INDEBTEDNESS INDICATORS IN THE SERBIAN TEXTILE INDUSTRY

ИНДИКАТОРИ ЗАДУЖЕНОСТИ У ТЕКСТИЛНОЈ ИНДУСТРИЈИ СРБИЈЕ

Miloš Đaković
University of Novi Sad, Faculty of Economics in Subotica, Republic of Serbia
milos.djakovic@ef.us.ac.rs
ORCID: 0000-0003-0167-4026

Nada Milenković
University of Novi Sad, Faculty of Economics in Subotica, Republic of Serbia
nada.milenkovic@ef.us.ac.rs
ORCID: 0000-0001-9810-3021

Jelena Andrašić
University of Novi Sad, Faculty of Economics in Subotica, Republic of Serbia
jelena.andrasic@ef.us.ac.rs
ORCID: 0000-0003-3941-1184

Abstract: The company's financing structure is one of the main factors of its successful functioning, as well as finding an adequate balance between its own financing and debt financing. Debt financing is a common way for companies to raise funds for their operations, investments, and other business activities. It involves borrowing money from lenders or investors and agreeing to repay the borrowed amount along with interest over a specified period. Companies can obtain loan financing from various sources such as banks, credit unions, private investors, and bonds. There are many internal determinants that can have a positive or negative impact on the trend of the company's indebtedness. In this study, the authors observed a period of 15 years and 10 companies of the Serbian textile industry, defining a model of internal determinants of companies' indebtedness. The authors used POLS and a fixed effects model to generate an adequate model of determinants. The results indicated a greater adequacy of the POLS model and at the same time showed a negative impact on indicators of financial stability, current liquidity, and profit on assets.

Key words: Indebtedness, debt, textile industry

Апстракт: Структура финансирања компаније представља један од главних фактора успешног функционисања исте, као и проналазак адекватне равнотеже између сопственог финансирања и финансирања уз помоћ дуга. Финансирање дуга је уобичајен начин да компаније прикупе средства за своје пословање, инвестиције и друге пословне активности. То укључује позајмљивање новца од зајмодаваца или инвеститора и пристанак на отплату позајмљеног износа заједно са каматом током одређеног временског периода. Компаније могу добити кредитно финансирање из различитих извора као што су банке, кредитне уније, приватни инвеститори и обвезнице. Постоји мноштво интерних детерминанти који могу да имају позитиван или негативан утицај на кретање задужености компаније. Управо у овој студији аутори посматрајући период од 15 година и 10 компанија текстилне индустрије Србије дефинишући модел интерних детерминанти

задужености компанија. Аутори су употребили ПОЛС и модел фиксих ефеката ради генерисања адекватног модела детерминанти. Резулати су указали на већу адекватност ПОЛС модела и уједно показали негативан утицај показетеља финансијске стабилности, текуће ликвидности и добити на активу.

Кључне ријечи: Задуженост, дуг, текстилна индустрија

1. INTRODUCTION

The textile industry has been a significant part of the Serbian economy for many years, with a long history of textile production. However, the industry has faced challenges in recent years due to globalization, increased competition, and changing consumer trends. In the past, Serbia's textile industry relied heavily on state-owned enterprises, but after the country's transition to a market economy, many of these enterprises were privatized or closed.

As a result, the industry has become more fragmented, with smaller private companies playing a more significant role in the sector. Of the numerous financial indicators of business, indebtedness indicators represent one of the most important items in the analysis of the business of any company.

Unfortunately, there is no magic number of debts that a business can take on. A key measure of balance sheet strength is a company's ability to prudently and proportionately use equity and debt to support its assets. An excellent indicator of investment quality is a healthy capital structure that shows a low amount of debt and, accordingly, a high level of capital (Ramachandran, Madhumathy, 2016, p. 4).

Businesses should include more debt in their capital structure because it will improve organizational performance (Ullah, Kashif & Ullah, 2017, p. 6).

