

DETERMINANTS OF LEVERAGE OF THE COMPANIES LISTED ON THE OFFICIAL MARKET OF THE MACEDONIAN STOCK EXCHANGE

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ABSTRACT

The decisions pertaining to the choice of the type of financing are ones of paramount importance for every company, since they have a direct impact on its profitability. Adequate choice of capital structure can minimize the overall cost of financing, which, in turn, leads to maximizing the value of the company.

The focus of this paper is to establish and examine the determinants that influence the leverage of the companies listed on the Macedonian Stock Exchange. For this purpose, the Fixed Effects Panel Regression model is used on a sample data that consists of 36 companies, out of which 16 are on the exchange listing and the remaining 20 are on the mandatory listing on the Macedonian Stock Exchange. The data for the analysis is collected from the audited financial statements of these companies for a period of 5 years, starting from 2017 to 2021.

The results of the research imply that only two of the total five analyzed variables have certain impact on the capital structure of the companies, while the other three are statistically insignificant and have a negative impact on the leverage. Profitability and tangibility are variables that have statistically significant influence on the leverage of the Macedonian companies, while liquidity, free cash flow and the size of the companies are not statistically significant variables according to this analysis.

Key words: *Leverage, capital structure, Fixed Effects Panel Regression*

JEL classification: *G32, C33*

1. INTRODUCTION¹

The purpose of the existence of every private company is to maximize its profit and increase its market value, which would result in higher earnings in the form of dividends for the shareholders and bonuses for the management. Hence, the interests of both interested parties coincide, but the idea of how to achieve this purpose may differ.

One of the decisions that significantly affect the profitability of the company is the choice of the sources of financing, i.e. the proper ratio of the liabilities in the company's balance sheet. Despite the many theories that have been developed so far, as well as the extensive research literature on this subject, science does not have yet provided a precise and unique answer on the best ratio between the company's sources of financing. This is expected, because, in addition to the economic justification when choosing which source of financing to prevail and in what ratio to be

¹ I would like to express my special gratitude to Prof. Dragan Tevdovski and Prof. Sasho Arsov, on their comments and assistance in drafting this paper, in the course of the PhD studies.

represented, the structure of financing depends on the numerous internal and external factors present at the specific moment, but also on the plans for the future development of the company.

The goal of this research is to establish the determinants that affect the structure of the sources of financing of the companies in the Republic of North Macedonia. Fixed Effects Panel Regression model is used on a sample of 36 companies listed on the Macedonian Stock Exchange.

Research hypotheses are:

- H1: The size of the company has a positive impact on leverage,
- H2: Free cash flow has a negative impact on leverage,
- H3: Liquidity has a negative impact on leverage,
- H4: Tangibility has a positive influence on leverage, and
- H5: Profitability has a positive impact on leverage.

The results obtained indicate that only two out of the total five variables affect the structure of the sources of financing of the companies, while the remaining three variables are statistically insignificant, with a negative sign. Variables that have a statistically significant impact on the leverage of the Macedonian companies are profitability and tangibility, while liquidity, free cash flow and the size of the company are not statistically significant variables according to this analysis.

This paper does not cover the tax aspects that affect the choice of the financing structure.

The limitations in the research may arise from the representativeness of the sample that is subject of analysis, given that the vast part of companies that have “facilitated” access to external financing are listed on the official market of the Macedonian Stock Exchange. Nevertheless, publicly available audited financial data exists only for these companies.

The research is to be considered a contribution to the literature in this field in the Republic of North Macedonia, while the results may be helpful for the financial decision makers in the companies.

In the future, the research can be expanded by analyzing more explanatory variables, covering a longer period of time, given that our panel data refers to a period that includes extreme conditions such as the Covid-19 pandemic and the energy crisis, which were inevitably reflected on the balance sheets of the companies. Moreover, samples of companies with different activities can be analyzed, for example companies from the manufacturing sector, trading companies, etc.

In addition to the introduction, the paper briefly presents results and knowledge obtained from previous research and contributions to the literature on this subject, the applied methodology and the data used for the research. At the end of the paper, the results of the research are discussed and the conclusions are presented, along with the possibility of applying the knowledge gained, as well as the possibility of continuing the research.

2. LITERATURE REVIEW

The literature on the structure of the sources of financing examines several aspects, including: analysis of theories that attempt to explain the optimal structure of the sources of financing; the determinants affecting the structure of the sources of financing; the impact of different ratios between these sources on the companies’ profitability, etc.

