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UNIVERSITY of GREENWICH

# University of Greenwich

M.Sc. Accounting & Finance

Department of Accounting and Finance

## Title of Dissertation:

## Analysing the impact of capital structure on Turkish companies performance: Evidence from Istanbul Stock Exchange

**Student name: Ilyas Tolog**

**Supervisor: Dr Cesario Mateus**

**A dissertation submitted in partial fulfilment of the requirements of the degree of Master of Science**

**Word count: 12096**

**02 October 2017**

**APPENDIX A**

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**Name: _ilyas Tolog_____**
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Student name __Ilyas Tolog_____
Student ID___000949323_____

| Date of contact | Method of contact (eg. email, personal meeting, group meeting) | Issue(s) raised by student (note: these should be meaningful, and directly related to your dissertation) | Any subsequent action taken by student |
|---|---|---|---|
| 5/12/2016 Time:7.00 pm Venue: KW211 | Personal meeting | Decided the topic of dissertation and discussed the way of research | Read the academic papers related to the topic |
| 9/02/2017 Time:7.30 pm Venue:KW211 | Personal meeting | Discussed the research questions, aims, structure and research methodology | Got the feedback from supervisor and improved research proposal |
| 3/04/2017 | Email | Sent the final research proposal | Got the supervisor's comment for research proposal |
| 6/06/2017 Time:10.30am | Skype | Discussed the data to be used | Started to collect data on ORBIS and EIKON database |
| 13/06/2017 | Email | Sent a feedback on data | Continued sourcing for data |
| 27/06/2017 Time:10.00 am | Skype | Discussed final confirmation about data and discussed analysis the data (regression, summary statistics) | Finalised collecting data and calculated regression and summary statistics |
| 27/07/2017 Time:10.45 am Venue:QA075 | Personal meeting | Discussed methodology and research method | Finalised methodology and research method |
| 27/09/2017 | Email | Signing of record of contacts with supervisor | Finalised all documentation for the final submission of the dissertation |

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# ACKNOWLEDGMENTS

It would not be possible to complete this dissertation without help. Primarily, from the beginning, I would like to thank from my button of my heart to Dr Cesario Mateus who always supported me in that dissertation not only in the sense of help but also in the way of improving the dissertation skills. At the same time, I appreciate to my family, friends and classmates who always motivate me in order to complete my dissertation.

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**ABSTRACT**

Capital structure is the most significant topic for firms to success more accurate both market and financial performance. The infrastructure objective for this thesis a study is to analyse the relation between firm performance and capital structure. It is investigated that 70 firms listed for Chemicals, petroleum rubber and plastic products sector, Food, beverage and tobacco, Fabricated metal products, machinery and equipment sector and Non-metallic mineral products sectors on Borsa Istanbul in the years of 2008-2016 by using panel data analysis. It is utilized that short-term debt to total which is (STDTA) and long-term debt to total asset called as (LTDTA) as proxies for financial leverage. Return on equity also named as ROE, earnings per share(EPS), return on assets (ROA) and Tobin's Q ratio are applied and used as in proxies of firm performance (dependent variable). Firms size and sales growth rate are used for control variable in that study. It is found that STDTA has a significant relation which is negative with ROA, Tobin's Q ratio and EPS. Furthermore, it is investigated that LTDTA has a significant negative relation via EPS, ROE and Tobin's Q ratio whereas it is significantly and negatively correlated via ROA.

Keywords: Capital structure, firm performance, ROE, ROA, Tobin's Q, EPS

# CHAPTER 1 INTRODUCTION

This study will investigate and analyse the impact of capital structure on Turkish selected firms' performance based on İstanbul Stock Exchange. Increasing amount of research conveyed that there is an important relationship between the capital structure as well as a firm's performance.

The positive relation between the capital structure and firm's performance that mirrors the theory of capital structure was conveyed by Frank and Goyal (2005). On the contrary, empirical results by Titman and Wessels (1998), Booth et al. (2001), showed a negative correlation between capital structure and the performance of a firm, which contradicts the theories from the majority of literature. Corporate Finance is another important issue form companies, especially the listed ones. The finance team makes the decisions on what amount should be invested in a specific area, and capital structure is the core of this issue. The MM theory emerged in 1958, and there are many studies which focused on the global corporate capital structures. These present conclusions in both theoretical study as well as practical data analysis (He, 2013).

The aim of the research depending on the questions, it is to investigate the impacts of capital structure affects to all firms' performance selected from Turkey.

The remainder of the paper is organized as follows: Following chapter will include definitions of capital structure and its theories, financial/firm performance and relationships. Under the same chapter, İstanbul Stock Exchange will be mentioned and via literature review research's route will be explained.

In the sense of methodology, it will be based on pooled ordinary least square. Research method which will be used is the panel data analysis. On the other hand, to measure the firm performance, data of the return on equity (ROE), return on asset (ROA), Tobin's Q and earning per share (EPS) will be used as dependent variables. By using the Tobin' Q data, market performance will be calculated. Also, in the calculation of capital structure, data of short-term debt to asset (STDTA) and long-term debt to total asset (LTDTA) as independent

variables. At the same time, firm size and value of growth will be used as the control variable.

### 1.1 Background

Companies' financial decisions depend on a wide range of policy issues and examination of the determinants of their capital structure decisions. Capital structure is affected such decisions that include regulation, interest rate and determination of price. Considering such financial decisions implications, they also affect companies' development strategies and corporate governance. (Greene, 2003).

Considering globalization of the firms and understanding of being under the same roof, although there are institutional similarities, capital structure of firms differs. Different countries have different institutional agreements depending on their tax codes. Moreover, existing market for corporate control and securities market play differs (Damodaran, 2001).

Firms' financing their overall operations and their growth by using funds refers capital structure. (Bhaduri, 2002). Also, it can be stated that firms' funding its business happens via controlling its equity and debt; capital structure decision (Damodaran, 2001). Capital structure and its meaning began with theoretical researchers. Modigliani and Miller's (M&M) Theory was the first step for capital structure models. Relevance and irrelevance of capital structure on firms' financial performance on listed companies considering whole conditions are studied. Factors that influence corporate structure also explain the variation in Financial Leverage of firms. The factors are cash flow and debt, taxes, interest rate changes etc. are also the factors that specify the decision-making processes. (Titman and Wessels,1998). It is stated that depending on attributes that caused distinct sources for a cost of capital, benefits and select capital structure of firm regards to both equity financing and debt.

Considering financial literature, until today, there are a lot of studies enlighten the relationship between financial performance and capital structure. Market share prices and the value of the firm depends on financing choices that based on corporate decisions; corporate financing mix. According to study on capital structure tries to define the different mix of financing and securities sources applied from companies to provide finance investments (Myers, 2011). Damodaran (2001) claims that firms financing its sources depends on debts end equity capital or the mixture strategies of them. Myers (2001) studied on cost of possible

financial distress and found that in such situations firms try to solve the problems via debts that also keep the balance between tax advantages of additional debts. It is explained on trade-off theory and the borrowings on the other side is explained by pecking order theory. Pecking order theory defend the opinion that considering insufficient internal cash flow for funding expenditures firms choose borrowings rather than equities. Therefore, it can be stated that this theory is concluded as the need for external funds will be reflected by the amount of debt. On the other way around, the free cash flow theory defends that firm value would increase via dangerously high debt levels. The theory explains that despite the threat of finance distress if a firms' operating cash flow significantly exceed its profitable investment opportunities, the value of firm increases. Over time the capital structure literature developed, and researchers found many variables that influence both financing decisions and financial performance Myers (2001).

Firm performance can be measured using a variety of metrics and ratios as it is a very diverse topic. Generally speaking, a financial performance can be defined using financial ratios from balance sheet and income statements like a return on assets, return on equity, net income, earnings before interest and taxes (Zahra & Pearce, 1989; Degryse, Goeij, & Kappert, 2010), stock market returns and their volatility (O'Brien, 2003; Muzir, 2011) and Tobin's Q, that mixes value of market via account values (O'Brien, 2003). So, it can be stated that financial performance is especially is measured by revenue of firm and firm performance refers financial performance.

### 1.2 Research objectives

The principal objective of this dissertation is to find answers to research questions and research sub-questions. As mentioned in previous chapters, this thesis focuses on the impact of capital structure on Turkish company performance. The main aim of this dissertation is to find out the relation between the capital structure and the performances of selected firms in Turkey. In the dissertation's literature review part, one can observe that there is a difference in the relationship between the performance of firms and capital structure in some countries. In some countries, the relationship between the performance of firms and capital structure can be found as negative while other countries are positive. A positive relationship means that the leverage firm's performance is improving. A negative relationship is that the leverage reduces the firm's performance. On the other hand, outside the general framework, this thesis aims to see how the 2007 crisis affected the relationship between the capital structure of firms

in Turkey and a firm’s performance. At the same time, it is one of the purposes to see the relationship between capital structure and firm performance in the firms which are in different sectors in Turkey. As a result,

· To examine the relationship between company performance and capital structure in the listed Turkish firm context between 2008-2016.

· To examine the effect of 2007 crisis on the relationship between capital structure and firm performance in the listed Turkish firm context

· To discuss the effect of industry to the relationship between capital structure and firm performance in the listed Turkish firm context.

### 1.3 Research question

The general intent of the research is answering the questions in the research. As already mentioned in the previous parts, this dissertation works on the relationship between Turkish firms' capital structure and firm performance. Therefore, as related to the topic the questions of this dissertation can be sorted in the following order;

1- How could the relationship between capital structure and firm performance among Turkish listed firms be described during the period 2008-2016?

2- How did the 2007 global crisis affect the Turkish firms' performance and capital structure?

Besides the research questions, there is also a sub-question as a part of this dissertation. The sub-question is;

How may the industry affect the relationship between capital structure and firm performance among Turkish listed firms during the period 2008-2016?

### 1.4 Research structure

The structure of this dissertation consists of 6 main sections.

The first part is an introduction, in this section, the topic of the dissertation in general, background, research questions and research aim are discussed. The second part consists of a

literature review on the theories of capital structure, the connection with company performance and research of Istanbul stock market.

The third part showcases research methodology, which is covered by the quantitative research, research design and regression method. The fourth part referred to as the data section; contains data collection, secondary data, variables used for the dissertation. The fifth part contains the empirical findings and analysis section (descriptive, correlation and regression analysis) for this dissertation. The final section is the conclusion section. This segment includes descriptive and correlation results, regression results, answers to research questions, and recommendations for future research.

# CHAPTER 2 LITERATURE REVIEW

## 2.1 Capital structure

"Capital structure" can be explained as the mix of debt and equity securities so the options the way firms operate their assets. (Bhaduri, 2002) So, capital structure reflects the firm's financing strategy, overall performance of financial tactics. As it is mentioned before and as Bhaduri (2002) states both equity and debt composes total capital structure of the firm. A firm's capital structure refers to the mix of its financial liabilities. As financial capital is risky but the essential resource for all firms, suppliers of finance can exert control over firms. (Harris and Raviv, 1991) So, capital structure can be explained via liabilities which also has two classes either: equity and investors of equities. As all financial decisions have risks they have risks of their benefits and control level either.

According to Harris and Raviv (1991), "leverage increase with fixed assets, non-debt tax shields, firm size, and investment opportunities, and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability, and uniqueness of the product." So it can be stated that the capital structure that is a mixture of equities and debt are affected by leverage either. Moreover, the different theories of capital structure may affect leverage via determinants of the theories: asset structure, growth, industry classification, size, earnings volatility and profitability. (Titman and Wessel,1988)

### 2.1.1 Capital Structure Theory (MM theory)

The capital structure research began in the 1950s, Modigliani and Miller (1958) demonstrated that the way firms finance their operations ant the value of firms so not depend on its capital

structure. With Modigliani and Miller (1958) presenting their theory in the landmark thesis in 1958, claiming the assumption that a company's investment policy is set in an ideal market, in which there are no taxes, the market is efficient etc., meaning that a company's value will not be influenced by the extent of a debt. It can be stated that Modigliani's and Miller's theory is the basis for the theory of the capital structure. Berk & DeMarzo (2007), The theory of MM considers that there is no tax in the perfect capital market, to proposition 1, at perfect capital market, firm's total value equals to the market value of which total cash flows that is generated via its assets and has not been affected by option of capital structure. Proposition 2 is the expected rate of a firm that a firm is predicting to get on the equity increases as its debt-equity ratio rises.

Soon after publishing their new tests in 1963, Modigliani and Miller acknowledge that the taxes may indeed have a crucial effect on the capital structure. As a result, the corporate income tax was incorporated into the MM theory. According to the updated theory, the liabilities might help corporation in increasing their values because of the tax shield, meaning that the best capital structure would be 100% debts. Later, in 1977, Miller further amended the theory, introducing the influence of the individual income level tax, and adding it to the theory. This meant that the capital structure would not affect the value of the company not the cost of the capital (He, 2013). However, over time the capital structure literature developed and researchers found many variables that influence both financing decisions and financial performance.

### 2.1.2 The trade-off theory

The theory related to trade-off expresses the firm's decision of leverage via a trade-off, taking into consideration the advantages of debt as well as the costs that come with it. The purpose of the trade-off theory of capital structure is to explain the strategy a firm uses to finance investments; equity or debts. So, the theory related to trade-off expresses the firm's decision of leverage via a trade-off, taking into consideration the advantages of debt as well as the costs that come with it. A company's optimal debt ratio is determined based on the costs of "costs, advantages of borrowing and holding the firm's asset." A firm's aim is just to replace debt with equity, and vice versa to understand the optimal debt ratio as well as make the best financial decisions for the firm. Moreover, it is to ensure the company reaches its highest value. In summary, it is crucial that a company finds the perfect balance between the benefits related to debt financing and the costs to achieve the optimal capital structure. Moreover, debt has an important role as it influences the reduction in free cash flow (Myers, 1984).

Frank & Goyal, (2005), the theory of trade-off was seen different years after; however, because of the increased dissatisfaction by it, a new perspective of the static trade-off was elected in the following years. By this new version, the so-called 'dynamic trade-off theory' was seen, that modelling would contain not only a period just like previously but also more taken into the account. In this version of the theory supposes that the financial leverage of the firms is a conclusion of on standing process, getting involved not only in the sense of tax investments. Furthermore, are recommendations which the current existing restructuring prices, that are involved in the setting of the capital structure, might cause to the optimum capital structure, which is something that might occur more than one period.

The theory of trade-off has been changing depending on different settings and beliefs. The static trade-off theory was found by Bradley in 1984 (Frank & Goyal, 2005). This theory claims that a company's leverage can be described by the period of single trade-off, having the balance between the company's benefits from the deduction of tax and the price of a potential bankruptcy. Amongst the sub theory's assumptions, it was claimed that an increase in the cost of financial distress, the tax rate of marginal bondholder or in non-debt's tax shields, has an impact on the optimum in a negative way. This means that a decrease in the personal tax might also result in a decline of optimal leverage. It must be mentioned, however, that these theories claim that the influence of risk on the optimal lever is not explicit. The main idea behind this model is that whenever unexpected alterations happen to firm's asset values, they don't modify their capital structure instantly. However, they allow their capital structure to fluctuate within optimum capital structure range because of cost of modifying within this range surpass the advantage of doing so. (Frank & Goyal, 2005).

### 2.1.3 The agency cost theory

The fundamental claim behind the agency theory is that managers in the corporation will make decisions that benefit their own interest. This means that they will search for job benefits, securities and might even try to access the assets and cash flow. The agency cost approach influenced the development of the ethics of the theory of free cash flow. If the free cash flow does not distribute between the stakeholders, the managers will have incentives, in order to reduce the firm's value. The free cash flow hypothesis which is developed by Jensen (1986), illustrates the matter is how to motivate directors to give up cash rather than putting in projects at lower than the cost of capital or wasting it on firm inefficiencies. Firms' administrations knowledge of and the permission of available cash would lead tendency of passive projects

that would not increase the value and size of the firm. A solution of such problems seen as debt creation, however, that causes rising interests and available cash flows.

According to Jensen (1986), 'the problem is how to motivate managers to disgorge the cash rather than investing it below the cost of capital and/or wasting it on organization inefficiencies'. Considering debt issuance cause pay off the stress of future cash flows, suggested solution to this problem is restricting managers. As a result, for avoiding default risk, the company would decrease expenses.

