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Capital structure decisions: Empirical evidence from Albanian non-financial companies

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Abstract: Well-structured existing companies need continuous sources of financing from the moment of creation until their continuation, to finance growth in sustainable assets and, above all, the value of their shares. Understanding the capital structure helps managers create the optimal capital structure for the company. The capital structure of firms is an important research area in corporate finance and remains at the center of studies by various academics. However, most studies have focused on listed companies in developed countries, and little attention has been paid to unlisted firms in developing countries, such as Albania. This study aims to bridge the gap between decision-making management and its financial effectiveness by analyzing the capital structure of unlisted companies in Albania. The proposed research question is "what are the main factors influencing the capital structure decision of non - financial companies in the Tirana region?" Based on previous studies, this paper examines several of the main factors (determinants) that are believed to reliably influence the capital structure. The specific key factors analyzed in this study are: Performance, Asset tangibility, Company liquidity, Company size, financial flexibility, Tax benefits from non-debt expenses, Growth opportunities, Company age, and the one period lagged debt ratio. We focus our study unto 75 non - financial companies of Albania for years to 2019 – 2023, and by calculating variables to measure capital structure, we run multiple regression analysis. We use total - debt, long - term debt and short-term debt to measure capital structure. The results of the study will be confirmed through analysis of empirical models and other statistical measurements. The linear regression model of multiple variables will be tested using three econometric techniques: POLS, FEM, and REM. The results indicate that lagged debt ratio of TD, LTD, STD, ROA, ROE, growth opportunity and liquidity are statistically significant and support for the pecking order theory (POT). The results show that firms do not have an optimal capital structure, but they had an average of 55.73 percent total-term debt, 15.27 percent long-term debt and 40.46 percent short-term debt. 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 Albania. These findings contribute to the existing literature on the relationship between capital structure and decision making and give hints to more profitable ways of financing for these companies such as relying on long-term financing and not only on short term or finding alternative ways in equity financing.

Keywords: *Capital structure, fixed effect, panel data, Pecking order theory, Trade off theory.*

1. Introduction

The issue of firms' capital structure remains an enigmatic question for academics worldwide. Following the proposition of Modigliani and Miller's "Irrelevance Theorem" (1958) [34, 35], 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. A combination of common stocks, preferred shares of the company, long-term and short-term liabilities, and other financial instruments make up the capital structure. 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

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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?" (Myers, 1984, p. 575) [32, 33]. The question of how companies select their ideal capital structure and what the ideal debt-equity ratio is to maximize the value of the firm still needs a concrete answer today.

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, Modigliani and Miller (1958). Various authors have studied specific firm factors that influence its financial decisions (Titman and Wessels, 1988; Rajan and Zingales, 1995; Antoniou et al., 2002; Frank and Goyal, 2009; Frank and Goyal, 2003, etc.) [12-15], but internal country factors are equally important, alongside firm characteristics, in determining its financial leverage (Cheng and Shiu, 2004).

Macroeconomic variables have been mentioned as important external factors influencing the capital structure of firms in different countries, despite receiving limited attention from various researchers (Abzari et al., 2012). It has been noted that the level of GDP growth, which approximates the overall economic condition of a country, inflation rates, and interest rates (measured by lending rates) are considered significant factors that substantially impact the capital structure of firms (Concorou, 1977; Gulati, 1997; Mateus, 2006; Bas et al., 2009, etc.). In some other studies, inflation rates have also been proposed as a macroeconomic factor determining the amount of companies' debt (Concorou, 1977; Feldstein et al., 1978; Gulati and Zantout, 1997; Mateus, 2006; Frank and Goyal, 2009; Bas et al., 2009) [12-19]. In cases of high inflation, firms may prefer short-term debt over their own capital (Abzari et al., 2012).

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 in 1984. It proposes a scale of backing preferences, with retained earnings at first, followed by debt, and equity at the end. Recently, the idea that firms engage in "Market Timing" has become quite popular, despite its weak empirical support for explaining the fundamental factors influencing capital structure. Various researchers often reference the survey conducted by Harris and Raviv (1991) or the empirical studies by Titman and Wessels (1988), Rajan and Zingales (1995), Frank and Goyal (2003 and 2009) [39-44]. According to Harris and Raviv (1991, p. 334), available studies "generally agree that leverage increases with fixed assets, benefits from tax shields on non-debt items (e.g., depreciation and amortization), growth opportunities, and firm size, while it decreases with volatility, advertising expenses, research and development costs, bankruptcy probability, profitability, and product uniqueness." However, Titman and Wessels (1988, p. 17) indicate that "their results do not support an effect on debt ratios resulting from non-debt tax benefits, volatility, collateral value, or future growth."

These studies contribute to our understanding of capital structure in several ways. First, starting with a long list of factors (39 factors) from previous literature, we can examine which factors are reliably and significantly correlated with leverage (Frank and Goyal, 2003 and 2009). Second, it is likely that corporate financing decision models have evolved over decades. Therefore, it is essential to examine changes over time. Finally, it is argued that different theories apply to firms under various circumstances and contexts. To address this serious concern, the effect of conditioning in strong circumstances has also been observed.

