



REPUBLIC OF TURKEY
ADANA ALPARSLAN TÜRKEŞ SCIENCE AND TECHNOLOGY
UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

THE ROLE OF EXPORTING ON CAPITAL STRUCTURE:
A FIRM-LEVEL INVESTIGATION

ERSİN İNAL
MASTER'S THESIS



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**SUPERVISOR
ASSOC. PROF. DR. BAHADIR ERGÜN**

ADANA 2021

DECLARATION OF ETHICAL CONDUCT

I declare that all the information in this thesis is obtained and presented in accordance with academic rules and ethical behavior. I also declare that I have cited any information that is not specific to this study, as required by these rules and behaviors.

Ersin İNAL



ABSTRACT

THE ROLE OF EXPORTING ON CAPITAL STRUCTURE: A FIRM-LEVEL INVESTIGATION

Ersin İNAL

Master's Degree, Department of International Trade and Finance

Supervisor: Assoc. Prof. Dr. Bahadır ERGÜN

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Capital structure is a subject that researchers have been working on for many years. In this study, the effect of exports on capital structure decisions has been investigated at the firm-level. In this study, the 2005-2019 annual data of 208 companies exporting in Turkey has been used. Leverage has been used as the dependent variable, and the export intensity, calculated by dividing exports by total sales, as the main independent variable. In addition, asset structure, cash flow, and firm size variables has been added as control variables in the study. In order to test the estimation results of the model, the variables of current ratio, real gross domestic product, and real effective exchange rate has been added. Panel data regression analysis has been used in this study. According to the analysis results, a positive relationship has been found between export intensity and leverage, however this relationship is statistically insignificant. A positive and statistically significant relationship has been found between asset structure, firm size, and leverage, and a negative correlation has been found between cash flow and leverage. Among the variables added to the model for robustness checks, a negative but statistically insignificant relationship has been found between current ratio and leverage. It has been found a negative relationship between leverage and real effective exchange rate, and this is statistically significant. A positive but statistically insignificant relationship has been found between gross domestic product and leverage.

Keywords: export, capital structure, leverage, panel data analysis

ÖZET

THE ROLE OF EXPORTING ON CAPITAL STRUCTURE: A FIRM-LEVEL INVESTIGATION

Ersin İNAL

Yüksek Lisans, Uluslararası Ticaret ve Finans Anabilim Dalı

Danışman: Doç. Dr. Bahadır ERGÜN

Haziran 2021, 76 sayfa

Sermaye yapısı uzun yıllardır araştırmacıların çalıştığı bir konudur. Bu çalışmada ihracatın sermaye yapısı kararlarına etkisi firma düzeyinde araştırılmıştır. Çalışmada Türkiye’de ihracat yapan 208 firmanın 2005-2019 dönemi yıllık verileri kullanılmıştır. Çalışmada bağımlı değişken olarak kaldıraç ve ana bağımsız değişken olarak ihracatın toplam satışlara bölünmesiyle hesaplanan ihracat yoğunluğu kullanılmıştır. Ayrıca çalışmada kontrol değişkenleri olarak varlık yapısı, nakit akışı, firma büyüklüğü değişkenleri eklenmiştir. Modelin tahmin sonuçlarının test edilmesi için cari oran, reel gayri safi yurtiçi hasıla ve reel efektif döviz kuru değişkenleri eklenmiştir. Çalışmada panel veri regresyon analizi uygulanmıştır. Analiz sonuçlarına göre ihracat yoğunluğu ile kaldıraç arasında pozitif yönlü bir ilişki bulunmuştur, fakat bu ilişki istatistiksel olarak anlamsızdır. Varlık yapısı ve firma büyüklüğü ile kaldıraç arasında pozitif yönlü ve istatistiksel olarak anlamlı bir ilişki bulunmuştur. Nakit akışı ile kaldıraç arasında ise negatif yönlü ilişki bulunmuştur. Sağlamlık kontrolleri amacıyla modele eklenen değişkenlerden cari oran ile kaldıraç arasında negatif yönlü, fakat istatistiksel olarak anlamsız bir ilişki bulunmuştur. Reel efektif döviz kuru ve kaldıraç arasında negatif yönlü ve istatistiksel olarak anlamlı bir ilişki bulunmuştur. Gayri safi yurt içi hasıla ile kaldıraç arasında pozitif yönlü, fakat istatistiksel olarak anlamsız bir ilişki bulunmuştur.

Anahtar Kelimeler: ihracat, sermaye yapısı, kaldıraç, panel veri analizi

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ABBREVIATIONS

M&M: Modigliani & Miller

EPS: Earnings per share

GDP: Gross Domestic Product

FDI: Foreign Direct Investment

IMF: International Monetary Fund

WTO: World Trade Organization

EU: European Union

USA: United States of America

SMEs: Small and Medium Enterprises

GMM: Generalized Method of Moments

CBRT: Central Bank of the Republic of Turkey

ROA: Return on Assets

NPV: Net Present Value

REER: Real Effective Exchange Rate

1. INTRODUCTION

Capital structure may be vital in the financial management of companies as the capital structure is not only about fundraising; but is also associated with supplementary financial decisions. For this reason, it is one of the most important issues that financial managers focus on (Gitman & Zutter, 2015; p.575).

Companies use different sources to finance projects to generate cash flow. The two components of the capital structure are debt financing (external source financing), and equity financing (internal source financing). The costs of debt financing and equity financing are different. Therefore, the decision of which financing method to use also changes the cost of the company's project financing. The cost of capital is used as discount rate when calculating the value of future cash flow of the project (hence, to find the net present value of the cash flow of the project). It directly affects whether the planned project is profitable and thus whether it will increase the firm value. The cost of capital is one of the main considerations in evaluating a project and deciding whether it is to be implemented or not.

Firms consider three basic issues in project finance: 1) the amount of cash flow, 2) the time horizon of the funds, 3) the financial and non-financial liabilities. Only long-term resources are included in the capital structure. Therefore, short-term debts are not considered in capital structure decisions. The level of the firm's need for financial resources also determines the cost of the resources for the firm. When a firm with a high debt ratio needs more debt, it borrows at a higher interest rate. A similar situation is also valid for equity financing. If the firm needs more resources, investors demand higher rates of return. (Yamini, 2013; p.11).

Debt financing is generally less costly than other financing methods. There are several reasons for this. One is that lenders may demand a lower rate of return because they are exposed to less risk. An additional reason is that since debts are liabilities for the company, fund providers have the right to confiscate company assets in the case of insolvency. A further reason is the tax shield of debt. Since the interest paid on the debt is an expense, it reduces the amount of tax the company will pay. Therefore, there are two costs of debt, namely pre-tax and post-tax costs. It is the after-tax cost that should be considered as the cost of debt in capital structure decisions (Gitman & Zutter, 2015; p.575-576).

Another basic component of capital structure is equity capital. Unlike debt financing, there is no 'maturity date' in equity financing. Thus, equity capital is an indefinite resource. Simply put, there are two types of equity financing, preferred stock equity and common stock equity. Common stock equity can be in the form of issuing new stocks to the market, or the portion of the profits earned during a period not distributed to shareholders. Financing provided by retained earnings is also called auto finance. Among these financing methods, the least costly is preferred stock. The most costly is common stock equity, which is to issue shares.

Firms should decide which resources to use and how much resources they need. Therefore, capital structure decisions are important for companies. However, there is still no clear answer to the question of "What should the optimal capital structure be for companies?". Some studies indicate that firm-specific factors and some macroeconomic factors are affecting the capital structure decisions of companies. Although there has been a great deal of research on the subject, there is no consensus on optimal capital structure. Since factors such as the industry in which the company is operated, the company's profitability, size, and growth rate are all variable, the optimal capital structure may differ for each company. In addition, macroeconomic factors such as interest rates, exchange rates, and tax rates may also affect the capital structure of the firms by different degrees. For these reasons, although there are many studies on the subject, there is still no consensus.

In financial management, the aim is to find an optimal capital structure. Optimal capital structure minimizes the cost of capital and maximize the value of the firm (Demirci, 2017). As a result of studies carried out for this purpose, many theories about capital structure have emerged. Capital structure theories can be divided into the two categories of classical theories and modern theories. A seminal paper on capital structure was published by Modigliani & Miller (M&M) in 1958. Modigliani & Miller argued that under the perfect market assumptions there is no relationship between firm's capital structure and firm value. The perfect market assumptions are;

- There is perfect competition in the market,
- There are no bankruptcy costs,
- There is no asymmetric information,
- There are no taxes,
- There are no arbitrage opportunities.

M&M stated that under these assumptions, the costs of financing resources used by the firm are balanced over time and therefore firm value is not affected. However, since the above-mentioned assumptions are too hypothetical for the markets, that is, the markets are not perfect, it is revealed in later studies that this theory is not valid. Modigliani & Miller later included the tax shield of debt in their study in 1963 and demonstrated that the use of debt could increase the value of the firm. Different theories have emerged in different studies on capital structure. The signaling theory, the trade-off theory, and the pecking order theory are the most prominent among these theories. Capital structure theories will be explained in detail in the following sections. These theories try to explain the capital structure decision-making process.

Another important issue focused on in the studies on the capital structure is the determinants of the capital structure. These factors may be firm-specific factors or macroeconomic factors. Factors such as profitability, company size, asset structure, and firm risk may be listed as firm-specific factors. A company with high profitability may use the auto-financing method more. Firm size may make it easier for the company to access resources, thus reducing the cost of these resources. The asset structure of the firm is an indicator of the solvency of the firm. The risk of the firm may also change the cost of the financing sources. Firms with lower risk may access resources with less cost. Considering all of these, the cost of capital may vary among firms. Therefore, the optimal capital structure may differ for each company. Besides firm-specific factors, some macroeconomic factors may also be effective in capital structure decisions. Inflation rate, exchange rate, interest rate, tax rates, government regulations, and supports may have an effect on the firm's decisions to use debt financing or equity financing. For example; exchange rates are very important for an export or import company. Therefore, export and import firms pay more attention to exchange rates and this is an important factor affecting their capital structure decisions. Interest rates, another macroeconomic factor, are important for all companies. However, it may be very difficult for small companies to issue stocks to the market. Therefore, interest rates in the market may be vital for these companies. As can be seen, macroeconomic factors also affect companies at different levels. Therefore, it is understood from this that the optimal capital structure may not be the same for every company and, thus, there is no consensus about the optimal structure.

Although there are many studies in literature about the determinants of capital structure, the firm-level export factor is not included in these studies sufficiently. There are studies on the capital structures of exporting firms. Most studies investigated the factors affecting the capital

structure. The aim of this study is to seek an answer to the question of what is the effect of export intensity on the capital structure decisions of firms. The results are expected to be useful not only for the researchers of this academic area, but also for the owners and managers of exporting firms, financial institutions, and policy makers.



2. SOURCES OF CAPITAL

Firms may meet the capital they need from different sources and at different costs. Therefore, financing sources can be classified according to their maturity, ownership, or the resources from which they are created. Capital resources are divided into two as short-term and long-term resources, in terms of maturity. Short-term resources are used to meet the financing required by businesses for their activities. Long-term resources are mostly used to finance the long-term investments of companies. The capital structure includes only long-term resources (Gitman & Zutter, 2015; p.575).

When separated according to the ownership of the resource, they can be divided into equity and debt-financing and financing made with these sources is called either equity financing or debt financing (Gündoğdu, 2018; p.213). Firms may also create a hybrid capital structure by using the two types of financing together. It is also possible to separate capital resources into internal resources and external resources (Paramasivan & Subramanian, 2008; p.26-27). In this study, capital resources are divided according to their ownership.

The cost of capital varies according to the type of financing used. It causes differences in the maturity of capital, ownership, or the cost of the resource from which it is created. In addition, each resource has different risks and different characteristics. Companies generally aim to create an optimal capital structure by using the least risky and least-cost resources.

2.1.Equity Financing

In this part, firstly, the definition of equity will be explained, and then types of equity-financing will be mentioned.

2.1.1. Definition of Equity

Shareholders' equity consists of the resources provided by the owners (shareholders) of the company, and the resources that arise as a result of profit of the company from its activities in the previous period not being distributed and kept within the company. Considering the basic accounting equation;

$$\text{Assets} = \text{Liabilities} + \text{Equity} \quad (1)$$

Equity is the remaining part of the company's assets after deducting its debts. Here, debts are also foreign resources (Öztürk, 2014; p.18).

Companies may increase their equity by issuing stocks to the market, so new partners are added to the company. Shareholders who provide equity to the company become owners of the company in proportion to the number of shares they own. At the same time, the liabilities of these shareholders in the company are also limited to this rate.

Equities have no maturity date, so do not need to be repaid by a specific date. Shareholders who provide equity to the company receive dividends from the profit generated as a result of the company's activities.

2.1.2. Types of Equity

Equity financing can be divided into two groups. The first is equity-financing, the second is auto-financing. There are two types of stocks. These are common stocks and preferred stocks. Auto-financing is the financing made through resources consisting of retained earnings of the company, depreciation, or provisions.

2.1.2.1.Stocks

Stocks are documents that qualify as negotiable documents issued to the market by a company whose capital is divided into shares. For a company to issue shares, it must meet the specified conditions. In Turkey, these conditions are regulated by the Capital Markets Board (Gündoğdu, 2018; p.233).

An investor who invests in stocks becomes a partner to the amount of investment in the company. Because of this partnership, the investor should bear all risks arising from the company's activities. The risk is limited to the investor's share in the company. For investors, stocks are risky investment tools. The investor has the right to take a share from the profit obtained as a result of the company's activities against the risk it bears. The rights provided to investors by stocks can be listed as follows (Istanbul Stock Exchange):

- *Dividend right:* An investor who owns stock has the right to receive a share of the profit of the company to which the stock belongs. The company decides how much of its profit to distribute according to its dividend distribution policy. Shareholders get a proportion of this profit according to the number of shares they own.
- *Pre-emptive rights:* Shareholders have priority of participation in the company's paid capital increases. Investors are free to exercise or not exercise these rights.
- *Right of liquidation:* In the case of liquidation of the company for any reason, the remaining balance as a result of liquidation is distributed to the shareholders in proportion to their shares.
- *Right to participate in the board of directors:* Investors can attend the general assembly of the company, elect board members and watch meetings. They can also be elected to the board of directors.
- *Voting right:* Each share gives at least one voting right to its owner. These voting rights can be increased at the company's discretion. Shareholders are entitled to vote according to the number of shares they own. For example, an investor who owns 1000 shares of a company has 1000 voting rights (if the voting right is 1 for each share).
- *Right to information:* Shareholders have the right to access information about the company. It is a legal obligation for the company to inform the shareholders. This right cannot be prevented in any way. In addition, public companies are obliged to disclose important information, news, and independently audited financial statements about the company. In Turkey, such disclosures are made via the Public Disclosure Platform. Anyone can access information about public companies through this platform.

Stocks are divided into two categories of common stocks and preferred stocks in terms of their characteristics.

Common stocks are the riskiest investment tool for investors. For this reason, it is the form of investment where investors demand the highest return, therefore, it is the capital source that has the highest cost. Common stocks do not provide investors with a fixed and definite return like debt or preferred stocks. These stocks do not have any maturity, which means they are indefinite. Common stockholders receive more dividends when the company's profitability is high, and when it is low, their returns fall. They may also earn capital gain by selling these stocks when the stock prices have risen. It does not provide a definite return to shareholders (Gitman & Zutter, 2015; p.320).

Common stocks offer equal rights to their owners. All investors who own common stocks have the same rights. The share they receive from the profit is determined solely by the number of shares they own. In addition, the company's real shareholders are common stockholders (Gitman & Zutter; p.320).

Preferred stock is a type of equity that gives investors some privileges over common stock by the issuing company. Although preferred stock is a type of equity-financing, they also show similarities with debt-financing due to their features. For this reason, this type of financing is also called as semi-debt financing. The commitment to pay dividends to the preferred stock is similar to the interest paid in debt-financing. However, it has equity financing features also as it does not have any maturity and provides partnership rights to the company (Brigham & Ehrhardt, 2017; p.820).

Preferred stocks undertake to pay dividends at a fixed rate to their investor. In addition, in case of the liquidation of the company, they have priority rights in any assets remaining after creditors (lenders) have been paid out. Although it is similar to debt-financing in that it undertakes a fixed payment, it cannot be deducted from taxable income as interest payment on a debt can because dividend payments are made from the remaining amount after tax is deducted. Therefore, this type of financing is more costly than debt financing. However, it is less risky for investors as it is committed to paying a certain dividend. In this respect, it is less costly than common stock financing. It is less risky for investors because it provides a fixed return, and investors may demand fewer returns than common stocks.

