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**THE DETERMINANTS OF CAPITAL STRUCTURE:
EVIDENCE FROM AZERBAIJAN FIRMS**

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THESIS APPROVAL PAGE



DECLARATION

I hereby declare that this doctoral thesis titled as “The determinants of capital structure: evidence from Azerbaijan firms” has been written by myself in accordance with the academic rules and ethical conduct. I also declare that all materials benefited in this thesis consist of the mentioned resources in the reference list. I verify all these with my honour.

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Elmir SAFARLI

Signature



ABSTRACT
Doctoral Thesis
Doctor of Philosophy (PhD)
The Determinants of Capital Structure: Evidence from Azerbaijan firms.
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The main purpose of this study is to determine the capital structure policies of Azerbaijan companies and to provide determinants of financing choice. There are three main parts in investigation.

The first part shows the leverage position of Azerbaijan companies over 2007-2014. Findings prove that leverage classification and borrowing level of companies are differentiated by sectors. Mainly, construction and agriculture sectors have high level leverage ratio.

Secondly, the relationship between firm specific factors and leverage ratio is measured with panel data analysis. Empirical findings indicate that, only profitability and firm size are significant determinants for leverage ratio. And results of relationship between variables are consistent with previous literature.

The effects of macroeconomic factors (GDP and inflation) on the financing choice of the firm are third objective of this study. Results provide that only GDP is positively and significantly related with leverage ratio.

Keywords: Azerbaijan, capital structure, firm specific determinants, leverage.

ÖZET
Doktora Tezi
Sermaye Yapısını Etkileyen Faktörler: Azerbaycan Örneği
Elmir SAFARLI

Dokuz Eylül Üniversitesi
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Bu çalışmanın amacı Azerbaycan şirketlerinin sermaye yapısı kararlarını incelemek ve finansman kararlarını etkileyen faktörleri belirlemektir. Çalışma genel olarak üç kısımdan oluşmaktadır.

Birinci kısım Azerbaycan şirketlerinin 2007-2014 döneminde borçlanma durumunu tesbit etmektedir. Bulgular borçlanma seviyesinin sektörler arasında farklılık gösterdiğini ve esas olarak, inşaat ve tarım sektörünün daha çok borçlanma yapısına sahip olduklarını göstermektedir.

İkinci olarak, sermaye yapısını etkileyen şirket içi faktörlerle borçlanma oranı arasında ilişki saptanmıştır. Araştırmanın sonucu seçilmiş faktörlerden sadece karlılık ve şirket büyüklüğünün borçlanma oranı üzerinde etkisi olduğunu göstermektedir. Bulunan sonuçlar daha önce elde edilmiş olan bulgularla benzerlik göstermektedir.

Gayri safi yurt içi hasıla və enflasyon gibi makro ekonomik göstergelerin borçlanma oranı üzerindeki etkisi ise üçüncü kısımda test edilmiştir. Araştırma, sadece gayri safi yurt içi hasılanın pozitif ve istatistiksel olarak anlamlı şekilde borçlanma ile ilişkili olduğunu göstermektedir.

Anahtar kelimeler: Azerbaycan, sermaye yapısı, şirket içi faktörler, borçlanma.

**THE DETERMINANTS OF CAPITAL STRUCTURE: EVIDENCE FROM
AZERBAIJAN FIRMS**

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ABBREVIATIONS

ADB	Asian Development Bank
AIC	Azerbaijan Investment Company
AZN	Azerbaijan New Manat
CBAR	Central Bank of Azerbaijan
CEO	Chief Executive Officer
CIS	Commonwealth of Independent States
DW	Durbin Watsonn
EU	European Union
EBRD	European Bank for Reconstruction and Development
GDP	Gross Domestic Product
IPO	Initial Public Offering
HT	Hausmann Test
NBA	National Bank of Azerbaijan
ROA	Returns on Assets
ROE	Returns on Equity
SOE	State Owned Enterprises
SME	Small and Medium Size Enterprises
SE	Standard Error
USSR	Union of Soviet Socialist Republics
WB	World Bank

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INTRODUCTION

Globalization has changed and strengthened the nature and conditions of finance and economy over the last decade. Based on all these advancements, financial economists try to analyze formal and scientific corporate finance theories, which can be applied by different corporations. According to Stiglitz (1974), the main purpose of corporate finance is to analyze financial decisions.

In general, corporate decisions can be divided into four groups.

- a) Financing of investment
- b) Distribution of revenue
- c) Amount of investment
- d) Selection of project types and techniques

Financing of investments and distribution of revenue imply financial decisions, whereas the amount of investment and the selection of project types and techniques are real decisions.

Most companies always want to purchase some tangible assets and make investment in new projects. The value of investments for a company determines the proportion of indicators in total assets.

Generally, a manager tries to generate more cash to cover capital expenditures. A question here arises: ``How can a firm increase its financial sources? `` ``How can we formalize capital structure of the companies? `` ``How can we get an optimal capital structure of the firms? ``

In these circumstances, the capital structure is the most discussed and tested issue in corporate finance. Since the fundamental work of Modigliani and Miller (1958) capital structure and its determinants has been considered one of the major and important debate topics.

Literature results indicate that corporate finance is mostly analyzed in developed countries. However, financial structure of the firms in developing countries has rarely been analyzed.

Azerbaijan is also developing countries and the global changes affected the economy and financial system of Azerbaijan as well. Azerbaijan financial system has started its operation very recently. The first stage began in 1990s with the formation

of legislative base of financial system after the collapse of the Soviet Union. Development of sectors and operations of companies have started since 1991.

The second stage began after 2000. Strong growth in the economy, strengthening coordination with World Bank, IMF and international financial institutions are the characteristics of the second phase. The Starting of stock exchange operations in Azerbaijan stimulated and increased quantity of international investments to the development of sectors and companies.

Respectively, insurance services also began to gain ground. Total 75-80% of all enterprises operate in industry, agriculture, wholesale and trade, transport, tourism and communication sectors. But researches obviously found that enterprises had some difficulties to provide an optimal capital structure and to find financial sources for investment projects.

So, the contribution of this study to the literature about the capital structure is that it is the first investigation, which analyzes the current leverage positions of companies and determines the effect of firm specific factors and macroeconomic indicators on the capital structure choice of Azerbaijan firms.

Additionally, selecting of time periods and collecting of data is another contribution of this study to the literature. In these conditions, study can be useful for corporations and government for formalizing of financing structure for the next periods.

This study aims to analyze the determinants of capital structure in Azerbaijan firms over 2007-2014. The investigation methodology has three phases. The first phase is general overview about entrepreneurship in Azerbaijan.

The leverage classification of companies and sectors are also analyzed in this phase. Descriptive statistics, tables and figures are the main method for this part. Statistical data about entrepreneurship are obtained from the State Statistical Committee.

The second part of the research obtains the firm specific determinants of capital structure in Azerbaijani companies. Taking into consideration the previous studies about this topic, researchers used different methods for calculation of relationship between leverage ratio and firm specific determinants. The third part of

the investigation describes the effect of macroeconomic factors on the capital choice of Azerbaijani companies.

Generally, thesis is structured as follows:

The first chapter indicates theoretical background of capital structure issues. Fundamental study of Modigliani and Miller, trade off theory, pecking order theory, agency cost theory, signaling theory and market timing theory are discussed in this chapter.

The second chapter analyzes economical position of Azerbaijan Republic. Development of economy, general explanation of macroeconomic indicators, current position of sectors and enterprises are the main part of this chapter.

The third chapter discusses the previous literature about these topics. Investigations and studies about capital structure and determinants can be found in this chapter.

The fourth chapter provides methodology part of study. The fifth chapter is aimed to show the results of investigation. The results of study have two parts. The first part indicates the measuring of firm specific determinants in Azerbaijan firms. The second part provides the effects of macroeconomic indicators on the financing choice of the companies. The last part explains conclusion and limitations of study.

CHAPTER ONE

THEORETICAL BACKGROUND

1.1. INTRODUCTION TO CAPITAL STRUCTURE

The selection of adequate financing type and financial source are very complicated and arduous for companies. A company has two fundamental financing alternatives: equity financing (including issue stock, the most useful method) and debt financing (bonds, bank debts, commercial papers, etc.).

Retained earnings are the first useful and inexpensive financing, as there are no costs to shape the funds. Debt financing is another type of alternatives. For example, bank debts, commercial papers, and bonds. However, firms must be prudent in their borrowing activities to avoid excessive risk and costs.

A firm can also issue securities as a financing alternative. Such securities lack any maturity date and repayment as a debt, and a security holder is considered as the owner of the firm. Sometimes problems may occur between owners that could incur costs in large amounts for the firm. So, old owners must take into account some components before issuing securities, such as dividend policy, the management system, etc.

Companies try to determine the combination of financing alternatives for getting some advantages. Generally, the total value of financing proportions provides the capital structure of the companies.

$$V=B+S$$

In this context, V indicates the total value of investment, as B is the proportion of debt. S is the pie of equity financing.

In this regard, scientists argue that total value of capital structure depends on proportion of debt and equity. Myers (2001) defines the capital structure as the mix of securities and financing sources used by corporations to finance real investment.

Ross, Westerfield and Jaffe (2005) assume that capital structure represents the proportion of financial sources from debt and equity. In a common denominator, capital structure shows the combination of financial sources containing securities, current and long-term debt, and equity.

Bos and Fetherston (1993) indicate that the ratio of total debt to total assets (total liabilities + total equity) is the most acceptable definition of capital structure. Because total share of debt in total assets shows the precise capital structure.

The main purpose of the capital structure is to determine the relationship between the cost of the capital and financing choice. There are two types of schools of thought. Some argue that there is no relationship between combination of financing and cost of capital. So, the capital structure is irrelevant with the firm value.

Another school of thought assumes that financing mix determines the cost of capital. According to their ideas, companies try to find optimal capital structure for minimizing cost of the capital.

In 1955, Weston argued that scholars must develop several theories about the structuring of financial sources to solve financing choice problems. Three years later, in 1958, Franco Modigliani and Merton H. Miller developed fundamental capital structure theory and gave some theoretical background for financial structuring.

The basic purpose of Modigliani and Miller theorem is that the capital structure of the firms is not in relationship with the value of the firm in perfect market. It means that there are not any tax and bankruptcy costs in markets. So, the debt financing will not change the value of the firms, and so, equity and debt substitute each other.

But the results of articles in literature review show that the proportion of debt and equity has some effects on the value of the firms, and the assumptions of Modigliani and Miller do not reflect the real world. Additionally, empirical works provided that information asymmetry costs, agency costs must be taken into account for getting optimal capital structure.

After Modigliani and Miller, surveys on the financing choice of the corporate have been widened and contributed to the literature with new assumptions by taking into consideration taxes, financial distress costs, information asymmetries, etc. Chronologically, the main theories after MM can be listed as follows:

First, the tradeoff theory says that firms seek debt levels that balance the tax advantages of additional debt against the costs of possible financial distress.

Secondly, the pecking order theory says that the firm will borrow, rather than issuing equity (information asymmetries are assumed relevant in this preference).

1.2 .MODIGLIANI AND MILLER THEORY

Modigliani and Miller gave fundamental definition for capital structure theory and explained the effects of financing on the value of the firm. The main issue in this topic is to determine the value of the firm in accordance of debt and equity financing.

The root of the main proposition in this theory is that the debt financing has no effects on the value of the firm. It means that, if there is insufficient equity to finance a project, the firm can apply to debt financing. And the proportion of debt will not change the value of the firm. (Modigliani and Miller, 1958).

For example, let`s assume that V is the market values of the firm, with D and E indicating debt financing and equity respectively.

$$V = D + E$$

Modigliani and Miller's Proposition says that the market values of the firm V is independent from the proportions of debt and equity. It means that the firms will regulate the proportion of debt and equity. So, total value of the firm will not change.

For example, if the equity balance of the firm is 75%, it will use 25 % of debt financing. In case of decreasing the equity degree, debt financing will increase automatically. And total value will not change. And this assumption also emphasizes that profitable companies will tend to use internal equity.

In this theory, capital markets are considered as a perfect market.

Ross (1988) listed the main restrictive notions, emphasized in Modigliani and Miller's perfect market theory assumptions.

1. Capital markets are considered to be perfect. It means that there was symmetric information in a market, and there are not any information costs in the market.
2. The second assumptions indicate that there were no transaction costs.
3. There is rationality in a market. All investors have rational expectations for maximizing profit of the companies.

4. There is no corporate tax.
5. The cost of capital is also estimated as zero in proposition. Myers (2001) notified that the cost of capital was counted as the expected return of whole securities in the firm. Consequently, expected return of securities is considered zero in the first proposition.

Villamil (2000) demonstrated the explanation of Miller (1991) about the proposition of Modigliani and Miller in a simple frame. ``Think of the firm as a gigantic tub of whole milk. The farmer can sell the whole milk as it is.

Or he can separate out the cream and sell it at a considerably higher price than the whole milk would bring. And the Modigliani and Miller proposition says that if there were no costs of separation, the cream plus skim milk would bring the same price as the whole milk.``

Mandacı (2009) also proved that in case of non-taxes and bankruptcy costs, markets were always efficient and the proportion of debt or equity financing would not influence the value of the firm.

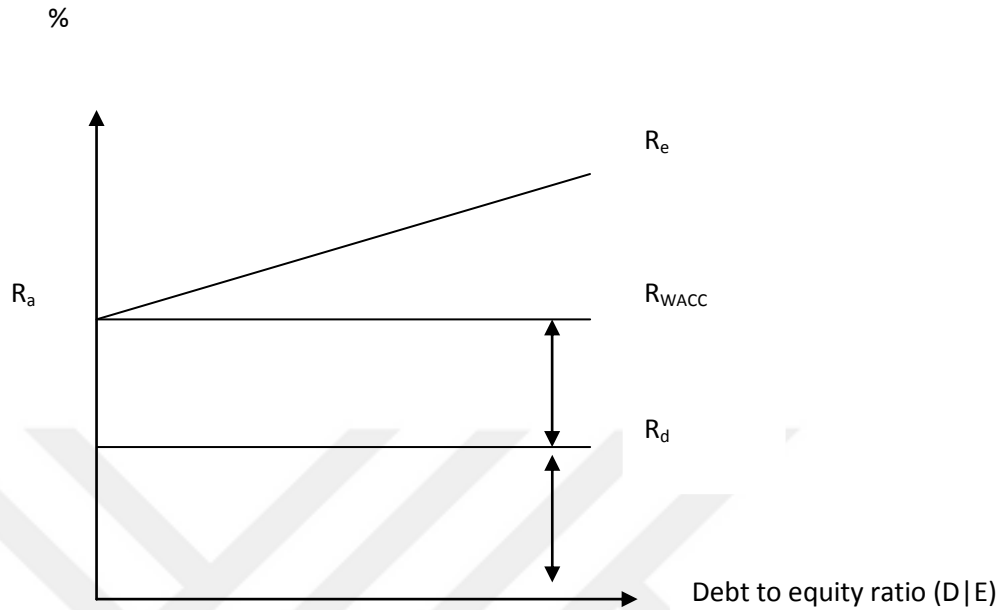
But some scholars argue that it is not acceptable in a real world. Because corporate taxes, information asymmetry, agency and bankruptcy costs exist under real conditions and the value of the firms has direct relationship with these elements, so these notions are restrictive for this theory. So, the results indicate that Modigliani and Miller's Proposition I is irrelevant.

After 3 years in 1961 Modigliani and Miller developed the second proposition. In this proposition Modigliani and Miller assumed that the leverage of the company had no influence on the weighted average cost of capital. It means that the expected rate of return on equity will change linearly with debt equity ratio.

(Ross, Westerfield and Jaffe, 2005:412) tried to analyze the second proposition of Modigliani and Miller in graphical form.

Figure 1: Modigliani and Miller Proposition II

Cost of capital: R



*** R_e indicates the expected rate of return on equity. R_a is the explanation of Return on assets and R_d is the indication of return on debt. D and E indicate Debt and Equity respectively

Source: Ross, Westerfield and Jaffe, (2005:412)

As is seen in Figure 1, there is a linear functional relationship between debt equity ratio and expected rate of return on equity. If R_a is greater than the debt rate R_d , the expected rate of return on equity will increase in parallel with debt equity ratio.

If there is no corporate tax, the weighted average cost of capital (R_{wacc}) is always equal to cost of capital (R_a) in a levered firm. And it means that leverage will not affect the weighted average cost of capital. The formula below also reflects the definition.

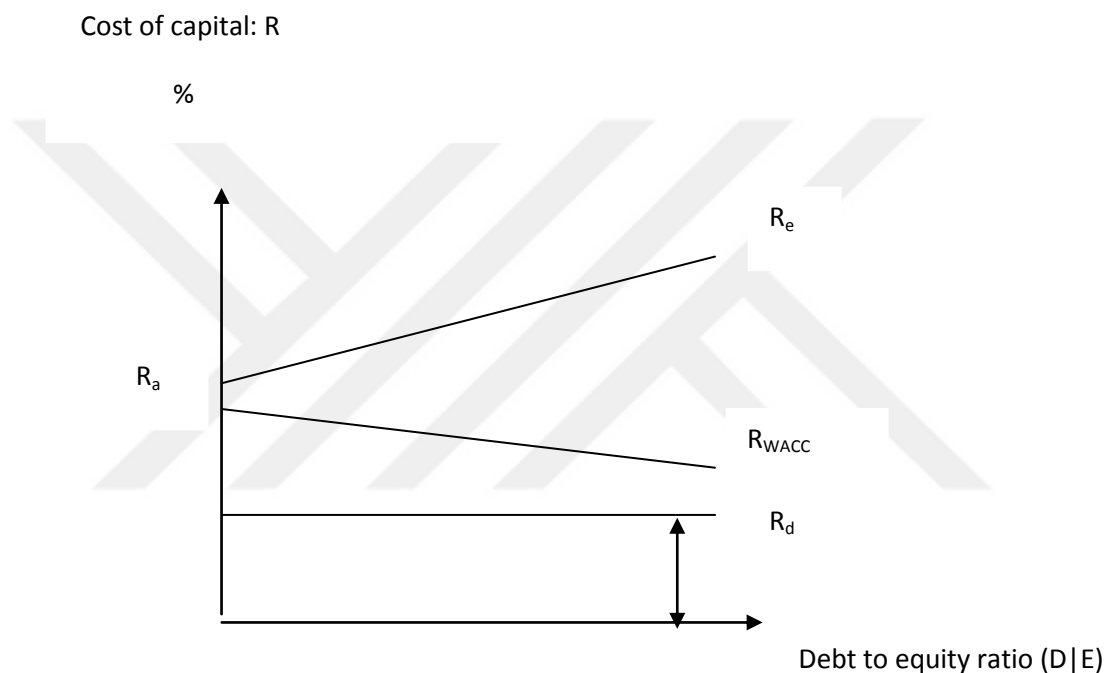
$$R_e = R_a + (R_a - R_d) \frac{D}{E}$$

In this equation R_e is the cost of equity. R_a shows the indication of cost of capital. And in no tax conditions, the weighted average cost of capital is equal to R_a .

R_d represents cost of debt. As a consequence, R_e is positively and linearly related to the debt equity ratio of the company.

But let's assume another version of proposition with corporate taxes. As we know, debt has some tax advantages. And there are some tax savings from the interests. Thus, it means that in a situation with corporate taxes debt equity ratio affects weighted average cost of capital. This assumption is shown in the following Figure.

Figure 2: Modigliani and Miller Proposition II (with corporate tax)



*** R_e indicates the expected rate of return on equity. R_a is the explanation of Return on assets and R_d is the indication of return on debt. D and E indicate Debt and Equity respectively

Source: Ross, Westerfield and Jaffe, (2005:412)

The risk of firm's equity rises with financial leverage. As compensation, cost of equity increases in parallel of firm's risk too. The formula below also reflects the definition.

$$R_e = R_a + (1 - T_c) R_a - R_d \frac{D}{E}$$

Modigliani and Miller also stated in 1961 that there was not any relationship between dividend policy of the company and the firm's value. Scholars assume that it is a third proposition that MM stated. According to this assumption, the dividend policy has no effect on the value of stocks in a market.

Bhattacharya (1977) implied that revealing dividend policy could be very costly for the companies for stating information about the firm. With one word, it is very costly signalling method. So, the companies choose other alternatives to create a signal.

Tax is also an important factor in this assumption. Because tax has effects on the dividend policy of the company.

Capital structure theory and Modigliani and Miller's Propositions have been met with some critic arguments. Harris and Raviv (1991) proved that the theory was based on inconclusive and abstract concepts. It is very difficult to apply on the empirical works.

Titman and Wessels (1988) also argued that the capital structure theory was very complicated in international concepts, especially in controlled markets and developing countries.

Osterberg and Thomson, (1990) implied in their article that Modigliani and Miller's assumptions could not be applied for all companies and institutions, especially for financial organizations. These assumptions only provide a fundamental description and important reasons why different types of financing occur and what the results of these decisions for firms are.

Regarding on capital structure issues, Modigliani and Miller theorems revealed a fundamental question for companies on determining debt or equity. So, following this theory, some alternative theories have been developed and applied in empirical tests. These are trade off and pecking order theories.

1.3. TRADE OFF THEORY

After Modigliani and Miller's theorem, several empirical works have been tested to determine the effects of debt on the value of the firms. As stated in MM assumptions, bankruptcy cost and income tax is not considered in a market. With one word, market was efficient.

But, reality shows that corporate taxes, information asymmetry, agency and bankruptcy costs exist under real conditions and the firm must pay attention for the selecting of borrowing level.

The results of empirical tests state that companies always try to take more debt and in this situation companies can meet with distress and bankruptcy costs.

For example, if the company borrows more debt, it can face difficulties for repayment of principal and interest payments of debts. In this case, the firm must liquidate and sell its assets. Thus, financial distress costs appear during the borrowings.

In other way, the increasing of leverages can encourage the company to make more profit. Simultaneously, more borrowings will reduce the tax level of the company. And all this can be considered as advantages of debt.

In accordance with these conditions, during the financial decision process, companies must endeavor to obtain the benefits and disadvantages of the debt. After determining these elements, they can decide to borrow. With one word, this theory is a progressive type of Modigliani and Miller theorem, by considering the influence of tax and distress costs.

In 1976 Jensen and Meckling investigated that if the company wanted to get optimal capital structure, they had to balance and to take into account the benefits and injuries of borrowings. Because too much debt such as financial distress and underinvestment can destroy total value of the firm.

However too little debt financing can effect to overinvestment. (Barclay and Smith, 2005). Myers (1984) stated that it was good point and could be good theoretical background for companies for obtaining optimal capital structure. So, it is called as *trade off theory*. Consequently, it is the trading of benefits and disadvantages of borrowings.

Scott (1977) also analyzed that optimal capital structure would be provided over the balancing net tax advantages of debt, financial distress and bankruptcy costs. The results of Bradley, Jarrel and Kim (1984), Sbeiti (2010) and Caglayan (2011) articles are consistent with previous assumptions.

Figure 3: Explanation of trade off theory

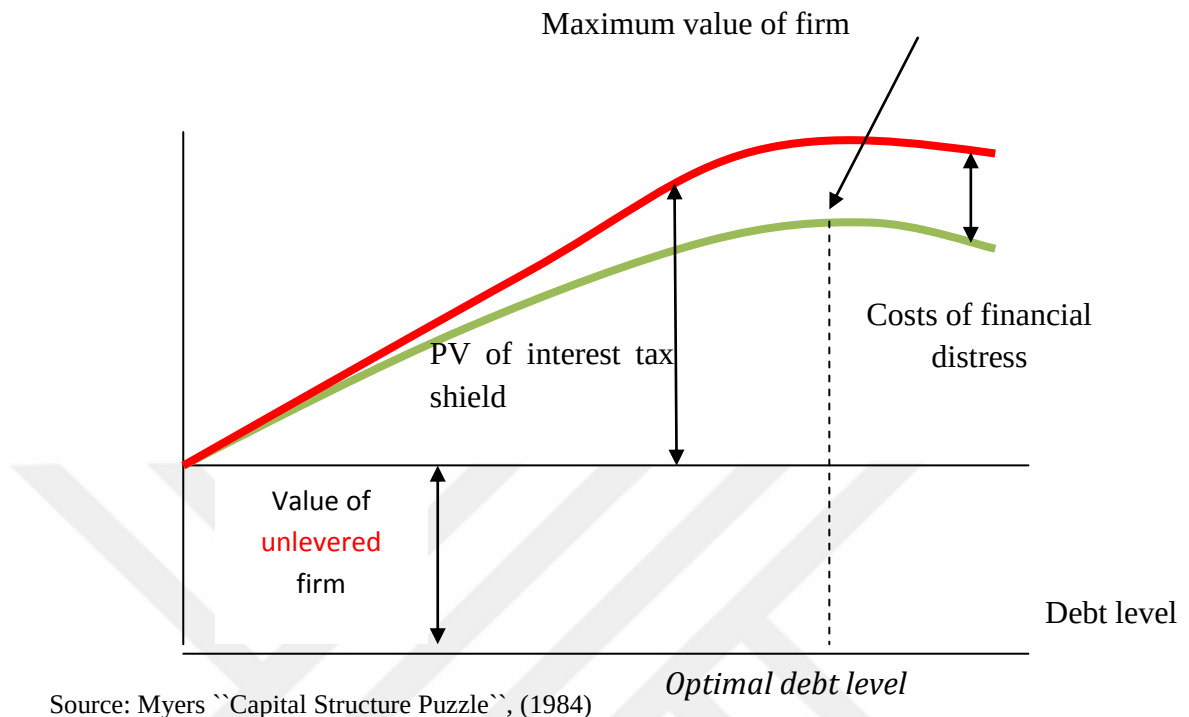


Figure 3 states the explanation of trade off theory. According to the Figure, present value of tax shield increases in parallel to firm debt line, until additional borrowing effects for the increasing of financial distress. It means that at moderate debt level probability of bankruptcy and financial distress degree are very trifling, if the company continues to take additional borrowings, financial distress will increase significantly.

So, a company must obtain equilibrium between the tax advantages and financial distress costs. In this point the firm value will be optimal and maximum. Cost of financial distress is represented as the difference between red and green line in Figure 3.

Anila Cekrezi (2010) formalized an equation for trade off theory on a basis of capital structure equation of Modigliani and Miller.

$$V = D + E = VF + PV(t) - PV(c)$$

- VF indicates total corporate value including all equity financings
- PV(t) shows interest tax shields (the present value of future taxes saved because of the tax deductions for interest rates)
- PV (c) means cost of financial distress (the present value of future costs due to the default risk with higher leverage)

Bauer (2004) assumed in his article that the trade off theory must be analyzed in various cases. For example, from the signaling aspect, the equilibrium occurs between advantages of signaling and financial distress costs. It means that companies will use the debt ratio as a signal. From agency problem aspects Jensen and Meckling (1976) investigated that the optimal capital structure occurred in the context of balancing tax advantages of debt and agency costs.

Of course, there are some factors affecting for determining optimal capital structure. For example, the trade off theory defenders assume that profitability is the most important factor to determine the capital structure. Because profitability will reduce the expected bankruptcy costs and companies will tend to more borrowing.

Scholars also suggest that size is an inverse variable for financial distress. Thus, big companies borrow more than little and medium-sized companies. Octavia and Brown (2008) indicate that there is positive relationship between borrowings and tangibility in big companies.

If the tangibility of the firm increases, company obtains opportunity for issuing more debts. Because tangible assets of the company will be fundamental security for borrowings. Also, increasing borrowings indicate the level of risks in business.

According to the trade off theory, companies in high growth level will tend less debt. It means that, growth opportunities will be negatively related with leverage level. Because of the results of more debt financial distress will be very costly.

In summary, theory suggests that companies can achieve optimal capital structure by balancing benefits of debts and financial distress costs.

