The Relationship Between Financing Decision of SMES and Their Performance

Valentina Diana Rusu and Angela Roman

Abstract Access to finance is one of the most important determinants of success and even the survival of a business. Several theoretical and empirical studies argue that small and medium-sized enterprises usually face more problems in obtaining financing compared to larger enterprises. The same happens in the case of enterprises that are in the first years of existence on the market. Thus, through this paper we aim to examine the relationship between the way small and medium enterprises are financed in the first years of existence and their performance. Thus, we want to see if the debt structure of these enterprises plays an important role in obtaining performance. In order to achieve the purpose of the paper, we perform an econometric analysis by choosing a sample of small and medium enterprises from the CEE countries in their first years of existence. Given the fact that start-ups are considered enterprises in the first five years of life, the analysis period considered is 2015–2019. As a method of analysis we use the panel data technique considering as dependent variables a set of indicators that measure the performance of enterprises, and as independent variables indicators that express the degree of indebtedness of enterprises. The data for this analysis are obtained from the financial statements of the companies accessed through the AMADEUS Bureau van Djik database. The results of our research show that the way in which the SMEs financing decisions are based plays a significant role in achieving performance. The use of short and long-term debt can stimulate the performance of enterprises, but an increased gearing ratio hampers this performance. These results can be useful for decision-makers because they emphasize the need for them to focus on formulating policies that facilitate access to finance for SMEs in the first years of life, thus generating an increase in their performance with positive effects at the level of general economy.

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1 Introduction

A key element for the survival and functioning of enterprises is represented by the financial resources to which they have access and which they use in their activity. These resources can come from own funds or from borrowed resources. Because own funds are insufficient, most enterprises are forced to use external borrowed resources. These external borrowed resources are beneficial for enterprises because in order to grow and develop they need a significant infusion of capital.

The problem that arises is related to the effects that financing decisions have on the performance of enterprises. Thus, the types and size of external resources used by enterprises can stimulate or, on the contrary, reduce the performance of enterprises. Concerns to identify the relationship between indebtedness and business performance are ongoing in the literature. The empirical results obtained so far are mixed, because they depend very much on the analysed period, on the sample of companies considered but especially on the economic particularities of the countries in which these enterprises operate. Thus, this topic will never become too analysed, because the new evolutions of the economies will determine the enterprises to adapt. These adaptations often requiring additional financial resources, but with the risk of compromising their performance. Or, there is a way for companies to use borrowed resources and still be able to increase their performance, to ensure their survival on the market and maintain a competitive environment? This is the main question which underlines this study.

The challenges regarding access to finance and increasing performance are greater for small and medium enterprises but also for those at the beginning of the road. Studies in the literature (Abor, 2005; Akinlo and Asaolu, 2012; Javed et al. 2014; Robb and Robinson, 2014; Zeitun and Saleh, 2015; Aziz and Abbas, 2019; Hongli et al. 2019; Nazir et al. 2021) analyse large companies listed on stock exchanges, because they have access to their financial statements to extract the indicators needed for analysis. There are also studies that have considered SMEs but smaller in number (Githaigo and Kabiru, 2015; Yazdanfar and Öhman, 2015; Carvalho et al. 2017; Ibhagui and Olokoyo, 2018; Mugisha et al. 2020; Rajamani, 2021). Due to their particularities we decided to choose for our analysis only SMEs. An additional argument for choosing the examination of SMEs is that these enterprises are considered to be the backbone of entrepreneurship in Europe. Therefore, the main objective of this study is to identify the relationship between the financing decision of SMEs and their performance. More, we have chosen a sample of SMEs at the beginning of their road, i.e. those that are in the first five years of activity. Company level data are obtained from the AMADEUS database.

Many studies from the literature on this matter focus on developing countries or consider only one country for analysis. The novelty brought by our study consists in the fact that we chose 14 countries from Central and Eastern Europe, and especially that we made a comparison between them on groups with different degrees of development.