Myers, S. C. (2001) makes observations of three prevailing theories: the trade-off theory, the pecking order theory and the free cash-flow theory, and draws a conclusion that there is relevant

evidence to support each of these theories, but none provides a generally accepted explanation for choosing the most appropriate financing strategy. Hence, testing them on a large, heterogeneous sample of companies may be unhelpful, i.e. uninformative. In certain cases, researchers arrive at results that are consistent with two of the theories or with a particular theory, while a different financing model is implemented in practice. The theories on the optimal structure of the sources of financing differ in the interpretation they provide of the factors that influence that structure. Thus, the trade-off theory emphasizes taxes, the pecking order theory emphasizes the concept of asymmetric information, and the free cash-flow theory emphasizes the agency costs. The trade-off theory claims that the companies strive for a level of indebtedness that balances the positive effects of the tax shield from additional borrowings against the possible financial distress costs. Consequently, this theory predicts moderate indebtedness of the companies that are taxpayers. The pecking order theory considers that the companies will decide to borrow and then issue additional capital, exclusively in cases where the internal cash flows are not sufficient to finance capital investments. According to this theory, the amount of indebtedness reflects the cumulative need for external financing. The free cash-flow theory argues that the significantly high levels of indebtedness will increase the value of the company, regardless of the threat of financial crisis, in cases where the cash flow from operating activities significantly exceeds the profitable investment opportunities. This theory is designed for “mature” companies with a significant volume of investments.

Harris, M., & Raviv, A., (1991) analyze the available relevant literature on the various theories of the structure of the sources of financing of the companies (more than 150 studies are included), relating the theories to the empirical results of current research, in a way that shows which research is a confirmation or negation of the individual theoretical claims. They exclude the theories that are primarily based on the tax shield. The results of their research identify a huge number of potential determinants of the structure of the sources of financing, but empirical research does not prove which of them are relevant in different time contexts.

According to these authors, the models that attempt to explain the structure of the sources of financing based on the agency costs are one of the most successful. These theoretical models predict that the leverage is positively correlated with: 1. the higher value of the company (Hirshleifer and Thakor, 1989; Raviv, 1990, Stulz, 1990, as cited in Harris, M., & Raviv, A., 1991), 2. the probability of failure (Harris & Raviv, 1990, as cited in Harris, M., & Raviv, A., 1991), 3. the free cash-flow (Jensen, 1986, Stulz, 1990, as cited in Harris, M., & Raviv, A., 1991), 4. the liquidation value of the company (Williamson, 1988, Harris & Raviv, 1990, as cited in Harris, M., & Raviv, A., 1991), 5. the threat of the company being targeted for takeover (Hirshleifer & Thakor, 1989, Stulz, 1990, as cited in Harris, M., & Raviv, A., 1991) and 6. the importance of management reputation (Hirshleifer & Thakor, 1989, as cited in Harris, M., & Raviv, A., 1991). On the other hand, the analyzed models show that the leverage is negatively correlated with: 1. the growth opportunities (Jensen & Meckling, 1976, Stulz, 1990, as cited in Harris, M., & Raviv, A., 1991), 2. the interest coverage ratio, the research costs of companies' announcements and the probability of reorganization in case of operational problems (Harris & Raviv, 1990). Additionally, some implications suggest that the restrictive contractual provisions of the creditors restrict the owners from pursuing risky projects (Jensen and Meckling, 1976, as cited in Harris, M., & Raviv, A., 1991) and that the companies with longer credit history have lower default rates and lower costs of debt (interest) (Diamond, 1989, as cited in Harris, M., & Raviv, A., 1991).

The theories that are based on the concept of asymmetric information held by the stakeholders analyze the changes (reactions) of the value of the shares in cases where the debt increases and

consider that the companies follow certain order in making the choice of financing (pecking order theory). Harris, M., & Raviv, A., (1991) conclude that empirical research confirms the theoretical claims, except in the following two cases: 1. leverage increases along with the increase in free cash flow, and 2. leverage is positively correlated with the probability of failure. Research has confirmed opposite theses, i.e. claims.

A large number of studies in the literature in this field also examine the determinants of capital structure, as well as its impact on the profitability of the companies on different markets and regions. In general, similar or identical variables are often used in the analysis, with certain modifications in the calculation of the relative indicators of profitability, liquidity, indebtedness and efficiency in the operations of the companies.