Generally there are two types of trade off theory in the literature. One of them is *static trade off theory*, the other is *dynamic trade off theory* (Luigi and Sorin, 2009).

- *Static trade off theory* - Theoretical analysis of Myers (1984) about capital structure puzzle has breathed new stage to optimal capital structure frameworks. Researcher deduced that companies wanted to get static optimal capital structure. Thus, the firms select a target debt ratio and gradually move toward it. Niu (2011) also mentioned that debt financing was very expensive in comparison with equity. He also stated that borrowings had some main and important superiority over equity. And this importance is tax deductibility. Because, more debts can cause for the increasing of distress and bankruptcy costs. So, debt equity ratio is considered as a target framework for getting optimal capital structure. Researcher also suggests that, profitable companies have high debt ratio. Because they want to ensure high tax advantages from borrowings.

After analysis of Myers (1984), Bradley (1984) gave fundamental explanation of static trade off theory. This theory explains that companies can maintain static optimal capital structure, by providing equilibrium between tax advantages and financial distress, bankruptcy costs, agency costs, etc.

It must be noted that there are some notions in this theory. Frank and Goyal(2008) assume that investors are risk neutral and the tax rate of dividends and profits are constant in this theory.

- *Dynamic trade off theory* - The main purpose of this theory is that financial decision will change respectively according financial planning for the next period. It means that, if company modifies financial margin for the next period, optimal capital structure will change significantly.

The optimal debt equity ratio depends on expectation for the next period. If the company needs to raise new funds, manager can choose debt or equity financing. Vice versa, dependence on the financial margin company may pay out the funds. The main initiator of the modern dynamic trade off theory was Stiglitz (1973). Leary and Roberts (2005) also indicate that managers can re-change the debt ratio as periodically according to their financial decision to maintain optimal capital structure level.

Frank and Goyal (2005) assume that companies can be profitable in one period. And in this situation, modeling of excess cash in a company is a main and important point for determining optimal capital structure for the next period.

On the whole, companies always want to pay out all the funds to the shareholders. And in need of financing, companies try to get additional money for investing and use borrowings. So, scholar assumes that companies must decide how much to pay out to the shareholders versus to retain.

Another important dynamic trade off theory model is Tserlukevich (2006) model, which considers mutual relationship between investment and financial decision. Referring to the model, equity value of the firm increases, while the company lives positive demand shock. So, the investment will postpone because of real frictions and borrowing decision will be abolished.

1.4. PECKING ORDER THEORY

Another alternative theory in capital structure is pecking order theory. Myers (1984) emphasized that Donaldson (1961) must be considered founder of pecking order theory.

Modigliani and Miller (1958) assumed in their irrelevance theory that capital market was an efficient market and there was no information costs in a market. It is also considered that all investors have rational expectations for maximizing profit of the companies.

However, Donaldson (1961) explained that some information about financial decisions, such as new investments, profit return and expectation of investments, company risk, etc. were known only by managers. Outside investors have less information about exact value of existing assets of the companies and the future investments.

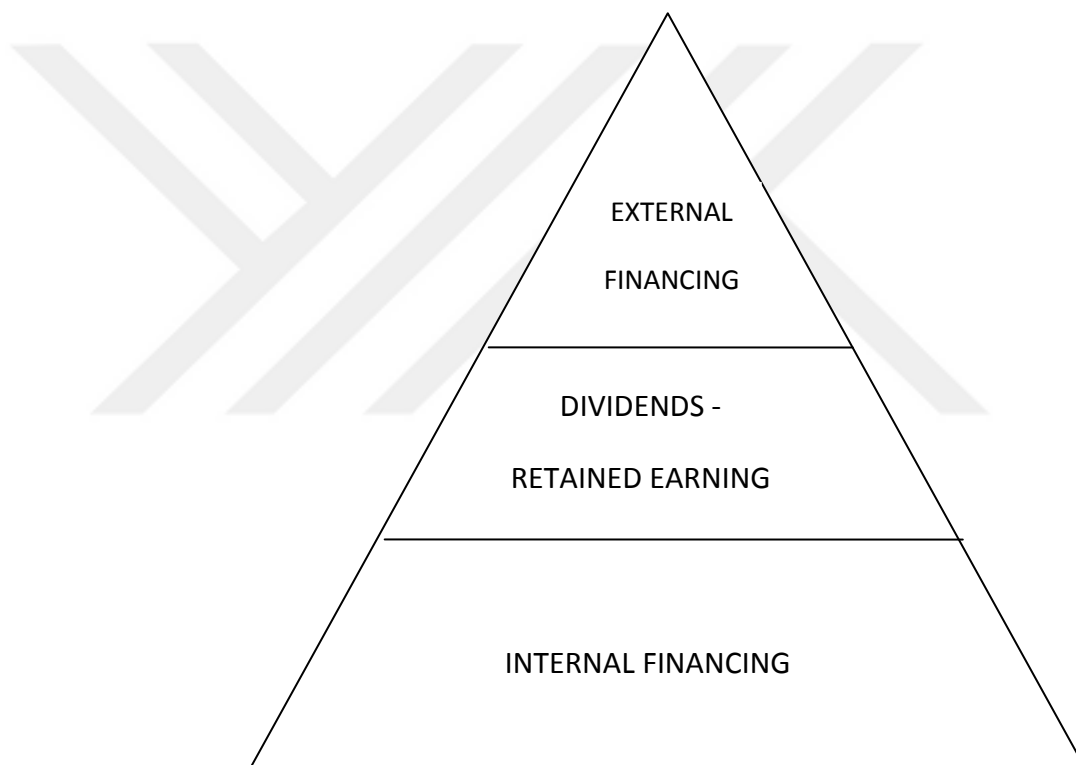
So, the investor will analyze a problem very carefully. Because, if the manager decides to sell securities, the investor will think about why the manager wants to sell securities than borrowings.

Basically, theory explains that when a company needs financing during the investment process it generally prefers internal financing. In this situation, managers

can minimize the asymmetric information costs for the company. If internal funding of the company is insufficient, the external funding becomes considerable. And firstly, the firm issues the safest securities. (Meyer and Allen,1991)

It must be noted that there are two types of external funding sources. One of them is retained earnings and the other is common stock. The retained earnings is the first useful funding source in external financing. If the quantity of financing is insufficient, common stock will be considerable. (Mandaci,2009)

Figure 4: Pecking order theory - assumptions hierarchy



Source: Mandaci,(2009)

Figure 4 illustrates the financial hierarchy that indicates the main assumptions in pecking order theory:

- Internal financing is the first useful and inexpensive choice for companies.
- Secondly, companies tend to use dividends as investment financing. Myers (1984) assumes that managers select dividend payout ratio as target for their outstanding investment opportunities.

- Thirdly, companies use external financing, such as convertible bonds, common stocks, etc.

Some scholars notice that pecking order theory is not suitable for all conditions. Because real world conditions for companies can be different than pecking order theory suggests.

So, company must analyze options for using the assumptions of pecking order theory by considering its own conditions. For example, let's assume that a company has not been profitable in late years, it has more borrowing, and the debt ratio is very high.

In this situation companies cannot use internal funding. If the company carries the second option of pecking order theory, company must tend to use more debts. But company has already more debts and debt ratio is very high.

Additional borrowings may put the company into financial distress. In this context, equity financing must be considerable and preferable for company.

In regards of the pecking order theory, scholars defined that cost and size were very important determinants in financial decision making. Pettit and Singer (1985) analyzed that in issuing new external sources, investors always wanted to get audited financial information. To prepare the audited financial information is very costly for companies, especially for small and medium-sized firms.

Whereas, all these costs are considered as zero or in minimum level in internal financing. Also there is no information problem and information costs in internal financing. So, the companies prefer to use internal financing. Faria and Mauro (2009), Razin, Sadka and Yuen (1998) also affirm these assumptions in their article.

Scholars also argue that there is no optimal capital structure in this theory. Beattie, et al. (2004) stated that pecking order theory did not support target mix of debt and security. And the managers of the companies are not planning long run target debt ratio. Instead, they try to choose the lowest costly financial decision for each working period. (Barclay and Smith, 2005).

Simultaneously, Sen and Oruc (2008) stated that debt financing could be more preferable than equity financing. Because beside the disadvantages, company can enjoy the tax advantages of the debt.

Researchers differentiated some superiorities for trade off and pecking order theories.

1. The targeting of debt amounts are very important for companies. Regarding to the trade off theory companies can define optimal capital structure that will balance between the advantages of debt and costs. Vice versa, in pecking order theory, firms do not imply any target and frames for amount of debts. Each firm obtains debt level on the basis of financing needs.
2. There are negative relationships between profitability and leverage ratio. It means that companies with high profit tend to use less debt. The main reason is that such companies generate more cash and use firstly internal financing. (Ross, Westerfield and Jaffe,2005).

By contrasts, trade off theory implies that companies with high profit will tend to use more debt, because of tax opportunity.

3. Some managers, who defend the pecking order theory, assume that company must determine the limits of additional financing needs and collect some amount of cash for the future operations.

Because the companies know that there will be some successful project in the future. And they will not lose time for finding financial needs. And cash reserve will meet all financing needs during project.

Van Horne (1998) presents that the use of pecking order theory in investing issues also helps management and decision making of organizations. Because using internal financing (retained earnings) avoids the scrutiny of suppliers and diminish floatation costs in a company.

1.5. AGENCY COST THEORY

Sometimes the intention of determining optimal capital structure may cause agency conflicts. Generally, these conflicts can be divided into two groups. One of them is conflict between managers and shareholders, the other is conflict between shareholders and bondholders.

In 1976 Jensen and Meckling noted that conflicts occurred in organization between managers and shareholders because of the increasing of cost in determining

optimal capital structure. Then researchers analyzed managerial conflicts and agency costs and gave another imperfection to the theory of Modigliani and Miller (1958).

The name of the theory was agency theory. This theory is defined on the basis of the Fama and Miller's (1972) work. Scholars defined agency costs as the sum of the residuals between monitoring expenditures by the principal and the bonding expenditures by the agent.

After the study of Fama and Miller (1972), scholars decided to measure the main problems that arise between managers, shareholders and debt holders. The results of investigations indicate that the main reason for agency conflict between shareholder and debt holder is a default risk. If there is no default risk, debt holder will not be interested in the income of the company.

In other hand, Niu (2011) assumes that the main reason for conflict between shareholders and bondholders is the determining of level of return over the bond. Especially, not written and enforced contracts are the beginning of the conflict between shareholders and bondholders. (Fama and Jensen, 1983)

In this case, shareholders try to realize some selfish strategies, such as taking large risks and accepting risky investments to injure the bondholders. But at the same time bondholders want to make written agreement for insurance of their rights against selfish steps of shareholders.

The name of this written agreement is **protective covenants** and it is a part of indentures between shareholders and debt holders. Protective covenants can be grouped into two forms. One of them is negative covenants which are:

1. The company will not make merger and acquisition strategies with other firms.
2. The company cannot sell or use their own major assets as a collateral in debts without confirmation of debt holder.
3. Dividend policy of the company must be defined before the indenture period and cannot change till mature period of indenture.

The other type of protective covenants is positive covenants. Positive covenants explain that the firm can decide the usage of its working capital and the company must provide periodical financial reports for the debt holders. Scholars

assumed that these protective covenants could decrease financial distress and agency costs and could make negotiations between shareholders and bondholders.

Another agency problem is conflicts between managers and shareholders. Jensen (1986) analyzed that the main problem in internal agency conflicts are that managers always try to provide decision over their self-interest.

For example, manager can give some financial and strategic decisions for their own benefits and perquisites. On the other hand, the owners of companies put some obligations to manager for maximizing shareholders' wealth. In this case, a problem arises.

Thu Thuy (2008) listed important agency problems caused by conflicts between shareholders and managers.

- First, managers prefer to have higher wage levels. If managers are not satisfied with wages level, they will perform reluctance on their decisions (Jensen and Meckling,1976).
- Secondly, managers wish to implement short-term projects, which yield early results and extend their reputation quickly. However, investors want to generate long-term projects (Masulis, 1988).
- Thirdly, managers can prefer less risky investments as the probability of bankruptcy will have a direct impact on the position of managers (Hunsaker, 1999).
- Fourthly, managers always want to expand employment and change corporate governance. Because in this situation, managers could resist takeovers (Garvey and Hanka, 1999).
- Fifthly, managers and shareholders could also disagree over a company's operating decision and planning. Managers may wish to invest all available funds as shareholders want to get dividends (Harris and Raviv,1990).

Jensen (1986) implies that the main solution of agency problem is debt financing which will mitigate the size of disputes. Myers (2001) also argued that the best and optimum alternative for the agency conflict was the organizational borrowing.

Debt may seem dangerous for the companies. But simultaneously, it is a big burden for managers, and debt will add value to the company by putting it in a form.

Agency cost defenders argue that the company must pursue the equilibrium between agency costs and benefits of the borrowings for determining optimal capital structure.

And this supplement must be considered in irrelevance theory of Modigliani and Miller. Harris and Raviv (1991) also emphasized that the optimal capital structure could be provided by the equilibrium between agency cost of the debt and advantages of the debt.

Implication of agency cost theory is very scarce and difficult. Some scholars assume that there are a few testable models of theory in reality. One of implication of models shows that there is relationship between debt ratio and growth opportunities of the company.

Titman and Wessels (1988) argue that growth opportunities are negatively related with leverage ratio. The explanation of results shows that it is very difficult to value and control growth opportunities in the company. And debt holders want a high return for financing of these opportunities. Under these conditions, the firms prefer to issue equity than the borrowing.

Bas, Muradoglu and Phylaktis (2009) also analyzed the relationship between agency costs and level of the companies. The findings indicate that there are few agency costs in small and medium-sized firms. Because, shareholders are the managers of the companies at the same time. And ownership reduces the agency conflicts. It means that, if the size of the firm increases, agency cost will increase significantly.

1.6. SIGNALLING THEORY

One of the important elements in determining capital structure is the signalling of information about the value and opportunities of the company. Basic research about information signaling in capital structure began with the investigation of Ross (1977).

Signaling theory basically describes that, manager tries to give good information to investors about the company. It will help to get more debt and it is a very important factor for obtaining optimal capital structure.

But in reality researchers assume that managers have better and more information than investors. If the shares of the firms are undervalued, managers try to increase share price by communicating this information to the market and investors.

Myers and Majluf (1984) also state that there is information asymmetry between investors and managers. It describes that investors have less information than managers. Taking into consideration information asymmetry, the market value will be higher than the value of common stocks.

The Increasing of leverage is accepted as a signal of undervaluation of stocks of company. And Leland and Pyle (1977) analyzed in their article that it was the main accepted signal for investors. Debt is also indicator of increasing default risk and bankruptcy risk.

And it is also signal of management problem which may occur in companies. Simultaneously, investors think that the issuing of equity is indicator of overvaluation. (Ross,1977)

Generally, Myers (1984) implies that it is very costly to give true information about total value of the firm for the investors. So, researcher mentions that pecking order theory is actual in this situation. Thus, companies firstly must use internal financing. Because the information and signaling cost is zero.

Fama and French (2005) conclude that the main indicator of signaling theory is information symmetry. Information symmetry directly influences the firm's investment decisions.

A large scale interview study by De Haan et al. (2007) shows that 54% of all firms prefer internal funds, 18% of all firms prefer debt and 3 % of all firms prefer share issues. 25% did not answer the questions.

The results of survey show that companies defend pecking order assumptions, prefer to use internal financing and want to minimize the negative effects of asymmetric information.

1.7. MARKET TIMING THEORY

Another important theory in capital structure is the market timing theory. Theory suggests that capital market conditions and the timing of equity issues are very important for the choosing of financing type.

Baker and Wurgler (2002) emphasized that another name of theory is Windows of Opportunity theory. Researchers assume that the market to book ratio is a successful indicator of timing. Theory states that if the market value is high, companies prefer to issue equity. And in this condition, cost of capital will also be in minimum level.

Welch (2004) documented that former stock prices are very important factor for market debt ratio. Scholar also emphasized that past stock returns and past financial decision over the periods must be considered for the future movements.

Hovakimian (2005) stated that market to book ratio is equal to weighted average of past market to book ratios. Baker and Wurgler (2002) formalized another equation for market to book ratio.

$$MB(\text{time}, t - 1) = \frac{\sum_{n=1}^{t-1} (e(s) - d(s)) MBs}{\sum_{r=0}^{t-1} (e(s) - d(s))}$$

According to equation, $e(s)$ indicates net equity on the determined period. At the same time, $d(s)$ means proportion of debts.

The firms prefer to issue equity when the stock price of the company is counted overvaluation. And when the stock price is undervalued, the firm tries to buy back its stocks. Usually, manager must consider and control the conditions of both of the debt and equity market. If the conditions of debt market are favorable, manager will use the debt market. In other way, equity market is preferable for the managers.

Hovakimian (2005) analyzed the assumptions of market timing theory in companies. The results proved that market to book ratio was negatively related with debt ratio. Findings are consistent with the analysis of Baker and Wurgler (2002).

1.8. SUMMARY OF THEORIES

Capital structure theory starts with Modigliani and Miller in 1958. After that many theories are forwarded to the literature. Modigliani and Miller assumed that capital structure choice had no effect on the total value of the firm in a perfect market.

Trade of theory suggests that Modigliani and Miller theory is not proper in real world. Because tax and financial distress cost are very important factors in capital structure theory. And companies can obtain optimal capital structure with balancing tax advantages and the cost of financial distress.

On the other hand, the pecking order theory emphasizes that companies firstly must use internal financing, because cost of this financing is zero. If the internal funding is insufficient, company can use debt financing and then equity issues.

Another theory in capital structure issues is agency cost theory. Agency cost theory indicates conflicts which occur between managers and shareholders, because of lack coordination of interests. Researchers assume that the debt financing can be solution of these conflicts. Thus, borrowings put more responsibility for managers and will decrease the size of disputes.

Additionally, signaling theory describes that, good information sharing with investors can be good signal and important factor for obtaining optimal capital structure. But in real worlds, it is fact that, managers always have better information than investors. Market timing is another important theory in capital structure. Theory suggests that capital market conditions and timing of equity issues are very important for the choosing of financing type. Theory indicates that, companies try to issue equity in the condition of high market value.

CHAPTER TWO

ECONOMICAL POSITION OF AZERBAIJAN REPUBLIC

2.1 HISTORY OF AZERBAIJAN FINANCIAL SYSTEM AND ITS CURRENT STRUCTURE

2.1.1 SUB PERIOD I (TILL 1991)

The financial system of Azerbaijan can be analyzed in two periods. The first sub period of financial system covers ancient times which proves the Azerbaijan statehood with the discovery of local coins.

Results of the scientific historical researches indicate that the first money found in Azerbaijan during the periods of Alexander of Macedonia and till XVIII century, Seljuq Empires, Shirvanshars, Shaddadis, Revvadis and Safavids minted their own coins and developed their economic and financial system. In 1828 Azerbaijan was divided into two parts with Turkmençay treatment which was signed between Russia and Iran. North Azerbaijan was the colony of Russian Empire and South Azerbaijan was in bondage of Iran. In 1860 Russian Empire formalized the Great National Bank of Russian Empire and after one year the main branch of the bank was opened in Baku.

In the XIX century, Azerbaijan was the capital of finance and industry. Thus, there were 200 financial institutions, 28 branches of commercial credit banks, 7 mortgage banks, 8 credit societies, etc. in Azerbaijan.

Main customers of banks in Baku were owners of oil and silk companies. However, entrepreneurs in cotton, wine and alcohol industries were known as the main customers in other regions of Azerbaijan. (Ibrahimov and Kerimov, 1997)

On 28 May of 1918, Azerbaijan established the first democratic republic in the Muslim World and became independent.

By the decision of new government, Ministry of Finance and State Bank of Azerbaijan Democratic Republic were established on March 7, 1919. The first branch of State bank was opened in Ganja. (Report of National Banks of Azerbaijan,

2009). After occupation of Bolsheviks at the end of 1920, all economical and government system was changed. By the decree of Council of Peoples' Commissariat, the name of State Bank was named as State Agricultural Bank of Azerbaijan.

The second sub period of financial and economic system began after the collapse of the Soviet Union in 1991. Independent economy of Azerbaijan after 1991 can be analyzed in two stages:

1. Chaos economy and redevelopment of economic fundamentals between 1991-1995
2. Macroeconomic stability and dynamic progress in economic and financial system after 1996

During the development period, the Azerbaijan Republic needed to develop political, social, economic and public systems. Unfortunately, a long lasting military conflict with Armenia over Nagorno Karabakh affected the newly-formed government, and Azerbaijan had to face difficulties, especially economic crises.

2.1.2 Sub Period II (after 1991)

In 1991 after the collapse of the Soviet Union, Azerbaijan declared independence. The country faced difficulties of long political and economic social turmoil over the independence period.

Beginning of the war with Armenia for the control of the Nagorno Karabakh region also impeded the development of the country. The area of Azerbaijan Republic is 86.6 square kilometers, with the population reaching 10 million (January 2014).

Gross Domestic Product (GDP) was determined as 2.7 billion AZM in 1991 and decreased by 13-20 % annually from 1991 to 1995 respectively. The decreasing of production activities caused the increasing of unemployment rates. Simultaneously, the actual salaries of population decreased in 8.2 times.

From the beginning of 1994, manat was the only means of payment in the country. All regulatory bank legislations and rules were renewed in 1996 and helped to take experience of financial and banking systems of developed countries (Report of National Banks of Azerbaijan, 1996).

In 1994 government started the exploitation of the Azeri, Chirag and Gunashli (ACG) oilfields. Since, a consortium of international oil companies began to invest oil sector of Azerbaijan

Total initial investment for oil sector was 13 billion USD and this project was named as ``Contract of the Century``. The Azeri, Chirag and Gunashli (ACG) oilfields This contract was the birth of new developments for Azerbaijan. According to the signed documents, total investment for exploitation was 64 billion USD (CESD Research Group, 2012).

The years from 1991 to 1995, referred as economic recession period. The negative outcomes of consequences of unsuccessful economic reforms and activities caused the following results¹ :

- paralysis of financial and banking systems
- Budget deficit, 13% of GDP in 1993
- The coverage of budget deficits by the National Bank caused to excessive money supply
- The amount of credits was counted 55-60% gross domestic product over 1992-1994
- Inflation of Azerbaijan manat and the weakening of exchange rates 9 times against Russian Ruble and 245 times against US Dollar
- Foreign trade turnover decreased over the reported period

Gross domestic product was decreased from 1990 to 1995 due to negative results of economic and financial crises. Total GDP was 2443 million USD in 1990 and 1629 million USD in 1994 respectively.

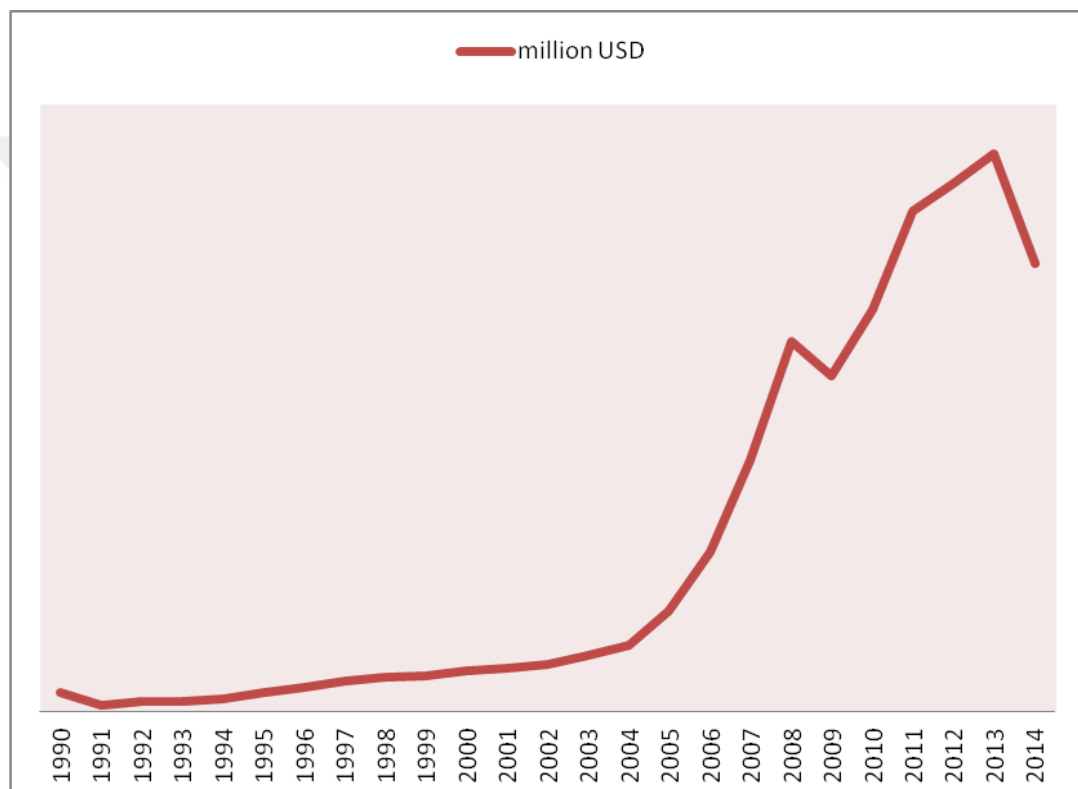
Since 1995 positive impact of new projects, the increasing of foreign direct investment level, employment of new legislations and regulations for the whole sectors have caused the increasing of GDP. According to State Statistic Committee, total GDP growth rate was approximately 8% in 1995 and 13% in 1996 respectively.

After 1996, oil projects and foreign direct investments to the oil sector gave revival to the economy and Azerbaijan Republic began to live macroeconomic stability and dynamic economical progress and stated high growth rates by years significantly.

¹ http://www.azerbaijan.az/portal/Economy/Reforms/reforms_e.html (23.12.2009)

Improvement of taxes and financial system, the renewing of private sectors, mitigation of juridical forms of financial system, reform and liberalization of trading helped to decrease the budget deficit, unemployment level and the increasing of GDP. So, total GDP was 3180 million USD in 1996, 5272 million USD in 2000, 13238 in 2005 and 73560 million USD in 2013 significantly.