Company performance is considered a source of long-term growth and one of the most critical variables that investors examine (Vieira, Neves & Dias, 2019, p. 2). As a result, financial analysis can be used to assess the development of a company, which is a key component of financial management (Tobisova, Senova, & Rozenberg, 2022, p. 5).

2. THEORETICAL OVERVIEW OF THE RESEARCH

Numerous studies have been conducted to examine the impact of capital structure on company performance, and one of the biggest challenges facing financial managers is understanding the impact of capital structure, and the use of debt, on company performance (Singh, Baga, 2019, p. 4).

Ullah, Pinglu, Ullah, Zaman & Hashmi (2020), examined the impact of capital structure on the financial performance of 90 textile companies in Pakistan and found that the debt-to-equity variable has a negative and significant relationship with financial performance, while asset turnover ratio and firm performance showed a negative and statistically insignificant relationship.

Mahmood, Iqbal, Zafar & Khalid (2017), investigating Pakistani textile companies, found a significant inverse relationship between companies' debt levels and return on assets.

In addition, a strong positive correlation was also found between the debt-to-equity ratio and the firm's return on equity. Ashraf & Rezika (2020) investigated and found that profitability, firm size, and liquidity have a significant positive relationship with the debt ratio of the studied firms.

The study dealt with the textile industry of Bangladesh. Another interesting study, conducted by Jubaedah, Yulivan, & Hadi (2016), looked at the Indonesian textile industry and found that the ratio of short-term debt to total assets had no significant effect on firm value, while the ratio of long-term debt to total assets did. significant positive relationship with firm value.

2.1. Financial indicator of indebtedness

Indebtedness refers to the state of owing money to someone or something. It can be held by individuals, businesses, or governments, and can be the result of borrowing money, taking out loans, or other financial obligations. Indebtedness can have both positive and negative effects.

On the one hand, it can allow individuals or businesses to invest in opportunities that might not be possible without borrowing.

On the other hand, it can lead to financial difficulties if the borrower is unable to repay their debts, resulting in high interest rates, collection calls, or even legal action. It is important to manage debt carefully and only take on debts that can realistically be repaid. This includes understanding the terms and conditions of any loan or credit agreement and creating a repayment plan that takes into account one's income and expenses.

Graph 1. The level of indebtedness of companies
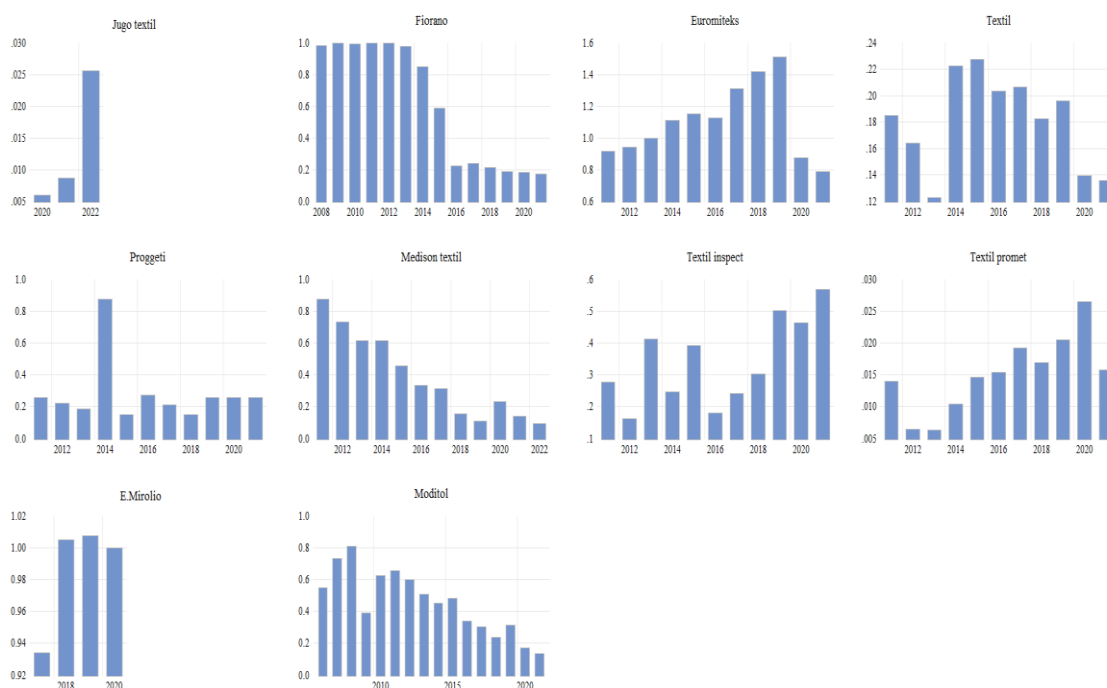
Source: Author's

