



The impact of capital structure on financial performance

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Abstract

The main purpose of this study is to measure the impact of the capital structure on the financial performance of commercial companies in Kosovo. Specifically, it aims to measure the relationship between the ratio of total debt to capital and the ratio of return on capital employed (ROE), as well as the relationship between the total debt-to-equity ratio and the return on assets (ROA) ratio. Panel data were used to measure the impact of the capital structure on the financial performance of commercial companies in Kosovo for the period 2014-2019. The capital structure indicators included in the study were total debt and total equity, while performance indicators were represented by return on assets (ROA) and return on equity (ROE). The results show that between the capital structure and the financial performance of commercial companies in Kosovo during the study period, there is a strong relationship between assets on the one hand and total capital and total liabilities on the other. The findings of this research are beneficial to investors, lenders, and corporations, and can help financial managers choose the best capital structure to increase the firm's worth.

1. Introduction

Every business enterprise seeks to maximize its value, which can be accomplished by cutting costs and identifying sources of funding that can most effectively permit this goal. The sources of financing are mainly external, through short- and long-term debts, and internal sources, such as the owner's capital and other constituents.

Companies usually use a combination of external and internal resources to finance operating, financial, and investing activities, representing their capital structure. While companies face different decision-making processes, the decision-making for the financing of various projects and processes is one of the most important decisions. An optimal capital structure, with several sources of financing (debt and equity), facilitates financing and makes it possible to achieve the goals and raise the business company's value. Therefore, the management of the commercial company should always strive to maintain an optimal degree of capital structure in order to operate their business at the desired level of efficiency.

On the other hand, to assess how much a commercial company has increased in value or has developed over the years, it is shown through its financial performance, namely the use of capital assets and income generation.

Over the years, various capital structure theories have been proposed and are still being discussed today in an effort to determine the optimal method of funding for-profit businesses that will enable them to expand their operations and enhance their performance (Aggarwal & Padhan, 2017).

Many studies in this field have emphasized that determining the optimal structure or the most optimal assessment for the debt and capital ratio is still missing. However, the underlying theory in many papers

suggests that choosing an optimal capital structure can impact financial performance. This has led authors to divide into two groups: those who have concluded that capital structure has a positive impact on financial performance, and those who have found a negative relationship between financial performance and capital structure in their studies.

Therefore, this study aims to measure the impact of capital structure on the financial performance of commercial companies in Kosovo, addressing the research gap in this field. Specifically, we will measure the relationship between the total debt to capital ratio and the return on capital employed (ROE), as well as the relationship between the total debt to capital ratio and the return on assets (ROA).

The following section provides a literature review on the methodology used to determine which aspects of financial performance are impacted by capital structure. The approach utilized in this investigation is presented in Section 3, along with a description of the data. The findings and a discussion of the results are presented in Section 4, and Section 5 provides the key conclusions.

2. Literature Review

When competing in an increasingly competitive market, any commercial company seek to increase its financial performance faces the challenge to find appropriate resources and managing them more efficiently and effectively to carry out the activities.

A company's financial performance and value can be impacted by its decision to select a strong capital structure, while an unwise choice could put the business at risk of financial trouble and insolvency ([Eriotis, Vasiliou, & Ventoura-Neokosmidi, 2007](#); [Rehman, 2016](#); [Singh & Kumar, 2012](#); [Tifow & Sayilir, 2015](#)).

According to the hypothesis put forth by [Modigliani and Miller \(1958\)](#), capital structure has no bearing on decisions made in an ideal market, but when the economy expands and develops further, the market becomes imperfect. As a result of market imperfections, the numerous costs incurred must be taken into account when attempting to explain the connection between capital structure and financial performance.

However, [Modigliani and Miller \(1963\)](#), pointed out that a few years after the idea was first proposed because interest costs are tax deductible, the value of a corporation should rise in response to rising debt ratios. In their 1997 study, [Modigliani and Miller](#) divided personal taxes into two categories, taxes on income from holding shares and taxes on income from debt securities, and included the impact of personal taxes in their study. Their findings led them to the conclusion that there is an ideal capital structure at the macro level, but there is no ideal capital structure at the micro level.

According to the literature, different studies have different perspectives regarding the relationship between capital structure and company performance. Even today, there are still many studies that do not come to the same conclusions, therefore there is a need for empirical studies in this field to better understand the relationship between capital structure and company performance in the future.