The dividend to be paid to the preferred stock can be expressed in a certain proportion over the par value of the stock or directly as a monetary value. For example, assuming a company committed to pay a \$-10 dividend on \$-100 worth of preferred stock, this would be expressed as a monetary value. In addition, the dividend can be expressed as 10% of the value of the stock. If the company does not make a profit, it does not have to pay dividends. The unpaid dividend in the non-profit period can be transferred to the next period and paid. Many preferred stocks in the markets pay in this way and they are called cumulative preferred stock. If there is such a form of payment, the preference shareholders are also paid in the previous period before the ordinary shareholders in the following period (Gitman & Zutter, 2015; p.324).

Preferred stocks may also be callable. Companies may buy back these stocks at a certain time. Some preferred stocks are convertible. Such stocks may then be converted into common stocks.

Also, some companies may not grant voting rights to preferred stocks. However, many preferred stocks give their owners the right to elect the board of director members. The number of members that can be elected to the board of directors cannot constitute the majority (Berk & DeMarzo, 2017; p.866).

2.1.2.2.Auto-financing

Auto-finance means meeting the financing needs of a company with internal resources, that is, creating funds by itself. Although these internal resources mainly consist of the retained earnings of the company, auto financing resources can also be created through depreciation and provisions (Ceylan & Korkmaz; p.226). Companies may prefer not to distribute a portion of the profits they have earned at the end of the operating period to shareholders and to keep it within the company. Retained earnings can be used to finance the company's investments. Profit kept within the company, i.e distributed to shareholders, is added to the company's equity account. Therefore, financing done in this way is a type of equity-financing.

The reduction in value of the fixed assets of companies as depreciation is also a source of auto-finance. Depreciation is allocated at a certain rate each year against the depreciation of legal fixed assets. However, it can be used freely as it does not require cash outflow. Companies show the depreciation of their fixed assets as expenses. These expenses reduce the amount of taxable profit of the company. Therefore, it also reduces the tax and dividends to be paid by the company. Moreover, as depreciation does not cause any cash outflow from the company, they can be used as a financing source.

Auto-financing may be done publicly or confidentially. Open auto-finance can be done with retained earnings. Covert auto-financing can be made with the difference that occurs as a result of the low value of the company's assets on the balance sheet. Auto-finance is a useful financing method for companies that cannot issue stocks and have limited access to debt-financing. Specifically, most small and medium-sized enterprises meet their financing needs with this method. However, since auto-financing, especially with retained earnings, reduces the returns of shareholders, it may not be welcomed by investors (Gündoğdu, 2018; p.238).

2.2. Debt-Financing (External Source Financing)

Another source of capital for firms is debt. Debt is a foreign resource provided from outside the company. Liabilities are resources with a specified maturity that create repayment obligations for the business. Because of this obligation, lenders take less risk than shareholders who provide equity as repayments are guaranteed. In addition, if the company cannot pay its debts for any reason, the lenders have priority over the assets. In the case of bankruptcy and liquidation of the company, debts are paid first. For these reasons, lenders may demand less returns than those who provide equity. As a result, debt-financing is less costly for companies than equity financing (Gitman & Zutter, 2015; p.575).

Another factor that reduces the cost of debt-financing is the interest paid on debt. Since interest payments are a type of expense for companies, they reduce taxable income. In the calculation of companies' income taxes, the income remaining after interest payments is taken into account. As a result, the amount of tax to be paid by the company decreases due to interest payments. This is called the tax shield of debt. For companies, the real cost of debt is the after-tax cost. Therefore, the cost of debt decreases (Gitman & Zutter, 2015; p.575).

If the cost of the pre-tax debt is R_d and the tax rate τ , the after-tax cost of the debt (R_i) is calculated as;

$$R_i = R_d (1 - \tau) \quad (2)$$

For example, if it is assumed that a company uses debt with a 10% interest rate and if the tax rate is 40%;

while the pre-tax cost of the debt is 10%,

the cost after tax is $0.10(1-0.4) = 6\%$.

as can be seen from the example, the cost of debt after tax decreases.

Cost of debt is lower, so firms may tend to use more debt in capital structure. However, the debt ratio exceeding a certain rate within the capital structure increases the riskiness of the enterprise. There is a risk of default and therefore the risk of bankruptcy for the firm. The increase in risk also increases the cost of resources. The debt ratio varies according to the conditions of the industry in which the firm is operated. A debt ratio that is considered high in one sector may be considered normal in another. Therefore, companies should pay attention to these conditions

for the debt ratio within the capital structure (Gitman & Zutter, 2015; p.576). Thus, constantly using debt cannot decrease the average cost of capital indefinitely.

Since debt has a certain maturity, it is possible to classify it in terms of such. With classification made in this way, the debts are divided into three groups of short-term, medium-term, and long-term debt. Short-term debt is that which is repaid in less than 1 year. Medium-term debt has a maturity of 1-5 years, and long-term debt refers to debt with a maturity of more than 5 years (Ceylan & Korkmaz, 2018; p.163). Short-term debt is a fund used to sustain the activities of the business. Medium-term funds are used by the enterprise to continue its activities, but are usually also the funds that it uses for its constant needs. Long-term debt is the debt with which companies prefer to finance their investments. In the capital structure, long-term debt is included in debt financing (Gitman & Zutter, 2015; p.575).

Debt may take the form of bank loans or corporate bonds. There are certain maturity and interest payments for both resources. There are also financing opportunities for companies such as factoring, forfeiting, leasing, and letters of credit. These methods are generally used for foreign trade and are not long-term. The capital structure takes into account long-term financing resources as it mostly includes long-term investments of companies.

3. CAPITAL STRUCTURE THEORIES

The capital structure shows the distribution of resources that companies use to finance their assets, which are on the right side of a company's balance sheet (Gündoğdu, 2018; p.316). In capital structure, short-term debts are generally ignored; instead, long-term resources are included within the capital structure. The capital structure has two components. These can be listed as debt and equity (Gitman & Zutter, 2015; p.575). The distribution or ratio of these two basic components in the company's balance sheet shows the capital structure of the company.

Capital structure decisions have substantial importance in maximizing the value of the firm, which is the main objective. The cost of capital affects the profitability of the firm, so it has a significant effect on the firm's value. Thus, financial managers of companies try to find an optimal capital structure for the firm. Optimal capital structure minimizes the weighted average cost of capital, so increases the value of the company (Ergün, 2020; p.15). The cost of capital is used as the discount rate to find the present values of the future cash flows of planned projects. The weighted average cost of capital is formed according to the weights of the resources used by the firm and this rate is used as the discount rate. It is necessary to determine which resources, and to what extent, are used in the financing of the projects or as assets of the firm. Financial managers pay particular attention to capital structure decisions because of the relation of capital structure with other areas of financial management.

Firms may use internal or external sources as financing resources. Internal funds are equity and the retained earnings of the firm. Similarly, the depreciation of the fixed assets of the firms can be considered as an internal resource, because these are expenses that do not require a cash outflow. Firms consider different factors when deciding which of these resources to use and to what extent. These factors and funding sources for companies will also be discussed in detail in this study.

The issue of capital structure has been the focus of attention of researchers working in the field of finance, as well as company managers, for many years. Many researchers have studied what the optimal capital structure should be for the firms, but there is no consensus on optimal capital structure. One of the biggest reasons for this is that company-specific factors that affect capital structure affect each company at different rates. The fact that many studies and researches have been carried out in this field has led to the emergence of different theories. It is possible to

examine these theories under the two main headings of traditional approaches and modern approaches. In this section, capital structure theories will be explained.

3.1.Traditional Approaches

The capital structure has been of interest not only to company managers but also to researchers working in the field of finance. Therefore, various theories about capital structure have been created. Traditional approaches try to explain the issue of capital structure under certain assumptions. These approaches can be listed as follows: (Ceylan & Korkmaz, 2018; p.257);

- There are no corporate income taxes for businesses and no individual income taxes for investors.
- Firms distribute all of their earnings to shareholders as dividends.
- Companies create their capital structures using the various changes they make in debt/equity ratios. They can increase this ratio by using more debt in their capital structure or they can reduce this ratio by using more equity financing.
- There will be no change in the profitability of the business in the future. Therefore, there is no future growth opportunity for companies.
- Investors in the market have homogeneous expectations about the company's return. Expectations do not differ among investors.
- Operational risk is constant. The firm does not cause any change in the risk by making different investments.

There are three different traditional theories of capital structure under these assumptions. These are the net income approach (Durand, 1952), the net operating income approach (Durand, 1952), and the traditional approach (Solomon, 1955).

3.1.1. Net Income Approach

The net income approach was emerged with the study made by David Durand in 1952. Durand explored debt and equity costs for businesses in his study. Durand explored how the capital structure should be for businesses according to these costs and how the firm value can be increased with an optimal capital structure.

According to the net income approach, the debt/equity ratio in the capital structure, that is, the firm leverage, is taken into account (Burucu, 2015). Firm value can be increased by reducing their weighted average capital costs, because the capital cost is used as the discount rate to find the net present value of the firm's investments. According to the net income approach, the cost of using debt for firms is lower than the cost of equity, because lenders may demand less return than investors who provide equity. This is because lenders have priority over shareholders in terms of receivables. Therefore, the cost of debt may be lower than the cost of equity. Firms can decrease their capital costs by increasing the debt ratio in their capital structures, thus increasing the firm values. In addition, as the use of debt increases, the cost of capital further decreases. Thus, the optimal capital structure for companies can be created with 100% debt financing.

According to this approach, changes in the capital structure do not cause any change in the costs of financing resources. In other words, increasing the debt ratio of the firm does not increase the cost of any new debt to be used. Here, the bankruptcy risk arising from the increase in the debt ratio for the firm is not taken into account. No matter how much the firm invests, its risk is constant. In this case, the cost of debt is lower than the cost of equity. As a result, the weighted average cost of capital decreases as the debt utilization increases.

This approach is criticized for being based on the assumption that the cost of capital remains constant for all capital structures. As the debt use of the firm increases, there is a risk of a cash shortage. Therefore, the cost of capital increases depending on the increasing risk (Timur, 2017).

According to the net income approach, the relationship between leverage and the cost of capital, and the relationship between leverage and firm value can be plotted as follows: (Ergün, 2020; p.20):

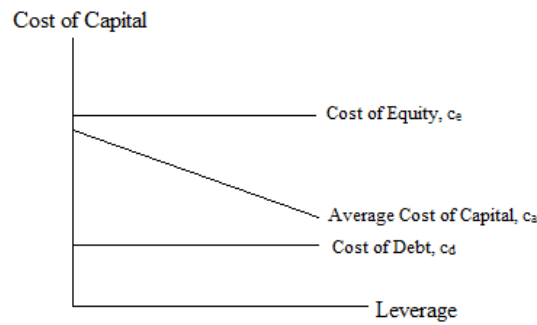


Figure 3.1: Cost of Capital - Leverage Relationship According to Net Income Approach

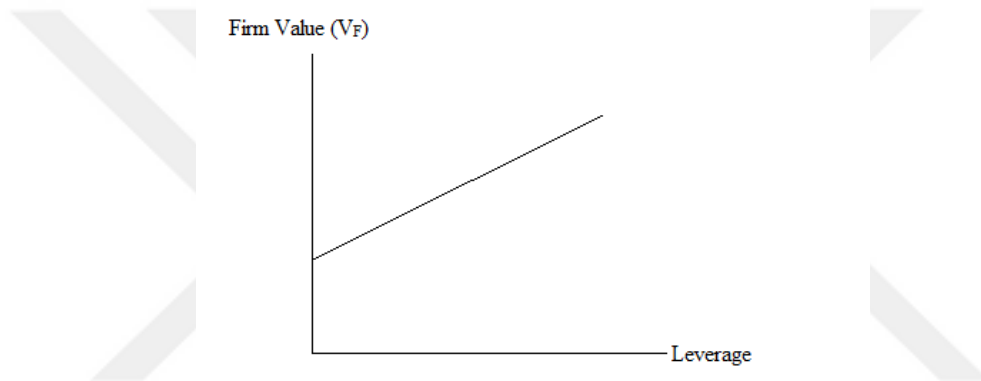


Figure 3.2: Capital Structure - Firm Value Relationship According to Net Income Approach

3.1.2. Net Operating Income Approach

Durand (1952), put forward another theory about capital structure by changing the assumptions in his study. This approach may be evaluated as the opposite of the net income approach. Durand, in this theory, said that increasing the debt ratio in the capital structure, in other words, increasing the leverage does not decrease the weighted average cost of capital. Considering the bankruptcy risk arising with the increasing debt ratio, it is revealed that the capital cost does not decrease. Therefore, the results are different from the net income approach and it emerged as a different approach to the issue of capital structure. Increasing the debt ratio in the firm's capital structure does not reduce the cost of debt, but it increases the cost of equity. Considering the bankruptcy risk, the rate of return expected by investors also increases and as a result, the cost of equity increases. Increasing debt used at low cost increases the risk of bankruptcy and the average cost of capital remains constant as a result of the increase in the cost of equity. This

increase in the cost of equity is at the same rate as the advantage brought by debt (Uysal, 2010). As a result, firms cannot reduce their capital costs by increasing the debt ratio in their capital structures, and therefore they cannot increase firm values. According to this approach, there is no optimal capital structure for companies (Onatça, 2017).

According to the net operating income approach, it is possible to graph the relationship between the cost of capital and leverage, and between firm value and leverage as follows (Prasanna, 2011; p.467):

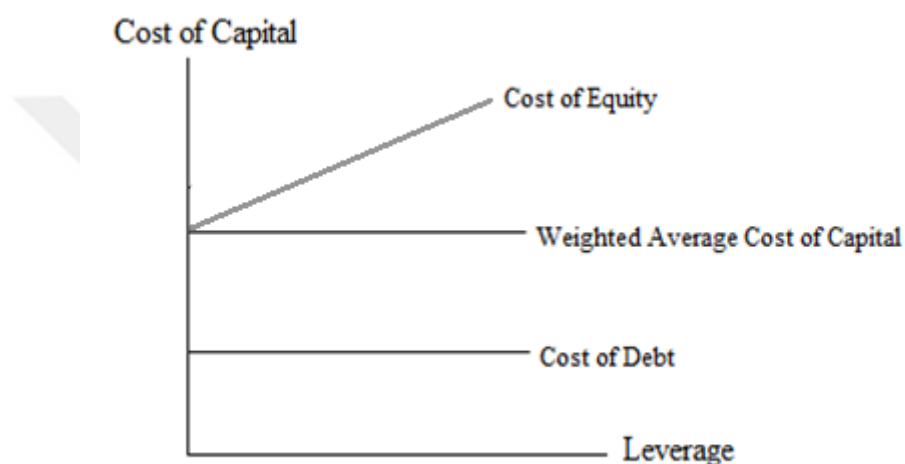


Figure 3.3: Relation between Cost of Capital and Leverage According to Net Operating Income Approach

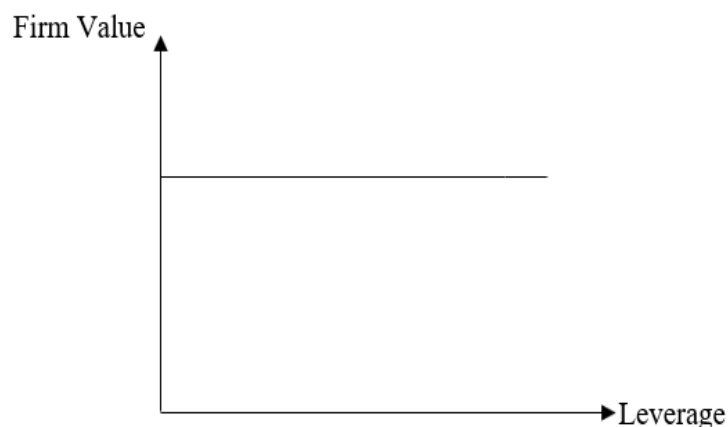


Figure 3.4: Firm Value - Leverage Relationship According to Net Operating Income Approach

3.1.3. Traditional Approach

The traditional approach emerged with the study conducted by Solomon (1955) investigating the cost of capital for companies and took place within the capital structure literature. Solomon states that companies should accept when the rate of return on their investment exceeds the costs of capital. Solomon aimed to formulate how the cost of equity, cost of debt, and the hybrid cost of capital should be calculated. Solomon also states that there are types of debt-financing and that some debt instruments can only be used in certain investments. In this case, the author tries to find an answer to the question of how the cost of capital should be calculated.

Solomon begins his analysis with the assumption that equity finance is used entirely. In this case, the project should increase the profit per share to be accepted. If the project raises earnings per share (EPS), it should be accepted. In this case, the welfare of the existing shareholders increases. However, if the current situation (without investment) has higher EPS, the project should not be accepted. For earnings per share to rise, the return on investment should be higher than the cost of capital.

Companies may also use depreciation and retained earnings as capital. However, retained earnings, especially, cause a decrease in shareholders' returns, which causes share prices to fall. If companies use financing in this way, the project return should be high.

