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THE INFLUENCE OF FINANCING DECISIONS ON FINANCIAL PERFORMANCE AND VALUE OF MANUFACTURING COMPANIES LISTED ON BORSA ISTANBUL

Yüksek Lisans Tezi

ABDULRAHMAN AL ABDEH

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Danışman: Assoc. Prof. Dr. MEHTAP ÖNER

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ÖZET

Bu çalışmanın temel amacı, finansman kararlarının 2009-2022 döneminde Borsa İstanbul'da işlem gören 138 finansal olmayan şirketin finansal performansı ve değeri üzerindeki etkisini araştırmaktır. Panel veri metodolojisi kullanılarak üç bağımlı değişken benimsenmiştir. Aktif karlılığı (ROA) ve hisse başına kazanç (EPS) finansal performansın muhasebe temelli göstergeleri olarak kullanılırken, piyasa değeri (MARKET CAP) firma değerinin piyasa temelli göstergesi olarak kullanılmıştır. Toplam borcun toplam varlıklara oranı, şirketlerin finansman kararlarını temsil eden sermaye yapısı (CS) için bir gösterge olarak kullanılmıştır. Buna ek olarak cari oran (CR), şirketin büyüklüğü ve yaşı kontrol değişkenleri olarak çalışmaya dahil edilmiştir. Çalışma bulguları, sermaye yapısı (CS) ile üç bağımlı değişken olan ROA, EPS ve MARKET CAP arasında önemli ölçüde negatif bir ilişki olduğunu ortaya koymaktadır. Kontrol değişkenlerine ilişkin sonuçlar ise şirket büyüklüğü ve yaşının finansal performans ve firma değeri göstergeleri ile istatistiki olarak anlamlı pozitif bir ilişkiye sahip olduğunu, ancak cari oranın sadece EPS göstergesi ile pozitif bir ilişkiye sahip olduğunu ortaya çıkarmıştır. Çalışma bulgularına göre, incelenen analiz döneminde seçili şirketlerin sermaye yapısı kararlarının, bu şirketlerin finansal performansları ve firma değerleri üzerinde anlamlı bir negatif etkiye sahip olduğu gözlemlenmiştir. Bu sonucun genel olarak Finansman Hiyerarşisi Teorisi ile uyumlu olduğu söylenebilir.

Anahtar Kelimeler: Sermaye yapısı, Finansman kararı, Firma performansı, Firma değeri, Panel veri.

ABSTRACT

The primary objective of this study is to explore the influence of financing decisions on the financial performance and value of 138 non-financial companies listed on Borsa Istanbul during the period 2009-2022. By utilizing panel data methodology, three dependent variables were adopted. While return on assets (ROA), and earnings per share (EPS) are used as accounting-based indicators of financial performance, market capitalization (MARKET CAP) is used as a market-based indicator of the firm value. The ratio of total debt to total assets is used as a proxy for the capital structure (CS) which represents financing decisions of the selected companies. In addition, three control variables namely current ratio (CR), size, and age are also embraced in the study. The outcomes of the study reveal that a significantly negative relationship exists between capital structure (CS) and all of the three dependent variables, namely; ROA, EPS, and MARKET CAP. As for the control variables, size, and age have a significantly positive relationship with ROA, EPS, and market capitalization, whereas the third control variable current ratio has a significantly positive relationship with EPS only. As a conclusion of the study's finding it can be stated that capital structure has a significantly negative impact on companies' financial performance and value which is in line with the Pecking Order Theory.

Keywords: Capital structure, Financing decision, Firm performance, Firm value, Panel data.

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ABBREVIATIONS

CR	Current Ratio
CS	Capital Structure
EPS	Earnings Per Share
MARKET CAP	Market Capitalization
M&M	Modigliani & Miller
ROA	Return on Assets

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INTRODUCTION

The strategies of capital structure are crucial for boosting a company's worth. Capital structure is a combination of debt and equity, therefore, businesses must adopt a combination that provides the needed finances for the operations of the business and increases the company's worth as a result (Bhaduri, 2002). If this combination is dynamic and efficient the value of a company will surge and the cost of its capital will plunge. The managerial choices related to capital structure are extremely crucial since they influence both cost and reward to shareholders (Pandey, 2010). Companies that don't make proper financing decisions and appropriately plan for their capital structures may have trouble funding their operations and don't make the best utilization of their resources.

Debt is simply the outcome of borrowing funds and is something that needs to be paid back. Debt can be classified into short-term and long-term classes according to its duration and maturity. In contrast to debt financing, equity financing is anticipated to stay with the firm for an unlimited amount of time. Retained earnings, common stocks, and preferred stocks are the three forms of equity capital. Compared to equity, debt is a cheaper form of funding because it's tax-deductible (Adesina et al., 2015). At first, financial gurus believed that companies ought to only borrow up to a specific amount since higher debt would raise interest costs and negatively impact corporate performance (Chowdhury & Chowdhury, 2010). A company should not acquire a large degree of leverage if it can not afford to pay it back. Hence, companies should constantly aim toward maintaining an optimal capital structure that equilibrates the advantages of tax savings and bankruptcy risks, yet large amounts of debt can raise the capital cost and as a result lower the company's financial performance and value (Desai, 2007).

A company's performance is a feature that demonstrates a company's capacity to acquire and manage assets in a variety of methods, which helps the company build its competitive advantage (Iswati & Anshori, 2007). The performance of a company can be measured in three primary ways. First is a company's productivity which is transforming the inputs into outputs in a competent process. Second is a company's profitability which is the ability of a company to generate revenue from its operations and this revenue should be higher than the cost of these operations. Third is market premium which is the extent to which a company's market value is higher than its book value. Nonetheless, it is controversial how to measure financial performance as numerous ratios and formulas could be used. These ratios and formulas can be classified into three categories basis. The first is market-based indicators such as stock returns and volatility.

The second is accounting-based indicators derived from the balance sheet and income statements in the form of financial ratios (Zahra & Pearce, 1989; Degryse et al., 2012). The third is Tobin's Q indicator which combines both market and accounting-based values (O'Brien, 2003).

Following the pioneering contributions of Modigliani and Miller (1958), the concept of capital structure and its association with a firm's performance and value has been a perplexing topic in the literature of corporate finance. According to the literature, there is an optimal capital structure and the theories contribute to the understanding of how a selection of a specific debt and equity combination can impact a company's performance and value. However, there aren't any specific methods or procedures that ensure how to achieve optimal capital structure. The Modigliani-Miller argument established literature on the basic structure of debt and equity. A firm's capital structure is the consequence of its harmony with diverse financial sources. The costs of diverse sources of funding do not differ separately in Modigliani and Miller's perfect capital markets, thus there is no additional advantage to arbitrarily single out one over another. However, it is unquestionable that financing decision is significant, and that is because of informational asymmetries, taxes, and agency costs. Various capital structure philosophies have varying perspectives on these variables. Each focuses on certain costs and gains of alternative financing techniques. According to the Trade-off Theory, because the cost of financial distress and taxes are crucial components of capital structure, a firm's desirable debt ratio is decided by weighing the benefits of debt against its cost. Centered on the concerns of information asymmetry among investors and firm insiders, the Pecking Order Theory stresses that firms must adopt internal funding first since it has no cost. If internal resources are inadequate, the firm may turn to debt financing and eventually equity offerings. The Modigliani and Miller framework was expanded by the Agency Cost Theory, which argues that there are disputes between shareholders and managers since their objectives are not matched, and claims that the optimal capital structure can be achieved by balancing the benefits of debt against the agency cost of debt. Asymmetric information among investors and firm executives is another foundational component of the Signaling Theory. Thus, according to Ross (1977), executives frequently utilize leverage choices as a signal for possible investors because they believe that a firm's degree of leverage conveys signals about the underlying worth of the firm to interested parties. According to the Market Timing Theory, the process of buying back equity at discounted costs after selling it for rising prices results in a capital structure that is the aggregate impact of these efforts to time the equity market. There are many different concepts when it comes to a firm's capital structure; nevertheless, there isn't a unified theory that all companies should follow when deciding how much debt or equity to use. As mentioned by (Frank & Goyal, 2009), alternative theories pertain to firms in various situations

Monetary decisions made by businesses are influenced by a variety of regulatory considerations and an analysis of the factors that influence their capital structure preferences. Interest rates, price determination, and governance are just a few of the factors that have an impact on capital structure. A company's growth plans and the balance of interest between stakeholders as a result are also heavily affected by these factors (Greene, 2003).

In this study, we aim to empirically investigate the impact of financing decisions (capital structure) on the financial performance and value of 138 non-financial companies listed on Borsa Istanbul from 2009-2022. By applying panel data methodology three dependent variables: ROA, EPS, and MARKET CAP are adopted as proxies of a company's financial performance and value. The ratio of total debt to total assets is adopted as a proxy of a company's capital structure and is the only independent variable employed in the analysis. In addition, three control variables: current ratio, size, and age are included in the analysis.

The framework of the study is composed as follows: The next chapter is a synopsis of capital structure and a detailed discussion of both the classical and modern theories of capital structure. In chapter 3, we reviewed previous research on the topic of capital structure and specifically empirical evidence on the influence of capital structure on companies' financial performance and value. In chapter 4, the study's methodology, data, variables, research design, and hypothesis are presented. Chapter 5, reflects the analysis and discussion of the findings. Finally, the findings, limitations, and suggestions for future research, as well as the contributions of this study are all demonstrated in the conclusion in chapter 6.

2. THEORIES OF CAPITAL STRUCTURE

2.1 Capital Structure: A Synopsis

All firms in the real world of business require funding streams to continue operating. Investment and funding decisions are two of a firm's primary financial considerations. The strategic and operational dimensions can both be used to assess the two decisions. Strategic financing decisions are related to the firm's capital structure, while operational financing relates to the company's short- and medium-funding alternatives.

In finance, a firm's capital structure is a composition of debt and equity. There are countless alternatives in capital structures due to the profusion of financial instruments. As a result, a firm may have a wide variety of different capital structures. For businesses, determining an appropriate funding source and form is a difficult and complex process, a firm can offer securities in debt or equity forms, huge amounts of debt or equity, convertible bonds, or preferred stocks.

The capital structure of a firm primarily focuses on the right section of the balance sheet, which demonstrates how the firm funds the assets on the left section. The balance sheet's right side displays debt and equity. Debt can be in the form of short-term and long-term debt, while equity may be in the form of preferred stock, common stock, and retained earnings. These components combined form the firm's capital structure. Moreover, making decisions on the capital structure is crucial for determining the cost of capital, which is an important criterion in evaluating firms' long-term investment opportunities.

Debt is simply the outcome of borrowing funds and is something that needs to be paid back. Debt can be classified into short-term and long-term classes according to its duration and maturity. Short-term debt is that which has less than one year before maturity; long-term debt, on the other hand, has a maturity beyond one year. Periodic payments are usually made on long-term debt throughout its existence. When a firm takes on long-term debt, it commits to return the principal plus interest periodically. Compared to equity debt has a lower cost, given their minimal risk compared to other capital providers, lenders anticipate considerably smaller returns. Firstly, in comparison to stockholders' lenders are entitled to the precedence of a claim. Secondly, they can apply greater legislative power than stockholders to get their funds. Thirdly, tax deductions apply to debt interest payments. Tax deductibility provides a considerable benefit and lowers the cost of debt based on the country's tax rate. The firm, however, must fulfill the payments and plan the cash flows in compliance because the debt's repayment dates are preset.

In contrast to debt financing, equity financing is anticipated to stay with the firm for an unlimited amount of time. Retained earnings, common stocks, and preferred stocks are the three forms of equity capital. Despite being categorized as a form of equity, preferred stocks have many features in common with debt securities. Preferred stocks have a set par value when they are first issued and pay dividends at set intervals.

The cost of capital structure components varies according to tax consequences, risk, and return. Alternative capital structure options can come with a variety of pros and cons. The advantage of deducting interest payments rises when debt is raised. Additionally, because of the restrictions that the firm has committed to, the debt system brings discipline to a firm's management. However, as debt rises, cash flow to meet interest payments rises as well. If it is not fulfilled, there is a possibility of bankruptcy.

Since equity funding has no regular payment obligations, there will be no pressure of fixed payments if owners' equity is raised rather than debt. Shareholders anticipate dividends, but they can be delayed and funds can be used for operational requirements. Additionally, creditors may require collateral for issuing debt, however, shareholders do not. Furthermore, unlike shareholders, creditors impose financial constraints that limit how loan funds may be utilized. Nevertheless, there are several drawbacks to equity funding. Firstly, shareholder returns are less certain; neither dividends nor profit are assured, and as a result, they generally demand a higher return than creditors do. Secondly, each shareholder takes on ownership of the business. As a result, the firm’s authority and ownership would be spread. Thirdly, to issue equity, substantial internal information must be disclosed to the public which is critical when competitors are taken into consideration.

