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Theme: «Capital structure and firm Profitability: Analysis of Listed firms in
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Abstract

Decisions regarding to capital structure is essential one since firm's profitability affected by such decision. This study is vital for financial managers to understand an effect of Capital Structure on Profitability. The paper was aimed to examine relationship between Capital Structure and Profitability of listed firms in Kazakhstan over five years' period from 2013 to 2017. Secondary data such as audited financial statements were used from randomly selected fifty listed companies in Kazakhstan. Regression analysis, specifically, generalized method of moments (GMM) estimator has been employed in order to analyze an impact of capital structure on firm's performance. The findings of this study revealed that a significant negative relationship between total debt ratio and profitability of Kazakhstani listed firms.

Key words: capital structure, profitability, total debt ratio, leverage.

Аңдатпа

Капитал құрылымына қатысты шешімдер маңызды болып табылады, өйткені фирманың табыстылығы осы шешімдерге бағынышты. Бұл зерттеу қаржы менеджерлеріне капитал құрылымының пайдалылығына әсерін түсіну үшін өте маңызды. Баяндама 2013-2017 жылдар аралығындағы кезеңде бес жыл ішінде Қазақстандағы листингтік компаниялардың капитал құрылымы мен кірістілігі арасындағы қатынасты зерттеуге бағытталған. Аудиторлық қаржылық есебі сияқты қайталама деректер Қазақстандағы елу компаниядан кездейсоқ түрде қолданылды. Капитал құрылымын фирманың өнімділігіне әсерін талдау үшін регрессиялық талдау, атап айтқанда, жалпыланған әдіс-сәттер (ЖӘС) бағалау атқарымы ретінде пайдаланылды. Зерттеудің қорытындысы Қазақстандық листингтік компаниялардың жалпы берешек коэффициенті мен кірістілігі арасындағы елеулі теріс қатынасты анықтады.

Түйінді сөздер: капитал құрылымы, кірістілік, жалпы берешек коэффициенті, леверидж.

Аннотация

Решения, касающиеся структуры капитала, имеют важное значение, поскольку прибыльность фирмы зависит от такого решения. Это исследование важно для финансовых менеджеров, чтобы понять влияние структуры капитала на прибыльность. Целью данного исследования является изучение взаимосвязи между структурой капитала и прибыльностью компаний, котирующихся на бирже в Казахстане за пятилетний период с 2013 по 2017 год. Вторичные данные, такие как аудированная финансовая отчетность, использовались от случайно выбранных пятидесяти листинговых компаний в Казахстане. Регрессионный анализ, в частности, оценка обобщенного метода моментов (ОММ) использовался для анализа влияния структуры капитала на результаты деятельности фирмы. Результаты этого исследования показали, что существенная отрицательная взаимосвязь между коэффициентом общей задолженности и прибыльностью казахстанских листинговых компаний.

Ключевые слова: структура капитала, рентабельность, коэффициент общей задолженности, левверидж.

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LIST OF ABBREVIATIONS

| | |
|------------|---------------------------------------|
| AR(2)..... | Second order autocorrelation |
| CS..... | Capital Structure |
| EBIT | Earnings Before interest and tax |
| EAR..... | Equity to total assets ratio |
| GMM..... | Generalized Methods of Moments |
| KASE..... | Kazakhstan Stock Exchange |
| LTDAR..... | Long-term debt to total assets ratio |
| LTD..... | Long-term debt |
| NI..... | Net Income |
| OLS..... | Ordinary Least Square |
| ROE..... | Return on Equity |
| STDAR..... | Short-term debt to total assets ratio |
| TDAR..... | Total debt to Asset ratio |
| TA..... | Total Assets |
| WACC..... | Weighted Average Cost of Capital |

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INTRODUCTION

1.1 Study Background

Nowadays in competitive and changing economic environment world, financial decision is crucial in day to day performance efficiency and operations of a firm. Business's financial decision influences most of all activities in a company. In the sphere of corporate finance, capital structure (CS) is the most arguable subject for individuals in academic field and practitioners (Negasa, 2016). Essentially, CS is the combination of debt and equity financing that is used in order to finance its operations (Damodaran, 2011). The notion is referred as mix of equity and debt which make firm's total capital (Pandey, 2009). In general, a firm can choose among many types of CS whether to employ a high amount of debt or low level of debt financing (Hamid, Abdullah& Kamaruzzaman, 2015). CS decision is important one because firm performance is strongly affected by that decision (Pandey,2009). Furthermore, the decision is very vital because of the need to maximize their returns as well as it influences on the firm's value. Besides that, solution adapted regarding to CS decision assist companies to adjust under competitive and changing environment world. Thus, companies need to set appropriate strategy in order to have accurate combination of equity and debt to finance its assets. However, apart from investment decisions, CS decisions perform another decision. Hereby, it is essential because of the involving a vast amount of finance and has firm's implication in long run (Ahmad, Abdullah& Roslan, 2012). In addition, CS provide financial information to the management and users on how firm's strategic decision creating its value (Hamid et al., 2015).

Generally, companies concentrate attention to internal financing rather than on external in order to have stability on firms' operations (Ting&Lean, 2011). In a case, when external financing could not be avoided, the firm is highly opting for secured debt financing and firms would issue equity as common stock for last order (Abor, 2005; Shubita& Alsawalhah, 2012). Furthermore, tax system has an effect when choosing appropriate level of debts (Azhagaiah& Gavoury, 2011). In a situation when interest on

debt is not tax deductible, companies are in difference whether to employ debt or equity to enhance its operations. Therefore, companies would not choose debt as CS since there is no tax advantage for debt. However, if interest from debt is tax deductible, firm would use debts in order to maximize its returns. Thus, due to tax benefit companies would prefer external financing as debt (Hamid et al., 2015). On the other hand, usage of huge amount of debts for CS leads to default risk (Nadaraja, Zulkafli& Masron, 2011). Default risk is referred to the unpredictability of paying its obligations during specified time frame (Shubita& Alsawalhah, 2012). From the point of risk, high level of debt ratio overcome all benefits in terms of tax. However, under unfavorable situation, firm might fall into difficult times and earnings before interest and tax (EBIT) is not sufficient to pay for interest charges, after that, main users of financial statement such as shareholders need to overcome that issue and in case of inability to do that, firms might go bankruptcy. Due to this, using too much debt lead to the possibility to be bankrupted (Hamid et al., 2015).

