

Analysis of the Capital Structure of the Company in the Period Before and During the COVID-19 Pandemic

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Abstract: This paper summarizes the optimal capital structure, comparing the period before and during the COVID-19 pandemic. Using the analysis of financial statements, we deal with the adequacy of the capital structure, drawing on the available literature that describes both classical and current models. We concluded that the company's low credit indebtedness was very beneficial for companies during the pandemic period since companies with a high credit burden were much more likely to become insolvent. The company we monitor draws foreign sources of coverage mainly from the sources of the consolidated whole, which is a huge competitive advantage, but we realize that not every company has such possibilities. In addition, it is necessary to monitor liquidity indicators, because our analysis showed that although the company, we monitor is financially sound and in excellent shape, it may have problems with repaying its liabilities, as its liquidity ratios have been below the optimal threshold for a long time.

Keywords: Capital Structure, Pandemic Period, Financial Statements, Financial Indicators

JEL classification: G30, G32, M41

1 Introduction and literature review

The COVID-19 pandemic shocked financial markets around the world and, as a result, markets became extremely volatile, with many company bankruptcies recorded in a brief period. Most businesses sought financial assistance to remain operational. This work focuses on analyzing the capital structure of a company compared to before and during the COVID-19 pandemic. Influencing operational risk through debt levels says

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that decisions about corporate capital structure help firms immunize against the pandemic, and the results of this work will be interpreted through an analysis of the financial statements of the selected company.

The theory of the irrelevance of the capital structure of Modigliani and Miller (1958) is considered the starting point of the modern theory of capital structure. Based on assumptions about investor behavior and the capital market, MM's model illustrates that a firm's value is not influenced by a company's capital structure. Securities are traded on a perfect capital market, all relevant information is available to managers and shareholders so that they can make their decision (no asymmetry of information), that is, transaction costs and costs of taxation do not exist. Borrowing is possible for companies and individual investors at the same interest rate that allows domestic leverage. Companies operating in similar risk classes have similar operating leverage, interest payable on debt does not save any burden and at the same time companies monitor 100% dividend payments. According to these assumptions, the MM model proved that there is no optimal debt-to-equity ratio, and the capital structure is irrelevant to shareholder profit. The MM model argued (1958) that the value of a leveraged firm is the same as that of a firm without leverage. Therefore, suggest that managers do not deal with the capital structure and are free to choose the composition of debt to equity. Notable contributions to the MM approach include Hirshleifer (1966) and Stiglitz (1969). They argue that increasing leverage increases the risk of the firm and, as a result, the cost of equity increases. The theory of the irrelevance of the capital structure was very correct in theory, but it was based on an unrealistic set of assumptions. For this reason, this theory has led to a lot of research on capital structure. Although the MM model was theoretically valid, a tax-free world was not real. To make the model more accurate, Modigliani and Miller (1963) incorporated the effect of tax on the cost of capital with the value of the firm. In the presence of corporate taxes, the value of the firm increases with leverage due to the tax shield. Interest on debt capital is an acceptable deduction from the company's income and thus reduces the net tax burden of the company. As a result, there would be an additional benefit of using debt capital by reducing the firm's cost of capital. The disadvantages in the MM model prompted a series of investigations devoted to proving the irrelevance of both theoretical and empirical character. Likewise, other theories that contribute to the theorem of capital structure can be developed based on the MM model, and it is exceedingly difficult to confirm any of them. Although there are weaknesses in the MM model, it cannot be completely ignored or eliminated.

Since the publication of the work of authors Modigliani and Miller (1958) "Theories of the irrelevance of capital structure", the theory of the structure of corporate capital has been a study of interest of financial economists. Over the years, three major theories of capital structure have emerged that deviate from the assumption of perfect capital markets, in which the "irrelevance model" operates. The first is trade-off theory, which assumes that firms trade the benefits and costs of debt and equity financing and find an "optimal" capital structure after accounting for shortcomings such as taxes and transaction costs. The second is the "pecking order" theory (Myers, Majluf, 1984), which argues that firms follow a hierarchy of funding to minimize the problem of information asymmetry between managers and shareholder. Baker and Wurgler (2002)

proposed a new theory of capital structure, namely theory of market timing of capital structure. This theory states that the current capital structure is a cumulative result of past attempts to time the stock market. The timing of the market means that companies issue new shares when they perceive that they are overvalued and that companies buy back their own shares when they consider them undervalued. The market timing of issuing stock issues has already been well established empirically by other authors, but Baker and Wurgler show that the impact of market timing on capital structure is constant.