Thus, the added value of our study comes from considering almost all the countries from the CEE region and also a large sample of start-ups SMEs. So, through our results we intended to fill this gap in the literature, and also to draw attention to the situation of start-ups.

Our paper is structure as follows: the first part presents a brief literature review; the second part describes the data and the methods used. The third part presents the results of the empirical analysis and discusses them. The study ends with concluding remarks.

2 Literature Review

The findings in the literature are mixed, depending on the sample of enterprises chosen, their size, country but also the analysed period. Thus, in the literature we find studies that highlight the positive relationship of indebtedness and enterprise's performance (Ruland and Zhou, 2005; Robb and Robinson 2014; Tsuruta, 2015; Hongli et al. 2019) but also studies which provide evidence on a negative relationship or mixed results (Akinlo and Asaolu, 2012; Zeitun and Saleh, 2015; Ibhagui and Olokoyo, 2018; Aziz and Abbas, 2019; Mugisha et al. 2020; Nazir et al. 2021).

A significant part of the studies regarding this issue focuses on developing countries. Such as, the study of Akinlo and Asaolu (2012) which found an inverse relation between debt and profitability of Nigerian listed enterprises. The authors show that when the debt increases the profitability of enterprises will decrease, and vice versa. Similar results were obtained by Aziz and Abbas (2019) only that they focused on enterprises listed at Pakistan Stock Exchange, considering a time period of nine years between 2006 and 2014. Also listed enterprises in Pakistan were considered by Nazir et al. (2021) only that their analysed period is 2013–2017 and their results show that both long and short-term debt have negative and significant effect on enterprises performance. This shows that within the same country and on the same type of enterprises the results may be different depending on the analysed period. Another sample of listed companies was analysed by Hongli et al. (2019) only as they are from Ghana. These authors chose only companies from the manufacturing sector and the empirical results obtained by them highlighted the strong and positive effect of financial leverage on enterprises performance, only that 65% of the money from debt is used to finance assets which can really have an important effect on performance. Robb and Robinson (2014) also pointed on the positive effects of indebtedness for the enterprises. They show that using debt financing might increase the market value of the enterprise and also that financial leverage is positively related to return on equity (ROE). Similar results were obtained by Abor (2005).

Javed et al. (2014) also analysed the effects of debt on the performance of enterprises listed from Pakistan and obtained mixed results. Thus, their findings showed that debt has a negative effect on return on equity (ROE) and a positive one on return on assets (ROA).

If the other papers presented above analysed the enterprises from only one country, the study of Zeitun and Saleh (2015) focused on 400 listed enterprises from six countries which are part of the Gulf Cooperation Council. Their results show that the leverage of enterprises is a significant determinant of the performance of enterprises from the considered countries.

Some of the studies also took into account the role that the size of the company plays in investigating the relationship between the indebtedness of enterprises and their performance. Thus, Ibhagui and Olokoyo (2018) claim that for the small enterprises the leverage has a negative effect and this effect is diminishing as the size of the enterprise increases, and may even disappear when the size of the company exceeds a certain threshold. The results obtained by this author are based on a sample of small firms in Japan. A similar result was obtained by the study of Mugisha et al. (2020) which analysed SMEs from Uganda and indicated that short-term debt may hamper the SMEs performance. Other studies (Githaigo and Kabiru, 2015; Yazdanfar and Öhman, 2015; Carvalho et al. 2017; Rajamani, 2021) have also shown, considering samples of SMEs from different countries (like Kenya, Sweden, India, Portugal) that the use of long and short-term loans might reduce the financial performance of this enterprises.

However, although a number of studies have shown more of a negative relationship between the short and long-term indebtedness of SMEs and their performance, we must keep in mind that in order to grow and develop, companies need external financing. They especially need the long-term financing that helps them make investments. So, a certain level of indebtedness is necessary for SMEs, and financial managers should focus on reaching the optimal level (Pervan et al. 2017).

