



DETERMINANTS OF CAPITAL STRUCTURE: THE CASE OF ALBANIAN DIFFERENT SIZE FIRMS IN PANEL DATA ANALYSIS

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Abstract

In corporate finance, the capital structure of businesses is a crucial research topic that is still the focus of many academics and not only. However, unlisted businesses in emerging nations like Albania have received little attention, with the majority of studies concentrating on listed businesses in industrialized nations. This paper analyzes a number of the primary elements that are thought to consistently affect the capital structure, drawing from earlier research. Performance, asset tangibility, company liquidity, size, financial flexibility, tax benefits from non-debt expenses, growth opportunity, company age, and the one-period lagged debt ratio are the specific important elements that are examined in this study. Our research focuses on seventy five different sizes enterprises between 2019 and 2023. Multiple regression analysis is used to quantify capital structure. Fixed effect econometric technique is used to test the multiple variable linear regression model. Results shows that firms do not have an optimal capital structure, but we note that over the period 2019-2023 for small firms they have had an average of 47.18 percent total-debt, 1.35 percent long-term debt and 45.83 percent short-term debt respectively. Over the period 2019-2023 for medium firms they have had an average of 60.89 percent total-debt, 8.16 percent long-term debt and 52.73 percent short-term debt respectively. Finally for large firms they have had an average of 55.59 percent total-debt, 17.62 percent long-term debt and 37.97 percent short-term debt respectively. In the first regression model of total debt for small firms, coefficients of constant, ROE, non-debt tax shield, firm age and firm flexibility are statistically significant in determining total-debt ratio. In the second regression model of total debt for medium firms, there are not coefficient that are statistically significant and in the third



regression model of total debt for large firms, coefficients of constant, tangibility of assets, ROE, non-debt tax shield, growth opportunity, firm size and firm flexibility are statistically significant in determining total-debt ratio. The findings confirm that the results are in line with the pecking order theory (POT) and the data indicate that enterprises do not have an ideal capital structure. Albania does not apply the trade-off principle, which contends that businesses should take on more debt in order to profit from the deduction of debt interest before taxes. These results add to the body of knowledge on the connection between capital structure and decision-making and offer suggestions for more lucrative financing options for these businesses, like utilizing long-term funding rather than just short-term.

Keywords: Capital structure, SME, Large firms, Panel data, Fixed effect model

INTRODUCTION

Despite decades of intensive research among academics and financial managers, a surprising lack of consensus exists even regarding many empirically known facts. This is unfortunate for empirical research in corporate finance, as it remains unclear what consensus exists on the factors to control for what we already know. For this reason, further empirical studies on this issue have been and will continue to be conducted to bring forth new facts about modern capital structure theories. A quick survey of the literature highlights broad academic interest, but not exclusively, regarding this aspect. The problem of capital structure has been addressed, analyzed, and further advanced, incorporating new elements not previously considered by the pioneering foundational authors of this theory [1,2]. The issue of firms' capital structure remains an enigmatic question for academics worldwide today. Following the proposition of Modigliani and Miller's "Irrelevance Theorem" [1], a vast and diverse literature has emerged, attempting to address specific market imperfections, primarily taxes, bankruptcy costs, agency conflicts, and asymmetric information to explain its features. Even though a lot of research has been done to evaluate the usefulness and validity of capital structure theories, it is still one of the most hotly contested subjects in contemporary corporate finance. When Myers asked, "How do firms choose their capital structures?" he immediately added his answer: "We don't know?" [3, p. 575]. This question of how companies select their ideal capital structure still needs a concrete answer today.

Various authors have studied specific firm factors that influence its financial decisions, but internal country factors are equally important, alongside firm characteristics, in determining its financial leverage [4-9].

It is particularly noteworthy that two competing theories have garnered significant interest over the years within the context of developing economies: "Trade-Off Theory" and "Pecking Order Theory." Most corporate finance textbooks discuss "Trade-Off Theory" (TOT), where the trade-off between the benefits of tax shields and bankruptcy costs is crucial. "Pecking Order Theory" first was introduced by Myers [3]. It proposes a scale of backing preferences, with retained earnings at first, followed by debt, and equity at the end.

Most theoretical and empirical studies on capital structure, both in developed and developing countries, have focused more on large firms, including the study by, Rajan and Zingales [5] in G-7 countries, Frank and Goyal [6-9] in the USA, Ghosh in the USA, [10-13]. However, few studies have been conducted on small and medium enterprises (SMEs), such as Hall et al. on SMEs in G-8 EU countries, Degryese on SMEs in the Netherlands, Sogorb Mira, Lopez Gracia and Sogorb Mira on SMEs in Spain, McNamara et al. on SMEs in G-9 EU countries, and Malinic et al. on SMEs in the UK [14-19].

However, as we know, large listed firms may have easier access to financial markets and banking markets. Therefore, the findings from these studies cannot generalize the financial behavior of all firms, especially unlisted Albanian firms that do not have the same access to financial markets and operate in an emerging economy. Thus, a perspective considering the context of the country and different size of the firms to which the study refers is necessary, taking into account its economic-financial development characteristics.

LITERATURE REVIEW

There are numerous definitions of capital structure in the literature. The term capital structure is often used in relation to the relationship between a firm's equity and debt. A firm's capital structure describes the relative amounts of various types of securities used to finance the firm.

The concept that capital structure can be understood as a reflection of the financial strategies utilized to fund a company's value-adding operations is present in the majority of definitions.

The query that Myers asked was, "What combination of these two sources works best?" still seeks a difficult-to-resolve an answer today. Furthermore, we can say that "there is no universal theory for the choice between debt and equity, and there is no reason to expect one" [3].

Despite decades of intensive research, there is a surprisingly lack of consensus even on many empirically-based facts. For this reason, additional empirical studies on this issue have been conducted and will continue to be conducted to bring forth further facts regarding capital

structure theories. A quick overview of the literature highlights the broad academic interest in this aspect. The issue of capital structure has been taken up, examined, and developed further, bringing in fresh perspectives that Modigliani and Miller had not previously taken into account.