When companies use debt and equity financing together, they should pay attention to the leverage ratio. Since increasing debt carries various risks, it also increases the cost. As the cost increases, the return of the project should be high to be profitable. Therefore, companies should achieve an optimal debt/equity ratio. As can be understood from here, there is an optimal capital structure for companies according to this approach. When the cost of debt is lower than the cost of equity, companies prefer the debt financing method. However, the increasing debt ratio (leverage) in the capital structure also increases the cost of debt and after a point makes it equal to the cost of equity. As a result of the increase in the debt ratio, the cost of capital starts to increase. The increasing cost of capital reduces the returns of projects and consequently stop the rise in firm value. The important point for companies is to increase the return rates of projects by keeping the capital cost at a minimum. As a result, the firm value also increases. However, as the cost of capital increases, the value of the firm starts to decrease as the rate of return decreases (Solomon, 1955).

3.2.Modern Theories

Modern capital structure theories begin with the study of Modigliani and Miller (M&M). In some studies, capital structure theories are grouped as before and after M&M theory. Therefore, M&M is a seminal paper for modern theories. In this section, M&M theory and other modern theories are explained.

3.2.1. Modigliani & Miller (M&M) Theorem

The study by Franco Modigliani and Merton Miller in 1958 is considered the first of modern theories on capital structure. M&M start their work with the question "What is the cost of the capital to the company when the returns are uncertain?". The work begins with the assumption that all physical assets are owned by the company. The returns of the company's shareholders correlate directly to the company's profits. First, it starts with the assumption that companies cannot borrow money. Companies are divided into certain classes according to their returns, and that the returns of companies in the same class are within a certain range. Thus, the shares of companies in the same class are full substitutes for each other. It is assumed that companies producing the same goods or operating in the same industry are homogeneous. In case of perfect competition in the market, the stocks of these companies are exact substitutes for each other. In this case, the prices of the stocks in the same class and the rates of expected returns are similar.

Later in the study, it is assumed that firms may use debt-financing by issuing bonds to the market. In this case, the price / expected return rates may vary because the leverage used as one of the risk indicators increases and as a result, the risk perception of the stock also changes. In this case, the concept of full substitution loses its validity. However, in this assumption, as in the other case, the bonds issued by companies in the same class under perfect market conditions are exact substitutes for each other.

There is an assumption of perfect market conditions in Modigliani & Miller's study. Researchers study on the assumption that these conditions exist. Perfect market conditions can be summarized as follows (Gitman & Zutter, 2015; p.578):

- Perfect competition conditions prevail in the market. In this case, the stocks of the companies in the same class or the bonds they issue to the market are full substitutes for each other.

- There is no personal income tax for investors and no corporate income tax for companies.
- There are no transaction costs for securities bought or sold for investment in the market. In other words, investors do not face any costs while buying or selling securities.
- There is no difference in the level of knowledge between company managers and investors. In other words, there is no asymmetric information in the market. Investors and company managers are equally informed.
- Individual investors can also borrow at the interest rate that companies borrow in the market.
- There is no bankruptcy costs resulting from companies becoming unable to pay their debts.
- For investors, there is no opportunity for arbitrage resulting from buying at cheaper price and selling at higher price at the same time in the market.

M&M build their propositions on the assumption of the above-mentioned conditions. However, most of these conditions are not valid in the markets. There are taxes in the market, interest rates vary between individuals and companies, there is an information asymmetry problem, and bankruptcy and transaction costs are expected in the market. The fact that these assumptions are unrealistic invalidates the postulates of M&M theory. The propositions of M&M theory can be written as follows:

Proposition 1: Firm value is independent of the company's capital structure. Regardless of how firms have formed their capital structure, this does not have an impact on firm value. In other words, the value of the firm is independent of the debt/equity ratio in the capital structure. The expected return/price ratio of the firm is only related to its class.

M&M gives an example of this proposition with butter and milk. It is assumed that a farmer produces milk and butter under conditions of perfect competition. The price of butter is higher than the price of milk. But the farmer has to give up a certain amount of milk to sell butter. Thus, there is no change in total income.

Proposition 2: For companies with some debt and some equity in the capital structure, the equality of the expected return of the stock is written as:

$$i_j = p_k + (p_k - r)D_j/S_j \quad (3)$$

where;

i_j : expected rate of return for stock j

p_k : the expected capitalization rate for the stocks of companies in class k

r : interest rate

D_j/S_j : leverage (debt/equity)

The higher the leverage, the higher the rate of return demanded by lenders as the increase in the leverage means an increase in the exposure. Accordingly, the cost of debt tends to increase. Proposition 1 is independent of this. When a company uses different sources of finance, the weighted average cost of those resources is independent of leverage. The cost of debt, which increases with leverage, is offset due to the decrease in stock returns. The basic assumption here is that individual investors and institutions can borrow at the same interest rate.

As can be understood from the above-mentioned propositions, M&M theory argues that there is no optimal capital structure for firms. However, as stated earlier, these propositions do not seem to be valid since these assumptions do not exist in real life. Nevertheless, this study is considered a turning point among the studies in the field of capital structure and it is considered the beginning of modern capital structure theories. M&M revised these studies in 1963 and conducted another research on this subject.

In the study conducted by M&M in 1963, taxes were also included. They explored how it would affect the capital structure where companies are subject to corporate taxation. In these studies, M&M investigated how capital structure decisions affect the value of the company in the case of taxation. Interest obligations arise if companies use debt financing. In this case, the interest paid on debt is an expense for the companies. The profit of the firm decreases due to the expenses. Since the taxes are calculated and paid on the net profit of the company, the tax rate to be paid by the company decreases. This is the tax shield of debt, and decreases the cost of debt. Therefore, the cost of debt is lower. In this study, it is revealed that when taxes are included, using the debt financing may increase the value of the company due to the decrease in the cost of debt. In other words, the study conducted in 1958 was revised and in the study conducted in 1963, it was concluded that there may be a relationship between capital structure

of the firm and the firm value. Proposition 1 in the first study loses validity when tax rates are included.

3.2.2. Trade-off Theory

Although the Modigliani & Miller theorem is a seminal paper for capital structure studies, the validity of the propositions is questioned as the study contains very rigid and unrealistic assumptions. After this study, different theories were created by different researchers by stretching the assumptions. However, many of the modern capital structure theories are based on the M&M theorem. Kraus & Litzenberger (1973), formed a new theory of capital structure, taking into account the corporate tax that firms have to pay and the bankruptcy costs caused by increasing debt ratios, in other words, increased leverage. This is the trade-off theory.

Using debt provides tax advantages to the firms. In case the using debt, the interest to be paid on the loan are an expense for the companies. Expenses reduce net taxable income. Since corporate tax is calculated on this amount, this decreases the amount of tax that companies must pay. In this case, the cost of debt after tax is lower. This is called the tax advantage of debt. Since the decrease in the cost of capital for the firm increases the profitability of the firm, the tax shield of debt has a positive effect on the value of the firm. However, the increase in the debt ratio also creates the risk of bankruptcy for the company. Bankruptcy means the company's assets are unable to meet its debts. According to the trade-off theory, firms should balance the tax advantage of debt and the bankruptcy risk created by debt. Firms may reach the optimal capital structure in this way.

If a firm earns less than expected, it may face the risk of insolvency. If the resources required for debt payment cannot be created, there is a risk of bankruptcy for the company. Bankruptcy has additional costs, such as lawyers' fees, accountants' fees, declining sales, and selling assets at a lower value (Warner, 1977). After the bankruptcy costs incurred by the company are paid, the remaining resources are paid to the lenders. As the amount of debt increases, the risk of bankruptcy, and therefore the cost of bankruptcy, increases. Modigliani & Miller's study in 1963, including taxes, does not cost bankruptcy. However, the trade-off theory argues that bankruptcy costs should also be taken into account in capital structure decisions.

When firms use debt financing, they may create optimal capital structures by balancing the tax shield advantage of debt with the bankruptcy costs arising from the increased leverage ratio

(Kraus & Litzenberger, 1973). For this purpose, companies should adjust their debt ratios within their capital structures according to an equilibrium point. The optimal capital structure for companies should also be created according to this balance. Firms may reduce their capital costs by using debt and, as a result, increase firm values. However, the increase in firm value does not last forever due to the bankruptcy risk that increases after a certain level. After a point, this increase starts to decrease because the increased risk also increases the cost of the debt. From this point on, using more debt does not reduce the cost of capital and therefore does not increase the firm's value. Companies need to use debt at a level that increases the value of the company and achieve balance.

3.2.3. Pecking Order Theory (Financial Hierarchy Theory)

The pecking order theory was emerged as the alternative of the trade-off theory. However, this theory approaches the subject from a different perspective than the trade-off theory. This theory considers firms' capital resources as internal resources and external resources. The theory argues that firms primarily tend to use internal resources in their capital structures, and that if those internal resources are insufficient, they tend to turn to external resources. For this reason, this theory is also called the financial hierarchy theory. Myers and Majluf (1984), examined the resource preferences of firms and put forward this theory.

The basis of the pecking order theory is the problem of information asymmetry. Information asymmetry is the difference in information known between company managers and investors. Managers know more about the company's activities than investors. Manager's actions give signals to investors due to information asymmetry. For example, investors think that if a company issues shares, the company's stock is overvalued, because, according to investors, managers only issue when the shares are overvalued (Ross, et al., 2012; p.543).

According to the pecking order theory, there is no targeted leverage ratio for the firms. Firms decide whether to use internal or external resources in their capital structure decisions. A capital structure is formed according to the financing needs of the firm. The first choice of companies is internal resources. Internal resources consist of profits that the company has earned in the previous years which were not distributed to shareholders. If this resource is insufficient, the company will turn to outside resources later. From this point of view, it can be concluded that profitable companies use less debt because profitable firms meet their financing needs mainly

from internal resources, for example profits from previous years. If the company's profitability is high, these internal resources are sufficient and the company does not need external resources. Less profitable firms, on the other hand, use more debt because internal resources do not meet the financing required for investments (McMillan & Considine, 2003; p.513).

Cash, marketable securities, and real assets ready for a sale constitute the financial slack concept for companies. This concept is important for firms because firms with financial slack need less debt and have easier access to debt financing when it is needed. Such firms are considered less risky for lenders (Myers & Majluf, 1984).

According to the static trade-off theory, firms create optimal capital structures by finding the balance between the risk and advantage of debt. The pecking order theory, on the other hand, argues that there is no optimal capital structure, that is, a specific leverage ratio for firms (Myers, 1984). Pecking order theory argues that companies meet the financing required for their investments primarily with internal resources. A firm's dividend distribution policy is also important here, as retained earnings make up a significant portion of internal resources. Firms should align their dividend distribution policies with investment opportunities.

Unforeseen fluctuations in profitability and investment opportunities may cause internal resources to be sufficient or insufficient. If the internal resources of the firm are more than the amount of financing required for an investment, the firm is able to cover the financing entirely with internal resources. However, if the investment requires a large amount of financing that cannot be covered by internal resources, the firm should provide financing with external sources. There is also a ranking in outsourcing. Firms prefer debt financing first when outsourcing. If the firm is able to access easily to debt, the debt is less costly and debt use does not pose any risk to the firm. However, there is a limit to the amount of debt that companies can use. After a certain point, the riskiness for companies increases, access to debt becomes difficult, and the cost of debt increases. If the internal resources and debt limit are still insufficient for the amount of financing required by the planned investment, the firm issues share as a last resort. In the case of stock issuance, the information asymmetry problem becomes more prominent.

Due to the problem of information asymmetry that occurs between firm managers and investors, when managers decide to issue shares, investors think that the stock is overvalued and its price will decrease. Therefore, investors tend to pay a price for the stock according to the level of

knowledge they have. This price is usually lower than the price investors are asking for. This situation increases the cost of equity-financing. As a result of rising costs, managers may have to forego an investment that would have a positive net present value of an investment. A solution for this problem caused by the lack of resources is financial slack (Gitman & Zutter, 2015; p.585).

3.2.4. Signaling Theory

Signaling theory is also based on the asymmetric information problem as with the pecking order theory. Therefore, the signaling theory is associated with the pecking order theory (Gündoğdu, 2018; p.321). Managers know more about the future of the firm than investors. At the same time, as it is known, the main purpose of managers is to maximize the welfare of the shareholders. For this reason, managers prefer debt-financing for investments when they think the firm is profitable. This choice has a very simple logic. If the firm is profitable, it makes profitable investments. These earnings are shared among the current shareholders when debt financing is used. Thus, managers maximize the welfare of shareholders, who have fundamental goals. However, securing financing by issuing new shares results in the earnings being shared with new shareholders. In this case, the welfare of the shareholders increases less. In the opposite case, that is, if the managers have poor expectations about the future of the company, the share issue is selected for financing. If the firm makes a loss in the future, the loss is reflected on new shareholders and the loss of each shareholder reduces.

The firm's use of debt or equity financing gives a signal to investors about the future of the firm. A firm using debt financing gives a positive signal to investors and makes them think that its future is good. However, equity financing gives a negative signal to investors and causes them to think there are substandard expectations for the future of the firm (Gitman & Zutter, 2015; p.586).

The signaling theory was proposed by Stephen Ross in 1977. Ross stated in this study that there is asymmetric information between firm managers and investors of the firm, and that the financing decisions of managers give signals about the future of the firm. However, since this theory does not consider the costs and risks associated with the use of debt, its validity is questioned.

3.2.5. Market Timing Theory

Market timing theory argues that the firms' capital structures are related to their past share prices. Firms use equity financing through stock issuance when market capitalization is high. When market values are low, they buy back shares. This situation changes the capital structures of firms (Baker & Wurgler, 2002).

The perfect market conditions assumption in the Modigliani & Miller theorem does not exist in real life. There is a constant fluctuation in the markets and this fluctuation causes changes in the cost of financing through equity. While the prices of shares and therefore the market value of the firm is high, the cost of using equity financing is lower. In the opposite case, it is more costly to issue shares while the share prices, and therefore the market value, of the firm are low. Thus, managers have the motivation to use differing financial resources at distinct times. Using different funding sources at different times is an effective method to keep the total cost of capital to a minimum. Managers issue shares when the market value is high; and they prefer to use debt financing when its market value is low. In addition, firms prefer to buy back shares when the market value is low. Capital structure decisions, taken in this way, form the basis of this theory.

Baker & Wurgler (2002), investigated the effects of market timing for stock issuance on capital structure. According to the analysis results of their study, market timing has long-term effects on capital structure. Contrary to the view that managers in the pecking order theory avoid issuing stocks, according to this theory managers' financing by issuing stocks at certain times can reduce the average cost of capital. Depending on the market conditions, sometimes it may be more advantageous than using debt because the cost of equity is lower. The key point in this theory is timing. According to the market timing theory, the capital structure is formed as a result of the cumulative effects of the past performances of stocks. In a study conducted by Graham & Harvey (2001), surveys conducted with 392 chief financial officers (CFOs) revealed that managers act according to market conditions in issuing stocks. The market timing theory put forward by Baker & Wurgler is also consistent with this result.

3.2.6. Agency Cost Theory

Shareholders appoint managers to run the activities of the companies they own. These directors are agents of the shareholders and their main purpose is to maximize the shareholders' wealth.

Managers may also be shareholders or owners of the companies they manage. In the study conducted by Jensen & Meckling (1976), the conflicts of interest between shareholders of the company and their appointed managers, namely agents, are examined. These conflicts of interest create various costs for the company. Managers' behavior, when they are 100% owners of the company, is different from their behavior when they are not. These differences constitute the agency problem and the agency costs (Jensen & Meckling, 1976).

Costs resulting from conflicts of interest between the firm managers and shareholders of the firm can be listed as follows. Agency cost is the sum of these costs.

- Monitoring costs caused by the shareholders' desire to follow the actions of the managers
- For the principals to serve their interests, their managers should take bonding costs.
- Residual loss

Monitoring costs is the cost shareholders should bear to monitor the actions and behavior of managers. These can take the form of budget constraints or operating rules imposed on managers. Bonding costs are additional costs such as bonuses paid by shareholders to managers. Shareholders try to motivate managers in these ways so that they best serve their interests.

Costs resulting from the agency problem also increase the cost of capital for companies. Therefore, agency costs are also related to the issue of capital structure. In the case of a firm using a debt, the remaining part of the earnings after the repayment of the debt is shared among the shareholders. Shareholders may wish to implement more risky projects in order to generate more profit. Managers tend to accept less risky and therefore lower return projects to avoid risk because if the project fails, managers are in danger of being fired from their jobs (Ayyıldız, 2013; p: 30). Conflicts of interest between the firm managers and shareholders of the firm and the willingness of firm managers to avoid risk prevent optimal utilization of leverage. This reduces the advantage of the debt. Failure to reduce the cost of capital to the optimal level causes the firm value to increase or decrease less (Jensen & Meckling, 1976).