In testing which factors are correlated with leverage, it is necessary to first define the concept of

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leverage. Many different empirical definitions of leverage have been used. Some researchers advocate for the accounting leverage concept, while others support the market leverage concept. Financial managers prioritize accounting leverage since debt is better supported by physical assets than by growth potential, according to Myers (1977). Accounting leverage is also preferred because financial markets are very volatile, and managers are said to believe that market leverage numbers are not reliable as a guide for corporate financial policy. Consistent with the academic perception of managers' views, Graham and Harvey (2001) found that a significant number of managers reported they do not rebalance their capital structure in response to movements in the capital market. Adjustment expenses make it impossible for businesses to continually rebalance. However, proponents of market leverage contend that rather than being a significant number in management aspects, the accounting value of capital is just a "number" used to balance the left and right sides of the balance sheet (Welch, 2004).

The accounting value is backward-looking, reflecting what has happened over time, while the market value is expected to be forward-looking and reflects what might happen in the future due to information deriving from financial markets.

Most theoretical and empirical studies on capital structure, both in developed and developing countries, have focused more on large firms, including the study by Corcoran (1977) in the USA, Rajan and Zingales (1995) in G-7 countries, Mutenheri and Green (2002) in Zimbabwe, Frank and Goyal (2003 and 2009) in the USA, Ghosh (2008) in the USA, Brigham and Ehrhardt (2008) in the USA, Gurcharan (2010) in four ASEAN countries, Abzari et al. (2012) on public traded firms in Tehran, Correa et al. (2007) on large firms in Brazil, Luçi and Lleshaj (2016), Shkreta and Meka (2021) on large firms in Albania, etc [13-20]. However, few studies have been conducted on small and medium enterprises (SMEs), such as that of Mateus (2006), which was carried out on SMEs in 16 Western European countries, Vasiliou and Daskalikis (2009) and Erioties et al. (2007) on SMEs in Greece, Margaritis and Psillaki (2010) on SMEs in France, Abdullah et al. (2019 and 2021) on SMEs in Germany, Goddard et al. (2005) on SMEs in Belgium, France, Italy, and the UK, Daskalakis and Psillaki (2008) on SMEs in Greece and France, Domenichelli (2012) and D'Amato (2019) on SMEs in Italy, Zeitun and Tian (2007) on SMEs in Jordan, Hall et al. (2004) on SMEs in G-8 EU countries, Degryese (2010) on SMEs in the Netherlands, Sogorb Mira (2005), Palancin Sanches et al. (2012), Lopez Gracia and Sogorb Mira (2008) on SMEs in Spain, McNamara et al. (2017) on SMEs in G-9 EU countries, and Michaelas et al. (1999) on SMEs in the UK.

However, as we know, large listed firms may have easier access to national and international financial 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 to which the study refers is necessary, taking into account its economic-financial development characteristics.

2. Literature Review

The term capital structure is often used in relation to the relationship between a firm's equity and debt. However, there are numerous definitions of capital structure in the literature. Berk and DeMarzo (2019, p. 525) define it as "the relative proportion of debt, equity, and other securities that a firm has outstanding [...]," while Van Horne (2001) describes it as the ratio of debt to the total equity of the firm. There are also more complex definitions, such as that of Brealey et al. (2010), stating that it "exclusively refers to the long-term funding sources of the firm" (p. 4), and later mentioning that "there are many different types of debt, and at least two types of equity [...], plus hybrids [...]. A firm can issue dozens of different securities in countless combinations" (p. 418), and firms do this to find the best combination that maximizes firm value. 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.

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Moreover, capital structure decisions are often seen as one of the most strategic decisions a firm will face due to the need to secure the necessary resources to finance projects with a positive net present value (NPV). Determining the optimal mix between equity and debt not only helps lower the weighted average cost of capital (WACC) but can also potentially increase the value for shareholders and the firm (Berk and DeMarzo, 2019). Therefore, capital structure decisions regarding the balance between internal financing, equity, and debt cannot be taken lightly. These sources are viewed in the literature as the primary financing methods and thus represent the capital structure of firms.

The query that Myers asked was, "What combination of these two sources works best? Is 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" (Myers, 2001, p. 81).

Despite decades of intensive research, there is a surprisingly lack of consensus even on many empirically-based facts. This is unfortunate for empirical research in corporate finance, as it remains unclear what consensus exists on the factors that should be controlled for what we already know. 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.

Various authors have studied specific firm factors that influence its financial decisions (Titman and Wessels, 1988; Rajan and Zingales, 1995; Antoniou et al., 2002; Frank and Goyal, 2009; Frank and Goyal, 2003), but internal country factors are equally important as firm characteristics in determining a firm's financial leverage (Cheng and Shiu, 2004).