In case lack of hidden actions and similar situations, external financing might affect the managers in a negative way, such as they might need to present the details, regarding the investment project to different stockholders. So in the sense of managers, they would illustrate the pure preference towards stocked acquisition for their financing project. Ever since, in that way, they do not provide any signal to the environment externally. On the other side, it is also addressed that in case the companies financially supported via equity, there is a fair opportunity which management would progress to the overinvestment, applying project that might be at risk in the sense of their Net Present Value (Jensen 1986). To increase the pay-off and in the meantime, change the risk to the creditors. In any situation, the conflict of interest that is a centred element of the agency theory can be seen in different settings and throughout various participants in that concept.

As Frank & Goyal (2005) build up these bargains, can cause to an equal, and in the same wat that it can be recommended in the theory of trade-off. So, both the trade-off theory and the pecking order theory suppose that the interests of company's administration and its stockholders are fully aligned. Therefore, these two theories are nearly connected but not fully aligned. Jensen (1986) state that considering the conflict between company's administration, and its shareholders also conflict between debt holders and shareholders agency costs would be unpreventable.

All in all, it can be stated that debt holders bear, while shareholders earn. The agency theory can be viewed as interfering with both the pecking order theory and the trade-off theory.

### 2.1.4 The pecking-order theory

Created by Myers and Majluf (1984), pecking order theory explains that: companies selection of new funding for growth and future performance goes through with a hierarchy followed by financing. Therefore, it can be stated that it is a priority order theory that bases the priority of using internal sources or external sources. Choosing debt; internal financing rather than equity; external financing is the most common strategy of majority of firms. It means that consuming

internal resources cause debts and once there are not any opportunities for debts equity is issued.

Traditionally, this theory has been determined via the cost of transaction, cost of issuing and asymmetric data. Importantly, there is fewer transaction as well as issuing costs in retained earnings compared to other sources. Moreover, with issuing debts, the costs of acquiring information are lower compared to the costs of equity. According to this theory, the people inside the firm, such as manager, have a wider knowledge and better access to information about the firm, in comparison to external sources such as investors. Equity has a higher risk than debt which is why the external investors need a return higher than 44% of equity. It can be seen from this theory that the retained earnings are more advantageous for the firm rather than sourcing funds externally, and debt is more beneficial compared to equity in case the company needs to seek funds from outside. This theory does not mention maximising firm's value by an optimal debt ratio. The alternations of debt ratio come from increasing the demand from external financing if all of the internal funds are used (Myers and Majluf, 1984).

Iasonidou, S. (2016) stated this priority when it is that the choices of financing, could be approved via different reasons, like the indifferent of policy to distribute in the check of external factors, or in another way, in the occasion which the style of management is more or less risk averse. All those reasons might protect the management from trying to support financially, the firm by issuing bonds or stocks; to Myers (1984), it could be understood considering the below asymmetric data. To put it another word, because of the underlying risk and the missing information which the investors have wondering the company, they will be willing to pay lesser which the company gives value its shares, to abstain from the risk. In the sense of company, it means that there is a high risk which they will not be eligible to reach the expected amount of progress to a project of an investment because of that, firms that attempt to support the investment via using the external project, will be pushed to use debt to make, so which means that the company is formed to excuse a pecking order (Myers, 1984). However, in most of the situations, a company use equity and shares both, in order to finance the investments of them.

### 2.2 The relation between capital structure and firm performance

Firm performance can be measured using a variety of metrics and ratios as it is a very diverse topic. For shareholders, firm's financial performance is measured by the comparison between beginning of the financial period and end of the specified period. During the periods, performance can be determined using date on stock market of ratios

derived from financial statements; especially the balance sheet and income statement. (Berger and Patti, 2002). Using financial ratios from balance sheet and income statements like a return on assets, return on equity, earnings before interest, net income and taxes can also determine the performance, Tobin's q, which combines market values with accounting values (O'Brien, 2003) and also (Degryse, Goeij, & Kappert, 2010), stock market returns and their volatility (Muzir, 2011). So, it can be stated that financial performance is especially is measured by revenue of firm and firm performance refers financial performance. Abor (2005) researched and found that developing countries' firms use more debts for future growth rather than industrialized countries' firms. In 2005 Abor did another research that explains a relationship between total assets and ROE. He found positive relationship via using the profitable firms in Ghana as data. Ghana is depended on debt for financing its operations considering the perceived low financial risk.

Gleason and Mathur (2000) argued that in theory, the Modigliani and Miller model was valid however in practice, there is a reality that bankruptcy costs are not calculated and forgotten the thing was that it affects directly and it is proportional to the debt levels in a firm. This conclusion implied a direct relationship between capital structure and financial performance of a firm.

Another theory which needs to be mentioned is the traditional theory, which claims that it is the low optimal mix of capital that secures a low average cost of capital which 'maximises the market value per share' (Cole and Mehran, 1998; Merz and Yashiv, 2007). However, there are many factors involved in the relationship between the leverage and equity ratios which is why those alone are not enough in predicting a firm's performance. It was Akintoye (2009), who approved that there are certain factors which have a crucial role when analysing a firm's performance and those include business risk, financial flexibility, taxes and managerial behaviour. He argued that ever since the capital structure relies on the trade-off which is between risk and the expected return, the factors mentioned above are significant when deciding on target capital mix. It would then be used as a guide to a perfect a combination of debt and equity which would maximise the company's value and at the same time, minimise the capital cost. Furthermore, if any changes occur in the sense of debt or equity, it would have an impact on the company's value. Based on the tax benefits, under the tax burden, companies are expected to increase their borrowing to improve their performance.

According to some, the performance can be defined as the firm's total market value or the total of market of equity and value of equity options (Cole and Mehran, 1998; Merz and Yashiv, 2007).

During 1989 - 2003 Zeitun and Tian (2007), were studying how the capital structure affects the corporate performance, by using a sample of 167 Jordanian companies. During the study, they discovered that there a firm's capital structure negatively impacted the firm's performance. Another study was conducted by Gleason and Mathur (2000) who used the data from retailers in 14 countries in Europe and analysed how the capital structure influences a firm's performance. They analysed it by using financial as well as operational measures of performance, and at the end of the study, they saw a significant, negative impact on a firm's performance which implies that agency issues can lead to using higher than appropriate debt level in capital structure which will result in lower performance. Shah and Khan (2012) conducted a study analysing the relationship the between the decisions regarding capital structure as well as the firm's performance Pakistan's engineering sector between 2003-2009. The results from his study convey that the financial leverage which is measured by the short-term debt to total assets (STDTA) with total debt to total assets (TDTA) did have a significant negative relation with the performance of the company which is measured by the Return on Assets (ROA) as well as Tobin's Q. In addition, it had an insignificant and negative relationship with (ROE).

Another study was conducted by Margaritis and Psillaki (2010) who analysed the relationship between the ownership structure, firm performance and capital structure. They used a sample of French manufacturing firms between 2003 and 2005, and in this particular study, they saw that the leverage had a positive effect on the firm's efficiency. Tianyu (2013) looked at the impact of capital's structure on the performance of a firm in the developed and developing markets. He analysed a sample of 1200 listed firms in Sweden and Germany and 1000 firms in China between 2003 and 2012. Interestingly in this study the results showed that the capital structure had a significant positive effect in Germany and Sweden before 2008, before the financial crisis happened but also negative effect on the company's performance in China. The relationship between capital structure as well as profitability of listed firms in Istanbul Stock Exchange was studied by Kabakci (2008) during six years. He learnt that there is a negative relationship between the ROE and the short-term debt to equity and long-term debt to equity.

Toraman et al. (2013) have studied the effects of the decisions of capital structure on the financial performance. In his study, he used a sample of companies listed on Borsa Istanbul between 2005- 2011. The sample consisted of 28 manufacturing companies. The relationship that Toraman et al.(2013) found was a significant negative relationship between the short-term debt to total assets, ROA and long-term debt to total assets. He also found that the relationship between total debt to equity ratio and ROA is insignificant.

**2.3 İstanbul Stock Exchange**

From 1873 to today, Istanbul Stock Exchange remains its operations as in a government presence and entity raised parallel with the growth of the economy of Turkey.
After a new Capital Markets Law (Law no: 6362) was introduced to promote Turkish and Istanbul capital markets as an international hub for worldwide investors, Turkish economy and the firms' performance growth dramatically. End of 2012, globalization affected Turkish economy positively. Capital markets became compatible with the EU regulations and new Capital Markets Law, Borsa İstanbul became a joint stock firm with a for-profit structure in 2013. Under the same roof "Borsa İstanbul", İstanbul Stock Exchange, TurkDEx, and İstanbul Gold Exchange merged and the horizontal integration of exchanges was completed. Moreover, vertical integration was performed by new share acquisitions.
By the end of 2013, Borsa İstanbul's and NASDAQ OMX Group's strategic partnership agreement strengthen İstanbul's position for capital markets. By this partnership collaboration and long-term commitment supplied common markets in all perspectives.

**2.4 2007 Global Financial Crisis**

The USA, especially in banking system, as a result of this, crisis destroyed the big councils and stock markets around the world downturned. For the financial crisis, it is strongly related that companies weak performances Campello, Graham and Harvey (2010). Research from Claessens, Djankov and XU, (2000) contrasted the patterns of financing in East Asian companies just before crisis year in other countries with corporation. The example included 850 public listed firms from 4 different countries that were effected by crisis, in which of these countries, there are Republic of Korea, Malaysia, Thailand and China (Hong Kong), besides two more comparators Singapore and Hong Kong. The result claims that the weakness of firm-specific that existed right before the crisis was basic consideration in failing performance for the sector of corporation. According to Suto (2003) research on capital

structure for crisis in 1997, the main reason that made economic distress process faster is because of increasing the dependency on debt financing. Excessed investment before the crisis was led by the dependency and moreover, instability in the economy of Malaysia.

The capability bank just to get data of monitoring borrowers were estimated right before the crisis. Moreover, it is not possible to estimate accurately, because the provided protection from government for domestic banking sectors. This opportunity had made the companies function of government lenders weaker. A went on the study by Gunay (2002) is on the impact of economic crisis on the capital structure. The basic results of the research are what by showing lower leverage. Firms in Turkey, became stronger themselves toward economic crisis. The raise of capital market is special for the firm's high leverage due firms are close to financial distress. This case had caused to have a higher cost of debt in the sense of high leverage firms at the period of post-crisis comparing to the cost of debt at the time of pre-crisis. Apart from this, the consequence had stated that profits important of high leverage firm could be raised by decrease the debt or issue equity. However, debt for the high leverage firms could not be diminished because of the produce profit by the normal operations in the period of the post-crisis.
Research on Jordanian firm, in the West Bank, outburst of Intifadah in 2000 September had had an impact on Jordanian company performance negatively just because most of the Jordanian corporate had done export to the West Bank. A decrease of 20.5% in the field of the market capitalisation of the ASE in the year of 2000 showed the back impact of Intifadah. That, at the same time, claimed that a Jordanian firm's performance was influenced deeply by the regional environment Zeitun and Tian (2007).
Financial Crisis is the opportunity which would have an impact on all the industries and macro, firm's performance will be affected directly. Research has been done on what if company plans spent changes conditionally on the basis of survey based on financial constraint measurements. The consequences claim firms which planned deeply cuts in technical spending, capital spending and employment. Furthermore, firms which are constrained also burned by throughout more cash and drew more on lines of credit just because firms scared that banks will restrict the access in the future times so that their operation would be funded by them with more assets Campello, Graham and Harvey (2010).

# CHAPTER 3 RESEARCH METHODOLOGY

## 3.1 Methodology and Approach

There are different types of methodologies, that can be applied when studying social sciences. The usage of quantitative research might have loads of advantages, the most significant of that is the deduction of concrete and objective conclusions. Numerical data from the statistical analysis can ease the understanding of "what" meaning, whereas, with qualitative methodologies, that try to respond "why" questions (Senge, 1990).

There are plenty types of explanations, that can be applied define qualitative research. Muijs (2010) explains the quantitative methodology, basically, such as analysis throughout mathematical methods, recommending that it is the basic distinctness of quantitative via qualitative methodologies. On the other side, as Cohen, Manion& Morison (2013), quantitative research is a kind of research which defines phenomena through picking numerical data analysed by using statistics.

According to Saunder, Lewis and Thronhill, (2009, p.4), it could be predicted that the deductive approach is more suitable to define the study. There are different ways to explain the approval of the certain approach. Cohen, Manion & Morrison (2003, p. 124-125), in the research of them, it can be said that such as typical sample of a deductive approach, ever since it plans to apply a hypothesis deducted via working on related theories, having tested those theories and respectively comparing these two.

Additionally, Saunders, Thornhill and Lewis (2009, p.124) stated that certain approach is generally integrated with the positivism. To epistemological perspective, science aims to examine the theories based on the fact that rules of effect and causality. Such as scientific research can add to development of acceptable and credible measurements' mechanism that can contribute the even-handed and undeniable for different phenomena yet such as a biased and equally measurements are not mostly feasible in real life is neither accepting nor denying pre-determined hypotheses (Muijs, 2010). Because of the narrow-minded perspective of positivism. Recently, there has been a change towards the so-called post-positivism. The

criticism toward positivism and This point of view embrace the criticism toward positivism and indicate which the real woman for phenomena could not be calculated in a properly objective way particularly, in the framework of social science. However, in the meantime, post-positivists help that the estimated of the real is possible, understanding that, it is created via different perspective subjectivity (Muijs, 2010). That, indeed, means that the properly, general truth, could not be obtained in a proper objective yet it can be commented at some point.

Having considered all data given above, the research attempts to analyse the determinants of capital structure in the market of Turkey via calculating various characteristics of difference for limited firms that control in it and indicators. The more it is negotiated more academically and analytically from the next following subsections, in this research, the dependent variable will be the independent variables in order to define the relationship to the dependant one and financial leverage.

### 3.2 Research design and method

The most important feature of panel data is that it calculates and measures units such as cross-sectional data that claims to n different firms, yet could be extended by time t. That caused by the description in other words definition to make datasets larger and because of the more amount of data of each observation contains, raises the impact of the estimation obtained. The standard errors are less when it comes to comparing to those of cross-section datasets (Hsiao, 2003). Moreover, when cross-sectional data or time series, panel data gives permission the inclusion of dynamic dimensions which makes sense when at the time t for dependent variable, is effected by its past value. For instance, at t-1 and so that decreases the explanatory power of exogenous regressors. As a conclusion, predictions can be expected to be more effective when important lagged variables included. In comparison to a cross-sectional data, panel data gives a more accurate inference of model parameters. Just because the number of the degrees of freedom are more, additionally, there are more examples variability which results from intra-individual dynamics and inter-individual differences (Hsiao et al., 1995). In order to obtain a more accurate definition for each person via pooling the data, there are more possibility so that taking into account there are same opportunities on specified variables, panel data provides a help of understanding a person from observing others. Hsiao et al. (1993) recommend that via changing the observation that is in question via the data on different other people such as supplement can conclude in a more accurate

result in other words output. Furthermore, panel data are stronger on building and testing and constructing in comparison to a cross-section or time series data. Panel data can catch up the differences at personal level whereas cross-sectional data are not able to distinguish the respective observation in various subintervals of the cycle over the time period. Additionally, panel data reduces the pointed out variable prejudice result from the impacts of unknown explanatory variables. In the window of the prediction of time-adjustment pattern, for Griliches and Pakes (1984), the inter-individual distinctions in panel data decrease the chance of high collinearity between lagged variables and current. Even though the most studies which use panel data do not apply and use dynamic models, the inclusion of lagged dependent variables can be significantly helpful. On the other side, there are also struggles when it comes to applying panel data. Even though panel data gives permission of following the similar person over a specific time period. It is not appropriate to result that various proxies follow the similar trends. The analysing become harder when dynamic models and liners are involved. Practically, missing values from values from panel data sets can cause problems when there are not any alternative choices apart from leaving the missing observations from the example.

### 3.3 Regression model

POLS in other words, (a pooled ordinary least squares), prediction is the conclusion of a raise of numbers for observation via uniting the data cross-sections and time into one “long” dataset (Wooldridge, 2010). The approach comes from the hypothesis which people are enough homogenous to permit for the change of N cross-sections and 65 the sequent variations by time T to a dataset which comes from N x T observations which are “pooled” all together. As it is considered an error term that concludes from cross-sectional disturbance, the attention of the time-dimension is behaved secondary and could be manipulated for via containing suitable dummy variables. A difference between panel with more cross-section units N than a unit temporal T and more temporal units T than cross-section units N is created via Stimson (1985). Whereas the previous is known as in cross-sectional dominant, the latter is claimed to as temporal dominant.

Since pooled model includes time series for couple of cross-sections, it is qualified via getting repeated observations on accurate fixed units. In comparison to the independent regression model, the pooled regression is more to disregard the unobserved omitted variable or heterogeneity, so that might have an impact or be associated with the explanatory variable

that causes to a biased prediction. Independent regression model on the other side, are generally not endowed with wide scale of examples, so that skipping the joint characteristics between each unit.