Conflicts of interest do not only occur between shareholders of the firm and the firm managers. At the same time, conflicts of interest may occur between lenders and company owners (Öztürk, 2014). Lenders may also increase the rate of interest to be paid on debt, as shareholders accept more risky projects in order to generate more returns. This is due to the increased risk and,

hence, increases cost of the debt. As a result, the possibility of increasing the firm's value by decreasing the capital cost decreases.

The optimal capital structure for firms changes as a result of the costs brought about by conflicts of interest (Ay, 2018). The agency problem also affects firm value, as costs directly affect capital costs. Firms should create a balanced capital structure by taking these costs into account.



4. FACTORS AFFECTING THE CAPITAL STRUCTURE DECISIONS

Managers should consider different factors to make decisions about the capital structure of the firm. Capital structure is a complex area of financial management, as it is also related to different fields of finance (Gitman & Zutter, 2015; p.575). Therefore, managers take into account not only the debt-equity ratio, but also many different factors in their capital structure decisions. These factors may be firm-specific factors, as well as macroeconomic factors and factors specific to financial markets (Gündoğdu, 2018; p.322).

Firm-specific factors affect firms at different levels. Therefore, it is not possible to talk about a common optimal capital structure for all firms. Firm-specific factors may make it easier or more difficult for firms to access capital. In addition, these factors change the firm's cost of capital. Auto-financing is easier for firms that have high profitability. Big firms can access debt more easily and with less cost. These factors significantly influence capital structure decisions; however, these factors are not limited to firm-specific factors.

Some macroeconomic factors affect the capital structure decisions of companies. Macroeconomic factors such as GDP, interest rate, tax rate, inflation rate, and exchange rate may directly affect companies. Companies should take macroeconomic factors into account while making capital structure decisions. In addition, the financial market conditions of the countries in which they operate are very important in terms of a companies' access to resources. The development and infrastructure of financial markets are very important for companies to access capital (Gündoğdu, 2018; p.322).

4.1.Firm-Specific Factors

In this section, firm-specific factors affecting the capital structure decisions are discussed. It is explained how the firm-specific factors affect the capital structure decisions.

4.1.1. Asset Structure

The assets of firms are basically divided into two groups as current (short-term) assets and fixed (long-term) assets. Short-term assets refer to assets with high liquidity, which the company can convert into cash in a short time (usually less than 1 year). These may be cash, stocks, and short-term receivables. Long-term assets, on the other hand, are assets such as machines, vehicles, buildings and equipment that the company does not intend to convert into cash in a short time and uses in production activities. The asset structures of the companies may differ from each other according to the sectors in which they operate. For example, the assets of a company operating in the retail sector are predominantly short-term assets, so the asset cycle is fast. In companies operating in the manufacturing sector, long-term assets such as factories, machinery and vehicles are predominant. Capital structures of companies also differ according to their asset structures. While the assets in companies with a fast asset cycle are mostly covered by short-term resources, companies which want to expand their activities with long-term investments are generally covered by long-term debts.

The tangible assets of businesses can be shown as collateral to lenders. Lenders have rights over these assets if the business is unable to pay its debts. Lenders may secure their receivables by selling the assets of a company unable to pay its debts. For this reason, access to debt may be easier for companies whose assets are predominantly long-term assets. Companies with a high proportion of tangible fixed assets in their asset structure are expected to lower the costs of securities issuance by using debt financing (Myers & Majluf, 1984).

In the study conducted by Jensen & Meckling (1976) on the agency problem, it is revealed that tangible fixed assets have a decreasing effect on the agency problem between the firm and the lenders. Since companies can pledge tangible fixed assets as collateral, the risk for lenders is reduced. Since tangible fixed assets of companies are easily visible, they do not incur any extra monitoring costs for lenders. Therefore, it is easier for companies with high tangible assets in their asset structure to use debt. In this case, according to the agency theory, it is expected that a positive relationship between tangible fixed assets and leverage. According to the trade-off theory, the use of debt may be higher in companies with high tangible fixed assets. Again, according to this theory, it is expected that a positive relationship between tangible fixed assets and leverage.

According to the pecking order theory, the cost of information-sensitive resources is higher due to the asymmetric information problem (Fama & French, 2002). Tangible fixed assets directly

reflect information about a company. If debt is used by collateralizing these assets, the cost of this debt is also information sensitive. According to the theory, debt is used when internal resources are insufficient. In the use of debt, primarily, the use of debt without collateral risk is preferred (Myers & Majluf, 1984). Thus, according to the pecking order theory, there may be a negative relationship between tangible fixed assets and leverage.

4.1.2. Profitability

Profitability is another factor that affects the capital structure. Highly profitable companies can meet their funding needs without the need for foreign resources by choosing auto-financing (Gündoğdu, 2018; p. 322). In addition, the cost of debt may be low, as companies with high profitability are considered less risky for lenders. For companies with high profitability, the risk of insolvency is also lower. On the other hand, companies with high profitability are more attractive to investors because their dividends are higher. Thus, investors' returns also increase. However, the relationship between profitability and leverage varies between capital structure theories. According to some of the capital structure theories, profitability and leverage are positively correlated, while for others negatively correlated.

Trade-off theory argues that high profitability also increases the amount of tax to be paid. For this reason, companies that want to take advantage of the tax advantage of debt want to use more debt. In addition, since the risk of bankruptcy resulting from insolvency is lower for these companies, they can find debt more easily. Thus trade-off theory argues that there is a positive relationship between profitability and leverage (Kraus & Litzenberger, 1973).

According to the signaling theory discussed by Ross (1977), profitable firms prefer to use debt because the use of debt for the firm gives positive signals to the market about the future of the firm. Therefore, according to signal theory, profitability and leverage are positively related as in the trade-off theory.

The pecking order theory suggests that firms meet their financing needs primarily from internal sources. These resources, on the other hand, mainly consist of the retained earnings of the firm which are not distributed to the shareholders. In line with that, profitable companies primarily prefer auto-financing and their debt levels are lower. Therefore, pecking order theory argues that the profitability and leverage are negatively correlated.

However, Almeida & Campello (2008), in their study, observed that there is a negative relationship between profitability, but this relationship is mainly valid for firms that face with high cost of debt. According to this study, negative relationship between profitability and demand for debt should be interpreted with endogenous investment decisions of firms (Almeida & Campello, 2008).

4.1.3. Growth Opportunities

Firms create growth opportunities with profitable investments. These investments are mostly long-term investments and their effects extend over a long period of time. The financing requirement for these investments varies according to the growth that the investment provides. Firms need different amounts of capital depending on the size of the investment and the opportunity it creates, and in this case, they may meet their needs from a variety of sources. In capital structure theories, it is explained that the relationship between growth opportunities and capital structure of the firm (Uysal, 2010; p.60).

Trade-off theory argues that the growth opportunities are not assets that can be collateralized like tangible fixed assets. Therefore, debt utilization is expected to be lower for firms with growth opportunities (Kraus & Litzenberger, 1973).

According to the agency problem theory, firms may miss profitable investment opportunities due to conflicts of interest. Shareholders may want to invest in high-risk projects to generate more profits. Investing in risky projects is perceived as a negative signal for lenders. Therefore, the firm's use of debt may be more difficult and more costly. According to this theory, companies that create growth opportunities by investing in risky projects use less debt. Thus, this theory claims that the growth opportunities and leverage of the firm are negatively related (Jensen & Meckling, 1976).

According to the pecking order theory, a positive relationship is expected between growth opportunities of the firm and leverage of the firm. Internal resources may be insufficient for the investments that companies make to be able to grow. For this reason, firms tend to use debt and consequently companies with high growth opportunities increase their use of debt (Myers & Majluf, 1984).

According to the signaling theory, companies with high growth opportunities need to send positive signals to the markets in order to meet their financing needs. In this theory, because of the assumption that debt using sends positive signals to the markets, companies with high growth opportunities are expected to have high debt usage. Therefore, signaling theory argues that the growth opportunities and firm leverage are positively related (Ross, 1977).

According to the market timing theory, a firm's capital structure decisions are related to the past performance of stocks. Thus, firms prefer to issue stocks when the stock price is high. While debt financing is used in companies with growth opportunities in the current period, financing through stocks is preferred as the value of the firm increases with the realization of growth (Baker & Wurgler, 2002).

4.1.4. Firm Size

Firms may access capital resources more easily or with more difficulty, depending on their size. Likewise, size is a factor affecting the cost of capital. Therefore, firm size affects capital structure decisions. According to capital structure theories, there may be a positive relationship between firm size and leverage, but there also may be a negative relationship. While some theories argue that there is a positive relationship, some theories argue that this a negative relationship (Sarioğlu, et al., 2013).

According to the trade-off theory, bankruptcy risk is lower for large firms. Since these firms operate in various fields and their cash flows are more predictable, they can access capital resources more easily (Fama & French, 2002). It is easier to use debt for large firms than for small firms. In addition, bankruptcy costs are relatively lower for such firms. Therefore, large firms are expected to turn to more external resources. For small firms, bankruptcy costs are higher than firm value so it is more difficult to access debt for these firms. Therefore, equity financing provided by partners is more common for small firms. According to the trade-off theory, a positive relationship between firm size and leverage is expected.

According to the agency theory put forward by Jensen & Meckling (1976), lenders to the firm can reduce this problem by monitoring the firm's costs. However, as firm size increases, monitoring activities become more difficult and more costly. Lenders increase the cost of debt when they do not have the opportunity to closely monitor the firm's activities. This makes

borrowing more difficult for large firms and, thus, less attractive. As a result, according to this theory, firm size and leverage of the firm are negatively related.

The pecking order theory argues that firms primarily obtain financing from internal sources. If the internal resources are insufficient, the firm tries to obtain financing first through debt and then through share issue. Since large companies operate in various business lines, their internal resources mostly meet their financing needs. Therefore, according to this theory, large firms tend to use less foreign resources. Pecking order theory argues that the firm size and leverage of the firm are negatively correlated (Myers & Majluf, 1984).

4.1.5. Firm Risk

Firm risk may be directly related to capital structure. Fund providers demand returns according to the risk level of the company. If the firm risk is high, the required return is also higher. Lenders lend to risky firms at higher interest rates, while equity providers demand higher returns for the risk they bear. Risk is a factor that increases the cost of capital for both types of financing. In addition, leverage, which is one of the most important indicators of capital structure, directly gives signals about firm risk. The higher the leverage, the higher the risk of the firm's failure to pay its debt. The risk of failure of companies to pay their debts is defined as the bankruptcy risk. These risks can take the form of business or financial risks (Gitman & Zutter, 2015; p.579).

If the company is unable to meet its operating expenses, it is referred to as an operational risk. In addition, fluctuations in variables such as demand for the firm's products, production costs, and product prices are also included in the operational risk. The firm's capital structure decisions do not affect operating risk; however, the operating risk is a variable in the capital structure decisions of the firm. Firms with higher operational risk should make decisions more carefully (Gitman & Zutter, 2015; p.579).

Financial risk is defined as the failure of companies to meet their financial obligations. The more debt a firm uses, the lower its ability to meet its financial obligations. When a company is unable to pay its debts, this results in the company's bankruptcy. In case the firm cannot pay its debts, the lenders have a right to the firm's assets. This situation refers to the financial risk of the firm. Capital structure decisions have a direct impact on financial risk (Gitman & Zutter, 2015; p.580).

The trade-off theory takes into account the bankruptcy risk of the firm directly. This theory argues that firms should establish optimal capital structures by balancing the advantage of debt and increased risk. As the increasing debt level increases the bankruptcy risk of the firm, so firm risk and leverage of the firm are negatively related according to the trade-off theory (Kraus & Litzenberger, 1973).

4.1.6. Dividend Policy

The dividend distribution policies of companies may also affect their capital costs. Firms that distribute high dividends may make financing through stocks easier and less costly, as it is more attractive to investors. In addition, preferred stocks are less risky for investors as they promise fixed dividend payments. Since the risk and the returns demanded by the investors move in the same direction, low risk may reduce the amount of return demanded. Firms may use equity financing more effectively with dividend payments. In this case, the company's debt usage level decreases and its leverage decreases. The company thus reduces its risk and becomes more attractive to investors. Risk-averse investors especially prefer companies with lower risk, even if their returns are lower. In this case, the cost of equity financing for the firm decreases. However, dividend payments also reduce the possibility of auto-financing through retained earnings. (Matos, 2001; p.97-120).

4.1.7. Liquidity

Liquidity refers to the firm's ability to meet its short-term liabilities by using its short-term assets. The ratio of short-term assets to short-term debts is used as a measure of liquidity. Short-term assets can be quickly converted into cash, so they are liquid assets. With these assets, the firm pays its short-term debt as well as the short-term portion of its long-term debt. Firms with highly liquid assets are able to meet their debts with their own resources, so use of debt of the firm decreases. In this case, the debt ratio within the capital structure decreases (Ata & Ağ, 2010).

4.1.8. Industry Conditions

The sectors in which businesses operate may have an effect on capital structure decisions. While cash flow is higher in some sectors, investments are more long-term in other sectors. For example, firms operating in the retail sector invest in short-term assets, particularly stocks. These companies meet their financing needs mainly with short-term debts. However, companies operating in the production sector invest in facilities, machines and vehicles. Since the assets and investments of such companies provide long-term returns, their funding is also long-term.

The sector of the firm is also important in terms of debt ratio. The firm should pay attention to debt ratios in terms of risk. However, the optimal debt level differs by sector. A debt ratio that is considered high and risky in one sector can be considered normal in another sector. The reason for this is that the operational risks of each sector are different (Gitman & Zutter, 2015; p.576). For this reason, the sector in which the company operates may have also effect capital structure decisions.

4.2. Macroeconomic Factors

Capital structure decisions are also affected by the macroeconomic factors. These factors can be listed as economic growth, inflation rate, interest rates, tax rates, exchange rates, and financial market conditions. In this section, macroeconomic factors are explained.

4.2.1. Gross Domestic Product (GDP)

Gross domestic product (GDP) refers to the monetary equivalent of the sum of all goods and services produced in a certain period within the borders of a country (Mankiw, 2003; p.208). According to this definition, GDP shows the total demand for products and services produced in a country. Changes in aggregate demand may also affect the capital structure decisions of companies (Ergün, 2020). In case of an increase in aggregate demand, firms may need more capital to increase their production. Since GDP is an indicator of a country's aggregate demand for goods and services, an increase in GDP is an indicator of economic growth. Economic growth means new investment opportunities for companies. In addition, individuals tend to invest their savings during economic growth periods. Economic growth is a macroeconomic variable that affects firms' access to capital and capital costs, and thus their capital structure.

In times of economic growth in a country, capital needs increase due to the willingness of companies to make new investments. In times of economic growth, companies can access capital more easily. Equity costs for companies may also be low due to the willingness of investors to invest during these periods. In addition, it is expected that there is a positive relationship between economic growth and leverage since it is easy to access debt from the markets (Ferri & Jones, 1979).

According to the pecking order theory, during economic growth periods companies need more resources to make new investments, so internal resources are insufficient and companies tend to use debt. Thus, pecking order theory argues that the economic growth and leverage are negatively related (Frank & Goyal, 2009).

4.2.2. Inflation

Inflation occurs when the prices of goods and services in a country increase over time (Abel, et al., 2007; p.6). An increase in prices reduces the purchasing power of money and therefore its value. In an environment with high inflation, the present value of money is higher than its future value. For companies, if the value of the debt borrowed today is great, companies prefer to use debt when there is high inflation expectation. Given the depreciation of the currency, debt utilization is now less costly in inflationary environments. Therefore, a positive relationship is expected between inflation and leverage (Joeveer, 2006).

On the other hand, high inflation may cause uncertainty in the economic situation of the country. In an environment of uncertainty, the risk of the firm increases. As a result of the increased risk, the borrowing costs of companies may increase. Therefore, companies may avoid using debt. From this perspective, inflation and leverage may be negatively related (Singh, 1995).

4.2.3. Interest Rates

Interest rates may be an important factor that affects capital structure decisions; because it determines borrowing costs. When interest rates are high, firms may prefer auto-financing with internal resources or the issuing of stocks due to the high interest costs. In this case, an inverse relationship occurs between interest rates and leverage. In order to reduce the cost of capital for

companies, there is a tendency to use cheaper financing sources. Since the increase in interest rates is a factor that directly increases the cost of the debt, companies may avoid using debt with high interest. However, in cases where there is a high-interest rate, investors may also want high returns. If the issuance of stocks is more costly despite the high-interest rate, companies may prefer to use debt despite the high-interest rate.