Notably, two competing theories have garnered considerable interest over the years: the optimal capital structure theory and the pecking order theory. Most corporate finance textbooks discuss the "trade-off theory," in which taxes and bankruptcy costs are central. Recently, the idea that firms engage in "market timing" has become quite popular. This is often referenced in the survey by Harris and Raviv [20] or the empirical study by Titman and Wessels [4]. According to Harris and Raviv [20, p. 334], available studies "generally agree that leverage increases with fixed assets, tax benefits from debt, growth opportunities, and firm size, and decreases with volatility, advertising expenses, research and development expenses, bankruptcy probability, profitability, and product uniqueness." But according to Titman and Wessels [4, p. 17], "their results do not provide support for an effect on debt ratios stemming from tax benefits, volatility, collateral value, or future growth."

In these works, Frank and Goyal [6-9] contribute to our understanding of capital structure in several ways. First, starting with an extensive list of factors from previous literature, they examine which factors are reliably significant for predicting leverage. Second, corporate financing decision models are likely to have changed over the decades, making it important to consider changes over time. Finally, it is argued that different theories apply to firms under varying circumstances. To address this serious concern, the effect of conditioning in strong circumstances is also examined.

Theories of Capital Structure

In this paper, we present a brief summary of the most important and widely accepted theories from the literature regarding the impact on capital structure decisions in modern finance. Below, we list two of the prominent theories object for this study:

Trade-Off Theory

The Trade-Off Theory states that a trade-off between the advantages and disadvantages of debt determines capital structure. Benefits and costs can be considered in various ways. The "tax-bankruptcy trade-off" perspective suggests that firms balance the tax benefits of debt against the costs of bankruptcy. The "agency" perspective posits that debt disciplines managers and mitigates agency problems concerning free cash flow, as debt must be repaid to avoid bankruptcy [21].

Pecking Order Theory

While the Pecking Order Theory (POT) has deep roots in descriptive literature, it was clearly articulated by Myers [3]. Considering three sources of funds available to firms—retained earnings, debt, and equity—equity has an unfavorable selection, debt has only a small negative selection, and retained earnings avoid this problem. From an external investor's perspective, equity is significantly riskier than debt. For all but the lowest-quality firms, the decline in net equity valuation makes equity appear undervalued, conditioned by the issuance of equity. From the perspective of those within the firm, retained earnings are a better source of funds than external financing. Thus, retained earnings will be utilized whenever possible. If retained earnings are insufficient, debt financing will be used, while equity is employed only as a last resort. This is a theory of leverage in which the notion of an optimal leverage ratio does not exist. Although the Pecking Order Theory is almost always framed in terms of asymmetric information, it can also arise from tax considerations, agency issues, or behavioral factors.

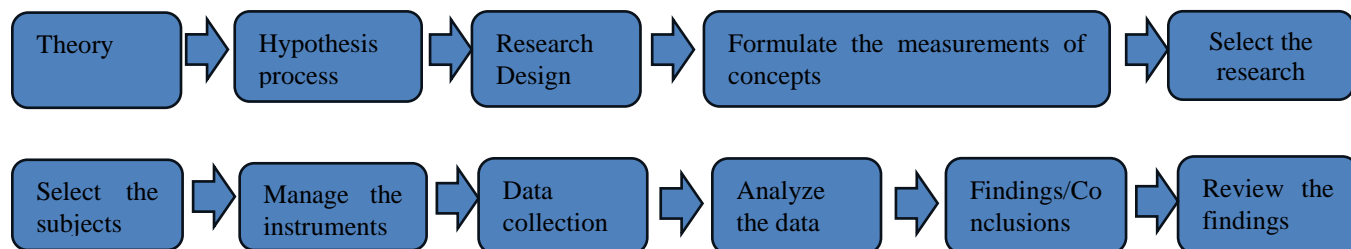
RESEARCH METHODOLOGY

Research design

The research design section outlines the sketch and the path that is designed to be followed in order to achieve results for further discussion. This study uses a mix of research methods (theoretical and practical) and employs quantitative methods. In fact, this paper uses a deductive approach, and for data analysis, the statistical program EViews 12 has been used. The study begins with the theoretical section on theories of capital structure, continues with the theoretical evidence found on the determinants that measure and explain capital structure. Therefore, in this case, the deductive approach is used, starting from the general theoretical part and later, through the results obtained from regressions, reaching specific conclusions.

This study follows a combination of steps and processes based on the research design with quantitative methods according to figure 1.

Figure 1. Steps in the design of research with quantitative methods



Source: <https://www.slideshare.net/slideshoë/ëeek03-qualitative-vs-quantitative-presentation-Ryerson-University>

Data selection

The data collection section expresses and analyzes the theoretical (theoretical concepts) and practical (empirical evidence) sources that have been used as the basis for this paper. This study is based on data collected from seventy five non-financial companies in the Tirana district (Albania), randomly selected from the total population of firms in this district, for which we had the necessary information available during the period 2019-2023 from the General Directorate of Taxes (GDT) and the National Business Center (NBC). The selection process is based in according to the business registers in Albania (2023) from INSTAT. The companies in the sample belong to various size of firms and various sectors of activity, including construction, manufacturing, trade, and services.

Table 1: shows the number of companies, the number of years, and the number of observations in the sample categorized by sectors during the period 2019-2023

| Sector | Number of Companies | Number of Years | Number of Observations |
|---------------|---------------------|-----------------|------------------------|
| Construction | 16 | 5 | 80 |
| Manufacturing | 20 | 5 | 100 |
| Trade | 28 | 5 | 140 |
| Services | 11 | 5 | 55 |
| Total | 75 | 5 | 375 |

Table 1 shows the number and type of companies selected for study during the research period 2019-2023, with a total number of observations amounting to 375. The average total assets of these firms is approximately 3,901,238,860 ALL (Albanian Lek) or about 32,646,350 Euros (the current average exchange rate for the studied period is 119.5 ALL/Euro). Let's take a closer look at the groups of companies in our sample. Out of the total companies observed, 28 belong to the trade sector, which is significantly large and very important for the economy of Albania, especially in the Tirana region. The group of activities—trade, hotels, and restaurants—contributes approximately 21.2% to Albania's GDP [22]. The data were collected from annual reports of financial statements, independent auditing reports, performance reports, and official documents submitted to the National Business Center (QKB).