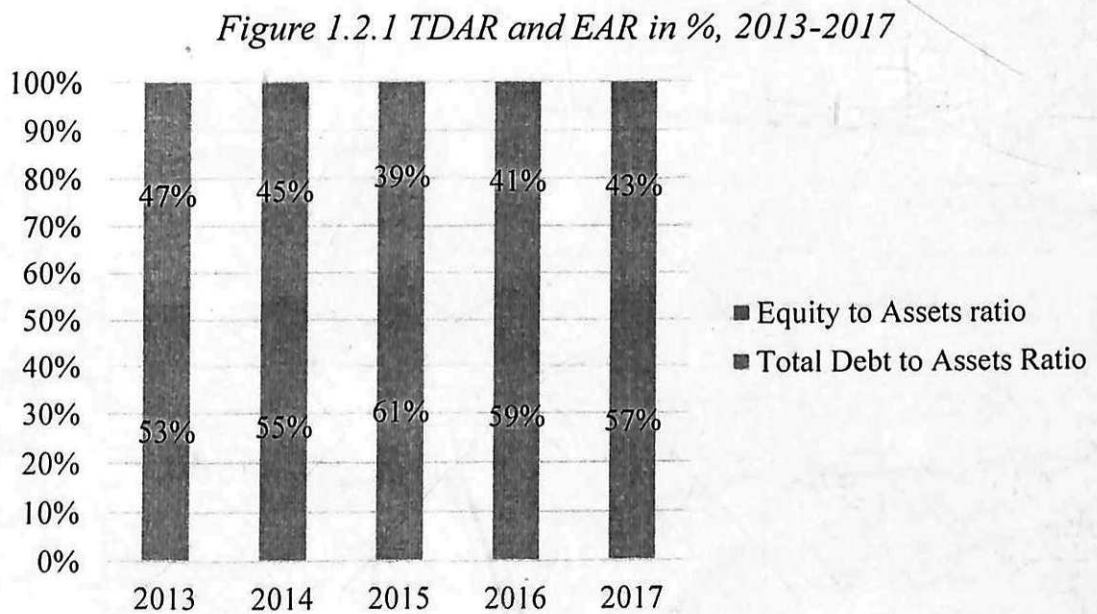
Profitability determines the following variables: capital, credit risk, productivity growth, operating costs, size, ownership, concentration, inflation expectations and cyclical output. Most articles use common macroeconomic indicators. Usually inflation, business cycles and interest rates are used. Another variable includes the size of the sector, ownership and market concentration (Lacobelli, 2017).

CS and determinants affecting to it in various countries and different sectors of business are studied today. Sufficient amount of such research is made in developed countries, however, in recent times it is becoming popular field of research in developing countries as well (Norvaisiene, 2012). For instance, to date, impact of CS on financial performance of listed firms in Kazakhstan is scientific field that has not been deeply investigated in Kazakhstani scientific and financial literature. Thus, this study will explore in depth on the relationship between profitability and CS.

1.2 Problem Statement

As it has been noted, CS is very essential topic in corporate management. Therefore, it is vital to figure out how firms determine their CS decisions by investigating the effect of CS on performance efficiency and assess main aspects of CS that affect firm's profitability since sustainability in long run strongly dependent on profitability (Hamid et al., 2015). A crucial question companies deal with financing its assets through raising neither debt or equity. Despite the fact that, there is still continuous debate on CS and there is small amount empirical evidence on selection among different types of finance of companies in order to reach optimization of profitability (Velnampy & Aloy Niresh, 2012).

In addition, detailed and deep study has not been conducted in Kazakhstan regarding on impact of CS on financial performance. For instance, in Figure 1.2.1, we can see that debt financing on average is most preferable (53% in 2013, 55% in 2014, 61% in 2015, 59% in 2016 and 57% in 2017) than equity.

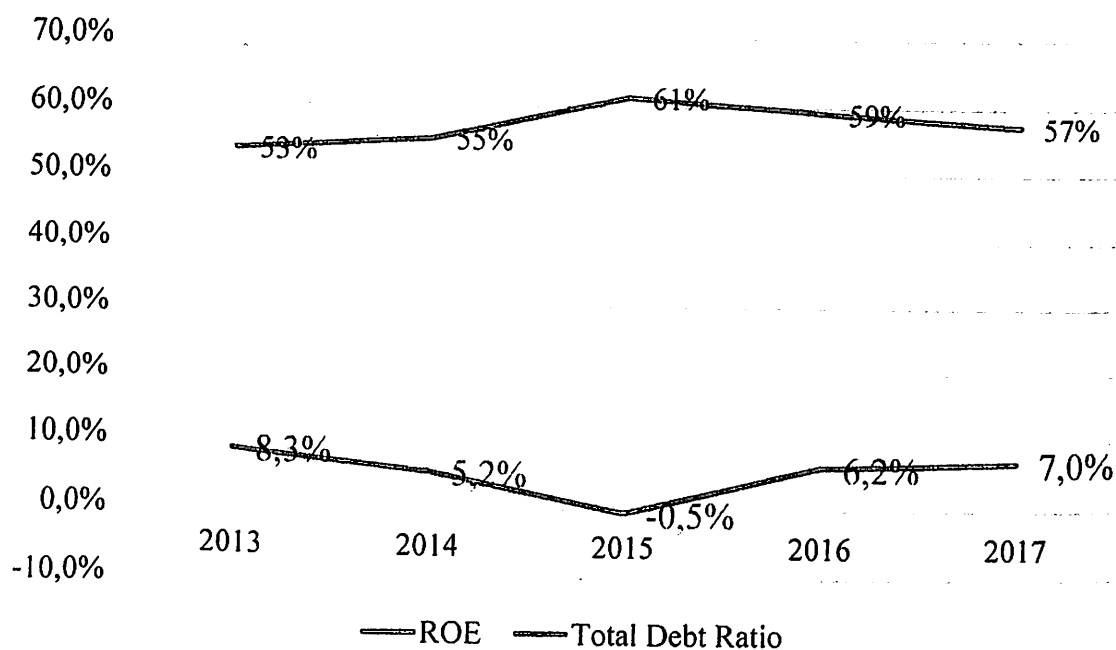


Source: Compiled by author calculations based on financial statements of listed companies

Figure 1.2.2 is described total debt ratio (TDAR) and Return on equity (ROE) indicators of listed firms in Kazakhstan trough 2013 to 2017. In all observed periods there is positive ROE indicators, except in 2015, where average ROE indicators of listed companies in Kazakhstan dropped to -0,005 points.

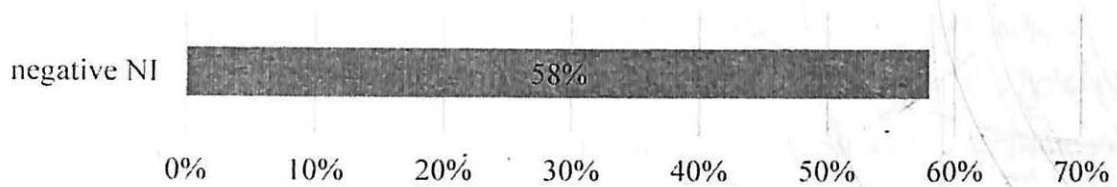
Furthermore, we can see on Figure 1.2.3 number of companies that experienced negative Net Income item throughout the observed periods. About 58% of analyzed listed companies in Kazakhstan had negative Net Income through 2013 to 2017. Hence, a question is raised why companies had negative NI and is it really somehow depends on level of debt financing? After that, it is important to investigate the relationship between CS and profitability. This fact, additionally, created uncertainty in that issue in case of Kazakhstan. Hence, central problem of this study is to research how the CS influences on firm's profitability of listed companies in example of Kazakhstan.

Figure 1.2.2 Dynamics of TDAR and ROE indicators



Source: Compiled by Author calculations based on financial statements of listed companies

Figure 1.2.3 Number of companies experienced negative NI throughout 2013 to 2017 in %



Source: Compiled by author calculations based on financial statements of listed companies

1.3 Research Question(s):

The above mentioned arguments led to the development of the following research questions:

What is relationship existing between CS and Profitability of listed non-financial firms in Kazakhstan?

- What is relationship existing between Total Debt to Total Assets and Profitability?
- What is relationship existing between Short-term Debt to Total Assets and Profitability?
- What is relationship existing between Long-term Debt to Total Assets and Profitability?