To (Zhu,2014), the breakable point of pooled panel data model is, because of its artificial way the data, is concentrated that takes into account the data for every firm as in one of the plenty various points in time. Ever since each firm I has its origin, pooling the data unrealistic homogenises observations as in the retrieve to the exactly same value and lose their personal property. This concludes in an intercept which uses and applies to all of observations whilst RE and FE puts more weights to individual firm level properties. So that, the pooled OLS is incoherent when the FE model can be applied.

The pooled estimator right after taking into account the personal impacts model is then:

$yit = \alpha + xit\,' \beta + (\alpha i - \alpha + \varepsilon it)$

At this model, time dummies xit manipulates any time-specific have an affect which is thought to be solved out. The equation above is taken from a single intercept that is applied to any kind of observations and completed via individual effect ai-a and to this individual impact, also the error term is attached that causes to ai-a+ $\varepsilon it$ and is needed no to be associated with $xit$ so as to gain consistent prediction when pooling the data yet just like in many cases autocorrelation amongst the error conditions could not be avoided. In order to approve the determinants of capital structure in Europeans firms, at this study, the regression model can be formulated as below;

$yit = \alpha i + \beta 1x1it + \beta 2x2i\square + \beta 3x3it + \cdots, + \beta kxkit + \varepsilon it$

Whereas yit, the time variant capital structure, the firm and xit signs the explanatory variables or either way regressors of firm I at time t via k-dimensional regressors of the panel model. Ever since the pooled OLS does not destroy the error condition, all individual have impacts which could not be defined via the regressors finish in the composite error term.

In my research, Tifow and Sayilir (2015), to measure the performance of firms, the data are shown below.

- ROE and ROA will be using to measure financial performance, while EPS and Tobin‟s Q ratio will be using to measure market performance.
- ROE: Calculated by dividing a firm's net income by its total equity.
- ROA: Calculated by dividing a firm's net income by its total assets.
- EPS: Calculated by dividing a firm's net income by its outstanding shares.
- Tobin’s Q: Calculated by dividing a firm's total market value by its total asset value.
- Capital Structure is the main explanatory variable and it will be using by two financial ratios:
- STDTA: Short-term debt to total assets
- LTDTA: Long-term debt to total assets
- Two variables will be using as control variables:

Growth (Sales Growth Rate): (Current year’s sales - Previous year’s sales) / (Previous year’s sales) * 100 Size

Firm Size: log of sales.

$ROE_x = \beta 0_X + \beta 1\ (LTDTA)_X + \beta 2\ (STDTA)_X + \beta 3\ (SIZE)_X + \beta 4\ (GROWTH)_X + u_X$

$ROA_x = \beta 0_X + \beta 1\ (LTDTA)_X + \beta 2\ (STDTA)_X + \beta 3\ (SIZE)_X + \beta 4\ (GROWTH)_X + u_X$

$EPS_x = \beta 0_X + \beta 1\ (LTDTA)_X + \beta 2\ (STDTA)_X + \beta 3\ (SIZE)_X + \beta 4\ (GROWTH)_X + u_X$

Tobin’s $Q_x = \beta 0_X + \beta 1\ (LTDTA)_X + \beta 2\ (STDTA)_X + \beta 3\ (SIZE)_X + \beta 4\ (GROWTH)_X + u_X$

# CHAPTER 4 DATA DESCRIPTION

In this part, collecting date, secondary collecting data and which data samples are collected will be indicated. At the same time, on which purpose, these data are collected for. Furthermore, in my thesis, it will be explained that which dependant and independent data I used additionally which regression model is used

## 4.1 Data collection

As it is known that, in order to create a reliable and academic thesis, the very first step is getting the calculations done with accurate data. So that, it is very important to be picky and careful while getting and picking up data from reliable sources. In my thesis, it is aimed to get an empirical result with the data from 70 main companies between 2008 and 2016. At the same time, from the data I have found, generally, how capital structure has an impact on company's performance and in different areas how companies are affected and last but not least, it will be told that in 2009 crisis, how company's capital structure can change company' s performance.

There are two types of data required in this study; capital measurement and firm performance measurement. The hardest part of this study was to analyse of companies' financial reports. However, at Greenwich university, it is easier and faster to collect data with ORBIS database. For some companies, they might not have possible data, in some years, in ORBIS so that EIKON data helped me over to cover these missing data. For me, both EIKON and ORBIS are the most accurate databases.

### 4.1.1 Secondary data and sources

In the literature, couple of variables were used to analysis the imaginable impacts of capital structure on performance of firm. Indicator return on assets and return on equity used for performance, both Tobin's Q and earning per share are most known ones in which profit

efficiency are used too. An indicator for capital structure, the ratios of the leverage are used, for instance, short-term debt to total assets, long-term to total asset. Furthermore, capital structure measures and the performance, the common of the studies which are used control capricious, firm size and growth in sale (Avci, 2016)

In this thesis, generally, secondary data and sources are used. For the market performance, both Tobin's Q data and Earning per share (EPS) are used, For the firm performance, both return on equity and return on asset data are used. In the meantime, in order to explain capital structure short-term debt to total asset(STDTA) and long-term debt to total asset(LTDTA) data are used. In addition to these, 2 data (firm size and firm growth) are used for control variable. Those data, as it is mentioned that ORBIS and EIKON provide.

### 4.1.2 Dependent variables

**Return on Equity**

ROE which means Return on equity is used for a significant measurement of company's performance on earning. That ROE claims known shareholders that how much impact their fund is employed, having said that, a person can indicate what if a firm is named as profit-burner or profit-creator and management's profit-earnings efficiency.

On the basis of these, the formula of ROE is calculated as below;

Return on Equity (ROE) = Net Income/Total Equity

The greater the return on equity of company, the stronger management is at the employing investors' capital to create more profits. Investors search the trend in ROE for every single firm and equate this to industry benchmarks and historical. A raising ROE can show that a company is eligible to get bigger with no adding recent equity into the business, that makes rare the ownership partake of current shareholders Kijewska, A (2016).

**Return on asset**

ROA which is shortened from return on assets is a very common indicator of which can make profit for a company is related to its total assets. On the other hand, it inspires an idea in regards to how good the company eligible to employ their assets to increase earnings. Calculated by dividing a company's annual earnings by its total assets. ROA is shown as in

percentage. Normally it is claimed to as return on investment. The figure of ROA hands over to investors an idea such how big impact the company convert the money invested into net income by them. The bigger the figure of ROA the better it is reflected such in the company earns more money on least invested company (MOKHTAR,2006).

**Tobin's Q**

Tobin, in 1969, introduced Tobin's Q, yet couple of articles have argued the development of measure. For example, Perfect and Wiles (1994) compare five different estimators of Tobin's Q; taking the findings into account Chung and Pruitt (1994) realized the difficulty of calculating the Tobin's Q right after Lindenberg and Ross (1981). They made a change on the calculations of Tobin's Q and simplified it which assumes that the values of a replacement for asset such equipment, plants and inventories are similar to their book values. Tobin's Q values of their model are tested by them and Lindenberg and Ross (1981) Tobin's Q model by completing the study ten years time comparisons with the cross-sectional and same results were found with the under both models.

Furthermore, Tobin's Q measures expectations of the investors for the upcoming profitability of firms. Ever since, investors do not disregard the past on their try to claim logical and reasonable expectations, it shows accounting-based also the market-based rates of return. The combination provides it to explain not only the economic but also the market performance of firms but, it also has meaning that it has got the same short-comings of those of accounting-based measurements, for instance, accounting problems artificially. In addition, the numerator of Q, at some point, shows the value investors detach to a firm's abstract assets. This changes performance compare of firms which trust differentiating degrees on abstract capital. The future of the company income stream is behaved like it can be produced by investments that are made only in tangible capital. The other big concern is that Tobin's Q deeply affected by share prices. So that, Tobin's Q shows market answers than firm's performance in long-term (Tong,2010).

### 4.1.3 Independent variables

Capital Structure signs to a source of a company's funding for it is the mix of equity, its assets and debt (Brounen et al., 2006). There are different ways to measure capital structure

in which there is long-term debt to total asset, total debts to total asset, short-term debt to total assets (Chakraborty, 2010; Kayo and Kimura, 2011; Pandey, 2001). Additionally, for the each debt ratio could be claimed by using the market value or book value (Frank and Goyal, 2009). This has used the ratios from long-term debt, total debts to book value, short-term debt and market value of in total assets to measure capital structure.

### 4.1.4 Control variables

**Firm size**

The size of the company is another factor which influences the choice of capital structure, this is because smaller companies have less opportunities for external financing in comparison to the larger companies, and the capital has a higher cost as well. Many argue that this is related to the information asymmetry problem which appears when smaller companies have to deal with financiers as well as lenders, as they lack the knowledge to assess smaller sized companies (Degryse, Goeij, & Kappert, 2010; Lindblom et al., 2011).

**Growth**

Bergmark and Dahlberg (2015), looking at growth using the pecking order theory, a firm which has a higher growth will push to re-invest its retained earnings in the firm. According to this theory, a firm will approach external sources for financing and continue to invest in the operations that bring growth. According to Cassar and Holmes (2003), companies will search for a less secure short-term debt rather than for a long-term debt which therefore results in higher leverage ratio in high-growth firms. Researchers who conducted the studies have come up with a mix of results, but the majority showed that there is a significant effect of growth on leverage. Cassar and Holmes (2003) proved that it is the firms with high growth opportunities which have a higher leverage ratio.

## CHAPTER 5 EMPIRICAL FINDINGS AND ANALYSIS

In this part, the analysis of data will be shown. All of them, are taken from the 70 firms data in Istanbul Stock exchange. Descriptive statistics, correlation and regression calculations are so important for the Research question's answer. End of this section, all answers for research questions will be found.

### 5.1 Descriptive statistics and correlation

In this part of the work, descriptive static and correlation calculations take part for the all existed data. These calculations are made by dividing into the parts. First of all, for the all data descriptive static and correlation are made. In order to see the effects of 2007-2008 crisis, data in 2008-2010 and 2011-2016, those years are divided to get the results. At last, the firms, at this work, are divided into sectors to get the calculations for descriptive and correlation.

**Table 1**: Full sample descriptive statistics

| | *ROE* | *ROA* | *Tobin's Q* | *EPS* | *LTDTA* | *STDTA* | *SIZE* | *GROWTH* |
|---|---|---|---|---|---|---|---|---|
| Mean | 1.186 | 2.964762 | 0.712238 | 0.265079 | 0.131742 | 0.3459114 | 5.472556 | 0.118222 |
| Standard Err | 1.4620052 | 0.304157 | 0.038089 | 0.038445 | 0.004862 | 0.0067296 | 0.028588 | 1.129054 |
| Median | 7.63 | 3.48 | 0.51 | 0.12 | 0.09682 | 0.337896 | 5.49 | -2.52 |
| Standard Dev | 36.69604 | 7.634274 | 0.956037 | 0.964958 | 0.122044 | 0.1689112 | 0.717551 | 28.33903 |
| Kurtosis | 45.129701 | 2.711322 | 70.35446 | 44.1383 | 0.913889 | -0.037567 | -0.192798 | 21.55343 |
| Skewness | -5.474806 | -0.3059 | 7.171653 | 4.80568 | 1.089763 | 0.4604611 | 0.095347 | 3.002055 |
| Minimum | -393.03 | -28.44 | 0 | -3.75 | 0 | 0.0098 | 3.51 | -81.33 |
| Maximum | 120.15 | 37.24 | 13.17 | 11.13 | 0.610598 | 0.9006 | 7.38 | 260.73 |
| Count | 630 | 630 | 630 | 630 | 630 | 630 | 630 | 630 |

The table above illustrates descriptive statistics of all data briefly. As it can be seen, mean, standard error, median, standard deviation, kurtosis, skewness, minimum, max, sum and count data are shown. To start with mean, ROE 1.186, ROA 2.964, Tobin's Q 0.712 and EPS

0.265 results are given. For the capital structure, mean result 0.131 (long-term debt to total asset), 0.345 (short-term debt to total asset) can be told respectively. From the results, it can be said that the mean capital structure's (LTDTA and STDTA) are around, 0.131 and 0.345 claiming that Turkish companies finance their asset via an averagely use the short-term and long-term debt. According to this result, it is explained that Turkish companies use 13% debt to finance that is their asset. It is confirmed that companies in Turkey are in the position which is less risky. For this reason, encouragement should be provided to spur or allow companies to increase business via having given more pressure to enhance companies' value. In the meantime, the growth means and firm size can be shown as 5.472, 0.118 respectively.

Nevermore, Cramer's V correlation is used to indicate an important link for correlations. Cramer's V Correlation is almost same the Pearson's r Correlation. The different is Pearson's r correlation includes testing the strength of linear relationship whereas Cramer's V is known to calculate correlation changes between 0 and 1. A value closes to 0 claims that there is a minor relation between variables. A Cramer's V of close to 1 explains that there is a strong relation.

| Cramer's V | |
|---|---|
| .25 or higher | Very strong relationship |
| .15 to .25 | Strong relationship |
| .11 to .15 | Moderate relationship |
| .06 to .10 | weak relationship |
| .01 to .05 | No or negligible relationship |

### 5.1.1 Descriptive statistics and correlation for all sample dependent variable and independent variable

**Table 2**: Descriptive Statistics and Correlation for all sample dependent variable and independent variable

| DEPENDANT VAR:ROA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROA | LTDTA | STDTA | SIZE | GROWTH |
| ROA | 630 | -28.44 | 37.24 | 2.964762 | 7.634274 | 1 | | | | |
| LTDTA | 630 | 0 | 0.610598 | 0.131742 | 0.122044 | -0.10037 | 1 | | | |
| STDTA | 630 | 0.0098 | 0.9006 | 0.345911 | 0.168911 | -0.32598 | -0.039116 | 1 | | |
| SIZE | 630 | 3.51 | 7.38 | 5.472556 | 0.717551 | 0.3518267 | 0.092286 | 0.071571 | 1 | |
| GROWTH | 630 | -81.33 | 260.73 | 0.118222 | 28.33903 | 0.2541509 | 0.052441 | 0.029974 | 0.09838052 | 1 |

| DEPENDANT VAR:ROE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROE | LTDTA | STDTA | SIZE | GROWTH |
| ROE | 630 | -393.03 | 120.15 | 1.186 | 36.69604 | 1 | | | | |
| LTDTA | 630 | 0 | 0.610598 | 0.131742 | 0.122044 | -0.059831 | 1 | | | |
| STDTA | 630 | 0.0098 | 0.9006 | 0.345911 | 0.168911 | -0.260617 | -0.039116 | 1 | | |
| SIZE | 630 | 3.51 | 7.38 | 5.472556 | 0.717551 | 0.2936817 | 0.092286 | 0.071571 | 1 | |
| GROWTH | 630 | -81.33 | 260.73 | 0.118222 | 28.33903 | 0.1829644 | 0.052441 | 0.029974 | 0.09838052 | 1 |

| DEPENDANT VAR:TOBIN'S Q | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | TOBIN'S Q | LTDTA | STDTA | SIZE | GROWTH |
| TOBIN'S Q | 630 | 0 | 13.17 | 0.712238 | 0.956037 | 1 | | | | |
| LTDTA | 630 | 0 | 0.610598 | 0.131742 | 0.122044 | -0.101617 | 1 | | | |
| STDTA | 630 | 0.0098 | 0.9006 | 0.345911 | 0.168911 | -0.187598 | -0.039116 | 1 | | |
| SIZE | 630 | 3.51 | 7.38 | 5.472556 | 0.717551 | 0.0315914 | 0.092286 | 0.071571 | 1 | |
| GROWTH | 630 | -81.33 | 260.73 | 0.118222 | 28.33903 | 0.0578922 | 0.052441 | 0.029974 | 0.09838052 | 1 |

| DEPENDANT VAR:EPS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | EPS | LTDTA | STDTA | SIZE | GROWTH |
| EPS | 630 | -3.75 | 11.13 | 0.265079 | 0.964958 | 1 | | | | |
| LTDTA | 630 | 0 | 0.610598 | 0.131742 | 0.122044 | -0.047416 | 1 | | | |
| STDTA | 630 | 0.0098 | 0.9006 | 0.345911 | 0.168911 | -0.148373 | -0.039116 | 1 | | |
| SIZE | 630 | 3.51 | 7.38 | 5.472556 | 0.717551 | 0.1894743 | 0.092286 | 0.071571 | 1 | |
| GROWTH | 630 | -81.33 | 260.73 | 0.118222 | 28.33903 | 0.137419 | 0.052441 | 0.029974 | 0.09838052 | 1 |

The table above, the correlation is seen between all dependent variables and independent variable. In general, dependent variables are insignificantly correlated with the LTDTA and

STDTA which means that dependent variables can be negatively affected by independent variable. As it can be seen at the table, none of the dependent variable has a positive relationship with independent variable. As a result of this, it can be said that capital structure affects performance of the firms negatively. On the other hand, the relation between all dependent variables and other variables such as firm size, firm growth, are positive. If these relations are compared, the strongest relationship is between ROA and firm size.