A firm's capital structure substantially influences its capital cost and overall risk which has significant ramifications for the firm (Baker & Martin, 2011, p. 1). It may impact the firm's value and, consequently, the shareholders' wealth. Since the primary objective of a firm's management is to maximize shareholder wealth and the firm's value, then choosing the right capital structure is crucial. The managers should choose a debt-to-equity ratio that maximizes the overall value of the firm, this ratio is referred to as optimal capital structure. One of the most controversial subjects in relevant capital structure studies and a continuing complex issue in financial research is whether there is an optimal capital structure and whether a firm's value is independent of its financial composition.

The reasoning behind why firms adopt the debt-to-equity ratio they employ is still a subject of debate. Although various firms favor debt funding, others favor equity, the variables influencing this choice are still unclear amid a mass of theoretical research and numerous empirical studies. There are divergent

points of view in the different capital structure theories. Various capital structure models attempt to address this issue from various angles.

2.2. Classical Theories of Capital Structure

Prior to Modigliani and Miller (1958), capital structure theories were referred to as basic, traditional, or classical theories in most of the research. These theories aim to determine a firm's optimal debt-to-equity ratio. For this reason, they investigate how a firm's cost of capital changes as its debt-to-equity ratio varies. The firm's value will be maximized when capital cost hits its lowest level, at this point the debt-equity ratio will be optimal for the firm. Under these suppositions, there are three distinct classic theories of capital structure. These theories are the Net Income Approach, Net Operating Income Approach, and Traditional Approach to Capital Structure.

2.2.1 Net Income Theory

Durand (1952) proposed two theoretical approaches, which are Net Income and Net Operating Income, for valuing the firm. These approaches seek to determine a firm's value based on its level of leverage.

The net income theory states that the capital structure strategy has an impact on a firm's valuation. Based on the net income concept, the firm's weighted average cost of capital reduces when financial leverage, or the debt-to-equity ratio, rises. As a result, both the market price of the shares and the value of the firm rise. On the other hand, if the debt-to-equity ratio declines, the firm's market value will fall due to a rise in the weighted average cost of capital.

The theory was modeled on some significant premises. The first and central premise is that even if the firm's capital structure alters, the cost of debt and equity will remain unchanged. Second, there are no taxes. Third, compared to equity, debt is a less costly means of financing because of its lower risk structure since creditors could require a lower rate of return than equity-based investors. This is because, regarding receivables, creditors take advantage over stockholders. Lastly, Creditors' and investors' perceptions of risk are unaffected by a rise in debt.

The graph in Figure 1 below shows the relationships amongst financial leverage, cost of financing, and the value of a firm; considering that D denotes the value of debt, E denotes the value of equity, r_D denotes the cost of debt, r_E denotes the cost of equity, and r_A denotes the average cost of capital.

Financial leverage percentages are displayed on the X axis, and rates of return for the average cost of capital, equity, and debt are displayed on the Y axis. According to premises, the cost of debt-equity stays unchanged regardless of the degree of financial leverage. As a result, both lines are parallel to the X-axis, with the equity line being higher than the debt line because the cost of debt is lower than the cost of equity. At zero levels of financial leverage, the average cost of capital line crosses the equity line, and at full levels of financial leverage, it crosses the debt line, where it reaches its minimum value.

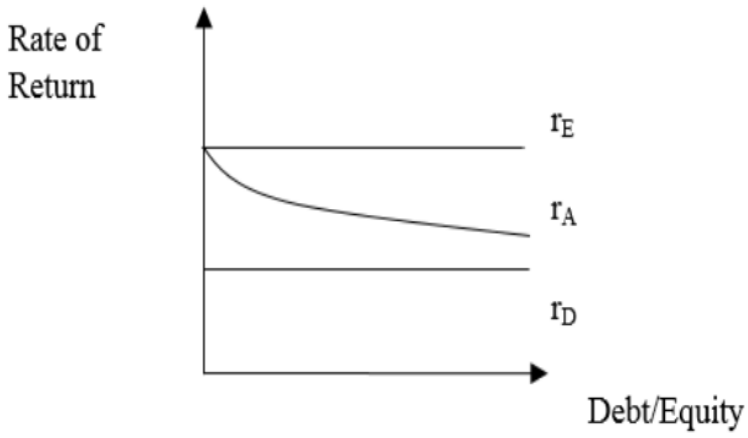


Figure 1: Net Income Theory- Average Cost of Capital

The main criticism leveled against the Net Income Approach is that when financial debt rises, lenders and shareholders will require greater returns due to the increased risk, as a result, debt and equity costs will rise rather than stay the same.

2.2.2 Net Operating Income Theory

In contrast to the Net Income Theory, Durand (1952) stated that a firm's market value is unrelated to its capital structure and that changes in the composition of capital structures have no impact on the firm's value.

The theory was predicated on some significant premises. First, debt cost does not influence the level of financial leverage. Second, the cost of debt is less expensive than the cost of equity, much like the Net Income Approach. Shareholders' perceptions of risk, which are tied to financial leverage, have an impact on it. Financial leverage raises the volatility of the firm, which raises shareholders' expectations and raises equity costs. Finally, financial leverage is independent of overall capital costs. Regardless of the level of financial leverage, debt cost is always cheaper than equity cost. When financial leverage rises, the entire

cost of capital falls, but as risk rises and equity costs rise as a result, they compensate out the fall and balance the total cost of capital. Considering these premises, the Net Income concept concludes that debt and equity financing composition does not affect the valuation of firms (Van Horne and Wachowicz, 2005, p.447-449).

The graph in Figure 2 below shows the relationships between financial leverage, cost of financing, and the value of a firm. Financial leverage percentages are displayed on the X axis, and rates of return for the average cost of capital, equity, and debt are displayed on the Y axis. As indicated in the premises, the cost of debt and total cost of capital remains constant regardless of the degree of financial leverage, as a result, both lines are parallel to the X-axis. Since the cost of debt is lower than the overall cost of capital, the line representing the overall cost of capital is higher than the line representing debt. At zero financial leverage, the cost of equity line crosses the cost of capital line, and at full financial leverage, it achieves its maximum value

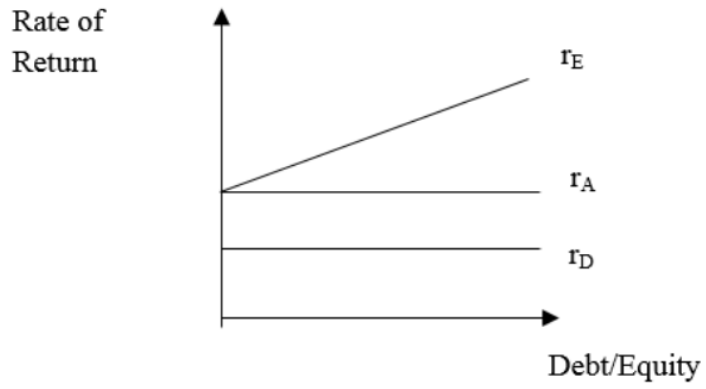


Figure 2:Net Operating Income Theory- Average Cost of Capital

There is no such concept as an optimal capital structure since the level of financial leverage cannot influence the overall cost of capital. The firm's value and cost of capital will be the same for all capital structures (Van Horne & Wachowicz, 2005, p.447-449).

The main criticism of the Net Operating Income model is that when financial leverage rises, debtors and shareholders will desire larger returns because the risk is rising. The Net Operating Income Concept, however, relies on the premise that the cost of debt won't vary.

2.2.3 Traditional Theory of Capital Structure

The traditional approach to capital structure was presented by Solomon (1963). It lies in between the net income and net operating income theories. The traditional model relies on the idea that there is an optimal capital structure and that managers may raise the firm's overall value by prudently using financial leverage (Van Horne & Wachowicz, 2005, p.447-449). According to this argument, the right combination of debt and equity will lower total capital costs and hence raise the firm's market value.

The theory was predicated on some significant premises. First, up until a certain point, the cost of debt is approximately constant. Hence, the cost of debt rises dramatically as a firm extends its usage of debt beyond that point. Second, the cost of debt is less expensive than the cost of equity, much like the Net Income and the Net Operating Income approaches. Third, equity's cost is similar to that of debt. Up until a certain point of financial leverage, it is nearly constant. Equity's cost dramatically rises as a firm raises its amount of debt beyond that point. Finally, depending on the previously given premises, the total cost of capital is related to financial leverage.

If there is an increase in financial leverage, which is defined as exceeding the appropriate level of debt, investors will constantly rise the needed rate or compensation of equity (Van Horne & Wachowicz, 2005, p.447-449). Debt's benefit as a less expensive form of capital will soon evaporate, and capital costs will begin to rise. This will proceed until the negative effects outweigh the advantages of less expensive debt capital (Shapiro & S. D. Balbirer, 2000, p.469).

There must be a specified ratio for the cost of capital that will be the lowest point for the firm because the cost of capital has double trends as a consequence of expanding financial leverage; firstly reducing, then rising. This point is referred to by traditional approach advocates as the optimal capital structure. At the optimal capital structure point, WACC will be at its minimum point, but the value of the firm will be at its maximum.

The graph in Figure 3 below demonstrates the relationships between financial leverage, required returns, and the optimal capital structure in the traditional approach;

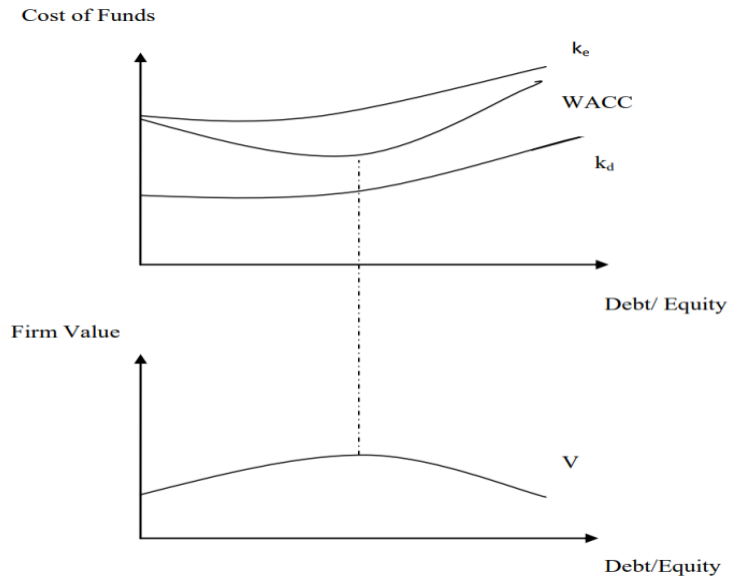


Figure 3:Traditional Approach: Optimal Capital Structure

2.2.4 The Modigliani and Miller (M&M) Theory: Capital Structure Irrelevance

Franco Modigliani and Merton Miller's study in 1958 is regarded as the first of capital structure modern theories and is frequently pointed out as the emergence of finance as an area or field of science. This theory is viewed as the most important attempt to analyze firms' funding behavior and capital structure (Pagano, 2005).

M&M (1958) proposed that in a perfect market, the value of a firm is independent of its capital structure. The perfect market major restrictive assumptions of the theory include(Copeland & Weston, 1988, p. 439):

- No taxes are levied
- The financial markets are stable.
- No transactional fees
- Markets are competitive.
- Information asymmetry does not exist.
- Both firms and households can borrow money at the same rates.
- Lending and borrowing are available at risk-free interest rates.
- Bankruptcy fees are nonexistent
- Firms only issue two sorts of claims: stock and risk-free financing.
- The same risk class is considered to apply to all firms.

- Managers want to enhance shareholder value since there are no agency costs.