The graph above provides a more detailed insight into the trend of the indebtedness indicators of the companies that are the subject of this analysis. The study covered the period from 2006 to 2021. As is noticeable, this period was not applied to every company that is the subject of this study due to the limited availability of data.

At companies such as Fiorano, Euromiteks, Tekstil, Madison Tekstil, and Moditol, there is a decrease in the level of indebtedness, while at other companies that are the subject of this study,

there is a noticeable increase in the level of debt used in the capital structure.

3. METHODOLOGICAL FRAMEWORK

In this paper, the authors use the data of the 10 largest companies in the textile industry of Serbia. The analysis data were organized in the form of unbalanced panel data. The analysis also covers the period from 2006 to 2021. In table no. 1, below, the authors present the dependent and independent variables used in the analysis.

Table 1. Used variables

	Symbol	Formula	Source
Debt to assets	Dug	Total debt / Assets	Companies financial statements
Return on assets	Roa	Net profit / Assets	Companies financial statements
Return on equity	Roe	Net profit / Capital	Companies financial statements
General Liquidity	Gl	Current assets / Current liabilities	Companies financial statements
Current liquidity	Rl	(Current assets – inventory – receivables) / Current liabilities	Companies financial statements
Financial stability	Stab	Capital / Assets	Companies financial statements

Source: Author's

Based on the presented dependent and independent variables, the authors define the following regression model:

$$Y = \alpha + \beta_1 Roa_{it} + \beta_1 Roe_{it} + \beta_1 Gl_{it} + \beta_1 Rl_{it} + \beta_1 Stab_{it} + \varepsilon$$

Where are:

- Y represents the dependent variable of the company's indebtedness
- Roa_{it} represents the return on the company's assets and in time t
- Roe_{it} represents the return on capital of the company and in time t
- Gl_{it} represents the general liquidity of the company and in time t
- Rl_{it} represents the rigorous liquidity of the company and in time t
- $Stab_{it}$ represents the financial stability of the company in time t

Based on the model defined above and the dependent and independent variables shown, the authors present the following main and auxiliary hypotheses:

H0: Internal factors do not have a statistically significant effect on the indebtedness of companies in the textile industry.

H1: Internal factors have a statistically significant effect on the indebtedness of companies in the textile industry.

Auxiliary variables:

H2: Return on assets has a statistically significant effect on indebtedness.

H3: Return on equity has a statistically significant effect on leverage.

H4: General liquidity has a statistically significant effect on indebtedness.

H5: Rigorous liquidity has a statistically significant effect on indebtedness.

H6: Financial stability has a statistically significant effect on indebtedness.

The paper consists of four main parts. The first and second sections of the paper include an overview of the theoretical aspect of indebtedness as well as previous research conducted on the subject of indebtedness and the financial structure of the company's capital. In the third section, the authors present the main dependent and independent variables used in the analysis, along with defining the regression model, and main and auxiliary hypotheses. In the last part of the study, the authors present and comment on the obtained results and propose future research.

The unit root tests (Peasan, 2012, p. 5), used to determine the stationarity of the data, and the correlation matrix (Rebonato, Jackel, 2011, p. 7), used to reject multicollinearity, are the two most significant tests used. The likelihood ratio is used to create and analyze POLS and fixed effects models in the final part of the study (Fan, Zhang & Zhang, 2001, p. 10).