Variables Definitions

Table 2 shows the measure of the dependent variable of companies selected for study during the research period 2019-2023, with a total number of observations amounting to 375. Also, for each variable are shown the theoretical references.

Table 2: Dependent Variables

| Code | Dependent Variable | Measure | Theoretical References |
|----------|--------------------|--------------------------------|------------------------|
| BT=TD | Total Debt | Total Debt / Total Assets | [23], [5], [6-9], [24] |
| BAGJ=LTD | Long-term Debt | Long-term Debt / Total Assets | [23], [5], [6-9], [24] |
| BASH=STD | Short-term Debt | Short-term Debt / Total Assets | [23], [5], [6-9], [24] |

Table 3 shows the measure of the independent variable of companies selected for study during the research period 2019-2023, with a total number of observations amounting to 375. Also, for each variable are shown the expected relationship for total, long term and short-term debt.

Table 3: Independent Variables

| Code | Independent Variable | Measure | Expected Relationship for BT | Expected Relationship for BAGJ | Expected Relationship for BASH |
|-------------------------------|------------------------------------|---------------------------------------|------------------------------|--------------------------------|--------------------------------|
| ROA | Performance, Return on Assets | EBIT / Total Assets | Negative | Negative | Negative |
| ROE | Performance, Return on Equity | EBIT / Total Equity | Negative | Negative | Negative |
| TA | Asset Structure | Fixed Assets / Total Assets | Positive | Positive | Positive |
| LF | Firm Liquidity | Current Assets / Current Liabilities | Negative | Negative | Negative |
| MF | Firm Size | Natural Log of Assets | Positive | Positive | Negative |
| FF | Financial Flexibility | Monetary Assets / Current Assets | Negative | Negative | Negative |
| PTJB | Tax Benefit from Non-Debt Expenses | Depreciation Expenses / Total Assets | Negative | Negative | Negative |
| MRR | Growth Opportunities | Change in Total Assets / Total Assets | Positive | Positive | Positive |
| MOF | Age of the Firm | Natural Log of Firm Age | Positive | Positive | Negative |
| BT (-1), BAGJ (-1), BASH (-1) | Lagged debt ratio | Debt ratio with one lagged period | Positive | Positive | Positive |

Model specification

This study employs a panel data regression model (cross-sectional and time series data), comparable to those used in studies on factors affecting capital structure by [25-32] among others. Multiple regression equations have been used to test the hypotheses developed above and to determine the relationship between the independent variables (performance, asset structure, firm liquidity, firm size, financial flexibility, tax benefits from non-debt expenses, growth opportunities, lagged debt ratio) and capital structure (total debt ratio, long-term debt ratio, and short-term debt ratio). In this study, the statistical software EViews 12 has been used to obtain the regression models and evaluate their correlation coefficients. Following Long's [34] model, we can express the linear regression model as follows in equation 1:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \dots + \beta_k X_{ik} + \dots + \beta_k X_{ik} + \varepsilon_i \quad (1)$$

In this case, (Y_i) represents the dependent variable, and (X_i) represents the independent variables, with (ε_i) being the random error term. The index (i) represents the observation number out of (N) random observations. The parameters (β_1) to (β_k) indicate the effect of a given (X_i) (independent variable) on (Y_i) (dependent variable). (β_0) is the intercept that represents the expected value of (Y_i) when all (X) variables are zero.

Model 1:

$$BT_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 TA_{it} + \beta_4 LFit + \beta_5 MFit + \beta_6 FFit + \beta_7 PTJBit + \beta_8 MRRit + \beta_9 MOFit + \beta_{10} BT_{it-1} + \varepsilon_{it} \quad (2)$$

Model 2:

$$BAGJ_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 TA_{it} + \beta_4 LFit + \beta_5 MFit + \beta_6 FFit + \beta_7 PTJBit + \beta_8 MRRit + \beta_9 MOitF + \beta_{10} BAGJ_{it-1} + \varepsilon_{it} \quad (3)$$

Model 3:

$$BASH_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 TA_{it} + \beta_4 LFit + \beta_5 MFit + \beta_6 FFit + \beta_7 PTJBit + \beta_8 MRRit + \beta_9 MOFit + \beta_{10} BASH_{it-1} + \varepsilon_{it} \quad (4)$$

For the reasons discussed above, panel data were created and used for analysis in this study due to several advantages they offer in our sample compared to cross-sectional or time series data in particular.

Hypotheses development

Hypothesis 1: Performance

Due to information asymmetries between internal business actors and outsiders, asymmetric information provides an additional theoretical framework for determining capital structure, primarily through the pecking order hypothesis. In particular, debt occupies an

intermediate position, while internal funds incur no information costs, which are especially high when new capital is issued. According to the pecking order theory (POT), performance and debt are expected to be negatively correlated [5-9].

H1o/a: ROA is not negatively related to total debt (BT)

H1a/a: ROA is negatively related to total debt (BT)

H1o/b: ROE is not negatively related to total debt (BT)

H1a/b: ROE is negatively related to total debt (BT)

Hypothesis 2: Asset tangibility

Financial leverage and asset tangibility are positively correlated, according to several studies. Their conclusions are based on the claim that a company can take on more debt when it has a higher ratio of fixed assets to total assets, indicating that the company has more tangible assets [24].