4.2.4. Tax Rates

Tax rate is a macroeconomic variable that may affect capital structure decisions due to the tax advantage of debt. The interests that businesses pay on debt are a form of expense. Tax payments are calculated over the amount remaining after interest payments. When the tax rate is high, it becomes more attractive for firms to use debt financing because of the tax advantage of debt. For this reason, firms prefer to use debt when tax rates are high. Modigliani & Miller (1961) found in their studies that firms use more debt when they included tax rates in their study. While debt has a tax advantage, dividend payments have no tax benefit for the firm as dividend payments are made on the remaining profit after taxes are paid. Firms may prefer debt-financing to take tax advantage when taxes are high. Therefore, tax rates and leverage are negatively related.

4.2.5. Exchange Rates

The exchange rate is a variable that needs to be taken into account, especially for companies doing foreign trade. Importing firms need foreign currency for their transactions. Therefore, these firms need more capital while the exchange rates are high. These firms should consider the exchange rate in the financing of their investments. It may be profitable for exporting firms, as a high exchange rate increases their income. These firms may meet their financing needs through auto-financing as their income increases. Pecking order theory argues that it is expected the firm provide financing through internal resources.

Exchange rates may also create risk and uncertainty for economic conditions. For firms borrowing in foreign currency, the amount of debt to be paid increases when the exchange rate rises. For these firms, the excessive rise in exchange rate creates the risk of insolvency. Therefore, when the expectation that the exchange rate will increase occurs, firms may use less debt according to the trade-off theory.

4.3.Financial Market Conditions

The development and legal infrastructure of financial markets, where firms meet the capital they need for their investments, may also be important for capital decisions. For companies, the variety of instruments in the debt market and ease of access are necessary for debt use. For companies that want to use equity financing through stock issuance, the development of capital markets is important. The development of these markets in a country creates an atmosphere of trust for investment in that country. A market with more resource diversity for firms is easier, and less costly, to access capital. For example, the fact that the capital market is more developed than the debt market may lead companies to issue shares, otherwise, firms prefer more debt-financing. Financial market regulations, soundness, and infrastructure affect the capital structure decisions of firms. (Gündoğdu, 2018; p.322).

5. EXPORTING AND OTHER MARKET ENTRY STRATEGIES

In this part of the study, the importance of international trade and export are explained in detail, and other market entry strategies will be explained briefly. Then exports from Turkey with data are represented.

5.1.Importance of International Trade

International trade benefits countries in a variety of ways. The benefits of international trade in international economic theories are also proved with different trade models having been created. One of these models is the trade model made with the comparative advantage theory. This theory was created by David Ricardo in the early 19th century. The comparative advantage theory states that countries' specialization is due to producing products that are more efficient for production. Countries produce products for which they have a comparative advantage, and buy other products through trade. Thus, by using resources more effectively, production increases and all countries benefit from trade. (Krugman, et al., 2018; p.52).

Another model that reveals international trade as beneficial for countries is the Heckscher-Ohlin model. Countries are different from each other and not every country has all possible production factors. A country may have more labor available than another country, while a further country may have more capital as a factor of production. According to the Heckscher-Ohlin theorem, countries should produce products that use their production factor intensely, and trade for other products. For example, wages may be relatively cheap in a country with a high labor force. The production of goods in which the labor force is used extensively in this country ensures efficient use of resources and reduces costs. Similarly, in a country with high capital, the production of goods in which the capital is used extensively in its production increases efficiency. Each country produces the goods in which its production factor is used extensively, and trades for other products. The surplus of the produced goods is exported to other countries, so exporters in the country benefit. The Heckscher-Ohlin model argues that in this case, both countries benefits from trade (Krugman, et al., 2018; p.80-88).

The emergence and proliferation of the concept of globalization forces companies to adapt to it. With the removal of trade and investment barriers between countries and the development

of communication and transportation technologies, companies should be able to compete at the international level and develop strategies accordingly (Aktan et al., 2003).

There are different international market entry strategies for companies. Market entry strategies differ in terms of risk and return. Firms should choose the strategy that best suits them in entering the market. Strategies to enter the international markets are exporting, licensing, franchising, joint ventures, strategic alliances, and foreign direct investment (FDI). Exporting is less risky than other strategies. FDI is the riskiest strategy among entry strategies (Cateora, 2014; p.360).

5.2.Exporting

Exporting is the sale of a domestic product or service abroad. Exports may be made as direct exports or indirect exports. Selling the goods produced by the exporter to the buyer abroad is a direct export. The manufacturer's sale of its goods to a domestic agent or distributor is indirect export. With indirect exports, the intermediary then sells these goods to a buyer abroad. These intermediaries may be exporters associations, export trade firms, foreign distributors, or brokers (Cengiz, et al., 2007; p.33). Indirect exports are less risky than direct exports because the firm does not have to bear the risks of export transactions. Exporting is the least risky way to enter international markets because the exporter does not need to invest capital in a foreign country. Therefore, it is an effective strategy for firms that will enter international markets for the first time (Cateora, 2014; p.361).

Export benefits firms in various ways. The benefits of exporting can be listed as follows (Gürsoy, 2016; p. 245):

- Firms earn foreign currency income through exports. In times of high exchange rates, firms may increase their profitability with exports.
- Firms may increase their market share by entering international markets with exports. Exporting is a relatively low risk international market entry strategy.
- Firms produce less in cases where domestic demand is insufficient. Thus, firms may not be able to use their capacities efficiently. With exports, firms use their production capacities more efficiently by increasing the demand for their products.
- In cases of a country-specific economic crisis, contraction occurs in domestic demand. Firms may compensate for the contraction in domestic demand with exports.

Besides the benefits of exporting, there are also some risks. These risks can be listed as follows (Gürsoy, 2016; p.246):

- Demand for the firm's products abroad may be less than expected.
- It may be difficult to compete with foreign competitors abroad.
- Buyers in the country of export may pay late or not at all. In this case, the legal process may be challenging for firms.
- Decreases in the exchange rate may cause the firm a loss.

In the studies conducted in the literature, it has been proved that exports increase the performance of the company. Yıldız (2018), found that there is a positive relationship between the export intensity of exporting companies in Turkey and firm performances. It was also observed that product and country diversification in exports had a positive effect on firm performance (Dalgıç & Fazlıoğlu, 2015). In addition, another study in the literature proved that the companies can reduce their capital costs by taking advantage of export tax rebates (Zhang, 2021).

Exporting has benefits for the economy of the country, as well as the companies. Economic growth and the terms of trade of countries are positively related. Exportation is a way for countries to compete in international markets (Krugman, et al., 2018; p.33). Exports provide growth to a country's economy and an increase of employment (Seyoum, 2009; p.8). In addition, foreign currency input is provided to countries with exports and resources are provided for products that need to be imported.

It is also proved by many studies that export contributes positively to economic growth in many countries (Yavuz, 2012; Saraç, 2013; Hesse, 2009; Ullah, et al., 2009; Hassan, 2012; Syarif, 2015). In addition, there are studies in the literature that prove that exports increase employment (Feenstra & Hang, 2007; Aydiner, 2016). Because of its contribution to economic growth, governments implement policies that encourage exports. These incentives are payments made to the exporter for exported products (Krugman, et al., 2018; p.255). In addition, countries provide financial support to exporters. Türk Eximbank was established to provide financial support to exporters exclusively in Turkey. Exportation increases with export support policies and export financing. As a result of the increase in exports, there is a growth in the country's economy.

5.3.Other Market Entry Strategies

There are different strategies to enter the international markets. These strategies differ in terms of risk and return. In this part of the study, these strategies are explained briefly.

5.3.1. Licensing

Licensing is a long-term contract that gives a firm (licensee) the right to manufacture the products of another firm (licensor) (Luthans & Doh, 2012; p.312). The licensee company pays the contract price to the licensor firm and in return buys the right to produce its products. With this contract, the licensee can use the licensor company's production technology, brand name and patent (Madura, 2013; p.10). Licensing may be an effective strategy for entering markets where there are trade barriers. Although it is a less profitable strategy, it is less risky than foreign direct investment. While the licensee firm can sell the products by using the brand recognition advantage of the licensor firm, the licensor firm can gain profit by overcoming commercial barriers (Cateora, et al., 2014; p.363). The risk of this strategy is that the licensee firm may become a competitor in the future. In addition, if the licensee company fails to produce the products to the set standards, the brand value of the licensor firm may be damaged (Luthans & Doh, 2012; p. 313).

5.3.2. Franchising

Franchising is a contract like licensing and gives a firm (franchisee) the right to operate by using the name of another firm (franchisor). The franchisee company can use the logo, products, and operating methods of the franchisor company by paying a fee with a contract (Luthans & Doh, 2012; p.313). Franchising is a very common strategy, especially in the fast food and hotel industry. Burger King, McDonald's, and Hilton Hotels are examples of franchising.

Although there are similarities between franchising and licensing, these strategies have some differences. Licensing is for a product while franchising encompasses a business model. Licensing agreements are longer than franchising agreements. Franchising agreements involve more control (Cengiz, et al. 2007; p. 78).

5.3.3. Joint Ventures

This strategy is the joint operation of two companies by establishing a third company. The company established in this strategy has a distinct personality. If companies do not have much information about the intended country's market, they can benefit from the another's experience by establishing a partnership with a company from that country. Thus, they reduce their risks (Madura, 2013; p.11). In addition, some countries require a partnership with a local company for foreign investments. To overcome the market entry barrier, companies may prefer a joint venture with a company from that country.

5.3.4. Strategic Alliances

A strategic alliance occurs when two or more companies come together and cooperate towards a common goal. With strategic alliances, companies may combine their strengths and eliminate their weaknesses by using their expertise. Strategic alliances may be technology-based, production-based, or marketing-based (Cateora et al., 2016; p.365).

Unlike the joint venture strategy, a separate company is not established in the strategic alliance strategy. Companies collaborate towards a common goal. A strategic alliance example is Star Alliance, established among airlines. Turkish Airlines is a member of this cooperation.

5.3.5. Foreign Direct Investment (FDI)

Foreign direct investment is the direct establishment of a facility in another country. The firm may also make FDI by purchasing a firm in another country. In addition, the firm's purchase of assets such as land or buildings in a country is an example of FDI. FDI is the riskiest form of investment for companies, but also the most profitable strategy. FDI may be done to reduce costs or increase earnings. Producing in regions where there is cheap labor or cheap raw materials is an investment to reduce costs. In countries where demand is high or the firm does not produce its products, FDI is an investment to increase profits (Madura, 2013; p.417-418).

5.4. Exporting in Turkey

Turkey has given importance to industrialization since the first years of the republic. In pursuing this direction, economic policies were applied. In the first years of the Republic, export products

mainly consisted of grains and raw materials. Imports, on the other hand, consisted mainly of industrial products. In this period, domestic producers were supported with industrialization policies, and import substitution policies were applied. Efforts were made to achieve economic growth by encouraging the production of imported goods with domestic resources. The period of 1930-1950 is that in which state intervention was felt most in Turkey. During this period, the state intervened more in foreign trade, and strict controls were imposed on imports. Export subsidies were also initiated during this period. In 1947, Turkey became a member of the International Monetary Fund (IMF). After 1950, Turkey adopted a more liberal and open economic policy. Various enterprises were established by the state. In the 1960-1980 period, the import substitution policy was adopted again. In this period, the share of agricultural products in the export products decreased, and the share of industrial products increased. Since the first years of the Republic, the fixed exchange rate regime has been implemented. Until the 1980s, the necessary importance was not given to exports, and exports remained in the background. Until this period, economic policies were predominantly "import substitution" policies (Gürsoy, 2016; p.6-8).

The period after 1980 was the beginning of a new era in Turkey. With the decisions made on 24 January 1980, serious changes were made to the economic policy. The "import substitution" policy was abandoned and the "export-based growth" policy was put into practice. These policies affected the development of exports in Turkey. The Turkish economy was integrated into the world economy with the liberalization of foreign exchange transactions, the transition to a flexible exchange rate system, the reduction of the role of the state in the economy, liberalization in foreign trade, export incentives, and the creation of free zones. Thus, export gained importance. With the establishment of Turkish Eximbank in 1987, the aim was to increase exports by providing financial support to exporters. Turkey became a member of the World Trade Organization (WTO) in 1995. In 1996, Customs Union Agreement with European Union (EU) was signed. Thus, with the free trade policies implemented, trade barriers were removed and exports improved. In 2001, the Central Bank's intervention in foreign currency was restricted and a free exchange rate regime was adopted. An important development has been observed in exports with the effect of the incentive policies implemented since this period (Gürsoy, 2016; p.10-14).

Since 2010, more attention has been paid to export policy. In 2012, the 'Turkey Export Strategy and Action Plan' was put into practice. Incentives were developed and policies were put into

effect in line with the predetermined targets. This period was the period when export incentives were developed and increased (Gürsoy, 2016; p.18-20).

With export-oriented policies and incentives, Turkey's exports set a record in the 2010s. In 2019, the highest export figure in the history of the republic was reached with exports of 180 billion US dollars. Although there is some decline in exports due to the pandemic that emerged in 2020, a record in exports is expected in 2021.

Export statistics of Turkey are shown in Table 5.1. The countries to which Turkey exports the greatest are shown in Table 5.2 and the sectors in which Turkey exports most frequently are shown in Table 5.3 (Turkish Statistical Institute, 2020):

Table 5.1: Export Statistics of Turkey 2013-2020 (Source: Turkish Statistical Institute)

Year	Value (thousand \$)	Change (%)
2013	161,480,914.70	
2014	166,504,861.80	3.11
2015	150,982,113.77	-9.32
2016	149,246,999.26	-1.15
2017	164,494,619.32	10.22
2018	177,168,756.29	7.70
2019	180,832,721.70	2.07
2020	169,650,994.16	-6.18

Table 5.2: Export Statistics of Turkey According to Countries (thousand \$) (Source: Turkish Statistical Institute)

Rank	Country	2020	2019	2018
1	Germany	15,979,855.10	16,617,244.22	17,353,443.49
2	United Kingdom	11,236,220.35	11,278,615.17	11,473,927.05
3	USA	10,183,126.34	8,970,657.92	9,072,756.26
4	Iraq	9,142,369.78	10,223,292.27	9,437,007.23
5	Italy	8,082,679.55	9,753,017.86	10,047,452.62
6	France	7,195,494.94	7,945,606.77	7,655,339.54
7	Spain	6,684,410.55	8,138,744.01	8,121,096.07
8	Netherlands	5,195,353.70	5,761,921.45	5,100,743.94
9	Israel	4,704,133.04	4,463,820.08	4,022,878.17
10	Russia	4,506,815.04	4,152,137.04	3,652,603.35

Table 5.3: Export Statistics of Turkey in terms of Products (Source: Turkish Statistical Institute)

Rank	Product	2019 (thousand \$)	2020 (thousand \$)	Change(%)
1	Vehicles except railway or tramway rolling-stock, parts thereof	2,260,921.03	2,508,568.68	10.95
2	Boilers, machineries and mechanical appliances, parts thereof	1,541,250.56	1,833,884.49	18.99
3	Iron and steel	745,151.19	1,018,018.27	36.62
4	Electrical machinery and equipment, parts thereof	900,932.74	1,013,772.52	12.52
5	Knitted and crocheted goods and articles thereof	696,974.40	854,955.03	22.67
6	Plastic and articles thereof	554,386.28	713,044.27	28.62
7	Precious metals, precious stones, pearls and articles thereof	601,914.89	687,383.38	14.20
8	Articles of iron and steel	610,377.65	627,738.71	2.84
9	Non-knitted and crocheted goods and articles thereof	480,818.10	575,546.58	19.70
10	Eatable fruits and nuts, peel of melons or citrus fruits	518,878.39	569,593.74	9.77

6. LITERATURE REVIEW ABOUT THE EFFECT OF FIRM-LEVEL EXPORTING ON CAPITAL STRUCTURE

Capital structure is an important topic for researchers working in the field of finance as well as for financial managers. Many researchers study on capital structure. Different theories about capital structure have been emerged. Nevertheless, there is no consensus on the optimal capital structure because the factors affecting the capital structure vary among firms.

While some of the studies on capital structure focus on the factors that affecting the capital structure, others focus on testing these theories. The effect of exports, which is the subject of this thesis study, on the capital structure is also one of the explored topics. Different results in the studies are conducted and results are obtained supporting different capital structure theories.

6.1. International Literature on the Relationship Between Firm-Level Export and Leverage

Abdel-Malek (1974), investigated the impact of foreign partnerships in firms on export performance. Domestic and foreign companies operating in Canada were examined in the study. The data of 166 companies operating in various sectors were used in the study. The results of the study showed that Canadian companies export more than foreign companies because they had export advantages and are supported by various regulations. Firms with more domestic partnerships in their capital structures had higher export levels.