4. FINDINGS AND DISCUSSION

After presenting the main dependent and independent variables as well as defining the basic panel regression model used in this study, the authors in this part of the study present the results of the analysis. In table no. 2, descriptive statistics of the used variables are presented.

According to the results, it is noticeable that general liquidity (Gl) contains the highest level of standard deviation of 20.118, which means that it is general liquidity that has the largest oscillation between the maximum and minimum values. Also, indicators of rigorous liquidity (Rl) and return on capital (Roe) show high amounts of standard deviation.

Table 2. Descriptive statistics

Variables	Mean	Std. Dev	Max	Min
Dug	0,440	0,377	1,512	0,006
Roa	0,095	0,191	1,115	-0,283
Roe	-0,490	4,490	4,500	-41,488
Gl	6,741	20,118	165,340	0,100
Rl	2,879	5,405	39,900	0,080
Stab	1,059	0,467	2,400	0,000

Source: Author's

Through the analysis of data and descriptive statistics, the maximum value of the indebtedness indicator of 1,512 was achieved by Euromiteks in 2019. The maximum values of indicators of return on assets and return on capital in the amount of 1,115 and 4,500 were achieved by the companies Tekstil Inspect and Fiorano in 2011 and 2013, respectively. The highest level of financial stability was achieved by the company Proggeti in 2013. The level of general liquidity and rigorous liquidity of 165.34 and 39.9 were achieved by the companies Jugo Tekstil and Tekstil Promet in 2020 and 2012, respectively.

Table 3. Corelation matrix

Varibales	Dug	Roa	Roe	Gl	Rl	Stab
Dug	**1,000**	-0,339	-0,232	-0,287	-0,403	-0,655
Roa	-0,339	**1,000**	0,231	-0,042	0,048	0,247
Roe	-0,232	0,231	**1,000**	0,042	0,073	0,047
Gl	-0,287	-0,042	0,042	**1,000**	0,490	0,094
Rl	-0,403	0,048	0,073	0,490	**1,000**	0,278
Stab	-0,655	0,247	0,047	0,094	0,278	**1,000**

Source: Author's

In this study, the authors, before conducting the panel regression, present the results of the data stationarity and multicollinearity analysis.

It is these two concepts and their rejection that represent the key points of implementing a valid regression model.

In table no. 3, the authors use a correlation matrix to analyze the potential presence of multicollinearity. Multicollinearity represents the presence of a high amount of correlation between the used independent variables in the model.

The analysis showed that between the independent variables, the correlation coefficient does not exceed the level of 0.70, which helps the authors reject the null hypothesis of the existence of multicollinearity between the variables used.

What is interesting about the results is that all the independent variables used have a negative relationship with the indebtedness indicator.

Table 4. Unit root tests

Variables	Levin, Lin & Chu		Im, Peasan, and Shin	
	Level	**1st diff**	**Level**	**1st diff**
Dug	-1,154 (0,1242)	- 3,337 (0,0004)*	0,374 (0,6457)	-4,483 (0,0000)*
Roa	- 1,941 (0,0661)	-1,960 (0,0250)*	-0,669 (0,2515)	-3,415 (0,0003)*
Roe	-1,994 (0,0681)	-4,926 (0,0000)*	-1,186 (0,1177)	-5,004 (0,0000)*
Gl	-0,191 (0,4243)	-8,599 (0,0000)*	0,328 (0,6286)	-3,064 (0,0011)*
Rl	-1,562 (0,0592)	-4,017 (0,0000)*	-0,185 (0,4267)	-3,232 (0,0006)*
Stab	-0,591 (0,2774)	-2,265 (0,0371)*	0,489 (0,6878)	-2,861 (0,0213)*

Source: Author's

Table no. 4 above shows the results of the unit root analysis.