Figure 5 Gross Domestic Product over the 1990-2014



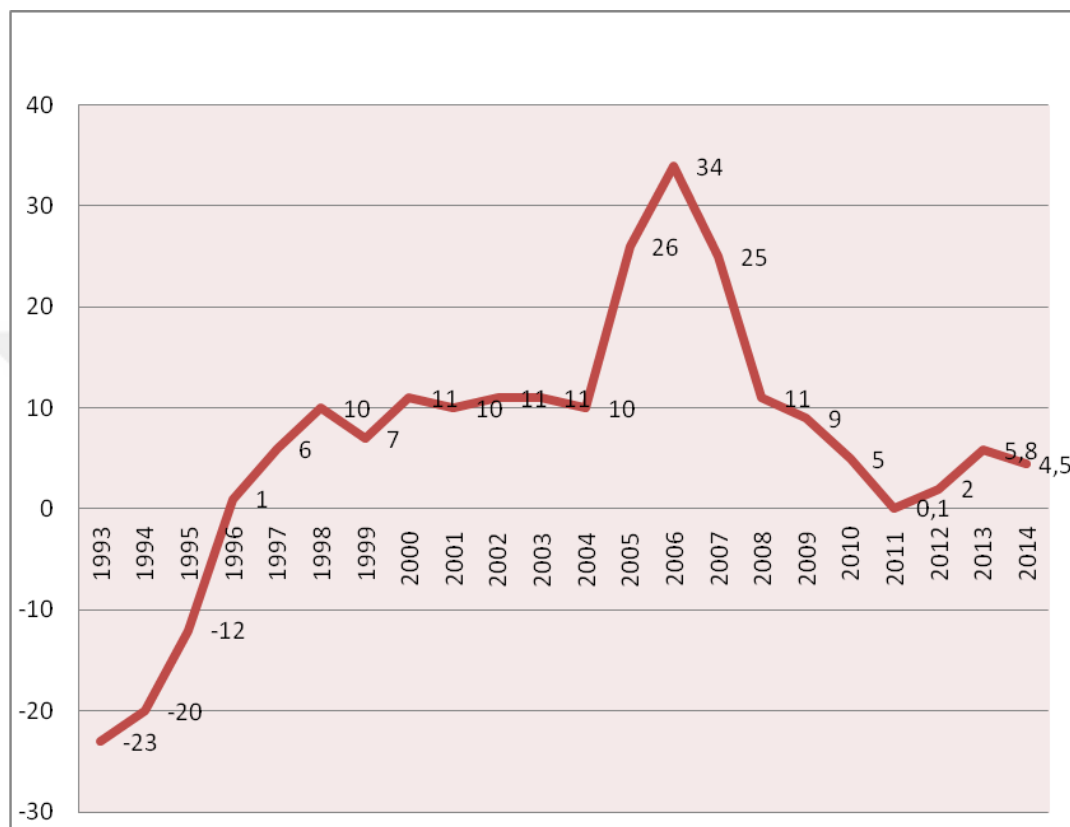
Source: State Statistical Committee of Azerbaijan Republic, (2014)

Figure 6 proves that over the latest 13 years total GDP of the country have increased approximately for 14 times. Only, in 2009 GDP decreased approximately 10% and 4555 million USD. Financial economists assume that the main reason for decreasing is negative impact of 2008 global crises. The net value of GDP was 58.9 billion in 2014.

GDP growth rate over the years is the fundamental indicator of development. Azerbaijan has performed high growth rate in gross domestic product since 1996.

The GDP growth rate was significantly indicated at 1 % in 1996, 11 % in 2000 and 26 % in 2005. The highest growth rate was 34 % in 2006.

Figure 6 GDP growth rate over 1993-2014



Source: World Bank Data, (2013).

According to the last five years results, after 2008 global crisis, the indicator of GDP growth rate was diminished to 0.1% respectively. But this figure increased to 5.8 % in 2013.

Generally, financial sector in Azerbaijan has five parts. Banks, microfinance institutions, insurance companies, small credit unions (non-banking credit organisations) and leasing companies (Commission of European Communities, 2005). Banking system is the main and important part of financial system. The country established two tiered banking systems which were developed on the basis of fundamentals of market principles and functions.

The first tier of system represents the National Bank of Azerbaijan Republic. It is also known as the Central Bank of the country. The second tier contains

commercial banks and non-banking credit organizations (Elmir Safarli, 2012). According to the 2013 Report of The Central Bank, there are 43 banks and 819 branches in Azerbaijan.

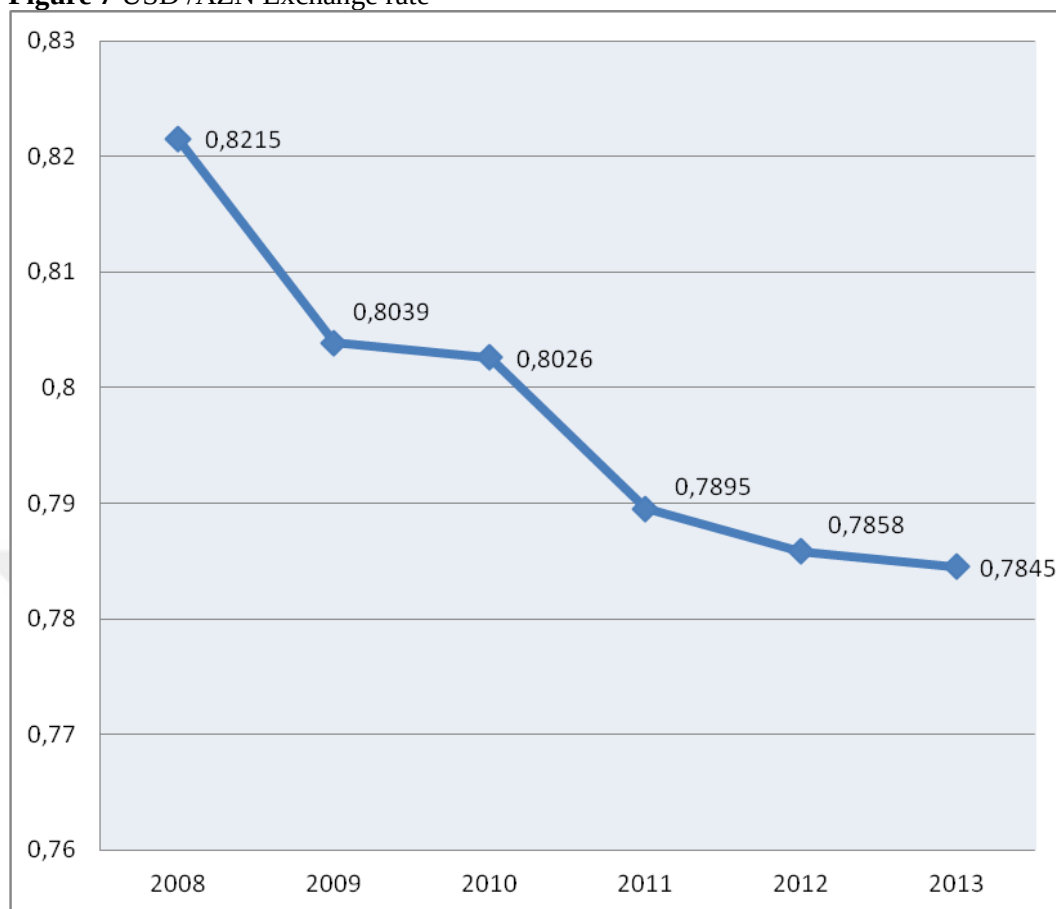
And in the third quarter of 2013, banking sector had approximately 330 million USD in profit. Interest income was the main profit indicator in regards of profit structure of banking system. Thus, this structure proves that today Azerbaijan Banking system is formalized on the credit based system. (Bayulgen, 2011)

The exchange rate policy was designed by the Central Bank to provide stable exchange rate system. Balance of payment status and ensuring financial sustainability also identify exchange rate policy.

So, taking into account the results of balance payments, 1584 million USD foreign exchange worth was provided during 2012 and 2457 million USD in 2013 significantly. It must be noted that supply also exceeds the demand.

As a consequence, appreciation of nominal exchange rate of manat against United States dollar was 0.19 % in 2012 and 0,17 % in 2013 respectively. The following figure indicates US dollar and manat exchange rate over the last years.

Figure 7 USD /AZN Exchange rate



Source: Central Bank of Azerbaijan, (2012 Annual Report)

Figure 5 indicates that in comparison with the previous year, total securities market increased 6% and valued 11.5 billion USD. 86% of total securities contain government securities. However, 14% indicates the corporate securities. Government bonds diminished 28.3% in 2012. (Central Bank of Azerbaijan, 2012 - 2013 Reports).

For additional information, Baku Fond Birjasi (Baku Stock Exchange) is the main stock exchange in the country which was established in 2000. The main roles of company are to provide the trading of securities, especially government, municipal shares and debt instruments, determining price and information system about dealers, formalizing market into classification of listing, the monitoring of market principles and laws, reporting to relevant organizations.

There are some important institutions that offer financial services and products for consumers. The activities of these organizations are based on financial payments, payment card operations, etc.

- *Azeri Post* - This organization is state-owned business which has 1200 branches. An important activity of the company is providing domestic and international money transfers. Azeri Post also provides payments of pensions and social funding.
- *Azeri Card* - This is the largest processing center which is a subsidiary company of the International Bank of Azerbaijan. The main activity of the company is the providing of payment cards for making local and international transactions. (World Bank,2006)

2.2. ECONOMIC POSITION OF AZERBAIJAN REPUBLIC

After independence Azerbaijan changed its planned economy to the transition into market economy.

Strong economical improvements and financial progress, achievements in the privatization, entry and improvement of local and financial institutions, the changing of legal, supervisory and regulatory framework were determined as the main beginning indicators of the country in the first decade of transition. (Buitter and Taci,2002)

According to the statistics of World Bank, consumer price index which is the main indicator of inflation, was 20 % in 1996, and approximately 10% in 2005 significantly. But this value increased in 2008 due to the results of global economical crises. However, after crises inflation rate decreased annually and was 2.4 % in December of 2013.

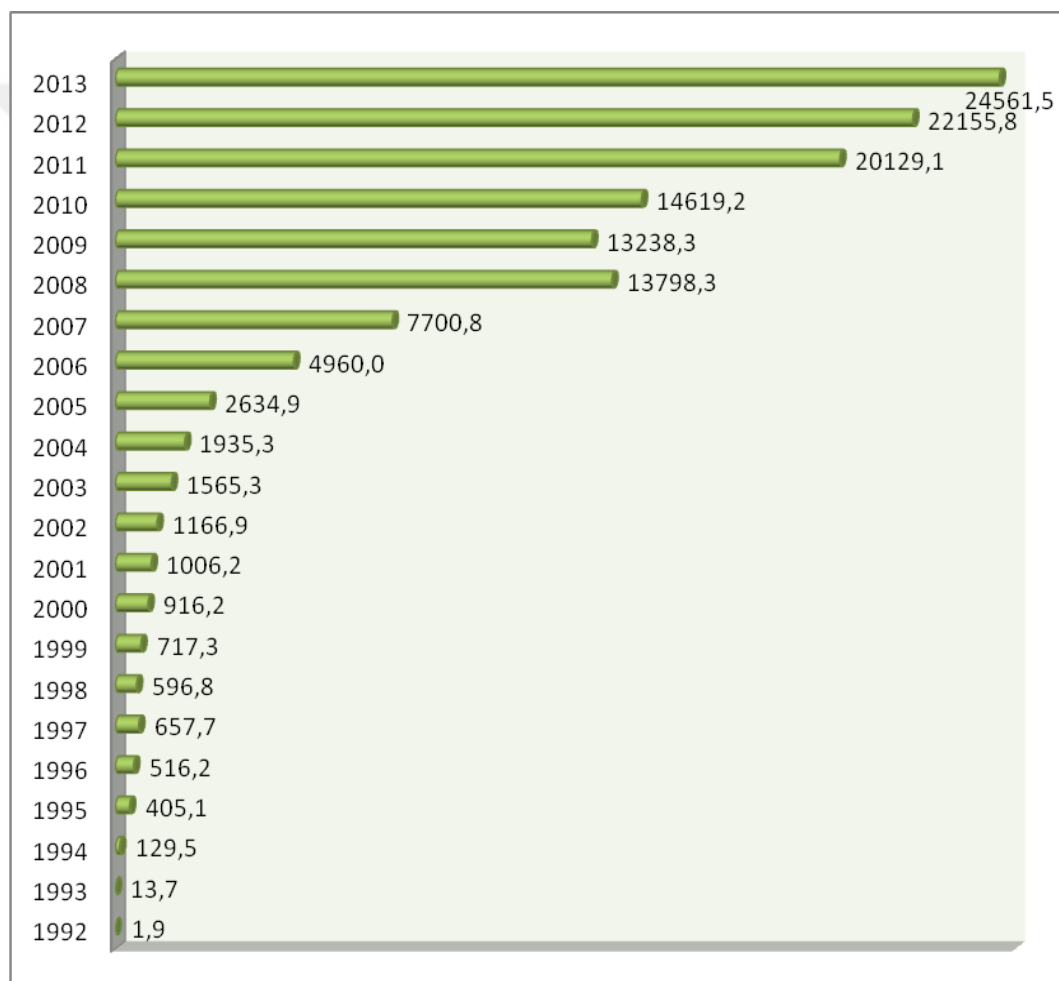
The economy of Azerbaijan depends on oil and gas sector. Several parts of foreign direct investments have been forwarded to this sector over the years.

``Contract of century`` oil contract, Baku Tbilisi Ceyhan oil pipeline, exploitation of Azeri Chirag Gunashli oil fields and Shahdeniz gas field are the most important and large scale investments projects in the country.

Increasing revenue from these projects helped to reduce poverty and unemployment level, reach dynamic growth and increase growth opportunities, ensure economic stability, increase diversification and development of non-oil sectors.

Dynamic economic growth influenced in turn the state budget. In comparison with revenues of the state budget in 1992, the state budget has increased more than 12 times over 20 years.

Figure 8 State Budget Revenues over the 1992-2013 (Million USD)



Source: Azerbaijan Ministry of Finance, (2013 annual report)

As seen from figure 7, the state budget revenues increase year by year. Total state budget revenue was 24.5 billion USD in 2012. Only in 2009 figures indicate 560 million USD decreases, which is considered the negative results of 2008 global

economic crises. The main share of revenues is income taxes from corporations and value added taxes and oil revenues.

Total state budget expenses were 25.4 billion USD in 2013. 50.7 % of state budget expenses were directed to current expenses, which include expenses on goods and services. Social expenses increased 10.6%. Total share of capital expenses was 45.5 % in 2013.

Large scale state investments from budget increased the level of modernization and made perfect the infrastructure of the country.

Lately, foreign trade position of the country has stated positive results. Total foreign trade turnover figured 34.7 billion USD.

According to the statistics in Table 1, total share of export was 24 billion USD, however total import indicated 10.7 billion USD. Trade balance was counted 13,3 billion USD.

Table 1 Trade balance

Years	Export (mln USD)	Import (mln USD)	Trade Balance (mln USD)
2010	21325	6599	14726
2011	26571	9756	16815
2012	23908	9653	14255
2013	23975	10713	13262
2014	31016	9187	21828
2015	25781	9221	16559
2016	20645	9221	11424

Source: State Statistical Committee, 2013

The large share of total foreign trade (including export and import) was channeled to European and CIS countries. Liquid and natural gas, oil and oil products, vegetables and food are the main exported products.

Regarding the report of The State Statistics Committee, share of non-oil products was figured 1.6 billion USD.

The changing of global energy and energy products prices influenced export and import values significantly. Thus, compared to previous years, import figures increased significantly. In contrary, trade balanced performed decreasing. The main import products are steel, metal, wheat, cement, potato, etc.

This changing also influences the value of current accounts balance. In terms of these figures, Azerbaijan achieves a leading position among the CIS countries.

All indicators of aggregate demand had a positive contribution to economical growth of the country. In 2013, nominal value of population's income increased 8,4%, in real terms this value was indicated 5,6 %.

Total population income in 2013 reached 48 billion USD. This value was 7,3 billion USD in 2003 and 26,5 billion USD in 2008. Over the 10 years total population has increased approximately 6,8 times.

26,5 billion USD of total population income was observed in Baku. This value indicates that the main employment region of the country is the capital. Total consumption expenditures increased 14,2 % in 2013. By the end of 2013, average monthly wage of population had been 26 USD.

The volume of monthly average wage was 57 USD in 2000 and 191 USD in 2006 respectively. The increasing of monthly average wage of population impacted to the increasing of purchasing power which is the main indicator of progress of real sector. The minimum life wage was defined 147 USD in 2013.

According to the investigation of the World Bank, poverty level of the Azerbaijan was 61% in 1996. The first State Program for Poverty Reduction and Economic Development covered 2003-2005 activity plan, and as a consequence, the results of project reduced the poverty level less than 20% in 2008.

The second State Program is currently in employment phase and will continue to 2015. (United Nations, 2010). There are four main goals of this program which are to provide economic stability, increase benefits of social policy, economic progress of sectors over the regions and development of existing potential (Hasanov,2010).

In regards to the information of Ministry of Economy, the poverty level of country was 5,3 % in 2013. Also, there are more than 1 million refugees and internally displaced people in the country. For the improvement of level of their life

conditions government signed special program and provide them with monthly social payments for each member of the family.(Allahveranov and Huseynov,2013)

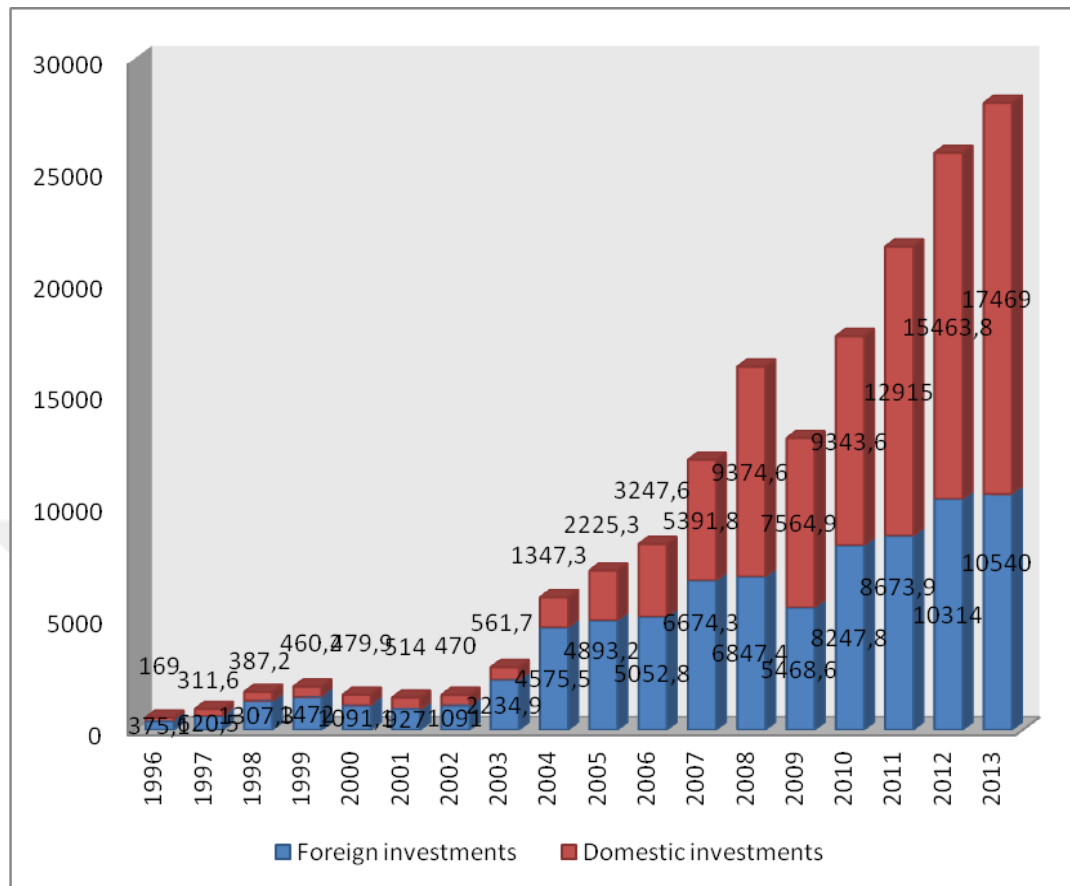
Total volume of investments in the country increased 8% and reached 28 billion USD. Foreign investments share was 10,5 billion USD in 2013. In regards to the history of foreign direct investment, foreign capitalization value was 1,3 billion USD in 1997, 4,8 billion USD in 2005 and 8,2 billion USD in 2010 respectively.

According to the State Statistics Committee 2,6 billion USD of foreign investment were financial credits issued by World Bank, International Monetary Fund, EBRD , etc. This type of financial sources is directly channeled for the providing of economic reforms.

4,9 billion USD foreign capital were directed to oil industry. Turkey, United Kingdom, United Arab Emirate and Netherland are the main countries that have relations with Azerbaijan in foreign investments issues.

Domestic investments were indicated 17,5 billion USD and valued to 25% of GDP. The main parts of domestic investments were channeled to non-oil industries which include construction sector, health sector, transport and tourism sectors.

Figure 9 Total investments over the 1996 -2013



Source: Azerbaijan State Statistical Committee, (2014)

According to the figure 8, only in 2009 total investment was decreased. As was said in previous sections, the main reason is the negative impact of 2008 global economic crises. The structure of the total investment also changes by years. It means that domestic investment exceeds foreign share of total investments.

For example, if the foreign investment was 4,8 billion USD in 2005, contrary domestic investment was 2,2 billion USD. It means 68,7 % of total investment was foreign investment. Statistically, it was 68,9% in 1996 and 37,6 % in 2013 significantly.

It is necessary for Azerbaijan to increase the level of domestic investments and internal savings in order to provide economic stability. As a result of oil and gas export, country targets to get more liquid gold and cash reserves for forthcoming risk and crises.

In regards to sources of investments, the main parts of domestic investments contain financial sources of companies. In some important government realized projects the main investment source is budget investments. Bank credits, population recourses are other types of investment sources.

Another macro-economic indicator of the country is employment level. The number of employed population of Azerbaijan was 4,7 million. Compared to CIS countries, this figure is 4,5 million in Belarus, 8,5 million in Kazakhstan and 1,2 million in Moldova. The main work area in Azerbaijan is the capital.

It means that income per capita in Baku exceeds regions and is twice as high as the population of regions. According to the statistics, most part of the employed population work on agriculture sector. Public administration, transportation, construction and education are the most preferred working sectors.

On the first level of independence, ``brain drain`` was realized in the country. Most of the unemployed population went to foreign countries and it effected the development of the country. But, after 2000 government began to wide effects of social reforms. All sectors are developed, new private and public enterprises were established and most part of unemployed people began to work.

International rating agencies also appraised the economic situation and development of Azerbaijan. Thus, credit rating of Azerbaijan has increased significantly. World Bank and other international financial corporation consider Azerbaijan to be the leading country which has stable economic growth.

So, they improved level of the country in ``Doing Business`` reports. Azerbaijan is ranked as a high average income country in classification of World Bank. (UNDP, 2013Azerbaijan 2020)

2.3 DEVELOPMENTS IN NON-OIL SECTORS

Before independence times, over the 1920 - 1990 periods, oil industry was the main economical sector in Azerbaijan. Statistically, this sector provided special proportion of national income.

During World Wars, oil industry of Azerbaijan was considered important sector for USSR. Because Azerbaijan provided 70% oil demands for the Soviet

Union and so, the empire mainly focused on the development of Azerbaijan oil industry.

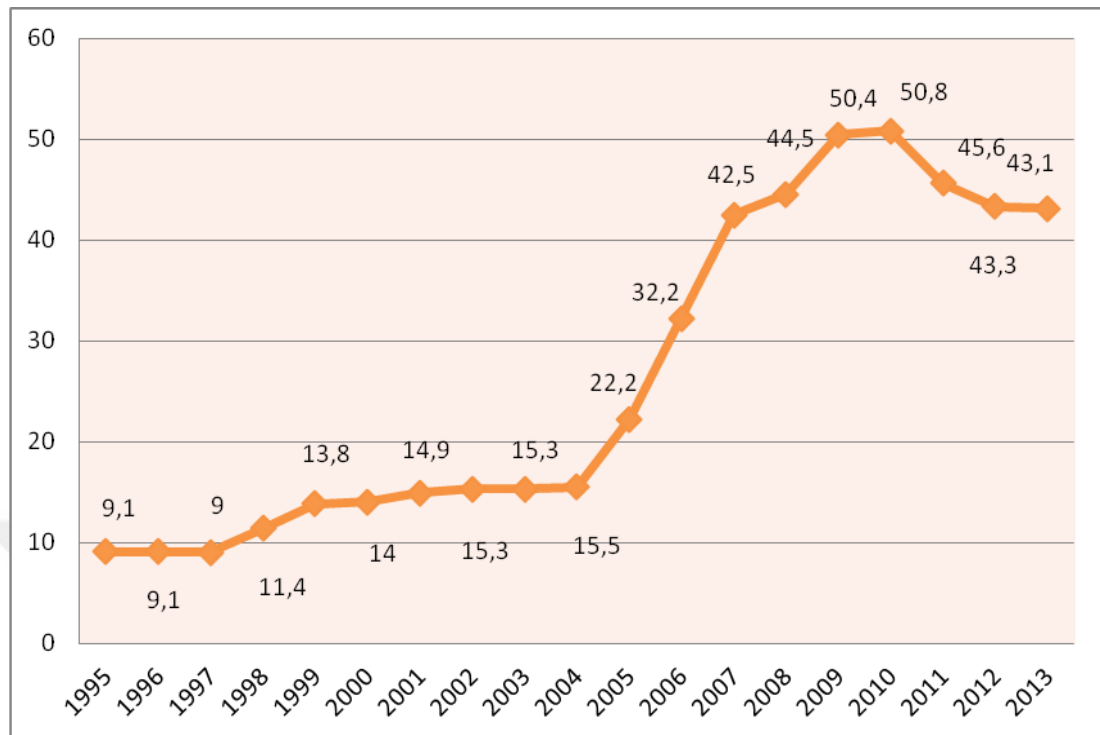
After independence oil sector was the main income resource for the country. And development of the country is directly related with the increasing of oil exports. Over the crisis period of independence, in 1994 Azerbaijan government decided to use exploitation of Azeri, Chirag and Gunashli new oil and gas fields which will be the beginning of growth for the country.

Experts assumed that the potential balance of these reserves was 6 billion barrels. And it was great reference for signing far-reaching contracts, especially ``Contract of Century``.

After these contracts new development pages were opened to Azerbaijan. Baku Supsa and Baku Novorossiysk were the main pipelines for the exporting of oil products. Even these pipelines were not able to provide the exporting of oil.

So, government decided to build new Baku-Tbilisi-Ceyhan pipeline for exporting oil to European Countries over Turkey. And this project helped to revive the economy (CESD,2012). As a consequence, the economy of the country reached high growth rates over the years.

Figure 10 Oil production over the 1995 - 2013 (million tons)



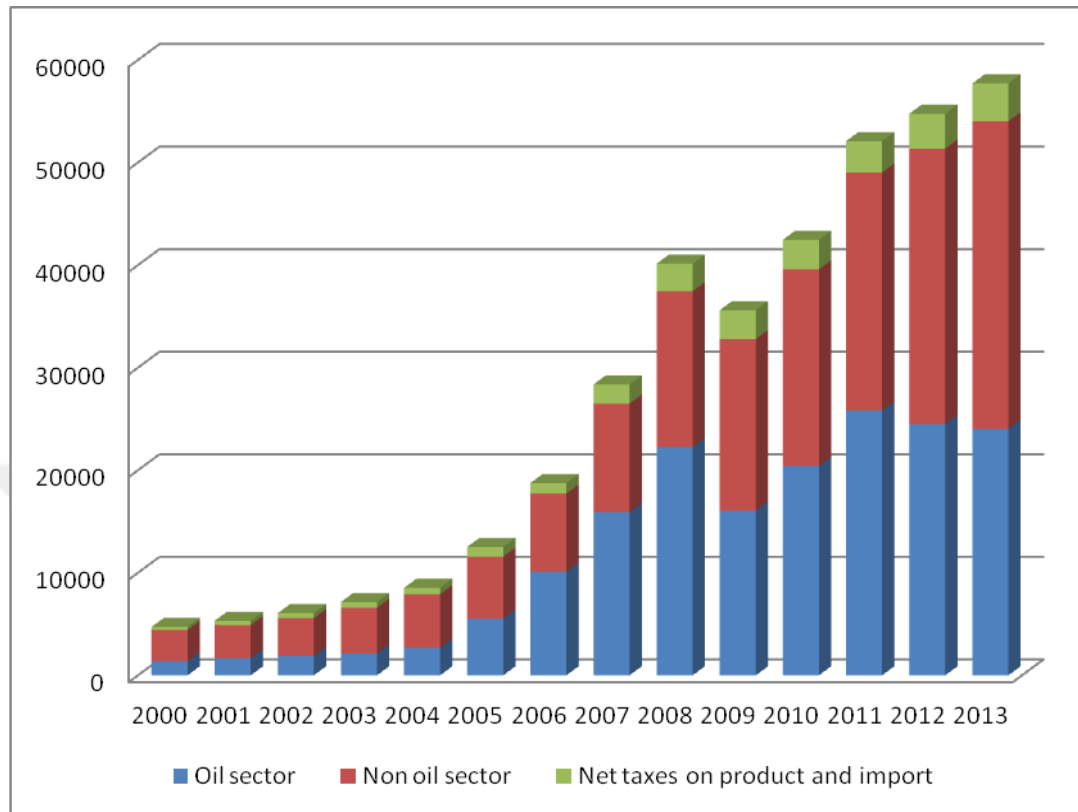
Source: State Statistical Committee, (2014)

In regards to Figure 9, 9,1 million tons of oil production were determined in 1996. This figure was 14 million tons in 2000 and 32,2 million tons in 2006 significantly. The Increasing of oil production in 2007 effected 25 % growth in GDP. Maximum oil production was indicated in 2010 as 50,8 million tons.

