

ST CLEMENTS UNIVERSITY

Determinants of Capital Structure of Companies in the State of Qatar

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By

Olayemi Tahir Adam
(10974)

Supervisor:

Dr. Jeff Wooller

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Final Thesis Approval

This acknowledges that **OLAYEMI TAHIR ADAM** has completed all requirements for the Doctor of Philosophy in Financial Management. It further attests that the student successfully met the requirements for a Doctor of Philosophy Dissertation.

The undersigned agree that this Dissertation entitled:

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Is accepted by the Faculty of the School of Business Administration, St Clements University, in partial fulfillment of the requirements for the Doctor of Philosophy degree

Faculty Mentor:

Date:

Director of Student Affairs:

Date:

Director of Academic Affairs:

Date:

St Clements University Trust

Date:

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Chapter1 Introduction

1.1 Background of the study

In finance and financial management fields, the capital structure of an organization is necessary. Therefore, an appropriate decision would be to increase the organization's value. Financial management, according to Baker and Powell (2005) as cited by Baker and Martin (2011) "is an integrated decision-making process concerned with acquiring, financing, and managing assets to accomplish some overall goal within a business entity."

However, Jensen (2001) as cited in Baker and Martin (2011) indicated that among most financial economists, the criterion for evaluating performance and deciding between alternative courses of action should be the "maximization of the long-term market value of the organization" Rauterberg (2016). The value maximization proposition has its roots dated back to 200 years of research in economics and finance.

Therefore, in maximizing 'organization' value, financial managers are charged with responsibilities, to take investment decision and capital structure choices according to Watson and Head (2010). Capital structure refers to the sources of financing that are employed by the organizations either through debt or equity or the hybrid securities that are used to finance assets acquisition, operations, and future growth.

The capital structure defined by different researchers such as Brealey and Myers (1991), described the capital structure as "comprising of debt, equity or hybrid (<http://ijecm.co.uk/wp-content/uploads/2015/10/31029.pdf>) of securities issued by the organizations." Haugen and Senbet (1988) defined the capital structure as a choice of companies using either an internal or external source of financing instruments. Schlosser (1989) described the capital structure in other terms as the proportion of debt to the total asset capital employed by the organizations. However, Bos and Fetherston (1993) defined the capital structure as the total debt to the total asset at book value that influences both the profitability and riskiness of the organization.

When financial leverage increases, there are better returns to some existing shareholders while its risks may also double as such could cause financial distress as well as the agency cost according to Jensen and Meckling (1976). Therefore, the cost of financial distress may

both be direct and indirect. For instance, bankruptcy is a perfect example of direct financial distress cost. While administrative costs, loss of trade credit, loss of sales and critical personnel are examples of indirect financial distress costs. Therefore, an optimal capital structure could determine the trade-off between benefits and costs of debt financing. Their gains typically taxed savings, and the costs are financial distress and agency costs according to Titman and Tsyplakov (2004).

Borrowing however not only increases the risk of default for an organization but also the volatility of the organization's earnings per share and its return on equity. Therefore, the benefits of a lower cost of debt decrease as leverage increases due to the increasing financial risk and the likelihood of financial distress and bankruptcy as with most business decisions where financing decisions involve risk-return trade-off.

The importance of capital structure and corporate financing of an organization is, however, significant given the changes that recently happened in the world economy due to the financial crisis that engulfed the USA stock market. Barclay and Smith (1999) as cited by Baker and Martin (2011) made the following observation: "a perennial debate in corporate finance concerns the question of the optimal capital structure; given a level of total capital necessary to support a company's activities. Is there a way of dividing that capital into debt and equity that maximizes current organization value. Moreover, what are the critical factors in setting the leverage ratio for a given company?"

Therefore, an optimal capital structure is the financing mix that maximizes the value of the organization. Given those above, there are mixed views on whether there is an actual optimal capital structure that exists, as some people believed that the asset value does not depend on its financing mix. Hence, an optimal capital structure does not exist (http://www.researchgate.net/publication/268398353_Capital_Structure_An_Overview).