Through their scientific works, Frank and Goyal present a summary of all the debates that have emerged in capital structure theories regarding the essential factors that influence the determination of companies' financial leverage. In order to determine which theory best describes how capital structure is chosen in American enterprises during the period under consideration, they evaluate two well-known theories at the same time: the pecking order theory and the optimal capital structure theory.

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 (1991) or the empirical study by Titman and Wessels (1988). According to Harris and Raviv (1991, 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 (1988, 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 contribute to our understanding of capital structure in several ways. First, starting with an extensive list of factors from previous literature (Frank and Goyal, 2003), 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.

In testing which factors are related to leverage, it is necessary to first define the concept of leverage. Various empirical definitions have been used. Some researchers advocate for the concept of accounting leverage, while others support market leverage. Managers prioritize accounting leverage because debt is better supported by physical assets than by growth potential, according to Myers (1977). Accounting leverage is also preferred because financial markets fluctuate significantly, and managers are said to believe that market leverage figures are not reliable as a guide for corporate financial policy. In line with the academic perception of managers' views, Graham and Harvey (2001) report that a large number of

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managers indicate they do not rebalance their capital structure in response to movements in the capital markets. Adjustment expenses make it impossible for businesses to continuously rebalance their capital structure. Proponents of market leverage argue that the book value of equity is mainly a "number" used to balance the left and right sides of the balance sheet rather than a significant figure in managerial aspects (Welch, 2004). The book value is focused from a retrospective viewpoint, reflecting what has happened over time, while market value is assumed to be forward-looking, reflecting what might happen in the future as a result of information derived from financial markets.

The main focus of the study by Frank and Goyal is on the ratio of total debt to the market value of assets (TDV). Using a sample of publicly traded U.S. firms from 1950 to 2003, based on previous literature definitions of market leverage, the authors find through empirical facts that a set of six factors accounts for more than 27% of the variation in leverage, while the remaining factors contribute only 2%. They call this set of six factors "core factors" and the model that includes these factors "the core leverage model." The core factors have stable signs and statistical significance across many alternative data treatments studied empirically. The remaining factors are not nearly as stable.

2.1. 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:

2.2. 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 (Jensen and Meckling, 1976; Jensen, 1986). Although debt alleviates shareholder-manager conflicts, it exacerbates shareholder-debt holder conflicts (Stulz, 1990).

2.3. Pecking Order Theory

While the Pecking Order Theory (POT) has deep roots in descriptive literature, it was clearly articulated by Myers (1984). 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.

3. Data and Methodology

In this section, we describe data selection, variables included and the model used in determining the impact of the specific factors on firm's capital structure.

3.1. Data Selection

The data collection section presents and analyzes the theoretical (theoretical evidence) and practical (empirical evidence) sources that have been used as the basis for this study. This research is based on data collected from 75 non-financial companies in the Tirana district, randomly selected from the total

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population of firms in this district. We had public access to the necessary information during the period 2019-2023 from the General Directorate of Taxes (DPT) and the National Business Center (QKB). All the data are collected from the Balance Sheet Annual Reports, the official document delivered to the National Business Center (QKB) and with public access. The companies in the sample belong to 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.

Table 1.
Shows the number of companies in the moster.

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

In Table 1 is showed the number and the 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 37,154,656 Euros (the current average exchange rate for the period is 105 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 (INSTAT, 2022).

The data were collected from annual reports of financial statements, independent auditor reports, performance reports, and official documents submitted to the Regional Tax Office of Tirana and the National Business Center (QKB). Other indicators were sourced from statistical reports by INSTAT and the Bank of Albania for the years 2021-2022.

3.2. Variables Definitions

According to the definition of dependent and independent variables and their measurements, please refer to Table 2 and Table 3 in the appendix.

Table 2.
Shows the dependent variable.

Code	Dependent variable	Measure	Theoretical references
BT=TD	Total debt	Total debt / Total assets	Ross et. al. (2002), Rajan dhe Zingales (1995), Frank dhe Goyal (2009), (Pandey, 2002)
BAGJ=LTD	Long-term debt	Long-term debt / Total assets	Ross et. al. (2002), Rajan dhe Zingales (1995), Frank dhe Goyal (2009), (Pandey, 2002)
BASH=STD	Short-term debt	Short-term debt / Total assets	Ross et. al. (2002), Rajan dhe Zingales (1995), Frank dhe Goyal (2009), (Pandey, 2002)

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Table 3.
Shows the Independent variable.

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

3.3. 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 Antoniou et al. (2002), Dincergok and Yalciner (2011), Ohman (2016), Rao et al. (2018), Proenca et al. (2014), Zeitun and Tian (2007), Acar (2018), among others[21,22]. The collection of cross-sectional unit observations over specific time periods is known as panel data (Gujarati, 2004) [21]. Antoniou et al. (2002) state that the use of panel data has several advantages compared to cross-sectional data, including greater degrees of freedom, more observations, reduced multicollinearity among explanatory factors, and the production of more accurate estimates. 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, business risk, financial flexibility, and tax benefits from non-debt expenses, growth opportunities) and capital structure (total debt ratio, long-term debt ratio, and short-term debt ratio). This approach aligns with the studies of Antoniou et al. (2002), Dincergok and Yalciner (2011), Ohman (2016), Rao et al. (2018), Proenca et al. (2014), Zeitun and Tian (2007), Acar (2018), and others. In this study, the statistical software EViews 12 has been used to obtain the regression models and evaluate their correlation coefficients.

