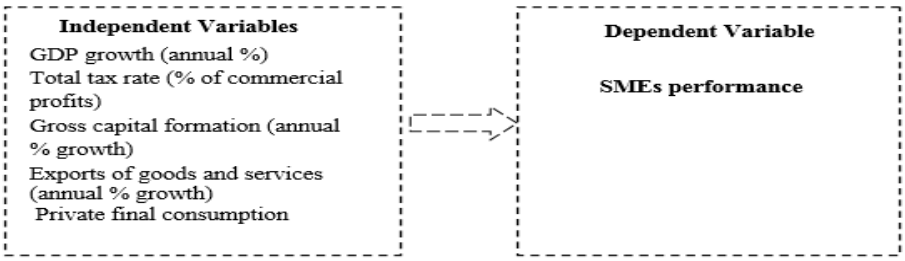

Figure 5. The dependent and independent variables of our model
Source: Authors simulation

The level of the GDP in the seven analyzed CEE countries shows a growth in GDP at constant prices, fact that suggests that the increase in the level of economic activity in the nonfinancial business sector reflects a real, but moderate, pick-up of the economic activity in the nonfinancial sector after the financial crisis. The evolution of the level of GDP (in real terms) since 2008 varied across the seven analyzed CEE countries: so we have countries were the level of real GDP in 2014 was *the same as in 2008 or higher:* Bulgaria, Estonia, Lithuania, Poland and Romania; and, other countries with the level of real GDP in 2014 still below its 2008 level: Hungary and Latvia.

The level of total tax rate has registered an improvement in CEE countries, with a decrease of the tax rate of 8%. In almost all the analyzed countries the level of tax rate as a percent of the commercial profits have decreased, registering a decrease between 20% in Bulgaria and 4 percent in Latvia. The only country were this indicator registered a small increase was Estonia.

Gross capital formation, which includes all investments in fixed assets such as housing, infrastructure, buildings and machinery, has affected in a larger extent the economic growth of the enterprises. The gross capital formation for CEE countries was lower in 2014 with 26% compared to 2008. Also, if taken separately all the seven considered countries have registered a reduction of the gross capital formation in 2014 compared to 2008 (a reduction between 9% in Estonia to 42% in Bulgaria) (World Bank, World Development Indicators). Such a depressed level of gross fixed capital formation had clearly an impact on the level of value added and employment, and, more generally, on the level of SME performance.

Private consumption also depressed the performance of the SME sector because the level of private consumption in 2014 in CEE region was with 2.9% lower than in 2008, and this aggregate demand component is a major driver of retail sales, care represents an important sector of activity for SMEs from the countries included in the sample.

The exports of goods and services have registered important decrease from 2008 to 2014, but this had only a more limited, direct, stimulating impact on the SME sector, because the majority of SMEs are not active in export-oriented sectors.

The objective of our analysis is to explore if the differences in macroeconomic performance explain the difference in the value added obtained by SMEs, in CEE countries. The annual financial data for the explanatory variable are obtained from the World Development Indicators database, for the period 2008-2014. The data for the value added of the SMEs are obtained from the SME Performance Review, 2015.

To achieve the objective we have estimated the coefficients using regression models. To obtain the estimated coefficients of the regression models, calculations

were made using Eviews 7 computer package. The regression analysis refers to testing hypothesis about the relationship between a dependent variable and two or more independent variables. In order to observe the relationship between the value added of the SMEs and the macroeconomic performance, we have adopted the Pooled Least Square method, by adopting the OLS method to panel data. At the same time, the estimator variance-covariance matrix was determined by the White cross method (derived from the treatment of the pool regression as a multivariate regression), because there is suspicion of transversely heteroskedasticity.

Table 5. The statistic characterization of the influence factors

Variable	Min.	Max.	Mean	Std. deviation
GDP	-14.81	7.58	0.5609	5.2078
EXP	-20.31	24.17	5.7309	10.0328
FINCON	-17.35	6.19	-0.0038	5.5816
GCF	-54.24	48.69	-2.2423	19.1825
TAX	27.00	66.80	42.4428	8.7472

Source: processed by the authors after E-views results

The descriptive statistics of the macroeconomic influence factors (presented in table 5) shows that the biggest standard deviation was registered by the gross capital formation, fact that shows that the changes that occurred in the CEE economies in the period 2008-2014, also in the context of the financial crisis, have affected, in a big proportion the gross capital formation from this countries.