In the Republic of North Macedonia, there are several research papers on the structure of the sources of financing. The results of the dynamic panel regression of Jovanović, B. (2015) on a sample of 194 Macedonian companies analyzed in the period 2000-2014², show that the size of the company and the development opportunities (shown through the growth rate of assets) are positively correlated, while profitability, tangibility and the tax shield against costs that are not related to debt, are negatively correlated with the leverage.

The mean leverage³ for 47 listed companies on the Macedonian Stock Exchange, calculated for the period 2009-2013, is about 35% (Arsov, S., 2015). The results of this research show that the total indebtedness of the companies has a negative impact on their profitability, while the size of the company has a positive impact. The other analyzed variables, such as investments⁴, income growth, tangibility and the profit tax rate do not have a statistically significant impact on the profitability of the companies.

In addition to the authors mentioned above, for the preparation of this paper, other research studies in this field were also consulted, such as those of: Acaravci, S. K. (2015), establishing the determinants affecting 79 manufacturing companies listed on the Istanbul Stock Exchange; Akhter, A. G. J. (2018), examining the impact of the structure of the sources of financing on the profitability of 35 pharmaceutical companies listed on the stock exchange; Chandra et al. 2019; Yapa, D. (2015), etc.

3. DATA AND METHODOLOGICAL APPROACH TO THE RESEARCH

For the purposes of the analysis, a fixed effects panel regression model is used with six variables, five of which are independent and one is a dependent variable.

The leverage of the companies is used as the dependent variable, while the liquidity, profitability, tangibility, free cash flow and the size of the companies are used as the independent variables.

The data for the analysis are summarized from a selected sample consisting of 36 companies listed on the Macedonian Stock Exchange. The data is publicly available, i.e. data from the audit reports published on the website of the Macedonian Stock Exchange, covering a period of five consecutive years, i.e. from 2017 to 2021. In the sample consisting of 36 companies, 16 are part of the stock market listing, and the remaining 20 are part of the mandatory listing on the official market of the Macedonian Stock Exchange. It is important to mention that the sample does not include companies from the banking and insurance sectors, taking into account that these companies have a different structure of the annual accounts, which is primarily characterized by a

² The analyzed period actually covers two sub-periods: 2000-2009 and 2013-2014, due to lack of data.

³ Leverage is calculated as the ratio of the companies' total debt and their total assets.

⁴ Investments from the previous three years in relation to the total assets are used as a variable.

high (incomparable) leverage with the rest of the companies in the sample, due to the specificities of their activities. Hotels are also excluded from the sample (due to the non-representative years as a result of the Covid-19 crisis), as well as state-owned companies and companies that are on the “Watch List” on the Macedonian Stock Exchange.

The variables “Size” and “Free Cash Flow” included in the models as time series are expressed in logarithmic values, while the stationarity of the other four variables: “Leverage”, “Liquidity”, “Profitability” and “Tangibility” is confirmed through the Unit Root Test (Dickey Fuller).

3.1. Explanations for the variables used as determinants of the structure of the sources of financing

The variables included in the model are of particular importance as financial indicators for the companies’ operations and have a great impact on the companies’ decision regarding their future borrowings. Hence, a more detailed explanation for their inclusion in the analysis is hereby provided, as well as for the method of their calculation.

Leverage is a relative indicator of the companies’ indebtedness. Usually, the companies finance their activities with a combination of debt and equity. Although debt can contribute to the faster growth of the companies, excessive indebtedness, on the other hand, can lead to challenges in their functioning, which is why this indicator is one of the basic ones used by creditors when analyzing the justification for approving additional borrowing. The level of indebtedness or leverage in the literature can be calculated in several ways, but the following ratios are most often used: debt to total assets; debt to equity; debt to EBITDA, etc. This paper uses the first indicator, i.e. debt to total assets (or total sources of financing), as the most comprehensive indicator of the company’s indebtedness.