In line with other research (Chittenden et al., 1996; Mac an Bhaird and Lucey, 2010, 2014; Michaelas et al., 1999), to assess the hypotheses and determine possible relationships between independent and dependent variables, the specification of the OLS regression estimation model is as follows.

Following Long's (1997) [28] model, we can express the linear regression model as follows in equation 1:

$$y_i = \beta_0 + \beta_1 x_{i1} + \cdots + \beta_k x_{ik} + \cdots + \beta_K x_{iK} + \varepsilon_i \quad (1)$$

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In this case, Yi represents the dependent variable, and Xi represents the independent variables, with ϵit being the random error term. The index (i) represents the observation number out of N random observations. The parameters β1 to βk indicate the effect of a given Xi (independent variable) on Yi (dependent variable). β0 is the intercept that represents the expected value of Yi when all X variables are zero.In our case of panel data, where we have a combination of cross-sectional and time series data, the general form of the regression model, following Baum (2006), will be as follows in equation 2:

$$y_{it} = \sum_{k=1}^{k} x_{kit}\beta_{kit} + \varepsilon_{it}, i = 1,\ldots,N, t = 1,\ldots,T \quad (2)$$

Where N is the number of individuals (in this study 75 firms) and T is the number of time periods (in this study 5 years). Yit represents the three ratios used to measure financial leverage as the dependent variable, and Xit represents the independent variables.

Model 1:

$$BT\ it = \alpha + \beta 1\ ROAit + \beta 2\ ROEit + \beta 3\ TAit + \beta 4\ LFit + \beta 5\ MFit + \beta 6\ FFit + \beta 7\ PTJBit + \beta 8\ MRRit + \beta 9\ MOFit + \beta 10\ RRBit + BT\ (-1)it-1 + \varepsilon it \quad (3)$$

Model 2:

$$BAGJ\ it = \alpha + \beta 1\ ROAit + \beta 2\ ROEit + \beta 3\ TAit + \beta 4\ LFit + \beta 5\ MFit + \beta 6\ FFit + \beta 7\ PTJBit + \beta 8\ MRRit + \beta 9\ MOitF + \beta 10\ RRBit + BAGJ\ (-1)\ it-1 + \varepsilon it \quad (4)$$

Model 3:

$$BASH\ it = \alpha + \beta 1\ ROAit + \beta 2\ ROEit + \beta 3\ TAit + \beta 4\ LFit + \beta 5\ MFit + \beta 6\ FFit + \beta 7\ PTJBit + \beta 8\ MRRit + \beta 9\ MOFit + \beta 10\ RRBit + BASH\ (-1)it-1 + \varepsilon it \quad (5)$$

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.

3.4. Hypotheses Development

3.4.1. 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 (Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001; Frank & Goyal, 2009; Rajan & Zingales, 1995) [12-15], [38, 39].

H_{1o}/a: ROA is not negatively related to total debt (BT)
H_{1a}/a: ROA is negatively related to total debt (BT)
H_{1o}/b: ROE is not negatively related to total debt (BT)
H_{1a}/b: ROE is negatively related to total debt (BT)

3.4.2. Hypothesis 2: Asset Tangibility

Financial leverage and asset tangibility are positively correlated, according to several studies (Pandey, 2002; Drobetz and Fix, 2003; Fan et al., 2004). 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 (Parson and Titman, 2009).

H_{2o}: Asset tangibility is not positively related to total debt (BT)
H_{2a}: Asset tangibility is positively related to total debt (BT)

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3.4.3. 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 debt (Deesomsak et al., 2004; Proença et al., 2014) 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 (De Jong et al., 2011).

H_{3o}: Liquidity is not negatively related to total debt (BT)
H_{3a}: Liquidity is negatively related to total debt (BT)

3.4.4. 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 (Titman and Wessels, 1988; Rajan and Zingales, 1995). Due to the reduced bankruptcy costs associated with debt, larger firms should have a higher debt capacity than smaller firms.

H_{4o}: Firm size is not positively related to total debt (BT)
H_{4a}: Firm size is positively related to total debt (BT)

3.4.5. Hypothesis 5: Financial Flexibility

A negative relationship has been found between debt ratios and the cash flow variable. These findings support the conclusions of Mira and Garcia (2003), 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.

H_{5o}: The financial flexibility of the firm is not negatively related to total debt (BT)
H_{5a}: The financial flexibility of the firm is negatively related to total debt (BT)

3.4.6. 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 (1980), a company with a greater tax benefit from non-debt expenses is expected to use less debt, holding all other conditions constant.