### 5.1.2 Descriptive statistics and correlation for all sample dependent variable and independent variable between 2008-2010

**Table 3:** Descriptive statistics and correlation for all sample dependent variable and independent variable between 2008-2010

| DEPENDANT VAR:ROE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROE | LTDTA | STDTA | SIZE | GROWTH |
| ROE | 210 | -229.37 | 37.98 | 0.415761905 | 27.94228283 | 1 | | | | |
| LTDTA | 210 | 0 | 0.362323 | 0.104871448 | 0.097922594 | 0.056102509 | 1 | | | |
| STDTA | 210 | -3.75 | 560.478950717 | 7.884093411 | 51.20970234 | -0.376823856 | -0.02641 | 1 | | |
| SIZE | 210 | 3.74 | 7.3 | 5.447571429 | 0.690222422 | 0.360523374 | 0.085757 | 0.01825092 | 1 | |
| GROWTH | 210 | -68.05 | 210 | 1.318684791 | 29.87579685 | 0.236302873 | 0.058784 | 0.05963192 | 0.096887022 | 1 |

| DEPENDANT VAR:ROA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROA | LTDTA | STDTA | SIZE | GROWTH |
| ROA | 210 | -28.44 | 19.98 | 2.136047619 | 7.416801249 | 1 | | | | |
| LTDTA | 210 | 0 | 0.362323 | 0.104871448 | 0.097922594 | 0.060338183 | 1 | | | |
| STDTA | 210 | -3.75 | 560.4789507 | 7.884093411 | 51.20970234 | -0.401399392 | -0.02641 | 1 | | |
| SIZE | 210 | 3.74 | 7.3 | 5.447571429 | 0.690222422 | 0.404646797 | 0.085757 | 0.01825092 | 1 | |
| GROWTH | 210 | -68.05 | 210 | 1.318684791 | 29.87579685 | 0.249868344 | 0.058784 | 0.05963192 | 0.096887022 | 1 |

| DEPENDANT VAR:TOBIN'S Q | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | TOBIN'S Q | LTDTA | STDTA | SIZE | GROWTH |
| TOBIN'S Q | 210 | 0 | 13.17 | 0.655 | 0.960386809 | 1 | | | | |
| LTDTA | 210 | 0 | 0.362323 | 0.104871448 | 0.097922594 | -0.051478289 | 1 | | | |
| STDTA | 210 | -3.75 | 560.4789507 | 7.884093411 | 51.20970234 | -0.1573813 | -0.02641 | 1 | | |
| SIZE | 210 | 3.74 | 7.3 | 5.447571429 | 0.690222422 | 0.013729047 | 0.085757 | 0.01825092 | 1 | |
| GROWTH | 210 | -68.05 | 210 | 1.318684791 | 29.87579685 | 0.029945534 | 0.058784 | 0.05963192 | 0.096887022 | 1 |

| DEPENDANT VAR:EPS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | EPS | LTDTA | STDTA | SIZE | GROWTH |
| EPS | 210 | -3.75 | 210 | 2.513358523 | 19.16275845 | 1 | | | | |
| LTDTA | 210 | 0 | 0.362323 | 0.104871448 | 0.097922594 | 0.023718027 | 1 | | | |
| STDTA | 210 | -3.75 | 560.4789507 | 7.884093411 | 51.20970234 | -0.176257178 | -0.02641 | 1 | | |
| SIZE | 210 | 3.74 | 7.3 | 5.447571429 | 0.690222422 | 0.307208973 | 0.085757 | 0.01825092 | 1 | |
| GROWTH | 210 | -68.05 | 210 | 1.318684791 | 29.87579685 | 0.179986247 | 0.058784 | 0.05963192 | 0.096887022 | 1 |

Correlation and descriptive statistics are shown by the data between 2008 and 2010 belonging to companies that are studied at the table above. It can be seen that most of the dependent variables are positive correlate with the long-term debt and total asset, the link between Tobin's Q and long-term debt to total asset is only negative one. However, it can not be said

that the link is strong because these links have a slight disposition toward to positivity. If it is compared in the sense of highest ratio, ROA and LTDTA have the highest which is around 6%. On the other hand, the relation between dependent variable and short-term debt to total asset is all negative relation. Amongst the links, the weakest ratio of links belongs to the relation between ROA and STDTA. On the other hand, the relation between other data (SIZE and GROWTH) in the correlation and dependent are in a positive situation.

### 5.1.3 Descriptive statistics and correlation for all sample dependent variable and independent variable between 2011-2016

**Table 4**: Descriptive statistics and correlation for all sample dependent variable and independent variable between 2011-2016

| DEPENDANT VAR:ROE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROE | LTDTA | STDTA | SIZE | GROWTH |
| ROE | 453 | -393.03 | 120.15 | 1.437637969 | 39.38265953 | 1 | | | | |
| LTDTA | 453 | 0 | 0.610598 | 0.141870704 | 0.12886461 | -0.0987015 | 1 | | | |
| STDTA | 453 | 0.0098 | 0.9006 | 0.343776892 | 0.165025108 | -0.2224434 | -0.0305649 | 1 | | |
| SIZE | 453 | 3.51 | 7.38 | 5.478609272 | 0.706653311 | 0.27545008 | 0.08856962 | 0.09021543 | 1 | |
| GROWTH | 453 | -81.33 | 260.73 | -0.122428256 | 28.58929389 | 0.17118025 | 0.05401672 | 0.01805992 | 0.10053125 | 1 |

| DEPENDANT VAR:ROA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROA | LTDTA | STDTA | SIZE | GROWTH |
| ROA | 453 | -25.89 | 37.24 | 3.255342163 | 7.656208463 | 1 | | | | |
| LTDTA | 453 | 0 | 0.610598 | 0.141870704 | 0.12886461 | -0.1698065 | 1 | | | |
| STDTA | 453 | 0.0098 | 0.9006 | 0.343776892 | 0.165025108 | -0.2874525 | -0.0305649 | 1 | | |
| SIZE | 453 | 3.51 | 7.38 | 5.478609272 | 0.706653311 | 0.32626925 | 0.08856962 | 0.09021543 | 1 | |
| GROWTH | 453 | -81.33 | 260.73 | -0.122428256 | 28.58929389 | 0.25783213 | 0.05401672 | 0.01805992 | 0.10053125 | 1 |

| DEPENDANT VAR:TOBIN'S Q | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | TOBIN'S Q | LTDTA | STDTA | SIZE | GROWTH |
| TOBIN'S Q | 453 | 0.04 | 9.58 | 0.74785872 | 0.927742792 | 1 | | | | |
| LTDTA | 453 | 0 | 0.610598 | 0.141870704 | 0.12886461 | -0.1304612 | 1 | | | |
| STDTA | 453 | 0.0098 | 0.9006 | 0.343776892 | 0.165025108 | -0.2129642 | -0.0305649 | 1 | | |
| SIZE | 453 | 3.51 | 7.38 | 5.478609272 | 0.706653311 | 0.03933937 | 0.08856962 | 0.09021543 | 1 | |
| GROWTH | 453 | -81.33 | 260.73 | -0.122428256 | 28.58929389 | 0.07457552 | 0.05401672 | 0.01805992 | 0.10053125 | 1 |

| DEPENDANT VAR:EPS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | EPS | LTDTA | STDTA | SIZE | GROWTH |
| EPS | 453 | -3.75 | 11.13 | 0.294988962 | 1.055909126 | 1 | | | | |
| LTDTA | 453 | 0 | 0.610598 | 0.141870704 | 0.12886461 | -0.1698065 | 1 | | | |
| STDTA | 453 | 0.0098 | 0.9006 | 0.343776892 | 0.165025108 | -0.2874525 | -0.0305649 | 1 | | |
| SIZE | 453 | 3.51 | 7.38 | 5.478609272 | 0.706653311 | 0.32626925 | 0.08856962 | 0.09021543 | 1 | |
| GROWTH | 453 | -81.33 | 260.73 | -0.122428256 | 28.58929389 | 0.25783213 | 0.05401672 | 0.01805992 | 0.10053125 | 1 |

The table above shows that descriptive and correlation belonging to the firms in this work, between 2011 and 2016. As it can be seen from the table that the relation between all dependent variable and long-term debt to total asset is negative. At the same time, the link between all the dependent variable and short-term debt to total asset is negative. On the other hand, in the correlation calculation, the link between (Firm size and Firm Growth) and (dependent variable) is positive.

### 5.1.4 Descriptive statistics and correlation by industry

**Table 5**: Descriptive statistics and correlation by industry (ROE)

Chemicals, petroleum rubber and plastic products

| DEPENDANT VAR:ROE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROE | LTDTA | STDTA | SIZE | GROWTH |
| ROE | 81 | -119.68 | 30.8 | 7.38469136 | 23.5352978 | 1 | | | | |
| LTDTA | 81 | 0 | 0.360983 | 0.11443547 | 0.10612896 | 0.03892663 | 1 | | | |
| STDTA | 81 | 0.222842 | 0.640059 | 0.41262242 | 0.10501344 | 0.02269115 | 0.0515984 | 1 | | |
| SIZE | 81 | 5.1 | 7.38 | 5.77802469 | 0.58410491 | 0.37752541 | 0.0210211 | 0.20211047 | 1 | |
| GROWTH | 81 | -39.72 | 77.62 | 0.54160494 | 22.5993871 | 0.15180182 | 0.0177243 | 0.20207841 | -0.0003572 | 1 |

Food, beverage and tobacco

| DEPENDANT VAR:ROE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROE | LTDTA | STDTA | SIZE | GROWTH |
| ROE | 90 | -229.37 | 65.53 | -6.3923333 | 37.7741508 | 1 | | | | |
| LTDTA | 90 | 0 | 0.398315 | 0.1477426 | 0.11549688 | 0.15268167 | 1 | | | |
| STDTA | 90 | 0.1048 | 0.86748 | 0.36909813 | 0.17164943 | -0.5336342 | -0.0301596 | 1 | | |
| SIZE | 90 | 3.95 | 6.64 | 5.39755556 | 0.76886654 | 0.45003609 | 0.34996557 | -0.3501516 | 1 | |
| GROWTH | 90 | -43.94 | 77.57 | -1.237 | 18.798067 | 0.38539832 | 0.1268959 | -0.1017694 | 0.19328232 | 1 |

Non-metallic mineral products

| DEPENDANT VAR:ROE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROE | LTDTA | STDTA | SIZE | GROWTH |
| ROE | 99 | -26.88 | 26.84 | 8.0104 | 8.21376184 | 1 | | | | |
| LTDTA | 99 | 0 | 0.2992240 | 0.09194 | 0.08035414 | -0.100125 | 1 | | | |
| STDTA | 99 | 0.03213 | 0.610527 | 0.21748 | 0.12335652 | -0.166155 | 0.035964389 | 1 | | |
| SIZE | 99 | 4.53 | 5.91 | 5.31616 | 0.38211203 | 0.426043 | -0.228631338 | -0.17545128 | 1 | |
| GROWTH | 99 | -33.42 | 33.33 | -4.71091 | 14.5440063 | 0.1983647 | -0.027215843 | 0.0345844 | 0.055949736 | 1 |

Fabricated metal products, machinery and equipment

| DEPENDANT VAR:ROE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROE | LTDTA | STDTA | SIZE | GROWTH |
| ROE | 108 | -393.03 | 50.85 | -1.684537037 | 58.75177411 | 1 | | | | |
| LTDTA | 108 | 0 | 0.565829 | 0.153520259 | 0.114814652 | -0.115418553 | 1 | | | |
| STDTA | 108 | 0.06352 | 0.824211 | 0.421790852 | 0.158081644 | -0.263693599 | 0.002725598 | 1 | | |
| SIZE | 108 | 4.01 | 6.77 | 5.597407407 | 0.84604453 | 0.41863785 | 0.019931326 | 0.154380559 | 1 | |
| GROWTH | 108 | -63.86 | 160.32 | 2.910833333 | 29.03782686 | 0.157247227 | -0.001404679 | 0.00118032 | 0.017017737 | 1 |

The table above illustrates that descriptive statics and correlations belonging to ROE and independent variable for different sectors. At this work, there are four different sectors. At

first glance, the relation between ROE and independent variable from chemical product sector will be analysed having said that the relation between ROE and LTDTA is positive. At the same time, ROE and STDTA have a positive relationship. Furthermore, when food sector is checked, ROE and LTDTA have positive relation yet same thing can not be said for the relation between ROE and STDTA. As a third sector which is the non-metal, ROE has a negative relation with both LTDTA and STDTA. Last but not least, for the metal product sector and non-metallic sector, for both, LTDTA and STDTA have a negative relation.

**Table 6**: Descriptive statistics and correlation by industry (ROA)

Chemicals, petroleum rubber and plastic products

| DEPENDANT VAR:ROA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROA | LTDTA | STDTA | SIZE | GROWTH |
| ROA | 81 | -18.66 | 11.82 | 3.81493827 | 5.9665916 | 1 | | | | |
| LTDTA | 81 | 0 | 0.360983 | 0.11443547 | 0.10612896 | 0.01397299 | 1 | | | |
| STDTA | 81 | 0.222842 | 0.640059 | 0.41262242 | 0.10501344 | -0.057118 | 0.0515984 | 1 | | |
| SIZE | 81 | 5.1 | 7.38 | 5.77802469 | 0.58410491 | 0.37848169 | 0.0210211 | 0.20211047 | 1 | |
| GROWTH | 81 | -39.72 | 77.62 | 0.54160494 | 22.5993871 | 0.18060093 | 0.0177243 | 0.20207841 | -0.0003572 | 1 |

Food, beverage and tobacco

| DEPENDANT VAR:ROA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROA | LTDTA | STDTA | SIZE | GROWTH |
| ROA | 90 | -28.44 | 24.6 | 0.765 | 9.25650506 | 1 | | | | |
| LTDTA | 90 | 0 | 0.398315 | 0.1477426 | 0.11549688 | 0.05564017 | 1 | | | |
| STDTA | 90 | 0.1048 | 0.86748 | 0.36909813 | 0.17164943 | -0.5057666 | -0.0301596 | 1 | | |
| SIZE | 90 | 3.95 | 6.64 | 5.39755556 | 0.76886654 | 0.52086129 | 0.34996557 | -0.3501516 | 1 | |
| GROWTH | 90 | -43.94 | 77.57 | -1.237 | 18.798067 | 0.38250385 | 0.1268959 | -0.1017694 | 0.19328232 | 1 |

Non-metallic mineral products

| DEPENDANT VAR:ROA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROA | LTDTA | STDTA | SIZE | GROWTH |
| ROA | 99 | -13.02 | 20.99 | 5.37505 | 5.24717541 | 1 | | | | |
| LTDTA | 99 | 0 | 0.2992240 | 0.09194 | 0.08035414 | -0.158855 | 1 | | | |
| STDTA | 99 | 0.03213 | 0.610527 | 0.21748 | 0.12335652 | -0.216664 | 0.035964389 | 1 | | |
| SIZE | 99 | 4.53 | 5.91 | 5.31616 | 0.38211203 | 0.4088593 | -0.228631338 | -0.175451284 | 1 | |
| GROWTH | 99 | -33.42 | 33.33 | -4.71091 | 14.5440063 | 0.1778966 | -0.027215843 | 0.034584365 | 0.055949736 | 1 |

Fabricated metal products, machinery and equipment

| DEPENDANT VAR:ROA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | ROA | LTDTA | STDTA | SIZE | GROWTH |
| ROA | 108 | -25.89 | 37.24 | 3.204907407 | 10.14486266 | 1 | | | | |
| LTDTA | 108 | 0 | 0.565829 | 0.153520259 | 0.114814652 | -0.146648276 | 1 | | | |
| STDTA | 108 | 0.06352 | 0.824211 | 0.421790852 | 0.158081644 | -0.403992565 | 0.002725598 | 1 | | |
| SIZE | 108 | 4.01 | 6.77 | 5.597407407 | 0.84604453 | 0.352342617 | 0.019931326 | 0.154380559 | 1 | |
| GROWTH | 108 | -63.86 | 160.32 | 2.910833333 | 29.03782686 | 0.100875637 | -0.001404679 | 0.00118032 | 0.017017737 | 1 |

The table above illustrates that descriptive statics and correlations belonging to ROA and independent variable for four different sectors. For the chemical sector, ROA and LTDTA have positive relationship yet with the relationship between STDTA is negative. Same comment can be made for non-metallic product and metallic product sectors. The relation between ROA and LTDTA, ROA and STDTA are negative relations.