The latest 3 years oil production shows decreasing trends. Economists and oil engineering experts argue different reasons for decreasing. Some economists assume that the main cause is erroneous estimation of oil reserves and production.

In spite of economists, oil engineering experts note that, there are unexpected problems for exploring depths of oil fields. So, it leads to exploitation of areas of activity.

Figure 11 GDP production in the section of oil and non-oil of economy



Source: Azerbaijan State Statistical Committee, (2014)

As Figure 10 indicates, the share of oil industry in annual gross domestic product increases significantly by years. For example, total gross domestic product was 36,4 billion USD in 2007. 20,4 billion USD of GDP is the harvest of oil industry.

However, 13,5 billion USD is results of non-oil sector. The share of the oil sector is 31,3 billion USD and non-oil sector is 34,4 billion USD in 2012 significantly.

After the decreasing of oil production, government and experts decided to diversify economy and to diminish dependence of the economy on oil industry. So, oil export incomes, especially most share of budget will channeled to the development of non-oil sectors in the following years.

2.3.1 Agriculture

Agriculture is the main potential non-oil sector that provides the socio-economic development in Azerbaijan. Climate and soil structure of the country is propitious for agricultural development. Agriculture sector provided 3,5 billion USD and approximately 5,2% of GDP in 2012.

Husbandry is the main part of agriculture and this sector is pursuit of population living in rural areas. Wheat, tea, cotton, vegetables, fruits contain the main parts of agriculture. Lankaran, Guba, Gabala, Masalli are the most suitable regions for cultivating vegetables.

Cotton was important product in history of Azerbaijan. In the 15-16 century, cotton was considered as strategic product. Thus, Azerbaijan was one of the cotton producer in the Soviet Union.

Annually, production plan was approximately 1 million tons. Due to the decreasing of world cotton prices, production value had reduced automatically.

One of the important agricultural products is wheat. Generally, total 2,8 million tons of cereal were produced in 2012. This value was figured 1,5 million tons in 2000 and 2,1 million tons in 2005 respectively. The Increasing of cereal production causes in parallel to the decreasing of wheat imports. Kazakhstan and Russia are the main countries for wheat import.

Grapes are one of the most produced agricultural products. Totally, 151 thousand tons of grapes were produced in 2012. But in 1985, grape production was indicated as 1,7 million tons. After independence government decided to destroy all grapes plantation and used all areas for cereal productions.

The main reason was to reduce dependence of wheat from import. During the last years, the increasing of grapes production stimulated development of winemaking industry too. Ganja Wine Factory and Baku Wine Factory are the main producers in this industry and products of these enterprises are exported to European countries.

Another traditional product is tea. Azerbaijan has begun to produce tea since 1930. The main and important region for tea production is Lankaran. Totally, 57.000 tons of tea were produced in 2012.

Cattle breeding and poultry are important type of agriculture. After privatization program in 1998 cattle breeding was the profitable business type. Statistically, the number of cattle and poultry increased compared to previous years.

Statistically, 2,7 million cattle, buffalo and 8,6 million sheep and goats, 24,5 million poultry were figured in 2012.

In parallel to cattle breeding and poultry, the level of meat, milk and egg industry had also improved. Private enterprises had increased the production level of milk and milk products, for the last three years. Total 1,7 million tons of milk and milk products were produced in 2012. Meat production was 285.000 tons in 2012 and 263.000 tons in 2011 significantly.

Statistically, Table 2 indicates that there were 1864 agricultural enterprises in Azerbaijan in 2012. 241 of them were state-owned enterprises. Also, 2 collective farms and 72 cooperatives are employed to agricultural sector. There are also 504 service organizations, which make exports and sales services of agricultural products.

Table 2 Number of agricultural enterprises, service organizations , to the end of the year

Years	Total	including					
		agricultural enterprises	including				service organizations
			state enterprises	collective farms	Cooperatives	other private	
2000	2910	2653	408	2	250	1993	257
2001	2420	2191	247	2	182	1760	229
2002	1984	1759	319	2	168	1270	225
2003	2143	1918	302	2	157	1457	225
2004	2241	1988	302	2	165	1519	253
2005	2506	2182	303	2	164	1713	324
2006	2518	2208	274	2	156	1776	310
2007	2282	1925	264	2	162	1497	357
2008	2308	1854	257	2	88	1507	454
2009	2409	1913	249	2	83	1579	496
2010	2336	1825	217	2	73	1533	511
2011	2343	1917	254	2	69	1592	426
2012	1864	1360	241	2	72	1045	504

Source: Azerbaijan State Statistical Committee, (2013)

After 2005, government signed special state programs for development of agricultural sectors. The most important program is payment of subsidiary financial sources to agricultural enterprises. Also, National Fund for Entrepreneurship Support under Ministry of Economy gives long term credits with minimum interest rates for improvement of agriculture.

2.3.2 Construction

Due to stable and strong economical and social development, construction sector improved rapidly over the 1996-2012. After gaining dynamic increasing oil

revenue, government decided to strengthen infrastructure of the country and channeled some parts of budget income to construction sector.

Many new roads, bridges, skyscrapers, complexes, plants and factories were built, and historical buildings, architectural structure of the country were restored.

Statistically, total investment to the construction sector was 19,7 billion USD in 2012. 15,5 billion USD of total investment was domestic and the share of foreign investment was figured 14,3 billion USD.

This indicator was figured as 1,2 billion USD in 2000 and 9,5 billion USD in 2007 respectively. The main foreign countries are Great Britain, The United States of America, Japan and Turkey. 12 billion USD was directed to the construction projects of the state. 7,6 billion USD investment was transferred to private construction.

Total growth rate of construction sector was 23% in 2013. The increasing growth rate of construction sector and the realization of new projects also influenced the increasing of employment level. Monthly average wage in construction sector is 750 USD.

Some construction companies of SOCAR, Azersutikinti, Azerenerjitikinti are the main state-owned construction companies. Zqan Holding, Ata Inshaar, Gilan Inshaat, Pasha CONstruction are private companies in construction sectors.

The development of tourism areas, hosting international, political, economic, sport and art conferences and projects also stimulate improvement of construction sector. Thus, the construction of Crystal Hall for Eurovision concerts, Olympic stadium for international games, Flame Towers, Fairmont Hotel for tourism sector are main examples.

Pipeline constructions, Industrial building and factories are also important projects in the country. Progress in growth rate of construction sector effected to the production activity of construction materials.

Domestic production and quality of production is not sufficient for material demand, thus, companies encourage and realize import of construction materials. The main cement, gyps, limestone producers in the country are Garadagh Cement, Matanat A and Norm LLC.

2.3.3 Health

After independence period Azerbaijan transferred some parts of budget incomes to health sectors. Because, hospitals and medical instruments did not meet modern and innovative requirements. Total expenses from budget in 2012 was 781 million USD. This indicator was 94 million USD in 2004 and approximately 444 million USD in 2008 respectively.

The number of physicians for all specialization was 32.000 people in 2013. Total 35 physicians are responsible for health of 10.000 people. Total amount of hospitals was 539 in 2013 and 43.200 beds are figured over all hospitals.

Table 3 Health sector statistics

Years	Number of Physicians	Number of Hospitals	Number of beds (thousand)
2000	28,5	739	71
2001	29	735	69,9
2002	29,1	735	69
2003	29,5	738	68,7
2004	29,7	734	68,1
2005	30,1	732	68,4
2006	30,6	729	68,9
2007	30,8	726	68,4
2008	32,4	748	68,1
2009	32,5	752	67,8
2010	32,8	756	67,4
2011	33,1	516	45,8
2012	31,4	523	42,4
2013	32,3	539	43,2

Source: Azerbaijan Health Ministry,(2014)

As seen in Table 3, the number of hospitals indicates the decreasing for the last years. The main reason for the diminishing of the number of hospitals was reforms of legislation, and health safety laws applied by the ministry of health.

Improving quality and quantity of new private health organizations and companies causes development of health sector.

Thus, government encourages and gives financial sources for education of student abroad in health area. The graduation of these students increases quality of health sector in the country. Also, progress of academic researches effects the improving of health sector.

2.3.4 Financial sector

The financial system is the major non-oil sector in Azerbaijan. There are five parts of the financial system, which are banks, microfinance institutions, insurance companies, small credit unions (non-banking credit organizations) and leasing companies. (Commission of European Communities, 2005)

Banking system was established as a two-tiered banking system which is developed on the fundamentals of market principles and functions. The National Bank of Azerbaijan represents the first tier of system and plays the role of Central Bank of the country. The second tier of system indicates commercial banks and non-banking organizations.

In regards to 2013 report of Central Bank, there are 43 banks and 819 bank branches in Azerbaijan. And in the third quarter of last year banking sector generated approximately 330 million USD profit.

Interest income was the main profit indicator in regards to profit structure of banking system. Thus, this structure proves that today Azerbaijan Banking system is formalized on the credit based system. (Bayulgen, 2011) The exchange rate policy was designed by the Central Bank to provide stable exchange rate system. Balance of payment status and ensuring financial sustainability also identify exchange rate policy.

Note that, on the backdrop of the country's balance of payments surplus, supply exceeds demand in Azerbaijan's foreign exchange market. In this regard, the Central Bank of the Republic of Azerbaijan (CBA) made purchases of USD 1584 million in 2012 and USD 2457 million in 2015 significantly. These moves helped

limit the appreciation [of the nominal exchange rate] of the manat against the US dollar to 0.19% in 2012 and 0.17% in 2013 respectively.

2.3.5 Communication sector

After the crisis period of 1996 Azerbaijan began to reform the whole system within the sectors. Azerbaijan joined the Global System for Mobile Telecommunications (GSM) in 1996 and began to use the internet, information and communication systems. The launch of wireless system in Azerbaijan also stimulated the sector's development. Real Price of communication services in the country was USD 1.8 billion in 2012, compared to USD 192 million in 2000 and USD 756 million in 2006, accordingly. The core services within this sector include: international call services, telephone services, internet services, DATA services, and information services.

Table 4 Communication sector turnovers (thousand USD)

	2008	2009	2010	2011	2012
Total	1 218 715	1 387 105	1 512 360	1 631 963	1 845 787
<i>communication services</i>	<i>1159179</i>	<i>1242873</i>	<i>1394590</i>	<i>1460771</i>	<i>1645331</i>
telecommunication (services of trunk and international communication)	681	903	815	1150	782
trunk and international telephone	189832	198014	218471	257776	296403
urban and rural telephone	62127	63392	68005	68794	70372
mobile telephone	855694	910895	1006940	1005096	1119010
internet (in broadband services)	31754	46146	54259	79226	110674
DATA services	4901	7729	10874	13424	14983
other services	14191	15794	35226	35305	33106
<i>services on information</i>	<i>59536</i>	<i>144232</i>	<i>117771</i>	<i>171192</i>	<i>200456</i>
activities on publishing	27521	37758	20459	21149	23651
programming, broadcast of radio and TV programs	21195	34150	35295	43383	57206
development of software and advises in this field	7809	27360	24664	44268	45224
other services	3012	44965	37353	62392	74374

Source: State Statistical Committee of Azerbaijan, (2013)

Azerbaijan's telecommunications services industry mainly provides two services: communications, and information technologies. According to Table 4

above, communications and information technologies, respectively, achieved turnovers of US\$ 1.6 billion and US\$ 200 million in 2012.

The companies and organizations involved in the telecommunication sector seek to apply global technological changings and innovative technology ideas in the country. There are three major mobile phone operators currently in Azerbaijan: Azercell, Bakcell and Azerfon.

All post offices were equipped with automotive computer systems. The government has launched a new program to develop an electronic government (e-government) to include all ministries and other government organizations.

One of the most important developments in communication sector occurred in 2013. Azerbaijan's first telecommunications satellite *Azerspace-1*, managed by Azercosmos specialists, was successfully launched into orbit². According to AzerKosmos, Azerbaijan will use around 20 percent of Azerspace-1's capacity for its own domestic needs. The remaining 80 percent will be made available to commercial customers.

² <http://en.president.az/articles/7257> - 05.05.2014

CHAPTER THREE

LITERATURE REVIEW- EMPIRICAL

STUDIES ON DETERMINANTS OF CAPITAL STRUCTURE

3.1 EMPIRICAL STUDIES - (1958 - 2000)

After the primary work of Modigliani and Miller (1958), the source and the structure of financing has been the main research question in the literature. Periodically, scholars also tried to measure determinants of the capital structure.

Some studies have been focused on developing and developed countries and some of them have been tested over the combination of sample countries to compare international strategies.

The main part of existing literature embraces models on a basis of certain firm level indicators, such as size, profitability, growth opportunities, etc.

The main purpose of the research of Titman and Wessels (1988) is to determine the effect of unobservable factors on the leverage ratio of companies by using factor analytic technique. Total 469 manufacturing companies were included to the sample over the 1974-1982 period. Regards on the result of investigation, uniqueness and firm size are negatively related to leverage levels. They also indicated that transaction was the main variable for determining capital structure.

Scholars emphasize that the results are consistent with arguments of Myers and Majluf. The results also conclude that there is no significant relationship between non-debt tax shield, volatility, collateral value, future growth and leverage ratio.

Harris and Raviv (1991) gave theoretical explanation about capital structure theories, especially agency cost and information asymmetry. They surveyed details of theories and provided brief overview.

Rajan and Zingales (1995) analyzed the firm specific factors of capital structure in public firms. G-7 countries (the United States of America, Japan, Germany, France, Italy, the United Kingdom and Canada) were the main sample for research.

Financial companies such as banks and insurance companies are excluded from sample, because their large scale debt financing influences the robustness of

empirical results. Scholars used four firm specific variables, such as tangibility, market-to-book, logsale (logarithm of net sales) and profitability.

According to empirical results of the study, all variables are significantly related to firm leverage only in USA companies. Results of regression analysis also determine that tangibility is significantly related to debt ratio in Japan, Germany, France, the United Kingdom and Canada.

There is negative and significant relationship between profitability and leverage in Japan and Canada. Market to book is explanatory for Germany, France, the United Kingdom and Canada. And Logsale is significantly related to debt ratio in Japan, Germany, the United Kingdom and Canada.

Kjellman and Hansen (1995) investigated the practice of capital structure theories on the listed companies of Finland. Authors surveyed that size of the firm was a very important factor for capital structure and corporate governance.

So, small companies do not prefer to borrow and tend to preserve the corporate governance. Scholars also resulted that macro-economic conditions did not have any specific effect on the choice of financial resources.

Hussain and Nivorozhkin (1997) analyzed the determinants of capital structure in Poland companies. 17 companies are selected for testing over the transition period of the country, 1991-1994. In regards to results, the age of the company was explanatory determinant for companies.

Thus, firm age has negative and significant relationship with leverage level of the company. It means new firm uses more debt than older one does. Firms size is positively related to the debt ratio. Otherwise, tangibility has negative effect on the financing choice of the company.

Chen, Lensink and Sterken (1998) studied the determinants of capital structure in Dutch companies. The main objective of analysis is to measure the relationship between determinants and leverage ratio of the firm.

Total 51 firms are tested over the 1984 - 1995 periods. Financial debt ratio is the main variable of research. Thus, scholars counted leverage ratio in two forms.

$$1) \text{ Leverage ratio} = \frac{\text{Total debt}}{\text{Total equity book value}}$$

$$2) \text{ Leverage ratio} = \frac{\text{Total debt}}{\text{Total equity market value}}$$

Authors mentioned that it was very hard to measure market value of outstanding share. So, the formula with equity book value was used in tests. Tangibility of the companies, size, growth, profitability, earning volatility are defined as independent variables in equation.

Researcher argues that the findings of investigation are relevant to pecking order theory assumptions. Profitability, tangibility and growth opportunities are significant at 1 % significance level.

The coefficient signs of all relationships are obtained positive. Only profitability is negatively related to debt ratio. Size has positive and significant relationship with leverage ratio at 10 % significance level. Earning volatility was found insignificant in tests.

One of the main studies about capital structure and implementation of theories is investigation of Myers and Sunder (1999). The main purpose of this article is to analyze differentiation of factor effects between trade off theory and pecking order theory. Total 157 companies of the United States of America were implemented for tests over the 1971-1989 period.

Empirical findings indicate that tangibility has positive relationship with leverage level of the company. It means that companies with more tangible assets use more debt financing. Profitability is negatively and significantly related to the leverage ratio of the firm.

Author indicates that all these results are consistent with pecking order theory. The retesting of sample by using cross sectional analysis significance level and coefficients of variable are found unchanged.

3.2. NEW PERIOD INVESTIGATIONS - (AFTER 2000 periods)

Miguel and Pindado (2000) investigated the determinants of capital structure in Spanish companies. Total 133 companies were selected for testing over the 1990-1997. Panel data regression analysis is the main measurement system in research.

Findings of test indicate that transaction costs are inversely and significantly related with leverage ratio. Authors emphasize that the transaction costs are in minimum level in Spanish companies.

Secondly, financial distress also has negative relationship with debt. The relationship is significant in analysis. Finally, cash flow is negatively and significantly related with debt.

Boateng (2001) analyzed the determinants of capital structure of 41 firms in Ghana. The sample companies have some partnerships with North America, Asia and Europe. The author used firms size, ownership control and industry type as explanatory variables.

Data are collected via questionnaire in a sample companies. Questionnaire is tested in two stages. Firstly, professors of Ghana and UK, secondly 6 managers who work in top management of the companies analyzed the quality of tests. Then the questionnaire was conducted to the companies.

ANOVA test was applied for determining results of analysis. The results show that firm size, industry type and ownership control are positively related with leverage ratio of the firm. All these relationships also also significant.

Another paper analysed in capital structure over international level is study of Booth, Aivazian, Demircuc Kunt and Maksimovic (2001). This investigation covers 10 countries all over the world (Brasil, Mexico, India, Korea, Jordan, Malaysia, Pakistan, Thailand, Turkey and Zimbabwe) . Sample size and sample period differ for each country.

For example, 49 companies were selected from Brasil and investigation covers 1985-1991 period. Total 96 firms were tested from Malaysia over the 1983-1990. In regards to the results of regression analysis profitability, market to book ratio and tax rate have negative relationship with debt ratio. Vice versa, tangibility and firm size are positively related to leverage level of the companies.

Ozkan (2001) investigated the firm specific determinants of capital structure in United Kingdom companies over the 1984-1996 periods. Total 390 companies are selected for measuring the level of relationship.

Results of analysis provide that growth opportunities are negatively and significantly related to the leverage level of the company. Simultaneously, size has positive and significant relationship with leverage.

The sign of the non-debt tax shield is also negative and significant. There is negative relationship between liquidity level of the company and debt financing. Profitability has negative influence on the leverage ratio of the firm.

In terms of European countries, Bancel and Mitto (2002) researched the determinants of capital structure. Total 16 countries are selected for measuring financing decision and effecting factors of the companies.

Empirical results determined that financial flexibility and credit ratings were strong explanatory factors for the debt decision of the company. At the same time volatility and interest rates have positive relations with leverage level of the companies.

Antoniou, Guney and Paudyal (2002) researched determinants of capital structure in European countries. Germany, the United Kingdom and France are selected for the testing of capital structure theories in this paper. Sample covers 1987-2000 period for Germany, 1983-2000 period for France and 1969-2000 period for the United Kingdom.

Firm size is positively and significantly related with the leverage level of the companies for all countries. At the same time, interest rate has negative and significant effect on the debt ratio of the companies. Profitability and market to book ratio are also negatively related with borrowings for all countries with exception of Germany.

Tangibility is significantly related with the leverage level for Germany and the United Kingdom. The signs of variables are positive and negative respectively. However, this value is insignificant for France companies. Simultaneously, liquidity and volatility do not indicate significant relationship with leverage.

Results of some previous investigations provide that there is relationship between ownership structure of the company and financing choice. Warokka and

Herrera (2002) analyzed 481 companies in 5 ASEAN countries. Empirical findings proved that there were negative significant correlation between size and free cash flow. Size is also negatively correlated with managerial share ownership.

From capital structure aspects external block ownership, size are positively related with capital structure choice. In other way, growth in total assets has negatively significant relation with leverage ratio. Free cash flow, profitability and non-debt tax shield are not significant.

Chen and Hammes (2003) analyzed explanatory degree of firm specific variables in 7 countries. Time, profitability, size, tangibility and market to book ratio are selected independent variables in analysis.

Sample of study covers 1989-1996 periods. Total 77 companies are selected from Canada, 92 companies from Denmark, 147 companies from Italy, 421 companies from USA, 200 firms from UK, 345 firms from Germany, 115 firms from Sweden.

In regards to the results of empirical measurement, profitability has negative impact on leverage ratio. However, tangibility has positive influence for capital structure. And both of the relationships are statistically significant for all countries.

Market to book ratio is negatively related with borrowings of companies. Size has also high explanatory degree on the leverage ratio of the companies.

Jorgensen and Terra (2003) investigated the role of firm specific factors and macroeconomic indicators on the capital structure in Latin America countries. Total 707 public firms are selected from 7 biggest countries of Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela) over the 1986-2000 period.

Authors use panel data regression analysis for measuring the level of relationship. Jorgensen and Terra emphasize that financial institutions, such as banks, insurance companies, investment corporation, etc. are excluded from study sample. Because, the leverage level of these institutions influence the exact calculation and robustness of the study.

Firstly, authors calculate the role of determinants in country base. In regards to empirical results tangibility is negatively and significantly related to leverage ratio with the exception of Mexico. Profitability has positive and significant relation with debt financing for all countries.

Firm size is statistically significant only for Mexico, Peru and Venezuela. The sign of relation is determined positive. Growth opportunities are positively related to leverage level for Argentina, Chile, Peru and Venezuela. Tax rate was important factor for Peru and Venezuela.

Researchers also determined the effect of macroeconomic indicators, such as service level, transportation and public utilities level, wholesale trade level and retail trade. Occasionally, it must be noted that the macroeconomic value was not available for all countries.

Empirical findings explained that transportation and public utilities were explanatory variable for the capital structure choice and significantly related to leverage level of companies for all countries with the exception of Peru and Mexico.

The level of service in the country level is significantly and positively related to financing choice of the company in Chile and Mexico. Retail trade has negative and significant relation with leverage only in Mexico companies.

The sign of relationship between wholesale trade and leverage is positive and the value is statistically significant for Mexico and Peru.

Secondly, data are tested in one format for whole of seven Latin American countries. The findings of study show that all firm specific and macroeconomic indicators have significant relation with financing choice of companies. Only size, tax rate, retail and wholesale trade were indicated insignificant.

Frank and Goyal (2003) investigated the effect of factors on the financing choice of public firms in the United States of America. Target period in research was selected in 1971-1998. According to the findings of study, Market to book ratio and profitability have negative and statistically significant relationship with leverage level of the companies. The signs of tangibility and firm size are positively related to the debt ratio.

At the same time, authors tried to compare the results of analysis with conclusions of the study of Sunder and Myers (1999). Researchers assume that in the condition of using long-time series for analysis, the study of Sunder and Myers will not be valid.

They argue that in 1980-1990 small public companies were more than in 1970s. And small companies do not prefer pecking order theory. So, the general

average of analysis, coefficients and significant level of relations will change automatically.

Bauer (2004) investigated the firm specific factors of capital structure in Czech Republic over the 2000-2001 period. Total 72 companies are included into sample for each year. The findings of research show that profitability is negatively related to debt ratio and this result is matching the pecking order theory.

According to the results there is positive and significant relationship between size and leverage. This result affirms trade off theory. Tangibility and growth opportunities are also negatively related to debt ratio. Regretfully, volatility is not related to leverage.

Another study about capital structure belongs to Deesomsak, Paudyal and Pescetto (2004). They tried to make contribution to the literature by examining the firm specific factors of capital structure in four Asian countries.

Data sample covers 1993-2001 periods and 294 Thailand, 669 Malaysian, 345 Singaporean and 219 Australian firms. Initially, authors researched firm specific determinants for each country.

Findings indicate that, tangibility is not statistically significant for all countries. Only in Australia leverage has positive and significant relationship with tangibility. Profitability is not related significantly with leverage in all countries with the exception of Malaysia.

Firm size is an important firm specific determinant in Asian region countries. There is positive and significant relationship between firm size and leverage in Thailand, Malaysian and Australia. Growth opportunities are negatively and significantly related to debt ratio in Thailand and Singapore companies.

Non-debt tax shield, liquidity and share price performance have negative relationship with leverage level of the firms for all countries. And all these variables are counted economically and statistically significant.

Secondly, researchers reinvestigated firm specific determinants in capital structure decisions for the whole of Asian region. Additionally, authors tried to determine the effect of country specific factors, such as financial activity of the stock market and interest rate on the financing decisions and choice of capital structure.

Results of regression show that there is significant relationship between leverage and independent variables with the exception of growth opportunities, share price performance and interest rate. Authors also examined the effect of 1997 Asian crises on the firm's financing decisions.

They tried to show the effect of independent variables on the leverage as a pre-crisis and post-crisis. Findings prove that crisis can change the effects of firms specific and country specific factors on the decisions of the companies.

Determinants of capital structure in Nepal listed firms are analyzed by Baral (2004). Size, risk, dividend, growth rate are selected main independent variables in research. Baral cited to previous research and calculated the dependent variables as the ratio of total debt to total assets.

The results of multiple regression indicate that only 3 variables were significant in research. Size of the firms and growth have positive relationship with leverage of the firms. In other way, earning rate of business has inverse sign with debt ratio. Business risk, degree of leverage and dividend payout are not explanatory variables for capital structure choice of Nepal Listed firms.

Acaravci and Dogukan (2004) also investigated the firm specific factor of capital structure in Turkey. Total 66 manufacturing companies are selected for the testing, and sample covers 1992-2002 periods.

Authors concluded that, growth opportunities of the company were positively and significantly related to the leverage level of the firm. Profitability has negative effect on the debt ratio. Simultaneously, tangibility has negative and significant relationship with debt financing of the company.

The determinants of capital structure in Slovene firms are analyzed by Berk (2005). Researcher investigated 44 largest firms over the 2000-2003 periods. In regards to the results of empirical studies, profitability has negative and significant relation with debt level.

At the same time results of relationship between tangibility and leverage are also negative. Growth opportunities are positively related to financing choice of company.

The determinants of capital structure on Nepal listed companies are

investigated by Baral (2004). Total 40 listed companies including manufacturing companies, banks, insurance companies , etc.

Empirical findings of the study indicate that corporate size and growth have positive and significant relationship with debt level of the firms. At the same time, earning rate is negatively and significantly related to the borrowing level.

Unfortunately, the relationships between debt and business risk, dividend payout, debt service capacity and degree of leverage were founded insignificant.

Buferna, Bangassa and Hodgkinson (2005) surveyed the determinants of capital structure in Libya. Financing choice of 55 companies were tested over the 1995-1999 companies. According to the results of regression analysis profitability, growth and firm size have significant relationship with total debt ratio of the companies.