H_{6o}: The tax benefit from non-debt expenses is not negatively related to total debt (BT).
H_{6a}: The tax benefit from non-debt expenses is negatively related to total debt (BT).

3.4.7. Hypothesis 7: Growth Opportunities

A key factor to consider in determining capital structure decisions is growth opportunities (Titman and Wessels, 1988; Michaelas et al., 1999; Sogorb-Mira, 2005) [29,30]. According to the Pecking Order Theory (POT) (Gomes and Leal, 2001), the level of growth and the use of debt by businesses should be positively correlated.

H_{7o}: Growth opportunities are not positively correlated with total debt (BT)
H_{7a}: Growth opportunities are positively correlated with total debt (BT)

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3.4.8. Hypothesis 8

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 (Mac an Bhaird and Lucey, 2010, 2014; Myers, 1984). Additionally, research has demonstrated that younger businesses are more likely than older ones to use short-term debt STD (BASH) and have less long-term debt LTD (BAGJ) (Serrasqueiro and Nunes, 2012; Yazdanfar and Śhman, 2016). (Sánchez Vidal and Martin Ugedo, 2005, 2012). 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.

H_{s0}: The age of the firm is not positively correlated with total debt (BT)
H_{sa}: The age of the firm is positively correlated with total debt (BT)

4. Results and Discussion

4.1. Descriptive Statistics

In the Table 4 below, it shows how the capital structure of the 75 companies has changed during the period from 2019 to 2023.

Table 4.
Capital structure of firms.

Years	BT (TD)	BAGJ (LTD)	BASH (STD)
2019	0.5534	0.1508	0.4027
2020	0.5541	0.1500	0.4041
2021	0.5548	0.1496	0.4052
2022	0.5558	0.1494	0.4063
2023	0.5568	0.1493	0.4074
Mean value	0.555	0.150	0.405

Table 4 shows the evolution of the capital structure of the sample according to three measurements of capital structure: the short-term debt ratio, the long-term debt ratio, and the total debt ratio. The average value of the short-term debt ratio is 40.5 percent, the average value of the long-term debt ratio is 15 percent, and the total debt ratio is 55.5 percent. The sample firms used more short-term debt in 2023, as the ratio of short-term debt to total assets is 40.74 percent. On the other hand, the long-term debt ratio is highest in 2019 at 15.08 percent. Meanwhile, the highest total debt value is in 2023 at 55.68 percent.

Table 4 shows the evolution of BT, BAGJ, and BASH for the entire sample during the period 2019-2023. As can be seen from the figure above, the capital structure is stable with a slight increase in BASH, followed by a slight decline in BAGJ and a small increase in BT.

In the figure 1 below, it shows how the capital structure of the 75 companies has changed during the period from 2019 to 2023.

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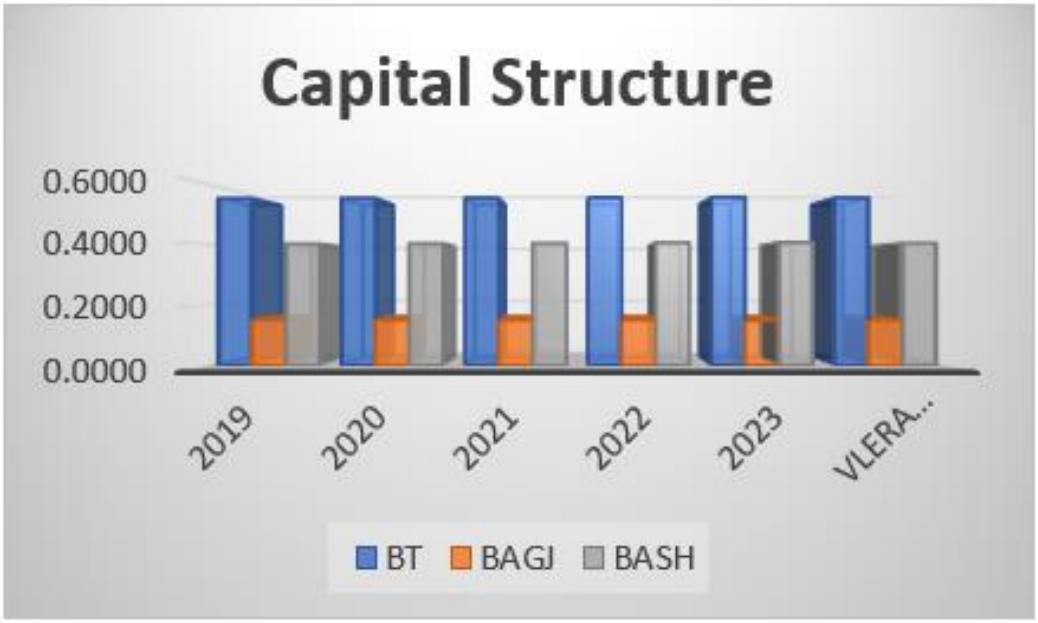

Figure 1.
Capital structure of the firms.