Various authors use the term compromise theory to describe related theories. In all these theories, the decision maker evaluates the different costs and benefits of alternative leverage plans. It is often assumed that the solution is obtained by balancing marginal costs and marginal benefits. When corporate tax was added to the original irrelevance, it created an advantage for debt by serving to protect tax revenue. Since the objective function of the firm is linear and there are no compensation costs for debt, this means 100% debt financing.

Compromise theory

The compromise theory of capital structure (Kraus, Litzenberger, 1973) suggests that firm value is maximized at an optimal capital structure where marginal benefits and marginal costs of debt are equal. The excessive use of debt above optimal levels therefore leads to a decline in the value of the enterprise and an increase in fixed risk, which is called the 'excessive indebtedness effect'. In addition, a positive deviation from the optimal capital structure increases the likelihood of financial difficulties, causing companies to file for bankruptcy. On the other hand, the value of firms continues to rise, with debt levels below the optimal level of capital structure to capture interest rate tax benefits, while remaining at a low level of bankruptcy risk. In other words, underleveraged firms have greater debt capacity to make new investments through debt loans (Marchica, Mura, 2010). As a result, insufficient leverage provides firms with greater liquidity and security, especially in the event of a sudden cash flow shortage. However, low debt levels also cause problems among shareholders and managers. Entrenched managers have more free cash to spend in their own interest rather than shareholders' best interest (Jensen, 1986), but managerial entrenchment is mitigated in economic recession (Kesten, 2010) and managers care more about their job security. Therefore, low debt levels may not be an issue in case of any agency conflict between shareholders and managers during a crisis period.

Demand for external funds increased in the presence of cash flow shortages due to COVID-19, as all business activities had to close to stop the spread of the virus. As a result, firms were negatively affected by the pandemic shock and sought more funds to cope with liquidity shortages. Halling et al. (2020) found that the bond market has become more active since the outbreak of COVID-19, and Li et al. (2020) and Acharya and Steffen (2020) further document that the pandemic has increased the drawdown of bank loans and lines of credit. The ability of companies to borrow from capital markets or banks depends on their current debt capacity. For example, when firms adopt a conservative debt policy that maintains financial flexibility, they can finance new investments with larger volumes of debt issuance (Marchica, Mura, 2010). Keeping

leverage low therefore provides greater debt capacity and financial flexibility, which brings benefits to businesses during market downturns. Fahlenbrach et al. (2020) found that firms with high financial flexibility lose less market value due to COVID-19 than firms with low financial flexibility. In other words, firms with more debt are at higher risk than firms with less debt because leverage is significantly positively correlated with stock yield volatility (Black, 1976; Christie, 1982; Schwert, 1989).

COVID-19 is forcing companies to think about a new business management strategy to survive the crisis and increase adaptability to the future. The risk of bankruptcy is closely related to the level of debt of the company, and therefore the way in which the company's executives determine the capital structure can directly affect the future of the company. The trade-off theory of capital structure suggests that over-leveraged companies are more likely to find themselves in financial difficulties than older underleveraged companies. Therefore, making the right decision on the capital structure helps to reduce the risk of bankruptcy when companies find themselves in financial difficulties.

2 Methodology and results

To create an analysis of sources of financing, we need to know the financial statements of the company for a period of at least 5 consecutive years. To base our analysis, we selected data from the financial statements for the period 2017-2021.