M&M developed two crucial propositions using these presumptions. First, a firm's market value remains independent of its capital structure. Second, equity costs rise when leverage rises. The framework was refined, and tax was considered in the (Modigliani & Miller, 1963) study. MandM's main propositions with and without tax considerations will be explained in the consecutive sub-sections

2.2.4.1 M&M Proposition I

According to the theory, as mentioned above the value of the firm is independent of its capital structure in other words, this statement can be presented as;

Value of unlevered firm (V_U) = Value of a levered firm (V_L)

Below is an explanation of the way a value of a firm is calculated, and some formulas are used for a better understanding of the propositions in the MandM theory; value of anything equals to the present value of future cash flows. Stating that, the value of any firm equals

$$EBIT\ (1-t)\ /\ R \qquad (1)$$

Earnings Before Interest and Tax (EBIT) is a good representation of a firm's cash flows, thus net income is not used because it's more of a representation of what shareholders are getting and ignores bondholders, but since a representation of the total firm value is what is aimed for, both bondholders and the shareholders are supposed to be taken into consideration in the perspective. (R) is the discount rate. A more specific representation of a firm's discount rate is the cost of a firm to raise capital and on average the cost of that could be represented by the Weighted Average Cost of Capital (WACC).

$$EBIT\ (1-t)\ /\ WACC \qquad (2)$$

Since firms are paying no taxes (1-t) can be ignored. Therefore, the value of any firm will be equal to

$$EBIT\ /\ WACC \qquad (3)$$

Referring to equation (3), the value of a firm is always going to be constant because the $V_U = V_L$ in a no-tax case, EBIT will be constant because the assets are constant, so they still are producing the same income no matter what capital structure the firm has since both firms value and EBIT are constant, therefore, a second implication for WACC is also going to be constant

2.2.4.2 M&M Proposition II

In the second proposition, MandM theory argues that the rate of return or cost of equity (r_E) increases with more leverage thus, the cost of equity (r_E) in a firm is directly and positively related to the financial leverage of that firm. Hence an increase in a firm's debt ratio will cause a hike in the default probability of that firm. As a result, investors will be willing to require a higher cost of equity (r_E) in return for the additional risk.

To put the above explanation into a formula, (r_E) denotes return on equity, (r_D) denotes return on debt, and WACC is the least revenue that our assets have to generate for the firm to make a profit because WACC is what capital is costing the firm on average so the firm has to gain more than that to make a profit, therefore, WACC can also be denoted as return on assets (r_A)

$$WACC\ or\ rA\ =\ (D/V)\ (rD)\ +\ (E/V)\ (rE) \qquad (4)$$

If the formula is rearranged and solved for (r_E), then the formula will be;

$$rE\ =\ rA\ +\ (rA\ -\ rD)\ (D/E) \qquad (5)$$

One of the implications of proposition I was that WACC or r_A is constant also return on debt is constant because it is not going to change if a firm uses more or less leverage. Subsequently, we can notice that return on equity (r_E) is a function of the debt-to-equity ratio (D/E) so as the debt-to-equity ratio rises by taking on more debt, the return on equity is going to rise.

Now to expand on the value of an unlevered firm (V_U), it's already known from *equation (3)* in proposition I that the value of any firm whether levered or unlevered is EBIT / WACC

Therefore, the value of an unlevered (V_U) firm is also equal to EBIT / WACC
where:

$$WACC\ =\ (D/V)\ (rD.)\ +\ (E/V)\ (rE) \qquad (6)$$

So, the question is, what will an unlevered firm's WACC be? In an unlevered firm, the debt is equal to zero, (D) = 0. Referring to the previous formula;

$$WACC\ unlevered\ =\ (D/V)\ (rD)\ +\ (E/V)\ (rE) \qquad (7)$$

If the debt is zero, then the (D/V) (r_D) part of the formula is going to be 0 as well, hence for an unlevered firm, this means that the equity (E) is equal to the value (V) of the firm, because (V) here is the value of the assets and if there is no debt means that the value of the assets on the left side of a balance sheet has to be equal to the equity on the right side. Therefore, an implication of an unlevered firm is (E) = (V).

If (E) = (V), then this bracket in the formula (E/V) is equal to 1, (E/V) = 1. To solve for WACC $_{unlevered}$, (r_E) would be multiplied by 1. As a result, WACC $_{unlevered}$ = return on equity of an unlevered firm, which can sometimes be denoted as (r_U) and to put this into a proper equation;

$$WACC\ unlevered\ =\ return\ on\ equity\ of\ an\ unlevered\ firm\ =\ rU \qquad (8)$$

Figure 4 shows the above explanation;

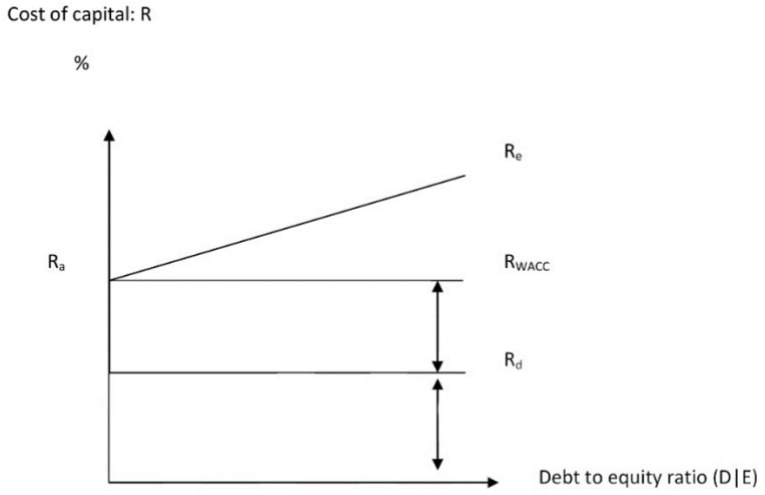


Figure 4:Modigliani and Miller Proposition II

Referring to the above graph, when the D/E ratio is 0 that means that the firm is unlevered, therefore, the return of the firm is going to be r_A, r_U, or WACC $_{unlevered}$. One of Proposition I implications is that WACC is always constant no matter how much leverage a company takes, so, WACC is represented as a straight horizontal line in the graph (line1). From Proposition II It's known that return on equity (r_E) increases with leverage and it is going to be a linear function of the (D/E) ratio, as represented in (line2). Turning back to *equation (6)* WACC = (D/V) (r_D) + (E/V) (r_E). It's noticed that with more leverage return on equity (r_E) increases, the debt figure (D/V) also increases, and the equity figure is decreasing (E/V). Although the return on equity (r_E) increases, this portion of the formula (E/V) (r_E) is weighted less because the weight of (E/V) is decreasing. Considering the other portion of the formula (D/V) (r_D), with more leverage (D/V) increases,

however, the return on debt (r_D), is always going to be constant, therefore WACC is going to remain constant. Since (r_D) is constant it can be presented as a straight horizontal line (line 3) below WAAC (line 1) because it is less. In MandM's (1958) propositions, one of the most important assumptions is that there are no taxes. However, in (1963) MandM manifested a new study, upgraded their model, and included the advantage of tax into the model.

2.2.4.3 M&M Proposition I (with taxes)

The main difference in the situation of tax involvement is that the interest payment a firm is making on its debt is going to be tax deductible and that is the justification why a firm's value is going to vary and would not be constant as it was in the situation of no taxes. Therefore, it's concluded that; when a firm takes on more debt, it will accordingly pay more interest, also taxes paid by the firm will be less, resulting in a larger firm value. The question to ask here is that, if a firm is taking on more debt, then they are also paying more interest, wouldn't their expenses be going up? The answer is if the firm didn't have any debt, then the right side of the balance sheet would be all equity and they would have to pay returns to the equity holders as well, so whether there is debt or not, the firm will have to pay some kind of return to the right side of the balance sheet, but the problem with the return to equity a firm pay is that it is not tax deductible like interest payments, therefore the company doesn't get the advantage of the tax shield.

Now to understand how tax shield works, the tax shield on an income statement from any expense is always going to be equal to whatever that expense is multiplied by the tax rate to put this into a formula;

$$Expense\ tax\ shield\ =\ (Expense)\ (Tax\ rate) \qquad (9)$$

MandM propositions are concerned with the interest tax shield that a firm receives so if the general formula above is followed, it can be said that interest tax sheild equals to

$$(Interest\ expense)\ (Tax\ rate) \qquad (10)$$

Further interst expense can be simplified to

$$[(Debt)\ (Interest\ rate)]\ (Tax\ rate) \qquad (11)$$

Normally an interest tax shield is on a per-year basis, however, unless a firm is paying off its debt within one year which rarely happens, the firm will be receiving the interest tax shield over multiple years,

and to know the benefit of that interest tax shield, it's important to calculate the present value of the interest tax shield from the future to the present for all years in the future.

It can be concluded that the difference between the value of an unlevered firm (V_U) and the Value of a levered firm (V_L) is the present value of the interest tax shield, to represent this statement in a formula;

$$Value\ of\ unlevered\ firm\ (VU)\ +\ PV\ of\ interest\ tax\ shield = Value\ of\ a\ levered\ firm\ (VL) \quad (12)$$

2.2.4.4 M&M Proposition II (with taxes)

From MandM Proposition I (with taxes), and referring back to one of the previous formulas that were mentioned; the value of any firm = EBIT (1-t) / WACC. It's known that the left side of the above equation which is the value of any firm increases with debt because the more debt the firm takes the higher the tax shield will be and as a result, the value of a levered firm (V_L) will be higher. Considering the right side of the equation EBIT is always constant because it is produced by the assets of the company regardless of the capital structure since the value of the firm is increasing and EBIT is constant, WACC must decrease with more debt, then the two sides of the above-mentioned formula will be equal. An implication of what has been explained is that WACC decreases with leverage.

From the graph below in Figure 5 it can be observed that WACC decreases with more leverage and starts to approach the return on debt (r_D)

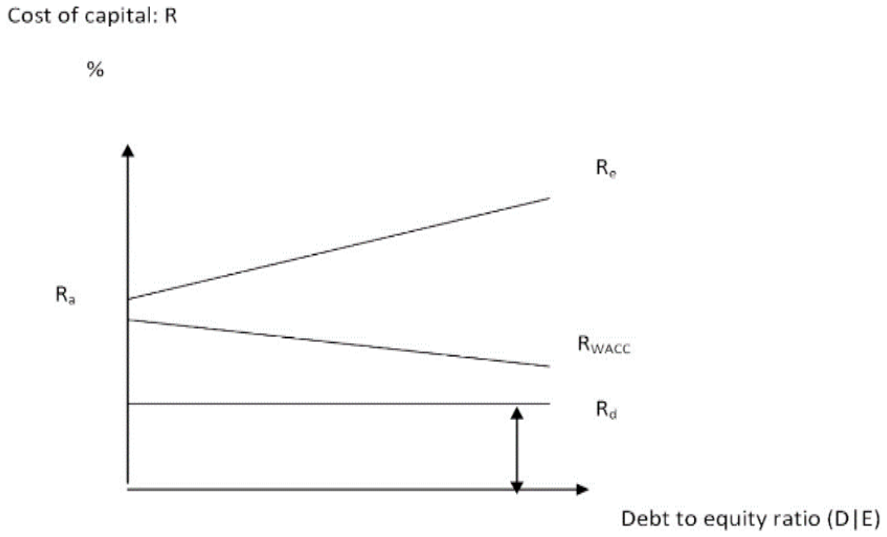


Figure 5: Modigliani and Miller Proposition II

At the end of the 1950s, Modigliani and Miller's (1958) argument was revolutionary, but since then their theory has been under extensive criticism. Over the years many theoretical and empirical kinds of research have been conducted. Many of these studies have eased some of the assumptions behind M&M propositions like perfect market conditions, which were described as a profound interpretation of reality, when in fact in the real-world market imperfections such as bankruptcy costs, tax, tax shield, agency cost, transaction cost, and information symmetry surely exist (Levinsohn, 2003, p.1). Also, the article of Osterberg and Thomson (1990)mentioned that Modigliani and Miller's propositions could not apply to all institutions and companies, particularly financial ones.

2.3 Modern Approaches to Capital Structure

Referring to capital structure, the leading study of Modigliani and Miller (1958) marks the beginning of the philosophies that are commonly regarded to be modern. They contended that in perfect capital markets, the decision to finance a firm with debt or equity had no impact on its capital structure. Various models with market inefficiencies were developed because the reality in which businesses function differs from the optimal one envisaged by Modigliani and Miller. Although a lot of studies believe in the relevance of capital structure, there isn't a complete understanding of its effects. All the theories can address a portion of the phenomena, but they still have issues with other variables and are in conflict with other theories. In this part of the study, the modern theories of capital structure, including; trade-off, pecking order, agency cost, signaling, and market timing theories will be explored.