1.4 Research Objective(s):

The objectives of this study are directed towards the following:

- To examine the relationship between CS and profitability of listed non-financial firms in Kazakhstan.
- 1. To examine the relationship between STD and profitability
- 2. To examine the relationship between LTD and profitability
- 3. To examine the relationship between TD and profitability

1.5 Contribution

The contribution of the research is to shed light financial managers to understand effect of CS on Profitability. Furthermore, refers to Ahmad et al. (2012), study is beneficial to managers of the companies to make accurate decisions on the level of debt and equity. In case when company take too high level of debt in their operations, it can influence company's performance in long term. It follows that, this concept is helpful for corporate managers since its enhance knowledge to them as comparative analysis in decision making. Besides that, results are beneficial to creditors in their decision making, whether to give debt or not to provide to the companies.

REVIEW OF LITERATURE

2.1 Background Theories

This study describes three main theories on CS, which is CS irrelevance, tradeoff theory and pecking order.

The study of CS was originally introduced by the original theory in CS which created by Modigliani and Miller (1958). That is named as "CS irrelevance". The theory said that there is no relationship between level of financial debt and firm's market value. This conclusion was based on assumption that there is perfect market, no any taxes and no transaction cost. These assumptions don't match real world that is why it is considered as irrelevant of CS. However, Modigliani and Miller (1963) reconsidered their earlier assumptions by incorporating advantages of tax as determinants of the CS of companies. The main feature of taxes is that interest on debt is tax deductible. Companies that pay off its taxes get a partially a tax-shields in the form of lower taxes paid by a companies. As a consequence, as Modigliani and Miller (1963) said, firm should finance its operations by debt more in order to increase its market value (Abor,2005). Refers to Modigliani and Miller theory, Miller (1977) differentiate three tax rates that influence on firm's value such as corporate tax, tax rate imposed on dividend's income and tax rate imposed on interest inflows income.

Other theories that has been introduced to explain CS includes trade-off and pecking order theories.

According to trade-off theory, profitable firms prefer debt financing rather than equity financing (Mileer, 1977), in order to improve firm's profit level (Ahmad& Rahim, 2013). The theory is being explained based on firm's choice for financing its assets after taking into consideration balance of costs and benefits for each CS (Nadaraja, Zulkafli& Masron, 2011). Both costs and benefits should be balanced in order to determine the optimization of CS. Companies should enhance level of debts until companies reach balance between tax shield of borrowing cost and the cost of financial distress in situations

if interest on debt is tax-deductible. Besides that, debt as a source of finance is reluctant to default risk which supposed to firms balanced the following two items of costs and benefits in making decision on optimal CS (Hamid et al., 2015).

Tradeoff theory states that big size firms are more diversified rather than small one, thus are tend to have less financial distress (Karadeniz et al., 2009). Tradeoff theory implies that firms with high profitability would have high debt capacities which enable them to take the tax advantage, and hence would have high level of leverage (Frank & Goyal, 2003).

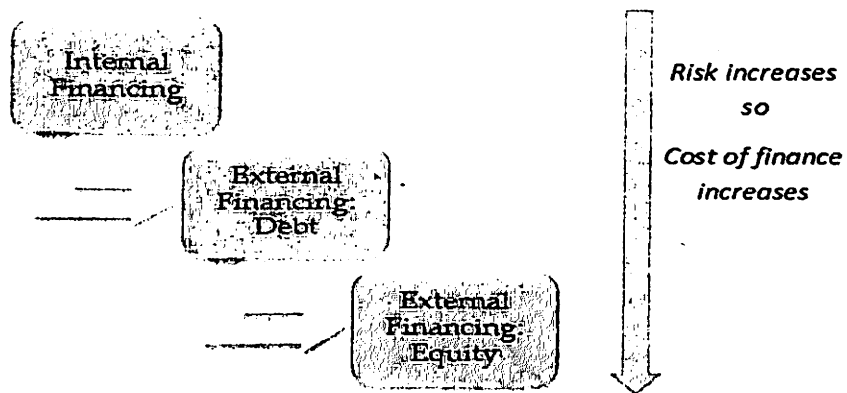
The Pecking Order theory states that companies clearly finance their activities hierarchically. Initially, the entity uses internal financing, such as retained earnings, to finance its debts, and if internal financing is not sufficient to finance its assets, the company uses equity as external financing (Negasa, 2016). The Pecking Order Theory (Myers & Majlu, 1984) stated that companies with high profits have low debts such as CS (Ting & Lean, 2011). This is due to asymmetrical information, which usually handles more information about the state of the company and future opportunities than investors.

If the company does not have enough retained earnings, the money must raise through external sources. Managers would like to see a lower debt than equity. The company, which has issued a new debt, will increase the share of the debt in the capital structure and ensure tax protection (<https://efinancemanagement.com/financial-leverage/pecking-order-theory>). So this will reduce the WACC as shown in Figure 2.1.1.

However, CS decisions are not based on a certain type of CS theories. A numerous studies stated that many factors: internal and external should depend on the choice of CS (Myers & Majluf, 1984). Results of those studies showed that CS of a firm is determined by sets of factors as tax rates, non-debt tax shields, firm size, profitability, growth opportunities, free cash flows, tangibility, and interenterprise debt (Prno & Slocombe, 2012). Companies may follow two or more theories at once and their preference of one

theory to another might be changeable over time. Consequently, it seems that no theory can fully capture the determinants of CS (Jensen, 1986).

Figure 2.1.1 Hierarchy for Pecking Order Theory



Source: <https://efinancemanagement.com/financial-leverage/pecking-order-theory>

2.2 Capital Structure and Profitability

Financial performance of a firm is dramatically impact on different factors and among them CS is one of the main factors. Vast amount of studies has been researched to examine any significant relationship (negative, positive or no relation) between performance efficiency and CS and additionally, authors come into different results (Salim, 2012).

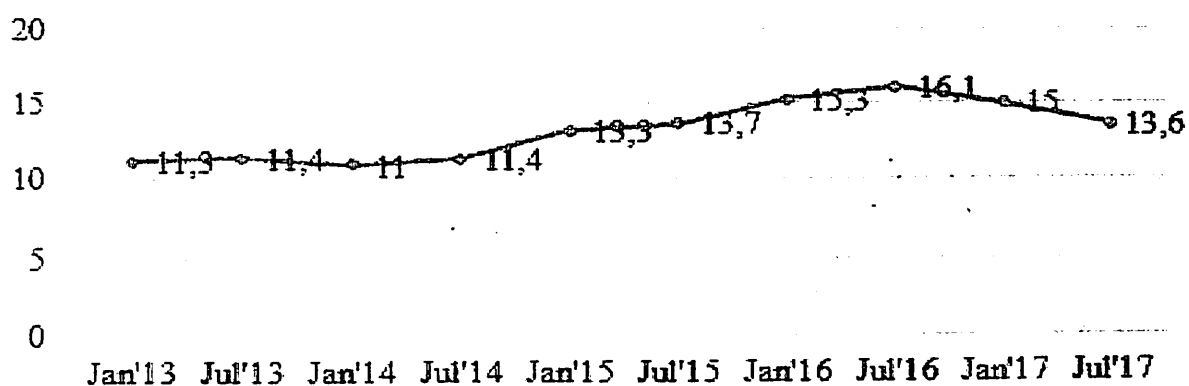
First, it is vital to mention profitability, that is one of them that influences on CS. According to the studies by Amran and Che-Ahmad (2011), Ting and Lean(2011) and Ahmad and Abdul-Rahim (2013) profitability is also named as financial performance and it strongly depends on the CS of organizations. The owners as well as managers fascinating about the financial performance of a firm. Shareholders finance their funds expecting to get at least adequate returns. At the same time, managers of organizations are interested in firms' operating efficiency. The operating efficiency and expected rate of return on investors invested capital impacted on the profit earned by a firm. Net income

(NI) are important item in Income Statement in order to run a company in a safe environment and to compete among rivals in the same industry. The structural proportion of CS of organizations influences on capacity of profit earning of the firm (Reddy, 2012).