Akhtar (2005), researched the determinants of the capital structures of domestic and multinational companies operating in Australia. In his study, he used the 1992-2001 period data of companies operating in Australia. The companies were grouped as multinational companies and domestic companies. Leverage was the dependent variable, and agency cost, political risk, exchange rate risk, agency cost, profitability, size, asset structure, non-debt tax shield, and bankruptcy cost were independent variables. The results of the study showed that size, profitability, and growth affect the capital structure for both groups of companies. In this respect, there was no difference between domestic and multinational companies. But bankruptcy costs and the level of geographic diversification were determinants of capital structure for multinational companies. For domestic companies, it was observed that the

collateral values of the assets were important. It was also observed that the determinants of the capital structures of domestic companies and multinational companies were the same in basic factors.

Greenaway, et al. (2007), investigated the relationship between export decisions and financial factors. They used data from 9,292 British firms for the 1993-2003 period. The results of the study showed that exporting firms perform better financially and had a better financial situation than non-exporting firms. In addition, it was observed that companies that have just started to export borrowed more due to high costs and therefore had higher leverage.

Bellone, et al. (2008), investigated the relationship between financial restrictions and exports on French firms. In their study, they used the data of manufacturing companies operating in France for the 1993-2005 period. According to the results of their analysis, they revealed that exporters show better financial performance than non-exporters. The limited access of firms to financial resources adversely affected their export performance.

Fu et al. (2010), investigated the effect of ownership structures in manufacturing companies operating in China on their export performance. They used the data of companies with an annual return of more than 5 million yuan for the 1999-2003 period. After the companies whose data were not accessible were excluded, the remaining 36,941 companies were included in the study. According to the results obtained in this study, fully foreign-owned companies or foreign-controlled joint ventures exported more. Domestically controlled joint ventures and fully domestic companies had less export intensity. The results of the study showed that foreign capital increased the level of exports in companies operating in China.

Berman & Hericourt (2010), investigated the impact of financial factors on exports with the data of 5,000 companies from 9 developing countries. Countries included in the study were: India, China, Vietnam, South Africa, Thailand, Bangladesh, Morocco, Indonesia, and the Philippines. Although the period of data used in the study varies according to country, all data covered the 2000-2005 period. The results obtained in the study showed that firms' access to financing resources significantly affected their exports. However, the financial health of firms did not have any effect on exports. It was observed that firms export more if they have access to external finance. A further result of the study was that the financial development of the countries increased the number of exporters in that country and also increased the level of exports.

Chen & Yu (2011), investigated the relationship between foreign direct investments (FDI), exports, and capital structure by using the data of 566 Taiwan firms. Debt ratio was the dependent variable and the rest were independent variables. Although they found a positive relationship between foreign direct investment and debt ratio in their study, they found a negative relationship between exports and debt ratio. According to this result, it was observed that exports with FDI carried different risks and therefore changed the financing behavior of the companies. In their research within the framework of agency theory, the authors also revealed that as the international operations of companies increased, monitoring costs for creditors increased, so it might be more difficult for companies to borrow money.

Goldman & Viswanath (2011), investigated the relationship between export and capital structure for Indian firms. Leverage was the dependent variable, and export, market capitalization, book value, research and development expenses, operating cash flow, and asset structure were independent variables. They used data of over 2100 firms for the 2000-2009 period. According to the results of the study, it was revealed that exporting firms have higher leverage than non-exporting firms.

Balla & Mundaca (2011), studied about the determinants of the capital structures of manufacturing companies operating in Hungary. In their study, they also considered whether the companies were exporters or not. They used data for the 1992-2006 period. Due to the problem of accessing data, the number of firms varied over the years. According to the results of the study, Hungarian companies should be exporters in order to have access to long-term external financing. In addition, the export market needed to be large enough. For small firms, exports alone were not enough to access external financing. It was observed that exporter companies had access to external financing more easily, and thus they could use more debt.

He, et al. (2013), investigated the relationship between the capital structure of the firms and the export capacities of firms. They used the data of 1,901 Chinese manufacturing firms for the 1999-2007 period. They grouped the firms according to their size as small, medium, and large. They investigated the effect of capital supports on the export capacities of firms. The Generalized Method of Moments (GMM) was employed in the study. In this study, export was the dependent variable, debt ratio, and firm age were the independent variables. According to the results of the study, financing decisions and capital structure affected the export capacity of all companies, but the degree of influence varied. Therefore, policies regarding government regulations and supports should be regulated by considering the size and structure of the

companies. It was thought that the capital supports given to small companies would also protect medium-large scale companies. Capital supports provided to firms increased the export capacities of firms.

Secchi, et al. (2014), investigated the impact of financial restrictions on exports for Italian firms. They used the data for the 2000-2003 period. They took into account the credit ratings of companies as a financial constraint criterion. According to the results obtained in the study, financial restrictions reduced the export values of companies. It was also problematic for companies with difficult access to financial resources to export.

Bartoli et al. (2014), investigated the relationship between access opportunities to bank financing and export performance for Italian firms. They used research data from UniCredit in their study in 2010. The study results showed that bank subsidies affect firms' export capacity. The ability of small businesses to obtain financing from banks enabled them to export by meeting the costs required for export. In this case, it could be said that exporting small firms had a higher debt ratio in their capital structure.

Bernini, et al. (2015), investigated the relationship between export quality and leverage. In their study, they used the data of manufacturing firms operating in France. They used firm data of the 1997-2007 period. Export quality was used as the dependent variable and leverage was used as the independent variable. In their work, they investigated the relationship between firms' leverage and export products within the scope of quality. Here, the quality of export was the degree to which the product produced met the consumer utility. According to the results obtained in the study, a negative relationship was found between the leverage of firms and the quality of export products.

Ayob, et al. (2015), examined the effects of financial factors on export behavior. In their study, they conducted a survey with 356 small and medium-sized enterprises (SME) operating in Malaysia, and analyzed the survey results. According to the results of the study, exporting companies encountered more costs than non-exporting companies. Therefore, these companies needed more resources. It was difficult for SMEs to obtain external financing, therefore these companies should be supported. The export performances of financially supported firms were also increasing.

Maes, et al. (2016), investigated the effect of exports on the capital structure by using the 1998-2013 data of SMEs operating in Belgium. Leverage was the dependent variable; export, size,

growth, profitability, volatility, and asset structure were independent variables. According to the results obtained in the study, it was seen that exporting firms have more leverage than non-exporting firms. The reason for this was thought to be the short-term debt of exporting companies being higher.

Liu & Zhang (2017), investigated the relationship between exports and the capital structures of companies operating in 16 different sectors in China for the 2007-2015 period. They took into account the capital structures of the sectors in their work. Variables such as export dependency, profitability, tangible assets, sector size, and risk were also used in the study. Leverage was included as the dependent variable, the others were included as independent variables. The results of the study showed that there was a positive relationship between the capital structure of the sector and dependency on exports. International operations reduced the cost of debt by increasing the cash flows of businesses. For this reason, exporting firms used more debt and in this case leverage ratios also increased.

Silva (2017), examined the financial structures of exporter and non-exporter firms in Portugal. In his study, he used data from 32,912 Portuguese companies for the 2011-2015 period. Taxes, tangible assets, profitability, size, industry, business risk, inflation rate, and leverage were variables used in the study. Leverage was the dependent variable with the others were independent variables. The analysis results showed that the debt utilization decisions of exporting firms were different from those of non-exporting firms. Exporter firms tended to use less debt than non-exporting firms. However, a meaningful result could not be found regarding the effect of export intensity on leverage and therefore it was concluded that its effect was insignificant.

Miravittles, et al. (2018), investigated the effects of the financial structures of companies on export decisions with the data of 8,019 Spanish companies. In their study, the companies were divided into groups according to their size. They used data of the 2002-2005 period. Export, ownership structure, financial rates, and FDI were variables. Export was the dependent variable and the remainder were independent variables. In the study it was observed that there was an export trend for large companies. It was observed that export decisions in small and medium-sized enterprises were not related to financial structure. Another result of the study was that the relationship between the financial structures of different sized firms and their export decisions differed. The reason for this difference was thought to be effective in the export incentives provided to businesses.

Pinto & Silva (2019), investigated the effect of exports on the capital structure of firms. They used the data of 7,676 Portuguese SMEs. In their study, they used the leverage, export intensity (ratio of exports to total sales), taxes, the ratio of tangible fixed assets, profitability, growth opportunities, firm size, operating risk, and industry conditions (average leverage ratio in the firm's industry) as variables. Leverage was the dependent variable and those remaining were independent variables. They employed the Generalized Method of Moments (GMM) analysis method. The analysis was made with data of the 2011-2016 period. According to the results, export incentives could encourage companies to use debt. In particular, the fact that governments provided guarantees for the loans used by companies facilitated the use of debt by companies. For this reason, companies that benefit from export incentives could borrow money.

Pinto (2019), examined the financing decisions of exporters and non-exporters in Spain. In his study, he investigated the effect of exports on the capital structure of companies with the 2012-2017 data of 45,147 Spanish companies. In addition to leverage and export variables, he also used tax rates, tangible fixed assets, profitability industry conditions, business risk and inflation rate variables in his study. Leverage was the dependent variable and the rest were independent variables. According to the results of the study conducted with panel data analysis, the capital structures of exporters and non-exporters might differ from each other. Three different models were established in the study. In the first model, when all firms were included, it was observed a negative relationship between exports and leverage. In the second model, where only exporting firms were included, a negative relationship was observed between profitability and inflation and leverage. In the third model, there were companies that did not export. A positive relationship was found between tax and profitability and leverage in non-exporter companies.

Abor et al. (2019), investigated the effect of SMEs' access to bank financing on their export performance. In the study, data of the manufacturing companies operating in Ghana for the 1991-2002 period were used. Data on exports, bank debts, firm age, profitability, firm size and panel data analysis were used. Export was the dependent variable for this study. The analysis results showed that SMEs that could access bank financing made higher exports. From this point of view, it might be said that according to this study, the debt ratios of exporting firms were higher in their capital structures.

Chalmers, et al. (2020), examined the relationship between exports and leverage of small and medium-sized enterprises operating in Spain, and the factors that affect the financial decisions of these firms. In their study, they investigated how the ratio of foreign sales of companies to

their total sales affects leverage. Leverage was the dependent variable, and export intensity, profitability, tangibility, size, growth, and business risk were independent variables. They used the data of 2,000 companies for the period 2010-2016 in their study. They employed the Generalized Method of Moments (GMM) analysis. Analysis results showed that the leverage ratio decreased as exports increased for the examined companies. Companies that export more used less debt, so a negative relationship was found between the leverage of firms and exports of firms. In addition, there was a negative relationship between profitability and leverage. There was a positive relationship between tangible fixed assets, growth, size and leverage.

Zhang (2021), in his study, investigated the effect of export tax rebates on the capital structures of firms. In his study, he used the data of the manufacturing industry companies operating in China for the period of 2007-2015. Leverage was used as the dependent variable in the study, and the ratio of export tax rebates to sales was used as the main independent variable. In addition, fixed assets investments of companies, cash flow, return on assets, financial costs, firm age, firm size, sales growth, and export level variables were also used in the study. The results of the study showed that export tax rebates positively affects leverage. In addition, export tax rebates reduce the financial costs of the firm and increase the firm's fixed assets investments and financial performance.

6.2.Literature on the Relationship Between Firm-Level Export and Leverage in Turkey

Research in Turkey has been conducted with several studies on the determinants of the capital structure. There are studies in which export is used as an independent variable. In these studies, it is observed that companies with high exports prefer the use of debt. It is observed that as exports increased in companies, the debt ratio also increased. This study emphasizes the effect of exports on capital structure decisions.

Yener (2002), investigated the factors affecting the capital structure decisions of 71 Turkish firms. He used the data for the 1992-1999 period and he employed a panel data analysis. Leverage, inflation, GDP, tax rate, non-debt tax shield, the role of the state (ratio of government bonds in securities), bankruptcy risk, and size variables were used in the study. Leverage was the dependent variable and with the remaining as independent variables. According to the analysis results, inflation was the most important factor affecting the capital structures of

Turkish companies. Contrary to expectations, a negative relationship was found between GDP growth and leverage. Looking at the role of the state variable, it was seen that firms earn non-operating earnings by investing in government bonds. In general, no significant relationship was found between the role of the state and the capital structures of firms. Due to the constant change in tax policies, a meaningful relationship could not be found between tax rates and capital structures. However, as the non-debt tax shield was an important advantage for companies, it was an effective factor on capital structures. Bankruptcy risk was also an important factor in capital structure. Firms preferred to strengthen their capital structures against this risk. The study results showed that the capital structure was not only due to firm-specific variables; it also showed that it was affected by macroeconomic factors.

Şişman (2006), investigated the factors affecting the capital structure decisions of firms. She used the data of manufacturing firms for the 1992-2002 period, and employed a regression analysis. She used variables such as leverage, profitability, asset structure, risk, and tax rate in her study. Leverage was the only dependent variable. Analysis results showed that there is no optimal capital structure for the companies examined. Each company created its capital structure according to its own needs and conditions. In addition, market conditions affected the decisions of firms' use of debt or equity financing.

Gündoğdu (2009), investigated the financing methods of exporting firms in Turkey. In the study, the data belonging to 86 firms for the 1997-2008 period were used. In the study, a Pedroni panel cointegration analysis was employed. The results of the analysis showed that firms primarily use debt while increasing their exports. It was understood from here that there was a positive relationship between export and leverage.

Terim & Kayalı (2009), investigated the factors affecting the capital structure of firms. In their study, they used data from 134 companies whose shares were traded on the stock exchange during the 2000-2007 period. They employed regression analysis with the variables of leverage, asset structure, firm size, profitability, growth opportunities, and non-debt tax shield. Leverage of the firms was used as dependent variable, and the remainder were used as independent variables. According to the analysis results, there was a negative relationship between asset structure, non-debt tax shield, profitability, and leverage. A positive correlation was found between firm size and leverage. The capital structure of the firms operating in Turkey, mostly in the manufacturing sector, showed that the pecking order theory was supported.

Okuyan & Taşçı (2010), studied about the determinants of capital structure of the 1,000 largest industrial firms operating in Turkey. They employed a panel data analysis by using the 1993-2007 period data of firms. The variables used in the study were debt ratio, profitability, added value created by the firm, export, ownership structure, and size. The debt ratio was used as the leverage of the firm and was the dependent variable. According to the analysis results, a negative relationship was observed between firm size and profitability and leverage. This result supported the pecking order theory. A positive relationship was found between the leverage of firms and the added value it creates. In other words, it was seen that companies using debt create more added value. In the study it was seen that exporting firms use more debt than those who do not. There was a positive relationship between exports and the leverage ratio.

Elçi (2011), investigated the relationship between capital structure and exportation of Turkish firms. She used the data of the 1993-2009 period. Companies were divided into three groups as fully foreign capital companies, companies with foreign partners, and companies without foreign capital. Analysis results showed that foreign partnerships increased firms' opportunities of entering new markets and therefore they could export more. It was observed that companies without foreign partnerships made fewer exports than those with existing partnerships.

Sayılğan & Uysal (2011), investigated the factors affecting the capital structures of firms by using the Central Bank of the Republic of Turkey (CBRT) sector balance sheet data. In their study, they employed panel data analysis on the sector balance sheet data for the 1996-2008 period. In the study, they used the variables of leverage, size, asset structure, profitability, growth opportunities, non-debt tax shield, and bankruptcy risk. Leverage was the dependent variable, and the others were independent variables. According to the results of the study, there was a negative relationship between leverage and the non-debt tax shield; but there was a positive relationship between size, profitability, asset structure, growth opportunities and leverage. The results of the analysis supported the trade-off theory. Contrary to the pecking order theory, a positive relationship was found between profitability and leverage.

Çelik (2014), examined the capital structure of exporter SMEs in Turkey. He researched the effect of export performance on the capital structure of these firms. He used the 2009-2011 period data of 882 companies in his study. Of the companies examined, it was observed that those which export use more foreign resources. It was concluded that exporter companies could access foreign resources more easily and therefore they had higher leverage.

Kara & Erdur (2015), investigated the determinants of the capital structure of exporter firms in Turkey. They used the data for firms from different sectors such as automotive, food & beverage, and the textile & leather industry. They used the data for the 2006-2014 period. They used the variables of the debt ratio, profitability, company size, liquidity, non-debt tax shield, asset structure, growth, company risk in their study. Debt ratio was used as leverage and it was the dependent variable of the study. The results of the study revealed that capital structures differed according to the sectors. Profitability, asset structure, and liquidity were the factors that affected the capital structure decisions of companies operating in the food & beverage, and automotive sectors. In the textile & leather sector, liquidity, firm size, asset structure, non-debt tax shield factors were the determinants of the capital structure. The results showed that the sector was also an important factor for capital structure decisions.

Tunahan et al. (2015), investigated the effect of ownership structure on profitability for the exporter firms in Turkey. 441 companies were included in the analysis results which showed that companies with low export intensity had higher profitability. In addition, it was observed that the profitability of domestic companies was lower. Additionally, it was observed that foreign ownership was high in the firms which had high export intensity.