2.3.1 Trade-Off Theory

The Modigliani and Miller theory disagreement gave rise to the first phase of the Trade-Off Theory. Initial advocates of the trade-off concept were (Kraus & Litzenberger, 1973). An advantage for debt was introduced when the corporate income tax was imposed on the initial irrelevance theory since it protected earnings from taxes. This suggested 100% debt financing because the firm's objective function is linear and there is no debt offset cost. To sidestep this exaggerated assumption Kraus & Litzenberger (1973) brought in the Static Trade-Off Theory and stated that market imperfections that are essential to a subjective explanation for the effect of capital structure on value include corporate earnings taxation and the inclusion of bankruptcy consequences. Hence they have explicitly incorporated the bankruptcy costs into their model. The Static Trade-Off concept proposes that a desirable capital structure displays a balancing situation between the benefits of debt financing and debt's costs.

The tax advantage is the most crucial benefit of debt financing because debt interest payments are tax deductible; on the contrary, dividends are not tax deductible. Reduced agency cost which is created as a result of the contrasting interests of stakeholders is considered to be another advantage of debt. Executives may not necessarily act in the firm's best interests because they are not the business's owners. Consequently, they might invest in undesirable projects when they have free cash flows. Conversely, if they have a debt to pay, managers are constrained in what they do since they are aware that creditors could force the company into liquidation (Kasaboglu, 2016).

In regards to debt disadvantage, finance practitioners are aware that as a firm's debt ratio rises, the likelihood that it would file for bankruptcy or otherwise experience financial distress also rises. When the contractual liabilities to lenders cannot be fulfilled, bankruptcy results (Haugen & Senbet, 1978). In a situation of bankruptcy, there are direct and indirect costs due to the firm's capital restructuring and ownership transfer. Reorganization costs, regulatory, and consulting expenses, and expenditures used by creditors and administrators are examples of direct costs. Indirect costs of bankruptcy are often considered to include loss of client trust, deteriorating supplier relations, and staff loss.

According to the Trade-Off Theory, the optimal level of debt is a compromise betwixt the debt financing tax advantages and the cost of bankruptcy as demonstrated in the below graph in Figure 6. Following (Myers, 1984), a firm that adheres to the Trade-Off approach, will weigh the tax benefits of debt versus the expense of bankruptcy and, as a result, determine a goal leverage ratio and progress in the direction of their determined goal over time.

As shown in Figure 6, a firm's value first rises as the ratio of debt in the capital structure does so due to the rise in the current value of the marginal tax shield. At greater debt ratios, however, the rise in the present value of the cost of financial distress will outweigh the rise in marginal benefits, and as the debt ratio rises, the firm value will fall. Consequently, the firms can upgrade their debt levels.

The Static Trade-Off Theory does not embrace the idea of target adjustment and exclusively concentrates on a single-period decision. By taking into account different timeframes the concept of Dynamic Trade-Off Theory was introduced by Fischer et al., (1989). The major goal of this theory is to show how financial choices will alter in accordance with future financial plans. It implies that the optimal capital structure will shift dramatically if the firm alters its financial margin for the following period. The optimal debt-to-equity ratio is dependent upon future expectations. If the firm intends to acquire more funds, the executives have the option of using debt or equity funding. To retain an optimal capital structure ratio, Leary & Roberts (2005) also suggest that management can periodically modify the debt level in accordance

with their financial judgment. Regardless of whether an optimal debt ratio exists, the cost to the firm of maintaining this ratio over the long run will be expensive. These expenses are transaction costs incurred to preserve desired stable leverage, which demands regular rebalancing of debt and equity (Bessler et al., 2011a). Hence, it is probable that firms' leverage ratios will diverge from the optimal leverage ratios in dynamic trade-off theories.

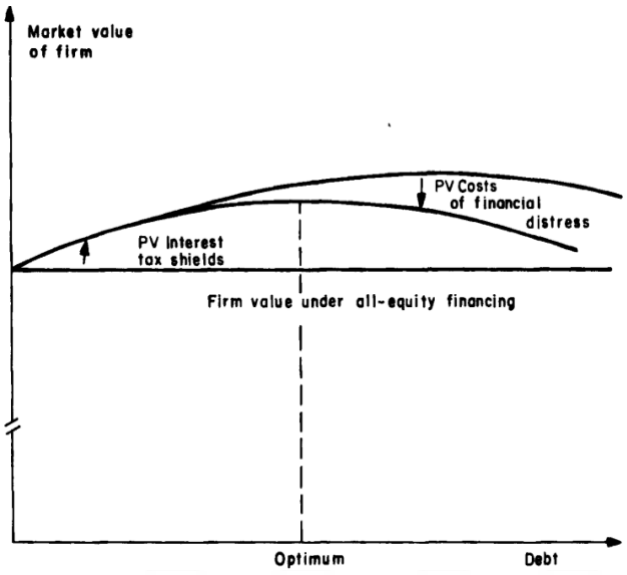


Figure 6: Static Trade-Off Theory of Capital Structure

Source: Stewart C. Myers, “The Capital Structure Puzzle”, The Journal of Finance, Vol. 39, No. 3, 1984, p.577.

2.3.2 Pecking Order Theory

Pecking Order Theory is another important study that significantly influences the related literature. Myers (1984) underlined that Donaldson (1962) should be regarded as the Pecking Order Theory's pioneer as he made the initial argument for the pecking order concept.

In their irrelevance hypothesis, Modigliani & Miller (1958) suggested that the capital market was an optimal market with no information asymmetries. Additionally, it is believed that all investors have reasonable expectations for maximizing corporate profits.

Nevertheless, according to Donaldson (1962), some information concerning financial decisions, like those of new investments, corporate risk, expectations of investments and profit return, etc., were only known by management. The precise value of a company's current assets and upcoming investments is less

known to outside investors. Donaldson's concept was further refined by Myers & Majluf, (1984) contingent on the studies of (Ross, 1977) “Signaling Theory”, and Jensen & Meckling, (1976) “Agency Theory”.

According to Myers and Majluf (1984), information asymmetry could lead to an inaccurate estimation of the firm's value. To give an example, if a firm has a new project, and issues new equity to fund it, these securities will be undervalued, because outside investors are less knowledgeable than firm insiders. Because they know little in regards with the recent project outsiders may assume that since debt is not the firm's preferred financing option, then there is risk and uncertainty in the project, hence, new investors may gain more than the net present value of the new project, by paying less for the new equity, that could result in a significant drop in share prices and a net loss to the current shareholders. As a result, firms will opt not to invest in the project although its net present value is positive. To avoid or minimize this kind of mispricing and undervaluing situation, according to the theory, the solution is to follow this sequence of financing: beginning from retained earnings when available as a first option, moving on to debt as a second option because, as opposed to equity, it is believed to be less impacted by information asymmetry (Bessler et al., 2011b), and finally, equity as a last option. From least to most impacted, these options are ranked based on the extent to which information asymmetry affects them.

To support the pecking order there are other costs to consider apart from information costs. The first is the cost of transactions. Internal funds have no transaction fees. However, there are dealer and legal costs and fees for external funds registration. Second, agency costs may make internal funds more appealing while driving up the cost of external funds. Utilizing internal resources also restricts any information from being disclosed to outsiders.

Numerous similar research in the literature on capital structure concentrates on evaluating whether the Pecking Order Theory's main prediction is true. The result reached by Myers & Majluf, (1984) is supported by Krasker, (1986) acknowledgment of the occurrence of the adverse selection challenge related to issuing risky debt and equity securities. Jarallah et al. (2019) have conducted a study on Japanese firms and the result reflects that the financing pattern is consistent with the basic pecking order model. Also, Yıldırım & Çelik (2021) have revealed in their study which was carried out on Turkish firms listed on Borsa Istanbul that the pecking order model is credible for firms’ choice behavior. The lack of an optimal capital structure in this theory is another claim made by researchers. According to Beattie et al. (2004), the pecking order concept does not support the optimal balance of debt and equity. Additionally, the company managers do not have long-term debt ratio targets in place. The least expensive financial option is sought after instead for each working term (Barclay & Smith, 2005).

2.3.3 Agency Cost Theory

Both the Pecking Order Theory and the Trade-off Theory assume that the interests of the company's management and its stockholders are completely aligned. However, such alignment is not possible in practice as it is in theory.

A modern corporation is a structure based on relationships among numerous parties, including executives, shareholders, creditors, suppliers, staff, distribution partners, and clients. Disputes of interest amongst owners and these sets of individuals are quite likely to occur. Our primary concern about these disputes is those that may have an impact on the firm's financial strategy.

As proposed by Jensen & Meckling, (1976), in a firm's finance certain agency costs result from two distinct forms of disputes: one between the management of the company and its shareholders, and the other between debt holders and shareholders.

The desire of managers to use companies' resources for their benefits, such as expensive travel, fancy offices, and premium memberships in social clubs, is one of the causes of shareholder-manager conflicts of interest. Some of the costs brought on by these conflicts between companies' shareholders and managers are; Expenses of monitoring driven by the urge of shareholders to keep track of managers' actions, bonding costs, or extra expenses like compensations paid to managers by shareholders for managers to effectively fulfill their interests, shareholders attempt to incentivize them in various ways.

Additionally, conflicts between debtholders and stockholders may arise and be managed by agencies. These include claim dilution, claim underinvestment, and asset substitution. When riskier assets are used in place of ones that are already available, asset substitution occurs, for instance, shareholders may engage in riskier activities at the possible cost of debtholders, and debtholders will be exposed to the consequences of engaging in value-decreasing projects financed by debt (Harris & Raviv, 1991). A firm would have an underinvestment issue if it chooses not to invest in assets of low risk. Debt holders favor low-risk assets because they offer consistent cash flow, but they are not favored by shareholders because they may not generate an extra return for them. A claim may be diluted in two ways. The first effect of dividend payments on debtors is a loss in cash and an increase in risk for all assets. Second, debtors automatically increase when new debt is issued.

Some agency-related theories encourage greater debt amounts. As an advantage of financing through debt, Jensen (1986) noted that because debt obligates the firm to pay out cash, it lowers the amount

of free cash flow that unethical managers can use for their purposes. In essence, managers may be disciplined by debt.

Costs associated with conflicts of interest affect the optimal capital structure for firms. The agency conflict has an impact on both firm value and capital costs. Firms should consider these costs while constructing a balanced capital structure.

2.3.4 Signaling Theory

Considering information asymmetry (Ross, 1977) proposed a contrasting assumption to Modigliani and Miller's assumption of perfect markets. Given that not everybody has access to the same information, he queried how the market dynamics should function. The core principle of the Signaling Theory is that managers or executives have access to additional information than external investors, and as a result, the investors may not be able to fully understand the traits of the firm as do managers. As a consequence, the market's evaluation of the information available to investors may not be sufficient to differentiate between firms with two distinct potentials. Hence, two firms might have identical prices, which would be unjust to the one with greater potential.

Investors can gain signals or insights from market-based financial choices to assess a firm's real value. It can be difficult for managers to establish a reliable signaling mechanism, however, increasing leverage may be a useful tool as stated by Barclay and Smith (2005). They underline that using debt as a means of financing will compel a firm to payments of fixed interest until the debt security's maturity. However, if the firm doesn't pay, the implications could be so catastrophic that insolvency might happen. Managers have a greater motivation to provide payments to stockholders when the firm is financed with equity since they can either stop making payments completely or decrease them in times of financial difficulty. For this reason, Barclay & Smith (2005) proposed higher leverage as a reliable signal or indicator of larger anticipated future cash flows.

Ross's (1977) model states that managers determine a firm's level of leverage, which serves as an effective signaling tool for prospective investors and give them insights about the firm's true value; if it is undervalued or overvalued. Also, these insights enable potential investors to improve their understanding of the risk classifications of the firms. Ross (1977) argues that capital structure and business value are positively correlated. From the perspective of the investors, they will assume that firms of high worth or value are capable of growing their levels and amounts of leverage, which will cause them to be funded mostly by debt, whilst firms of low value will be funded mostly by stocks.

Leverage growth is recognized as a signal or a sign that a firm's stock is being undervalued. Additionally, Brealey et al., (1977) revealed that leverage is the primary signal that investors recognize. Debt is a sign of rising default and insolvency risks as well. Information symmetry, according to (Fama & French, 2005), serves as the primary signaling theory indication. The firm's investment choices are significantly impacted by information symmetry.

2.3.5 Market Timing Theory

Debt and equity are treated equally under Modigliani and Miller's (1958) capital structure theory, which was predicated on the assumption that financial markets are efficient and coordinated. By easing some of the preceding theory's suppositions and taking into consideration the fact that financial markets are not efficient, firms would make financial policy decisions based on the state of the debt and equity markets, and managers would attempt to gain from market timing.

The market timing concept also referred to as the Windows of Opportunity Theory discussed by (Baker & Wurgler, 2002) is another major capital structure theory. According to the theory, firms issue new stock when their share price is high and buy back their shares when their share price is low, a practice also known as “equity market timing”. Consequently, changes in the stock price will have an impact on the firm’s funding choices and eventually the capital structure of the firm.