Second, CS decisions only choice between neither debt or equity in financing its investment made. The level of debt depends on the debt interest, income taxes of a company, withholding taxes, income taxes of a person, cost of financial distress and financial agreements on covenant restrictions and market imperfections as well (Hovakimian, Opler& Titman, 2002). Fundamentally, the lower interest rate on non-current liabilities, the more probability that a company desire to opt for it, however, high the leverage ratio, enhance the risk of financial distress (Flannery& Rangan, 2004). Besides that, the higher ratio of leverage, rise average cost of capital (WACC) of a firm and simultaneously, lowers total market of a company (Barine, 2014). In economic downturn, sometimes companies are not able to meet its obligations and became insolvent to creditors. For that reason, it is basically leads to significant costs such as administrative and legal and further, cost implicit while trading its assets at lower price that actually it is. In case, if not going bankruptcy, high level of leverage can make stock value of a firm less attractive to shareholders as the possibility of financial distress system goes up (Flannery& Rangan, 2004).

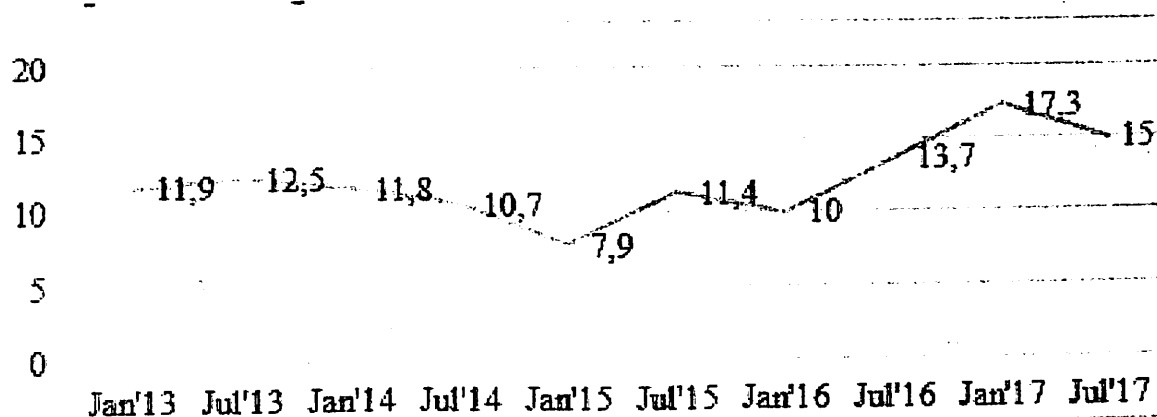
In case of Kazakhstan, interest on short term debt ranged from 11,3% to 16.1% during 2013-2017. Highest interest rate about 16.1 % is observed in the beginning of July 2016. While interest rate on long-term debt ranged from 10% to 17.3% on average during 2013-2017. The highest interest rate of 17.3% is showed in January 2017. Hence, interest on LTD is inexpensive than interest on STD (Figure 2.2.1 & 2.2.2).

Figure 2.2.1 Short-term interest rate on debt in Kazakhstan in %, 2013-2017



Source: National bank

Figure 2.2.2 Long-term interest rate on debt in Kazakhstan in %, 2013-2017



Source: National bank

2.3 Hypothesis Development

Vast amount of researchers admit that CS affects the behaviour of the company and financial performance results and its market value as well. The conclusion of current empirical research is mixed and debatable (Norvaisiene, 2012).

It is essential mention Abor (2005) investigated an impact of CS on profitability of twenty-two listed companies in Ghana from 1998 through 2002. He found that there is significant positive relationship between STDAR and ROE. Additionally, he investigated

that the reason is that short-term interest of debt is less expensive in Ghana leading to high performance and concluded firms that wealthy firms finance their operations by STD. Therefore, STD is an important source of finance in case of Ghana. Besides that, study by Tailab (2014) analyzed 30 Energy American firms on how CS influence on profitability. The findings of this study provided suggest that there is dramatically positive relationship between STD and firm performance. Due to the reason that, the more company earns, the more expectation to cover its obligations. These results are also similar to the studies by Abor (2005), Champion (1999) and Mesquitta and Lara (2003).

However, other studies have found revised results. For instance, Salim & Yadav (2012) analyzed 237 Malaysian listed firms during 1995-2011 and found statistically negative relationship between ROE and STD. This finding is also similar reported to the studies by Hamid et al. (2015), Arbiyan and Safari (2009), Ahmad et. al(2012), and Norvaisiene (2012).

Since, interest on STD is relatively high in Kazakhstan than LTD we make an assumption that due to expensive interest rate bearing on STD, profitability expecting to be low.

Hence, a negative relationship is hypothesized between STDA and ROE.

Study evidence by Abor (2005), Mesquita and Lara (2003) found negative relation among CS (LTDAR) and profitability. The reason why is explained by the statement that non-current liabilities (LTD) are more expensive than current liabilities and as an effect low profitability is expected. Similarly, based on studies by Hamid et al. (2015) examined relationship of family and non-family firms in Malaysia. The study reveals that a rise in leverage ratio leads to lower performance. The findings of the study are similar to Salim (2015), Norvaisiene (2015) and Hamid et al. (2015).

On the other hand, studies have found contrast results, Ahmad et al. (2012) reviled positive association between LTDAR and ROE by explaining that high proportion of debt in CS would consequently lead to high performance since there is tax shield on LTD and

therefore tax advantages. This reported results are the same in the findings of Grossman and Hart (1986), and Philips and Sipahioglu (2004).

Since in Kazakhstan interest on LTD is lower than STD, we make an assumption that LTD would positively relate to ROE.

As a consequence, this study hypothesized positive relation between non-current liabilities (LTD) and ROE.

Salim (2012) found that total debt to asset ratio (TDAR) negatively effect on ROE and these findings in line with Min-Tsung Chen (2009), Norvaisiene (2012), Ahmad et al. (2012), Hamid et al. (2015). Besides that, Tailab (2014), has found negative relationship between non-current liabilities as well as TD. The reason is that the more company uses its external financing as debt leads to lower performance level and means company uses less equity finance. On the other hand, study by Negasa (2016) reported positive relationship between TDAR and ROE, indicating that firms use debt in order to lower WACC and increase firm's value. This result is similar to Abor (2005), Zerah (2011) and Abu-Rud (2012).

As in Kazakhstan STD is expensive than LTD, and we make an assumption that due to this fact, overall effect to TD would be negative regarding to firm performance of listed firms in Kazakhstan.

Therefore, we can hypothesize that TDA negatively influence on ROE.

Review of literature are summarized in Appendix A.