In addition to these mentioned negative effects, there are also studies that highlight the benefits of increased indebtedness for small enterprises, pointing out that high leverage can make SMEs management more efficient (Tsuruta, 2015). Saidi et al. (2019) also found that debt financing is positively associated with SMEs performance, expressed by business expansion and outputs.

3 Data and Method

For creating the database for our study we selected the Central and Eastern European region countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia and Slovenia). The data were obtained from AMADEUS database created by Bureau Van Djik. For creating the sample of enterprises, we used the search strategy from the database and we selected active small and medium enterprises, by excluding the micro firms (which have less than

10 employees). Also we chose to focus only on start-up enterprises, thus we only considered enterprises founded 5 years ago or less. For this reason, the period selected for the analysis is 2015–2019. With these search criteria we have extracted 8.074 enterprises from Amadeus database belonging to different sectors of activity. Next, we performed a database processing, starting from the availability of data for performance indicators but also those regarding indebtedness. The final sample includes 7.294 enterprises from 14 CEE countries (for Albania, Kosovo and Slovakia we did not had enough data for the considered indicators, so these countries were excluded from the sample). See the distribution of sample in Table 1.

Around 32% of the enterprises from the sample are from Romania followed by Bulgaria with 18%. Poland and Hungary were also countries whose companies accounted for more than 10% of those chosen for analysis. This can be explained by the fact that these countries generally have a higher total number of SMEs than the other countries included in the sample (see the data offered by the European Commission (2021), SBA Fact sheets).

Moreover, in order to perform a more in-depth analysis, depending on the degree of development of the countries in which the enterprises operate, we chose to group them according to World Economic Situation and Prospects 2020 Report realized by the UNCTAD (UN DESA, 2020). This report realizes a classification of countries according to the per capita GNI in June 2019. According to this classification the CEE countries are included into two groups: High-income countries (Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovenia) and Upper

Table 1 Number and percentage of start-up SMEs by country

Country	Number of start-up SMEs	Percentage of start-up SMEs in total sample (%)
Bosnia and Herzegovina	215	2.95
Bulgaria	1351	18.52
Croatia	381	5.22
Czech Republic	40	0.55
Estonia	100	1.37
Hungary	844	11.57
Latvia	229	3.14
Lithuania	114	1.56
Montenegro	69	0.95
North Macedonia	46	0.63
Poland	1088	14.92
Romania	2398	32.88
Serbia	175	2.40
Slovenia	244	3.35

Source processed by the authors

middle income countries (Bosnia and Herzegovina, Bulgaria, Montenegro, North Macedonia, Romania and Serbia) (UN DESA, 2020, pp. 168).

Considering the findings from the literature review we formulated a model for testing the relationship between financing decision of SMEs and their performance. The general equation that we used for the econometric model that we tested in this analysis is:

$$\text{Performance}_{it} = \beta_1 indebtedness_{it} + \beta_2 Z_{it} + \mu_{it} \quad (1)$$

where: *i* represents the country and *t* is time (2015–2019); *Performanceit* represents the dependent variable and is measuring the SMEs performance; *indebtednessit* represents the indicators measuring the level of SMEs indebtedness; Z_{it}: represents the control variables; β_1 and $\beta_{2:}$ are the coefficients whilst μit is the error term.

Because the performance of SMEs can be measured by different indicators, and following the tendency from the studies in the literature (Hongli et al. 2019; Forte and Tavares, 2019; Nazir, et al. 2021; Rajamani, 2021) in our analysis we use three alternative measures for the performance: return on assets (ROA), return on equity (ROE) and profit margin. These are the most commonly used and also the most accessible indicators of performance. Therefore, we use three specific models expressed by the following equations:

$$\text{ROA}it = \beta_1 indebtedness_{it} + \beta_2 \text{RGDP}_{it} + \beta_3 \text{INFL}_{it} + \mu_{it} \quad (2)$$

$$\text{ROE}it = \beta_1 indebtedness_{it} + \beta_2 \text{RGDP}_{it} + \beta_3 \text{INFL}_{it} + \mu_{it} \quad (3)$$

$$\text{PROFITM}it = \beta_1 indebtedness_{it} + \beta_2 \text{RGDP}_{it} + \beta_3 \text{INFL}_{it} + \mu_{it} \quad (4)$$

The variables included in our analysis are presented with their definition and measurement in Table 2.