**Table 7**: Descriptive statistics and correlation by industry (Tobin's Q)

Chemicals, petroleum rubber and plastic products

| DEPENDANT VAR:TOBIN'S Q | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | TOBIN'S Q | LTDTA | STDTA | SIZE | GROWTH |
| TOBIN'S Q | 81 | 0.12 | 3.56 | 0.73592593 | 0.57063731 | 1 | | | | |
| LTDTA | 81 | 0 | 0.360983 | 0.11443547 | 0.10612896 | -0.1351371 | 1 | | | |
| STDTA | 81 | 0.222842 | 0.640059 | 0.41262242 | 0.10501344 | -0.2010622 | 0.0515984 | 1 | | |
| SIZE | 81 | 5.1 | 7.38 | 5.77802469 | 0.58410491 | -0.0029834 | 0.0210211 | 0.20211047 | 1 | |
| GROWTH | 81 | -39.72 | 77.62 | 0.54160494 | 22.5993871 | 0.0370825 | 0.0177243 | 0.20207841 | -0.0003572 | 1 |

Food, beverage and tobacco

| DEPENDANT VAR:TOBIN'S Q | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | TOBIN'S Q | LTDTA | STDTA | SIZE | GROWTH |
| TOBIN'S Q | 90 | 0.04 | 2.31 | 0.63344444 | 0.5215667 | 1 | | | | |
| LTDTA | 90 | 0 | 0.398315 | 0.1477426 | 0.11549688 | 0.28836584 | 1 | | | |
| STDTA | 90 | 0.1048 | 0.86748 | 0.36909813 | 0.17164943 | -0.3278312 | -0.0301596 | 1 | | |
| SIZE | 90 | 3.95 | 6.64 | 5.39755556 | 0.76886654 | 0.57862299 | 0.34996557 | -0.3501516 | 1 | |
| GROWTH | 90 | -43.94 | 77.57 | -1.237 | 18.798067 | 0.20743556 | 0.1268959 | -0.1017694 | 0.19328232 | 1 |

Non-metallic mineral products

| DEPENDANT VAR:TOBIN'S Q | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | TOBIN'S Q | LTDTA | STDTA | SIZE | GROWTH |
| TOBIN'S Q | 99 | 0.08 | 13.17 | 1.28515 | 2.03472375 | 1 | | | | |
| LTDTA | 99 | 0 | 0.2992240 | 0.09194 | 0.08035414 | -0.256479 | 1 | | | |
| STDTA | 99 | 0.03213 | 0.610527 | 0.21748 | 0.12335652 | -0.125385 | 0.035964389 | 1 | | |
| SIZE | 99 | 4.53 | 5.91 | 5.31616 | 0.38211203 | -0.180568 | -0.228631338 | -0.175451284 | 1 | |
| GROWTH | 99 | -33.42 | 33.33 | -4.71091 | 14.5440063 | 0.0222156 | -0.027215843 | 0.034584365 | 0.055949736 | 1 |

Fabricated metal products, machinery and equipment

| DEPENDANT VAR:TOBIN'S Q | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | TOBIN'S Q | LTDTA | STDTA | SIZE | GROWTH |
| TOBIN'S Q | 108 | -25.89 | 37.24 | 3.204907407 | 10.14486266 | 1 | | | | |
| LTDTA | 108 | 0 | 0.565829 | 0.153520259 | 0.114814652 | -0.088274248 | 1 | | | |
| STDTA | 108 | 0.06352 | 0.824211 | 0.421790852 | 0.158081644 | -0.288331021 | 0.002725598 | 1 | | |
| SIZE | 108 | 4.01 | 6.77 | 5.597407407 | 0.84604453 | -0.01626571 | 0.019931326 | 0.154380559 | 1 | |
| GROWTH | 108 | -63.86 | 160.32 | 2.910833333 | 29.03782686 | 0.077642082 | -0.001404679 | 0.00118032 | 0.017017737 | 1 |

The table above illustrates that descriptive statics and correlations belonging to Tobin's Q and independent variable for four different sectors. For the chemical sector, the relation between Tobin's Q and LTDTA have negative relation and so is the relation between Tobin's

Q and STDTA. For the food sector, Tobin's Q and LTDTA have positive relation while Tobin's Q and STDTA have negative relationship. Same comment can be made for non-metallic product and metal product.

**Table 8**: Descriptive statistics and correlation by industry (EPS)

Chemicals, petroleum rubber and plastic products

| DEPENDANT VAR:EPS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | EPS | LTDTA | STDTA | SIZE | GROWTH |
| EPS | 81 | -3.75 | 3.5 | 0.29395062 | 0.89788874 | 1 | | | | |
| LTDTA | 81 | 0 | 0.360983 | 0.11443547 | 0.10612896 | 0.18040374 | 1 | | | |
| STDTA | 81 | 0.222842 | 0.640059 | 0.41262242 | 0.10501344 | 0.14020882 | 0.0515984 | 1 | | |
| SIZE | 81 | 5.1 | 7.38 | 5.77802469 | 0.58410491 | 0.80877123 | 0.0210211 | 0.20211047 | 1 | |
| GROWTH | 81 | -39.72 | 77.62 | 0.54160494 | 22.5993871 | 0.04001659 | 0.0177243 | 0.20207841 | -0.0003572 | 1 |

Food, beverage and tobacco

| DEPENDANT VAR:EPS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | EPS | LTDTA | STDTA | SIZE | GROWTH |
| EPS | 90 | -2.05 | 3.45 | 0.32222222 | 0.98281615 | 1 | | | | |
| LTDTA | 90 | 0 | 0.398315 | 0.1477426 | 0.11549688 | -0.3746448 | 1 | | | |
| STDTA | 90 | 0.1048 | 0.86748 | 0.36909813 | 0.17164943 | -0.3895342 | 0.07453924 | 1 | | |
| SIZE | 90 | 3.95 | 6.64 | 5.39755556 | 0.76886654 | 0.27219399 | 0.15397352 | -0.2914836 | 1 | |
| GROWTH | 90 | -43.94 | 77.57 | -1.237 | 18.798067 | 0.25096992 | 0.12426477 | -0.087921 | 0.18483473 | 1 |

Non-metallic mineral products

| DEPENDANT VAR:EPS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | EPS | LTDTA | STDTA | SIZE | GROWTH |
| EPS | 99 | -3.26 | 2.81 | 0.26131 | 0.53524293 | 1 | | | | |
| LTDTA | 99 | 0 | 0.2992240 | 0.09194 | 0.08035414 | 0.0514095 | 1 | | | |
| STDTA | 99 | 0.03213 | 0.610527 | 0.21748 | 0.12335652 | -0.200683 | 0.035964389 | 1 | | |
| SIZE | 99 | 4.53 | 5.91 | 5.31616 | 0.38211203 | 0.1786488 | -0.228631338 | -0.175451284 | 1 | |
| GROWTH | 99 | -33.42 | 33.33 | -4.71091 | 14.5440063 | 0.1903797 | -0.027215843 | 0.034584365 | 0.055949736 | 1 |

Fabricated metal products, machinery and equipment

| DEPENDANT VAR:EPS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | COUNT | MIN | MAX | MEAN | SD | EPS | LTDTA | STDTA | SIZE | GROWTH |
| EPS | 108 | -1.52 | 11.13 | 0.618425926 | 1.699264361 | 1 | | | | |
| LTDTA | 108 | 0 | 0.565829 | 0.153520259 | 0.114814652 | -0.167108029 | 1 | | | |
| STDTA | 108 | 0.06352 | 0.824211 | 0.421790852 | 0.158081644 | -0.332240216 | 0.002725598 | 1 | | |
| SIZE | 108 | 4.01 | 6.77 | 5.597407407 | 0.84604453 | -0.025382361 | 0.019931326 | 0.154380559 | 1 | |
| GROWTH | 108 | -63.86 | 160.32 | 2.910833333 | 29.03782686 | 0.064974764 | -0.001404679 | 0.00118032 | 0.017017737 | 1 |

As it can be seen above from the table, for different sectors, that descriptive statistics and correlation are analysed for EPS and independent variables. First of all, for chemical product sector, for EPS, both LTDTA and STDTA have positive relationships. The other sector, food,

EPS has a negative relationship with both LTDTA and STDTA. For the non-metallic sector, EPS has a positive relation yet with STDTA has a negative relation. Lastly, metal product, EPS has a negative relationship with both LTDTA and STDTA. At the same time, for the metal sector, firm size and EPS have a negative relationship.

### 5.2.1 Regression model for all sample independent variable and dependent variable

In this part of the work, regression models and results will be explained. In order to regression analyse, each data is calculated by dividing into three different part. First of all, by calculating the dependent variable, two independent and two control variable, the relation between these is analysed. In the second part, those of which are dependent, two independent and two control variable relations are analysed between the years of 2008-2010 and 2011-2016. In the third section, with a dependant, two independent and two control variable, relations are analysed by industry.

**Table 9**: Regression model for all sample independent variable and dependent variable

| Dependent | ROE-Regression 1 | | | ROA-Regression 2 | | | Tobin's Q-Regression 3 | | | EPS-Regression 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value |
| LTDTA | -32.596 | 10.801 | 0.002 | -10.085 | 2.067 | 1.364 | -0.919 | 0.306 | 0.002 | -0.623 | 0.304 | 0.041 |
| STDTA | -63.413 | 7.785 | 2.071 | -16.535 | 1.490 | 3.118 | -1.119 | 0.221 | 5.426 | -0.967 | 0.219 | 1.247 |
| SIZE | 15.754 | 1.846 | 1.095 | 3.931 | 0.353 | 2.370 | 0.066 | 0.052 | 0.202 | 0.264 | 0.052 | 5.263 |
| GROWTH | 0.216 | 0.046 | 3.999 | 0.063 | 0.008 | 2.013 | 0.002 | 0.001 | 0.097 | 0.004 | 0.001 | 0.001 |
| Adj. $R^2$ | 0.198 | | | 0.321 | | | 0.048 | | | 0.077 | | |

Regression 1: $ROE=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size$+$ e

Regression2: $ROA=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size$+$ e

Regression3: Tobin's $Q=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size $+$e

Regression4: $EPS=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size$+$e

The table shows the results of the regression in which a dependent variable, two independent variable and two control variables. First of all, if the regression 1 analyses are started to analyse, LTDTA is significant because p-value is smaller than 0.05. From the table above, Coefficient can be commented as ROE and LTDTA have a negative relation which means that when LTDTA increases while ROE decreases. It can be said that if LTDTA increases a unit, ROE decreases by 32.596 on an average. At the same time, for STDTA can be commented same as them. The relation between ROE and STDTA is negative yet STDTA is insignificant whereas between ROE and LTDTA have positive standard deviation relation. This refers to a rise for standard deviation in LTDTA leads to an increase of 10.081 standard deviation for ROE. At the same time, standard deviation in STDTA and SIZE and GROWTH have a positive relationship. On the other side, SIZE and GROWTH are insignificant, yet SIZE and GROWTH have a positive relationship with ROE whereas LTDTA has a negative relation with ROE. The other important value which is adjusted $R^2$ meaning is to show percentage between two variables which means that adjusted $R^2$ in regression is 0.198.

By checking the data above, the relation between two variables will be focused without commenting the regression numerical results. As it is clear from the above that tables can be seen and commented easily and clearly.

In regression 2, as dependent variable such as ROA, on the other hand, LTDTA and STDTA are shown independent variable, GROWTH and SIZE control variables' regression results can be seen. Both LTDTA and STDTA are insignificant. As it is seen in Regression 1, STDTA and LTDTA are in the relation of negative with ROA. On the other hand, SIZE is insignificant but GROWTH is significant. At the same time, GROWTH and SIZE have positive relation via ROA. Furthermore, standard deviation for SIZE, GROWTH, STDTA, LTDTA are in the positive relation with ROA. Lastly, adjusted $R^2$ 0.321 referring to in the percentage of 32.1% of total variance in explained ROA.

In Regression 3, LTDTA is significant, whereas STDTA is insignificant. Both LTDTA and STDTA have a negative relation with Tobin's Q. On the other side, both SIZE and GROWTH have a positive relation with Tobin's Q. As it is in regression 2, all variable's standard deviations have a positive relation with Tobin's Q. Adjusted $R^2$ is calculated as 4% even though this ratio slow, it is still acceptable. Having added more independent variables

could raise the predictive capability of regression model.

In regression 4, LTDTA and GROWTH are significant in a way statistic. On the other hand, STDTA and SIZE are significant as well. Just like, other regression analyses, in this regression calculations, LTDTA and STDTA have a negative relation with EPS. However, SIZE and GROWTH have relation with EPS. Adjusted $R^2$ is calculated as 0.077(7.7%)

### 5.2.2 Regression model for all sample independent variable and dependent variable by years

In this part, regression calculations are analysed based on the years. First one is between 2008-2010, and the other one is between 2011 and 2016 are analysed. Dividing according to years points out that how 2007 crisis effected the Turkish firms. In that regression analyse, just like the first regression model, it has a dependent variable, there are two independent variables and two control variables used, and those things are analysed by them.

**Table 10**: Regression model for all sample independent variable and dependent variable between 2008-2010

| Dependant | ROE-Regression 5 | | | ROA-Regression 6 | | | Tobin's Q-Regression 7 | | | EPS-Regression 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value |
| LTDTA | 0.766 | 16.431 | 0.962 | 0.140 | 4.166 | 0.973 | -0.585 | 0.678 | 0.388 | -0.114 | 0.452 | 0.800 |
| STDTA | -63.567 | 9.201 | 6.059 | -17.981 | 2.333 | 5.444 | -0.891 | 0.379 | 0.019 | -0.755 | 0.253 | 0.003 |
| SIZE | 13.991 | 2.337 | 9.475 | 4.182 | 0.592 | 2.567 | 0.024 | 0.096 | 0.797 | 0.0294 | 0.064 | 8.265 |
| GROWTH | 0.233 | 0.059 | 0.0001 | 0.064 | 0.015 | 2.605 | 0.001 | 0.002 | 0.551 | 0.004 | 0.001 | 0.012 |
| Constant | | | | | | | | | | | | |
| Adj. $R^2$ | 0.314 | | | 0.374 | | | 0.110 | | | 0.137 | | |

Regression 5: $ROE=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 6: $ROA=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 7: Tobin's $Q=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size +e

Regression 8: EPS=$b_0$+$b_1$ STDTA+$b_2$ LTDTA+$b_3$ Growth+$b_4$ Size+e

In regression 5, ROE's analyse amongst LTDTA, STDTA, SIZE and GROWTH has been done separately. At the table above, LTDTA, SIZE, STDTA are not significant yet GROWTH is statistically significant. The relation between LTDTA and ROE is seen as positive. Two existence control variable (SIZE and GROWTH and ROE) relations are positive. When it comes to adjusted $R^2$, it is seen as 0.314 which 34.1 percent.

In this regression 6, it is stated that regression is not significant for LTDTA, STDTA, SIZE and GROWTH. ROA and LTDTA have a positive relationship. On the other hand, the relationship between LTDTA and ROA is negative. For (SIZE and GROWTH) have a positive relationship. Adjusted $R^2$ is 0.374 referring to 37.4% from the total variance for ROA which is explained.

In regression 7, as it can be seen the table above, STDTA is significant, LTDTA, SIZE and GROWTH are not significant statistically. LTDTA and STDTA have a negative relationship with Tobin's Q yet control variable which are SIZE and GROWTH have a positive relationship with Tobin's Q. Adjusted $R^2$ it is lower comparing to 5 and 6, which is 0.110. In order to predict capability Tobin's from the other independent variable is seen as lower which means that independent and more control could be entered to easily predict of regression.

In regression 8, GROWTH and STDTA are statistically significant, yet SIZE and LTDTA are not significant. (STDTA and LTDTA) have negative relation with EPS. It is seen that the relationship between control variables (SIZE and GROWTH) and EPS are positive.