The signs of variables are positive, negative and positive respectively. It means that trade off theory is useful for Libyan companies. However, tangibility is not explanatory determinants for total debt ratio. Because, relation is not significant in research.

Gaud (2005) surveyed 104 Swiss firms over the 1991-2000 period. Researcher used panel data analysis for measuring the effect of firm specific determinants of capital structure . Findings of panel data indicate that profitability has negative and significant effect on the debt ratio of the company.

Growth opportunities are also negatively related to the financing choice of firms. Otherwise, firm size and tangible assets are strongly explanatory variable for leverage. Thus, positive and statistically significant relationships are found between firm size, tangible assets and leverage.

Akhtar and Oliver (2005) researched the determinants of capital structure for Japanese multinational (MNCs) and domestic corporations (DCs), with 360 multinationals and DCs being examined over 1994-2003. The authors firstly indicate that all variables are significant.

Empirical findings proved that age, collateral value of assets, political risks and firm size was positively related to leverage level of firms. Agency costs, bankruptcy risks, business risks, free cash flows, foreign exchange risks, growth, non-debt tax shields and profitability have negative relationship with debt financing.

Empirical findings also found that multinationals use lower debt than DCs. Besides, variables such as financial distress risks, size and foreign exchange risks are not significant.

Another research about determinants of multinational corporations (MNCs) is the study by Z. Zhang (2006). He analyzed the leverage strategy of 1821 Canadian firms over 1998-2002 and provided significant variables related to a debt ratio.

The author found that multinationals had a higher-level debt ratio than domestic corporations. Also, the firms associated with the US companies are highly levered. Negative relationship between agency costs, business risks and leverage were defined as important results.

Jõeveer (2006) explores the significance of firm-specific, institutional, and macroeconomic factors on the capital structure choice of companies in transition countries. A total of 72,550 listed and unlisted firms were tested in nine European countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia) over 1995-2002. The methodology part of the study consists of two parts. The first part is ANOVA analysis and the second part indicates regression analysis.

Findings indicated that tangibility and logarithm of assets were significantly related to the leverage. The signs of relations are negative and positive respectively. However, there are negative and insignificant relationships between profitability and leverage level of the firm.

Macroeconomic indicators such as industry leverage, GDP growth, inflation are explanatory indicators for capital structure choice of firms and all these factors are statistically significant. However, domestic bank credit, market capitalization and government consumption are indicated as insignificant variables.

In another study, Delcours (2006) made an attempt to find out the determinants of capital structure choice in the Central and Eastern Europe countries, namely Poland, Russian Federation, Czech Republic and Slovakia. The sample in this study covered a period from 1996 till 2002. The research was conducted using panel data regression methodology for a sample of 129 firms.

The results showed that size was positive and related with leverage ratio in Russia. But the sign of relationship between variables is positive in Czech Republic,

Poland and Slovakia. Coefficient of tangibility is positive and significant with debt ratio in all countries. Profitability and risk have negative and significant relationship with debt ratio for all countries.

The effects of firm specific factors on the capital structure choice of Turkish manufacturing firms were tested by Sayilgan, Karabacak and Kucukkocaoglu (2006). Total 123 companies were tested over the 1993-2002 periods.

Size, profitability, non-debt tax shields, growth opportunities and tangibility are considered as the main firm specific determinants in panel data regression analysis. The existing findings of the research imply that growth opportunities on total assets and size have positive relationship with leverage ratio. However, profitability, tangibility and non-debt tax shields are negatively related with debt level of the firms.

The effect of determinants on the capital structure of the Greek firms are analyzed by Eriotis, Vasiliou and Neokosmidi (2007). A total of 129 companies are implemented for testing and the sample covers the period between 1997 and 2001. Findings showed that firm size was positively related to the leverage level of the firm. It means that, large companies tend to borrow more than small companies do.

Unlike firm size, liquidity and growth opportunities have negative and significant relationship with debt financing. The authors explained that growth opportunities were calculated as annual change on earnings. So, high growth will result in high deviations in earnings and it can cause a high business risk.

And there was negative relationship between business risks and debt financing. Because the lender will put several conditions and high returns in front of companies. In addition, it will make capital expensive. So, firms would not prefer debt financing.

Determinants of capital structure in Turkish banking sector are analyzed by Asarkaya and Ozcan (2007). The sample period in research covers the periods between 2002 and 2006. Scholars assume that the capital structure choice, especially leverage level of the financial institutions differ from the other sector.

Because of the liquidation aspects financial institutions must generate high cash limits. If the internal funding is not sufficient, financial institutions must use debt borrowing at high level.

This article tries to determine the factors which influence for the providing of funding sources. GDP of the country, portfolio risk, average capital level of the sector, ROE and deposits are selected the main variables for testing. Panel data measurement system was used in investigation.

The results of testing emphasize that only share of deposits have negative relationship with capital adequacy ratio. All other factors are positively and significantly related to the capital adequacy ratio.

Dragota and Semenescu (2008) surveyed the firm specific factors of financing choice for the Romanian companies. Authors resulted that profitability and asset tangibility had negative effect on the choice of financing capital. On the other hand, firm size is positively related to leverage level of the companies.

Prahalathan (2008) determined the relationship between leverage and firm specific factors on Sri Lanka companies. Total 19 companies are tested and sample covers 2003-2007 periods. Findings of regression analysis provide that tangibility has positive and significant relation with long-term debt. Unfortunately, the effect of tangibility on the short-term debt and total debt are not significant.

Descriptive statistics shows that firm size is not explanatory factor for capital structures. So, the relationships are obtained as insignificant. Non-debt tax shield and profitability are significantly related with short-term debt and total debt. The sign is determined negative for both variables.

Chang, Lee and Lee (2008) investigated determinants of capital structure choice in 351 countries over the 1988-2003 periods. Structural equation model is selected as the main method for determining the relationship.

According to the findings of equation, growth is the most important determinant for the capital structure. The authors indicated that growth was calculated in two forms. One of them is market to book assets ratio and the other is market to equity ratio. In the first condition, growth is negatively related with debt. However, in the second situation positive relationship is obtained between variables.

The results of profitability and leverage relationship are consistent with growth. If the profitability is calculated as income divided by total assets, there is negative relationship with debt. But in the position of income divided by total sales, profitability has positive and significant relationship with leverage ratio.

Jensen and Thomas (2008) investigated the effects of country specific factors on the financial choice of small and medium size companies of European countries. Total 500.000 observations\160.000 companies are selected from 24 countries. Sample covers 2001-2006 periods.

Finding provides that investor protection has positive and significant relationship with debt. It means that if the value of investor protection of government increases, the investor and shareholders of companies will tend to use more debts.

On the other hand, empirical results suggest that legal environment has also positive effects on the borrowing. With one word, if the legal policy of government aims to protect the rights of investor and shareholders, companies will try to take more debts.

But simultaneously, corruption is used as proxy variable in legal environment factors. And there is a negative relationship between corruption debt. Consequently, it is expected result. If the government minimizes corruption level in the country, companies will associate with debts.

Mandaci (2009) tested optimal capital structure theories over the Turkish non-financial firms. Researcher selected 247 firms from different industrial sectors and sample also covered 1996-2004 period. The method of research is tested by regression analysis.

In regards to the empirical results, there is negative relation with leverage ratio and this result is consistent with pecking order theory. It means that high profitable Turkish firms prefer to use internal financing. The tangibility is also negatively related to debt ratio and implies the result of trade off theory. There are also negative relationships between size, liquidity and leverage.

Liu and Ren (2009) analysed the determinants of capital structure in Chinese companies. Especially, it is concentrated in Information Technology sector, so, 92 IT companies are selected as samples, which are listed in the China stock exchange. Sample covers 2004-2007 period. Authors use linear regression method for calculation of the effects of firm specific factors.

Empirical results of paper show that firm size has positive relation with leverage. While, profitability, growth opportunities and tangibility are negatively

related to debt level of companies. It must be noted that scholars indicate that all variables are not significant.

At the same time Huang and Song (2009) surveyed determinants of capital structure in 1000 listed companies of China over the period 1994-2000. Independent variables of investigation consist of profitability, firm size, non-debt tax shield, growth opportunities, tangibility and volatility.

Results of research indicate that findings are consistent with previous studies and theories. Profitability is negatively and significantly related to leverage level of companies. Non-debt tax shield, firm size, growth opportunities and volatility have positive relationship with leverage. It means that in the condition of increasing firm size or growth opportunities, automatically, leverage will increase.

Bas, Muradoglu and Phylaktis (2009) investigated corporate system of 25 developing countries from 5 regions (Africa, East Asia and Pacific, Latin America and Caribbean, Middle East and North Africa, South Asia). 11.125 firms are selected for investigation of firm specific determinants of capital structure decisions.

The most part of countries represents low income economy. All variables used in the study are collected from World Bank Information Database. Empirical results indicate that all variables are significantly related to leverage level of companies. Profitability and Tangibility are negatively related to debt ratio. Growth opportunities have positive relation with leverage.

But the sign of relationship between inflation and leverage is negative. At the same time, if the inflation rate of the country increases, the debt ratio of the company decreases automatically. It must be noted that, all independent variables are statistically significant.

Gill, Biger, Pai and Bhutani (2009) surveyed 300 USA public companies over the 2004-2005 period. The main purpose of the study is to analyze the effect of firm specific factors on the capital structure choice of service industry companies of USA.

According to the results of regression analysis, relationship between collateralized assets and leverage indicates inverse results of theories.

Theoretical background depicts that collateralized assets must be positively related to the debt level of the company. But this paper results that assets are negatively related to the leverage.

Profitability has negative and significant relationship with leverage. Unfortunately, non-debt tax shield, firm size and growth opportunities were found insignificant. R square of test is determined 0.106. It means that the explanation degree of analysis is 10%.

Deari and Deari (2009) analyzed the firm specific factors of capital in Macedonian firms. Author selected two ways for measuring the relationship to determine the true theory. One of them is testing 32 non-financial firms of Macedonia over the 2005-2007 periods. The other is investigation of 30 small and medium-sized companies over the 2005-2007 periods. Annual reports of company were used as information source for testing.

Findings of the research indicate that profitability and tangibility are negatively and significantly related to the leverage level of the company for both samples. The authors want to convince that Macedonian firms with low tangible assets tend to borrow more. Of course, this result can be based on the assumptions of pecking order theory.

At the same time firm size and growth have positive relationship with financing choice of the company. And this result is consistent with the arguments of pecking order theory. Non-debt tax shield is negatively related to the leverage level of the firm. Unfortunately, this value was indicated insignificant.

The study of Sbeiti (2010) investigates the effect of firm specific factors on the choice of capital structure in three countries of Gulf Cooperation Council (GCC). Total 142 companies are selected for testing. 59 of them are from Kuwait, 41 are from Saudi Arabia and 42 are selected from Oman.

Main independent variables are tangibility, profitability, firm size and liquidity. In regards to the outcome of the test, all variables have significant relationship with leverage level of companies. Size was positively related to debt ratio for all 3 countries. Liquidity, profitability and tangibility have negative sign with leverage.

Akhtar, Hussein and Muhktar (2010) surveyed financing choice and firm specific factors of Pakistani firms. Total 30 firms listed on the Karachi Stock Exchange are selected from textile sector for analyzing determinants of capital structure and sample covers 2004-2009 periods.

According to the results of regression analysis firm size and financial cost are positively related to the leverage level of the company. Simultaneously, growth and profitability have negative relationship with debt financing of the firms. Tangibility has also positive effects on debt to equity ratio.

Khrawish and Khraiwesh (2010) also proved that size and tangibility were positively related to the financing choice of companies. They analyzed the determinants of capital structure of Jordanian industrial companies. Total 30 companies are tested for each year and sample covers 2001-2005 periods.

Descriptive statistics shows that the relationship between size and tangibility and leverage level of the company is statistically significant. It means that large companies and firms with more tangible assets tend to borrow more. Simultaneously, profitability has negative and significant relationship with debt ratio.

Kayo and Kimura (2010) analyzed the hierarchical determinants of capital structure of the companies. Total 17061 companies are selected from 40 countries which are Turkey, UK, Germany, Malaysia, Netherlands, Sweden, Japan, France, Italy, Greece , etc. Total 127.340 observations are included in testing the determinants of the companies.

Authors tried to determine the effect of time, industry, firm and country level factors on the financing choice of the companies. Hierarchical linear model results that firm specific and time specific factors explain 78% of the debt ratio in the companies.

The results of analysis indicate that firm specific determinants explain 42,5% of leverage ratio in the companies. It means that the main explanatory variables for capital structure are firm specific determinants.

Proenca, Laureano and Laureano (2010) wanted to analyze the effect of firm specific determinants and 2008 global crisis on the capital structure choice of Portuguese companies. Total 12857 firms were selected for testing over the 2007-2010 periods.

In regards to the results, asset structure has positive relationship with leverage ratio. Non-debt tax shield is negatively related with borrowing level of the firms. In the same way, profitability and growth opportunities are in negative relationship with debt ratio.

The crisis is significantly and positively related with short-term debt, long-term debt and total debt. It means that the crisis positively influences the borrowing level of the companies. If the degree of the crisis increases, debt level of the companies will increase automatically.

Taiwan electronic companies are analyzed by Li Ju Chen (2010). The main purpose of article was to identify the determinants of leverage ratio. Total 305 electronic companies are selected for analysis.

Researcher used hierarchical regression model for measuring relationship between independent and dependent variables. 5 independent variables are included to empirical research. These are profitability, growth, dividend, tax and asset structure. The first hypothesis of study indicates that there is negative effect between profitability and leverage ratio. Vice versa, other variables are pre-assumed positive relationship with debt ratio.

The results of research proved that profitability, tax rate and growth opportunity were the most important factors for determining debt ratio. Profitability is negatively and significantly related with leverage. However, growth opportunity has positive influence for capital structure choice.

Unfortunately, asset structure and dividend policy were not significant in analysis. It means that these variables are not correlated with leverage and are not explanatory variables for financing decision making.

Tax rate also positively affects debt ratio. Size plays moderator role between tax rate and capital structure. It means that large firms always want to take tax advantages of debt. Simultaneously, pecking order defender also emphasizes that growing firms need additional funds for the financing of investment opportunities. So, they will tend to borrow additional money.

Awan, Rashid and Rehman (2011) also analyzed Pakistani firms. They selected sugar industry for testing the effects of firm specific determinants. Total 33 firms are selected for research and sample covers 1999-2004 periods. Panel data regression analysis is used as methodology of investigation.

The proxy of firm size is obtained as the log of sales and has negative relationship with debt financing. Unfortunately, this relationship was insignificant.

Profitability is also negatively related to the leverage level, but the sign of profitability was significant.

Tangibility and growth are positively related to the leverage. And the significance level of relations was determined significant and insignificant respectively.

Karadeniz, Kandir, Iskendoglu and Onal (2011) analyzed the relationship between firm size and capital structure of the Turkish lodging companies. They surveyed 163 lodging companies and made classification of the companies according to their sizes.

Findings concluded that size of the companies was the main factor for choice of capital structure. And the relationship between leverage and firm size is statistically significant. The authors also implied that firm size could be important factor for issuing securities and personal debt.

Caglayan (2011) also investigated determinants of capital structure theories in 206 Turkish firms over the 2004 - 2007 period. Researcher used quantile regression method in analysis.

The findings of equation show that growth opportunities , tangibility and firm size are positively and significantly related to debt ratio. Vice versa, there is negative relationship between profitability and leverage. And this result is consistent with previous studies and theories.

Another investigation about Turkey is the analysis of Buyuksalvarci and Abdioglu (2011). The main purpose of the article is to provide the determinants of capital adequacy ratio. The independent variables of the research are size, ROA and ROE, Deposits, leverage, loans and liquidity.

The findings of regression analysis indicate that loans, ROE and leverage are negatively related with capital adequacy ratio. Loan Loss reserve and ROA have positive relationship with dependent variable. In other wise, deposits, size, liquidity have not any significant relationship with capital adequacy ratio.

Mishra (2011) surveyed determinants of capital structure in manufacturing companies in India. Author selected only 41 profit making manufacturing and public companies. Study covers 2006-2010 periods and regression analysis is selected as the method of research.

Results of empirical findings provide that asset structure of company (Net fixed assets to total assets) has positive and significant relation with leverage level of company. Profitability is also obtained statistically significant. However, the sign of profitability was negative. It means that there is negative and significant relationship between debt ratio and profitability.

Researcher used Non-debt tax shield (depreciation to total assets) as a independent variable for measuring the effect of tax on the capital structure choice. Analysis indicates that the relation between debt ratio and non-debt tax shield is not significant. Author emphasizes in his paper that result is consistent with previous studies.

The main factors which influence the financing choice of small and medium-sized companies are analyzed by Mateev, Poutziouris and Ivanov (2012). Authors specially selected middle and small companies in Eastern and Central Europe for measuring the relationship between size and leverage level.

Total 3175 companies were analyzed by panel data analysis over the 2001-2005 periods. Cash flow was selected the main explanatory variable in regression equation. The findings of research indicate that cash flow has negative and significant relationship with leverage ratio. The authors explain that larger companies with more cash limit prefer to use internal funds.

Scholar also found that age was negatively and significantly related with debt ratio. It means that older companies use debt financing in minimum level. Liquidity and growth opportunities in sales are positively and significantly related with leverage.

The influencing of firm specific factors on the capital structure of Czech companies was analyzed by Pinkova (2012). 100 companies from automotive industry are selected for measuring relationships and sample size covers 2006-2010 periods.

Firm size of the company was negatively related to the total debt and short-term debt. But these values were indicated insignificant. At the same time firm size has positive relationship with long-term debt and this relationship is significant. Firm size is calculated by log of total assets.

Tangibility and profitability have positively related to total debt, long-term debt and short-term debt and all values are statistically significant. Only profitability has negative relationship with long-term debt. The sign of the effects of liquidity was obtained as negative. Only relationship with liquidity and short-term debt were insignificant.

Atiyet (2012) compared power of using internal funds through the Pecking Order theory and Static Trade off theory. Total 250 companies are selected from French Stock Exchange. Sample period covers 1999-2005.

Serrasqueiro and Caetano (2012) tested determinants of capital structure in small and medium sized enterprises of Portugal. Total 53 non-financial companies were selected for analysis over the 1998-2005 periods.

Descriptive statistics of regression analysis provides that non-debt tax shield and tax rate are statistically insignificant . It means that these variables have not any explanatory influence for capital structure choice.

The researcher found that profitability had negative relationship with leverage ratio in Portugal companies. And this relationship is statistically significant. The results of findings also suggest that small and medium sized companies always tend to use internal financing in need of additional funds and these results are consistent with assumptions of pecking order theory.

Beside this result, size is significantly explanatory variable for financial decision making. Thus, there is a positive relationship between size and leverage ratio.

Empirical findings resulted that age was important factor in borrowings. From the view point of the companies, old firms try to take fewer debts as additional funds. Because, old firms can maximize retention of profits. In the context of explanation, results prove that there is negative relationship between age and debt ratio in Portugal firms.

Chechet, Garba and Odudu (2013) investigated the determinants of financing choice in Nigerian Chemical companies. 12 companies are selected for investigation and sample size covers the 2005-2009. Ordinary least square was adopted for measuring relationship.

Profitability and tangibility are negatively and significantly related to the leverage level of the companies. Vice versa, the relationship between firm size, formal age, growth and leverage are insignificant.

Determinants of New Zealand listed firms were analyzed by Basyith and Idris (2013). They tried to prove that financing choice assumption of listed firms of New Zealand was the most appropriate to trade off theory. Sample size includes 79 companies and covers 2007-2011 periods. Panel data analysis is used for measuring influences of firm specific factors.

Empirical findings provide that tangibility is positively and significantly related to the leverage level of the company. The relationship between growth and debt ratio is signed negative. And the significance level supports the relationship.

The results indicate that signalling and managerial ownership are explanatory factors for the financing choice of New Zealand companies. These relationships are also statistically significant. The significance level of variables was obtained as 0,057 and -0,9356 respectively.

Firm size have negative relationship with debt ratio. It means that large listed companies do not prefer borrowing. Unfortunately, the relationships between leverage ratio and profitability, non-debt tax shield are insignificant.

Oolderink (2013) obtained the research of the effects of firm specific determinants on the capital structure choice of Dutch Lister firms. The main purpose of the article was to compare the activity of the companies with the assumptions of theories.

Non-debt tax shield, business risk, profitability, firm size, asset tangibility were selected as main variables. Results of investigation indicate that profitability is negatively related with debt ratio of the companies. There is also significant and negative relationship between non-debt tax shield and leverage.

In other way, firm size and asset tangibility are positively related with capital structure of the firms. And the relationship was proven as insignificant.

Empirical findings of paper of Nyangoro (2013) also emphasize that firm specific determinants are explanatory variables for financing choice of the company. Sample are selected from Nairobi Stock Exchange. The author noted that there were 63 listed companies in Nairobi Stock Exchange.

But some of them are financial institutions and these companies are excluded from sample. Because the strong leverage level of this companies may change the correctness and robustness of results. Finally, 32 companies are included to the sample for analysis and sample covers 2003-2012 periods.

Results of investigation indicate that firm size, asset tangibility and profitability have significant relation with leverage level of the companies. Firm size has positive effect on the short-term borrowings and negative influence on the long-term debt.

Vice versa, tangibility is positively related with long-term leverage ratio and negatively related with short-term debt.

At the same time, the author emphasized that the increasing of profitability reduced the leverage level of the firms. It means that there is negative relation between profitability and debt ratio. Unfortunately, growth opportunities were obtained insignificant for Nairobi industrial companies.

Ghazouani (2013) tried to analyze the capital structure issues from the evidence of Tunisian companies. He strove to determine the explanation of effects of selected variables on the financing choice of the companies in the context of trade off theory.

The researcher constructed two models. One of them is implementation of static trade off model, the other is measurement of dynamic trade off model. Total 20 Tunisian companies are included to the sample. Panel data regression model is In this model total 5 variables are selected for measurement. These are economic profitability, growth opportunities, size, operational risk and guarantees.

Results of the first model prove that size has positive relationship with debt ratio. But unfortunately, this relationship was not significant. Operational risk is positively and significantly related with debt ratio. It means that in the condition of the increasing of borrowings, operation risk will increase automatically.

Asset structure is also positively related with leverage. Growth opportunities have negative relationship with financing decision making. But this variable was not counted statistically significant at 5 % level. Total explanation degree analysis was 32.1% .

The results of dynamic model assume that engagement cost exists in Tunisian companies. Findings indicate the coefficient of adjustment is relatively high and statistically significant.

Koksal and Orman (2014) tried to analyze applicability of pecking order theory and trade off theory in Turkey. Sample of study covers 1996-2009 periods. Researchers provided 3 group factors for measurement of relationship. The first group is firm specific factors. The main variables in this group are size, profitability, tangibility, growth and business risk.

The second group factors are named as tax related determinants. There are two variables in this group, which are corporate taxes and non-debt tax shield. The third group is macroeconomic group, including inflation, GDP growth and capital flows.

Leverage ratio was dependent variable in analysis. In regards to Rajan and Zingales (1995) researchers calculated leverage ratio as total liabilities to total assets. They emphasized that it was the best indication of financial choice. Empirically, fixed effect panel data analysis was applied in measurement.

In regards to the results of empirical tests provide that, size is positively related with debt ratio. It is consistent with assumptions of trade off theory. However, profitability and tangibility have negative influences on the leverage ratio of the companies. All these findings are consistent with predictions of pecking order theory.

All these relationships are statistically significant. Business risk is also negatively and significantly related with debt ratio of the company. Coefficients of the tax related determinants are also significant in analysis. Findings prove that the signs of relationship are consistent with assumption of trade off theory.

In regards to macroeconomic determinants, inflation has positive relation with debt ratio. Vice versa, GDP is negatively related with total leverage. Both of the relations are statistically significant.

Review of explanation of results, indicate that, large Turkish firms tend to take more debts. But in the condition of high profitability companies use internal financing more than the borrowings. At the same time, companies with more tangible assets, try to use internal fund for investment opportunities.

Empirical results suggest that debt ratio will increase in parallel to the increasing of inflation. It means that if the inflation of the country is high, companies will have more anxiety and will use borrowings for the financing of investments.

GDP is conversely related with debt ratio. With one word, if the value of GDP increases, companies will use debt in minimum level.



CHAPTER FOUR

METHODOLOGY, DATA AND EMPIRICAL RESULTS

4.1 MOTIVATION AND SCOPE

The Republic of Azerbaijan is one of the transition countries and gained independence after the collapse of the Soviet Union in 1991. Oil and gas industry secures the bulk of economy and the state budget of the country. The share of oil and gas industry accounts for approximately 54% of the gross domestic product.

The bulk of foreign investment has been channeled into the oil sector since Azerbaijan regained independence, thus leading to large-scale development throughout the country. Foreign investment stood at USD 10.5 billion in 2013, including AZN 4.9 billion poured into the oil and gas industry.

The president of Azerbaijan Republic in 2005 endorsed state programs to develop the non-oil sector. Thus, oil and gas revenues over the years have been allocated to develop non-oil sector, and the budget of the Fund for Entrepreneurship Support has increased respectively.

In 2007, there were 74,354 entities in the country, 80.6 % of which were private (Asian Development Bank, 2007). According to the State Statistical Committee, this figure was 89,939 in 2009 and 91,657 in the first half of 2010.

The development trends in non-oil sector, shows that this sphere will increase in years ahead.

On the whole, scientists have attempted to practice the applicability of capital structure theories over the international data and tried to determine the common effected factors, notwithstanding each country has its own specific factors. Nevertheless, the literature about academic and practical problems of the companies and entrepreneurship in Azerbaijan is lacking.

The main purpose of this study is to analyze the capital structure issues in Azerbaijan. Generally, three main issues are emphasized and investigated in this research.

The first part contains the general analysis and overview of entrepreneurship in Azerbaijan. The second part provides the main point of the investigation.

Thus, the implication of capital structure theories and the effect of the firm specific determinants on the capital structure in Azerbaijan firms are tested in this part. Thirdly, the effect of macroeconomic factors on the leverage ratio is selected for analysis.

The results of the research provide benefits to managers, shareholders and legislators by giving information about capital structure theories, financing choice methods and implication of theories in different countries.

These benefits are useful for banks and financial institutions and lenders, as this research provides leverage classification of the companies and sectors in Azerbaijan. Simultaneously, relationship between firm specific factors and financing choice, especially relationship with debt ratio is very helpful. GDP growth rate over the years is the fundamental indicator of development. Azerbaijan has performed high growth rate in gross domestic product since 1996. GDP growth rate was significantly indicated at 1 % in 1996, 11 % in 2000 and 26 % in 2005. The highest growth rate was 34 % in 2006.

According to the last five years results, after 2008 global crisis the indicator of GDP growth rate was diminished to 0.1% respectively. But this figure increased to 5.8 % in 2013

Government representatives can also benefit from this research by getting information about effect of macroeconomic factors on the capital structure choice of Azerbaijan companies over 2008-2013

The contribution of this study to the literature about the capital structure is that it is the first investigation, which determines the effect of firm specific factors and macroeconomic indicators on the capital structure choice of Azerbaijan firms.

4.2 RESEARCH METHODOLOGY

This study aims to analyze the determinants of capital structure in Azerbaijan firms over 2007-2013. The investigation methodology has three phases. The first phase is general overview about entrepreneurship in Azerbaijan.

The leverage classification of companies and sectors are also analyzed in this phase. Descriptive statistics, tables and figures are the main method for this part.

Statistical data about entrepreneurship are obtained from the State Statistical Committee.

The second part of the research obtains the firm specific determinants of capital structure in Azerbaijani companies. Taking into consideration the previous studies about this topic, researchers used different methods for calculation of relationship between leverage ratio and firm specific determinants.