Data on control variables were obtained from the International Monetary Fund (2021) for real GDP growth rate and World Bank (2021) for the inflation rate.

Starting from the findings of other studies analysed in the literature review and also based on our expectations, we defined a couple of hypotheses:

Hypothesis 1: Long-term debt of start-up SMEs is negatively related to their performance.

Hypothesis 2: Short-term debt of start-up SMEs is negatively related to their performance.

Hypothesis 3: Higher gearing ratio of start-up SMEs is negatively related to their performance.

The next steps of our empirical analysis are: first we performed a test of the variables to identify the presence of a unit root. Only the variable measuring inflation resulted to have a unit root, thus we calculated the first difference of this variable. There were no problems with the other variables in this regard. Then, we transformed the variables that express long-term indebtedness and current liabilities by applying

Table 2 Variables description

Variable (abbreviation)	Definition (Measurement)
Dependent variables	
Return on Assets (ROA)	Shows how profitable is a firm reported to its total assets. Is calculated by dividing the net income of the firm by its total assets (annual, %)
Return on Equity (ROE)	Is calculated by dividing the net income of the firm by its shareholders equity (annual, %)
Profit margin	It shows what percentage of the sale was turned into profits. Shows how many cents of profit have been generated by each monetary unit of sales (annual, %)
Independent variables	
Long-term debt	Is the amount of debt of a firm, which has the maturity in more than one year (annual, thousand euro)
Current liabilities	Are the short-term financial obligations of a firm, that are due within one year or within a normal operating cycle. (annual, thousand euro)
Gearing ratio	Is the measurement of the firm's financial leverage, and shows the degree to which a firm's activities are funded by shareholders' funds versus creditors' funds (annual, %)
Control variables	
Real GDP growth rate	Is measured by the changes of GDP rate from one year to another
Inflation rate	Is measured by the consumer price index and shows the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly (annual, %)

Source processed by the authors

the natural logarithm, because these variables were initially measured in absolute size. Following, we analysed the descriptive statistics and the correlation matrix. Finally, we applied the panel data regression models for testing the relations between the variables included.

4 Results and Discussions

Our first step in the empirical investigation is the analysis of the descriptive statistics of the variables because it helps us understand the behaviour of the indicators considered (see Table 3). The variables measuring the performance and the indebtedness are significantly different between firms, fact highlighted by both high standard deviation and high amplitude of the variables.

From the results highlighted for the indicators that measure performance, we notice that we have in our sample both enterprises that have a very high performance and enterprises with very low performance. We also notice large differences between ROE and ROA. These differences may be related to how the two rates are calculated,

Table 3 Descriptive statistics of the variables

Variable	Mean	Max	Min	Std. Dev	Obs
ROA	14.141	100.000	−100.000	29.164	33674
ROE	56.766	1000.000	−995.170	98.977	28837
Profit margin	7.768	100.000	−100.000	21.133	33044
Long-term debt	95.074	61,071.82	−1.113	653.398	19479
Logarithm of Long-term debt	4.375	11.019	−4.843	1.838	5243
Current liabilities	335.285	37,012.23	−271.467	903.086	33405
Logarithm of Current liabilities	4.335	10.519	−6.907	2.145	31694
Gearing ratio	3.846	6.907	−6.907	1.843	8794
Real GDP growth rate	4.074	7.300	1.100	1.185	36401
D Inflation rate*	0.804	3.286	−2.249	1.511	29176

*Note * the first difference of this variable*
Source authors own calculations

so ROE is reporting the net income to equity and ROA to the assets. The average ROA of the SMEs included in the sample is higher than profit margin.

The different number of observations obtained for the analysed variables is due to the availability of data in the database.