**Table 11**: Regression model for all sample independent variable and dependent variable between 2011-2016

| Dependant | ROE-Regression 9 | | | ROA-Regression 10 | | | Tobin's Q-Regression 11 | | | EPS-Regression 12 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value |
| LTDTA | -43.096 | 13.161 | 0.001 | -13.311 | 2.345 | 2.487 | -1.061 | 0.328 | 0.001 | -0.756 | 0.374 | 0.044 |
| STDTA | -61.14 | 10.268 | 5.286 | -15.327 | 1.829 | 7.104 | -1.263 | 0.256 | 1.197 | -1.045 | 0.292 | 0.0003 |
| SIZE | 16.474 | 2.417 | 3.041 | 3.810 | 0.043 | 2.090 | 0.084 | 0.060 | 0.160 | 0.253 | 0.068 | 0.0002 |
| GROWTH | 0.211 | 0.059 | 0.0003 | 0.064 | 0.010 | 2.423 | 0.002 | 0.001 | 0.080 | 0.004 | 0.001 | 0.006 |
| Constant | | | | | | | | | | | | |
| Adj. $R^2$ | 0.171 | | | 0.303 | | | 0.067 | | | 0.065 | | |

Regression 9: ROE=$b_0$+$b_1$ STDTA+$b_2$ LTDTA+$b_3$ Growth+$b_4$ Size+ e

Regression 10: ROA=$b_0$+$b_1$ STDTA+$b_2$ LTDTA+$b_3$ Growth+$b_4$ Size+ e

Regression 11: Tobin's Q=$b_0$+$b_1$ STDTA+$b_2$ LTDTA+$b_3$ Growth+$b_4$ Size +e

Regression 12: EPS=$b_0$+$b_1$ STDTA+$b_2$ LTDTA+$b_3$ Growth+$b_4$ Size+e

The table above, regression results are given amongst the dependent variable, independent and control variable. As it is mentioned before, it is seen that after 2007 global economic crisis, how firm performances and capital structure are effected by the years.

In regression 9, Growth and LTDTA are significant, and SIZE and STDTA are not significant. LTDTA and STDTA have a negative relationship with ROE. Adjusted $R^2$ 0.0171 which is 1.71%.

In regression 11, LTDTA is statistically significant and on the other hand, other variables are significant, LTDTA and STDTA have a negative relationship with Tobin's Q. Adjusted $R^2$ is 0.067 which by 6.7%. The prediction for capability for Tobin's Q is low referring that independent variable and control could be entered the regression to make it predictable.

In regression 12, GROWTH and LTDTA are significant, SIZE and STDTA are highly statistically significant. STDTA and LTDTA have a negative relationship with EPS. Lastly, capability of prediction for EPS from other independent are low.

### 5.2.3 Regression model by Industry

In this part, one dependent, two independent variables and two control variables, industry dummy and year dummy are included. Results are presented at the table 18, 19, 20 and 21. It is aimed to see what kind of relation capital structure has with firm performance, for each industry just because the relation could change for each industry to another

**Table 12**: Regression model by Industry (Chemicals, petroleum rubber and plastic products)

| Dependant | ROE-Regression 13 | | | ROA-Regression 14 | | | Tobin's Q-Regression 15 | | | EPS-Regression 16 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTDTA | 7.186 | 23.146 | 0.757 | 0.615 | 5.748 | 0.914 | -0.678 | 0.597 | 0.259 | 1.393 | 0.546 | 0.012 |
| STDTA | -20.926 | 24.401 | 0.393 | -10.557 | 6.060 | 0.085 | -1.197 | 0.629 | 0.060 | -0.359 | 0.576 | 0.534 |
| SIZE | 15.946 | 4.292 | 0.0003 | 4.248 | 1.066 | 0.0001 | 0.043 | 0.110 | 0.697 | 1.251 | 0.101 | 7.678 |
| GROWTH | 0.177 | 0.110 | 0.114 | 0.057 | 0.027 | 0.039 | 0.002 | 0.002 | 0.461 | 0.001 | 0.002 | 0.488 |
| Constant | | | | | | | | | | | | |
| Adj. $R^2$ | 0.130 | | | 0.165 | | | 0.015 | | | 0.667 | | |

Regression 13: $ROE=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 14: $ROA=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 15: Tobin's $Q=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size +e

Regression 16: $EPS=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+e

In regression 13, GROWTH, STDTA and LTDTA are not significant, SIZE is highly significant. According to these regression results, STDTA and ROE have a negative relationship. Adjusted $R^2$ is calculated as 0.130(13%).

In regression 14, LTDTA and STDTA are not significant. SIZE is significant highly whereas GROWTH is statistically significant. As it is in regression, only STDTA and ROA have a negative relationship. Other variables have a positive relationship with ROE and finally Adjusted $R^2$ is calculated as 0.165(16.5%).
In regression 15, as a difference from regression 13, 14, in this regression analyse, all variables are seen as insignificant. LTDTA and STDTA have a negative relationship with Tobin's Q. Adjusted $R^2$, comparing to other results, is the lowest level by 0.015.

In regression 16, LTDTA is statistically significant, SIZE, STDTA and GROWTH are insignificant. EPS and STDTA have a negative relationship yet others have a positive relationship with EPS.

**Table 13**: Regression model by Industry (Food, beverage and tobacco)

| Dependant | ROE-Regression 17 | ROA-Regression 18 | Tobin's Q-Regression 19 | EPS-Regression 20 |
|---|---|---|---|---|

| | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTDTA | 6.144 | 28.365 | 0.829 | -10.225 | 6.745 | 0.133 | 0.486 | 0.417 | 0.247 | -3.573 | 0.783 | 1.714 |
| STDTA | -92.242 | 19.060 | 5.759 | -18.547 | 4.532 | 9.695 | -0.457 | 0.280 | 0.106 | -1.621 | 0.526 | 0.002 |
| SIZE | 11.784 | 4.577 | 0.117 | 4.687 | 1.088 | 4.434 | 0.319 | 0.067 | 8.498 | 0.401 | 0.126 | 0.002 |
| GROWTH | 0.590 | 0.165 | 0.0005 | 0.142 | 0.039 | 0.0005 | 0.002 | 0.002 | 0.323 | 0.010 | 0.004 | 0.019 |
| Constant | | | | | | | | | | | | |
| Adj. $R^2$ | 0.421 | | | 0.455 | | | 0.341 | | | 0.347 | | |

Regression 17: $ROE=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 18: $ROA=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 19: Tobin's $Q=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size +e

Regression 20: $EPS=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+e

In regression 17, Growth is statistically significant. LTDTA, SIZE and STDTA are not significant. ROE and STDTA have a negative relationship. However, on the other hand, SIZE, LTDTA and GROWTH have a positive relationship with ROE. Adjusted $R^2$ is calculated as 0.421 (42.1%).

In regression 18, GROWTH is highly statically significant. STDTA, LTDTA and SIZE are not significant. STDTA and LTDTA have a negative relationship with ROA. Adjusted $R^2$ is calculated as 0.455.

In regression 19, all variables are not significant. LTDTA and Tobin's Q have a positive relationship. On the other hand, STDTA and Tobin's Q have negative relation and lastly, adjusted $R^2$ is calculated as 0.341.

In regression 20, LTDTA is statically insignificant. Other variables are statistically significant. As it is in regression 18, both LTDTA and STDTA have a negative relationship. Adjusted $R^2$ is calculated as 0.347.

**Table 14**: Regression model by Industry (Non-metallic mineral products)

| Dependant | ROE-Regression 21 | | | ROA-Regression 22 | | | Tobin's Q-Regression 23 | | | EPS-Regression 24 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTDTA | -0.059 | 9.552 | 0.995 | -4.389 | 6.113 | 0.474 | -7.960 | 2.468 | 0.001 | 0.662 | 0.667 | 0.323 |
| STDTA | -6.827 | 6.158 | 0.270 | -6.687 | 3.941 | 0.093 | -2.721 | 1.591 | 0.090 | -0.794 | 0.430 | 0.068 |
| SIZE | 8.552 | 2.042 | 6.349 | 4.900 | 1.307 | 0.0003 | -1.508 | 0.527 | 0.005 | 0.222 | 0.142 | 0.122 |
| GROWTH | 0.101 | 0.051 | 0.051 | 0.058 | 0.032 | 0.080 | 0.004 | 0.013 | 0.712 | 0.007 | 0.003 | 0.054 |
| Constant | | | | | | | | | | | | |
| Adj. $R^2$ | 0.189 | | | 0.186 | | | 0.117 | | | 0.068 | | |

Regression 21: $ROE=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 22: $ROA=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 23: Tobin's $Q=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size +e

Regression 24: $EPS=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+e

In regression 21, all variables are insignificant. Both LTDTA and STDTA have a negative relationship with ROE yet SIZE and GROWTH has a positive relationship with ROE. Adjusted $R^2$ is resulted as 0.189.

In regression 22, SIZE is statistically significant but other variables are insignificant. LTDTA and STDTA have a negative relationship with ROA. Size and GROWTH have a positive relationship with ROA. Adjusted $R^2$ is concluded as 0.186.

In regression 23, LTDTA and SIZE are statistically significant. However, STDTA and GROWTH are not statistically significant. As it can be seen from this regression STDTA, LTDTA and SIZE have a negative relationship with Tobin's Q. Adjusted $R^2$ is resulted as 0.117.

In regression 24, all variables are insignificant. Only STDTA and EPS have a negative relationship. Others (LTDTA, SIZE and GROWTH), have a positive relationship. Adjusted $R^2$ is on the lowest level of value by 0.068 (6.8%).

**Table 15**: Regression model by Industry (Fabricated metal products, machinery and equipment)

| Dependant | ROE-Regression 25 | | | ROA-Regression 26 | | | Tobin's Q-Regression 27 | | | EPS-Regression 28 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value | CC | SE | P-value |
| LTDTA | -63.282 | 41.482 | 0.130 | -13.583 | 6.901 | 0.051 | -0.450 | 0.479 | 0.349 | -2.466 | 1.350 | 0.070 |
| STDTA | -124.936 | 30.488 | 8.330 | -30.129 | 5.072 | 3.898 | -1.087 | 0.352 | 0.002 | -3.615 | 0.992 | 0.0004 |
| SIZE | 32.669 | 5.698 | 9.916 | 5.111 | 0.948 | 4.459 | 0.020 | 0.0658 | 0.757 | 0.057 | 0.185 | 0.756 |
| GROWTH | 0.302 | 0.164 | 0.068 | 0.032 | 0.027 | 0.231 | 0.001 | 0.001 | 0.410 | 0.003 | 0.005 | 0.480 |
| Adj. $R^2$ | 0.297 | | | 0.347 | | | 0.062 | | | 0.109 | | |

Regression 25: $ROE=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 26: $ROA=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+ e

Regression 27: Tobin's $Q=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size +e

Regression 28: $EPS=b_0+b_1$ STDTA$+b_2$ LTDTA$+b_3$ Growth$+b_4$ Size+e

In regression 25, all variables are seen as insignificant. LTDTA and STDTA have a negative relationship with ROE. SIZE and GROWTH have a positive relationship with ROE. Adjusted $R^2$ is calculated as 0.297.

In regression 26, as it can be seen from the regression 25, all variables are insignificant. LTDTA and STDTA have a negative relation. Adjusted $R^2$ is calculated as 0.347 as in 34.7%.

In regression 27, STDTA is statistically significant. LTDTA is insignificant. LTDTA and STDTA have a negative relation with Tobin's Q. Adjusted $R^2$, compared to other results, is the lowest by 0.062.

In regression 28, STDTA is highly significant. LTDTA is insignificant. Just like other regressions, LTDTA and STDTA have a negative relationship with EPS. Finally, adjusted $R^2$ is resulted as 0.109(10.9%).

# CHAPTER 6 CONCLUSIONS

As it is mentioned in literature view, there has been a lot of searches about the relation between capital structure and firm performance. In the some of the relation, it is found that the relation negative whereas others are positive. These searches can make a difference depending on a country. The regression results found in this thesis can be seen as followed; in the first model, generally, the regression results of dependent variable, independent variable and control variable can be seen. In the second model, in the different years (2008-2010 and 2011-2016) regression results between independent variable, dependent variables and control variables are seen. Lastly, in the field of different sector, regression results are seen. Generally, in the Turkish firms, the relation between capital structure and firm performance is negative. The relation, from long-term debt to total asset has a positive connection with ROE and ROA between 2008-2010. On the other hand, the relationship between short-term debt to total asset and ROA and ROE is negative. When it comes to relation in the year of between 2011-2016, have completely opposite relation comparing to the relation of all dependent variable and independent variable which is positive, negative between 2008 and 2010. At the glance of different sectors, generally, overall the relations between dependent variable and independent variable are negative.

## 6.1 Research question

As it is mentioned from the first part, research questions are given below;

1- How could the relationship between capital structure and firm performance among Turkish listed firms be described during the period 2008-2016?

2- How did the 2007-2008 global crisis affect the Turkish firms' performance and capital structure?

After a long time of calculation, the results that answer those questions are obtained. First of all, to start with from the first question, data that calculates the firm performance which are ROE, ROA, Tobin's Q and EPS and with data that calculate the capital structure LTDTA and STDTA have negative relation which means that the financial performance for the Turkish listed firms for the previous years is affected negatively via its ratio of leverage. Practically, the application is so that the debt in the relation to asset which firm uses to finance operations, the firm perform is done by the worse financially and findings are found by Abor (2005) that claimed that performance of firms has relation with capital structure negatively.

When it comes to answer of second question, ROA and ROE have a positive relationship with LTDTA by looking to results of calculation between 2008 and 2010. However, on the other hand, all data that calculates the STDTA and firm performance have a negative relationship. When it comes to time of 2011 and 2016 data that calculates all firm performance have a negative relationship with data that calculates the capital structure. Therefore, it is resulted that, by looking at the calculation results, the impact of 2007-2008 crisis continued till 2016 and it affected the performance negatively.

### 6.2 Research sub-question

The sub-question was prepared by looking at the relationship between structure, capital and financial performance amongst firms in Turkey listed yet split via industry. The sub-question was formulated as in the below chapter one:

"How the industry may affect the relationship between capital structure and firm performance among Turkish listed firms during the period 2008-2016?"

This work includes four different sectors. At first glance, Chemicals, petroleum rubber and plastic products sector, LTDTA and Roe have a positive relationship with ROA and EPS

whereas STDTA and measurement that calculates performance have relation which affects performance negatively. Second of all, Food, beverage and tobacco sector, measurement that calculates capital structure, LTDTA and ROE, ROA and Tobin's Q have positive relation which means that it has a positive impact. The other sector, non-metallic mineral products, it can be said that generally, both LTDTA and STDTA with ROE, ROA and Tobin's Q have a negative relationship that affects performance in a negative manner. Last but not least, for the Fabricated metal products, machinery and equipment sector, variable that measures capital structure LTDTA and STDA are affected negatively on firm's performance.