H2o: Asset tangibility is not positively related to total debt (BT)

H2a: Asset tangibility is positively related to total debt (BT)

Hypothesis 3: Firm Liquidity

The liquidity ratio indicates how well a company can invest beyond covering its current liabilities and expenses. According to the pecking order theory (POT), companies with high liquidity should have less because they can rely less on debt financing due to greater availability of financial resources in the form of liquidity generated from retained earnings over the years [35]

H3o: Liquidity is not negatively related to total debt (BT)

H3a: Liquidity is negatively related to total debt (BT)

Hypothesis 4: Firm size

Since large companies often have more diversification than small companies, they should have fewer chances of facing financial problems and less volatility in their cash flows. As a result, firm size and the probability of bankruptcy should be negatively correlated [4, 5]. Due to the reduced bankruptcy costs associated with debt, larger firms should have a higher debt capacity than smaller firms.

H4o: Firm size is not positively related to total debt (BT)

H4a: Firm size is positively related to total debt (BT)

Hypothesis 5: Financial flexibility

A negative relationship has been found between debt ratios and the cash flow variable. These findings support the conclusions of Sogorb - mira [16], who argued that

the pecking order theory indicates that businesses with higher revenue generation tend to prefer the use of internal funds over external financing to fund their investments.

H5o: The financial flexibility of the firm is not negatively related to total debt (BT)

H5a: The financial flexibility of the firm is negatively related to total debt (BT)

Hypothesis 6: Tax Benefit from Non-Debt Expenses

The tax benefit from non-debt expenses refers to tax deductions for investment credits and depreciation against taxable income for the purpose of fiscal profit taxation. According to DeAngelo and Masulis [32], a company with a greater tax benefit from non-debt expenses is expected to use less debt, holding all other conditions constant.

H6o: The tax benefit from non-debt expenses is not negatively related to total debt (BT).

H6a: The tax benefit from non-debt expenses is negatively related to total debt (BT).

Hypothesis 7: Growth Opportunities

A key factor to consider in determining capital structure decisions is growth opportunities [4, 16]. According to the Pecking Order Theory (POT), the level of growth and the use of debt by businesses should be positively correlated.

H7o: Growth opportunities are not positively correlated with total debt (BT)

H7a: Growth opportunities are positively correlated with total debt (BT)

Hypothesis 8: Firms Age

The Pecking Order Theory states that a company's ability to avoid debt financing increases with its age, as it has had more time to accumulate retained earnings [3]. Additionally, research has demonstrated that younger businesses are more likely to use short-term debt STD (BASH) and have less long-term debt LTD (BAGJ). As a result, it appears that older firms are better able to take on long-term debt, while younger ones are more dependent on short-term debt.

H8o: The age of the firm is not positively correlated with total debt (BT)

H8a: The age of the firm is positively correlated with total debt (BT)

Hypothesis 9: Lagged debt ratio

A key factor to consider in determining capital structure decisions is also the lagged debt ratio [4, 16, 6]. According to the Pecking Order Theory (POT) the level of the lagged debt ratio and the use of debt should be positively correlated.

H5o: The lagged debt ratio of the firm is not positively related to total debt (BT)

H5a: The lagged debt ratio of the firm is positively related to total debt (BT)

RESULTS AND DISCUSSION

Descriptive Statistics

To test whether the factors influencing the determination of capital structure depend on the size of the firms' activity, this study has made a reclassification of firms into three groups: large, medium, and small. To carry out this classification, which is presented in Table 4, we have relied on Albanian law 43/2022 on SMEs.

Table 4: Grouping of enterprises into three categories based on the number of companies, percentage of the total, and the number of observations for the period 2019-2023.

| Grouping | Number of companies | Expressed Percentage | in Number of years | Number of observations |
|-------------------|---------------------|----------------------|--------------------|------------------------|
| Small enterprise | 5 | 6.66 | 5 | 25 |
| Medium enterprise | 10 | 13.33 | 5 | 50 |
| Large enterprise | 60 | 80 | 5 | 300 |
| Total | 75 | 100 | 5 | 375 |

Source: Referenced from Albanian Law 43/2022 on SMEs, Article 43.

Table 4 presents the reclassification of companies into small (5 companies with 25 observations in total), medium (10 companies with 50 observations in total), and large (60 companies with 300 observations in total). From the table, we observe that the majority belong to the third group, which also holds the largest share, accounting for 80% of the total, in line with the study's objective to assess the reliability of the data considered.

Table 5: Descriptive statistics for the small enterprise group during the period 2019-2023

| | BT | BAGJ | BASH | TA | ROE | ROA | PTJB | MRR | MOF | MF | LF | FF |
|--------------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
| Mean | 0.4718 | 0.0135 | 0.4583 | 0.3196 | 0.1696 | 0.1053 | 0.05622 | 0.2662 | 2.5699 | 17.699 | 2.5377 | 0.1465 |
| Median | 0.5097 | 0.0000 | 0.5097 | 0.3156 | 0.0721 | 0.0265 | 0.00338 | 0.0308 | 2.4849 | 17.622 | 1.4 | 0.0195 |
| Maximum | 0.895 | 0.0885 | 0.895 | 0.7918 | 0.6567 | 0.4046 | 0.60768 | 4.0544 | 3.3673 | 19.52 | 12.408 | 0.8603 |
| Minimum | 0.0447 | 0.0000 | 0.0447 | 0.0000 | -0.011 | -0.001 | 0.0000 | -0.228 | 1.6094 | 16.084 | 0.2371 | 0.0005 |
| Std. Dev. | 0.2995 | 0.0269 | 0.3023 | 0.244 | 0.1937 | 0.1342 | 0.15053 | 0.8137 | 0.5724 | 0.9961 | 2.6378 | 0.2627 |
| Skeñness | 0.0847 | 1.9198 | 0.1597 | 0.5339 | 1.2477 | 1.117 | 3.0965 | 4.2602 | -0.008 | 0.3023 | 2.2755 | 1.7958 |
| Kurtosis | 1.5268 | 5.1416 | 1.5357 | 2.5977 | 3.2441 | 2.7023 | 10.9021 | 20.402 | 1.5655 | 2.0487 | 8.9224 | 4.7192 |
| Jarque-Bera | 2.2908 | 20.134 | 2.3398 | 1.3564 | 6.5481 | 5.291 | 104.996 | 391.06 | 2.1438 | 1.3235 | 58.112 | 16.516 |
| Probability | 0.3181 | 4E-05 | 0.3104 | 0.5075 | 0.0379 | 0.071 | 0.0000 | 0.0000 | 0.3424 | 0.516 | 0.0000 | 0.0003 |
| Sum | 11.796 | 0.3373 | 11.458 | 7.991 | 4.2399 | 2.6328 | 1.40545 | 6.6549 | 64.247 | 442.47 | 63.443 | 3.662 |
| Sum sqDev | 2.1521 | 0.0174 | 2.1935 | 1.4284 | 0.9008 | 0.4325 | 0.54382 | 15.892 | 7.8623 | 23.812 | 166.99 | 1.6566 |
| Observations | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |

Table 6: Descriptive statistics for medium enterprise group during the period 2019-2023

| | BT | BAGJ | BASH | TA | ROE | ROA | PTJB | MRR | MOF | MF | LF | FF |
|--------------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
| Mean | 0.6089 | 0.0816 | 0.5273 | 0.3571 | 0.156 | 0.0622 | 0.03211 | 0.1541 | 2.5687 | 18.743 | 1.4972 | 0.1397 |
| Median | 0.6964 | 0.000 | 0.5867 | 0.209 | 0.1091 | 0.0251 | 0.01057 | 0.0026 | 2.6736 | 18.521 | 1.1957 | 0.0652 |
| Maximum | 0.9714 | 0.6154 | 0.9714 | 0.9366 | 0.859 | 0.3389 | 0.14587 | 2.3588 | 3.3322 | 21.109 | 7.8568 | 1.373 |
| Minimum | 0.0059 | 0.000 | 0.0059 | 0.000 | -1.084 | -0.222 | 0.000 | -0.432 | 1.0986 | 16.614 | 0.0735 | 0.0005 |
| Std. Dev. | 0.306 | 0.19 | 0.3148 | 0.3648 | 0.3088 | 0.1051 | 0.043 | 0.5097 | 0.5748 | 1.1774 | 1.6215 | 0.2353 |
| Skeeness | -0.753 | 2.1628 | -0.195 | 0.3671 | -0.491 | 0.7277 | 1.27743 | 3.4053 | -0.724 | 0.002 | 2.5449 | 3.5629 |
| Kurtosis | 2.2758 | 5.8999 | 1.6859 | 1.4783 | 7.4041 | 3.8711 | 3.51028 | 14.768 | 2.6338 | 2.0083 | 9.7119 | 17.438 |
| Jarque-Bera | 5.8195 | 56.5 | 3.9152 | 5.9474 | 42.414 | 5.9941 | 14.141 | 385.17 | 4.6425 | 2.0488 | 147.82 | 540.08 |
| Probability | 0.0545 | 0.000 | 0.1412 | 0.0511 | 0.000 | 0.0499 | 0.00085 | 0.000 | 0.0982 | 0.359 | 0.000 | 0.000 |
| Sum | 30.444 | 4.0778 | 26.366 | 17.855 | 7.7986 | 3.11 | 1.6057 | 7.7066 | 128.43 | 937.16 | 74.86 | 6.9827 |
| Sum SqDev | 4.587 | 1.7685 | 4.8555 | 6.5216 | 4.6712 | 0.5415 | 0.09061 | 12.731 | 16.191 | 67.933 | 128.83 | 2.713 |
| Observations | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |

Table 7: Descriptive statistics for large enterprise group during the period 2019-2023

| | BT | BAGJ | BASH | TA | ROE | ROA | PTJB | MRR | MOF | MF | LF | FF |
|--------------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
| Mean | 0.5559 | 0.1762 | 0.3797 | 0.2848 | 0.3348 | 0.1445 | 0.0282 | 0.149 | 2.8325 | 22.164 | 2.2081 | 0.2269 |
| Median | 0.5506 | 0.0901 | 0.3494 | 0.2331 | 0.2307 | 0.0843 | 0.01904 | 0.0639 | 2.9444 | 22.14 | 1.5775 | 0.086 |
| Maximum | 1 | 0.9748 | 0.9997 | 1.9814 | 1.5823 | 0.8949 | 0.19703 | 11.711 | 3.4657 | 26.077 | 27.087 | 17.044 |
| Minimum | 0.0072 | 0.0000 | 0.0072 | 0.0000 | -0.132 | -0.074 | 0.000 | -0.799 | 0.0000 | 17.75 | 0.1274 | 0.0002 |
| Std. Dev. | 0.2156 | 0.2139 | 0.2275 | 0.2707 | 0.3312 | 0.1651 | 0.0307 | 0.7757 | 0.5312 | 1.4346 | 2.8553 | 0.9964 |
| Skeeness | 0.075 | 1.6489 | 0.5961 | 1.6067 | 1.2546 | 1.837 | 2.05979 | 11.884 | -1.613 | 0.1687 | 5.6974 | 16.118 |
| Kurtosis | 2.4543 | 5.4993 | 2.7904 | 7.7258 | 3.8341 | 6.5166 | 8.50492 | 170.2 | 6.8548 | 3.5664 | 42.535 | 272.32 |
| Jarque-Bera | 4.003 | 214.02 | 18.317 | 408.25 | 87.393 | 323.3 | 590.938 | 356518 | 315.84 | 5.4339 | 21160 | 919658 |
| Probability | 0.1351 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0661 | 0.0000 | 0.0000 |
| Sum | 166.77 | 52.859 | 113.91 | 85.434 | 100.43 | 43.351 | 8.45932 | 44.699 | 849.75 | 6649.1 | 662.43 | 68.068 |
| Sum SqDev | 13.896 | 13.68 | 15.47 | 21.911 | 32.802 | 8.1524 | 0.2818 | 179.89 | 84.369 | 615.38 | 2437.7 | 296.85 |
| Observations | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |

Tables 5, 6 and 7 present the descriptive statistics for the three groups of companies. From the results, we can see that small companies use less total debt (47.18%) compared to large companies (55.59%) and medium companies (60.89%). Additionally, the level of long-term debt used by small companies is significantly lower (1.35%) compared to large companies (17.62%) and medium companies (8.16%), which clearly indicates their inability to repay loans and a lower probability of accessing funding from financial institutions. The results also show that the ROE and ROA indicators are similar for small and medium companies, but much higher for large companies (33.48% and 14.45%, respectively). Meanwhile, the MRR is highest in small companies (26.62%), gradually decreasing with the size of the company, to 15.41% for medium companies and 14.9% for large companies. The results also indicate that the LF indicator is similar for large companies (2.2 times) and small companies (2.53 times), but significantly different for medium companies (1.49 times).