Sbeiti (2010) used Ordinary Least Square (OLS) method for determining the factors of capital structure in GCC countries. Scholar argues that, debt ratio of each company must be selected as a function of determinants in cross sectional framework. So, OLS method is appropriate method for measuring relationship in countries individually.

Huang and Song (2009) also emphasized the simplicity of OLS method and used for measuring firm specific determinants in 1000 Chinese companies.

Researcher argued that Tobit model and OLS method were very similar for measuring relationship between variables.

Caglayan (2011) also investigated determinants of capital structure theories in 206 Turkish firms over 2004 - 2007. Researcher used quantile regression method in analysis.

Joeever (2006) investigated firm specific factors of capital structure in transition countries. The author used two models for determining the significance and relationship of variables. The first method is ANOVA for the measuring of leverage variation. Secondly, regression analysis is used for definition of explanatory factors.

Mandaci (2009), Bauer (2004), Gill, Biger, Pai and Bhutani (2009), Buferna, Bangassa, Hogkinson (2008) used regression analysis to explain the factors of debt ratio.

Mishra (2011) also analyzed the determinants of capital structure in Indian companies by using multiple regression method.

Booth, Aivazian, Demirguc Kunt and Maksimovic (2001) tested cross sectional regression analysis to provide the significance of relationship between firm specific determinants of capital structure in developing countries.

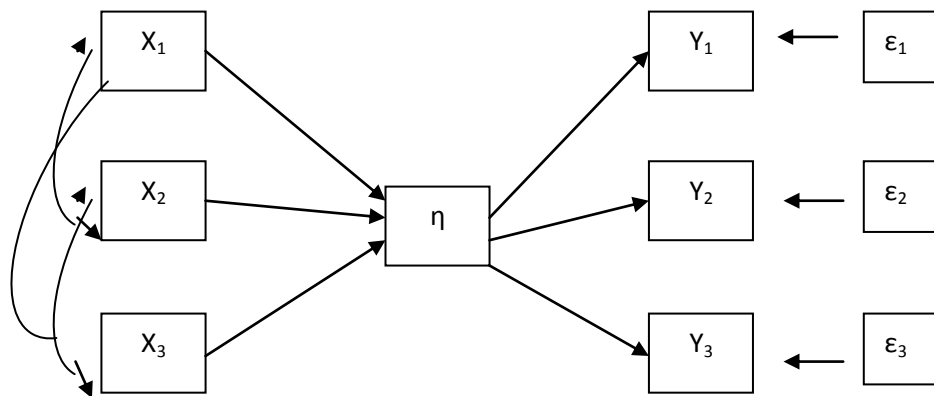
Akhtar and Oliver (2005) also measured the effects of factors on the capital structure decision in Japanese firms by using pooled cross sectional time series regression method. Author used ratio analysis for calculation of independent variables.

Deesomsak, Paudyal and Pescetto (2004) researched the effect of firm specific factors of the capital structure in Asian countries. Fundamentally, cross sectional regression analysis explains the relationship between indicators and leverage ratio. Simultaneously, the effect of legal and financial environment is also tested in the article.

Another methodology type for calculating the coefficients of relationship between variables is structural equation model. Chang, Lee and Lee (2008) analyzed determinants of capital structure in 351 firms through this method.

Structural equation model implies that the independent variables have some structural effects on the dependent variables. The following figure depicts the situation exactly.

Figure 12 Structural equation model in capital structure



Source: Chang, Lee and Lee (2008)

Figure 11 indicates that X1, X2 and X3 represent the independent variables which have effects on the dependent variable. η is indication of dependent variables, which can be calculated in three forms. Y1, Y2 and Y3 are the calculation method of dependent variables.

The method of the research of Titman and Wessels (1988) is to determine the effect of unobservable factors on the leverage ratio of companies by using factor analytic technique. Total 469 manufacturing companies were included in the sample over the 1974-1982 period.

The other method for the determining of the relationship between debt ratio and firm specific factors is panel data analysis. Sometimes researches need the longitudinal data set for defining strong economical hypothesis.

In this case, cross sectional analysis or multiple regression method cannot provide reliable results for investigation. Therefore, analysts try to use panel data analysis for determining exact findings.

Panel data is a methodology type which helps to control sample of individuals in defined period. This method determines multiple analysis and provides more observations in the sample.

For example, Karadeniz, Kandir, Balcilar and Onal (2008) used panel data analysis for calculation of the relationship between explanatory variables and leverage ratio of companies in Turkey.

Bas, Muradoglu and Pylakhtis (2009) also used panel data analysis for measuring the effects of firm specific determinants on the capital structure of developing countries.

Fauzi, Basyith and Idris (2013) tested the influence of determinants on the capital structure of New Zealand companies by using panel data approach. Awan, Rashid and Rehman (2011) choose panel data analysis for analyzing the power of explanatory variables in Pakistani firms. Gaud (2005) surveyed 104 Swiss firms over the 1991-2000 period. Panel data analysis is selected the main measuring method for investigation.

Panel data analysis has two versions. One of them is unbalanced panel data analysis, the other is balanced panel data analysis. If the number of observations is

changeable, unbalanced data analysis can be preferable. In the condition of no missing values, researchers use balanced panel data.

In this method the number of cases (n) and time period (t) are very important. Because total observation number depends on the number of cases and time period. We can calculate the total number of observations as:

$$\text{Number of observations} = \text{number of cases (n)} \times \text{time period (t)}.$$

Gujarati (2004:637-638) emphasized the advantages of panel data analysis from the econometric aspect. These are:

“ 1. Since panel data relate to individuals, firms, states, countries, etc. over time there is bound to be heterogeneity in these units.

The techniques of panel data estimation can take such heterogeneity explicitly into account by allowing for individual specific variables, as we shall show shortly. We use the term individual in a generic sense to include micro units, such as individuals, firms, states and countries.

2. By combining time series of cross section observations, panel data “give more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency”

3. By studying, the repeated cross section of observations panel data are better suited to study the dynamics of change. Spells of unemployment, job turnover and labor mobility are better studied with panel data

4. Panel data can better detect measure effects that simply cannot be observed in pure cross section or pure time series data. For example, the effects of minimum wage laws on employment can be better studied if we include successive waves of minimum wage increases in the federal or state minimum wages.

5. Panel data enable us to study more complicated behavioral models. For example, phenomena, such as economies of scale, and technological change can be better handled by panel data by pure cross section or pure time series data

6. *By making data available for several thousand units panel data can minimize the bias, that might result if we aggregate individuals of firms into broad aggregates.* ``

Antoniou, Guney and Paudyal (2002) assume that there are some benefits for using cross sectional panel data approach. Because this improves the degree of freedom and the number of observations, decreases the collinearity degree between independent variables. The main formula is presented as the follows:

$$Y(it) = a(0) + \beta_1 Y_i(t-1) + \sum_{k=1} Y(k) X_{akit} + \sum_{k=1} \delta(k) X_{bki}(t-1) + \vartheta(i) + \vartheta(t) + \varepsilon(it)$$

Y is an indicator of dependent variable. X represents the independent variables. $\vartheta(i)$ is indication of firm specific effects and $\vartheta(t)$ represents time specific effects, such as inflation and interest rates.

Chen, Lensink and Sterken (1998) also determine that panel data is the best method for measuring the effects of factors on the dependent variable.

Maddala and Lahiri (2009) pointed problems of panel data regression models in their article. The authors specified that there might occur multicollinearity and heteroskedasticity problems in analysis. These problems influence the consistence of estimations.

Hsiao (2003) also assumed that panel data was very useful for analyzing longitudinal data set. The researcher emphasizes that panel data provides multiple observations, more degree of freedom and less collinearity between independent variables. This method determines very informative and definitive results for analysis.

There are various techniques and approaches for panel data analysis: fixed effect panel data analysis and random effects panel data. Findings of analysis are very important in this situation. Because the researcher must choose the corresponding method, which makes more informative, efficient and reliable coefficients.

The easiest and most accepted way for obtaining true technique is the Hausman tests. The Hausman tests compare models with their results. Degree of efficiency and consistence of model are very important indicators in this comparison.

The researcher uses Stat A and Eviews programs for testing the Hausman tests. Firstly, the program estimates the results of fixed effect panel data. Secondly, random effect will occur in the program. Finally, the Hausman test will compare the results of models.

In regards to all this information the general equation can be described for panel data approach. Naceur (2003) also specified the equation of regression model in his article.

Gujarati (2004) depicted that error term in equation had two components. One of them is cross section or individual specific error component and the other was combined time series and cross section error component.

According to previous studies and in regards to all this information panel data regression analysis will be used in this study to determine the effect of firm specific factors on the capital structure of Azerbaijan companies.

General equation of analysis is as follows :

$$Y(i, t) = a(i) + x_{it}^l \beta + \varepsilon(i, t)$$

$$Y(i, t) = a(i) + \beta(1)X_{it}^1 + \beta(2)X_{it}^2 + \dots + \varepsilon(i, t)$$

In this case, Y represents the dependent variable - leverage ratio of the companies. X indicates the explanatory variables of the data set which are the firm specific determinants. a shows the constant and β represents the coefficients of explanatory variables.

The third part of the investigation describes the effect of macroeconomic factors on the capital choice of Azerbaijani companies. Macroeconomic data are obtained from the State Statistical Committee and the Central Bank of Azerbaijan. Based on previous studies, panel data analysis will also be the main approach of research. The dependent variable indicates a firm's debt ratio.

$$Y(i, t) = a(i) + \beta(1)X_{it}^1 + \beta(2)X_{it}^2 + \dots + \varepsilon(i, t)$$

In this case, Y represents the dependent variable - leverage ratio of the companies. X indicates the macroeconomic indicators. a shows the constant and β represents the coefficients of explanatory variables.

4.3 RESEARCH VARIABLES

In the shade of the literature the research questions of investigation are determined as follows:

- 1) What is the capital structure and what are the main determinants?
- 2) Which factors have the influence on the leverage ratio of the company?
- 3) Is there any relationship between macroeconomic indicators and leverage ratio?
- 4) Is the empirical result of analysis consistent with the assumptions of pecking order theory and trade off theory?

So, the selection of variables is the most important part of the answer to these research questions. Generally, the findings of literature survey show that the companies use different variables for measuring the effects. Of course, the assumption of theories is also important for choosing variables.

4.3.1 Dependent Variables

As mentioned in theoretical part of investigation, capital structure is a mix of securities and different financial sources for the financing of real investment. In other words, capital structure represents the proportion and combination of financial sources which are securities, short and long-term debt and equity.

Matos (2001) assumes that if the company uses debt financing together with equity, it means that the firm is levered firm. In regards to literature survey, dimension of capital structure is indicated as the leverage ratio of the companies. Another explanation of this ratio is debt ratio.

Generally, there are three approaches for calculation of leverage ratio. And these approaches play various roles in determination of capital structure choice.

4.3.1.1 Short-term leverage ratio

The calculation method of this ratio is indicated as the ratio of short-term debts to total assets. Researcher assumes that companies seek to get short-term borrowing than long-term. Because short-term financing is very flexible for companies and simultaneously, companies provide short-term debts with minimum costs. Especially, seasonal enterprises use short-term financing.

Chen (2007) assumes that companies always need periodical liquidity and in this condition, they prefer short-term debts. And financial institutions provide short-term easily for them.

4.3.1.2 Long-term leverage ratio

This ratio is indicated as the long-term liabilities to total assets. In comparison with short-term financing, profitable and large companies prefer long-term borrowing. Because the interest rate of debt is at minimum level. And financial institutions can provide sources with long-term maturity.

According to the annual reports of international financial institutions such as World Bank, International Monetary Fund, etc, large and industrial companies use long-term financing. Because this debt provides more productivity for companies.

4.3.1.3 Total leverage ratio

The main used calculation method is a ratio of total liabilities to total assets. Researcher emphasizes that all combination of liability items. such as accounts payable, deposits, foreign exchange liabilities, reserves and long-term debts provide total liabilities.

There are two types of calculation methods for debt ratio. One of them is calculation with book values and the other is calculation with market values. Frank and Goyal (2003) assume that book value represents the past situation of companies. Otherwise, market values show the future position of the firms.

There are different calculation approaches for total leverage ratio. Padron, Apolonirao, Santana, Conceptio, Martel and Sales (2005) used leverage ratio by dividing total borrowings of the company to the sum of the debt and equity.

Sayilgan, Karabacak, Kucukkocaoglu (2006) counted the leverage ratio as total debt to total equity. The calculation method of leverage ratio in Booth, Aivazian, Demirguc Kunt and Maksimovic (2001) articles are also consistent with previous studies.

Mandaci (2009) provided both of book value and market value calculations for short-term, Long-term and total borrowings. Author also indicated choice of borrowings during 2001 crisis and afterwards.

Deesomsak, Paudyal, Pescetto (2004) used total leverage ratio and calculated as:

$$\text{Debt to capital ratio} = \frac{\text{total debt}}{\text{total debt} + \text{market value of equity} + \text{book value of preference shares}}$$

Financial economists suggest using market value instead of book value in empirical studies. Modigliani and Miller theories also indicated the use of market values. But book values are used in this investigation due to limitation of data collection.

But Chen (2007) assumes that volatility of stock markets influences the use of market value and it can be very changeable in empirical studies. So, the book value is very useful for investigations. Thus, the author counts the leverage ratio in two forms.

$$1) \text{ Leverage ratio} = \frac{\text{Total debt}}{\text{Total equity book value}}$$

$$2) \text{ Leverage ratio} = \frac{\text{Total debt}}{\text{Total equity market value}}$$

As a result, total leverage ratio is selected as dependent variable and calculated by dividing total liabilities to the sum of the total liabilities and total equities.

$$\text{Total debt ratio} = \frac{\text{total liabilities}}{\text{total liabilities} + \text{total equities}}$$

4.3.2 Independent Variables

Theories and studies suggest that the companies use capital structure choice for getting information about costs and benefits of financing. According to the literature some factors which have influence on the capital structure choice are selected as independent variables.

Rajan and Zingales (1995) selected tangibility, profitability, logsale and firm size as independent variables for analyzing firm specific determinants of G-7 countries. Firm size, tangibility, profitability and market to book ratio are the main indicators of capital structure in the study of Frank and Goyal (2003).

Growth, ownership, signaling are the main selected independent variables of the article of Fauzi, Basyith and Idris (2013). Macroeconomic indicators, such as growth rate, interest rate, inflation rate were also interesting for measuring relationship with leverage.

Bancel and Mitto (2002) researched the determinants of capital structure. A total of 16 countries are selected for measuring financing decisions and effecting factors of the companies.

Empirical results determined that financial flexibility and credit ratings are strong explanatory factors for the debt decision of the company. At the same time, volatility and interest rates have positive relations with leverage level of the companies.

Akhtar and Oliver (2005) also researched the determinants of Japanese companies' capital structure. 360 companies were tested over 1994-2003. The author firstly indicates that all variables are significant.

Empirical findings prove that, age, collateral value of assets, political risks and firm size are positively related to leverage level of the companies. Agency costs,

bankruptcy risks, business risks, free cash flow, foreign exchange risks, growth, non-debt tax shields and profitability have negative relationship with debt financing.

In respect of literature survey, the variables below are selected as independent variables to measure the firm specific determinants of companies in Azerbaijan. Macroeconomic indicators such as GDP and inflation rate are also selected independent variables in the second part of analysis.

4.3.2.1 Size

There are different conflicts over the explanations of relationship between firm size and leverage ratio. In regards of theory discussions, there are two main assumptions. Pecking order theory argues that there are negative relationships between variables.

Researcher assumes that large firms have good profitability ratio and access to capital market. So, they prefer equity to borrowing. For this, there are negative relationships between firm size and leverage ratio.

Titman and Wessels (1980) and Rajan and Zingales (1995) indicate the negative relationship between firm size and profitability. Mandaci (2009) also proved the negative relationship between firm size and profitability in Turkish companies.

However, trade off theory defenders argue that there occurs positive relationship between firm size and debt ratio. They assume that if the size of the company is large, its risk and bankruptcy levels are lower. And a large firm needs more external financing.

So, company may tend to high debt financing. Myers and Majluf (1984) also indicate positive relationship in asymmetric information theory. They assume that outside investors can learn more information about large companies. So, the large companies can easily provide debt financing.

There are different calculation methods of size in literature review. Mandaci (2009) calculated the firm size of the companies as the natural logarithm of the total sales. Padron (2005), Titman and Wessel (1980), Rajan and Zingales (1995) Bauer (2004) also used natural logarithm method for firm size.

In this study, positive relationship is assumed between firm size and leverage ratio. It means the assumption of trade off theory is appropriate for Azerbaijan companies. And Natural Logarithm is used for the counting of firm size.

Hypothesis 1: There are positive relationships between firm size and leverage ratio of Azerbaijan companies.

4.3.2.2 Profitability

Myers (1984) indicates that earnings level of the company is the main indicator for the choosing of financing type. Pecking order theory assumes that there is negative relationship between profitability and leverage ratio. It means that profitable companies have more earnings and high level retained earnings.

These companies will use internal fund firstly. The borrowing level will indicate minimum level. So, there are negative relationships between profitability and debt ratio. The results of investigation of Caglayan (2011) Mishra (2011) and Joever (2006) are consistent with the assumptions of pecking order theory.

Vice versa, trade off theory argues that positive relation must be between profitability and leverage ratio. Because, high profitable companies have more earnings and they can repay interest and main debt payments easily. So, they tend to more borrowing.

Jorgensen and Terra (2003) investigated the role of firm specific factors and macroeconomic indicators on the capital structure in the Latin American countries. The authors proved that there are positive relationships between profitability and leverage ratio. Mandaci (2009) also affirmed the findings of theory in article measuring the Turkish companies.

Titman and Wessels (1980) calculated the profitability ratio by dividing the operating revenues over the sales to operating revenues over total assets. Rajan and Zingales (1995) counted the profitability ratio by dividing EBIT to total assets.

Caglayan (2011) assumes that profitability ratios are indication of earning power of the companies and equal to return on assets ratio.

Mandaci (2009), Bauer (2004), Deesomsak, Paudyal, Pescetto (2004) Huang and Song (2006), Booth, Aivazian, DemirgucKunt and Maksimovic (2001), Niu

(2011), Sbeiti (2010) calculated the profitability ratio by dividing the earning before income and taxes (EBIT) to total assets.

EBIT/total assets are selected main calculation method of profitability ratio. There are assumed negative relationships between profitability and debt ratio of the companies.

Hypothesis 2: There are negative relationships between profitability and leverage ratio of Azerbaijan companies.

4.3.2.3 Non-debt tax shield

Theories always assume that companies use debt financing for saving tax. The increasing of non-debt tax shield effects for the minimizing of tax benefits. So, there are negative relationships between non-debt tax shield and debt financings.

In this situation, both of the trade off theory and pecking order theory suggest that there are negative relationships between non-debt tax shield and leverage ratio of the firms.

The articles of Prahalathan (2008) and Deesomsak, Paudyal, Pescetto (2004) show that there are negative relationships between non-debt tax shield and debt financing. Simultaneously, Mishra (2011) Gill, Biger, Pai and Bhutani (2009) proved that the relationships between non-debt tax shield and profitability were insignificant.

Sayilgan, Karabacak, Kucukkocaoglu (2006) found the non-debt tax shield ratios by dividing the annual depreciation of expenses to total assets. Bauer (2004) Deesomsak, Paudyal, Pescetto (2004) and Huang and Song (2006) also indicate the ratio of the annual depreciation expenses to total assets as the proxy of the non-debt tax shields.

According to the literature survey and assumption of theories ratio of annual depreciation of expenses to total assets is the main indicator of this investigation. And negative relationship is assumed for Azerbaijan companies.

Hypothesis 3 : There are negative relationships between non-debt tax shields and leverage ratio of Azerbaijan companies.

4.3.2.4 Asset tangibility

Tangibility is the most important determinant of capital structure. Pecking order theory assumes that companies with more tangible assets tend to less borrowing. Researcher argues that companies with more tangible assets generally are large companies.

And large companies use internal finance and use debt financing in minimum level. So, there are negative relationships between asset tangibility and debt ratio.

Trade off theory indicates positive relationship between tangibility and profitability. Because these assets are collateral for debt financing and it is the guarantee of debt. At the same time collateral reduces the risk of debt and maintains the constancy of purpose between lender and companies.

Padron (2005) argues that tangible assets of the company indicate the real guarantee degree for the credit holders. So, the value of tangible assets in proportion of the total assets influences the borrowing degree of the company (Rajan and Zingales, 1995 and Harris and Raviv, 1991)

Mandaci (2009) measured tangibility in her study by dividing net fixed assets to total assets. Sayilgan, Karabacak, Kucukkocaoglu (2006) calculated tangibility as the ratio of tangible assets plus inventories to total assets.

Bauer (2004) defined the tangibility as tangible assets divided to total assets. Niu (2011) counted by dividing the total net book value of property, plant and equipment to total assets.

The main calculation method for this research is selected as follows:

$$\text{tangibility} = \frac{(\text{tangible assets} + \text{inventories})}{\text{total assets.}}$$

And positive relationship is argued for determining relationship between tangibility and debt ratio.

Hypothesis 4: There are positive relationships between tangibility and leverage ratio of Azerbaijan companies.

4.3.2.5 Growth Opportunities

As other variables, relationship between growth opportunities and leverage ratio has various explanations. The pecking order theory assumes that growth opportunities have positive relationship with debt financing.

Because, companies need additional funding in growth level. And most probably, many companies choose external financing for it. So, the increasing of growth opportunities will effect the increasing of debt level.

Karadeniz, Kandir, Balcilar and Onal (2009), Caglayan (2011) and Acaravci and Dogukan (2011) indicated that the findings of research were consistent with assumption of pecking order theory.

Vice versa, trade off theory suggests that the relationship between growth opportunities and debt level is negative. Jensen and Meckling (1976) predict that there are negative relationships between growth opportunities and debt ratio.

Because when the companies have growth opportunities, they take more risk and have more financial distress expenses. It means that in case of growth opportunities firms intend to accept the higher risky projects, thus increasing the risky debts and borrowing costs.

So, the relationship between growth opportunities and debt level is negative. The findings of Bauer (2004) and Gaud (2005) are also consistent with the theory.

Titman and Wessel (1980) measure the growth opportunities as the annual growth rate of the company in total assets. Rajan and Zingales (1995) calculated this ratio by dividing market value of the assets to book value of assets.

Caglayan (2001) used the growth opportunity ratio as the annual change of the revenues or the annual changes of the total assets of the company. Huang and Song (2006) and Mandaci (2009) assume that Tobins` Q (market to book ratio of the total assets) is the best proxy for the measuring of the growth opportunities.

Sayilgan, Karabacak, Kucukkocaoglu (2006) argue that there are two types of the growth opportunities. One of them is growth opportunities in plant, property and equipment, which is calculated as the percentage change of the plant, property and equipment values. The other is growth opportunities in total assets which is counted as the change the percentage of the total assets significantly.

Two types of growth opportunities are used in this research: growth opportunities in plant, property and equipment; growth opportunities in total assets.

Growth opportunities in plant, property and equipment are counted as the percentage change of the plant, property and equipment values. But the ratio of growth opportunities to total assets is calculated as the percentage change of total assets.

The sign of relationship between leverage ratio and both of the growth opportunities in plant, property and equipment and growth opportunities in total assets is assumed negative.

Hypothesis 5 : There are negative relationships between growth opportunities in plant, property and equipment and leverage ratio of Azerbaijan companies.

Hypothesis 6 : There are negative relationships between growth opportunities in total assets and leverage ratio of Azerbaijan companies.

Additionally, some researchers used addition factors to determine the relationship between factors and leverage of the companies. For example, Karadeniz, Kandir Balcilar and Onal (2009) argued in their investigation that there are positive relationships between effective tax rates, free cash flows and debt ratio, but negative relationships between commercial trade position and debt ratio.

Mandaci (2009) indicated the stock price performance, liquidity, risk and numbers of the board of the directors as the additional determinants of the capital structure decision. Bauer (2004) used tax, volatility and industry classification as the effecting factors of the debt ratio of the Czech companies.

Huand and Song (2006) also argue that tax, volatility, ownership structure and managerial shareholdings are determinants of the leverage ratio. Sbeiti (2010) explained in his article liquidity, interest rate, financial market development variables are the explanatory factors of the debt ratio.

In regards to theories and studies about firm specific determinants of capital structure, Table 5 shows the calculation method and the sign of the relationships between variables.

Table 5 Explanation of independent variables

Variables	Definition	Relationship for theories and models	Relationships from studies	Expected relationship	Theories
Profitability	EBIT/Total assets	-	-	-	Pecking order theory
		+			Trade off theory
Firm size	Natural logarithm of total sales	-			Pecking order theory
		+	+	+	Trade off theory
Growth opportunities in plant, property and equipment	Percentage change in property, plant and equipment	+			Pecking order theory
		-	-	-	Trade off theory
Growth opportunities in total assets	Percentage change in total assets	+			Pecking order theory
		-	-	-	Trade off theory

Non-debt tax shield	Annual depreciation expenses/total assets	-			Pecking order theory
		-	-	-	Trade off theory
Tangibility	(tangible assets + inventories) / total assets	-			Pecking order theory
		+	+	+	Trade off theory

Taking into consideration all variables equation model of investigation will be as follows:

$$\begin{aligned}
 \text{Leverage of the firms} = & \beta_0 + \beta_1 \text{ profitability} + \beta_2 \text{ firm size} \\
 & + \beta_3 \text{ growth opportunities on plant, property and equipment} \\
 & + \beta_4 \text{ growth opportunities on total assets} + \beta_5 \text{ non-debt tax shield} \\
 & + \beta_6 \text{ tangibility} + \varepsilon
 \end{aligned}$$

4.4 DATA COLLECTION AND DATA ANALYSIS

The main purpose of this research is to analyze the firm specific determinants of capital structure in Azerbaijan firms over the 2007-2014 period. 6 main firm specific factors are considered in analysis and simultaneously, macroeconomic determinants, such as GDP and Inflation are added in the second phase of analysis.

The main source for calculation ratios and variables in analysis are balance sheet and income statements of Azerbaijan companies. These data are obtained from internet website of the companies and by the meeting chief financial officer. And all data are shown annually.

The contribution of this investigation to the literature about the capital structure is that it is the first study which determines the firm specific factors of

capital structure and macroeconomic indicators affecting the leverage of firms in Azerbaijan.

Unfortunately, data are not available for all companies through the years. So, unbalanced panel data analysis will be used for this investigation. Firstly, total 76 companies are used in this research.

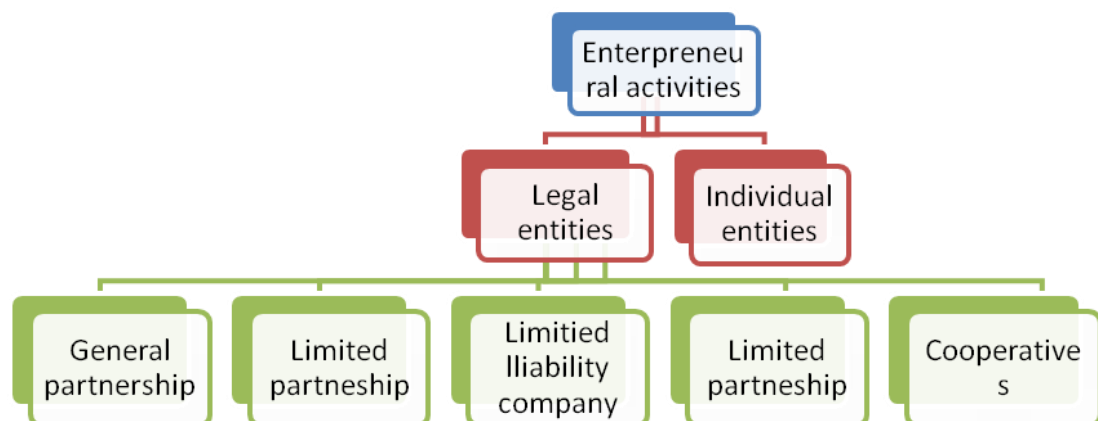
And these companies are from various sectors. As stated in the article by Nyangoro (2013), the strong leverage level of financial institutions may change the correctness and robustness of the results. So, five financial companies were excluded from the sample and there are a total of 71 companies and 222 observations in the study. As to the currency, all data are shown in US dollars. The relationship between variables will be tested in E-views program.