Analysis of the company's indebtedness

Measuring a company's total indebtedness is particularly important. With it, we can find out to what extent the company is financed by foreign sources. The share of equity and foreign capital affects the financial stability of the company. A high equity ratio increases the stability of the enterprise, however, by using foreign capital, it is possible to increase the return on equity using leverage. However, society must be careful not to fall into debt distress. The most used indicators are (Sivák et al., 2019):

- the degree of total indebtedness – expresses the structure of financial resources and the value of this indicator should be in the range of 0.3 to 0.7. This suggests that the leverage ratio in the company should not exceed 70%.
- degree of self-financing – this is the debt ratio of equity. This indicator tells us how many units of foreign capital account for 1 unit of equity. This is in addition to the level of total indebtedness. The sum of these two indicators must be 100 %.
- Leverage – tells you what proportion of assets equity is. The value of this resource should be balanced with the value of the share of foreign capital in assets.

In the following review, we will analyze selected debt indicators of our selected company.

The total indebtedness indicator indicates the extent to which foreign capital is used to finance the needs of the enterprise. Total indebtedness can affect the overall profitability of a business. We calculate it using the formula:

$$\frac{\text{foreign capital}}{\text{assets}} \cdot 100 \quad (1)$$

Table 1. – Development of total debt ratios and degree of financial autonomy

Items/indicators	Period				
	2017	2018	2019	2020	2021
Accounts payable	1 740 338 000	1 677 178 000	1 297 165 000	1 678 318 000	1 299 864 000
Total assets	3 119 417 000	3 077 672 000	2 953 686 000	3 097 258 000	2 722 294 000
Total indebtedness	55,79%	54,50%	43,92%	54,19%	47,75%
Equity	1 379 079 000	1 400 494 000	1 656 521 000	1 418 940 000	1 422 430 000
Total assets	3 119 417 000	3 077 672 000	2 953 686 000	3 097 258 000	2 722 294 000
Degree of financial autonomy	44,21%	45,50%	56,08%	45,81%	52,25%

Total indebtedness at Volkswagen is optimal. The company has been at the lower limit of optimal indebtedness for a long time. In 2019 and 2021, we can see that the company is below 50%, which indicates that the company is in good financial shape but with a low potential for leverage.

The degree of self-financing is the opposite of the total debt ratio. Summing up these indicators, we get a value of one hundred and express the degree of financial independence of the company. We express it using the formula:

$$\frac{\text{own capital}}{\text{assets}} \cdot 100 \quad (2)$$

Table 1 shows that during the period under review the company prefers self-financing to a significant extent, as the degree of self-financing is around 50 %. It can be stated that the ratio of self-financing and external resources of the company is balanced in the reporting period, slightly oscillating during the monitored years.

Developments in credit indebtedness

This indicator reflects to what extent the company covers assets through loans. We express it using the formula:

$$\frac{\text{bank loans}}{\text{assets}} \cdot 100 \quad (3)$$

We note that the company does not use this source of financing at all and uses the funds to which it is entitled as part of the consolidated whole.

Table 2. – Development of the long-term debt ratio

Items/indicators	Period				
	2017	2018	2019	2020	2021
Long-term liabilities	352 009 000	350 552 000	270 628 000	73 208 000	75 851 000

Bank loans	0	0	0	0	0
Total assets	3 119 417 000	3 077 672 000	2 953 686 000	3 097 258 000	2 722 294 000
Long-term indebtedness	11,28%	11,39%	9,16%	2,36%	2,79%

This indicator tells us to what extent the company is bound to repay the obligation for a long time. We express it using the formula:

$$\frac{\text{long-term foreign resources}}{\text{assets}} \cdot 100 \quad (4)$$

It tells us about the extent to which long-term foreign capital can be used to finance the needs of the enterprise. We can see that the development thanks to investments is initially slightly upward, but at the beginning of the pandemic the company reduced credit indebtedness to a minimum level.