Irk & Karaca (2015), investigated the factors affecting the capital structures of 123 manufacturing industry firms. They used company data for the 2000-2010 period. They employed panel data analysis using the variables of leverage, firm size, growth, non-debt tax shield, profitability, tax rate, and asset structure. Leverage was used as the dependent variable of the model, and the remaining as independent variables of the model. According to the results obtained in the study, it was seen that profitable companies primarily used their internal resources. A positive relationship was found between the debt ratios of firms and the non-debt tax shield. There was no statistically significant relationship between taxes and debt ratios. There was a positive relationship between growth and indebtedness. Based on this, it could be said the growing companies need more resources. According to the results of the study, there was no optimal capital structure for manufacturing industry companies. These results supported the pecking order theory.

Abdioğlu & Deniz (2015), investigated the firm-specific factors affecting the capital structure decisions of 188 Turkish firms. They used data for the 2009-2013 period and employed a random-effects panel data regression analysis. The debt ratio was used as the dependent variable; and the variables of asset structure, profitability, firm size, liquidity, growth, leverage,

volatility in sales, and non-debt tax shield were used as the independent variables. The companies included in the study were selected from 8 different sectors. It was revealed that the capital structures of the examined firms supported the pecking order theory.

Cevheroğlu-Acar (2018), investigated the factors affecting the capital structure of Turkish firms. The author used leverage as the dependent variable, and used size, liquidity, profitability, risk, asset structure, tax shield of debt, and growth as independent variables. In her study, she employed panel data analysis by using the 2009-2016 data of 111 companies. According to the analysis results, profitability, non-debt tax shield, liquidity variables, and leverage had a negative relationship. However, a positive relationship was observed between tangible assets, growth and size variables, and leverage. The obtained results showed that the capital structure decisions of the firms supported the pecking order theory.

Öztürk (2018), investigated the factors that affect the capital structure decisions of companies. In his study, the author used the quarterly data of 19 companies for the January 2013 - March 2018 period. The total debt/total assets ratio was used as the dependent variable; asset structure, risk, cost of debt, ROA, size, current ratio, non-debt tax shield, and growth variables were used as independent variables. It was observed that a positive relationship between leverage of firms and size. It was observed that a negative relationship between profitability, current ratio, asset structure, cost of debt, and leverage. No significant relationship was found between other variables. In addition, the current ratio was the most important factor on capital structure decisions and size the least.

Erkol & Coşkun (2020), searched the impact of the financial structure on the export performance for firms operating in manufacturing sector firms in Turkey. In their study they used data from 24 different manufacturing sectors for the 2008-2016 period. In the study, the ratio of exports to total sales was used for export intensity and this was the dependent variable. Profitability, debt ratios, size, current rate, exchange rate, and interest expenses were used as financial factors and were the independent variables. Analysis results showed that financial structure affected export intensity. It was observed that firms with easy access to debt had higher exports. In addition, firm size was a factor affecting exports. The easier access of large companies to resources increased the exports of these companies.

7. THE ROLE OF EXPORTING ON CAPITAL STRUCTURE: A FIRM-LEVEL INVESTIGATION

In this part of the study, the purpose and importance of study, data, and variables used in this study, methodology of the study, and the results obtained from the analysis are explained.

7.1. Purpose and Importance of the Study

Capital structure decisions are one of the most vital financial decisions for a firm. The cost of capital is used as the discount rate for the future generated cash flows from projects planned by the firm to the present value, that is, in the calculation of net present value (NPV). Capital structure decisions are an issue on which financial managers are particularly concentrating in terms of affecting the general financial situation of the company. Firm managers make capital structure decisions with a cost/benefit analysis (Gitman & Zutter, 2015; p.575).

In literature, there are different theories on the capital structure. The M&M theory can be considered as a basic among these theories. This theory was created in 1958 by Modigliani & Miller. Later, different theories were created such as the pecking-order theory, the signaling theory, and the trade-off theory, which are called modern theories, and numerous researches were conducted on these theories.

Capital structure decisions of the firms may be affected by various factors. Some of these are the company's debt ratio, the size of the firm, profitability, export, asset structure, partnership structure, and added value created by the business. In many studies, the relationship between capital structure and firm performance and the determinants of capital structure are investigated and it is observed with which theory firms' capital structures are compatible.

Export is also important for firms. Firms may increase their profitability, market share, and financial performances. Export requires extra financial sources for firms. Firms may need increasing the production capacity because of the more demand created by exporting. If the internal sources of firms are sufficient to finance the export, firms use internal sources (Tomanbay, 2014).

In this study, the effect of exports on the capital structure of the firms is emphasized. The aim of this study is to find an answer to the question of how the export intensity affects the capital structure decisions of the firms. In the study, the leverage of the firms is used as the dependent variable and the foreign sales data of the companies is used as the main independent variable. Some firm-level and macro-level variables are also included to the study. The data of exporting firms in Turkey are used and a panel data analysis is applied with the results observed. The aim of the study is to reveal the role of exports in determining the capital structure.

There are many studies about the determinants of capital structure. These studies mostly focus on the factors that affect the capital structure decisions. In the studies, the determinants of capital structure vary according to the regions, periods, or sectors examined. Export is among the determinants of the capital structure. In this study, focus is on the role of exports in the capital structure decisions of companies. For this purpose, the research was on exporting companies in Turkey. Thus, in this study, the aim is to contribute to the literature by showing how the exports affect the capital structures of the exporting firms.

7.2.Data and Variables

In this part of the study, the dataset and variables of the study are explained.

7.2.1. Dataset

The annual data of 208 companies whose stocks are traded on the Istanbul Stock Exchange for the period 2005-2019 are used in the study. The reason for choosing 2005 as the starting year in the data used in the study is the amendment made in the tax procedure law in 2005. With this law, companies are obliged to make inflation adjustments in their financial statements. Since the effect of exports on the capital structure is investigated in the study, companies operating in the financial sector and companies that do not export are not included in the analysis. As a result, only the data of exporting real sector companies are used in this study. The data of the companies are obtained from the Finnet database.

In addition to firm-level data, real gross domestic product (GDP) and the real effective exchange rate (REER) macroeconomic variables are also used in the analysis. The real effective exchange rate data is obtained from the Central Bank of the Republic of Turkey Electronic Data

Delivery System. Real GDP data are taken from the World Development Indicators of World Bank.

7.2.2. Variables

In the study, "leverage" is used as the dependent variable, in line with the previous determinants of capital structure researches. There are different leverage calculations that are used in different studies. Titman & Wessels (1988), in their study, investigated the determinants of capital structure, and they used different leverage calculations. As a result, it is observed that there is no difference between different leverage calculations (Titman & Wessels, 1988). The export intensity is calculated as a ratio of exports to total sales and is used as the main independent variable. In addition, some control variables are added into the model. These are asset tangibility, cash flow, and size. The asset tangibility variable is included to express the firm's collateral strength, cash flow to express the company's cash flow generation power, and total assets to express the size of the firm. The size variable is used by taking the logarithm of the total assets. For robustness checks supplementary firm-level and macro-level variables are added to the main model. The additional firm-level variable is current ratio. This variable is added to the model to control the effect of liquidity on capital structure decisions.

Table 7.1: Variables

Notation	Variable	Description
<i>lev</i>	Leverage	Dependent variable. It is calculated by dividing the long-term liabilities by total assets.
<i>exp</i>	Export Intensity	Main independent variable. It is calculated by dividing the foreign sales by total sales.
<i>astan</i>	Asset Tangibility	Tangible Assets / Total Assets
<i>cf</i>	Cash Flow	(Net profit + Amortisation) / Total Assets
<i>size</i>	Size	The logarithm of total assets
<i>cr</i>	Current Ratio	Short-term Assets / Short-term Liabilities
<i>reer</i>	REER	Real Effective Exchange Rate
<i>gdp</i>	Real GDP	The logarithm of real GDP

In addition to these firm level variables, further macro-level variables such as real GDP (as the natural logarithm) and real effective exchange rate are added to the study. GDP is included in the analysis as an indicator of aggregate demand in the country. When there is an increase in GDP, this means the aggregate demand in the country increases. As a result of increasing in demand, firms may need to make new investments to increase their production capacities to meet this demand, so the firms may need more capital sources. In this situation, may be internal sources of firms become insufficient and there may be increase in the debt usage of firms. Thus, there may be a positive relationship between GDP and the debt usage of the firms.

The Central Bank of the Republic of Turkey creates a currency basket from the currencies of the countries where Turkey's trade volume is high when calculating the exchange rate. The value of the Turkish lira against this currency basket represents the nominal exchange rate. The real effective exchange rate is obtained by adjusting for the relative price effects of the nominal effective exchange rate. (Central Bank of Turkey, 2021).

The REER variable has been added to observe the effect of exchange rate changes on the capital structure decisions of exporting firms. If REER increases, this means the Turkish Lira appreciated. (Eğilmez, 2012). If Turkish Lira appreciated, internal sources of the firms may be sufficient to meet their capital needs, so there may be a negative relationship between REER and leverage of the firms. For the real effective exchange rate and real GDP variables, the data taken as the base year 2003 were used. The explanations of the variables used in the study are given in Table 7.1.

Before starting the econometric analysis, extreme values of the leverage, export intensity, asset tangibility, and cash flow variables are removed from the data used in the study. In other words, the values below 1% and above 99% are eliminated with the trimming method. The descriptive statistics of the variables are given in Table 7.2.

The correlation test results are given in Table 7.3. Finding high levels of correlation among the dependent variables is undesirable in econometric analysis. According to the results, there is a high negative correlation between the real effective exchange rate and real GDP.

Table 7.2: Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
<i>lev</i>	2909	0.149326	0.1402562	0.0020679	0.635232
<i>exp</i>	2905	0.24895	0.2472958	0	0.94
<i>astan</i>	2912	0.323162	0.1884438	0.0016325	0.773287
<i>cf</i>	2909	0.06183	0.0945915	-0.265807	0.334445
<i>size</i>	2912	8.528182	0.8497449	6.015668	11.6089
<i>cr</i>	2912	2.039036	1.793144	0.1897359	10.83371
<i>reer</i>	2912	102.7117	14.75055	76.25	127.72
<i>gdp</i>	2912	12.11797	0.0930555	11.97016	12.24852

Table 7.3: Correlation Test Results

	<i>lev</i>	<i>exp</i>	<i>astan</i>	<i>cf</i>	<i>size</i>	<i>cr</i>	<i>reer</i>	<i>gdp</i>
<i>lev</i>	1							
<i>exp</i>	0.0649	1						
<i>astan</i>	0.2536	0.0633	1					
<i>cf</i>	-0.2191	0.1011	-0.0867	1				
<i>size</i>	0.2492	0.0664	0.0323	0.2026	1			
<i>cr</i>	-0.2911	-0.0587	-0.1975	0.2928	-0.1506	1		
<i>reer</i>	-0.0947	-0.0116	0.1124	0.0393	-0.1972	0.0639	1	
<i>gdp</i>	0.0953	0.0081	-0.1312	-0.0242	0.1996	-0.0278	-0.8992	1

The main model is as follows:

$$lev_{it} = \alpha + \beta_1 exp_{it} + \beta_2 astan_{it} + \beta_3 cf_{it} + \beta_4 size_{it} + \mathcal{E}_{it} \quad (4)$$

Here *lev* denotes the leverage and it is the dependent variable. α denotes the constant parameter. The main independent variable is export intensity and it is expressed with *exp*. Other variables are *astan* for asset tangibility, *cf* for cash flow, and *size* denotes the total assets of the firm. These are the control variables.

According to the some studies in the literature, exporting level affects the leverage positively (Goldman & Viswanath, 2011; Pinto & Silva, 2019; Greenaway, et al., 2007; Maes, et al., 2016). These studies argue that companies with high exports use more debt. However, there are also studies find that exportation affects leverage negatively (Chalmers, et al., 2020; Silva, 2017). In these studies, it was revealed that companies use less debt as their exports increase.

A positive relationship is expected between leverage asset tangibility. If firms own more tangible assets, they may borrow more by using them as collateral. (Myers & Majluf, 1984). Also, according to the agency theory, tangible assets reduce the agency cost for lenders. In this case, debt usage may be higher for companies with high tangible assets (Jensen & Meckling, 1976).

According to the trade-off theory, large companies can create more cash flow because they operate in different sectors. Therefore, it may be easier for large firms with high cash flow to access capital resources. As a result, these firms are expected to have higher leverage (Fama & French, 2002). According to the pecking order theory, companies primarily use internal resources. Firms with high cash flow may have low leverage, as they provide financing with internal resources. In this case, a negative relationship is expected between leverage and size (Myers & Majluf, 1984). However, there are also studies in the literature that find a positive relationship between size and leverage (Cevheroğlu-Acar, 2018; Öztürk, 2018; Terim & Kayalı, 2009).

7.3. Empirical Methodology

In this study, a classical panel data regression analysis was applied. In econometric analyses, three types of data are used. These are time-series data, cross-sectional data, and panel data. Time series are data that include the changes of a variable over days, months, quarters, or years. Cross-sectional data contain data of different variables at a given time. Panel data, on the other hand, are the data in which both time series data and cross-sectional data are combined. In panel data, the number of units is expressed as 'N' and the number of observations is expressed with 'T'. Panel data include more than one observation and more than one time. Econometric analysis using panel data is called panel data analysis (Tatoğlu, 2018; p. 2-3).

There are several advantages of using panel data in econometric analysis. The advantages of using panel data can be listed as follows:

- The number of observations increases because the panel data includes cross-sectional data and time-series data together. With the increase in the number of observations, more information can be obtained from the data. Thus, errors in the results can be reduced (Güriş, 2018; p.11).

- In a time series, the change of only one unit over time can be examined. In cross-sectional data, the properties of different units at a single time can be examined. Panel data provides the opportunity to simultaneously examine the differences between units and the changes of units over time (Tatoğlu, 2018; p.10).

- A multiple collinearity problem may be encountered in time series data. This possibility decreases as there are two dimensions in the panel data (Güriş, 2018; p.12).

In addition to the advantages of panel data, there are also some limitations. One of these is the data collection problem. It may not always be possible to access the data in panel data analysis (Güriş, 2018; p.12). Another problem encountered in panel data is the error term in the model. In panel data analysis, there may be a deviation in the error term. In addition, the short time dimension used in panel data analysis can cause problems in predictions (Tatoğlu, 2018; p.14).

In general, in the analysis made using panel data, the model is formed as follows (Tatoğlu, 2018; p.4):

$$Y_{it} = \alpha_{it} + \beta_{it}X_{it} + u_{it} \quad (5)$$

Here Y expresses for the dependent variable of the model and X expresses for the independent variable of the model. α indicates the constant parameter and β indicates the slope parameters. Here, u is the error term. The subscript i denotes units (e.g. firms), and subscript t denotes time (e.g. years). The combination of i and t subscripts in the equation indicates that panel data are used (Tatoğlu, 2018; p.4). If each unit used in the study has been observed for all times, it is called a "balanced panel". If there are lost times in the units, it is called an "unbalanced panel".

In panel data models, parameters take a value for each unit in each period. Before the model is estimated, some assumptions are made. These assumptions are the fixed-effects and random-effects assumptions. Random effects assume no correlation between unit effects and any of the independent variables in the equation. In addition, the random-effects model assumes that the current period values (t) of independent variables are not affected by the previous period ($t-1$). However, especially in studies using firm-level data, the assumption that previous period data does not affect the dependent variable in the current period may not be realistic. For this reason, using a fixed-effects model may give better results in analyses using firm-level data (Falls & Natke, 2007). There are some tests to decide which model is more appropriate. One of them is the Hausman Test. The Hausman test shows whether the 'fixed-effect' or 'random-effect' model is more appropriate.

In addition, before the econometric analysis, the diagnostics of the model should be observed. For this purpose, a cross-sectional dependence test, an auto-correlation test, and a heteroskedasticity test are applied before the main model estimation. These tests are explained in the next sections.

7.3.1. Hausman Test

The Hausman test is used to make decision whether to use a fixed-effects model or a random-effects model. In the random-effects model, there is an assumption that the error term and the independent variables are unrelated. The Hausman test is based on this assumption (Güriş, 2018; p.38). The hypotheses of the Hausman test are as follows:

H_0 = There is no correlation between explanatory variables and unit effect.

H_a = There is a correlation between explanatory variables and unit effect.

Here, H_0 indicates the null hypothesis, and H_a indicates the alternative hypothesis that is accepted in case the null hypothesis is rejected. If the null hypothesis (H_0) is accepted as a result of the test, it is more appropriate to use the random-effects model. If the null hypothesis is rejected, it is more appropriate to use the fixed effects model (Tatoğlu, 2018; p.185).