Two kinds of equities market timing will result in identical capital structure dynamics (Baker & Wurgler, 2002). The first is a dynamic interpretation of Myers & Majluf, (1984) that emphasizes the rational behavior of managers and investors. After an announcement of positive and useful information that reduces the information asymmetry amongst shareholders and management of the firm, equity is immediately issued. Therefore, share prices rise whenever information asymmetry decreases, as a result, firms develop their unique timing opportunities. The second is a dynamic interpretation of Baker & Wurgler, (2002) which states that, when the cost of equity is extraordinarily low, managers issue equity because they believe that investors are not rational, and then buy back equities when they think the cost is extraordinarily high. It's vital to recognize that the second perception of market timing doesn't necessarily entail that the market is inefficient. It is not demanded of managers to predict stock returns precisely. The apparent conclusion is that management believes they can time the market.

Managers revealed trying to time the equity market in research by Graham & Harvey, (2001), and the majority of those who had thought about issuing equity securities stated that the extent to which our stock is undervalued or over-valued was a key factor. In their study, Graham & Harvey (2001) also

discovered that large firms with competent treasury divisions pay special attention to market timing. This indicates that firms are more likely to time interest rates by issuing debt when they perceive that market interest rates are low.

Baker and Wurgler (2002) assessed how firms' capital structure strategies are influenced by the timing of the equity market. They discovered that companies with low levels of debt tend to raise capital at a point where their value, measured by market-to-book valuation, is high. Contrarily, high-leverage companies raise capital at a time when their market value is low. According to the study, Leverage and historical market valuation are inversely related. They concluded that capital structure is the cumulative outcome of attempts to time the equity market.

Market-to-book ratio, according to Hovakimian (2006), is a correspondent of prior market-to-book ratios weighted average. Hovakimian (2006) evaluated how market timing theory is applied in firms. The findings demonstrated an adverse relationship between the market-to-book and debt ratios. The results are in line with the study of Baker & Wurgler (2002). Moreover, Setyawan (2011) concluded in his study that market leverage is negatively affected by the market-to-book ratio, hence the market timing theory is supported. The study of Chen et al. (2013) further provided evidence that in the Taiwan stock market for a timespan between 1990 and 2001, the market timing theory has been favorable.

2.3.6 Summary of The Capital Structure Modern Theories

There are many different concepts when it comes to a firm's capital structure; nevertheless, there isn't a unified theory that all companies should follow when deciding how much debt or equity to use. Myers, (2001), states that no justification exists for embracing a single capital structure theory. The theories stress specific costs and benefits of various funding schemes, but they are not intended to be general.

The Modigliani-Miller argument established literature on the basic structure of debt and equity. A firm's capital structure is the consequence of its harmony with diverse financial sources. The costs of diverse sources of funding do not differ separately in Modigliani and Miller's perfect capital markets, thus there is no additional advantage to arbitrarily single out one over another. However, it is unquestionable that financing decision is significant, and that is because of informational asymmetries, taxes, and agency costs. Various capital structure philosophies have varying perspectives on these variables. Each focuses on certain costs and gains of alternate financing techniques.

According to the Trade-off Theory, because the cost of financial distress and taxes are crucial components of capital structure, a firm's desirable debt ratio is decided by weighing the benefits of debt

against its cost. Centered on the concerns of information asymmetry among investors and firm insiders, the Pecking Order Theory stresses that firms must adopt internal funding first since it has no cost. If internal resources are inadequate, the firm may turn to debt financing and eventually equity offerings. The Modigliani and Miller framework was expanded by the Agency Cost Theory, which argues that there are disputes between shareholders and managers since their objectives are not matched, and claims that the optimal capital structure can be achieved by balancing the benefits of debt against the agency cost of debt. Asymmetric information among investors and firm executives is another foundational component of the Signaling Theory. Thus, according to Ross (1977), executives frequently utilize leverage choices as a signal for possible investors because they believe that a firm's degree of leverage conveys signals about the underlying worth of the firm to interested parties. According to the Market Timing Theory, the process of buying back equity at discounted costs after selling it for rising prices results in a capital structure that is the aggregate impact of these efforts to time the equity market.

As mentioned by Frank & Goyal (2009), alternative theories pertain to firms in various situations. Fama & French (2005), emphasize how different studies of capital structure have comparable features and share insights that serve to clarify various components of funding choices.

3. LITERATURE REVIEW

Following the dissemination of Modigliani and Miller's prepositions, many scholars have continued to explore the interrelationship between companies' financing decisions, and financial performance and value. Some researchers have identified a negative relationship, whereas others have shown a positive one. Further, several studies discussed a significant correlation between capital structure and company performance, while others discussed an insignificant correlation.

This study will point out the findings of previous research that has been conducted on various economies, as well as focus on the recent papers in the field of study that have been carried out in emerging markets that have complementary features with the Turkish market. Also, there will be a specific section that mentions some of the explorations that have been conducted in the Turkish market.

3.1 The Influence of Financing Decisions on Financial Performance of the Firms

Krishnan and Moyer (1997) analyzed the financing decisions and corporate performance of 81 large companies from four different emerging market economies in Asia namely, Korea, Malaysia, Singapore, and Hong Kong. The findings revealed that the country of origin affects both financing decisions and financial performance. Hong Kong companies had significantly higher invested capital and returns on equity than enterprises from other countries. The financial performance discrepancies of firms from other countries were not statistically significant. Korean firms had noticeably greater levels than firms from other countries. Leverage solely does not appear to influence corporate financial performance.

Majumdar et al. (1999) investigated the correlation between capital structure debt levels and the financial performance of 1000 Indian firms. The result reported a significant negative relationship. The occurrence of this relationship is assumed to be due to the structural system of Indian capital markets, where both short-term and long-term lending entities are government-owned. It was further concluded that corporate governance frameworks that are effective in the West will not be effective in India except if the loan capital supply is privately owned.

Abor (2005) analyzed the impact of financing decisions and firms' profitability in the Ghana Stock Exchange during a period of five years between 1998 and 2002. ROE was used as a determinant of profitability, and leverage ratios were total debt to total capital, short-term debt to total capital, and long-term debt to total capital. The findings unveiled a substantial positive relationship between short-term debt and ROE, proposing that profitable firms rely more on short-term debt to fund their business activities and operations. Nevertheless, a negative correlation was observed between long-term debt and ROE. Considering the relationship between total debt and ROE, the findings reflected a significant and positive connection. In conclusion, Ghanaian profitable firms rely more on debt as their primary financing alternative, and the immense volume is depicted in short-term debt.

Zeitun and Tian (2007) examined the influence of financing decisions on the performance of non-financial Jordanian companies between 1989 and 2003. The findings reported that firms' financing decisions had a negative consequential effect on both market and accounting measures of firms' performance. Furthermore, short-term debt to total assets positively impacted the market performance gauge Tobin's Q.

El-Sayed Ebaid (2009) analyzed the impact of financing decisions on the firm financial performance of non-financial firms listed on the Egyptian Stock Exchange during the period of (1997-2005). Performance measures were ROA, ROE, and gross profit margin. Financial leverage was proxied by total debt to total

assets, short-term debt to total assets, and long-term debt to total assets. The size of the firms was used as a control variable. The results revealed that short-term debt and total debt negatively influence the firms' performance measured by ROA for the analysis period. Furthermore, the three financial leverage ratios had no significant influence on firms' performance measured by gross profit margin or ROE. Overall, financing decisions in Egypt as an emerging market have feeble to no influence on firms' performance.

Gill et al. (2011) conducted a study on a sample of American manufacturing and service industry firms. In their results, they stated that firms' financing decisions influence profitability, since in the United States interest payments on debt are tax-deductible. They used ROE as a proxy for profitability. To weigh the independent variable capital structure, debt ratios were used (short-term debt to total assets, long-term debt to total assets, and total debt to total assets). The findings propose that profitable firms rely upon debt as their primary financing alternative.

Fawzi Shubita and Maroof Alsawalhah (2012) performed a study to test the influence of financing decisions on the Jordanian industrial companies listed on the Amman Stock Exchange during the period of 2004 and 2009. ROE was used as a measure of profitability. Leverage ratios were total debt to total assets, short-term debt to total assets, and long-term debt to total assets. The findings reflect that the interrelationship between debt and profitability is substantially negative which indicates that profitable firms rely more on equity as their primary financing alternative.

Salim and Yadav (2012) studied 237 non-financial firms listed on the Bursa Malaysia to test the relationship between financing decisions and firm performance. ROA, ROE, EPS, and Tobin's Q were the four measures used for firm performance. Total debt to total assets, short-term debt to total assets, long-term debt to total assets, and growth were used to measure the capital structure. The size of firms was the only control variable used in the study. The findings revealed that the relationship between total debt, short-term debt, long-term debt, and firm performance measures ROA, ROE, and EPS is negative. However, growth had a positive relationship with the performance of all sectors studied. Also, findings reflected a significantly positive correlation between Tobin's Q and total debt, short-term debt, and long-term debt. Further, Tobin's Q had a significantly positive relationship with the control variable (size).

Chinaemerem and Anthony (2012) investigated the weight of financing decisions on the financial performance of 30 listed firms on the Nigerian Stock Exchange during the period of 2004 and 2010. The outcome revealed that there is a significant negative relationship between capital structure and firms' financial performance for the analysis period.

Pouraghajan et al. (2012) inspected the effect of financing decisions on the financial performance of 80 Iranian firms listed on the Tehran Stock Exchange between the period of 2006 and 2010. The outcome reported that there is a significantly negative interrelationship between debt ratio and financial performance. However, firm size, asset turnover, growth opportunities, and asset tangibility ratio have a significantly positive relationship with financial performance. Also, there is no significant relationship between ROA, ROE, and firm age. Additionally, study findings indicate that managers can raise shareholder wealth and accordingly boost the firm's profitability by lowering the debt ratio.

Olokoyo (2013) examined the influence of leverage on firms' financial performance of 101 non-financial firms listed on the Nigerian Stock Exchange. It was observed that leverage had a significantly negative effect on ROA. However, all leverage measures had a strongly positive relationship with Tobin's Q. Furthermore, the findings uncovered a fact that firms in Nigeria are primarily funded by equity capital or a combination of equity and short-term financing.

Sheikh and Wang (2013) performed research on 240 non-financial companies listed on the Karachi Stock Exchange between the period of 2004 and 2009 to test the influence of financing decisions on firms' financial performance. The empirical findings implied that between capital structure and firms' performance exists a negative correlation.

Al-Taani (2013) studied the impact of financing decisions on firms' financial performance of 45 Jordanian manufacturing firms listed in the Amman Stock Exchange between the period of 2005 and 2009. The findings identified that capital structure measured by total debt to equity, short-term debt to total assets, long- term debts to total assets is not a key factor in influencing how well a company performs, and there is a negative relationship between capital structure and financial performance measured by ROA and profit margin.

Fosu (2013) analyzed the interrelationship between financing decisions and firms' financial performance of 257 South African firms listed on the Johannesburg Stock Exchange during the period of 1998 and 2009. The extent of industry competition was given special consideration in the study. The outcomes stated that financial leverage significantly and positively influences firms' performance.

Hasan et al. (2014) investigated the impact of financing decisions on firms' financial performance of 36 Bangladeshi companies listed on the Dhaka Stock Exchange between 2007 and 2012. The result concluded that capital structure measured by total debt, short-term debt, and long-term debt negatively affect firms' financial performance measured by ROA, ROE, EPS, and Tobin's Q. There was a single exception found which was a positive relationship between EPS and short-term debt.

Chadha and Sharma (2015) studied the influence of financing decisions or financial leverage on the financial performance of 422 manufacturing firms listed on the Bombay Stock Exchange during the period of 2003-2013. ROA, ROE, and Tobin's Q were used as proxies to measure financial performance. Financial leverage was weighed as a fraction of total debt to total equity. Control variables were ownership structure, asset turnover, growth, tangibility, age, and size. The findings unveiled that debt does not influence financial performance criterions Tobin's Q and ROA. Thus, it is consequentially and negatively associated with ROE. Furthermore, it was found that all the control variables are decisive elements of firms' financial performance in the Indian manufacturing sector.

Yazdanfar and Öhman (2015) explored the relationship between the levels of debt and financial performance of 15,897 small and medium-sized Swedish enterprises functioning in five different industry sectors during the period of 2009-2012. The outcome of the study showed that short-term debt, long-term debt, and trade credit had a negative impact on firms' profitability. Furthermore, it was stated that SME investors and executives frequently use equity capital to fund their companies because a large debt ratio appears to raise agency costs and the possibility of losing control of the company.