From the analysis of the descriptive statistics we also observe that start-up SMEs included in our sample use mainly short-term financing. This finding is consistent with the literature which shows that small firms usually develop more strong short-term relations with third parties (Gibson, 2004) and use mainly trade credit and short-term loans to finance their working capital (Bańkowska et al. 2020).

For identifying the correlation coefficients between variables we analyse the correlation matrix. The results summarised in Table 4 indicate that ROA has a significant and inverse association with long-term debt and gearing ratio. The value of correlation coefficient of 26.4% confirms the presence of a week negative relationship between ROA and long-term debt. In the same time the value of 41.5% for the coefficient of correlation shows a medium negative relationship between ROA and gearing ratio. The same type of relationships with the same sign, only weaker (correlation coefficients of 0.9% and 27.9%) are obtained between Profit margin, on the one hand, and long-term debt and gearing ratio, on the other hand. ROE has a significant and positive association with long-term debt, but is a week one (16.1%).

However, Long-term debt, Current liabilities and Gearing ratio have a very low and low correlation with each other (correlation coefficients smaller than 70%) confirming the lack of multicollinearity amongst variables.

For estimating the results of the regression analysis we used panel data models. We tested three estimation models: OLS adapted to panel data, fixed effects and random effects. The results of the Hausman tests and the Redundant fixed effects tests showed that the best model fitted to our data is the fixed effects model. Thus the centralized results in Table 5 show the coefficients and standard errors (in parenthesis) for fixed effects models. The main findings of our analysis (see Table 5) show that regardless

Table 4 The correlation matrix of the variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) ROA	1.000							
(2) ROE	0.535*	1.000						
	(0.000)							
(3) Profit margin	0.712*	0.411*	1.000					
	(0.000)	(0.000)						
(4) Logarithm of Long-term debt	−0.264*	0.161*	−0.090*	1.000				
	(0.000)	(0.000)	(0.000)					
(5) Logarithm of Current liabilities	0.003	−0.017	0.021	0.184*	1.000			
	(0.835)	(0.357)	(0.250)	(0.000)				
(6) Gearing ratio	−0.415*	−0.013	−0.279*	0.479*	−0.039*	1.000		
	(0.000)	(0.472)	(0.000)	(0.000)	(0.035)			
(7) Real GDP growth rate	−0.067*	−0.037*	−0.065*	0.187*	0.114*	0.014	1.000	
	(0.000)	(0.044)	(0.000)	(0.000)	(0.000)	(0.429)		
(8) D Inflation rate	0.056*	0.029	0.043*	−0.044*	0.014	0.001	0.036*	1.000
	(0.002)	(0.110)	(0.019)	(0.016)	(0.448)	(0.945)	(0.049)	

Note probability in parenthesis, correlation is significant when $p < 0.05$ (*)
Source authors own calculations

of the indicator used for measuring SMEs performance, the financing decision of start-up SMEs influences significantly their performance.

Therefore, long-term debt is positively and statically significant related with ROA and Profit margin. Aziz and Abbas (2019) also found a positive relation between long-term debt and performance of the enterprises. Current liabilities are positively and statistically significant related only with Profit margin. These results are in line with those obtained by Abor (2005) and Zeitun and Tian (2007) which found a positive relation between short-term debt and enterprises performance, showing that the use of short-term debt can generate the improvement of enterprises' performance by providing them with the necessary financial resources to carry out their operations

Table 5 The relationship between start-up SMEs indebtedness and their performance

Dependent variable	ROA	ROE	Profit margin
Logarithm of Long-term debt	2.370*** (0.268)	1.322 (1.441)	1.654*** (0.245)
Logarithm of Current liabilities	−0.076 (0.073)	−0.237 (0.180)	0.195** (0.093)
Gearing ratio	−6.803*** (0.284)	−2.566 (1.884)	−3.104*** (0.308)
Constant	30.104*** (0.988)	48.516*** (3.249)	12.461*** (1.838)
Real GDP growth rate	0.698 (0.276)	1.500 (1.263)	0.173 (0.223)
D Inflation rate	−0.503*** (0.136)	−4.805*** (0.749)	−0.255 (0.191)
Obs	1457	3127	3099
R-squared	0.829	0.800	0.804
R-squared adjusted	0.677	0.624	0.629
F-statistic	5.481***	4.554***	4.610***

Note *, ** and *** represents significant values at 1%, 5% respectively 10%; Standard error in parenthesis
Source authors own elaboration

in the early stages, and creating the potential for further development and growth. Therefore, the first and second hypotheses in our study are not supported.