4.5. EMPIRICAL RESULTS

4.5.1. Enterprises And Leverage Ratio Classification In Azerbaijan

Put simply, entrepreneurship is a system of starting business activities and developing an organizational model. Generally, there are two types of legal forms of entities in Azerbaijan: individual and legal entities. Figure 12 below descriptively illustrates the legal forms of entities in Azerbaijan.

Figure 13 Legal types of entities in Azerbaijan.



Source: Ministry of Economy and Industry, (2014)

Figure 13 emphasizes that individual entities are the basic model of entrepreneurship, which can be set up by individuals without creating a legal entity. Of course, an entrepreneur is a starter of this model and responsible for success and risk of organization.

But a legal entity is a type of business established within the law and has a registration code as an organization. This type of business provides own properties and possesses its obligations within the balance of properties. Legal entities have five structural forms which are general partnership, limited partnership, limited liability company, limited partnership and cooperatives.

Simultaneously, there are nonprofit legal organizations whose main purpose is to maintain the social, cultural and educational goals in communities, ensure human rights protection and development of psychical needs of the population, etc.

To make profit is not the main and important goal for these organizations and annual profit is not distributed between founders. Unions, associations and foundations are examples for such organizations.

According to the Ministry of Economy and Industry, there were a total of 90,783 registered legal entities in Azerbaijan in the first quarter of 2014, compared to 75,632 and 86,010 registered in 2010 and 2013. From the ownership aspect, state ownership, municipal and private ownership contain main proportion of legal organizations.

Table 6 The number of organizations from ownership aspect

Ownership structure	State ownership	Municipal ownership	Private ownership
The number of entities	9,937	1,755	79,091
As %	10.9	1.9	87.1

Source: The Development Dynamic of Entrepreneurship in Azerbaijan, (2014)

According to Table 6, a total of 9,937 organizations were registered with state ownership. The number of entities with municipal ownership is 1,755. The proportion of these ownerships over the total number of entities is 10.9 and 1.9 respectively. The private organizations totaled 79,091 in the first half of 2014.

The bulk of the companies is located in the capital city of Baku. Thus, a total of 48,265 legal entities are operating in Baku, with 12,555 registered in Central Aran Economic Region 6,257 in Ganja-Kazakh Economic Region. Lenkaran, Guba, Sheki and Nakhcyvan are the main biggest and suitable districts for establishing new organizations.

In comparison with previous years, the number of registered new companies declined and some 5,042 new legal entities were established during the first half of 2014, versus 5,137 in 2011, 5,417 in 2012, and 7,879 in 2013. Statistically, 18.6% of organizations were involved in education sector, whereas 16.8% in trade and 9.2% in construction sectors.

Table 7 proves that the statistics of individual entities without creating a legal entity also shows an increase in the first six months of 2014. So, their number, compared with 2013, increased from 454,997 to 488,219.

Table 7 The number of individual entities, 1H 2014

Years	2008	2009	2010	2011	2012	2013	06 2014
Number of individual entities	275,006	272,597	306,933	364,581	432,141	454,997	488,219

Source: The Development Dynamic of Entrepreneurship in Azerbaijan, (2014)

The lion`s share of individual entities also goes to the three biggest cities: Baku, Sumgait and Ganja. 81.5% of individual entities were established by males. Woman entrepreneurs account for 18.5%. Individual entities are mainly involved in trade, agriculture and transportation.

As it is observed from the business reports of international organizations, small and medium-sized enterprises account for the major part of legal entities. There are different principles used by different countries for definition of small medium enterprises.

The number of employees and turnover is taken as generally-accepted and fundamental approaches for small legal entities.

According to historical practices of some countries, annual balance sheet and revenue are also main indicators for considering legal entities as small and medium. For example, turnover, balance sheet and the number of employees are main factors for definition of small and medium-sized entities.

Some European countries also refer to these arguments. But the developing countries use annual turnover and the number of employees for differentiation of legal organizations.

In Azerbaijan, the Cabinet of Ministers has approved classification of small and medium entrepreneurship regulations. The Azerbaijan government uses both the number of employees and annual turnover in determining small and medium-sized enterprises. Classification in small and medium-sized enterprises are presented in Table 8 below.

Table 8: Determinants classification of small and medium-sized enterprises

Entrepreneurship category	Number of employees	Annual Turnover
Industry and construction	<50	≤ 500.000 AZN
Agriculture	<25	≤ 250.000 AZN
Wholesale trade	<15	$\leq 1.000.000$ AZN
Retail trade, transportation	<10	≤ 250.000 AZN

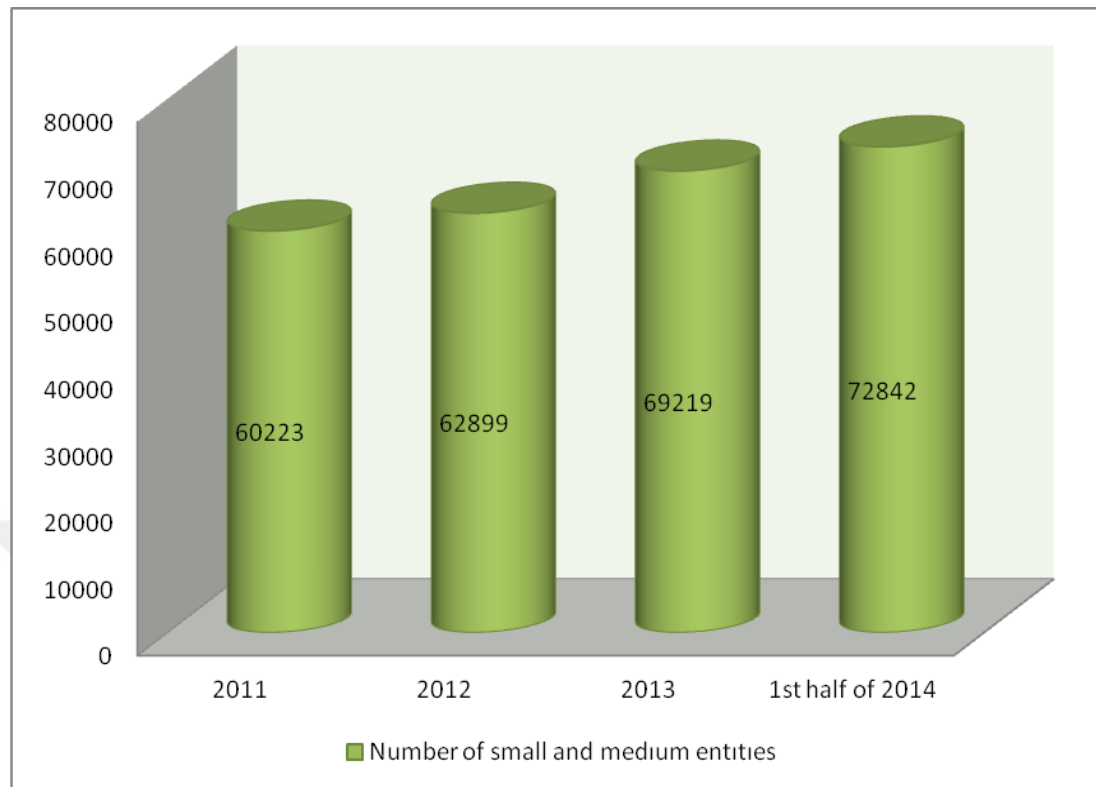
Source: CESD report, *Small and Medium Entrepreneurship in Azerbaijan, Country Assessment (2012)*

According to the statistical data by the Ministry of Economy and Industry, the number of small and medium-sized companies stood at 72,842 during the first half of 2014.

It means that 80.2 % of total legal entities are small and medium-sized organizations, operating in different regions across Azerbaijan.

Figure 13 provides that the number of small and medium-sized companies shows increasing trend, compared to 2011

Figure 14: Number of small and medium-sized enterprises



Source: *The Development Dynamic of Entrepreneurship in Azerbaijan*, (2014)

As is evident in ``Data and Collection``, a total of 71 companies are analyzed in this study, of which 14 are engaged in construction sector. The number of food industry companies is 4. In addition, 13 companies are involved in service, 5 in agricultural, 14 in transportation, 9 in trade, 5 in health and 7 in IT sectors.

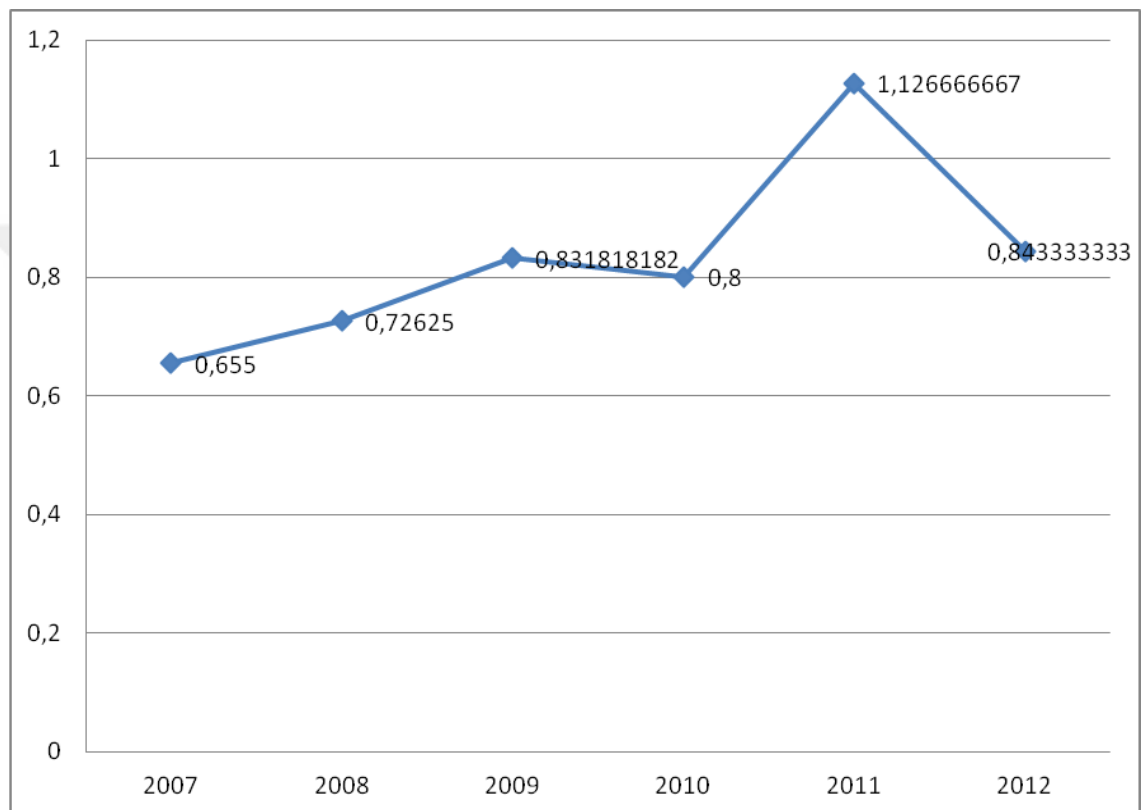
Leverage classification and borrowing level of these companies are differentiated by sectors. The main leverage indicator in this analysis is calculated by dividing total liabilities to the sum of the total liabilities and total equities.

Due to stable and strong economical and social development, construction sector improved rapidly over 1996-2012. Dynamically increasing oil revenues have been channeled to expand domestic infrastructure over recent years.

New roads, bridges, skyscrapers, complexes, plants and factories have been built and historical buildings, architectural structure have been restored. The sectoral breakdown of companies also affirms this assumption.

A total of 14 companies involved in construction sector are analysed in this research. The results indicate that the leverage value of the companies has increased over the years. The graphical explanation of the borrowings is as follows:

Figure 15:Level of borrowings in construction sector



Source: State Statistical Committee,(2013)

Figure 14 indicates that the average leverage ratio was 0.655 in 2007 versus 0.83 in 2009 and 1.12 in 2011. Official statistical data also prove that the total investment into the construction sector was USD 19.7 billion in 2012.

Of the total, USD 15.5 billion came from internal investment, while USD 14.3 billion from external sources. 2000 saw USD 1.2 billion in investment and 2007 AZN 9.5 billion respectively.

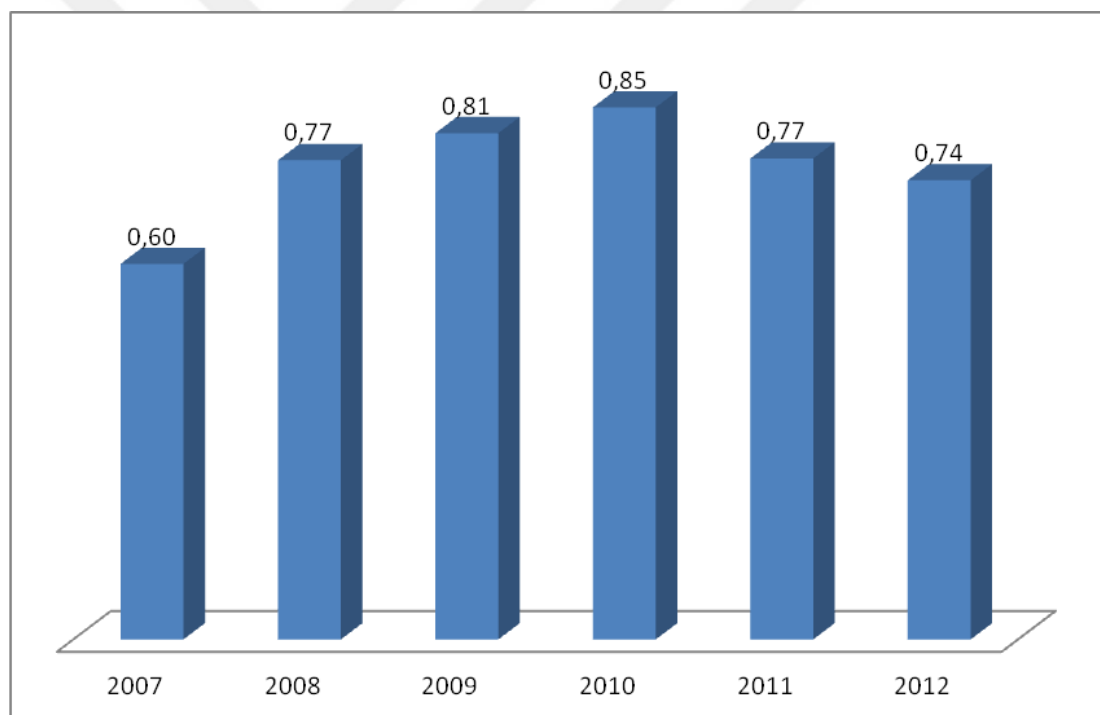
Transportation is one of the important sectors in Azerbaijan, which contributes to GDP increase. The main developed types of transportation are pipeline transportation, road and railway transportation and shipping.

The number of private companies within transportation sector has also significantly grown through promoting increase in the total level of services. The large regional transportation network is the major system linking the country with the world: consider the Baku-Tbilisi-Ceyhan (BTC) main export pipeline.

The launch of the Baku-Tbilisi-Erzurum (BTE) gas transportation pipeline and Baku-Tbilisi-Kars (BTK) railway will help increase the volume of goods transportation. These projects are tailored to foster relations between countries.

A total of 14 transportation companies are selected to investigate the firm specific determinants of capital structure. From the leverage aspect, debt borrowing of the companies has increased over 2007-2010.

Figure 16: Debt ratio in transportation sector



Source: State Statistical Committee of the Republic of Azerbaijan, (2013)

Figure 16 illustrates that borrowings ratio level in transportation companies was 0.60 in 2007. This value respectively increased to 0.77 in 2008 and 0.81 in 2009. The maximum debt ratio was in 2010. Total volume of borrowings diminished over 2011-2012.

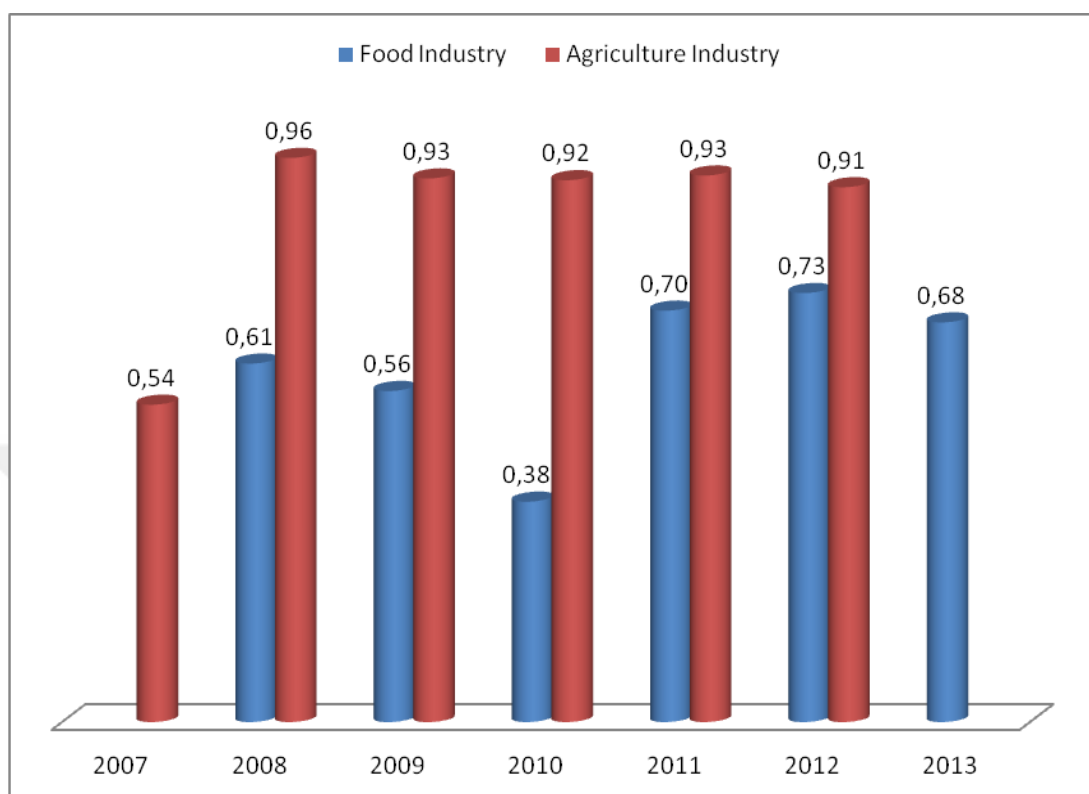
Governmental statistics is also consistent with results. Thus, after the reforming of non-oil sectors government increased the amount of total credits with the minimum interest rate for improvement of infrastructure and development of sectors. The bulk of the biggest transportation companies is located in Baku and Ganja.

Agriculture is the main potential non-oil sector that provides the socio-economic development in Azerbaijan. Climate and soil structure of the country is propitious to develop agriculture. This sector provided USD 3.5 billion and approximately 5.2% of GDP in 2012.

Statistically, there were 1,864 agricultural enterprises in Azerbaijan in 2012, of which 241 were state-owned enterprises. Also, two collective farms and 72 cooperatives are employed within the agricultural sector. There are also 504 service firms, exporting and selling services of agricultural products.

Five companies within the agricultural sectors and four companies from food industry are selected as sample companies in analyzing capital structure of companies.

Figure 17: Level of leverage ratio in food and agricultural industries



Source: State Statistical Committee of the Republic of Azerbaijan, (2013)

According to Figure 16, borrowing level of companies in agricultural sector indicated approximately 0.93 during the years. Only in 2008 debt level increased comprehensively. Thus, the leverage ratio was 0.54 in 2007 and this figure was calculated as 0.96 in 2008.

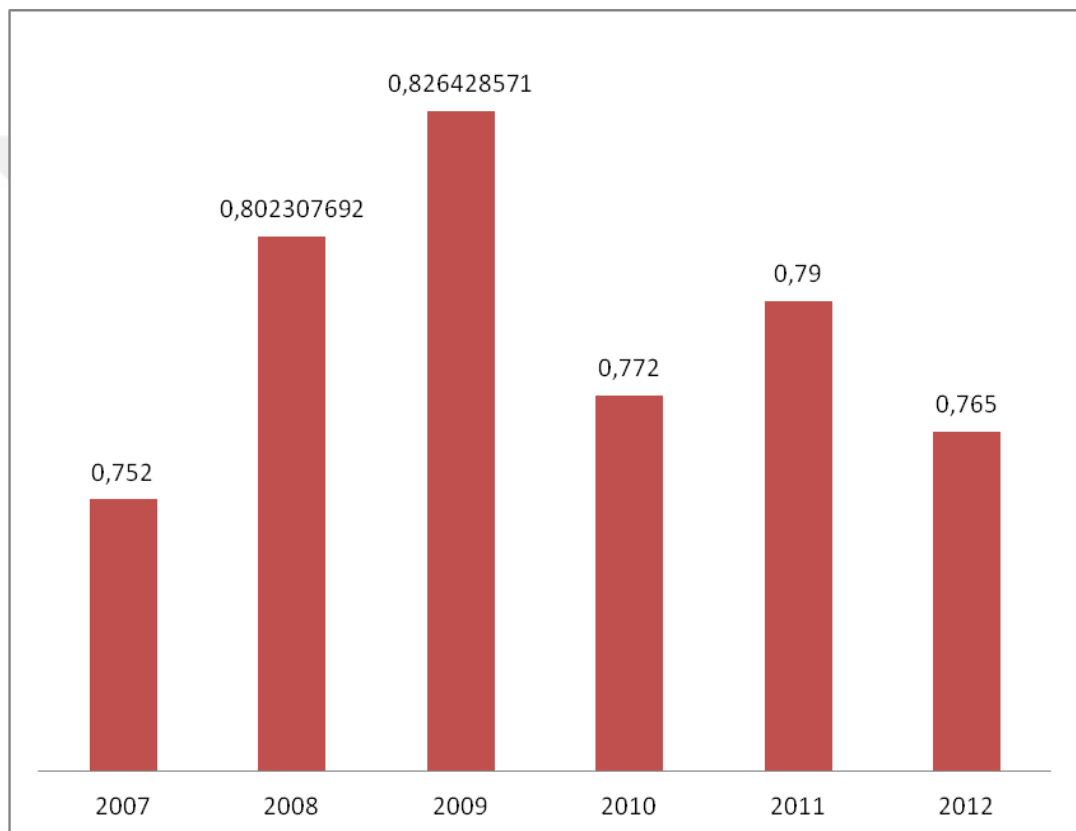
After 2005, government launched special state programs for development of agricultural sector. The most important program is payment of subsidiary financial sources to agricultural enterprises. Besides, the National Fund for Entrepreneurship Support under the Ministry of Economic Development and Industry grants long-term credits with minimum interest rates in order to boost agriculture.

At the same time, food industry indicators were changeable over 2008-2013. Borrowing level of companies was indicated 0.61 in 2008, but this value decreased to 0.38 in 2010. But the volume of debts has increased approximately by two times since 2011.

In recent years, development of other areas has contributed to increases in service and trade sectors. For example, the country inaugurated the opening of new service centers, schools and educational centers, and tourist resort areas.

Sample data also prove that the main part of the companies is involved in service and trade sector. A total of 21 companies from this sector are selected for measurement of firm specific factors of capital structure.

Figure 18: Debt ratio in service and trade sector



Source: State Statistical Committee of the Republic of Azerbaijan, (2013)

Figure 17 indicates that maximum borrowing ratio value was 0.82 in 2009 and most probably, the main reason for debt financing is the results of 2008 inflation. As in other sectors, inflation affected the profitability and performance of companies. And in consequence of inflation, financing opportunities decreased to minimum level across the country.

Figure also demonstrates that the debt ratio was 0.75 in 2007 and this value increased to 0.82 in 2009. But this value diminished after 2010.

Since its independence from the Soviet Union, Azerbaijan has channeled some part of budget receipts to health sector, as health facilities and equipment did not meet modern and innovative requirements.

The total expenses from budget in 2012 were USD 781 million. This indicator was USD 94 million in 2004 and approximately USD 444 million in 2008 respectively. .

Improving quality and quantity of new private health organizations and companies cause development of health sector. Thus, the government encourages and gives financial sources for education of student abroad in health sphere. Their graduation increases quality of health sector in the country. Also, progress of academic researches affects the improving of health sector.

A total of five medical companies are analyzed in this investigation. The main leverage ratio classification of companies also provides consistent results with government statistics.

4.5.2. The Firm Specific Determinants Of Capital Structure In Azerbaijan-Based Firms

The purpose of this study is to determine the firm specific indicators of capital structure in Azerbaijani firms. The main selected factors for measurement are profitability, firm size, growth opportunities in plant, property and equipment, growth opportunities in total assets, non-debt tax shields and tangibility.

Table 9 highlights general information on output of analysis.

Table 9: General information on analysis

Dependent variable	A firm's debt ratio
Independent variables	profitability, firm size, growth opportunities in plant, property and equipment, growth opportunities in total assets, non-debt tax shields and tangibility
Method	Fixed effect method
Sample period	2007-2013
Total panel observations	222 observations

Unfortunately, the data are not available for all companies with consecutive years of data. For the analysis, the basic data consisting of a total of 222 observations were taken from the balance sheets of 71 firms. So, unbalanced panel data regression analysis will be used for measurement of relationship between debt ratios and firm-specific factors. The relationship between variables will be tested in E-views program.

As presented in methodology section of thesis, the main regression equation for analysis is as follows:

$$\begin{aligned} \text{Leverage of the firms} = & \beta_0 + \beta_1 \text{ profitability} + \beta_2 \text{ firm size} \\ & + \beta_3 \text{ growth opportunities on plant, property and equipment} \\ & + \beta_4 \text{ growth opportunities on total assets} + \beta_5 \text{ non-debt tax shield} \\ & + \beta_6 \text{ tangibility} + \varepsilon \end{aligned}$$

To decide on selecting Cross Section Method type of panel data is the main requirement in the analysis. According to Ashenfelter, Levine and Zimmerman (2003), it is important to take into consideration advantages and disadvantages of models for comparing fixed and random effects models in the study.

But with the help of the Hausman test we can decide which model is very useful in the analysis. The results of the test offer that the cross random effect is not systematic and fixed effect method is very useful for measurement of relationship

between variables. The value of the chi square Hausman test was 27.96 and this value was statistically significant.

After the Hausman test all variables are included into the program and fixed effect are applied for measurement. The results of panel data regression analysis are presented in Table 10 below:

Table 10: Panel data regression analysis results

Variables	Coefficients	St. errors	T Values	P> t
Profitability	-0.1782	0.1099	-1.62	0.113
Firm size	0.0008	0.0091	0.10	0.922
GOTA (growth opportunities on total assets)	0.0001	0.0001	0.58	0.567
GOPPE (growth opportunities on plant, property and equipment)	-0.0001	0.00002	-0.64	0.525
NDTS	-0.3021	0.2769	-1.09	0.282
Tangibility	-0.0685	0.0893	-0.77	0.448
Constant	0.8135	0.1008	8.07	0.000

Notes: R^2 – 0.1508, F statistics – 1.15

As seen from Table 10, there is no significant relationship between leverage ratio of the companies and explanatory variables. And simultaneously, R-squared (R^2) value is 0.1508. It means that the model has approximately 15% explanation percentage. F statistics is calculated as 1.15.