Le and Phan (2017) carried out research in Vietnam to analyze the influence of financing decisions on firm performance of all the non-financial listed firms in the Vietnam Stock Market for a period between 2007 and 2012. ROE, ROA, and Tobin's Q were used as measures of performance. To measure capital structure short-term debt, long-term debt, and total debt to book value and market value of total assets were used. The findings of the study demonstrate that in a developing market like Vietnam, the distress cost of debt exceeds the benefit of tax saving.

Ajibola et al. (2018) tested the correlation between financing decisions and firms' financial performance of 10 manufacturing companies listed on the Nigerian Stock Market in the timespan between 2005-2014. The results indicate that ROE and short-term debt ratio have a positive statistically insignificant association, but there is a positive statistically significant relationship between total debt ratio, long-term debt ratio, and ROE. Additionally, there was a weak negative correlation between all the capital structure proxies of total debt, short-term debt, long-term debt, and ROA, making ROE a more accurate indicator of performance. According to the study's findings, businesses should use more long-term debt because it benefits their financial success. Therefore, it suggests that every company chooses wisely when it comes to their financing decisions to be profitable and run their business efficiently.

Aziz and Abbas (2019) analyzed the correlation between debt financing and financial performance of 360 companies listed on the Pakistani Stock Exchange from 2006 to 2014. The research concluded that

debt financing has a significantly negative relationship with firms' performance. Since internal financing is the most affordable and sustainable source of funding in Pakistan, the study's results suggest that businesses should depend more on it.

Ayaz et al. (2021) studied the influence of leverage on firms' financial performance of 528 non-financial companies listed on the Bursa Malaysia Stock Exchange between 2005 and 2016 and framed their research under the Agency Cost and Trade-Off theories. The results demonstrate that the leverage ratio enhances company performance, which is associated with leverage functioning as an efficient approach in preventing managers from establishing their empires. This advantage for Malaysian businesses is significantly higher than the cost of debt financing. Furthermore, the research indicates that when leverage levels exceed the optimal level, a previously positive association between leverage and performance transforms into a negative association.

Boshnak (2023) analyzed the influence of financing decisions on firms' financial performance of 70 Saudi no-financial companies listed on the Saudi Stock Exchange during the period 2016 and 2020. The findings reported that total debt, short-term debt, long-term debt, and debt-to-equity ratios all have a significantly negative relationship with firms' operational performance proxied by ROA. Also, total debt, long-term debt, and debt-to-equity have a significantly negative relationship with firms' financial and market performance proxied by ROE and Tobin's Q. The findings also demonstrate that while asset tangibility and liquidity have a less clear-cut effect on business performance, rises in insider ownership levels, sales growth, firm age, and size generally have a positive influence on firm performance.

3.2 The Influence of Financing Decisions on Firm Value

Antwi et al. (2012) explored the correlation between financing decisions and firm value of 34 companies listed on the Ghana Stock Exchange. The outcome of the research revealed that long-term debt is a primary determinant of a firm's value. Furthermore, equity capital as an element of capital structure is significant to the value of a firm. As a result of the study's outcomes, corporate executives are recommended to use long-term debt more frequently than equity capital to fund their businesses because it has a greater influence on a firm's value.

Adetunji et al. (2016) performed a study to test the influence of financial leverage on firms' value of companies listed on the Nigerian Stock Exchange between 2007 and 2012. The results stated that leverage significantly influences firms' value. According to the study, when a company must fund long-term initiatives, leverage is a superior form of funding to equity. Moreover, several economic conditions could

have adverse consequences on the profitability of Nigerian companies, therefore using debt finance in those companies could have unfavorable outcomes like bankruptcy and poor firm value. To maximize the value of the company, the research advises that financial leverage be optimized by the company's executives.

Vo and Ellis (2017) explored the relationship between financing decisions and the firm value of Vietnamese companies listed on the Ho Chi Minh City Stock Exchange during the period 2007 and 2013. The empirical findings demonstrated a negative relationship between leverage and shareholder value, indicating that debt funding has a significantly higher cost than benefit for Vietnamese companies. Furthermore, the results disclosed that low-leveraged companies have higher chances of creating value for their shareholders.

Hirdinis (2019) conducted a study on 47 mining companies listed on the Indonesia Stock Exchange during the period 2011 and 2015 to observe the impact of financing decisions and the size of firms on firms' value by using profitability as a moderator. The findings reported that capital structure has a significantly positive impact on firm value, whilst firm size has a significantly negative impact on it. Also, firm size has a significant positive impact on profitability, while profitability has no significant impact on firm value. However, profitability cannot mediate the impact of firm size and capital structure on firm value.

Al-Slehat (2019) executed research to identify the effect of financial leverage, structure of assets, and size on the values of industrial firms listed on the Amman Stock Exchange between the period of 2010 and 2018. The results revealed that financial leverage has no effect on the value of firms and there is a negative interrelationship between Tobin's Q and financial leverage. Moreover, both the size and structure of assets were found to affect firms' value positively. As stated by the report, firms need to identify a suitable composition of debt and equity to secure their long-term existence and, eventually, their growth.

3.3 The Influence of Financing Decisions on Financial Performance and Value of Turkish Companies

Sayilgan et al. (2006) studied 123 Turkish manufacturing companies listed on the Istanbul Stock Exchange. The panel data results reported a negative relationship between leverage measured by the ratio of total debt to total equity and profitability measured by the ratio of earnings before interest, tax, and depreciation to total assets.

Topal (2006) also investigated the impact of financial leverage on firms' profitability of Turkish manufacturing companies during the period of 1997-2003. The result stated that when leverage increases, there are no changes in gross profit margin and ROA, whereas the profitability ratio decreases.

Al Bayrak and Akbulut (2008) studied companies from the industrial and service sectors listed on Borsa Istanbul. The findings revealed that while the relationship between capital structure and ROA is found to be negative, the relationship is found to be positive between capital structure and ROE.

In the study of Birgili and Düzer (2010) on 58 firms listed on Borsa Istanbul during the period of (2001-2006), to test the relationship between financial ratios and firms' value. The outcomes disclosed that there is a negative relationship between leverage and firms' value.

Meder Çakir and Küçükkaplan (2012) examined the relationship between components of working capital and the valuation and profitability of 122 manufacturing companies listed on Istanbul Stock Exchange. The analysis reported that profitability is negatively affected by the leverage ratio, also there was no significant relationship between ROE, and market value with the elements of working capital.

Aydin (2013) carried out a study on 104 companies listed on Borsa Istanbul during the period between 1992 and 2011, to examine the effect of capital structure on the profitability of the studied companies during years of crisis. The findings of the analysis revealed that companies chose equity over debt even in years of crisis. Furthermore, the choices of the companies caused the ROA and Return on sales to be positively affected.

Kisakurek and Aydin (2013) analyzed the relationship between financing decisions and firms' profitability of 104 firms listed on Borsa Istanbul for a timespan from 1992 to 2011, the study gave special consideration to the crisis years. As a result, it was observed that the firms in the sample prioritized using equity in their capital structure during the investigation period, which included the crisis years. Furthermore, it was found that capital structure is inversely correlated to ROE but linearly correlated to ROS and ROA.

Ayrıçay and Türk (2014) examined the relationship between financial ratios and firm' value of 56 industrial companies listed on Borsa Istanbul between 2004 and 2011. The investigation unveiled a positive correlation between the liquidity ratio and market value, and a negative correlation between leverage and market value.

Uluyol et al. (2014), researched five different sectors listed on the Istanbul Stock Exchange including textile, food, IT, mining, and construction for the period of 1991-2012, to explore the influence of the ratios of financial leverage on ROE. The research revealed that ROE was significantly and negatively impacted by the leverage ratio in the sectors of textile, food, mining, and IT, however, ROE was significantly and positively impacted by leverage ratio in the construction sector.

Ahmed Hassan (2015) studied the Turkish food manufacturing companies listed on Borsa Istanbul from 2008-2013 to determine how the company's profitability is affected by capital structure decisions. The panel data findings revealed a non-significant relationship between ROA as a proxy of profitability and short-term, long-term, and total debt. Furthermore, there was a significantly negative relationship between ROE and short-term, and long-term debt.

Cobanoglu (2015) investigated the impact of capital structure decisions on the profitability of 117 companies listed on Borsa Istanbul from 2006 to 2014. The outcomes of the analysis reported that profitability is negatively affected by capital structure. In addition, a negative relationship between companies' market value and short-term debt was detected, whereas a positive relationship with long-term debt existed.

Tifow and Sayilir (2015) investigated the relationship between financing decisions and the financial performance of 130 manufacturing companies listed on Borsa Istanbul between 2008 and 2013. The result indicated that a significant negative correlation exists between the financial leverage ratio short-term debt-to-total assets and financial performance proxies of ROA, EPS, and Tobin's Q. In addition, there is a significantly negative relationship between the long-term debt-to-total assets ratio and ROE, EPS, and Tobin's Q. However, the long-term debt-to-total assets ratio has a significant positive relationship with ROA.

Avcı (2016) researched the influence of financing decisions on firms' financial performance of 110 industrial companies listed on Borsa Istanbul from 2003 to 2015. The findings showed that debt, both short-term and long-term have an adverse and statistically significant influence on ROE and ROA. This shows that the cost of both short-term and long-term debt outweighs the ROE and ROA, which substantially reduces firm performance.

Karadeniz and Kaplan (2016) studied the influence of capital structure on the profitability of tourism companies listed on Borsa Istanbul from 2009 to 2015. The results reported a non-significant impact of long-term debt on all profitability proxies. However, short-term debt and total debt had a negative effect on ROA, net profit margin, and basic earnings power.

Nassar (2016) explored the effect of financing decisions on the financial performance of 136 industrial companies listed on Borsa Istanbul for the period between 2005 and 2012. The analysis reported that the relationship between capital structure and firms' financial performance is significantly negative.

Senbabaoglu (2016) investigated the impact of capital structure on companies' return performance of companies listed in BIST. Consistent with the Pecking Order Theory a negative relationship was found between leverage and performance indicators which reflects that successful companies will prioritize internal forms of finance before turning to external forms.

Tezcan (2017) studied the effect of the 2008 financial crisis on the relationship between financing decisions and performance of companies listed on BIST 100 for the period of 2002-2007. Capital structure proxied by the ratio of debt to equity had a negative impact on the financial performance of companies proxied by ROA, ROE, and Tobin's q.

Apan and İslamoğlu (2018) conducted a study on energy companies listed on Borsa Istanbul to examine the effect of financial characteristics on companies' profitability. The panel data findings reported a negative relationship between leverage ratios and profitability proxied by ROA.

Ersoy (2019) performed research on Turkey's top 500 industrial companies listed by the Istanbul Chamber of Industry to find out the correlation between financing decisions and financial performance. The results reported a significantly negative correlation between the financial leverage ratio and performance proxied by ROA, ROE, and return on sales.

Mustafa (2019) carried out a study on 120 manufacturing companies listed on Borsa Istanbul from 2011-2017 to explore the influence of capital structure on companies' financial performance. There was a negative relationship between capital structure and performance measured by ROA, ROE, net profit margin, and Tobin's q.

Mercimek (2020) examined the relationship between the value of 26 companies listed on the Istanbul Stock Exchange from 2012-2017 and their capital structure. The outcomes reported a negative relationship between leverage ratio and firms' value proxied by market-to-book value. However, a positive relationship existed between leverage ratio and market capitalization which is another indicator of firms' value.

Tolog (2020) analyzed the correlation between capital structure and performance of 70 companies listed on Borsa Istanbul for a period between 2008 and 2016. The study reported significantly negative relationships between proxies of financial leverage and financial performance.

Abdulqader (2022) investigated the correlation between financing decisions and the profitability of manufacturing companies listed on the Istanbul Stock Exchange for eight years. The relationship between short-term debt and long-term debt with ROE was significantly positive in contrast the relationship was

significantly negative with ROA. Moreover, the relationship between total debt to total equity and ROE was negative in contrast the relationship between total debt to total equity and ROA was positive.

Rashid (2022) researched the manufacturing sector in Turkey and Germany to explore how the companies' financial performance is influenced by capital structure. The companies were listed on the Turkish and German stock exchanges from 2011 to 2020. The finding reported a negative relationship between total and long-term debt and profitability.