Gearing ratio is negatively and statistically significant related with ROA and Profit margin. This confirms our hypothesis (H3). The negative sign of the coefficient shows that increased leverage of start-up SMEs determines a reduction of their performance. This can be explained by the fact that a high gearing ratio points out that the firm has a larger proportion of debt than equity. Thus, the firm has a greater financial risk, because in case of lower profits and higher interest rates it has a greater risk of loan default or/and bankruptcy. This result is in line with the findings of other studies from the literature (Ibhagui and Olokoyo, 2018) which show that the leverage has a negative effect on firm performance especially for the case of small firms, and as firms grow this effect diminishes. The results of our study are based on the pecking order theory of capital structure because the performance of enterprises is significantly and negatively affected by the level of indebtedness.

The control variables presented the expected impact on performance: positive for Real GDP growth rate (although not statistically significant) and negative for inflation rate.

However, the high value obtained for the constant shows us that there are a number of other indicators that exert a statistically significant influence on the variables chosen to measure the performance of enterprises. This result was to be expected, as there are other factors that exert a stronger and faster influence on performance. This does not influence the objective of our study which was to show if and what

relationship exists between the indebtedness of enterprises and their performance. Of course, in future studies we intend to include other factors in the models.

The value of R squared adjusted shows that the variables expressing the indebtedness of start-up SMEs from our models explain above 60% of the variation in the performance indicators. Also, the F statistics shows that our panel data models are significant.

When we analyse the relationship between indebtedness and the performance of start-up SMEs depending on the countries they come from, the results show only small differences (see Table 6). Thus, long-term debt is positively and statistically significant related to ROA, ROE and Profit Margin for high income countries. At the same time, it is also related positively and statistically significant only with ROA and profit margin for Upper middle income countries. Current liabilities are positively and statistically significant related only with Profit margin for the group of high income countries. Gearing ratio is negatively and statistically significant related with all three indicators used for measuring performance for the group of High income countries, and only with ROA and Profit margin for the upper middle income countries.

Thus, the particularities between the two groups of countries are that ROE of start-up SMEs for lower rated countries is not influenced by their indebtedness. Whilst ROE of start-up SMEs in the top ranked countries is positively influenced by long-term debt and negatively by gearing ratio. This can be explained by the fact that countries with high degrees of development offer greater opportunities for business development so that the use of long-term borrowed resources can be seen as a way to stimulate investment and business development. But at the same time, very high indebtedness rates can have negative effects on performance. Here, the problem lies on managers who must find an optimal capital structure so as to adapt to the specific economic conditions of the country in which they operate, but also to use the financial resources they can access in an optimal combination with beneficial effects on performance.

Another difference is the effect of control variables. For high income countries, real GDP growth rate has a positive influence on performance of start-up SMEs, whilst for the other group of countries a negative influence. This may be due to the fact that increasing the level of real GDP for the more developed countries can be seen as a catalyst for business, and especially for those at the beginning of the road, offering them increased opportunities and simulating them to improve their performance.

The same was observed in the case of inflation, negative effects on ROE of start-up SMEs from high income countries, and positive effects on profit margin from upper middle income countries. In high income countries increased inflation determines an increase of prices and of the costs of enterprises, affecting also their investments and generating negative effects on performance. On the other hand, in upper middle income countries inflation reduces the real value of the enterprises debt with positive effects on their performance. These findings are in line with those of Maimunah and Patmawati (2018).