The authors used two unit root tests, Levin, Lin & Chu, and Im, Peasan and Shin. The results indicate that at the level of analysis, the data are non-stationary, but after differentiation, the results show the absence of non-stationarity of the data. After satisfying the diagnostic tests, the authors continued the analysis using the POLS model and the Fixed Effects model.

Table 5. Panel regression model

Variables	Pols	Fixed
Roa	-0,581 (0,0000)**	-0,492 (0,0000)
Roe	0,001 (0,5407)	0,005 (0,1086)
Gl	-0,002 (0,0835)*	-0,002 (0,2123)
Rl	0,002 (0,5103)	0,002 (0,4661)
Stab	-0,307 (0,0000)*	-0,322 (0,0000)
C	-0,019 (0,1245)	-0,019 (0,1360)
R - squared	0,4684	0,5886
Prob.	0,0000	0,0000

Source: Author's

Table 6. Likelihood ratio

Statistic	D.f	Prob
1,598517	(15,82)	0,092
26,420531	15	0,034

Source: Author's

Based on the results of the analysis, it is noticeable that the POLS method represents a more adequate panel regression model. The results indicate a statistically significant negative impact of indicators of return on assets and financial stability with a level of statistical significance of 5%.

These findings agree with those of (Ullah, Uddin, Abdullah & Islam, 2017, p. 7; Ashraf & Rezina, 2020, p. 4; Ullah, Pinglu, Ullah, Zaman & Hashmi, 2020, p. 7; Jubaedam, Yulivan & Hadi, 2016, p. 4), and adjacent to the sites (Singh & Bagga, 2019, p. 8; Asad, Iftikhar & Jafary, 2019, p. 10).

There is also a noticeable negative impact of general liquidity with a statistical significance level of 10%. The growth of indicators of return on assets, general liquidity, and financial stability by 1% causes a decrease in the level of indebtedness by 0.581%, 0.002%, and 0.307% respectively. Considering the results of the study, the authors reject the null hypothesis H0 and auxiliary hypotheses H3, and H5, while accepting the hypothesis H1 and auxiliary hypotheses H2, H4, and H6.

CONCLUSION

In conclusion, the findings of this paper indicate a significant level of indebtedness in the textile industry in Serbia, as well as the negative impact of increased liquidity, profitability, and financial stability on the company's debt level. The analysis shows that many companies in this sector have struggled to manage their finances, leading to a significant increase in their debt levels. This issue is further exacerbated by the current economic climate and increasing competition in the industry. The research also reveals that the textile industry in Serbia faces a number of challenges, including outdated production methods, lack of investment, and weak institutional support. These factors have contributed to high levels of leverage in the industry, making it difficult for companies to remain competitive and sustainable. To meet these challenges, policymakers, industry leaders, and investors must work together to support the modernization of the sector, facilitate access to finance and credit, and implement effective debt management strategies. Companies in the textile industry must adopt more efficient and sustainable production methods and explore new business models to improve their competitiveness and financial stability. Limitations of this study are the use of only 10 companies from the textile industry. The authors suggest that the topics of future research should be comparative analyses of the textile industries of several countries.

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SUMMARY

The subject of this study is the textile industry of the Republic of Serbia. The aim of the study and the main problem is the analysis of the level of indebtedness of the company as well as the level of influence of certain internal variables on it. In the analysis, the authors used panel data of the 10 largest textile industry companies in the period from 2006 to 2021. Pols model and fixed effects model were used to analyze the influence of independent variables. The results showed a negative impact on RoA indicators, general liquidity, and financial stability. The study provides precise insight into the impact of performance companies on debt levels and serves financial managers in the textile industry as a basis for creating a more successful company capital structure. The analysis showed that many companies in this sector were struggling to manage their finances, which led to a significant increase in their debt levels. The current economic climate and increasing competition in the industry worsen the current situation of the sector. The research also reveals that the textile industry in Serbia faces a number of challenges, including outdated production methods, lack of investment, and weak institutional support. These factors have contributed to high levels of leverage in the industry, making it difficult for companies to remain competitive and sustainable.