Table 3. – Development of the leverage ratio

Items/indicators	Period				
	2017	2018	2019	2020	2021
Total assets	3 119 417 000	3 077 672 000	2 953 686 000	3 097 258 000	2 722 294 000
Equity	1 379 079 000	1 400 494 000	1 656 521 000	1 418 940 000	1 422 430 000
Leverage	2,26	2,20	1,78	2,18	1,91

This indicator indicates what proportion of assets is equity. We calculate it using the formula:

$$\frac{\text{assets}}{\text{own capital}} \quad (5)$$

From the analysis, we can find that society fluctuates around the second mark. The company was above 2 in the first years of the period under review, i.e., most assets were leveraged with around 55 % because of incoming investments. Subsequently, 2021 again brought a larger share of equity. With good financial condition of the company, it can be assumed that this positive development will continue in the future. This will be due to the improved production potential in the form of its optimization and the setup of such production, which will be focused primarily on the production of SUVs with an emphasis on electric propulsion, which are a proven attribute that forms the greatest potential of this automaker.

Financial health indicators

Financial health indicators tell us about the overall performance of the enterprise. The return on equity (ROE) expresses the percentage of profit that the company earned from one euro of equity.

For the period under review, we can observe a good financial return of our selected company. The year 2019 was significant for the company, when the indicator grew to the level of about 27%, in recent years the indicator has been around 13% on average, which we consider to be particularly satisfactory results that testify to the good financial health of the company.

Return on assets (ROA) is a percentage of the profit a company earned from €1 in assets.

This indicator, like ROE, testifies to the excellent financing of the company, where on average it accounts for 6% of profit per one euro of assets. Once again, we highlight 2019, where the company managed to climb up to around 15%.

EBIT and EBITDA show us earnings before interest and taxes. In addition, EBITDA considers impairment and amortization. From the data below, we can see that compared to before and during the pandemic, companies' profits have not fallen to such a level that the company is in any way existentially threatened.

Table 4. – Development of indicators of financial health of the enterprise

Financial health indicators					
Items/indicators	Period				
	2017	2018	2019	2020	2021
Equity	1 379 079 000	1 400 494 000	1 656 521 000	1 418 940 000	1 422 430 000
Clear profit	173 299 000	191 902 000	447 572 000	206 684 000	191 704 000
ROE	12,57%	13,70%	27,02%	14,57%	13,48%
Total assets	3 119 417 000	3 077 672 000	2 953 686 000	3 097 258 000	2 722 294 000
ROA	5,56%	6,24%	15,15%	6,67%	7,04%
Interest expense	4 809 000	4 077 000	1 377 000	3 912 000	3 793 000
Tax on income from ordinary activities	66 812 000	108 974 000	-127 900 000	71 158 000	72 140 000
EBIT	244 920 000	304 953 000	321 049 000	281 754 000	267 637 000
The result of economic activity	244 920 000	304 952 000	321 049 000	281 758 000	267 637 000
Copies	219 515 000	311 958 000	259 849 000	231 789 000	216 666 000
Revenue from the sale of DM and materials	0	0	0	2 240 000	2 140 000
EBITDA	464 435 000	616 910 000	580 898 000	511 307 000€	482 163 000
Degree of operating leverage	100,31%	117,19%	105,38%	120,62%	94,55%

The degree of operating leverage tells us how much the amount of profit change is affected by the change in the amount of sales. From the data, we can see that except for 2021, where due to the pandemic the company was forced to have limited production

for most of the year, the company had excellent indicators, which testifies to its strong market position.

Company liquidity analysis

Liquidity is the ability to turn assets into ready-made funds as quickly as possible and at the least cost. It reflects the company's ability to pay its due obligations. There are 3 levels of liquidity (Sivák et al., 2018):

- **Level 1 – immediate liquidity** – indicates the company's current ability to pay its liabilities. Its optimal value is 0.2-0.6. We calculate it using the formula:

$$\frac{\text{financial assets}}{\text{short-term foreign resources}} \quad (6)$$

- **Level 2 – current liquidity** – expresses a company's ability to pay its liabilities on time, without taking inventories into account. Its optimal value is 1.0-1.5. A value of 1 means that the company is still able to pay its liabilities without being forced to sell its inventory. Below this value, the company is forced to sell its stock. We calculate it using the formula:

$$\frac{\text{short-term assets} + \text{short-term receivables}}{\text{short-term foreign resources}} \quad (7)$$