4. METHODOLOGY

Research methodology reflects the approaches, procedures, and means utilized to gather and examine data to address a research subject or hypothesis. Numerous research methodologies exist, encompassing the quantitative approach, qualitative approach, and mixed-methods. Each approach has its advantages and disadvantages, and the selection of methodology is influenced by the subject of the study, the nature of data that must be gathered, the resources that are accessible, and the research design.

In this section of the study, the distinguishing characteristics of panel data methodology will be highlighted and a brief discussion of the commonly accessible forms of data utilized in empirical analysis will be given. The most suitable estimation technique for the study will be chosen depending on the structure of our data by evaluating several estimation approaches to utilize the panel data approach.

4.1 Panel Data Methodology

The most prevalent forms of data for empirical analysis are time series, cross-section, and panel data. Investigating the relationships among data can be done via panel data analysis. Panel data also goes by the terms cross-sectional time series data or longitudinal data. In time series data the value of one variable or more can be detected over a period of time, however, the value of one variable or more can be detected for various sample units at the same point in time in cross-section data(Gujarati, 2003, p. 636). Further, both time series and cross-sectional scopes are encompassed in panel data (Wooldridge, 2003, p. 426). Panel data deals with combining information on a cross-section of components over various time periods (Baltagi, 2001, p. 1), i.e., the same cross-sectional components are examined for a period of time in panel data.

In comparison to time series and cross-section data, panel data possess some primary advantages:

- By using panel data, a researcher can integrate a time series of cross-section observations in which he/she can be provided with variability, more informative data, an increased degree of freedom, less collinearity between variables, and enhanced performance of econometric measures (Hsiao, 2003, p. 3; Gujarati, 2003, p. 637).
- Time series and cross-section analysis do not handle specific variety or heterogeneity and therefore, have the exposure to attaining biased outcomes. In contrast, panel data imply that countries, companies, and individuals are heterogenous, and can handle a specific heterogeneity (Baltagi, 2001, p. 5).

- Panel data can reduce the influence of excluded factors. It provides details on both the intertemporal behavior and the uniqueness of the companies, and it might make it possible to limit the impact of factors that are either omitted or not noticed (Hsiao, 2007, p. 4).
- When using classic time series and cross-section data some effects are commonly not recognized, however, panel data can recognize and compute these effects (Baltagi, 2001, p. 7; Gujarati, 2003, p. 638).
- More complex behavioral hypotheses can be created and tested using panel data models than with just cross-section or time series data (Baltagi, 2001, p. 7; Hsiao, 2007, p. 3).
- Considering panel data are typically obtained on micro levels including individuals and companies, numerous parameters can be evaluated more correctly at the micro level, and biases caused by aggregation over individuals or companies are eradicated (Baltagi, 2001, p. 7).

To enhance empirical analysis in such a manner that would not be possible if only cross-sectional or time series data were utilized, we opt to embrace panel data frameworks due to their positive benefits.

4.2 Data and Variables Description

This study was conducted for 138 non-financial companies listed on Borsa Istanbul for the period between 2009 and 2022. Data was extracted from the Thomson Reuters database which is an inclusive database that encompasses information on numerous financial indicators of companies worldwide.

The study aims to investigate the impact of financing decisions on financial performance and value of selected companies. Return on assets (ROA) and earnings per share (EPS), are two dependent variables that will be adopted as indicators of companies' financial performance. Market capitalization is a third dependent variable that will be adopted as an indicator of companies' value. ROA is a profitability ratio and as such gauges the return on investment of a company. Specifically, ROA measures a company's operating efficiency regardless of its financial structure and is calculated by dividing a company's net income by its total assets. Short et al. (2007) examined a lot of earlier studies and concluded that ROA is one of the most commonly used indicators of a company's performance measurement. Numerous academicians have carried out similar studies on the subject of financing decisions and have also employed ROA as an accounting-based performance indicator (Mehran, 1995; Krishnan & Moyer, 1997b; Topal, 2006; Zeitun and Tian, 2007; Al bayrak and Akbulut, 2008; El-Sayed Ebaid, 2009; Olokoyo, 2013; Kisakurek and Aydin, 2013; Tifow and Sayilir, 2015 Chadha and Sharma, 2015; Le and Phan, 2017; Boshnak, 2023).

On the other hand, EPS is calculated as net income divided by the total shares outstanding. Similar to past studies EPS has been adopted as an accounting-based indicator of a company's performance (Saedi and Mahmoodi, 2009; San and Heng, 2011; Salim and Yadav, 2012; Hasan et al., 2014; Nassar, 2016; Aziz and Abbas, 2019b).

Market Capitalization represents the market value of the requested issue share type. It is calculated by multiplying the requested share type by the latest close price. This item supports default, free float, and outstanding shares types. The default shares type is the most widely reported outstanding shares for a market and it's the most commonly issued outstanding, or listed shares. In line with many previous studies that have adopted both accounting-based and market-based indicators of performance and/or value (McConnell & Servaes, 1990; Zeitun & Tian, 2007; Sheikh & Wang 2013; Le & Phan, 2017; Boshnak, 2023) in this study market capitalization is used as a market-based indicator of the firm value.

In line with abundant previous studies, the independent variables of the study is financing decision or capital structure of the selected companies which is proxied by the ratio of total debt to total assets (El-Sayed Ebaid, 2009; Gill et al., 2011; Salim & Yadav, 2012; Olokoyo, 2013; Fosu, 2013; Sheikh & Wang 2013; Hasan et al., 2014; Le & Phan, 2017; Aziz & Abbas, 2019b).

Based on numerous past studies, size, age, and current ratio, are determined to be the three control variables of the analysis. Size is measured as the natural log of total assets (Zeitun & Tian, 2007; King & Santor, 2008; El-Sayed Ebaid, 2009; Salim & Yadav, 2012; Fosu, 2013; Haron, 2014; Hasan et al., 2014; Chadha & Sharma, 2015; Aziz & Abbas, 2019b). Age is measured as the number of years since the company was incorporated to each year of the period under study (Majumdar et al., 1999; Pouraghajan et al., 2012; Yazdanfar & Öhman, 2015b). Current ratio is calculated as current assets over current liabilities (Fazlzadeh et al., 2011; Le & Phan, 2017; Vo, 2017; Haron, 2014; Khadijah Mohd Azhari et al., 2022; Pathak & Chandani, 2023).

All the variables utilized in the study are demonstrated in Table 1 below with their abbreviations and definitions.

Table 1: Variables

Variable	Abbreviation	Definition
Dependent Variables		
Return on Assets	ROA	Net income / Total assets
Earnings Per Share	EPS	Net income / Total shares outstanding
Market Capitalization	MARKETCAP	Multiplying the requested share type by the latest close price
Independent Variable		
Capital Structure	CS	Total debt to total assets
Control Variables		
Size	Size	Natural log of total assets
Age	Age	Number of years since the company was incorporated to each year of the period under study
Liquidity (Current ratio)	CR	Current assets over current liabilities

4.3 Hypothesis Development and Research Design

In the following subsections, the hypothesis development and the research design will be thoroughly explained.

4.3.1 Hypothesis Development

The outcomes of empirical research on the correlation between capital structure and company performance are diverse and conflicting. Given that most capital structure studies and empirical research carried out in developed nations claim a positive linkage between financing decisions (capital structure) and firm performance/value (Berger & Bonaccorsi di Patti, 2006; Margaritis & Psillaki, 2010; Gill et al., 2011), several investigations looking into this relationship in developing nations and emerging markets have found a negative relationship (Majumdar et al., 1999; Zeitun & Tian, 2007; Abor, 2007). In this study, we expect that financing decisions (capital structure) will have a statistically significant impact on companies' financial performance and value, therefore, it is hypothesized that:

H1: Capital structure affects the financial performance of firms.

H2: Capital structure affects the firm value.

4.3.2.

This study aims to investigate the impact of financing decisions (capital structure) on companies' financial performance and value. To empirically examine the hypothesis generated three models were developed. Models (1) and (2) are developed to assess the impact of financing decisions represented by the ratio of total debt to total assets, and company financial performance proxied by ROA, and EPS. Model (3) is developed to assess the impact of financing decisions represented by the ratio of total debt to total assets, and company value proxied by market capitalization. The numerical representation of the models developed can be seen below;

$$ROA_{it} = \beta_0 + \beta_1 CS_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 CR_{it} + \epsilon_{it} \quad (1)$$

$$EPS_{it} = \beta_0 + \beta_1 CS_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 CR_{it} + \epsilon_{it} \quad (2)$$

$$MARKETCAP_{it} = \beta_0 + \beta_1 CS_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 CR_{it} + \epsilon_{it} \quad (3)$$

The problem of multicollinearity was addressed in the early phases of the study through the use of Variance Inflation Factor (VIF) testing. Multicollinearity, which can result in skewed models, happens when there is a significant correlation between independent and control variables. The VIF test aids in determining how serious multicollinearity is. When the VIF values in this instance were checked, it was found that they were lower than 5 (VIF<5), suggesting that the model did not contain multicollinearity. This is a significant finding since multicollinearity can make it difficult to determine the underlying relationships between variables, which might compromise the validity of the findings (López, 2021).

Moving on to the next step, the presence of unit and time effects in the model is investigated through the Likelihood-ratio test. The Likelihood-ratio test is a statistical test used to assess whether the inclusion of unit and time effects significantly improves the model's fit. The results of this test indicated the presence of both unit and time effects in the first model where ROA is the dependent variable and unit effect in the second and third models where EPS and market capitalization are the dependent variable, suggesting that these factors play a significant role in shaping the dependent variable (Tatoğlu, 2020).

The Hausman test is performed to further improve the model and choose the best estimator to be utilized. To determine whether the model should be stated as a fixed effects model or a random effects model, the Hausman test is used. The model should be stated as a two-way fixed effects model with unit and time effects, according to the findings of the Hausman test. This suggests that the model takes into

consideration both the time-specific features and the unique properties of the units in the panel data (Tatoğlu, 2020).

Subsequently, several tests are conducted to assess whether the model deviates from the fundamental assumptions of the panel data model. One such test is the Jarque-Bera normality test, which examines whether the distribution of the dataset follows a normal distribution. The results of this test indicated that the dataset is normally distributed. This is an important assumption for many statistical models as it allows for the application of various estimation techniques and hypothesis testing procedures (Longhi & Nandi, 2014).

Heteroskedasticity, the presence of varying levels of dispersion in the error term across observations, was examined using the Wald test. The Wald test provides insights into whether heteroskedasticity is present in the model (López, 2021). The findings of this test supported the presence of heteroskedasticity in the model, indicating that the variability of the error term is not constant across observations. This can have implications for the efficiency and reliability of the estimated coefficients.

To investigate the issue of cross-sectional independence, three alternative tests were conducted: the Pesaran test, the Friedman test, and the Frees test. These tests are specifically designed to assess whether there is cross-sectional independence in the panel data model. The results of these tests revealed that the model does not satisfy the assumption of cross-sectional independence, indicating that the observations are not independent of one another. This finding is crucial as it highlights potential issues related to the violation of this assumption (Tatoğlu, 2020).

Finally, tests for autocorrelation are carried out using the Durbin-Watson test and Baltagi's LBI test. Autocorrelation refers to the correlation between error terms of observations at different time periods. The results of these tests indicated the presence of autocorrelation in the model, suggesting that the errors in the model are not independent across time periods. Autocorrelation can introduce bias in the estimated coefficients and lead to inefficiency in the model's predictions (Longhi & Nandi, 2014).

The panel data model was re-estimated using Driscoll-Kraay standard errors to account for these departures from the assumptions. This reliable estimate method accounts for cross-sectional dependency, autocorrelation, and heteroskedasticity (Tatoğlu, 2020). The model makes an effort to mitigate the effect of these variations and offer more trustworthy and accurate estimations by using Driscoll-Kraay standard errors.

The approach used in this study generally takes into consideration the unique properties of the panel data, such as balanced data, time and unit fixed effects, heteroskedasticity, autocorrelation, and cross-sectional independence. To generate accurate and effective parameter estimates, the fixed effects estimation approach, robust standard errors, and suitable techniques to address autocorrelation and cross-sectional independence are used.