Multicollinearity Analysis of the Variables

As recommended by Gujarati [36], the variance inflation factor (VIF) method is used to test for the existence of multicollinearity among the determinants of capital structure. The VIF measures how much the variance of the estimated regression coefficients is inflated compared to the situation where the predictors are not linearly related. R^2 represents the coefficient of determination, while the indicator (1/VIF) measures tolerances, which are presented in the table below. Generally, a VIF greater than 10 indicates the presence of harmful collinearity among the variables [37-39].

Table 8: Variance Inflation Factors

| Included observations: 375 | | | |
|----------------------------|-------------------------|-------------------|-----------------|
| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
| TA | 0.001401 | 2.761604 | 1.316879 |
| ROE | 0.002471 | 5.705089 | 3.102060 |
| ROA | 0.010283 | 5.094156 | 3.029983 |
| PTJB | 0.038176 | 1.532583 | 1.114234 |
| MRR | 0.000174 | 1.187445 | 1.136811 |
| MOF | 0.000392 | 36.84345 | 1.377923 |
| MF | 2.64E-05 | 143.0663 | 1.300989 |
| LF | 1.55E-05 | 2.169551 | 1.339558 |
| FF | 0.000141 | 1.396806 | 1.324273 |
| C | 0.010429 | 122.1525 | NA |

As we can see from the table above, in any case, the VIF (centered) is not greater than 10, which indicates that we are not facing the problem of multicollinearity among the variables.

Autocorrelation Test

To test autocorrelation in our model, we set up the hypotheses as follows:

Ho: There is no autocorrelation





















H1: There is autocorrelation

As a basic rule, if the p-value < 0.05, we reject Ho. Since the probability of the F-statistic is 0.0539, which is greater than 0.05, we can say that we accept the null hypothesis and reject the alternative hypothesis, meaning that there is no autocorrelation in our model. In this way, we have eliminated autocorrelation. In the table 9 is represented Breusch-Godfrey Serial Correlation test and in the table 10 is represented Autocorrelation and partial autocorrelation test.

Table 9: Breusch-Godfrey Serial Correlation LM Test

| | | | |
|---------------|----------|----------------------|--------|
| F-statistic | 2.972243 | Prob. F (2,374) | 0.0539 |
| Obs*R-squared | 6.152627 | Prob. Chi-Square (2) | 0.0461 |

Table 10: Autocorrelation and Partial autocorrelation test

| Autocorrelation | Partial Correlation | AC | PAC | Q-Stat | Prob* | |
|---|---|----|--------|--------|--------|-------|
|  |  | 1 | 0.031 | 0.031 | 0.1797 | 0.672 |
|  |  | 2 | -0.088 | -0.089 | 1.6163 | 0.446 |
|  |  | 3 | -0.166 | -0.162 | 6.7153 | 0.082 |
|  |  | 4 | 0.057 | 0.060 | 7.3129 | 0.120 |
|  |  | 5 | -0.098 | -0.135 | 9.1287 | 0.104 |
|  |  | 6 | -0.098 | -0.114 | 10.951 | 0.090 |
|  |  | 7 | -0.086 | -0.088 | 12.367 | 0.089 |
|  |  | 8 | 0.080 | 0.022 | 13.587 | 0.093 |
|  |  | 9 | 0.028 | -0.018 | 13.733 | 0.132 |
|  |  | 10 | 0.004 | -0.022 | 13.737 | 0.185 |

Heteroskedasticity Test

To test for heteroskedasticity in our model, we formulate the hypotheses as follows:

Ho: There is significant evidence of homoskedasticity.

H1: There is significant evidence of heteroskedasticity.

To check for the elimination of the presence of heteroscedasticity, we do the test. So in the table 11 is represented Breusch-Godfrey Serial Correlation test

Table 11: Heteroskedasticity Test: Breusch-Pagan-Godfrey

| | | | |
|---------------------|----------|----------------------|--------|
| F-statistic | 1.873447 | Prob. F (9,374) | 0.0590 |
| Obs*R-squared | 16.23860 | Prob. Chi-Square (9) | 0.0621 |
| Scaled explained SS | 80.82047 | Prob. Chi-Square (9) | 0.0000 |

As a basic rule, if the p-value < 0.05 , we reject Ho. Since the probabilities of the F-statistic and chi-square are 0.059 and 0.0621, respectively, which are greater than 0.05, we can say that we accept the null hypothesis and reject the alternative hypothesis, indicating that there is significant evidence of homoscedasticity, or we are not facing heteroscedasticity. In this case, the residuals are homoscedastic. Thus, the tests for autocorrelation and heteroscedasticity pass with high reliability. We can refer to the following table that comes with the discussion on autocorrelation diagnostics. The Q statistic is often preferred by researchers, and it is noted that the probabilities are higher than 5%, and that the values of the graphs are within the limits,

indicating that the model does not "suffer" from autocorrelation of the error term, meaning that the estimated model is a good model.