As an indicator of the *size*, the assets of the companies are used, i.e. the sum of their total assets. In the literature, in addition to the value of assets, the revenues, number of employees, market value of the company, etc. are usually used as indicators of the size. The assumption in this research is that the size has a positive impact on the leverage, which is in line with the trade-off theory, because there is a lower probability of bankruptcy for large companies, which allows them to attract more debt. According to this theory, leverage should be positively correlated with the size of the company, because large companies also have less variation in profits, which makes them more tolerant of higher levels of leverage (Castanias, 1983; Titman & Wessels, 1988, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015). Some research indicates that the size of the company does not have a significant impact on its leverage (Karadeniz et al., 2009, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015), but there are also studies which prove that size is inversely correlated with leverage, which is consistent with the pecking order theory in choosing the sources of financing, as asymmetry in information increases with the increase of the size of the company (Marsh, 1982, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015).

Tangibility is calculated as the ratio of tangible assets to total assets of the company. In certain research, this relative indicator is calculated as the ratio between the sum of tangible assets and inventories, in relation to the total assets. Usually, creditors are more willing to approve a loan to a company whose tangibility is greater. The positive relationship between tangibility and leverage is confirmed in several studies (Ferri & Jones, 1979; Titman and Wessels, 1988; Rjan and Zingales, 1995; Gaud et al., 2005, as cited in Jovanovic, B., 2015).

Several indicators are used as indicators of *liquidity* in the literature: current liquidity ratio, “quick” liquidity ratio, net working capital ratio (net working capital in relation to total assets),

etc. For the calculation of liquidity in this model, the quick ratio for liquidity is used, calculated as the ratio between current assets, reduced by the amount of inventory (considering the existence of a certain period for their turnover) and current liabilities. This ratio is taken into account given the assumption that the companies that are sufficiently liquid do not need to borrow, because every new borrowing reduces net profit and available future dividends to the company's owners. In addition to the relative liquidity indicator, the model also includes *cash flow at the end of the year* as money and cash equivalents at the end of the year (free cash flow). It represents a sum of cash flows from operating activities, cash flows from investment activities, cash flows from financing activities and cash assets at the beginning of the year. The absolute value of the cash flow is also logarithmic. In the literature, there are studies that confirm the pecking order theory in financing, i.e. the claim that the companies that are liquid have less need for external financing (Myers & Rajan, 1998; Eldomiaty & Azim, 2008; Deesomsak et al., 2004; Eriotis et al., 2007; Sheikh & Wang, 2011, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015). This claim is in line with the free cash-flow theory, as well as with the theory of agency costs. *Profitability*, for the purposes of this model, is calculated as operating profit margin, i.e. ratio between operating profit and total revenues (sales). In the respective literature, there are also several options for this variable, such as ROA, ROE, EBIT in relation to total assets, etc. Myers & Majluf, 1984, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015, concluded that the companies with higher profitability are less inclined to external financing, which is consistent with pecking order theory in choosing the financing, because with the increase in profitability, the company has more of its own capital accumulation available for financing and accordingly has less need for external financing, which results in less debt. However, the trade-off theory argues otherwise. Namely, investors and creditors are more willing to approve a loan or invest in more profitable companies because the probability of debt repayment is higher in these companies. Again, there are studies in the literature that indicate a positive correlation between these two variables (Fama & French, 2002; Rajan & Zingales, 1995; Graham, 2000; Lasfer, 1999; Ezeoha, 2008; Sogorb-Mira & How, 2005; Huang & Song, 2006; Al-Najjar & Taylor, 2008; Karadeniz et al., 2009; Lemmon & Zender, 2010; Al-Fayoumi & Abuzayed, 2009; Yu & Aquino, 2009; Deloof & Overfelt, 2008; Brav, 2009; Kim et al., 2006; Gaud et al., 2005; Hall et al., 2004; Abor & Biekpe, 2009; Heshmati, 2001; Ezeoha, 2011; Eldomiaty, 2007; Amidu, 2007; Sheikh & Wang, 2011; Viviani, 2008; Strebulaev, 2007, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015), their negative correlation (Chittenden et al., 1996; Al-Sakran, 2001, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015), but also excluding any relationship of profitability and leverage (Hovakimian et al., 2004; El-Sayed Ebaid, 2009, as cited in Alipour, M., Mohammadi, M. F. S., & Derakhshan, H., 2015).