- **Level 3 – total liquidity** – indicates the company's ability to repay its liabilities over the long term. Its optimal size is 1.6 – 2.5. The value should not fall below 1, as this would indicate that the company is completely illiquid. If the value of the indicator were too high, this would indicate an unproductive use of the funds invested. We calculate it using the formula:

$$\frac{\text{current assets}}{\text{short-term foreign resources}} \quad (8)$$

Table 5. – Analysis of the company's liquidity indicators

Items for liquidity calculation					
Entries	Period				
	2017	2018	2019	2020	2021
Financial accounts	240 004 000	116 609 000	278 701 000	460 116 000	143 918 000
Short-term receivables	727 584 000	936 106 000	736 405 000	920 437 000	828 983 000
Stocks	248 313 000	254 214 000	301 832 000	268 968 000	414 051 000
Current liabilities	1 351 243 000	1 280 394 000	967 815 000	1 541 852 000	1 161 941 000
Bank loans	0	0	0	0	0
Liquidity ratios					
Indicators	Period				

	2017	2018	2019	2020	2021
Level I liquidity	0,17762	0,09107	0,28797	0,29842	0,12386
Level II liquidity	0,71607	0,82218	1,04886	0,89539	0,83731
Level III. liquidity	0,89984	1,02072	1,36073	1,06983	1,19365
Net working capital	-135 342 000	26 535 000	349 123 000	107 669 000	225 011 000

The above data shows that the company has a long-standing liquidity problem. This is since the company has recently invested its own funds, especially in fixed assets. Recently, this development has had a negative tendency. It will be in the interest of the company to review its financing policy so that in the future, despite sufficient funds, there is no problem with the company's insolvency to pay its obligations on time. These figures also imply a declining value of net working capital. In the future, however, an improving tendency of the company's liquidity can be assumed if investments are withdrawn. Interestingly, the pandemic period did not affect the composition of assets in the company to a considerable extent, based on which we conclude that the pandemic did not force a change in the strategic decision-making of our chosen company.

3. Conclusion

Concluding our analysis, we can conclude that the development of the financing structure in each company is remarkably diverse. In particular, the company uses financing through its own resources, which is also made possible by the advantages of the status of a joint-stock company. Within the framework of its own funds, in addition to profit, the company also uses the issuance of employee shares, which is allowed by its mother abroad. However, this source does not constitute such an important source of financing in this company, but in the future, it can be assumed that in case of potential problems, the company will start to issue them to a greater extent, since it has a long-term aversion to foreign sources of financing, which we have managed to demonstrate also based on financial indicators of this company. The pandemic period has not affected the company's business activities financially, so we can say that even the production shutdown during the worst period did not cause the company greater financial difficulties.

Our analysis focused primarily on the development of the share of own and external funds in a certain period of the selected company. We found that the financial situation is developing in a good direction, as the company's sales and assets in the year-on-year period are at a favorable level. However, it was surprising to us that this company does not make sufficient use of the potential of foreign resources and prefers to finance it through its own resources, from which it makes the most profit even at the cost of making its investments significantly more expensive in this way.

Furthermore, based on our analysis, we found that the company has a long-standing liquidity problem, and we suggest that it reconsider its attitude towards this fact so that it does not have to face a problem of repaying its liabilities in the future.

Overall, our analysis managed to show that the variability of the company's sources of financing is incredibly significant. which has been confirmed during the COVID-19 pandemic. This is also proven by our chosen company, where on the basis of indicators we could see that if it were more efficient in the use of sources of financing, it would not give preference to its own sources of financing to a large extent and would also involve more foreign sources, then there would be no problem with overpricing of capital and overall the company would at least partially manage to solve the liquidity problem, but such a financing scenario could subsequently be harmful to the company, which would not have made it perform so well during the pandemic period.

Overall, it can be stated that the company has many possibilities through which it can finance its business activities and it is up to the company's management how to use these possibilities in order to contribute to the greatest possible financing efficiency and eliminate as much as possible the costs associated with the acquisition of capital and possible financial difficulties associated with it.

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