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Appendix 1: Full results of regressions

Regression 1
Dependent variable ROE

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.451177478 |
| R Square | 0.203561117 |
| Adjusted R Square | 0.198463908 |
| Standard Error | 32.85343168 |
| Observations | 630 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 172418.5019 | 43104.6255 | 39.9358006 | 8.3265E-30 |
| Residual | 625 | 674592.4832 | 1079.34797 | | |
| Total | 629 | 847010.9851 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -58.83044073 | 10.33985011 | -5.6896802 | 1.9569E-08 | -79.135496 | -38.525386 | -79.135496 | -38.525386 |
| LTDTA | -32.59634157 | 10.80163664 | -3.0177225 | 0.00265045 | -53.808238 | -11.384446 | -53.808238 | -11.384446 |
| STDTA | -63.41326479 | 7.78588789 | -8.1446414 | 2.0716E-15 | -78.702933 | -48.123596 | -78.702933 | -48.123596 |
| SIZE | 15.75467951 | 1.846744242 | 8.53105652 | 1.0955E-16 | 12.1281044 | 19.3812546 | 12.1281044 | 19.3812546 |
| GROWTH | 0.216396211 | 0.046508524 | 4.65282903 | 3.999E-06 | 0.12506431 | 0.30772811 | 0.12506431 | 0.30772811 |

Regression 2

Dependent variable ROA

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.57074275 |
| R Square | 0.32574728 |
| Adjusted R S | 0.32143206 |
| Standard Err | 6.28875088 |
| Observations | 630 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 11941.7203 | 2985.43007 | 75.4880351 | 3.3042E-52 |
| Residual | 625 | 24717.7422 | 39.5483876 | | |
| Total | 629 | 36659.4625 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -11.51144 | 1.97888159 | -5.8171447 | 9.5604E-09 | -15.397503 | -7.6253784 | -15.397503 | -7.6253784 |
| LTDTA | -10.0851 | 2.06764942 | -4.8775678 | 1.3642E-06 | -14.145482 | -6.0247189 | -14.145482 | -6.0247189 |
| STDTA | -16.535137 | 1.49037027 | -11.09465 | 3.1185E-26 | -19.461877 | -13.608397 | -19.461877 | -13.608397 |
| SIZE | 3.93179568 | 0.35345252 | 11.1239712 | 2.3706E-26 | 3.23769734 | 4.62589403 | 3.23769734 | 4.62589403 |
| GROWTH | 0.06390346 | 0.00890266 | 7.17801727 | 2.0135E-12 | 0.04642071 | 0.08138622 | 0.04642071 | 0.08138622 |

Regression 3

Dependent variable Tobin's Q

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.23318093 |
| R Square | 0.05437334 |
| Adjusted R S | 0.04832133 |
| Standard Err | 0.9326526 |
| Observations | 630 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 31.2597979 | 7.81494949 | 8.98434383 | 4.6503E-07 |
| Residual | 625 | 543.650546 | 0.86984087 | | |
| Total | 629 | 574.910344 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 0.85438431 | 0.29347785 | 2.91123953 | 0.00372826 | 0.27806224 | 1.43070637 | 0.27806224 | 1.43070637 |
| LTDTA | -0.9195993 | 0.30664255 | -2.9989292 | 0.00281702 | -1.5217738 | -0.3174248 | -1.5217738 | -0.3174248 |
| STDTA | -1.1191541 | 0.22102922 | -5.0633764 | 5.4267E-07 | -1.553204 | -0.6851043 | -1.553204 | -0.6851043 |
| SIZE | 0.06685585 | 0.05241874 | 1.27541875 | 0.20263492 | -0.0360823 | 0.16979404 | -0.0360823 | 0.16979404 |
| GROWTH | 0.00219412 | 0.00132031 | 1.66182386 | 0.09704954 | -0.0003987 | 0.0047869 | -0.0003987 | 0.0047869 |

Regression 4

Dependent variable EPS

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.28906533 |
| R Square | 0.08355876 |
| Adjusted R S | 0.07769354 |
| Standard Err | 0.92671436 |
| Observations | 630 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 48.9394606 | 12.2348651 | 14.2464745 | 3.8981E-11 |
| Residual | 625 | 536.749685 | 0.8587995 | | |
| Total | 629 | 585.689146 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -0.7636887 | 0.29160926 | -2.6188767 | 0.00903595 | -1.3363413 | -0.1910361 | -1.3363413 | -0.1910361 |
| LTDTA | -0.6233252 | 0.30469014 | -2.0457675 | 0.0411973 | -1.2216656 | -0.0249848 | -1.2216656 | -0.0249848 |
| STDTA | -0.9673261 | 0.21962192 | -4.4045062 | 1.2473E-05 | -1.3986123 | -0.5360398 | -1.3986123 | -0.5360398 |
| SIZE | 0.26404168 | 0.05208499 | 5.06943893 | 5.2633E-07 | 0.1617589 | 0.36632445 | 0.1617589 | 0.36632445 |
| GROWTH | 0.00433504 | 0.0013119 | 3.30439418 | 0.00100622 | 0.00175877 | 0.00691131 | 0.00175877 | 0.00691131 |

Regression 5

Dependent variable ROE

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.57241412 |
| R Square | 0.327657925 |
| Adjusted R Square | 0.314539055 |
| Standard Error | 23.13413374 |
| Observations | 210 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 53467.60504 | 13366.90126 | 24.97607881 | 7.36024E-17 |
| Residual | 205 | 109713.5695 | 535.1881438 | | |
| Total | 209 | 163181.1745 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -54.33583643 | 13.15111942 | -4.131651057 | 5.24546E-05 | -80.26462949 | -28.40704338 | -80.26462949 | -28.40704338 |
| LTDTA | 0.766801886 | 16.43137997 | 0.046666919 | 0.962824126 | -31.62936436 | 33.16296813 | -31.62936436 | 33.16296813 |
| STDTA | -63.56708265 | 9.201630564 | -6.908241121 | 6.05955E-11 | -81.70904967 | -45.42511563 | -81.70904967 | -45.42511563 |
| SIZE | 13.99109712 | 2.337236366 | 5.986171244 | 9.47587E-09 | 9.382993726 | 18.59920052 | 9.382993726 | 18.59920052 |
| GROWTH | 0.233006659 | 0.059425555 | 3.920984123 | 0.000120234 | 0.115843026 | 0.350170292 | 0.115843026 | 0.350170292 |

Regression 6

Dependent variable ROA

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.621706903 |
| R Square | 0.386519474 |
| Adjusted R Square | 0.374549122 |
| Standard Error | 5.865610821 |
| Observations | 210 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 4443.763607 | 1110.940902 | 32.28973402 | 7.21608E-21 |
| Residual | 205 | 7053.105013 | 34.40539031 | | |
| Total | 209 | 11496.86862 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -14.56706156 | 3.334438593 | -4.368669915 | 1.9843E-05 | -21.14125236 | -7.992870766 | -21.14125236 | -7.992870766 |
| LTDTA | 0.140260716 | 4.166141739 | 0.033666813 | 0.9731756 | -8.073718915 | 8.354240346 | -8.073718915 | 8.354240346 |
| STDTA | -17.98101223 | 2.333054024 | -7.707070666 | 5.44453E-13 | -22.58086971 | -13.38115475 | -22.58086971 | -13.38115475 |
| SIZE | 4.18231242 | 0.592601351 | 7.057547895 | 2.56744E-11 | 3.013937522 | 5.350687319 | 3.013937522 | 5.350687319 |
| GROWTH | 0.064838106 | 0.015067224 | 4.303254879 | 2.60547E-05 | 0.035131514 | 0.094544698 | 0.035131514 | 0.094544698 |

Regression 7

Dependent variable Tobin's Q

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.173244165 |
| R Square | 0.030013541 |
| Adjusted R Square | 0.011086976 |
| Standard Error | 0.955048078 |
| Observations | 210 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 5.785699763 | 1.446424941 | 1.585789114 | 0.179372908 |
| Residual | 205 | 186.9839502 | 0.91211683 | | |
| Total | 209 | 192.76965 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 0.884131413 | 0.542918592 | 1.628478793 | 0.104959206 | -0.186288782 | 1.954551609 | -0.1862888 | 1.954551609 |
| LTDTA | -0.585599908 | 0.67833782 | -0.863286537 | 0.388988815 | -1.923013128 | 0.751813312 | -1.9230131 | 0.751813312 |
| STDTA | -0.891164919 | 0.379871565 | -2.345963748 | 0.019932853 | -1.640121026 | -0.142208813 | -1.640121 | -0.142208813 |
| SIZE | 0.024757012 | 0.096488294 | 0.256580472 | 0.797759966 | -0.165479646 | 0.21499367 | -0.1654796 | 0.21499367 |
| GROWTH | 0.001464242 | 0.002453269 | 0.596853375 | 0.551263864 | -0.003372632 | 0.006301117 | -0.0033726 | 0.006301117 |

Regression 8

Dependent variable EPS

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.392302995 |
| R Square | 0.15390164 |
| Adjusted R Square | 0.137392404 |
| Standard Error | 0.637380685 |
| Observations | 210 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 15.14865422 | 3.787163554 | 9.322153808 | 6.09955E-07 |
| Residual | 205 | 83.28209817 | 0.406254137 | | |
| Total | 209 | 98.43075238 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -1.177435977 | 0.362333407 | -3.24959265 | 0.001350723 | -1.89181379 | -0.463058163 | -1.89181379 | -0.463058163 |
| LTDTA | -0.1147779 | 0.452709591 | -0.253535384 | 0.800108609 | -1.007341713 | 0.777785913 | -1.007341713 | 0.777785913 |
| STDTA | -0.75533154 | 0.253518963 | -2.979388727 | 0.003236955 | -1.255170414 | -0.255492666 | -1.255170414 | -0.255492666 |
| SIZE | 0.294557624 | 0.064394428 | 4.574271908 | 8.26526E-06 | 0.167597344 | 0.421517904 | 0.167597344 | 0.421517904 |
| GROWTH | 0.004139159 | 0.001637265 | 2.528093888 | 0.012222115 | 0.000911122 | 0.007367196 | 0.000911122 | 0.007367196 |

Regression 9

Dependent variable ROE

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.42266144 |
| R Square | 0.17864269 |
| Adjusted R Square | 0.17130915 |
| Standard Error | 35.8510032 |
| Observations | 453 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 125237.324 | 31309.3309 | 24.3596565 | 2.9387E-18 |
| Residual | 448 | 575811.906 | 1285.29443 | | |
| Total | 452 | 701049.23 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -61.659179 | 13.4833305 | -4.5729932 | 6.2302E-06 | -88.157609 | -35.160749 | -88.157609 | -35.160749 |
| LTDTA | -43.096316 | 13.1611858 | -3.274501 | 0.00114055 | -68.961643 | -17.230989 | -68.961643 | -17.230989 |
| STDTA | -61.140565 | 10.2685827 | -5.9541387 | 5.2862E-09 | -81.321137 | -40.959994 | -81.321137 | -40.959994 |
| SIZE | 16.4741732 | 2.4171205 | 6.81561933 | 3.0416E-11 | 11.7238708 | 21.2244756 | 11.7238708 | 21.2244756 |
| GROWTH | 0.21173669 | 0.0593486 | 3.56767777 | 0.00039899 | 0.09510046 | 0.32837291 | 0.09510046 | 0.32837291 |

Regression 10

Dependent variable ROA

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.55659039 |
| R Square | 0.30979286 |
| Adjusted R Square | 0.3036303 |
| Standard Error | 6.38901171 |
| Observations | 453 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 8207.99984 | 2051.99996 | 50.2701268 | 6.0108E-35 |
| Residual | 448 | 18287.1228 | 40.8194706 | | |
| Total | 452 | 26495.1227 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -10.457301 | 2.40286599 | -4.3520118 | 1.6725E-05 | -15.17959 | -5.7350127 | -15.17959 | -5.7350127 |
| LTDTA | -13.311491 | 2.34545654 | -5.6754371 | 2.4878E-08 | -17.920954 | -8.7020279 | -17.920954 | -8.7020279 |
| STDTA | -15.327567 | 1.82996539 | -8.3758782 | 7.1046E-16 | -18.923949 | -11.731185 | -18.923949 | -11.731185 |
| SIZE | 3.81087658 | 0.43075534 | 8.84696303 | 2.0907E-17 | 2.9643246 | 4.65742856 | 2.9643246 | 4.65742856 |
| GROWTH | 0.06441676 | 0.01057652 | 6.09054272 | 2.4237E-09 | 0.043631 | 0.08520251 | 0.043631 | 0.08520251 |

Regression 11

Dependent variable Tobin's Q

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.27496433 |
| R Square | 0.07560538 |
| Adjusted R Square | 0.06735186 |
| Standard Error | 0.89595563 |
| Observations | 453 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 29.4134748 | 7.35336871 | 9.16037677 | 4.0344E-07 |
| Residual | 448 | 359.625948 | 0.80273649 | | |
| Total | 452 | 389.039423 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 0.86830082 | 0.33696312 | 2.57684231 | 0.01028968 | 0.20607619 | 1.53052545 | 0.20607619 | 1.53052545 |
| LTDTA | -1.0610433 | 0.32891237 | -3.2259149 | 0.00134768 | -1.707446 | -0.4146406 | -1.707446 | -0.4146406 |
| STDTA | -1.2634764 | 0.25662307 | -4.9234716 | 1.1975E-06 | -1.7678109 | -0.7591419 | -1.7678109 | -0.7591419 |
| SIZE | 0.08483194 | 0.06040647 | 1.40435184 | 0.160907 | -0.0338833 | 0.20354718 | -0.0338833 | 0.20354718 |
| GROWTH | 0.00259929 | 0.00148319 | 1.75250084 | 0.08037179 | -0.0003156 | 0.00551415 | -0.0003156 | 0.00551415 |

Regression 12

Dependent variable EPS

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.27088647 |
| R Square | 0.07337948 |
| Adjusted R Square | 0.06510608 |
| Standard Error | 1.02095761 |
| Observations | 453 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 36.9799353 | 9.24498384 | 8.86932839 | 6.722E-07 |
| Residual | 448 | 466.97479 | 1.04235444 | | |
| Total | 452 | 503.954725 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -0.6249761 | 0.38397556 | -1.6276455 | 0.10430312 | -1.379593 | 0.12964082 | -1.379593 | 0.12964082 |
| LTDTA | -0.7564104 | 0.37480158 | -2.0181621 | 0.04416988 | -1.4929979 | -0.0198228 | -1.4929979 | -0.0198228 |
| STDTA | -1.0454856 | 0.29242662 | -3.5752066 | 0.000388 | -1.6201838 | -0.4707873 | -1.6201838 | -0.4707873 |
| SIZE | 0.25321397 | 0.06883427 | 3.67860343 | 0.00026302 | 0.11793582 | 0.38849212 | 0.11793582 | 0.38849212 |
| GROWTH | 0.00464858 | 0.00169012 | 2.75044991 | 0.00619236 | 0.00132704 | 0.00797013 | 0.00132704 | 0.00797013 |

Regression 13

Dependent variable ROE

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.4176133 |
| R Square | 0.17440086 |
| Adjusted R S | 0.13094828 |
| Standard Err | 21.9402974 |
| Observations | 81 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 7728.19397 | 1932.04849 | 4.01358998 | 0.00524322 |
| Residual | 76 | 36584.6252 | 481.376648 | | |
| Total | 80 | 44312.8192 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -77.041175 | 24.953415 | -3.0874 | 0.00281805 | -126.74021 | -27.342142 | -126.74021 | -27.342142 |
| LTDTA | 7.18673415 | 23.1463035 | 0.31049166 | 0.75703701 | -38.913125 | 53.2865929 | -38.913125 | 53.2865929 |
| STDTA | -20.926464 | 24.4015434 | -0.8575877 | 0.39381652 | -69.526349 | 27.6734218 | -69.526349 | 27.6734218 |
| SIZE | 15.9469996 | 4.29231067 | 3.71524822 | 0.00038548 | 7.39812196 | 24.4958771 | 7.39812196 | 24.4958771 |
| GROWTH | 0.17728752 | 0.11093511 | 1.59811904 | 0.11416611 | -0.0436589 | 0.39823394 | -0.0436589 | 0.39823394 |

Regression 14

Dependent variable ROA

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.45558801 |
| R Square | 0.20756043 |
| Adjusted R S | 0.16585309 |
| Standard Err | 5.44938618 |
| Observations | 81 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 591.135682 | 147.783921 | 4.97659171 | 0.00128672 |
| Residual | 76 | 2256.88154 | 29.6958098 | | |
| Total | 80 | 2848.01722 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -16.476867 | 6.19776446 | -2.6585177 | 0.0095651 | -28.820784 | -4.1329489 | -28.820784 | -4.1329489 |
| LTDTA | 0.61575168 | 5.74892603 | 0.10710725 | 0.91498613 | -10.834227 | 12.0657302 | -10.834227 | 12.0657302 |
| STDTA | -10.557341 | 6.06069421 | -1.7419359 | 0.08556537 | -22.62826 | 1.51357759 | -22.62826 | 1.51357759 |
| SIZE | 4.24822509 | 1.06609578 | 3.98484373 | 0.00015364 | 2.12491133 | 6.37153886 | 2.12491133 | 6.37153886 |
| GROWTH | 0.05758284 | 0.02755333 | 2.08986867 | 0.03997493 | 0.00270563 | 0.11246006 | 0.00270563 | 0.11246006 |

Regression15

Dependent variable Tobin's Q

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.2536799 |
| R Square | 0.06435349 |
| Adjusted R S | 0.01510894 |
| Standard Err | 0.56631004 |
| Observations | 81 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 1.67641847 | 0.41910462 | 1.30681441 | 0.27510103 |
| Residual | 76 | 24.3737371 | 0.32070707 | | |
| Total | 80 | 26.0501556 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 1.05689237 | 0.64408287 | 1.64092607 | 0.10494519 | -0.2259098 | 2.33969457 | -0.2259098 | 2.33969457 |
| LTDTA | -0.6784452 | 0.59743877 | -1.1355896 | 0.25969689 | -1.8683477 | 0.5114572 | -1.8683477 | 0.5114572 |
| STDTA | -1.1978938 | 0.62983828 | -1.901907 | 0.06097282 | -2.4523254 | 0.05653785 | -2.4523254 | 0.05653785 |
| SIZE | 0.04323319 | 0.1107906 | 0.39022439 | 0.6974622 | -0.1774254 | 0.26389179 | -0.1774254 | 0.26389179 |
| GROWTH | 0.00211804 | 0.00286339 | 0.7396948 | 0.46176398 | -0.0035849 | 0.00782098 | -0.0035849 | 0.00782098 |