Table 1: Expected signs of the variables included in the model

Variable	Abbreviation used in the model	Expected sign of the variable
Leverage	Lev	
Size	Size	+
Cash flow	Cf	-
Liquidity	Liq	-
Tangibility	Tang	+
Profitability	Prof	+

The basic model used in this paper to consider which determinants affect the leverage is the fixed effects panel regression model. The sample includes 36 companies listed on the Macedonian Stock Exchange. Although this method has some flaws and random errors, it is still one of the most powerful methods used in regression analysis. Based on this model, the regression function is evaluated on a certain sample, which is an approximation of the theoretical regression function. This means that the score b_0 is closer to the actual parameter B_0 , the score b_1 is closer to the actual parameter B_1 , when the actual parameters B_0 and B_1 are not known.

The model specification reads as follows:

$$Y Lev_{i,t} = b_0 + b_1 X Size_{i,t} + b_2 X Cf_{i,t} + b_3 X Liq_{i,t} + b_4 X Tang_{i,t} + b_5 X Prof_{i,t} + u_{i,t}$$

i represents the specific company, t refers to the year, while u stands for the error in the model.

Abbreviations used for the variables:

$Y Lev$ - Leverage

$X Size$ - Size of the company

$X Cf$ - Cash flow

$X Liq$ - Liquidity

$X Tang$ - Tangibility

$X Prof$ - Profitability

Table 2: Descriptive statistics of the variables included in the model

	Leverage	Size	Cash flow	Liquidity	Tangibility	Profitability
Mean	0.382017	6.136535	4.293295	2.600781	0.407190	0.066361
Median	0.329083	6.126123	4.316972	1.007531	0.342809	0.038969
Maximum	1.784761	7.166114	6.547498	45.64137	6.694271	0.940833
Minimum	0.005541	4.128399	1.690196	0.107619	0.008734	-0.525158
Std.Deviation	0.342298	0.511632	1.020756	5.758169	0.511329	0.157904
Skewness	1.916580	-0.389557	-0.389557	5.081483	10.41885	1.701952
Kurtosis	7.890160	2.943771	2.943771	31.66723	128.4659	11.13294
Jarque-Bera	289.5508	5.097952	4.576342	6938.220	121319.2	582.9842
Probability	0.000000	0.078162	0.101452	0.000000	0.000000	0.000000
Sum	68.76313	1104.576	772.7931	468.1405	73.29424	11.94506
Sum Sq.Dev.	20.97308	46.85636	186.5077	5935.015	46.80085	4.463109
Observation	180	180	180	180	180	180

Source: Own calculations

Table 2 displays the descriptive statistics of the collected data and includes the following central tendency measures: the mean and median value, the minimum and maximum value of the data, as well as the standard deviation.

Table 3: Mean value of the variables included in the model

Leverage (debt to equity)	Leverage (debt to total assets)	Liquidity	Profitability	Tangibility
68.2%	38.2%	2.6%	6.6%	40.7%

Source: Own calculations

4. RESULTS OF THE RESEARCH AND DISCUSSION

The table below shows the results of the research.

Table 4: Presentation of the research results

Variable	Coefficient	Std.Error	T-Statistic	Prob.
C	0.552414	0.926099	0.596496	0.5518
Size	-0.028745	0.149509	-0.192265	0.8478
Cash Flow	-0.001743	0.012601	-0.138292	0.8902
Liquidity	-0.00338	0.002662	-1.269.354	0.2064
Tangibility	0.088643	0.036187	2.449.561	0.0155
Profitability	-0.208310	0.064861	-3.211.642	0.0016

Adjusted R ²	0.946183
Akaike info criterion	-2.031.363
Schwarz criterion	-130.478
F-statistic	7.967.722
Prob (F-statistic)	0.000000

$\alpha=5\%$ $\alpha=1\%$ Source: Own calculations

Considering the results obtained from the analysis and shown in Table 4, it can be concluded that out of total of five independent variables, only two are statistically significant, namely: tangibility and profitability of the companies, with a significance level of 5% in tangibility and 1% in profitability. The other three variables: size, cash flow and liquidity, are statistically insignificant, with a negative sign.

From the expected signs of the variables, shown in Table 1, compared to the results obtained of the model, it can be concluded that only two of the variables differ in their sign, namely the size and profitability, while the remaining three variables (cash flow, liquidity and tangibility) match the expectations, but the results obtained are insignificant. In other words, the size of the

company has a negative impact on its leverage, which means the more the company's size increases, its leverage decreases, which is in line with the pecking order theory in choosing the financing. This can be illustrated by a simple example, the bigger the company, the more it dominates on the market, and thus dictates the business conditions of its customers in its favor, in order to enable more liquidity and less need for borrowing for which it needs to pay interest.