Studies that have found positive relationships between capital structure and financial performance are [Roden and Lewellen \(1995\)](#); [Ghosh and Jain \(2000\)](#); [Hadlock and James \(2002\)](#); [Abor \(2005\)](#); [Gill, Biger, and Mathur \(2011\)](#) [Nirajini and Priya \(2013\)](#).

Also, [Nasimi's \(2016\)](#) empirical study of commercial companies in London, England, examined the effects of capital structure on the profitability of the firm and found significant effects of capital structure on the performance of commercial companies' performance. The study highlights the value of the debt, the higher the tax benefits (tax shield) that the commercial companies receive, emphasising the importance of capital structure decisions for firm performance.

While the studies that have found a negative relationship between capital structure and financial performance are: [Kester \(1986\)](#); [Titman and Wessels \(1988\)](#); [Rajan and Zingales \(1995\)](#); [Fama and French \(1998\)](#); [Simerly and Li \(2000\)](#); [Chiang, Ping Chuen Albert, and Chi Man Eddie \(2002\)](#); [Shubita and Alsawalhah \(2012\)](#); [Pratheepkanth \(2011\)](#); [Khan \(2012\)](#); [Sadeghian, Latifi, Soroush, and Aghabagher \(2012\)](#); [Arulvel and Ajanthan \(2013\)](#); [Dawar \(2014\)](#); [Cheruyot and Ntoiti \(2015\)](#).

Despite differing findings in the works of various authors regarding the relationship between capital structure and firm performance, the management of trading companies must make decisions on maintaining a particular certain capital structure to achieve business objectives and finance projects. Finding a capital structure that permits the attainment of the stated objectives, the growth in the value of the trading company, and also boosting financial performance is crucial, as the primary objective of any trading company is to maximize its value.

There are many shortcomings in the data published by commercial companies in Kosovo regarding the main indicators of financial performance and capital structure; therefore, this study aims to extract as much data and indicators as possible that reflect the main financial data, which can be used in multi-user decision making.

3. Data and Methodology

3.1. Sample

The analysed sample includes 42 companies, and the data were collected through publicly available financial statements in the annual reports of companies that submit reports to the main reporting authority, such as the

Kosovo Council for Financial Reporting (KCFR). These annual reports are reliable, as they have been prepared in accordance with IFRS and IAS and have been subject to an independent external audit.

3.2. Variables

Two performance metrics employed were ROE and ROA, which were used as the dependent variables. The definition of return on equity (ROE) is the proportion of net income to shareholders' equity, whereas the definition of return on assets (ROA) is the proportion of net income to all assets. These matrices are used to assess the amount of profit a business generates from its asset investments and the efficiency with which managers look after investors' funds. Total liabilities (T lia) and total equity (T Eq) were the independent variables. In order to explain more of the variance in performance indicators, the determinants of capital structure in Kosovo companies will be used as control variables, including Size (Size), Leverage (Leve), Assets (Assets), Net Profit (N prof), and Inflation (Infla).

3.3. Empirical Model

This study uses cross-sectional time series data from 2014 to 2019 to try and uncover some of the factors affecting company performance. Performance can be understood as follows since ROA and ROE will be regressed on a set of factors:

$$\text{Profitability } f(\text{total liabilities, total equity, size, leverage, assets, net profit, inflation}) \quad (1)$$

In the second and third equations, the static linear models are presented:

$$ROA_{it} = \beta_0 + \beta_1 T_lia_{it} + \beta_2 T_Eq_{it} + \beta_3 Size_{it} + \beta_4 Leve_{it} + \beta_5 Asset_{it} + \beta_6 Infla_{it} + \varepsilon_{it} \quad (2)$$

$$ROE_{it} = \beta_0 + \beta_1 T_lia_{it} + \beta_2 T_Eq_{it} + \beta_3 Size_{it} + \beta_4 Leve_{it} + \beta_5 Asset_{it} + \beta_6 Infla_{it} + \varepsilon_{it} \quad (3)$$

Where β_i ($i = 1 \dots 6$) is the unknown intercept for every company, t ($t = 2014 - 2019$) represents the year analyzed, the β 's are the coefficients for every independent variable and ε_{it} is the error term.