Regression 16

Dependent variable EPS

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.82694767 |
| R Square | 0.68384246 |
| Adjusted R S | 0.66720259 |
| Standard Err | 0.51797941 |
| Observations | 81 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 44.1053327 | 11.0263332 | 41.0966207 | 2.6759E-18 |
| Residual | 76 | 20.3910031 | 0.26830267 | | |
| Total | 80 | 64.4963358 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -6.9465092 | 0.58911486 | -11.791434 | 7.7116E-19 | -8.1198331 | -5.7731852 | -8.1198331 | -5.7731852 |
| LTDTA | 1.39301675 | 0.54645151 | 2.54920466 | 0.01281192 | 0.30466423 | 2.48136926 | 0.30466423 | 2.48136926 |
| STDTA | -0.3594645 | 0.57608595 | -0.6239772 | 0.53451102 | -1.5068391 | 0.78791009 | -1.5068391 | 0.78791009 |
| SIZE | 1.25101318 | 0.10133539 | 12.3452743 | 7.6784E-20 | 1.04918626 | 1.45284009 | 1.04918626 | 1.45284009 |
| GROWTH | 0.00182303 | 0.00261902 | 0.69607213 | 0.48850694 | -0.0033932 | 0.00703926 | -0.0033932 | 0.00703926 |

Regression 17

Dependent variable ROE

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.66917845 |
| R Square | 0.4477998 |
| Adjusted R S | 0.4218139 |
| Standard Err | 28.7229162 |
| Observations | 90 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 56867.3926 | 14216.8482 | 17.2324196 | 2.1919E-10 |
| Residual | 85 | 70125.503 | 825.005917 | | |
| Total | 89 | 126992.896 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -36.131269 | 27.0580182 | -1.3353258 | 0.18533479 | -89.929858 | 17.6673204 | -89.929858 | 17.6673204 |
| LTDTA | 6.14464205 | 28.3651165 | 0.21662672 | 0.82901834 | -50.252809 | 62.5420928 | -50.252809 | 62.5420928 |
| STDTA | -92.242212 | 19.0607198 | -4.8393876 | 5.7592E-06 | -130.14003 | -54.344394 | -130.14003 | -54.344394 |
| SIZE | 11.784654 | 4.57742295 | 2.57451717 | 0.01176986 | 2.68351084 | 20.8857971 | 2.68351084 | 20.8857971 |
| GROWTH | 0.59077313 | 0.16558362 | 3.56782348 | 0.00059452 | 0.26154853 | 0.91999773 | 0.26154853 | 0.91999773 |

Regression 18

Dependent variable ROA

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.69279855 |
| R Square | 0.47996983 |
| Adjusted R S | 0.45549782 |
| Standard Err | 6.83041129 |
| Observations | 90 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 3660.14278 | 915.035696 | 19.6130134 | 1.8264E-11 |
| Residual | 85 | 3965.63407 | 46.6545184 | | |
| Total | 89 | 7625.77685 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -16.00242 | 6.43449265 | -2.4869747 | 0.01483837 | -28.795916 | -3.2089252 | -28.795916 | -3.2089252 |
| LTDTA | -10.225537 | 6.74532524 | -1.5159442 | 0.13324367 | -23.637051 | 3.18597689 | -23.637051 | 3.18597689 |
| STDTA | -18.547293 | 4.53270674 | -4.0918803 | 9.6959E-05 | -27.559529 | -9.5350579 | -27.559529 | -9.5350579 |
| SIZE | 4.68723932 | 1.0885274 | 4.30603705 | 4.434E-05 | 2.52295522 | 6.85152342 | 2.52295522 | 6.85152342 |
| GROWTH | 0.14203354 | 0.03937637 | 3.60707544 | 0.00052176 | 0.06374277 | 0.22032432 | 0.06374277 | 0.22032432 |

Regression 19

Dependent variable Tobin's Q

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.60932838 |
| R Square | 0.37128107 |
| Adjusted R S | 0.3416943 |
| Standard Err | 0.42317857 |
| Observations | 90 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 8.98902377 | 2.24725594 | 12.5488871 | 4.5623E-08 |
| Residual | 85 | 15.2218085 | 0.1790801 | | |
| Total | 89 | 24.2108322 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -0.9919604 | 0.3986494 | -2.4883028 | 0.01478691 | -1.7845822 | -0.1993386 | -1.7845822 | -0.1993386 |
| LTDTA | 0.48689105 | 0.41790706 | 1.16507019 | 0.24724982 | -0.3440201 | 1.31780224 | -0.3440201 | 1.31780224 |
| STDTA | -0.4578594 | 0.28082413 | -1.6304132 | 0.10671445 | -1.016213 | 0.10049425 | -1.016213 | 0.10049425 |
| SIZE | 0.31967486 | 0.06743978 | 4.74015242 | 8.4988E-06 | 0.1855865 | 0.45376322 | 0.1855865 | 0.45376322 |
| GROWTH | 0.00242318 | 0.00243957 | 0.99328198 | 0.32339179 | -0.0024273 | 0.00727369 | -0.0024273 | 0.00727369 |

Regression 20

Dependent variable EPS

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.61393677 |
| R Square | 0.37691836 |
| Adjusted R S | 0.34759687 |
| Standard Err | 0.79383511 |
| Observations | 90 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 32.4027502 | 8.10068755 | 12.8546802 | 3.1557E-08 |
| Residual | 85 | 53.5648054 | 0.63017418 | | |
| Total | 89 | 85.9675556 | | | |

| | *Coefficients* | *tandard Erro* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -0.7067124 | 0.74782117 | -0.9450285 | 0.34732294 | -2.1935812 | 0.78015648 | -2.1935812 | 0.78015648 |
| LTDTA | -3.5735294 | 0.78394635 | -4.5583852 | 1.7148E-05 | -5.1322248 | -2.014834 | -5.1322248 | -2.014834 |
| STDTA | -1.6214263 | 0.5267943 | -3.0779116 | 0.00280584 | -2.6688345 | -0.5740181 | -2.6688345 | -0.5740181 |
| SIZE | 0.40182463 | 0.12650941 | 3.17624317 | 0.00207956 | 0.15029004 | 0.65335922 | 0.15029004 | 0.65335922 |
| GROWTH | 0.01092019 | 0.00457635 | 2.38622297 | 0.01924294 | 0.00182118 | 0.0200192 | 0.00182118 | 0.0200192 |

Regression 21

Dependent variable ROE

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.471421298 |
| R Square | 0.22223804 |
| Adjusted R Square | 0.189141786 |
| Standard Error | 7.396300818 |
| Observations | 99 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 1469.3616 | 367.3404001 | 6.714900198 | 8.48043E-05 |
| Residual | 94 | 5142.294984 | 54.70526578 | | |
| Total | 98 | 6611.656584 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -35.48759053 | 11.43409759 | -3.103663428 | 0.00252521 | -58.19025934 | -12.78492172 | -58.19025934 | -12.78492172 |
| LTDTA | -0.059619726 | 9.552174019 | -0.006241482 | 0.995033277 | -19.02568516 | 18.90644571 | -19.02568516 | 18.90644571 |
| STDTA | -6.827652054 | 6.158506081 | -1.108653944 | 0.270408001 | -19.05551024 | 5.400206136 | -19.05551024 | 5.400206136 |
| SIZE | 8.552457281 | 2.042284834 | 4.187690736 | 6.34932E-05 | 4.497452867 | 12.60746169 | 4.497452867 | 12.60746169 |
| GROWTH | 0.101449006 | 0.051509637 | 1.969515078 | 0.051837851 | -0.000824585 | 0.203722597 | -0.000824585 | 0.203722597 |

Regression 22

Dependent variable ROA

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.468388171 |
| R Square | 0.219387478 |
| Adjusted R Square | 0.186169924 |
| Standard Error | 4.733609742 |
| Observations | 99 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 591.9555226 | 147.9888806 | 6.604564488 | 9.95356E-05 |
| Residual | 94 | 2106.263752 | 22.40706119 | | |
| Total | 98 | 2698.219275 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -18.54459235 | 7.317787243 | -2.534180311 | 0.012924424 | -33.07423046 | -4.014954237 | -33.07423046 | -4.014954237 |
| LTDTA | -4.389003588 | 6.113361951 | -0.717936157 | 0.474577193 | -16.52722705 | 7.749219875 | -16.52722705 | 7.749219875 |
| STDTA | -6.68760719 | 3.941424923 | -1.696748592 | 0.093053315 | -14.51339877 | 1.13818439 | -14.51339877 | 1.13818439 |
| SIZE | 4.900551594 | 1.307056004 | 3.749304988 | 0.000306248 | 2.305361259 | 7.495741929 | 2.305361259 | 7.495741929 |
| GROWTH | 0.05827951 | 0.032966009 | 1.767866735 | 0.080327923 | -0.007175273 | 0.123734294 | -0.007175273 | 0.123734294 |

Regression 23

Dependent variable Tobin's Q

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.391496064 |
| R Square | 0.153269168 |
| Adjusted R Square | 0.117238069 |
| Standard Error | 1.911733069 |
| Observations | 99 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 62.18588003 | 15.54647001 | 4.253802168 | 0.003296399 |
| Residual | 94 | 343.5439927 | 3.654723327 | | |
| Total | 98 | 405.7298727 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 10.65379771 | 2.955388514 | 3.604872138 | 0.000502052 | 4.785804536 | 16.52179088 | 4.785804536 | 16.52179088 |
| LTDTA | -7.960503325 | 2.468964879 | -3.224227041 | 0.001737443 | -12.86269097 | -3.058315681 | -12.86269097 | -3.058315681 |
| STDTA | -2.721853013 | 1.591798389 | -1.70992321 | 0.090579116 | -5.882406029 | 0.438700004 | -5.882406029 | 0.438700004 |
| SIZE | -1.508905539 | 0.527872453 | -2.858466152 | 0.005242701 | -2.557008668 | -0.460802409 | -2.557008668 | -0.460802409 |
| GROWTH | 0.004927436 | 0.013313774 | 0.370100629 | 0.712140095 | -0.021507374 | 0.031362246 | -0.021507374 | 0.031362246 |

Regression 24

Dependent variable EPS

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.326270736 |
| R Square | 0.106452593 |
| Adjusted R Square | 0.068429299 |
| Standard Error | 0.51660529 |
| Observations | 99 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 2.988712895 | 0.747178224 | 2.799667838 | 0.030263222 |
| Residual | 94 | 25.0868164 | 0.266881026 | | |
| Total | 98 | 28.07552929 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -0.774973011 | 0.798631025 | -0.970376791 | 0.334349013 | -2.360673632 | 0.81072761 | -2.360673632 | 0.81072761 |
| LTDTA | 0.662382757 | 0.667185361 | 0.992801696 | 0.323355388 | -0.662329416 | 1.987094931 | -0.662329416 | 1.987094931 |
| STDTA | -0.794125982 | 0.430149733 | -1.846161748 | 0.068015749 | -1.64819836 | 0.059946395 | -1.64819836 | 0.059946395 |
| SIZE | 0.222175797 | 0.142646328 | 1.557529038 | 0.122705514 | -0.06105183 | 0.505403425 | -0.06105183 | 0.505403425 |
| GROWTH | 0.007012234 | 0.003597765 | 1.949052906 | 0.054270356 | -0.000131212 | 0.01415568 | -0.000131212 | 0.01415568 |

Regression 25

Dependent variable ROE

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.568657283 |
| R Square | 0.323371106 |
| Adjusted R Square | 0.297094256 |
| Standard Error | 49.25717853 |
| Observations | 108 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 119433.7203 | 29858.43008 | 12.30631156 | 3.23509E-08 |
| Residual | 103 | 249905.7726 | 2426.269636 | | |
| Total | 107 | 369339.4929 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -123.019003 | 33.33129903 | -3.690795335 | 0.000359416 | -189.1237733 | -56.91423273 | -189.1237733 | -56.91423273 |
| LTDTA | -63.28271922 | 41.48272685 | -1.525519753 | 0.13019434 | -145.553924 | 18.98848558 | -145.553924 | 18.98848558 |
| STDTA | -124.9362433 | 30.48840543 | -4.097828059 | 8.33096E-05 | -185.4028046 | -64.46968193 | -185.4028046 | -64.46968193 |
| SIZE | 32.66983011 | 5.698629527 | 5.732927533 | 9.91641E-08 | 21.3679425 | 43.97171773 | 21.3679425 | 43.97171773 |
| GROWTH | 0.302408528 | 0.164012729 | 1.843811331 | 0.068085332 | -0.022872037 | 0.627689092 | -0.022872037 | 0.627689092 |

Regression 26

Dependent variable ROA

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.609832042 |
| R Square | 0.371895119 |
| Adjusted R Square | 0.347502697 |
| Standard Error | 8.194746668 |
| Observations | 108 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 4095.402585 | 1023.850646 | 15.24633802 | 7.99812E-10 |
| Residual | 103 | 6916.848914 | 67.15387295 | | |
| Total | 107 | 11012.2515 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -10.70851766 | 5.545213101 | -1.931128248 | 0.056216047 | -21.70613998 | 0.289104657 | -21.70613998 | 0.289104657 |
| LTDTA | -13.58364568 | 6.901337994 | -1.968262631 | 0.051725672 | -27.27082188 | 0.103530514 | -27.27082188 | 0.103530514 |
| STDTA | -30.12977051 | 5.072250711 | -5.940118545 | 3.89865E-08 | -40.18938348 | -20.07015754 | -40.18938348 | -20.07015754 |
| SIZE | 5.111598535 | 0.948061313 | 5.391632869 | 4.45959E-07 | 3.231342526 | 6.991854543 | 3.231342526 | 6.991854543 |
| GROWTH | 0.032826319 | 0.027286231 | 1.203036032 | 0.231720379 | -0.021289485 | 0.086942123 | -0.021289485 | 0.086942123 |

Regression 27

Dependent variable Tobin's Q

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.312557256 |
| R Square | 0.097692038 |
| Adjusted R Square | 0.062650952 |
| Standard Error | 0.568775548 |
| Observations | 108 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 3.607642051 | 0.901910513 | 2.78792839 | 0.03028106 |
| Residual | 103 | 33.32107925 | 0.323505624 | | |
| Total | 107 | 36.9287213 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 1.121932293 | 0.384878477 | 2.915029961 | 0.004364051 | 0.358616608 | 1.885247977 | 0.358616608 | 1.885247977 |
| LTDTA | -0.450031898 | 0.479003495 | -0.93951694 | 0.349663467 | -1.400022356 | 0.499958559 | -1.400022356 | 0.499958559 |
| STDTA | -1.087812836 | 0.352051417 | -3.089926027 | 0.002574584 | -1.786023789 | -0.389601884 | -1.786023789 | -0.389601884 |
| SIZE | 0.020387189 | 0.065802411 | 0.309824338 | 0.757320504 | -0.110116375 | 0.150890752 | -0.110116375 | 0.150890752 |
| GROWTH | 0.001565191 | 0.001893865 | 0.826453246 | 0.41045741 | -0.002190843 | 0.005321224 | -0.002190843 | 0.005321224 |

Regression 28

Dependent variable EPS

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.378227578 |
| R Square | 0.143056101 |
| Adjusted R Square | 0.109776726 |
| Standard Error | 1.603283862 |
| Observations | 108 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 44.19896089 | 11.04974022 | 4.298641488 | 0.002948751 |
| Residual | 103 | 264.7634715 | 2.570519141 | | |
| Total | 107 | 308.9624324 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 2.187585324 | 1.084908544 | 2.016377635 | 0.046363543 | 0.035925109 | 4.339245539 | 0.035925109 | 4.339245539 |
| LTDTA | -2.466782833 | 1.350231347 | -1.826933465 | 0.070605641 | -5.14464825 | 0.211082584 | -5.14464825 | 0.211082584 |
| STDTA | -3.615004456 | 0.99237451 | -3.642782458 | 0.000424257 | -5.583145239 | -1.646863672 | -5.583145239 | -1.646863672 |
| SIZE | 0.057759855 | 0.185486076 | 0.311397256 | 0.756128031 | -0.310108029 | 0.425627739 | -0.310108029 | 0.425627739 |
| GROWTH | 0.003783147 | 0.00533849 | 0.708654844 | 0.480139512 | -0.006804489 | 0.014370783 | -0.006804489 | 0.014370783 |

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EGE PROFIL TICARET VE SANAYI A.S.
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