Table 6. Estimation results of simple SME value added growth models

	All SMEs	Micro SMEs	Small SMEs	Medium SMEs
Explanatory variable	*Dependent variable: value added growth from 2008 to 2014*			
GDP growth (annual %)	.15537	-.036787	.26150*	.05825
Total tax rate (% of commercial profits)	-.03242**	.00097	-.00125	.00313
Gross capital formation (annual % growth)	.13219	-.13787	.07726***	.02184
Exports of goods and services (annual % growth)	.42471***	.27489***	-.07476*	-.11805***
Private final consumption (annual % growth)	.95311**	.36710	-.17857	-.08159
R^2	.8037	.1670	.3507	.1088

*, ** and *** denotes that coefficients are significantly at the 99%, 95% and 90% level, respectively.

Source: processed by the authors after E-views results

The most stable indicator was represented by the GDP growth and private final consumption, which had the smallest standard deviation.

For our analyze we have considered 4 regression *models:* one for the value added obtained by all the SMEs and 3 other models for the enterprises according to their dimensions: micro, small and medium. The results of the regression models are presented in table 6.

Interpretation of the results: Based on the results of the static regression models and their statistically significant coefficients, we can conclude that total tax rate, exports of goods and services and private final consumption are the determinants of the value added growth of the all SMEs from CEE countries.

The exports of goods and services significantly influence the growth of the value added of the SMEs, and the relationship is statistically significant at 1% level. Although, the effect is small, an increase of 10% of the exports would induce an increase of only 0.42% of the value added of the SMEs.

Also, the relationship between total tax rate and private final consumption and the value added of the SMEs is statistically significant at 5% level. According to our results, the other economic factors considered in the analysis do not have a statistically significant impact on the value added growth of the SMEs.

When we take into consideration the other three models we observe that appear differences due to the size of the enterprise: micro, small or medium. For example, according to our results, the value added growth of microenterprises is influenced only by the changes in the level of the exports of goods and services. The same results are obtained for medium sized enterprises, where the relationship between the exports of goods and services and the growth of the value added of the SMEs is statistically significant at 1% level. In the case of small sized enterprises, besides the exports of goods and services and gross capital formation, the annual growth of GDP has also an important influence on the value added growth.

Looking at the value of the R^2, we observe that only for the entire sample comprised from all the SMEs, the value is of 80%, so our model explains 80% of the changes in the value added growth.

For the microenterprises and medium sized enterprises, the value of R^2 is only of 10%, fact that shows that the models does not explain the changes in the value added growth. For these types of enterprises, the changes in the value added are explained by other factors.

5 Conclusions

This study explores the evolution of the performance of the SMEs between 2008 and 2014 and also the factors influencing the performance of the SMEs from seven countries from the Central and Eastern European region, namely Bulgaria, Estonia, Hungary, Lithuania, Latvia, Poland and Romania. The aim of our study was to test the impact of macroeconomic performance indicators on the growth of the value added of the SMEs.

In our analysis, the explanatory variables are represented by real gross domestic product growth, total tax rate, gross capital formation, exports of goods and services and private final consumption. As a dependent variable, we have considered the economic performance of the SME sector, expressed by the growth of the value added

To summarize the empirical findings of the regression analysis, we can confidently say that more than half of the selected macroeconomic indicators (total tax rate, exports of goods and services and private final consumption) are statistically significant and have a strong correlation with SMEs performance, and the *hypothesis* that all macroeconomic factors have a strong influence on the growth of the value added it is only partial validated.

We also have proven that the SMEs performance, expressed by the growth of the value added, growth of employment and changes in the number of the enterprises, is very important for economic recovery of the countries from CEE and should be an important concern of the economic decision makers.

Overall, our study emphasizes that the performance of the macroeconomic environment is of major importance for increasing the economic performance of the SME sector. As future research directions, we want to expand the analysis realized in this paper by including other EU Member States and also by empirically assessing the feedback effects from the SME sector to the performance of the macroeconomic environment.

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