To test the static models under consideration, Pooled Ordinary Least Squares, Fixed Effects with n entity-specific intercepts, and Random Effects will be used. The Hausman test will reveal which of the two models is superior. Finally, a final regression with necessary corrections will be estimated to address the issues of heteroskedasticity and autocorrelation. Fixed effects models are suitable when assuming that businesses have distinctive traits that affect the relationships between variables. These models examine the links between the independent variable and explanatory variables as separate entities. On the other hand, random effects models suggest a random fluctuation between companies that is unrelated to explanatory factors.

3.4. Descriptive Statistics

The summary statistics for the variables used in the analysis are presented in [Table 1](#). The average ROA ratio is 10.4, indicating that Kosovo manufacturing firms have no difficulty using their assets efficiently. In terms of ROE, it appears that Kosovo companies generate profit based on the investments of their shareholders. Total liabilities have an average of 0.000000106, while total equity has an average of 0.000000959. Size is averaged at 7.04, leverage is averaged at 3.10, assets are averaged at 0.000000201, net profit is averaged at 0.00000141, and inflation is averaged at 0.893.

Table 1. Descriptive statistic data.

Variable	Mean	Median	S.D.	Min.	Max.
ROA	10.4	6.21	19.7	-13.5	254.0
ROE	48.4	14.9	407.0	-78.2	6.40
T_Lia	1.06	3.90	2.07	-9.45	1.35
T_Eq	9.59	4.74	1.49	-6.99	8.85
SIZE	7.04	6.90	0.44	6.08	8.15
Leverage	3.10	0.77	41.0	-475	336.0
Assets	2.01	8.01	2.91	1.20	1.40
N_Prof	1.41	5.57	3.64	-7.62	3.72
INFLA	0.893	0.42	1.03	-0.52	2.72

3.5. Correlations

[Table 2](#) shows the correlations between variables. Debt and equity ratios have high correlations, but as long as only one of these variables is taken into account in regressions, the results will be satisfactory. According to the correlations, total liabilities, total equity, size, asset, and inflation all have a negative impact on ROA. ROE is also affected by total liabilities, total equity, size, leverage, asset, net profit, and inflation. There is a strong correlation between total liabilities and asset size. A strong correlation exists between assets and total equity and total liabilities. The relationship between size and assets is strong.

Table 2. Correlations between variables.

Variable	ROA	ROE	T_Lia	T_Eq	SIZE	Leverage	Asset	N_Prof
ROE	-0.030							
T_Lia	-0.163	-0.009						
T_Eq	-0.004	-0.053	0.313					
SIZE	-0.204	-0.029	0.709	0.705				
Leverage	0.007	-0.734	-0.009	-0.031	-0.080			
Asset	-0.118	-0.034	0.873	0.736	0.867	-0.022		
N_Prof	0.302	-0.025	0.079	0.530	0.341	-0.000	0.329	
INFLA	-0.147	0.003	0.044	0.084	0.135	-0.045	0.074	-0.006

4. Results

Unit-root tests were performed on the panel data to prevent erroneous variable correlations. Due to the panel's missing values, only the Fisher test was feasible. Rejecting the hypothesis that all panels have a unit root shows that all of the variables are stationary. The key conclusions from the regressions that employed one capital structure ratio as an explanatory variable and capital structure determinants as control variables are summarized in [Table 3](#). The first columns show the outcomes of regressions utilizing Pooled Ordinary Least Squares (OLS), Fixed Effects (FE), and Random Effects (RE).

Table 3. Comparative analysis between multiple regressions results.

Control variables	Independent variable – ROA (Model 1)			Independent variable – ROE (Model 2)		
	OLS	FE	RE	OLS	FE	RE
T_lia	1.37	4.92	-1.55	8.76	-5.81	4.61
T_Eq	1.37	4.92	-1.55	8.76	-5.81	4.61
Size	-21.59***	-73.95***	-34.35***	-148.84*	-200.83	-175.93*
Leve	-0.015	0.01	-0.005	-7.40***	-8.99***	-8.31***
Asset	-1.37	-4.92	1.55	-8.76	5.812	-4.61
N_prof	2.23***	1.63***	1.93***	2.99	2.312	2.32
Infla	-1.78	0.62	-1.40	-4.67	-6.792	-5.45
Cons	159.1***	518.81***	244.48***	1104.23**	1449.99	1286.10*
F-test	9.55	6.04		42.31	11.93	
R-squared	0.21	0.59		0.55	0.7412	
Wald chi2(7)			69.12			406.46
Hausman chi(7)			4.55			20.85

Note: ***, **, * Significant at 1%, 5% and 10% value respectively.