The profitability variable, which also has a negative sign, shows that every increase in the profitability of the company causes a decrease in its financial leverage, i.e. more profitable companies have less need for borrowing, which is also in line with the pecking order theory in choosing the financing. The companies that are more profitable accumulate a larger amount of assets than the profit they earn and use it as a cheaper source of financing of their activities.

Tangibility affects leverage with a significance level of 5%. The results of the model show that if tangibility increases by 1, leverage will increase by 0.0886 if all else remains unchanged (*ceteris paribus*). This positive relationship can be explained by the fact that the companies that have more tangible assets are more acceptable for borrowing, because they have something to offer as collateral. However, the rest of the suppliers also see greater stability and security for the collection of their claims if there is greater tangibility.

Liquidity and cash flow of the companies indicate an inverse relationship with leverage, which is expected, since the companies that have sufficient funds to finance their business activities do not need external financing. Again, this is in line with the pecking order theory in choosing the financing.

Hence, the hypotheses set at the beginning of the research are rejected or accepted respectively, as shown in the table below.

Table 5: Display of accepted/rejected hypotheses

	<u>Hypothesis</u>	<u>Result</u>
H1	The size of the company has a positive impact on leverage.	Rejected (statistically insignificant)
H2	Free cash flow has a negative impact on leverage.	Rejected (statistically insignificant)
H3	Liquidity has a negative impact on leverage.	Rejected (statistically insignificant)
H4	Tangibility has a positive influence on leverage.	Accepted (significance level 5%)
H5	Profitability has a positive impact on leverage.	Rejected (significance level 1%)

5. CONCLUSION

The purpose of this paper was to establish and examine the determinants that influence the structure of the sources of financing of the companies in the Republic of North Macedonia. Using the fixed effects panel regression model on a sample consisting of 36 companies listed on the

Macedonian Stock Exchange, the influence of the following five independent variables, namely the size, profitability, tangibility, liquidity and cash flow, was tested on the dependant variable - leverage.

The results of the research show that only two, out of the total of five analyzed variables, influence the structure of the sources of financing of the companies, while the remaining three are statistically insignificant and have a negative sign. Variables that have a statistically significant impact on the leverage of the Macedonian companies are profitability and tangibility, while liquidity, cash flow and the size of the companies are not statistically significant.

The reasons for this can be found in the weak development of the capital market, where no corporate bonds are issued and the companies are predominantly financed by the accumulated own capital and debt. Debt (in total, including liabilities to suppliers, borrowings and bank loans) in the analyzed period and sample of companies accounts for an average of 38%. The liquidity of the analyzed companies is on average 2.6%, and the profitability is 6.6%, in the analyzed 5-year period.

The theory does not offer a single answer for the ideal ratio of the sources of financing, because there is no unified answer that would be appropriate for every type of company. Namely, in certain periods of the company's economic development, financing by indebteding may be more appropriate, while in others, financing with own funds. This especially refers to the beginning while sufficient reserves and retained earnings are accumulated, under the assumption that loan interest rates are not high, i.e. enable profitable operation. But securing sufficient external funds can be a problem at first, as creditors and investors may demonstrate reservations if the company fails to provide historical financial data.

Notwithstanding, the decision on the structure of the sources of financing largely depends on the "financial literacy" of those in charge of managing finances, i.e. of the financial managers of the companies and on the moment when that decision should be made. Namely, if the interest rates on external borrowing allow profitable operation, and the market conditions allow an increase in sales, managers may combine funds from accumulated profits and borrowings as long as the marginal increase in sales allows profitable operation (is greater than the marginal cost of capital). Still, if the external financiers and investors are not willing to approve additional loans, then the management is obliged to plan the operation of the company based on its own assets. "Financial literacy" is indeed particularly important when presenting the company's project to external financiers.

The contribution of this scientific research is aimed at expanding the respective literature in the Republic of North Macedonia, and the results may be useful to the financial decision makers in the companies.

The research can further be supplemented and continued with the analysis of more explanatory variables, as well as over a longer period of time, given that in the analyzed years there were extreme situations such as the Covid-19 pandemic and the energy crisis, which were reflected on the companies' balance sheets. Furthermore, the companies can be analyzed depending on the activity in which they operate, for example separately for manufacturing and trading companies, but with such a division, there is a risk of being faced again with a limited sample of companies for which there are publicly available audited financial statements.

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