5. EMPIRICAL RESULTS

5.1 Descriptive Statistics

Table 2 below reflects the descriptive statistics of 138 non-financial companies in Turkey. The result of the descriptive statistics mirrors the mean, maximum, minimum, and standard deviation of the dependent, independent, and control variables for the period of 2009 to 2022. Capital structure which represents the ratio of total debt to total assets reported an approximate mean value of 0.56, which means that on average more than half of companies assets were financed by debt, maximum value of 4.3974 showing that in some companies the amount of debt has even surpassed the value of their total assets. Market capitalization which is calculated by multiplying the requested share type by the latest close price reported a mean value of approximately 2.15 billion Turkish Liras, a maximum value of 355 billion Turkish Liras, and a minimum value of 0.94 million Turkish Liras. ROA's result which is calculated by dividing a company's net income by total assets revealed that on average companies make 0.046 return from their total assets, maximum value of 0.52 which is slightly above half the value of their total assets, a minimum value of -2.05 meaning that some companies reported a negative earnings. EPS which is calculated as net income divided by the total shares outstanding reported that on average a company's share earns 0.22, maximum value of 20.86, a minimum value of -2.05. Current ratio which is calculated as current assets over current liabilities reported approximately a mean value of 2.36 such an average is a good sign because it reflects the ability of the companies to meet their short-term obligations, a maximum value of 120.77, a minimum value of 0.033. Size which is calculated as the natural log of total assets reported a mean value of 19.30318, maximum value of 24.15544, and minimum value of 13.02884. Age which is calculated as the number of years since the company was incorporated to each year of the period under study reported the average age of the companies studied is 39.98550, the oldest company age is 87, and the newest is 3.

Table 2: Descriptive Statistics

	Mean	Maximum	Minimum	Standard Dev.
Capital structure	0.56258	4.39744	0.00566	0.30320
Market Capitalization	2,146,446,095	355,256,000,000	935,713.4478	17,310,839,690
ROA	0.04676	0.52718	-2.05094	0.11873
EPS	0.22745	20.86422	-2.05662	1.01079
Current Ratio	2.35687	120.76967	0.0317	5.69933
Size	19.30318	24.15544	13.02884	1.68438
Age	39.98550	87	3	14.37987

5.2 Empirical Analysis and Interpretations

This section represents the main findings reached by running panel data regression on three models to identify the extent to which financing decisions impact the financial performance and value of 138 non-financial companies listed on Borsa Istanbul through the period 2009-2022.

The findings of Model 1 panel data analysis utilizing the Diriscoll-Kraay standard error method are shown in Table 3. In this model, ROA is used as a proxy for firm performance and is utilized as the dependent variable of the analysis, whereas capital structure which represents financing decisions of the firms calculated by total debt to total assets ratio is used as the independent variable. On the other hand, current ratio, size, and age are included in all models as the control variables of the study. The coefficient, standard error, and t-statistics of each variable are listed in Table 3. The F statistics of 33.44 and a probability value of 0.0000 imply that the panel data model as a whole is interpretable and statistically significant. With a P>|t| statistics value of 0.000, the independent variable capital structure appears to have a significantly negative relationship with the accounting-based performance indicator ROA, which is consistent with the findings in the studies of Zeitun & Tian (2007), El-Sayed Ebaid (2009), Salim &Yadav (2012), Pouraghajan et al. (2012), Olokoyo (2013) and Le & Phan (2017). Regarding the control variables, current ratio with a P>|t| statistics value of 0.222 is found not to have any significant impact on the financial performance of the selected firms. On the other hand, at a 10% significance level, size of the selected firms appears to have a significantly positive relationship with ROA which is in line with the studies of Gleason et al. (2000), Zeitun & Tian (2007), Salim & Yadav (2012),Aziz and Abbas (2019b). Similarly, with a t statistics value of 0.000,

the control variable age appears also to have a significantly positive relationship with ROA, as in the study of Pouraghajan et al. (2012).

Table 3: Results of Model 1. Regression with Driscoll-Kraay standard errors

Dependent variable: ROA

Variable	Coefficient	Standard Error	P>|t| Statistics
Capital structure	-.3222939	.0370071	0.000
CurrentRatio	-.0012184	.0009503	0.222
Size	.0208476	.0114448	0.092
Age	.0080518	.0015011	0.000
Constant	-.4934251	.1802981	0.017
Number of obs	1932	F(4, 13)	33.44
Number of groups	138	Prob > F	0.0000

The findings of panel data analysis for Model 2 utilizing the Diriscoll-Kraay standard error method are shown in Table 4. In this model, EPS is used as the dependent variable of the analysis to represent financial performance of the selected companies. Whereas capital structure is the independent variable as in the previous model. The F statistics of 20.36 and a probability value of 0.0000 imply that the panel data model as a whole is interpretable and statistically significant also for the second model. With a P>|t| statistics value of 0.013, the independent variable capital structure appears to have a significantly negative relationship with the accounting-based performance indicator of EPS. This result is in line with the studies of Salim & Yadav (2012), Hasan et al. (2014), Nassar (2016), and Aziz & Abbas (2019b). With a P>|t| statistics value of 0.064, the current ratio appears to have a significantly positive relationship with EPS, similar to the findings of Le & Phan (2017) who found a positive relationship between firms' liquidity and their financial performance. Both of the other two control variables; size and age are found to have a significantly positive relationship with EPS which is in line with the evidence revealed in the studies of Aziz & Abbas (2019b) and Pouraghajan et al. (2012).

Table 4: Results of Model 2. Regression with Driscoll-Kraay standard errors

Dependent variable: EPS

Variable	Coefficient	Standard Error	P>|t| Statistics
Capital structure	-.4258415	.1473885	0.013
CurrentRatio	.0057601	.0028403	0.064
Size	.1737635	.0276194	0.000
Age	.0192616	.0046527	0.001
Constant	-3.670921	.507618	0.000
Number of obs	1932	F(4, 13)	20.36
Number of groups	138	Prob > F	0.0000

The findings of Model 3 panel data analysis utilizing the Diriscoll-Kraay standard error method are shown in Table 5. In this model where market capitalization is the dependent variable of the analysis is utilized to represent firm value. On the other hand, similar to the first two models, the independent variable is the capital structure of the selected companies calculated by total debt to total assets. With respect to control variables, liquidity is proxied by current ratio, size measured as natural logarithm of total assets, and age of the firms are incorporated into the model. The coefficient, standard error, and t-statistics of each variable regarding Model 3 are listed in Table 5 below. The F statistics of 20.36 and a probability value of 0.0000 imply that the panel data model as a whole is interpretable and statistically significant. With a P>|t| statistics value of 0.013, the independent variable capital structure appears to have a significantly negative relationship with the companies' value market-based indicator of market capitalization. This result is consistent with the findings of Titman (1984), Rajan & Zingales (1995), Booth et al. (2001), Huang & Song (2006), Oino & Ukaegbu (2015), and Vo & Ellis (2017) who have used numerous proxies to investigate the impact of financing decisions on companies' value and reported the same result. Moving to the control variables liquidity proxied by current ratio is found not to have any significant relationship with firm value. However, with a P>|t| statistics value of 0.000, size appears to have a significantly positive relationship with market capitalization of the selected companies as the findings of the studies by Hirdinis (2019) and Al-Slehat (2019). Similarly, with a P>|t| statistics value of 0.001, the control variable age also found to have a significantly positive relationship with market capitalization.

Table 5: Results of Model 3. Regression with Driscoll-Kraay standard errors

Dependent variable: Market Capitalization

Variable	Coefficient	Standard Error	P>|t| Statistics
Capital structure	-.6490000	.4100000	0.013
CurrentRatio	.7623903	.5697495	0.204
Size	.10700000	.3650000	0.012
Age	.133000000	.3680000	0.003
Constant	-.23400000	.8140000	0.013
Number of obs	1932	F(4, 13)	5.04
Number of groups	138	Prob > F	0.0000

It can be concluded that debt as a component of capital structure which is proxied by the ratio of total debt to total assets has a significant and negative relationship with financial performance and firm value proxies in the three models constructed in this study. In other words as debt levels of the company increase the financial performance and value of that company decreases. The results are consistent with the Pecking Order Theory which states that companies should utilize their internal alternatives of finance, then debt as a second alternative, and finally equity as a last alternative because it is assumed to be affected the most by information asymmetry. Thus, based on the findings for the selected companies in the analysis period, it can be stated that financial managers and decision-makers of Turkish companies should have maintained low levels of debt and concentrated on funding their operations through internal alternatives if available to enlarge the wealth of the shareholders. The control variables size and age have a significantly positive relationship with the financial performance and firm value indicators in all the models of the study. The positive influence of size and age means that larger and older Turkish companies in the sample studied, experience better financial performance and increased value. It can related to the arguments such as larger companies in size may have more diversified alternatives for investment, products, and markets, better administration, and enjoy larger economies of scale. Furthermore, older companies by age may be more able to capitalize on economic advantages due to their experience, have greater access to resources, and use the influence of their reputation.

6. CONCLUSION

In the real business world, every company requires funding streams to continue operating, typically companies acquire capital through different alternatives consisting of debt and equity. The combination of these alternatives is commonly recognized as capital structure, and a lot of attention by scholars has been drawn to the topic of capital structure since the 1950s. In literature, the fundamental topic of the debate has always been questioning if there is a specific combination of debt and equity that maximizes a company's performance and/or value. Plentiful studies have been conducted in developed and developing countries to investigate the impact of financing decisions (capital structure) on a company's financial performance and value.

In this study, by utilizing panel data methodology, the impact of financing decisions (capital structure) on the financial performance and value of 138 non-financial companies listed on Borsa Istanbul were analyzed through three models for the period between 2009 and 2022. To measure capital structure, the ratio of total debt to total assets was used as the independent variable. In the first model which was designed to test the impact of capital structure on financial performance, return on assets (ROA) was used as an accounting-based indicator of performance, whereas in the second model earnings per share (EPS) was used as a second accounting-based indicator of performance to also test the impact of capital structure on financial performance. Furthermore, the third model was designed to test the impact of capital structure on a company's value, and market capitalization was used as a market-based indicator to measure firm value. In addition, current ratio, size, and age were all used as control variables.

The panel data outcomes of the study reveal that a significantly negative relationship exists between financing decisions of the selected companies and their financial performance, measured by ROA and EPS, and firm value which is proxied by market capitalization. Regarding the control variables, size, and age both had a significantly positive relationship with ROA, EPS, and market capitalization, whereas the liquidity proxied by current ratio had a significantly positive relationship with EPS only. Therefore, as a conclusion of the study finding it can be stated that capital structure has a significantly negative impact on companies' financial performance and value, this is in line with the findings of Sayilgan et al. (2006), Zeitun & Tian, (2007), Birgili & Düzer (2010), Salim & Yadav (2012), Le & Phan, (2017), and Boshnak (2023). The negative impact result reached in this study is contradictory to the concept of the Trade Off Theory which supposes that successful or highly profitable companies employ more debt financing to decrease the burden of their tax. However, our results are in line with the Pecking Order Theory, which discloses that companies

favor internal finance over external finance. Following the findings of the study for the companies selected and at the period examined we propose that financial managers and decision-makers of Turkish companies should have attempted to maintain low levels of debt and concentrate on funding their operations through internal alternatives to enlarge the wealth of the shareholders and that is because of the adverse influence of debt on financial performance and value of companies. For the future, we suggest that financial managers and decision-makers adopt appropriate debt levels and cautiously consider the effect of overleveraging such as not underrating the bankruptcy cost of reorganization or liquidation which will decrease the financial performance of the firms as a result. Furthermore, larger and older companies in terms of size and age should utilize these two advantages as they should have more experience in the markets they are operating in, benefit from economies of scale, and build a sound reputation over the years.

Similar to most research, this study has its limitations. A major limitation faced was that some companies in the sample had missing observations for some variables in the model during the study period and therefore, they were dropped. After the data screening, our sample included 138 companies which is adequate for generating reliable outcomes for a panel of 1932 observations. One more limitation is that proxies of some variables are related to each other in terms of measurement, and there isn't any unique way of measuring variables that have been theoretically quoted. Since there are multiple proxies and ways of measurement for variables academicians opt to choose proxies that best fit with their models, which may induce biased judgment of the outcomes. In this study, the proxies used were the same as the majority of similar credible studies and theories in the same area of research.

Our suggestion for future research is to build on this study by expanding the number of proxies or enlarging the panel data set which will further strengthen the reliability of the research. Additionally, we can recommend that such a study be conducted on specific sectors for two main reasons. First, when studying all sectors at the same time there will be a difference in the number of companies in each sector, thus some sectors might have a large number of companies unlike others, and therefore those sectors will outweigh the others in the analysis. Secondly, studying sectors separately will help researchers to make comparisons of different sectors.

We firmly believe that our study will contribute to filling the gap in the capital structure theoretical puzzle. The results of our research provide essential features of Turkish non-financial companies concerning their capital structure preferences. Furthermore, this study provides insight for Turkish financial executives and managers regarding how to handle their companies' capital structure choices, to raise the companies’ value and achieve higher financial performance.

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