The values of R squared adjusted for the models analysed in Table 6 are between 52 and 96% showing that the variables expressing the indebtedness of start-up SMEs

Table 6 The relationship between start-up SMEs indebtedness and their performance by groups of countries

Dependent variable	ROA	ROE	Profit margin
High income countries			
Logarithm of Long-term debt	2.392*** (0.325)	1.949* (1.094)	1.650*** (0.282)
Logarithm of Current liabilities	−0.073 (0.091)	−0.112 (0.299)	0.154** (0.069)
Gearing ratio	−6.662*** (0.386)	−4.918*** (1.446)	−3.124*** (0.321)
Constant	24.092*** (1.652)	39.025*** (3.591)	9.295*** (0.862)
Real GDP growth rate	1.536*** (0.345)	4.494*** (0.909)	0.668*** (0.144)
D Inflation rate	0.597 (0.367)	−0.403** (0.202)	0.082 (0.124)
Obs	2028	2034	2021
R-squared	0.974	0.829	0.783
R-squared adjusted	0.967	0.684	0.595
F-statistic	15.990***	5.706***	4.183***
Upper middle income countries			
Logarithm of Long-term debt	2.426*** (0.318)	0.890 (2.473)	1.768*** (0.218)
Logarithm of Current liabilities	−0.039 (0.093)	0.013 (0.197)	0.350 (0.212)
Gearing ratio	−7.161*** (0.312)	0.769 (3.035)	−3.175*** (0.410)
Constant	36.669 (1.344)	59.084 (9.810)	16.282*** (2.888)
Real GDP growth rate	−0.074 (0.443)	−4.668*** (0.901)	−0.584** (0.230)
D Inflation rate	−0.308 (0.342)	−2.074 (0.209)	0.689* (0.339)
Obs	1090	1093	1078
R-squared	0.849	0.756	0.824
R-squared adjusted	0.703	0.523	0.654
F-statistic	5.822***	3.240***	4.857***

Note *, ** and *** represents significant values at 1%, 5% respectively 10%; Standard error in parenthesis
Source authors own elaboration

from our models explain in a high proportion the variation of the performance indicators. Also, the F statistics shows that our panel data models are significant.

5 Conclusions

The aim of our research was to determine if exists a relationship between the financing decision of small and medium enterprises start-ups and their performance. The analysis is conducted on start-up SMEs from 14 Central and Eastern European countries for the period from 2015 to 2019. The total number of firms included in the analysis was 7294. This firm belongs to different sectors of activity. For a more in depth analysis we grouped the countries in the sample according to their level of development, and realized a comparative analysis between groups.

The results of the panel data analysis reveal that the financing decision of firms is an important factor in determining their performance. More clearly long-term debt resulted to be positively related with SMEs performance both for total sample and also by groups of countries. Current liabilities resulted to be positively related only with Profit margin for the total sample of countries. Whilst gearing ratio resulted to have a negative relation with performance regardless of the performance measurement method but also of the analysed sample.

Our results are mainly in line with the findings of some studies from the literature but at the same time they are in contradiction with other studies. The results depend on the particularities of the countries analysed in different studies, the periods considered but also the characteristics of the analysed enterprises.

The added value of our study comes from considering almost all the countries from the CEE region and also a large sample of start-ups SMEs. Another element of novelty lies in the grouping of countries according to their degree of development and the comparison of the results obtained for the two groups. We consider that our findings could be of interest both to researchers and policy-makers. On the one hand, because it offers new evidence on the relationship between companies' indebtedness and their performance, with emphasis on enterprises at the beginning of the road. On the other hand, because it shows what financing methods can increase the performance of SMEs at the beginning of activity, thus providing a starting point for policy-makers in decision-making and the adoption of programs to support access to finance for these categories of enterprises.

The limitations of our study come from the availability of the data for the indicators that measure the indebtedness of SMEs. In order to extend the results of this study, we want to include in the analysis all the countries from Europe, but also to group the SMEs according to the sector of activity.

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