Table 5 reports descriptive statistics for 75 companies during the period from 2019 to 2023. (According to the measurements of descriptive statistics, please refer to the appendix.)

Table 5 reports summary statistics for the variables used in our study. It shows that the average short-term debt to total asset ratio (SDTA) for the sample as a whole is 40.46 percent and of long-term debt to total assets (LDTA) is 15.27 percent. While the total debt (TD) capital structure ratio is 55.57 percent, this is consistent with the results from Table 5.1. The table above also shows the average values as well as the minimum and maximum values for both the dependent and independent variables across a total of 375 observations. The firm's performance, measured by return on equity (ROE) and return on assets (ROA), shows average values of 29.99 percent and 13.09 percent, respectively. And similarly for all the independent variables included.

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Table 5.
Reports descriptive statistics for 75 companies during the period from 2019 to 2023.

	BT	BAGJ	BASH	TA	ROE	ROA	PTJB	MRR	MOF	MF	LF	FF
Mean	0.557357	0.152731	0.404615	0.296745	0.299922	0.130916	0.030588	0.157494	2.779811	21.40989	2.135278	0.209902
Median	0.563524	0.068333	0.363249	0.237528	0.201237	0.073348	0.017033	0.055087	2.890372	21.75555	1.503118	0.080843
Maximum	1.000000	0.974848	0.999745	1.981388	1.582288	0.894874	0.607683	11.71145	3.465736	26.07734	27.08731	17.04394
Minimum	0.005908	0.000000	0.005908	0.000000	-1.083658	-0.221610	0.000000	-0.798518	0.000000	16.08422	0.073533	0.000165
Std. Dev.	0.236685	0.209208	0.250831	0.283690	0.327849	0.158826	0.049986	0.747251	0.548661	2.053743	2.716298	0.898080
Skewness	-0.137624	1.764219	0.505266	1.297517	1.062872	1.834250	6.681932	11.11249	-1.319592	-0.420013	5.553864	17.65516
Kurtosis	2.353097	5.819529	2.391493	5.699641	4.691667	6.868261	68.40001	159.7815	5.287885	2.924825	42.74605	330.9907
Jarque-Bera	7.722580	318.7440	21.74153	219.0978	115.3207	444.0833	69621.16	391787.2	190.6204	11.11398	26611.41	1700387.
Probability	0.021041	0.000000	0.000019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.003860	0.000000	0.000000
Sum	209.0090	57.27412	151.7307	111.2795	112.4708	49.09364	11.47047	59.06008	1042.429	8028.710	800.7291	78.71308
SumSq. Dev.	20.95141	16.36918	23.53072	30.09955	40.19943	9.434376	0.934475	208.8354	112.5849	1577.480	2759.476	301.6491
Observations	375	375	375	375	375	375	375	375	375	375	375	375

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Table 6 shows the Pearson correlation coefficients for total debt (BT), using observations from 75 companies during the period from 2019 to 2023. (According to the measurements of Pearson correlation coefficients, please refer to the appendix).

The following tables show the correlation coefficients between independent variables and capital structure BT (TD) for the entire sample. This analysis is carried out to identify whether the relationship between the variables is positive or negative. The linear correlation coefficient (r), measures the strength and direction of a linear relationship between the variables. If "r" is greater than 0.8, it indicates a strong relationship between the variables. If "r" is less than 0.5, it indicates a weak relationship between the variables (Gujarati, 2004).

As we can observe, in no case do the coefficients exceed the value of 0.8, and this can be verified through the values of VIF. Total debt (TD) has a positive correlation with total assets (TA), return on equity (ROE), and growth opportunity MRR and a negative correlation with return on assets (ROA), non-profit tax shield PTJB, firms age MOF, Firms size MF, liquidity ratio (LR), and firm flexibility (FF). In all cases, the coefficients are statistically significant, except for the case of Firms size MF.

4.2. Multicollinearity Analysis of the Variables

As recommended by Gujarati (2004) [20], 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. Thus, this indicator expresses the degree to which each independent variable is explained by other independent variables and is measured using the following formula:

$$VIF = \frac{1}{1 - Ri^2} \quad (6)$$

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 (Gujarati, 2004) [20].

Table 7.
Shows the variance inflation factors.

Included observations: 375			
	Coefficient	**Uncentered**	**Centered**
Variable	**Variance**	**VIF**	**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 7 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.

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

H_0: There is no autocorrelation

H_1: There is autocorrelation

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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.

Table 8.
Shows the autocorrelation test.

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

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

H_o: There is significant evidence of homoskedasticity.
H_1: There is significant evidence of heteroskedasticity.

To check for the elimination of the presence of heteroscedasticity, we do the test.

Table 9.
Shows 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 sound.

4.3. Regression Results

Testing the More Suitable Model: FEM or REM

To test which model is more suitable, FEM or REM, we formulate the hypotheses as follows:

H_o: The random effects model (REM) is more suitable.
H_1: The fixed effects model (FEM) is more suitable.