2.4 KASE overview

November 5, 1993 is a day when the national currency "tenge" was firstly introduced in Kazakhstan. On November 17 in 1993 Kazakhstan Interbank Currency Exchange was created in order to create and develop the tenge currency market which a few years later was renamed as Kazakhstan Stock Exchange (KASE).

Since its inception KASE has been the only trading platform in Kazakhstan serving the stock, currency and money markets. The historical partnership of KASE with

professional participants - members of the Exchange who are for the most part its shareholders, makes it possible to find a mutually acceptable balance between the interests of the Exchange as a commercial company and consumers of its services.

Today KASE is more than just an exchange. KASE value the history unique knowledge of our employees and established trusting relationships with professional participants of the securities market.

KASE improves the standards of its activities in order to increase the attractiveness of the exchange market of Kazakhstan and tries to be an example for other participants in terms of corporate governance and information transparency. (official web-site KASE: kase.kz).

The mission of KASE is to contribute to the sustainable economic development of Kazakhstan by providing technological infrastructure to attract financing by domestic companies of the public and private sectors and provide a reliable, stable and transparent investment environment for local and foreign investors. The objectives of KASE are technical modernization, marketing activities, open information policy and more attention to the interests of investors and issuers of securities.

Vision of KASE in 2019 - a client-oriented modern technological platform, as open as possible to innovations and communications, capable of effectively meeting the needs of domestic issuers, Kazakhstani and foreign investors.

Strategic directions

Exchange market development

- Attraction of new issuers;
- Expansion of the investor base;
- Development of the foreign exchange market;
- Development of clearing activities.

Improving the customer focus of the Exchange and its services

- Work with market participants and members of the Exchange;

- Corporate website development;
- Improving the image of the Exchange and raising awareness of its activities;
- Improving the quality of services.

Increase efficiency and competitiveness of exchange business

- Promotion and sale of information;
- Development of IT systems;
- Modernization of the management system operational risks (KASE official web-site).

METHODOLOGY

3.1 Data Collection

This study uses secondary data for analysis. Secondary data is data that has been collected earlier, rather than gathered by scientists. Secondary data was obtained from the financial statements consisting of the statement of income and the balance sheet financial position. This data comes from Kazakhstan Stock Exchange (KASE), company publications and official websites. Specifically, the secondary data from the financial documents was gathered from 2013 and 2017.

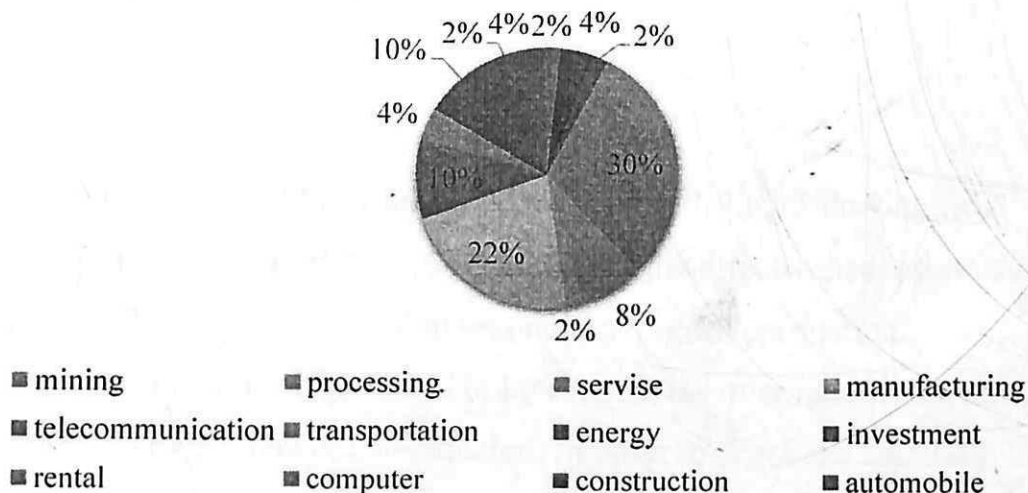
3.2 Sample design

The study has employed panel data which were collected from 50 listed companies of Kazakhstan for a five years' study period (2013-2017). The present study employed stratified sampling method. Listed firms were screened against several factors: financial service institutions (banks and insurance companies) were canceled from the sample and those companies unqualified annual reports or not enough data also were eliminated from the study. From non-financial firms simple sampling method were used and 50 listed firms were selected. Therefore, sample were taken from 12 sectors (Figure 3.2.1) making the final sample 250 firms-years considerations for the years 2013 to 2017. The list of the companies are on Appendix B.

3.3 Method of data analysis

Regression analysis is used to investigate the relationship between CS and firm performance. Estimations of stated above objectives were carried out by the use of dynamic panel generalized method of moments (GMM) estimator (Arellano and Bond, 1991; Roodman, 2009a & b).

Figure 3.2.1 Sample of companies by main activities (in %)



Source: Compiled by author

3.4 Generalized-method-of-moments (GMM)

GMM method presents an efficient econometric estimator of the panel data. GMM is an effective estimator and mechanism that can lower and prevent endogeneity issue. Endogeneity refers as the relationship between determinants with the error term. This test prevents the endogeneity issue by using undetectable collision in the sample random aspect (Hadi, Hamad& Suryanto, 2016). Endogeneity in the regressions would make it hard to rely on the explanation of results from such traditional panel estimations as pooled ordinary least square (OLS), fixed effects, and Random effects. Due to evidence that results from traditional panel estimators could be misleading because of methodological shortcomings that make them hard to overcome endogeneity issues and simultaneity bias (Nickell, 1981; AM Bond, 1991& Greene, 2004). The GMM panel estimator (Arellano& Bond, 1991; Roodman, 2009a and 2009b) that regulates for both autocorrelation and heteroskedasticity solve these issues utilizing past period observations of the independent variables as interior mechanism.

According to Baltagi (2013) the Blundell and Bond System GMM Estimator is used when the following condition is satisfied:

When $T < 10$ and $N > 50$ GMM panel estimator maybe selected,

Where:

T-time period;

N-number of observations

The validity of the GMM estimators depends on fulfilling following two necessary conditions. First, the Hansen/Sargan test for the effectiveness of the tools and the second is the *AR (2)* that is referred to second order serial correlation.

The Hansen/Sargan test is provided to investigate the over identifying limitations. This test is provided by ρ value of Chi- squared. In order to check the suitability of the used tools, the following two hypotheses must be checked: H_0 : The tools used in this analysis are correct; H_1 : The tools used in this analysis are not correct. A solid evidence of the suitability of the model is achieved when p-value result is not significant. The Sargan/Hansen test measures the suitability (correctness) of the tools used in the estimation analysis. This test is provided to figure out if these tools are interacted with the error term (Hadi et al., 2016).

AR (2) shows the existence or not existence of serial correlations of the first and second order. Moreover, *AR (2)* tests are used to verify that null hypotheses are not serial correlations. H_0 : No series correlation; H_1 : There is a serial correlation (Hadi et al., 2016).

3.5 Variable measurement

In articles there are many different measures of firm profitability and mainly accounting measures that calculated from financial statements such as ROE & ROA (Abor, 2005). Present study uses ROE to measure profitability of the company. ROE is used to interpret efficiency of investors' capital invested. The debt measurement is proxies of the following independent variables such as STD, LTD and TD (Abor, 2005; Saedi, 2009 & Ebaid, 2009). Control variable are firm size which is measured by natural log of total assets (TA) and growth of revenue that are calculated as current year's

revenue minus previous year's revenue divided by previous year revenue. The summary of variables is presented in Table 3.5.1 below.