Based on the regression results, it can be concluded that total liabilities and total equity have a positive impact on profitability (ROA) in the Pooled OLS and FE Models, but a negative impact in the RE Model. Size has a negative impact on profitability in the Pooled OLS, FE Model, and RE Model. Leverage has a negative impact on profitability in the Pooled OLS and Random Effect Models, but it has a positive impact in the FE Model. The asset has a negative impact on profitability in the Pooled OLS and FE Model, but a positive impact in the RE Model. Net profit has a positive impact on profitability in the Pooled OLS, FE Model, and RE Model. Inflation has a negative impact on profitability in the Pooled OLS, RE Model, but a negative impact in the FE Model.

The R-square value of 0.2172 for the Pooled OLS indicates that about 21 percent of the total variation in the profitability (ROA) is jointly explained by total liabilities (T_lia) and total equity (T_Eq), Size (Size), Leverage (Leve), Assets (Assets), Net profit (N_prof) and Inflation (Infla). The R-square value of 0.5918 in the Fixed effect Model indicates that about 59 percent of the total variation in profitability is jointly explained by total liabilities (T_lia) and total equity (T_Eq), Size (Size), Leverage (Leve), Assets (Assets), Net profit (N_prof) and Inflation (Infla). The Hausman test indicates that the FE model is appropriate.

On return on equity, total liabilities have a positive impact on profitability in the Pooled OLS and RE Model and it has a negative impact in the FE Model. Total equity has a positive impact on profitability in the Pooled OLS and RE Model and it has a negative impact in the FE Model. Size has a negative significant impact on profitability in the Pooled OLS and RE Model and a negative impact in the FE Model. Leverage has a negative significant impact on profitability in the Pooled OLS and RE Models had a positive impact in the RE Model. Net profit has a positive impact on profitability in the Pooled OLS, FE and RE Models. Inflation has a negative impact on profitability in the Pooled OLS and RE Model, it has a negative impact in the FE Model. The R-square value of 0.5513 for the Pooled OLS indicates that about 55 percent of the total variations in the profitability (ROA) are jointly explained by total liabilities (T_lia) and total equity (T_Eq), Size (Size), Leverage (Leve),

Assets (Assets), Net profit (N_prof) and Inflation (Infla). The R-square value of 0.7412 in the FE Model indicates that about 74 percent of the total variation in profitability is jointly explained by total liabilities (T_liq) and total equity (T_Eq), Size (Size), Leverage (Leve), Assets (Assets), Net profit (N_prof) and Inflation (Infla). The Hausman test indicates that the FE model is appropriate.

5. Conclusion

The study examined the profitability of 42 companies from 2014 to 2019 and the effect of capital structure on profitability. According to descriptive statistics, the average ROA ratio is 10.4, indicating that Kosovo manufacturing firms use their assets efficiently. With regards to ROE, it appears that Kosovo enterprises make money based on the investments of their owners. The average total liability is 0.000000106, while the average total equity is 0.00000959. The average size is 7.04, the average leverage is 3.10, the average assets are 0.000000201, the average net profit is 0.00000141, and the average inflation is 0.893. According to correlation analysis, total liabilities, total equity, size, asset, and inflation have a negative impact on ROA. Total liabilities, total equity, size, leverage, asset, net profit, and inflation all have an impact on ROE. Total liabilities and asset size have a strong correlation. There is a strong relationship between assets and total equity assets and total liabilities. Finally, size and assets show a strong relationship.

The RE model (model 1) results show that increasing total liquidity, total equity, size, leverage, and inflation decreases return on assets while increasing assets and net profit increases return on assets. The FE model (model 1) results show that an increase in total liquidity, total equity, leverage, net profit, and inflation results in an increase in return on assets, whereas an increase in size and assets results in a decrease in return on assets. According to the results of the RE model (model 2), an increase in size, leverage, assets, and inflation reduces the return on equity, whereas an increase in total liquidity, total equity, and net profit increases the return on equity. The FE model (model 2) results show that increasing assets and net profit increases return on equity, while increasing total liquidity, total equity, leverage, size, and inflation decreases return on equity.

The findings of this study are beneficial to investors, lenders, and corporations. Additionally, it will help financial managers choose the best capital structure to increase the firm's worth. The future study could cover a broader range of companies or be industry-specific.

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