The table also indicates that there is a negative relationship between profitability and debt ratios. GOPPE, NDTS and Tangibility are also negatively related to the leverage ratio of the firms. But unfortunately, all relationships are not significant.

The analysis also indicates that $\text{corr}(u_i, X_b) = 0.0995$. At the same time correlation values prove that there are no strong correlations between variables.

Table 11: Correlation values between independent variables

	<i>Firm size</i>	<i>GOPPE</i>	<i>GOTA</i>	<i>Leverage</i>	<i>Profit.</i>	<i>NDTS</i>	<i>Tang.</i>
<i>Firm Size</i>	1.000	0.046	-0.025	-0.170	0.069	-0.025	-0.063
<i>GOPPE</i>	0.046	1.000	0.109	0.033	-0.022	-0.007	-0.020
<i>GOTA</i>	-0.025	0.109	1.000	0.053	-0.008	-0.090	0.179
<i>Leverage</i>	-0.170	0.033	0.053	1.000	-0.246	-0.160	0.146
<i>Prof.</i>	0.069	-0.022	-0.008	-0.246	1.000	0.067	-0.085
<i>NDTS</i>	-0.025	-0.007	-0.090	-0.160	0.067	1.000	0.103
<i>Tang.</i>	-0.063	-0.020	0.179	0.146	-0.085	0.103	1.000

According to Table 11, there is not any strong relationship between variables. For example, the correlation value between profitability and firm size is 0.069. It means that the correlation between these variables is 6.9 % and variables are positively correlated.

Moreover, there is a negative correlation between profitability and GOPPE, and the figures indicate that the correlation value is calculated as 0.022 or -2.2%.

The main reason for the unlucky model is that there are some missing values in variables, especially, in GOTA (growth opportunities in total assets) and GOPPE (growth opportunities in property, plant and equipment). And these values directly influence the results and correctness of measurement.

Thus, under these conditions, GOTA and GOPPE will be excluded from the measurement. And the analysis will be analyzed for the second time as Model 2. A total of 4 explanatory variables will be included into the model, which represents profitability, firm size, NDTS and tangibility.

Regarding all these variables, the panel data regression analysis of the model will be as the follows:

$$\begin{aligned} \text{Leverage of the firms} = & \beta_0 + \beta_1 \text{profitability} + \beta_2 \text{firm size} \\ & + \beta_3 \text{non-debt tax shield} + \beta_4 \text{tangibility} + \varepsilon \end{aligned}$$

Reanalysis of the Hausman test indicates that the results are consistent with the outcomes of previous model. The Hausman test offers to select a fixed-effect approach to this model, too. The chi square value in this model was 23.84, being statistically significant.

The results of Model 2 panel data regression analysis are presented in Table 12 below:

Table 12: Panel data regression analysis results - Model 2

Variables	Coefficients	St. Errors	T Values	P> t
Profitability	-0.5338	0.1259	-4.24	0.000***
Firm size	0.0166	0.089	1.85	0.068***
NDTS	-0.0676	0.2552	-0.26	0.7992
Tangibility	-0.0969	0.0798	-1.21	0.228
Constant	0.7353	0.0823	8.43	0.000***

Notes: *** indicates the significance level at 10%, $R^2 = 0.2103$, F statistics – 5,86

Taking into consideration the results of Table 12 and Model 2, there are two significant relationships between variables: the relationship between profitability and leverage ratio of the firms and the relationship between firm size and leverage ratio.

Profitability is negatively and significantly related with the leverage ratio. The significance level of relationship is 10%. The coefficient of relationship is -0,5338. It means that 1 percent increase in profitability effects -0,5338 decrease in leverage ratio.

The results of relationship are consistent with pecking order theory. In literature, pecking order theory defenders assume that there must be a negative relationship between profitability and debt ratio.

Secondly, there are positive and significant relationships between leverage ratio and firm size. The significance level is also within 10% for this relationship. The coefficient of relationship is 0.0166. It means that 1 percent increase in firm size increases leverage of the firm by 0.0166 percent.

However, the non-debt tax shield and tangibility are not significantly correlated with debt ratio. The coefficient of both relationships is negative.

Additionally, R-squared (R^2) value is 0.2103. This figure proves that the model has 21% explanation percentage. F statistics is calculated as 5.86 and this value is significant. Analysis also indicates that $\text{corr}(u_i, X_b) = -0.129$.

Finally, we decided to reanalyze measurement of relationship between leverage ratio and explanatory variables by including two variables only, which are profitability and firm size. These variables had a significant relationship with leverage ratio. So, it will be very concrete to determine the real signs and coefficient of relationship and significance with leverage ratio.

So, profitability and firm size are included in the testing as Model 3. The Hausman test indicates that fixed effect method is systematic for Model 3. This result is consistent with the previous one. And it is significant, too. The chi square value was 6.58. Equation of Model 3 will be:

$$\text{Leverage of the firms} = \beta_0 + \beta_1 \text{ profitability} + \beta_2 \text{ firm size} + \varepsilon$$

The results of Model 3 are presented in Table 13:

Table 13: Panel data regression analysis results - Model 3

<i>Variables</i>	<i>Coefficients</i>	<i>St. Errors</i>	<i>T Values</i>	<i>P> t </i>
Profitability	-0.5631	0.1236	-4.55	0.000***
Firm size	0.0155	0.0088	1.76	0.068***
Constant	0.6887	0.0724	9.51	0.000***

Notes: *** indicates the significance level at 10%, $R^2 = 0.20$, F statistics – 10.88

As can be seen from Table 13, both variables are significant at 10% significance level.

Profitability is negatively and significantly related to the leverage ratio of the firms. The coefficient of relationship indicated -0.5631. It means that 1 percent increase in profitability affects -0.5631 decrease in leverage ratio.

The results of relationship are consistent with pecking order theory. Allen (1991) explained that companies firstly preferred internal financing. If the internal financing channel is insufficient, the external financing channel becomes more relevant.

With regard to this information, Mandaci (2009) pointed that there are two types of external financing: retained earnings and common stock. Retained earnings are the highly reliable financing type.

Ross, Westerfield and Jaffe (2005) also describe that profitable companies use debt financing at a minimum level. Therefore, the debt ratio decreases in case of higher profits.

All this theoretical background explains that the results of measurement are accurate. So, there is a negative relationship between profitability and leverage ratio. Literature review also affirms the results of the analysis.

Rajan and Zingales (1995) proved that there is negative relationship between profitability and leverage ratio in Japanese and Canadian companies. Simultaneously,

profitability is negatively related to debt ratio of U.S. companies (Myers and Sunder, 1999).

Booth, Aivazian, Demircug, Kunt and Maksimovic (2001) determined the firm-specific factors of companies in Brasil, Mexico, India, Korea, Jordan, Malaysia, Pakistan, Thailand, Turkey and Zimbabwe over the period between 1985 and 1991.

The results of regression analysis indicate that profitability had negative relationship with debt ratio. And it is significantly explanatory variable for capital structure.

Research by Bauer (2004), Berk (2005), Akhtar and Oliver (2005) also approves the relationship position between profitability and leverage ratio.

Secondly, firm size has significant relationship with leverage. And the sign of the relationship is positive and coefficient indicates 0.0155. It means that in case of an increase in firm size, it will influence the increasing of leverage ratio.

Theoretically, trade off theory defenders assume that debt financing will increase in parallel with firm size. It means that there must be a positive relationship between profitability and debt ratio.

Ozkan (2001) tests the firm specific determinants of capital structure in UK companies. Outcomes of measurement imply that firm size is positively related with leverage ratio. The findings are consistent in Swiss firms, too (Graud, 2005).

Zhou Zang (2006) described the same issues in Canadian firms. He explained that the size of the company was the strongest explanatory variable for debt financing of the company. It is described that firm size has positive relationship with leverage ratio. And the researcher also emphasizes that multinationals have higher level debt ratio than domestic corporations. Regarding the outcome of the test in the article by Sbeiti (2010), size is positively related to debt ratio for all 3 countries (Kuwait, Saudi Arabia and Oman). R square of Model 3 is figured 0.20. It means that there is 20% explanation degree of analysis. F statistics is counted as 10.88, which is a statistically significant value. Analysis also indicates that $\text{corr}(u_i, X_b) = 0.031$. Findings of the three models are summarized in Table 14 below:

Table 14: Results of all models

	Model 1 (Coefficients)	Model 2 (Coefficients)	Model 3 (Coefficients)
Profitability	-0.1782	-0.5338***	-0.5631***
Firm size	0.0008	0.0166***	0.0155***
GOTA	0.0001	-	-
GOPPE	-0.0001	-	-
NDTS	-0.3021	-0.0676	-
Tangibility	-0.0685	-0.0969	-
Constant	0.8135	0.7353	0.6887
Hausmann Test	27.86*** (fixed effect)	23.84*** (fixed effect)	6.58*** (fixed effect)
R2	0.15	0.21	0.20
F Statistics	1.15	5.86***	10.88***
Corr (u _i .Xb)	0.094	-0.129	0.031

Notes: *** indicates the significance level at 10%

Taking into account Table 14 and all the models, our final equation will be as follows:

$$\text{Leverage of the firms} = 0.6887 - 0.5631 \text{ profitability} + 0.0155 \text{ firm size}$$

Before measurement and predetermining there were 6 hypotheses. Only the first and the second hypotheses are accepted. Only these arguments are maintained with measurement. Other hypotheses are rejected and H0 is accepted.

4.5.3. The Effects Of Macroeconomic Factors On The Capital Structure Of The Firms

After fundamental work of Modigliani and Miller (1958), researchers tried to put substantial effort for determining the indicators of capital structure. And most part of the investigations have been conducted on the measuring of effects of firm specific factors on the financial decision making.

Unfortunately, there were not sufficient researches from macroeconomic aspects. So, quantitative and qualitative changes in the economy of the country are essential for capital structure choice and financial decision making of firms.

The main parts of financial researchers consider that the analysis of Booth, Aivazian, Demircug Kunt and Maksimovic (2001) is coincided as the first paper on determining the relationship between the leverage ratio of the firms and macroeconomic factors. They investigated 49 companies from 10 countries.

The findings of the analysis indicate that the economic growth has positive and significant relationship with debt ratio. But inflation is negatively related to the leverages of firms. It means that increased inflation will decrease the amount of debt ratio.

Following this study, in literature, many analyses are conducted concerning the survey of the effect of macroeconomic factors on the financing decision making. Jorgensen and Terra (2003) determined the effect of macroeconomic indicators, such as service level, transportation and public utilities level, wholesale trade level and retail trade.

Occasionally, it must be noted that the macroeconomic value was not available for all countries. Empirical findings explain that transportation and public utilities are explanatory variables for capital structure choice and significantly related to leverage level of companies for all countries with the exception of Peru and Mexico.

Survey of Joeever (2006) provides that macroeconomic indicators, such as industry leverage, GDP growth, inflation are explanatory indicators for capital structure choice of firms, and all these factors are statistically significant. However,

domestic bank credit, market capitalization and government consumption are indicated as insignificant variables.

Bas, Muradoglu and Phylaktis (2009) proved that GDP, interest rate and tax rate has positive relationship with the leverage financing of the firm. It means that an increase in a country's gross domestic product will increase its debt ratio respectively. However, inflation is negatively related to leverage ratio.

Joeever (2012) analyzed the macroeconomic determinants of capital structure in nine European countries, including Poland, Hungary, Latvia, and Estonia. GDP growth, inflation, corporate tax rates, country credit rating and corruption level are the main independent variables of the equation.

The author mentioned that the data were unbalanced. So, unbalanced panel data regression equation is used for testing. The findings of results indicate that the effect of factors differs in listed and unlisted firms.

GDP growth is negatively related with the debt ratio in listed firms. But the inverse relationship occurred in unlisted firms. Inflation (the consumer price index) has negative relationship with the leverage ratio in both types of the companies.

Corporate income tax and corporate credit rating are also in negative coefficients in listed firms. But, corporate income tax has positive relationship with debt in unlisted firms. Corporate credit rating is negative for unlisted companies. Corruption level also affects the increasing debt in listed and unlisted companies.

Mokhova and Zinecker (2013) investigated the effects of macroeconomic indicators on the capital structure of European countries after global crisis. The main purpose of the research is to determine the effects of global crisis on the countries and to measure the influence of factors in choosing a financial source.

The paper consists of seven European countries: Czech Republic, Slovakia, Hungary, Poland, Greece, Germany and France. Macroeconomic factors are presented in two forms: monetary and fiscal policies. Independent variables related with monetary policies are inflation rate, long-term and short-term interest rate. Fiscal policy indicators are government debt to GDP, tax revenue (as a share of GDP) and income tax.

The findings of investigation indicate that all variables show various results for countries. Inflation rate has negative and significant relationship with leverage ratio in Czech Republic.

Interest rate is also negatively related with dependent variable, but the coefficient of relationship is insignificant. Government debt has also negative relationship. The relation between leverage ratio and tax revenue, income tax are insignificant.

The inflation rate has an insignificant relation with dependent variable in all countries except France. Government debt is positively and significantly related with the leverage ratio in Hungary. The results of Slovakian companies are consistent with Hungary. Leverage ratio and Greece government debt relation are found as insignificant. Interest rate has positive signs in Germany and France.

As shown from the review, this issue is rarely exposed to literature. So, the contribution of this analysis to the literature is that it is the first measurement to prove the relationship between leverages and macroeconomic indicators, such as GDP and Inflation.

4.5.3.1 Methodology and variables

The main purpose of this investigation is to determine effects of macroeconomic factors on the financing choice of the company. Generally, three variables are selected for measurement. The leverage ratio is the main indicator of dependent variable. Two macroeconomic factors such as GDP and Inflation are the symbols of independent variables.

As noted in previous sections, the leverage ratio is calculated by dividing total liabilities to the sum of the total liabilities and total equities.

$$\text{Total debt ratio} = \frac{\text{total liabilities}}{\text{total liabilities} + \text{total equities}}$$

GDP is the main component which was called the best single measure economic well-being of a country. In a word, ``Gross domestic product (GDP) is the

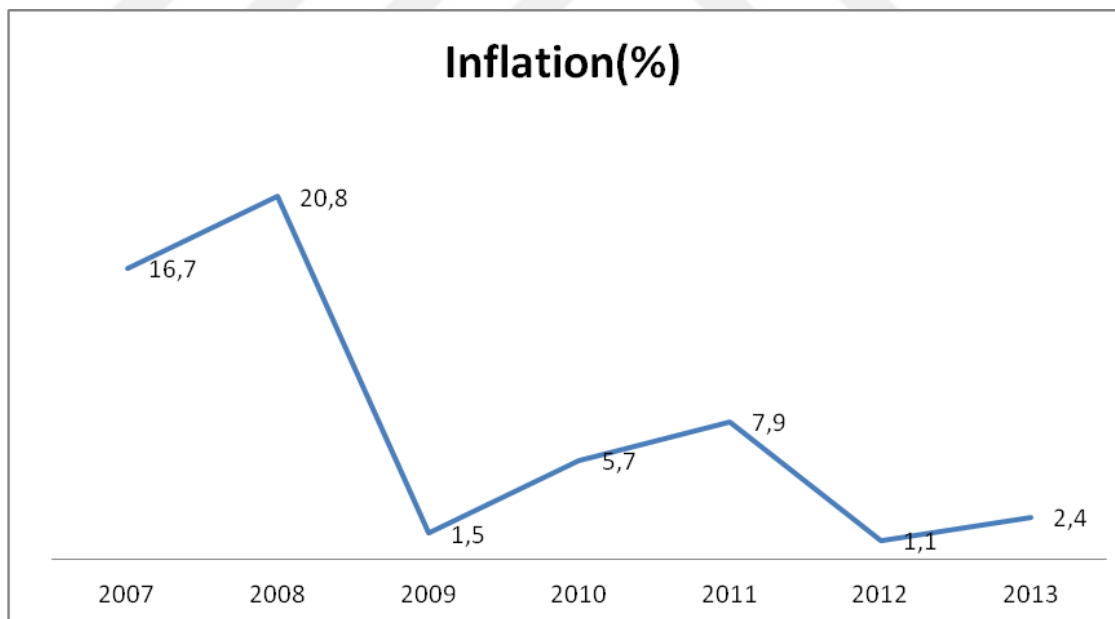
market value of all final goods and services produced within a country in a given period of time. ` (Gregory Mankiw, 2005)

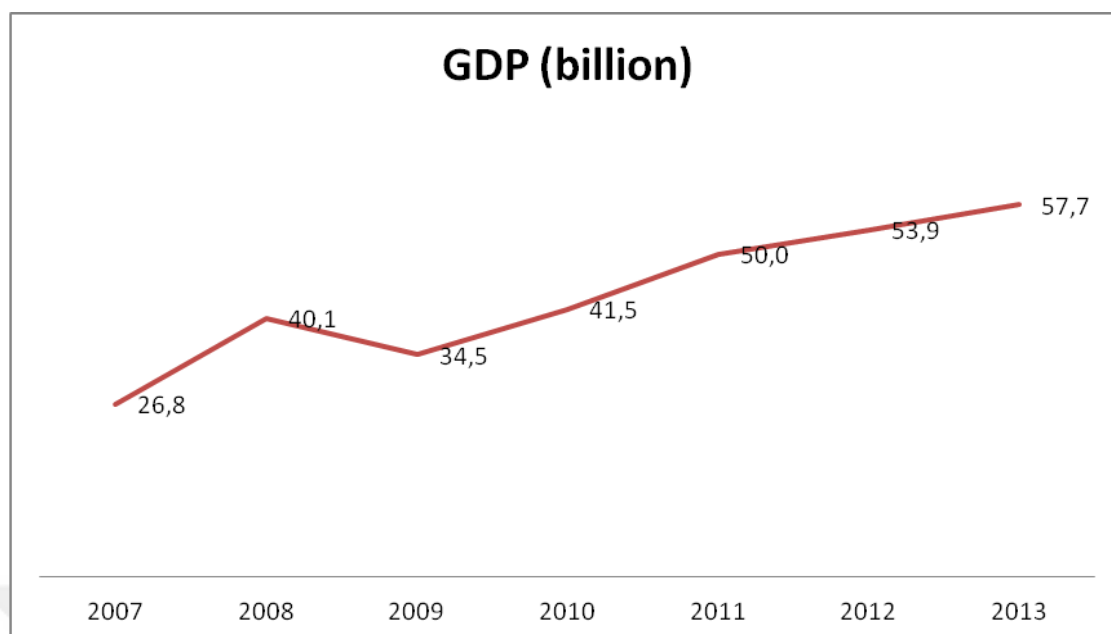
Gross domestic product was decreased from 1990 to 1995 due to negative results of economic and financial turbulences. Total GDP was USD 2443 million in 1990 and USD 1629 million in 1994 respectively.

After 1995, positive impact of new projects, the increasing of foreign direct investment level, employment of new legislations and regulations for whole sectors paved the way for increasing GDP. According to the State Statistical Committee, total GDP growth rate was approximately 8% in 1995 and 13% in 1996 respectively.

Improvement of taxes and financial system, the renewing of private sectors, mitigation of juridical forms of financial system, reform and liberalization of trading helped decrease the budget deficit, unemployment, thus increasing GDP. Therefore, total GDP was USD 3180 million in 1996, while USD 5272 million in 2000, USD 13238 in 2005 and USD 73560 million in 2013 significantly.

Figure 19: Inflation and GDP in Azerbaijan





Source: State Statistical Committee of the Republic of Azerbaijan,(2013)

Figure 18 shows that the Gross Domestic Product (GDP) in Azerbaijan has increased by about 14-fold over the past 13 years, with a 10% decrease (USD 4555 million) recorded in 2009 only. Financial economists assume that the main reason for the decrease was the negative impact of the 2008 global crisis.

Inflation values of the country are not stagnant. It was very changeable during the periods. This indicator was figured as 16.7% and 20.8% in 2007 and 2008 respectively. Moreover, financial economists assume that the inevitable reason of this increase was the negative effects of the global crisis.

However, after 2009 inflation was calculated under 10% significantly. Thus, the inflation rates were 1.5% and 5.7%, accordingly, in 2009 and 2010. A consumer price index (CPI) is the main indicator to be used as a measure of inflation. The CPI stood at 1.1% in 2012 and 2.4% in 2013 respectively.

Unfortunately, the data are not available for all companies through the years as in the previous investigation. So, unbalanced panel data analysis will be used for this investigation, too. A total of 222 observations are included in the sample. Natural logarithm is applied for GDP. All data are expressed in terms of U.S. dollars. The relationship between variables will be tested in E-views program.

Regarding all this information, the panel data regression equation will be as follows:

$$\text{Leverage of the firms} = \beta_0 + \beta_1 \text{ GDP} + \beta_2 \text{ Inflation} + \varepsilon$$

4.5.3.2 Results

The table below includes general information about output of the analysis. There are 222 observations in the sample and the sample covers the periods between 2007 and 2013. With the help of Hausman test, we can decide which model is very useful in the analysis.

Table 15: General information about analysis

Dependent variable	Debt ratio of the companies
Independent variables	GDP and inflation
Method	Fixed effect method
Sample period	2007-2013
Total panel observations	222 observations

Results of Table 15 and tests offer that the cross-random effect is not systematic and the fixed effect method is very useful for measurement of relationships between variables.

After the Hausman test all variables are included into the program, and fixed effect is applied for measurement. The results from the panel data regression analysis are presented in Table 16:

Table 16: Results of panel data regression (the effect of macroeconomic factors on the capital structure)

<i>Variable</i>	<i>Coefficient</i>	<i>St. Errors</i>	<i>T Value</i>	<i>P> t </i>
GDP	0.240716	0,07	3,28	0,001***
Inflation	-0,001698	0,001	-1,18	0,239
Constant	-5.049986	1.78	-2.82	0.005***

Notes: *** indicates the significance level at 10%

According to the results of the panel data regression analysis in Table 16, there is only one significant variable.

The table above indicates that GDP is positively and significantly related to an advantage ratio. The significance is within the 10% level. The coefficient of GDP is 0.24. That means in case of 1 percent increase, GDP influences 0.24% increase in leverage ratio.

Theoretically, the finding of analysis is consistent with previous research in literature. Booth, Aivazian, Demircug Kunt and Maksimovic (2001), Jorgensen and Terra (2003), Joever (2006) also proved that the relationship between debt ratio and GDP was positive.

The results explain that the increasing of GDP will affect the increasing of debt. Consequently, the firms in Azerbaijan tend to select debt financing in the condition of the increasing of GDP.

However, on the contrary, inflation is negatively related to the leverage ratio, and this relationship is insignificant. The coefficient of inflation is -0.0016. The results of this relationship are also consistent with theories and previous researches.

The R-squared (R^2) value of analysis is indicated as 0.93. This value shows the explanation degree of measurement. It means that the analysis is explained 93%. Adjusted R square is calculated 0.89.

CONCLUSION

Since 1958, capital structure has been considered the most discussed topic in corporate finance. The major question is to find optimal capital structure point and determine the fundamental determinants. Extensive investigations have been attracted to provide the effects of factors on the leverage ratio of the companies. The main part of these studies explains, the firm specific determinants in corporate. Another part of investigations determines the influence of macroeconomic factors on the financing choice of companies. According to previous literature, the majority of these articles have been applied to developing countries.

In light of previous literatures and theories, the main purpose of this study is to determine capital structure policies of Azerbaijan companies. There are three main objectives in investigation.

The leverage classification of companies and sectors are also analyzed in this phase. Descriptive statistics, tables and figures are the main method for this part. Statistical data about entrepreneurship are obtained from the State Statistical Committee.

The second part of the research obtains the firm specific determinants of capital structure in Azerbaijani companies. Taking into consideration the previous studies about this topic, researchers used different methods for calculation of relationship between leverage ratio and firm specific determinants. The third part of the investigation describes the effect of macroeconomic factors on the capital choice of Azerbaijani companies.

The contribution of this investigation to the literature about the capital structure is that it is the first study which determines the firm specific factors of capital structure and macroeconomic indicators affecting the leverage of firms in Azerbaijan. Collecting of data and choosing of periods are also contribution of this study.

Companies are selected from various sectors. Totally 71 companies are attracted to analysis and there are 222 observations in the study. Unfortunately, data are not available for all companies through the years. So, unbalanced panel data analysis will be used for this investigation.

The first chapter of this study indicates theoretical background of capital structure issues. The basic principles of capital structure were the main debate in the chapter. After the explanation of MM propositions, trade off theory and pecking order theory were discussed in theoretical section.

Additionally, agency cost theory, signaling theory and market timing theory were explained respectively.

The second chapter analyzes economical position of Azerbaijan Republic. Development of economy, tendency of macroeconomic indicators, current position of sectors and enterprises were the main part of this chapter.

The third chapter explains articles and investigation about capital structure. The use of different theories on the financing choice of companies in different countries was discussed in this chapter. Studies of Titman and Wessels, Rajan and Zingales, Miller were predictive light for investigation.

The fourth chapter provides methodology part of study. The fifth chapter is aimed to show the results of investigation. Results of study have three explanations.

The first part of results was about leverage classification of companies in Azerbaijan over 2007-2014. Findings prove that leverage classification and borrowing level of these companies are differentiated by sectors. Mainly, construction, trade and service, food and agricultural sectors have been selected for discussion. The main leverage indicator in this analysis is calculated by dividing total liabilities to the sum of the total liabilities and total equities.

Results indicate that after world global crises investments (generally foreign direct investments) and local banking loans is transferred to non-oil sectors. The main purpose is to increase development of non-oil sectors, and to diminish the dependence of GDP and state budget from oil sectors.

The second part of findings indicates the measuring of firm specific determinants in Azerbaijan firms. The main selected factors for measurement were profitability, firm size, and growth opportunities in plant, property and equipment, growth opportunities in total assets, non-debt tax shields and tangibility.

Unfortunately, no significant explanation was found between variables in the first model. The main reason for the unlucky model is that there are some missing values in variables, especially, in GOTA (growth opportunities in total assets) and

GOPPE (growth opportunities in property, plant and equipment). And these values directly influence the results and correctness of measurement.

So, the next 4 variables are included in the second model. According to the finding, only profitability and firm size were explanatory and significant factor for leverage ratio of the companies. The results of relationship are consistent with pecking order theory. In literature, pecking order theory defenders assume that there must be a negative relationship between profitability and debt ratio.

Finally, the including of only two factors (profitability and firm size) was re-tested in Model 3. And the results of Model 3, indicate that both of determinants are significant and explanatory variables for financing decision of companies.

The main purpose of the third part is to determine effects of macroeconomic factors on the financing choice of the company. Generally, three variables are selected for measurement. The leverage ratio is the main indicator of dependent variable. Two macroeconomic factors such as GDP and Inflation are the symbols of independent variables.

According to the results of the panel data regression analysis, only GDP is positively and significantly related with leverage ratio at 10% significance level. Theoretically, the finding of analysis was consistent with previous research in literature.

LIMITATIONS AND SUGGESTIONS

There were some limitations that affect the results of analysis and constrain the generalization of the findings.

- Firstly, there were not included all companies by years, because of data unavailability.
- Secondly, the investigation covers 2007-2014 period. But including period from 1994, would be very explanatory and preferable to gain sufficient results.
- World financial crisis in 2008-2009 has inevitable impacts on Azerbaijan. It will be very important in future investigations to analyze capital structure decisions and determinants in companies over the period before and after crisis.

Capital structure issues are very important for future studies. In the light of this investigation, there are some suggestions for the future researches:

1. To collect great sample size for analysis.
2. To extend the number of years
3. More firm specific determinants and macroeconomic indicators can be included in the investigations.
4. To extend size of industries and sectors.



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