Table 3.5.1- Variable measurement

| VARIABLES | DESCRIPTION | MEASUREMENT |
|-----------------------------|-----------------------|---|
| DEPENDENT VARIABLE | | |
| ROE | Return on Equity | Net income divide to Equity |
| INDEPENDENT VARIABLE | | |
| STDR | Short term debt ratio | Short term debt divide to total assets |
| LTDR | Long term debt ratio | Long term debt divide to total assets |
| TDR | Total debt ratio | Total debt divide to total assets |
| CONTROL VARIABLES | | |
| SIZE | Firm Size | Natural logarithm of firms' total assets |
| GROWTH | Revenue growth | (Current Year Revenue minus Previous Year Revenue) divide to Previous Year Revenue(Sales) |

Source: Compiled by Author

3.6 Model Specification

The association between CS and Firm Performance was tested using following multivariate regression models:

$$ROE_{it} = \beta_0 + \beta_1 STDAR_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \epsilon_{it}$$

$$ROE_{it} = \alpha_0 + \alpha_1 LTDAR_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \epsilon_{it}$$

$$ROE_{it} = \lambda_0 + \lambda_1 TDAR_{it} + \lambda_2 SIZE_{it} + \lambda_3 GROWTH_{it} + \epsilon_{it}$$

Where:

$\beta_0, \lambda_0, \alpha_0$ is the intercept of the equation

β, λ, α is regression coefficients

ROE is return on equity

STDA is short -term debt to assets ratio

LTDA is long- term debt to assets ratio

TDA is total debt to assets ratio

i is firm

t is period, 2013-2017

ϵ is error term

RESULTS AND CONCLUSION

4.1 Descriptive Analysis

The table 4.1.1 captures a summary of descriptive statistics of the independent as well as dependent variables that are used in this paper. Descriptive statistics presents such parameters as mean, minimum, maximum and standard deviation. First, mean of ROE on average is -1,29% and standard deviation is 10.3091. The range value for ROE is from -140.0238 to 8.5803.

Short-term debt ratio (STDAR) that was measured by the ratio of short-term debt to total assets has average value of 0.28, its standard deviation is 0.2563, highest STDAR is 1.1560 and the lowest is 0.0054. The average long-term debt ratio (LTDAR) was measured as long-term debt divided by total assets has average value of 0.2914 and its standard deviation is 0.3165. The range of value of LTDAR is from 0 to 1.9189. The total debt ratio (TDA) has mean of 0.5732 and its standard deviation is 0.3622. The highest TDAR is 2.1203 and lowest is 0.1369. For size and growth mean value are 5.3773 and 18.8661 respectively.

From the above results, TDAR indicates that almost 60% on average are financed through debt, of which 28% STD and 29% LTD in Kazakhstani non-financial listed companies. This confirm that listed companies in Kazakhstan prefer to use debt as source of finance.

Table 4.1.1- Descriptive Statistics

| Variable | Observation | Mean | Min. | Max | Standard deviation |
|----------|-------------|---------|-----------|---------|--------------------|
| ROE | 250 | -1.2939 | -140.0238 | 8.5803 | 10.3091 |
| STDR | 250 | 0.2817 | 0.0054 | 1.1560 | 0.2563 |
| LTDR | 250 | 0.2914 | 0 | 1.9189 | 0.3165 |
| TDR | 250 | 0.5732 | 0.01369 | 2.1203 | 0.3622 |
| Size | 250 | 7.6429 | 5.3773 | 2.1203 | 0.9264 |
| Growth | 250 | 0.2782 | -0.9957 | 18.8661 | 1.6684 |

Source: Compiled by author, based on STATA calculation

4.2 Correlation Matrix

Multicollinearity may arise when running a regression model and including two independent (explanatory) variables identical to each other that describing the effect to the same measure (Studenmund, 2014). This paper employed correlation matrix tests and described low points which is an indicator that multicollinearity is low and not a problem in present study (Table 4.2.1). Evidence shown in table 4.2.1 below, correlations between STDAR and Firm Size and sales growth (-0.3 and 0.05 respectively) is very low. The same is for LTDAR 0.04 and 0.03 that is very low and for TDAR values are low for a correlation of Size and sales growth (-0.2 and 0.07 respectively).

Table 4.2.1- Correlation matrix of independent variables

| | STDAR | LTDAR | TDAR | Firm size | Sales growth |
|--------------|---------|--------|---------|-----------|--------------|
| STDR | 1 | | | | |
| LTDR | -0.21 | 1 | | | |
| TDR | 0.5205 | 0.7224 | 1 | | |
| Firm Size | -0.3440 | 0.0485 | -0.2011 | 1 | |
| Sales growth | 0.0544 | 0.0398 | 0.0734 | -0.0577 | 1 |

Source: Compiled by author, based on STATA calculation

4.3 Econometric Analysis

It was analyzed the effect of leverage on ROE for 50 Kazakhstani listed companies over 5 years' period between 2013 and 2017, by employing representative of financial performance ratio as ROE. Moreover, it was used Correlation Matrix to check the presence of non-multicollinearity between independent (explanatory) variables. So, the results of the estimation of GMM method on the panel data model are presented in Tables 4.4.1, Table 4.4.2 and Table 4.4.3.

It can be said that provided results are correct for the following reasons: First, the tools used in our regressions are valid. A strong evidence of the correctness of the model is achieved and the p-value result is not significant. Hansen test does not reject the hypothesis of validity of past period variables in levels and in difference as tools. As shown in Table 4.4.1, Table 4.4.2 and Table 4.4.3 the conclusion of the p-value of the Sargan test for the overall sample is 0.311, 0.301 and 0.422 respectively. This non-significant p-value shows the overall validity of the tools and the checked determinants of CS.

Secondly, we have analyzed that there is no AR(2) of errors for difference equation. The results in the inexistence of serial correlation, that is for regression analysis of independent variables such as STDAR, LTDAR, and TDAR with a value of 0.163, 0.238 and 0.146, respectively. Therefore, any serial correlation is not found, and the null hypothesis(H_0) is accepted.

4.4 Regression analysis

Regression analysis is employed in order to find out the association between CS (STDAR) and financial performance calculated by ROE. GMM panel data estimator are presented in Table 4.4.1. On average, value of ROE goes down by 5.67% and for each extra 1 percent rise of STDR. This is due to the fact, that STD are comparatively more expensive, consequently, employing more amount of debt could lead to decline in the ratio of profitability. In addition, the findings of econometric model also shown that the

firm's performance calculated by ROE of listed firms in Kazakhstan increases with control variables of revenue growth and correlation is significant at the 10 percent level. However, firm size is not significantly depending on profitability. Hence, research concludes that 1st hypothesis is accepted.