To determine which model is more appropriate, we first need to perform the regression with random effects (REM) as follows:

In this case, to evaluate the more suitable model, we conduct the Hausman test between the random effects model (REM) and the fixed effects model (FEM). The result of the probability will indicate which model is more appropriate for explaining the impact of independent variables on the dependent variable.

Table 9.
Shows Hausman test.

Test cross-section random effects			
Test summary	**Chi-sq. statistic**	**Chi-sq. d.f.**	**Prob.**
Cross-section random	64.544212	9	0.0000

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According to the basic rule, if the P-value < 0.05, then we reject Ho. If we have a statistically significant p-value, we can say that we should choose the fixed effects model (FEM); otherwise, we would choose the random effects model (REM). Since the Hausman test resulted in a Chi-Square statistical probability of 0.0000, which is less than 0.05, we can conclude that we reject the null hypothesis and accept the alternative hypothesis. This means that the more suitable model to be used in our study is the fixed effects model (FEM). Employing panel data (cross pooled sectional data) analysis (Gujarati, 2004) and using EViews 12 statistical package we obtain the following output of regressions:

Table 10 shows summary of fixed effects (FEM) regression results for 75 companies during the period 2019-2023. (Regression result model FEM please refer in appendix)

Table 10 presents the regression results of determinants of total debt ratio, long term debt ratio and short-term debt ratio of the companies between 2019 and 2023 time period. Coefficient of determination R-squared is the measure of proportion of the variance of dependent variables about its mean that is explained by the independents or predictor variables. In model 1 the variance of the dependent variables around its mean that is explained by the independent or predictor variables is represented by R-squared, which is 0.9415. This indicates that approximately 94.15 percent of the variability in the total debt ratio is explained by firm-specific factors. The remaining 5.85 percent (100 percent minus 94.15 percent) of the variance in total debt is attributed to other variables. The F-statistic of 41.26548 and a P-value (F) 0.00000 less than 0.005 suggest that the model fits the data significantly.

The regressions coefficients of BT (-1), ROE, ROA, MRR and LF appear significant in determine the total debt ratio. Therefore, the first main null hypothesis is rejected which indicates that there is a relationship between the selected factors and total debt ratio of the firms in the sample. The coefficients for ROA, and LF, are -0.677871 and -0.005979 respectively. This indicates that among these variables (return on assets, and liquidity) and total term debt, there is a significant negative correlation. Among other variables BT (-1), ROE, MRR there is a significant positive correlation.

The impact of ROA on the total term debt ratio is particularly strong; specifically, a 1 percent decrease in ROA and LF, while keeping other variables unchanged, would lead to an increased tendency for firms to rely on total-term debt by approximately 67.78 percent and 0.59 percent, respectively. In contrast, the positive coefficient for ROE, BT (-1), and MRR indicates that a 1 percent increase in return on equity, lagged total debt or growth opportunity will increase the ratio of total term debt by approximately 10.13 percent, 41.41 percent or 2.48 percent respectively

In model 2 the variance of the dependent variables around its mean that is explained by the independent or predictor variables is represented by R-squared, which is 0.8958. This indicates that approximately 89.58 percent of the variability in the long-term debt ratio is explained by firm-specific factors. The remaining 10.42 percent (100 percent minus 89.58 percent) of the variance in long terms debt is attributed to other variables. The F-statistic of 22.023 and a P-value (F) 0.00000 less than 0.005 suggest that the model fits the data significantly. The regressions coefficients of BAGJ (-1), ROA, and MRR appear significant in determine the total debt ratio. Therefore, the first main null hypothesis is rejected which indicates that there is a relationship between the selected factors and total debt ratio of the firms in the sample.

In model 3 the variance of the dependent variables around its mean that is explained by the independent or predictor variables is represented by R-squared, which is 0.9131. This indicates that approximately 91.31 percent of the variability in the short-term debt ratio is explained by firm-specific factors. The remaining 8.69 percent (100 percent minus 91.31 percent) of the variance in short terms debt is attributed to other variables. The F-statistic of 26.92 and a P-value (F) 0.00000 less than 0.005 suggest that the model fits the data significantly. The regressions coefficients of BASH (-1), ROA, and LF appear significant in determine the total debt ratio. Therefore, the first main null hypothesis is rejected which indicates that there is a relationship between the selected factors and total debt ratio of the firms in the sample.

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5. Conclusion

Numerous studies have addressed capital structure, beginning with an article by Modigliani and Miller in 1958 [32-34] and continuing through the work of various researchers. 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 non-financial enterprises in Albania's Tirana area when deciding on their capital structure. Company-specific criteria including return on equity, return on assets, tangibility of assets, liquidity, business size, financial flexibility, non-debt tax shields, growth opportunity, and firm age are some of the aspects that are looked at. The first hypothesis looks at whether the capital structure choice of the chosen sample is influenced by firm-specific factors.

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 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).