Regression Results

Table 12: Summary of the regression results with fixed effects model (FEM) for the total, long-term, and short-term debt ratios for the small enterprise group during the period 2019-2023

| Variables | Model 1 | Model 2 | Model 3 |
|-----------------------------|-------------|-----------|------------|
| Independent | BT | BAGJ | BASH |
| Constant | 0.488387** | 0.585220 | 0.517450 |
| BT(-1), BAGJ(-1), BASH (-1) | 0.561886 | 0.047590 | 0.531000 |
| TA | 0.694477 | 0.058949 | 0.581990 |
| ROE | -1.261380** | -0.001019 | -1.214158* |
| ROA | -0.100936 | 0.002025 | -0.103044 |
| PTJB | 0.196459* | -0.032504 | 0.243560 |
| MRR | -0.096588 | -0.036576 | -0.034206 |
| MOF | 0.221666* | 0.037165 | 0.181075 |
| MF | -0.013066 | 0.000458 | -0.013721 |
| LF | -0.018159 | -0.023328 | -0.002915 |
| FF | -3.612916** | -0.583423 | -3.053694 |
| R-square | 0.999140 | 0.815345 | 0.998005 |
| Adjusted R-square | 0.996730 | 0.298312 | 0.992420 |
| F (10, 300) | 414.7224 | 1.576969 | 178.6940 |
| P-value (F) | 0.000001 | 0.322737 | 0.000009 |

Note: * $p < 0.1$ (10% significance level),

** $p < 0.05$ (5% significance level), *** $p < 0.01$ (1% significance level).

Table 12 presents a summary of the fixed-effects regression results on the impact of independent variables on the total, long-term, and short-term debt ratios for the small enterprise group. The adjusted R-squared value of 0.9967 in Model 1 indicates that approximately 99.67% of the variability in the total debt ratio is explained by the firm-specific factors. In Model 2, it shows that approximately 29.83% of the variability in the long-term debt ratio is explained, and in Model 3, it shows that approximately 99.24% of the variability in the short-term debt ratio is explained by the firm-specific factors.

Table 13: Summary of the regression results with fixed effects (FEM) for the total, long-term, and short-term debt ratios for the medium enterprise group during the period 2019-2023

| Variables | Model 1 | Model 2 | Model 3 |
|-----------------------------|-----------|-------------|-----------|
| Independent | BT | BAGJ | BASH |
| Constant | 0.198621 | 1.373655*** | 0.471268* |
| BT(-1), BAGJ(-1), BASH (-1) | 0.361703 | 0.044422 | 0.103999 |
| TA | -0.025597 | 0.077938 | -0.048474 |
| ROE | -0.589085 | -0.047773 | -0.589611 |
| ROA | 0.158145 | -0.077038 | 0.074118 |
| PTJB | 0.010515 | -0.033307 | 0.008591 |
| MRR | 0.180679 | 0.110665 | 0.094822 |
| MOF | 0.117308 | -0.008876 | -0.078799 |
| MF | 0.007028 | 0.009332 | -0.007096 |
| LF | 0.102389 | 0.023318 | 0.004123 |
| FF | -2.297562 | -0.179337 | 1.521811 |
| R-square | 0.933800 | 0.957421 | 0.901776 |
| Adjusted R-square | 0.870911 | 0.916970 | 0.808463 |
| F (10, 300) | 14.84822 | 23.66894 | 9.664015 |
| P-value (F) | 0.000000 | 0.000000 | 0.000002 |

Note: * $p < 0.1$ (10% significance level),

** $p < 0.05$ (5% significance level), *** $p < 0.01$ (1% significance level).

Table 13 presents a summary of the fixed-effects regression results on the impact of independent variables on the total, long-term, and short-term debt ratios for the medium enterprise group. The adjusted R-squared value of 0.8709 in Model 1 indicates that approximately 87.09% of the variability in the total debt ratio is explained by the firm-specific factors. In Model 2, it shows that approximately 91.69% of the variability in the long-term debt ratio is explained, and in Model 3, it shows that approximately 80.84% of the variability in the short-term debt ratio is explained by the firm-specific factors.

Table 14: Summary of the regression results with fixed effects (FEM) for the total, long-term, and short-term debt ratios for the large enterprise group during the period 2019-2023

| Variables | Model 1 | Model 2 | Model 3 |
|-----------------------------|-------------|------------|-----------|
| Independent | BT | BAGJ | BASH |
| Constant | 0.371766*** | 0.200607** | 0.123150 |
| BT(-1), BAGJ(-1), BASH (-1) | -0.018671 | 0.018814 | -0.039739 |

| | | | |
|-------------------|--------------|-------------|--------------|
| TA | 0.149497*** | 0.024728 | 0.179582*** |
| ROE | -0.703425*** | -0.279807** | -0.438520*** |
| ROA | -0.313910 | -0.206293 | 0.120360 |
| PTJB | 0.017066** | 0.018023* | -0.005021 |
| MRR | -0.128628** | -0.012556 | -0.161100* |
| MOF | 0.007828 | 0.020036 | 0.008691 |
| MF | -0.005974** | 0.001431 | -0.008241** |
| LF | 0.004304 | -0.001967 | 0.008431 |
| FF | 0.611272* | -0.244146 | 0.628579 |
| R-square | 0.942424 | 0.889882 | 0.914141 |
| Adjusted R-square | 0.919055 | 0.845187 | 0.879292 |
| F (10, 300) | 40.32802 | 19.91013 | 26.23164 |
| P-value (F) | 0.000000 | 0.000000 | 0.000000 |

Note: * $p < 0.1$ (10% significance level),

** $p < 0.05$ (5% significance level), *** $p < 0.01$ (1% significance level).

Table 14 presents a summary of the fixed-effects regression results on the impact of independent variables on the total, long-term, and short-term debt ratios for the large enterprise group. The adjusted R-squared value of 0.9190 in Model 1 indicates that approximately 91.90% of the variability in the total debt ratio is explained by the firm-specific factors. In Model 2, it shows that approximately 84.51% of the variability in the long-term debt ratio is explained, and in Model 3, it shows that approximately 87.92% of the variability in the short-term debt ratio is explained by the firm-specific factors.