7.3.2. Cross-sectional Dependence Test

In panel data models, it is assumed that error terms are independent of units. However, there may be a correlation between units. Therefore, it should be determined whether this is so. There are different tests used to determine the presence of a correlation between units in fixed-effect models (Tatoğlu, 2018; p.229). The Pesaran test is a test used for this purpose. The null hypothesis in the Pesaran test is that there is no correlation between units.

7.3.3. Heteroskedasticity Test

Another assumption in panel data analysis is that the variances of error terms between units are constant. However, in practice, it can be revealed that the variances are not constant. This situation is called a heteroskedasticity problem. In fixed-effect models, the error terms are assumed to have constant variances. In case of deviation from this assumption, there is a heteroskedasticity problem (Güriş, 2018; p.75-76). A modified Wald Test is used for heteroskedasticity problem detection in fixed-effect models. Here, the null hypothesis (H_0) is that the variance of each unit is equal to the panel mean. The alternative hypothesis (H_a) is that at least one of the units in the panel data breaks this equation.

7.3.4. Auto-correlation Test

Auto-correlation indicates a relationship between consecutive observations. In other words, auto-correlation is that the error term of any observation is affected by the error term of a previous observation. Auto-correlation refers to the relationship between consecutive values of the same variable (Kutlar, 2012; p.232). The presence of auto-correlation may cause the analysis results to be misleading. Therefore, it should be determined whether there is an auto-correlation problem or not. The Durbin-Watson Test of Bhargava, Franzini and Narendronathan and Baltagi-Wu's local best invariant test can be used to test autocorrelation in

fixed-effects model. The null hypothesis is that there is no autocorrelation. If the statistical values calculated according to the results of these tests are lower than 2, the null hypothesis is rejected and it is understood that there is an autocorrelation problem (Tatoğlu, 2018; p.226). In this study, Baltagi-Wu auto-correlation test is performed.

7.4. Results

In this section, results of the Hausman test, diagnostics of the model, and main model estimation results are explained.

7.4.1. Results of Hausman Test and Diagnostics of the Model

The Hausman test results, Pesaran cross-sectional dependence test results, modified Wald heteroskedasticity test results, and Baltagi-Wu auto-correlation test results are shown in Table 7.4.

The Hausman test results show that the probability value is less than 0.05. According to this result, H_0 null hypothesis is rejected and the alternative hypothesis (H_a) is accepted. The Hausman test results show that the fixed-effects model is more appropriate to use.

According to the results of the Pesaran test, the test statistic is calculated as 4.576 and the probability value is less than 0.05. In this case, the H_0 null hypothesis is rejected and it is accepted that there is a correlation between units. According to this result, there is cross-sectional dependence in the model used.

According to the modified Wald Test results, the probability value is found to be less than 0.05. In this case, the null hypothesis is rejected and the alternative hypothesis is accepted. It is revealed that there is a heteroskedasticity problem in the model.

According to the Baltagi-Wu test results, test statistics are less than 2, and the probability value is less than 0.05. In this case, the null hypothesis is rejected and it is considered to be an auto-correlation problem.

Test results show that there is cross-sectional dependence, heteroskedasticity, and auto-correlation problems in the predicted model. In the case of these problems in fixed-effect

models, it is appropriate to use the Driscoll & Kraay standard errors estimator. The results for the Driscoll & Kraay standard errors estimator are explained in the next section.

Table 7.4: Hausman Test Results and Diagnostics of the Model

Tests	Hypothesis	Test Statistics	Probabilities
Hausman Test	H₀: there is no correlation between explanatory variables and unit effect.	35.22	0.0000
	H_a: There is a correlation between explanatory variables and unit effect.		
Pesaran Cross-Sectional Dependence Test	H₀: There is no correlation between units	4.576	0.0000
	H_a: There is a correlation between units		
Modified Wald Heteroskedasticity Test	H₀: The variance of each unit is equal to the panel mean	190,000	0.0000
	H_a: At least the variance of one unit is not equal the panel mean		
Baltagi-Wu Auto-Correlation Test	H₀: There is no auto-correlation between units	1.1202717	0.0000
	H_a: There is auto-correlation between units		

7.4.2. Main Model Results

Driscoll & Kraay (1998), state that there is mostly a cross-sectional dependence problem in the analysis made with panel data. According to Driscoll & Kraay, standard techniques that do not take into account spatial and cross-sectional correlations can give erroneous results. In these cases, the Driscoll & Kraay estimator can produce resistant standard errors (Tatoğlu, 2018; p.276). In cases of cross-sectional dependence, heteroskedasticity, and autocorrelation problems in fixed-effect models, accurate predictions can be made using the Driscoll & Kraay standard error estimator.

The results of the analysis performed on the main model using the Driscoll & Kraay standard errors estimator are shown in Table 7.5.

When the results are examined, a positive relationship was found between export intensity and leverage. It can be said that firms use more debt as their export intensity increases. However, it was revealed that this relationship is not statistically significant. The fact that the probability value was 0.457 indicated that the positive relationship between export intensity and leverage was statistically insignificant. There are further studies in the literature that find a positive relationship between export and leverage (Goldman & Viswanath, 2011; Pinto & Silva, 2019; Greenaway, et al., 2007; Liu & Zhang, 2017; Bolla & Mundaca, 2011; Maes, et al., 2016; Abor, et al., 2019; Bartoli, et al., 2014; Çelik, 2014; Gündoğdu, 2009; Okuyan & Taşçı, 2010). However, Silva (2017) found a negative relationship between exports and leverage in his study; but this relationship is also statistically insignificant.

The positive relationship between export and leverage is a result which is compatible with many studies in the literature. However, the statistical insignificance of this relationship is different from the studies in the literature.

Asset tangibility, one of the control variables, refers to the asset structures of companies. Firms can borrow their tangible fixed assets by providing collateral. Therefore, firms with high tangible fixed assets may be expected to use more debt. According to the analysis results, it was revealed leverage and asset tangibility have positive relationship. The probability value was calculated as 0.019. This result proved that the relationship is statistically significant at the 5% significance level. In addition, this result is consistent with the studies of Myers & Majluf (1984) and Jensen & Meckling (1976). The positive relationship between asset tangibility and leverage is also compatible with the trade-off theory and the agency theory, but this result is incompatible with the pecking order theory. From this point of view, it can be interpreted that the asset tangibility and leverage relationship of exporting real sector firms supports the trade-off theory.

The cash flow variable, which expresses the cash flow generation power of firms, was used as another control variable. According to the analysis results, there was a negative relationship between cash flow and leverage, and this relationship was statistically significant. Firms that have the strong ability to generate cash flow use less debt. In this case, it can be interpreted that firms with high cash flow meet their financing needs with their internal resources. This result

is consistent with the pecking order theory. However, this relationship may be explained with the firms face with high costs of debt, so the firms may avoid the debt usage (Almeida & Campello, 2008).

Table 7.5: Main Model Estimation Results - Driscoll & Kraay Standard Errors Estimator

	(1) <i>lev</i>
<i>exp</i>	0.00862 (0.457)
<i>astan</i>	0.0768* (0.019)
<i>cf</i>	-0.226*** (0.000)
<i>size</i>	0.0656*** (0.000)
<i>α</i>	-0.424*** (0.000)
<i>N</i>	2902
<i>Within R²</i>	0.0833
<i>F stat.</i>	240.39
<i>F stat., p val.</i>	0.0000
<i>p</i> -values in parentheses * <i>p</i> < 0.05, ** <i>p</i> < 0.01, *** <i>p</i> < 0.001, + <i>p</i> < 0.10	

There was a positive relationship between leverage and firm size. Analysis results showed that large firms use more debt. This relationship is also statistically significant. This result is again in line with the trade-off theory, but it is incompatible with the agency theory and the pecking order theory. The pecking order theory states that large firms have more internal fundraising power and therefore use less debt. The agency theory, on the other hand, states that as firms grow, the difficulty for lenders to use debt increases because their agency cost also increases, so this relationship is negative.

7.4.3. Robustness Checks

Robustness checks were made to test the robustness of the model after the main model predictions were made. Table 7.6 shows the robustness checks results. Here, first of all, the firm

level variable current ratio was included in the model and an estimation was made. It was observed that there was a negative relationship between the leverage and current ratio. The negative relationship between current ratio, which is a ratio expressing the liquidity of companies, and leverage shows that companies use less debt as their liquidity increases. This result is consistent with many studies in the literature. However, this relationship turned out to be statistically insignificant.

Table 7.6: Robustness Checks

Robustness checks			
	(2) <i>lev</i>	(3) <i>lev</i>	(4) <i>lev</i>
<i>exp</i>	0.00844 (0.473)	0.0108 (0.365)	0.0123 (0.316)
<i>astan</i>	0.0744* (0.016)	0.0815* (0.016)	0.0849* (0.013)
<i>cf</i>	-0.222*** (0.000)	-0.223*** (0.000)	-0.224*** (0.000)
<i>size</i>	0.0652*** (0.000)	0.0519*** (0.000)	0.0455*** (0.001)
<i>cr</i>	-0.00177 (0.266)		
<i>reer</i>		-0.000354 ⁺ (0.078)	
<i>gdp</i>			0.0776 (0.105)
<i>α</i>	-0.416*** (0.000)	-0.272*** (0.001)	-1.196* (0.022)
<i>N</i>	2902	2902	2902
<i>R</i> ²	0.0837	0.0848	0.0856
<i>F stat.</i>	209.26	279.88	202.11
<i>F stat., p val.</i>	0.0000	0.0000	0.0000

p-values in parentheses

* *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001, ⁺*p* < 0.10

Estimates were made by adding macroeconomic variables to the model for Robustness checks. Real effective exchange rate and real GDP were used as macroeconomic variables. A statistically significant negative correlation was found between the real effective exchange rate and leverage at a 10% significance level. Increase in REER means that the Turkish Lira appreciated. (Eğilmez, 2012). When Turkish Lira appreciates, firms may meet their financial needs with their internal sources and they may demand less debt. All companies included in the analysis are exporter companies. Exporter firms use less debt as the real effective exchange rate increases. If there is an increase in real effective exchange rate, this means Turkish lira appreciated. For this reason, exporting companies can meet their financing needs with their internal resources when the real effective exchange rate increases. This situation also supports the pecking-order theory.

The analysis was repeated by including real GDP as another macroeconomic variable in the model. Here GDP was used by taken the natural logarithm of the real GDP and GDP expresses the aggregate demand for goods and services in a country. If there is an increase in the aggregate demand, firms may need more capital sources to make investments to meet this demand. Analysis results show that there is a positive relationship between real GDP and leverage, but this relationship is statistically insignificant. According to this result, an increase in the aggregate demand in Turkey, increases the debt usage of the firms. But this relationship is statistically insignificant.

8. CONCLUSION

The capital structure includes the composition of the financing resources required for the projects of firms. It consists of liabilities and equity on the right side of the balance sheet. Generally, the capital structure does not include short-term debt. (Gitman & Zutter, 2015; p.575; Miglo, 2016; p.5). Capital structure decisions are important for firms. The cost of capital may differ depending on the sources of funding. For this reason, it is important to choose which source is to be used and to what extent. Capital structure decisions are complex because they are related to other units of the firm, and require many factors to be taken into account (Gitman & Zutter, 2015; p.576). The cost of capital is used in the evaluation of the firm's investment projects. For this reason, firms strive to reach an optimal capital structure. The importance of capital structure has also attracted the attention of researchers in the field of finance and many studies have been done on the subject. Various theories of capital structure have emerged as a result of the studies.

It is possible to group theories of capital structure generally into classical theories and modern theories. Classical theories were formed as a result of the work done by Durand (1952) and Solomon (1955). These theories are the net income approach (Durand, 1952), the net operating income approach (Durand, 1952), and the traditional approach (Solomon, 1955). The study by Modigliani & Miller, also known as M&M, (1958) is accepted as the first theory of modern approaches.

Modern capital structure theories were formed based on the M&M theory. In the M&M theory, contrary to the traditional approach, it is claimed that there is no relationship between the market values of the enterprises and their capital structures under the assumptions of perfect market conditions (Modigliani & Miller, 1958). However, the perfect market assumptions do not fit the market conditions and are far from reality. This theory was proved to be invalid by the same authors in 1961 and 1963. In addition, various theories have been put forward by other researchers working on capital structure. These theories are called the modern capital structure theories or, simply, the modern approaches. The modern theories are the pecking-order theory (Myers & Majluf, 1984), the trade-off theory (Kraus & Litzenberger, 1973), the market timing theory (Bakers & Wurgler, 2002), the signaling theory (Ross, 1977), and the agency theory (Jensen & Meckling, 1976). These theories approach the issue of capital structure from different

perspectives and advocate different views. The main purpose of the traditional theories is to find an answer to the question of what should be the optimal capital structure for firms, and the main purpose of the modern theories is to find an answer for what factors affect the capital structure. However, there is still no consensus for the optimal capital structure of the firms. One of the reasons for this is the range of factors that affect capital structure decisions. There are firm specific factors that affect the capital structure and the effect of these factors varies according to the characteristics of the company. For this reason, it may not be possible to talk about the optimal capital structure for all companies.

Many factors need to be taken into consideration simultaneously to understand the optimal capital structure. These factors may be firm-specific factors, as well as macroeconomic factors that occur due to general economic conditions.

There exists a great deal of literature on the factors that affect capital structure decisions. It was observed in the studies that the factors affecting the capital structure vary according to the companies and countries examined. Results of some studies support some capital structure theories, whereas others did not. The variables used in the studies were also different from each other. Generally, leverage was used to represent the capital structure in the studies. Different variables were added to the models according to the subject of the studies. In this study, it is aimed to seek an answer to the question of what is the effect of exporting on capital structure decisions of the firms. Since the effect of exports on capital structure is investigated in this study, leverage was used as the dependent variable and export intensity as the main independent variable. Leverage was calculated by dividing the firm's long-term debt by its total debts. The export intensity was calculated as the ratio of the company's foreign sales to its total sales. Control variables were also added to the main model. Asset tangibility was added to the model to represent the asset structure of the company and was calculated as the ratio of tangible fixed assets to total assets. In addition, the cash flow variable was added to the model, representing the firms' power to generate cash flow. The cash flow variable, on the other hand, was calculated as the ratio of the sum of net profit and depreciation to total assets. In the study, the total assets were used by taking the logarithm to represent the firm size. The data for these variables were taken from the Finnet database. Annual data of 208 exporter companies operating in the real sector for the period 2005-2019 were used. In addition to firm-level variables, two macroeconomic variables were added to the study. These variables were the real effective exchange rate and real GDP variables. Real effective exchange rate data was obtained from the

Central Bank of the Republic of Turkey Electronic Data Distribution System. Real GDP data were obtained from the World Development Indicators of World Bank.

According to the results obtained from the analyses, a positive relationship was found between export intensity and leverage, but this relationship is statistically insignificant. The positive relationship between export and leverage is a result consistent with many studies in the literature. However, finding this relationship to be statistically insignificant is a result that has not been encountered before in the literature. A positive and statistically significant relationship was found between asset tangibility and leverage, another variable of the study. This result is consistent with many studies in the literature. In addition, the positive relationship between asset tangibility and leverage supports the trade-off theory and agency theory. It was seen that there was a negative, statistically significant relationship between cash flow, a control variable, and leverage. This result shows that firms with high cash flow generation power use less debt. This result supports the pecking-order theory and the trade-off theory. A positive relationship was found between firm size and leverage. While this result supports the trade-off theory, it does not support the pecking-order theory.

After estimation of the main model, robustness checks were performed. In these controls, firstly the current ratio variable was added to the model. A negative but statistically insignificant relationship was found between the current ratio and leverage. In the analysis performed by adding macroeconomic variables, a negative relationship was found between the real effective exchange rate and leverage, and this relationship was statistically significant. Increasing in REER means appreciation of Turkish Lira. It may be interpreted as exporter companies meet their financial needs with internal sources when REER increases. As a result, they may be able to use less debt by financing with internal resources. The negative relationship between exchange rate and leverage proves this. Finally, it was observed that there was a positive relationship between real GDP and leverage included in the model, but this relationship was statistically insignificant. Here GDP expresses the aggregate demand in country. When the aggregate demand in country increases, this causes an increase in GDP and economic growth. When the aggregate demand increases, firms may need more capital sources to meet this demand. If there is a positive relationship between GDP and leverage, this means an increase in aggregate demand increases the debt usage of the firms. However, this relationship is statistically insignificant according to the test results.

The results obtained in the study show that the capital structures of the real sector firms exporting in Turkey predominantly support the trade-off theory. In this study, only exporter firms in Turkey were examined. It is possible to compare the capital structure of exporter and non-exporter firms by including the non-exporter firms for future studies. Also, it is possible to find different results by including the data of firms from different countries and this may be compared for future studies.



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