Firms do not have an optimal capital structure, but we note that over the period 2019-2023 they have had an average of 55.73 percent (respectively 55.34, 55.41, 55.48, 55.58, and 55.68 percent) total-term debt, 15.27 percent (respectively 15.08, 15.00, 14.96, 14.94, 14.93 percent) long-term debt and 40.46 percent (respectively 40.27, 40.41, 40.52, 40.63, 40.74 percent) short-term debt. 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. On average they finance their assets with debt to the extent of 55.73 percent (40.46 percent short-term debt and 15.27 percent long-term debt) and with equity to the extent of 44.27 percent. 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 Albania (Tirana district).

In the sample is observed that 40.46 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 regression analysis of fixed effect FEM is proved that:

In the first regression coefficients of lagged total-term debt ratio BT (-1), ROE, ROA, growth opportunity and liquidity are statistically significant in determining total-term debt ratio (BT). Also, factors affecting positively this report were BT (-1), ROE, and growth opportunity. While the factors that affect negatively total-term debt ratio (BT) are ROA, and liquidity.

In the second regression coefficients of lagged long-term debt ratio BAGJ (-1), ROA, growth opportunity are statistically significant in determining long-term debt ratio (BAGJ). Also, factors affecting positively this report were BAGJ (-1), and growth opportunity. While the factors that affect negatively long-term debt ratio (BAGJ) are ROA.

In the third regression coefficients of lagged short-term debt ratio BASH (-1), ROE, and liquidity are statistically significant in determining short-term debt ratio (BASH). Also, factors affecting positively this report were BASH (-1). While the factors that affect negatively short-term debt ratio (BASH) are ROA and liquidity.

6. Further Research Directions

6.1. Recommendations

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

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appropriate for firms to determine their optimal capital structure. It is suggested not a fixed structure but a fluctuating one depending on the size of firm's investments or 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. The Tirana stock exchange, which is active but not functional, needs to be operational and efficient. This is crucial, similar to the energy exchange, which is functioning effectively for trading and also providing access to the need for capital.

6.2. Limits of the study

This study is limited to data collection of only 75 Albanian entity, which may not be sufficient to represent the entire population of firms in Tirana district. In the absence of active capital markets in Albania, this study uses only accounting data and non-market data of firms to measure their capital structure. The period of study may be short, since it starts from 2019 and ends in 2023. 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. This study takes into account only the firm specific determinants of capital structure. It would be of interest the use other factors, such as macroeconomic determinants. This is left as an open door for future studies.

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Appendix

Table 6.
Shows the Pearson correlation coefficients for total debt (BT).

	BT	TA	ROE	ROA	PTJB	MRR	MOF	MF	LF	FF
BT	1									
TA	0.2058	1								
	0.0001	-----								
ROE	0.0404	-0.35	1							
	0.435	0.0000	-----							
ROA	-0.315	-0.317	0.8002	1						
	0.0000	0.0000	0.0000	-----						
PTJB	-0.13	0.1071	0.1383	0.2126	1					
	0.0117	0.0382	0.0073	0.0000	-----					
MRR	0.1164	-0.088	0.1663	0.0395	-0.029	1				
	0.0242	0.0874	0.0012	0.4455	0.5702	-----				
MOF	-0.144	0.053	-0.188	-0.088	-0.123	-0.288	1			
	0.0052	0.3057	0.0003	0.0878	0.0168	0.0000	-----			
MF	-0.024	0.2537	-0.095	-0.093	-0.086	-0.069	0.3842	1		
	0.6468	0.000	0.066	0.0724	0.0968	0.1843	0.0000	-----		
LF	-0.303	-0.146	0.0572	0.1245	-0.003	-0.027	0.0868	-0.023	1	
	0.0000	0.0045	0.2693	0.0159	0.9477	0.6023	0.0933	0.6569	-----	
FF	-0.193	0.0873	0.0116	0.0505	0.0673	-0.017	-0.052	0.098	0.4396	1
	0.0002	0.0915	0.8227	0.3291	0.1933	0.7379	0.3181	0.0579	0.0000	-----

Note: In the first box, the coefficients are presented, while in the second box, the corresponding probabilities are shown.

Table 10.
Summary of fixed effects (FEM) regression results.

Variables	Model 1	Model 2	Model 3
Independent	BT	BAGJ	BASH
Constant	0.296317	-0.397280	0.714324*
BT(-1), BAGJ(-1), BASH (-1)	0.414121***	0.237558***	0.310336***
TA	-0.008422	0.019255	-0.029649
ROE	0.101399**	0.049466	0.073596
ROA	-0.677871***	-0.271799**	-0.423469***
PTJB	0.059091	0.049139	0.014824
MRR	0.024822***	0.017055**	0.011493
MOF	-0.060204	-0.016862	-0.055470
MF	0.012019	0.026383	-0.010671
LF	-0.005979**	0.001977	-0.007612**
FF	0.003469	-0.002623	0.006028
R-square	0.941597	0.895882	0.913180
Adjusted R-square	0.918779	0.855203	0.879260
F (10, 300)	41.26548	22.02332	26.92136
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).

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