Table 4.4.1- Results on Regression, STDAR

| GMM regression Model | | | | | | |
|-------------------------------------|---|----------------------------|-------|---------|--------------------------|------------|
| Number of observ. | | | | | 250 | |
| Number of the groups | | | | | 50 | |
| ROE | Coef. | Robu st Std.E rr. | T | p>[t] | [95% Confiden. Interval] | |
| STDAR | - 5.6661 | 2.498 4 | -2.27 | 0.028** | -10.6867 | -0.6452415 |
| Size | 0.7333 | 0.609 7 | 1.20 | 0.235 | -0.4919966 | 1.958638 |
| Growth | 0.2805 | 0.172 5 | 1.63 | 0.110* | -0.662776 | 0.6273132 |
| _Constant | - 6.6237 | 5.046 7 | -1.07 | 0.292 | -15.52191 | 4.76167 |
| Arellano- Bond Test for AR(2) | Pr > z 0.163 | | | | | |
| Hansen test | Prob > Chi (2) 0.311 | | | | | |
| NOTE: | *Statistically significant 10% ** Statistically significant 5% | | | | | |

Source: Compiled by author based on STATA calculations

Regression Model in Table 4.4.2 shows no significant association between LTDR and ROE, since the p-value is 0.158. This is explained that listed firms in Kazakhstan indifference on level of LTD because there is no association with profitability. The results from regression indicates that profitability of listed firms in Kazakhstan is goes up with

control variables of firm size and significant at 10 percent level. Therefore, the 2nd hypothesis is rejected.

Table 4.4.2- Results on Regression, LTDAR

| GMM regression Model | | | | | | |
|-------------------------------------|--------------------------------|----------------------------|-------|--------|-----------------------|-----------|
| Number of observ. | | | | | 250 | |
| Number of the groups | | | | | 50 | |
| ROE | Coef. | Robu st Std.E rr. | T | p>[t] | [95% Confid.Interval] | |
| LTDAR | - 1.4656 | 1.018 | -1.43 | 0.158 | -3.519022 | 0.5877344 |
| Size | 1.2864 | 0.749 8 | 1.72 | 0.093* | -0.2203378 | 2.793206 |
| Growth | 0.2490 | 0.160 9 | 1.55 | 0.128 | -0.0743741 | 0.572442 |
| _Constant | - 10.768 2 | 6.218 9 | -1.73 | 0.090 | -23.26559 | 1.729227 |
| Arellano- Bond Test for AR(2) | Pr > z 0.238 | | | | | |
| Hansen test | Prob > Chi (2) 0.301 | | | | | |
| NOTE: | *Statistically significant 10% | | | | | |

Source: Compiled by author based on STATA calculation

From results based on GMM panel data estimator, in Table 4.4.3 the average value of profitability calculated by ROE goes down by 3.73%, on average, for each extra 1 percent of TDR of listed firms in Kazakhstan. Basically, the regression results coefficient

indicates that rise in proportion of leverage is associated with reduction of ROE. Hence, the higher the proportion of debt leverage, the lower the financial performance level is. This explains that successful listed firms in Kazakhstan rely more on equity financing as major source of finance.

Table 4.4.3- GMM Regression model of ROE and TDR

| GMM regression Model | | | | | | |
|------------------------------|---|-----------------|-------|---------|-----------------------|------------|
| Number of observations | | | | | 250 | |
| Number of the groups | | | | | 50 | |
| ROE indicator | Coef. | Robust Std.Err. | T | p>[t] | [95% Confid.Interval] | |
| TDR | -3.7313 | 1.7111 | -2.18 | 0.034** | -7.170002 | -0.2927216 |
| Size | 0.9669 | 0.6606 | 1.46 | 0.150 | -0.360565 | 2.294522 |
| Growth | 0.2813 | 0.1484 | 1.90 | 0.064* | -0.169739 | 0.5797105 |
| _Constant | -6.6237 | 5.2715 | -1.26 | 0.215 | -17.21743 | 3.969836 |
| Arellano-Bond Test for AR(2) | Probab>z 0.146 | | | | | |
| Hansen test | Probab >Chi (2) 0.422 | | | | | |
| NOTE: | *Statistically significant 10% ** Statistically significant 5% | | | | | |

Source: Compiled by author, based on results on STATA calculation

In addition, the results have shown that firm's profitability rise up with revenue growth, with a significant value of 10 percent. In addition, the results based on regression that is corresponded to the "pecking order theory" in example of listed companies in Kazakhstan.

4.5 Discussion and Conclusion

The central objective of the study is to investigate relationship of CS on financial performance of listed non-financial companies in Kazakhstan. Based on theoretical literature on CS, namely, Modigliani-Miller theorem (capital irrelevance), pecking order theory and trade-off theory, study was reviewed above theories in order to provide acknowledgment about how CS choice effects on profitability of firms. A vast amount of studies was reviewed in order to investigate proxies and variables for CS as well as firm performance and to identify control variables. Therefore, ROE indicator is employed as calculation for the profitability of the companies and CS is measured by STDAR, LTDAR, and TDAR. Variables such as asset size, and sales growth are measured in the paper as control variables. The study covers 50 Kazakhstani non-financial listed companies as the sample for the research from 2013 through 2017 with 250 overall number of observations. The data was gathered from financial statements of the companies, specifically from Income Statement and Balance Sheet. GMM panel data estimator were utilized in order to assess the association of debt on ROE. The study has found that only STDAR and TDAR has important association with ROE, while LTDAR has no significant association with ROE.

The results from Regression analysis concluded that there is a significant negative association between profitability measured by ROE and STDA and TDA ratios. In other words, the findings have shown that rise in the level of debt financing leads to decline in the ratio of ROE that is profitability measure. As a result, research does not agree with theory of trade-off and the findings are in line with pecking order theory, where the choice of CS is based on hierarchy which begins with internal source of funding, then using

external such as debt and for the last order equity is used (Nadaraja et al., 2011). Therefore, according to pecking order theory firms with high profitability level would use less external debt financing as its CS. Table 4.5.1 represents summary of comparative analysis of studies have done before.

As shown in table 4.5.1 in Kazakhstan, Egypt, Morocco and Italy debt is most preferable CS, while in such countries as: Baltic and Malaysia is opposite, where most of assets financed by equity. However, relationship is negative in both cases, that is in line with pecking order theory, and the outcome even more difficult in countries such as Kazakhstan, Morocco and Egypt, since proportion of debt is high. Therefore, such countries should be careful with debt level and try to optimize it.

For example, Achy (2009) found that the correlation between TDR and ROE is negative among Moroccan listed companies that finance more assets with debt, and shows that the more profitable companies, the low probability of taking high amount of debt. This conclusion proves that "Myers" and "Majluf" (1984) proposed a "pecking order" theory that companies choose internal funding and as an external opportunity to use external resources. The other country is Egypt, which was investigated by Ebaid (2009), but the results were not significant and the level of debt is not related to ROE.

Besides that, the findings are in line with Hamied et al. (2015), Salim& Yadav (2012), both used case of Malaysian companies. According to Ali; Yatim& Said (2009), explained Malaysia as a country with weak financial support from government, bankers and other financial institutions, thereby it has lower practice in debt financing. According to Baltic countries, firms are tending not to use more debts, financial debt ranged from 13 to 29% during 2002-2011. As a results, companies use more equity in order to have high profitability ratios (Table 4.5.1).

On the other hand, findings are contradicted by Abor (2005), he found that in Ghana listed firms employ more STD in order to finance its assets and profitable firms rely more on debts as the choice of CS. In addition, the reason is that STD are less

expensive, as a results, low interest rate on debt, therefore, companies tend to have high profit indicator. The same results we can find in research done by Negasa (2016), the relationship between variables are positive since high profits level have less bankruptcy costs evidence from Ethiopian Manufacturing firms.