Table 15: Summary of the fixed-effects (FEM) regression results for the total debt ratio (BT=TD) for the small, medium, and large enterprise groups during the period 2019-2023

| Variables | Model 1 | Model 2 | Model 3 |
|-----------------------------|-------------|-----------|--------------|
| | Small | Medium | Large |
| Independent | BT | BT | BT |
| Constant | 0.488387** | 0.198621 | 0.371766*** |
| BT(-1), BAGJ(-1), BASH (-1) | 0.561886 | 0.361703 | -0.018671 |
| TA | 0.694477 | -0.025597 | 0.149497*** |
| ROE | -1.261380** | -0.589085 | -0.703425*** |
| ROA | -0.100936 | 0.158145 | -0.313910 |
| PTJB | 0.196459* | 0.010515 | 0.017066** |
| MRR | -0.096588 | 0.180679 | -0.128628** |

| | | | |
|-------------------|-------------|-----------|-------------|
| MOF | 0.221666* | 0.117308 | 0.007828 |
| MF | -0.013066 | 0.007028 | -0.005974** |
| LF | -0.018159 | 0.102389 | 0.004304 |
| FF | -3.612916** | -2.297562 | 0.611272* |
| R-square | 0.999140 | 0.933800 | 0.942424 |
| Adjusted R-square | 0.996730 | 0.870911 | 0.919055 |
| F (10, 300) | 414.7224 | 14.84822 | 40.32802 |
| P-value (F) | 0.000001 | 0.000000 | 0.000000 |

Note: * $p < 0.1$ (10% significance level), ** $p < 0.05$ (5% significance level),

*** $p < 0.01$ (1% significance level).

Table 15 presents a summary of the fixed-effects regression results on the impact of independent variables on the total debt ratio (TD) for the small, medium, and large enterprise groups. The adjusted R-squared value of 0.9967 in Model 1 indicates that approximately 99.67% of the variability in the total debt ratio for the small enterprise group is explained by the firm-specific factors. In Model 2, it shows that approximately 87.09 % of the variability in the total debt ratio for the medium enterprise group is explained, and in Model 3, it shows that approximately 91.90 % of the variability in the total debt ratio for the large enterprise group is explained by the firm-specific factors we selected.

CONCLUSIONS

Numerous studies have addressed capital structure, beginning with an article by Modigliani and Miller [1] and continuing through the work of various academics and not only. Different approaches and procedures are used in different nations to examine a firm's financial leverage and the choice of funding sources. This study primarily looks at firm-specific factors that influence the capital structure of non-financial enterprises in Albania's. Company-specific criteria including return on equity, return on assets, tangibility of assets, liquidity, firms size, financial flexibility, non-debt tax shields, growth opportunity, firm age and lagged debt ratio are some of the aspects that are looked at.

Overall, the Albanian enterprises' survey results align with theoretical research assumptions and prior empirical findings. The same factors that affect the capital structure of the study's participating enterprises also affect the capital structures of small and medium-sized businesses and large businesses in industrialized nations. The question of whether Albania has any particular components that influence a firm's financial leverage is still open for debate.

Recall that there are no functioning capital markets in Albania, and the only places to go for outside finance are banking institutions (oriented to banking markets) [40].

Firms do not have an optimal capital structure, but we note that over the period 2019-2023 for small firms they have had an average of 47.18 percent total-debt, 1.35 percent long-term debt and 45.83 percent short-term debt respectively. Over the period 2019-2023 for medium firms they have had an average of 60.89 percent total-debt, 8.16 percent long-term debt and 52.73 percent short-term debt respectively. Finally for large firms they have had an average of 55.59 percent total-debt, 17.62 percent long-term debt and 37.97 percent short-term debt respectively. So firms in the sample have small fluctuations in debt levels.

Firms in the study follow the principles of the theory of the pecking order POT, financing primarily with debt and equity later. These figures indicate that more firms rely on loans from suppliers (short term debt) than from banks. This happens because of restrictive procedures applied by the banks and due to high interest rates on loans during the study period in Albania. Trade-off theory which argues that firms increase the level of debt to take benefit from the deduction of debt interest before tax is not applicable in firm Albania.

In the sample is observed that for small firm 45.83 percent of assets are financed with short-term debt, for medium firm 60.89 percent of assets are financed with short-term debt and for large firm 37.97 percent of assets are financed with short-term debt which shows the collection of debts from suppliers and for liquidity problems by the firms.

From the summary regression analysis of fixed effect model FEM is proved that: In the first regression model of total debt for small firms, coefficients of constant, ROE, non debt tax shield PTJB, firm age and firm flexibility are statistically significant in determining total-debt ratio ($BT=TD$). Also, factors affecting positively this report were non debt tax shield PTJB and firm age. While the factors that affect negatively total-debt ratio (BT) are ROE, and firm flexibility. In the second regression model of total debt for medium firms, there are not coefficient that are statistically significant in determining total-debt ratio ($BT=TD$). In the third regression model of total debt for large firms, coefficients of constant, tangibility of assets TA, ROE, non-debt tax shield PTJB, growth opportunity MRR, firm size MF, and firm flexibility FF are statistically significant in determining total-debt ratio ($BT=TD$). Also, factors affecting positively this report were tangibility of assets TA, non debt tax shield PTJB and firm flexibility FF. While the factors that affect negatively total-debt ratio ($BT=TD$) are ROE, growth opportunity, and firm size.

RECOMMENDATIONS

Depending on the actual economic conditions of Albania, which is considered a country in transition (emerging markets) and with a rapid evolution of the financial environment, it would

be appropriate for firms to determine their optimum capital structure. It is suggested not a fixed structure but a flexible one depending on the size of firm's investments, macroeconomic conditions or environment of the country. Banks should facilitate lending procedures and should apply reduced rates of interest to businesses that have ability to repay the obligations of debt. Banks should train their employees to better estimate businesses based on the industry in which the firm operates [41]. The Tirana stock exchange, which is active but not functional, needs to be operational and efficient. This is crucial, for trading and also providing access to the need for capital. Policymakers can use these insights to formulate effective economic policies, while businesses can make informed decisions regarding capital structure decisions in the global marketplace [42]. Moreover, this study contributes to the econometrics and macroeconomics literature, paving the way for future research into pricing behavior and exchange rate dynamics.

This study takes into account only the secondary data obtained from financial statements to determine the decision of capital structure of firms. It would be of interest the use of primary data through interviews run to firm's financial managers to better identify the selection by their capital structure.

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