Table 4.5.1 - Comparative analysis of results among countries

| Country | Period | Average TDAR of analyzed period | Relationship between TDA & ROE |
|------------------|-----------|---------------------------------|--------------------------------|
| Kazakhstan | 2013-2017 | 57% | Negative |
| Malaysia | 2009-2011 | 21% | Negative |
| Baltic countries | 2002-2011 | 13% | Negative |
| Egypt | 1997-2005 | 60% | Not significant |
| Morocco | 1998-2003 | 68% | Negative |
| Italy | 2007-2011 | 56% | Negative |

Source: Compiled by Author

Regarding to the relationship between LTDAR and ROE, an insignificant either positive or negative association is found in case of Kazakhstani listed firms. The findings suggest that companies are indifference in level of LTD, since it has no effect on firm performance in case of Kazakhstan. This study is in line with Mohamed et al. (2014), who investigated energy American firms.

4.6 Practical implications

Financial Managers: The association between CS and financial performance (ROE) could not be without attention as improving the ROE (profitability) level is crucial for the survival of the companies in long run. An appropriate mix of CS (equity

and debt) shall be settled to rise up the ROE (profitability) of the firms. In addition, a high proportion of financial leverage increases the riskiness of a company's financial disaster as well. Hence, companies should pay more attention to sources of internal funding to increase their profitability. The financial managers of each company should make wise and appropriate financing decisions to be cost effective and competitive on the market.

Creditors: The provided results are also important for creditors. Since this conclusion helps them to make decisions about granting debt to companies or not. There is a negative link between STDA and profitability in case of Kazakhstani listed companies, therefore creditors have to carry out a detailed and thorough investigation and analyze their decisions.

The results of the study showed that TDAR negatively correlates with ROE (profitability) in example of listed companies on KASE in Kazakhstan through 2013-2017. As a result, ROE tends to decrease with more level of leverage. This actually can be true due to high interest rate on debt securities related to TD. What is more, a high proportion of external source of finance as debt also increase the probability of risk of the company. Hence, the company's financial managers should pay more attention to internal sources of funding to increase their ROE. The top management of each non-financial corporation should adopt a wise and robust financing decision in order to remain successful and competitive on the market.

4.7 Limitations

The insufficiencies of this work is that it only affects the non-financial companies that are listed on KASE in Kazakhstan for the 5-year period 2013 to 2017. The time frame was not so long and the number of the companies in the sample restricted to the listed non-financial companies only. What's more, any improvements and changes after analyzed period was not included in this paper. Therefore, time was restricted in the

analysis as well. In addition to this, only 50 listed firms were included in the study. This is comparatively small number of companies and sectors were analyzed.

The study was also faced with a limitation of the model. The model adopted was limited as it only consisted of one CS variable (STDAR, LTDAR and TDAR) and one profitability variable (ROE) leaving out other determinants that could be important to the study.

4.8 Direction for future Research

Based on above results and limitations, the following suggest the guidance for future research.

In future research data should be collected for more time periods in order to find out the relationship before, during and after the financial crisis. Because profitability level also depends on macro and economic factors.

Moreover, the future study should incorporate more dependent as well independent variables. The model shall be corrected with more variables other than ROE and STDAR, LTDAR, and TDAR in order to obtain broad and comprehensive findings.

The present study involves a small number of companies but in Kazakhstan more other operated companies. Hence, in the future research studies sample of the companies should be improved for more accurate results.

APPENDICES

Appendix A- Review of Literature

| No | Author | Metho dology | DV | IV | Sign | Main Results |
|----|------------------------------|----------------------------|----------------------------------|-------------------|----------------------------|--|
| 1 | Tailab (2014) | Regress ion analysis | ROE | STD LTD TD | STD + LTD no TD - | Negative relationship between TD, reason is that debts usually are more expensive than equity financing. |
| 2 | Salim and Yadav (2012) | Regress ion analysis | ROE ROA Tobi n Q EPS | STD LTD TD | STD- LTD- TD- | An increase in leverage would decrease profitability |
| 3 | Negasa (2016) | Regress ion analysis | ROA | TDR | TD+ | There is positive relations due to the high performance have less expected cost of bankruptcy |
| 4 | Norvaisie ne (2012) | Regress ion analysis | ROE ROA | STD LTD TD | STD- LTD- TD- | In Baltic countries are not willing to use lots of debt. |
| 5 | Ahmad et al. (2012) | Regress ion analysis | ROE ROA | STD LTD TD | STD- LTD+ TD- | STD tend to be expensive. |
| 6 | Hamid et al.(2015) | Regress ion analysis | ROE | STD LTD TDR | STD- LTD- TD- | All debts negatively influence on profitability and findings conclude equity is main source of finance. |

| | | | | | | |
|---|----------------|----------------------------|-----|------------------|---------------------|---|
| 7 | Abor (2005) | Regress ion analysis | ROE | STD LTD TD | STD+ LTD- TD+ | Wealthy firms use more short-term debt. |
| 8 | Achy (2009) | Regress ion analysis | ROE | STD LTD TD | STD- LTD+ TD- | Moroccan companies are described by their high proportion of debt to suppliers and STD creditors. |

Note:

“+” refers positive relationship between IV and DV
“-” refers negative relationship between IV and DV
“no” refers no association between IV and DV
IV-independent (explanatory) variables
DV-dependent (explained) variables

Source: Compiled by Author

Appendix B- List of non-financial firms

1. LLP Amangeldy Gas
2. «AMF Group» JSC
3. “Mega Center Management”
4. UST-Kamenogorsk Titanium & Magnesium
5. Ust-Kamenogorsk Poultry Plant
6. Kazakhstan Temir Zholy National Co JSC
7. Samruk-Energy JSC
8. National Welfare Fund Samruk-Kazyna JSC
9. KazTransCom JSC
10. Rakhat JSC
11. KazTransOil JSC
12. RG Brands AO
13. Kazatomprom Natsionalnaya Atomnaya Kompaniya AO
14. KazMunaiGas Exploration Production JSC
15. Mangistaumunaigas AO
16. KCell JSC
17. KazBurGas JSC
18. Mangistau Distribution Power Grid JSC
19. Pavlodarenergy JSC
20. LLP ShalkiyaZinc Ltd
21. Logy Com JSC
22. Maten Petroleum JSC
23. KMK Munai JSC
24. "Fincraft Resources"
25. Kazakhtelecom JSC
26. Altynalmas JSC

27. AO "Tin One Mining" (Тин Уан Майнинг) (SRBT)
28. LLP Aktoberefinery
29. Astel
30. Caspi Neft JSC
31. KAZ Minerals PLC
32. Asia Avto JSC
33. Bayan-Sulu
34. Kazakh Republican Trade House ZANGAR JSC
35. BAST JSC
36. Batys tranzit JSC
37. Atameken-Agro JSC
38. ZGOK JSC
39. Eastcomtrans LLP
40. Aktobe Oil Equipment Plant JSC
41. Kazakhstan Electricity Grid Operating Co
42. Kazexportastyk Holding JSK
43. JSC Central-Asian Electric Power Corporation
44. AO "Dosjan temir joly" (DTJL)
45. Ecoton + JSC
46. JSC KazTransGaz Aimak
47. Sokolovka JSC
48. Aktoberefinery LLP
49. Aikarauul JSC
50. Alma Telecommunications Kazakhstan JSC

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