The history of the capital structure started with Modigliani and Miller (1958) as they pioneered the research on the capital structure and the value of the organization. In their seminal research work, they show that under stringent conditions of competitive frictionless of the entire stock market, the value of an organization is independent of its capital structure. Furthermore, business risk alone determines the cost of capital. Therefore, they propose that

financing and capital structure decisions are not to be shareholders' value enhancing and are irrelevant.

However, other researchers believe that managers can theoretically determine an organization's optimal capital structure(http://www.zikaobj.com/jy/zck_cg_yy2_12.htm). Lately, financial economists have introduced capital market frictions such as taxes, bankruptcy costs, and asymmetric information into their models that can explain some of the factors that are driving capital structure decisions. Therefore, they can set forth some theories such as trade-off theory as in Kraus and Litzenberger 1973. Pecking order theory as in Myers 1984, Myers and Majluf 1984; signaling theory as in Ross 1977; and market timing theory as in Baker and Wurgler 2002 were used to explain the relevance of capital structure. However, these theories relate directly to taxes, asymmetric information, bankruptcy costs, and agency problem.

Therefore, pecking order theory popularized by Myers (1984) was a theory that explained the relevance of debt and optimum capital structure. He presented two sides of the capital structure issue that are called static trade-off theory and pecking order hypothesis. Therefore, the static trade-off theory postulates that the trade-off may explain the capital structure choices between 'benefits and costs of debt' versus equity; as a company sets "a target debt level by moving gradually towards it" (<https://www.coursehero.com/file/pe6k7a/The-trade-off-theory-explained-the-relevance>).

However, the pecking order hypothesis postulates that there is no well-defined target ratio as an organization has an ordered preference for financing. Myers (1984) states that companies prefer retained earnings as sources of fund for their investment activities and then follow by debt as the internally generated fund are believed to be cheap as it is not subject to outside inferences. Externally generated debt is ranked next to be less expensive than issuing equity as is somewhat having minor restrictions. However, issuing equity is considered most costly and dangerous as it could lead to potential loss of control of the organization by the original owner and manager of the enterprise, and hence ranked last.

In Bharath et al (2009) postulation on pecking order hypothesis that revolves around asymmetric information, the proxies used is market liquidity and transactions costs that have three components that are as follows:

- Order processing costs
- Inventory costs
- Adverse selection costs

Bharath et al (2009) argued that adverse selection could correlate positively with the level of information asymmetry. Moreover, that if the assumption of pecking order theory, asymmetry information, “is dominant in the data, then the theory performs better in predicting capital structure” (<http://www.economicissues.org.uk/Files/2014/214harrison.pdf>) choice as cited in Harrison and Widjaja (2014).

In a perfect capital market situation, capital structure decision should not have an impact on the market value of an organization. However, when capital market frictions such as bankruptcy costs, taxes, and asymmetric information introduced into the perfect capital market model, the resultant effect is that the factors related to these frictions could affect the capital structure decisions. However, survey evidence indicates that the most dominant factors that hinder the decision to issue debt are to maintain financial flexibility as the significant factors for the issuance of equity stock is earnings per share that may result in its overvaluation or undervaluation. Therefore, the result from the regression analysis studies by using organization-level data sets indicates the factors to measure the corporate leverage as the following:

- Market-to-book ratio ended in negative
- The tangibility of asset finished in positive
- Profitability ended in negative
- Organization size ended in positive
- Expected inflation ended in positive
- Median industry leverage ended in positive on leverage

The determinants of the capital structure popularized through the research carried out targeting companies in the United States. Wherein Antoniou et al (2002) postulated that studies based on “an experience of a single country might not represent the effect of diversity of economic tradition and financial environment on the corporate’s capital structure.” In the 1980s, research on the determinants of capital structure widened to cover Europe and Japan (Nagano, 2003).

However, Rajan and Zingales (1995) broadened the understanding of determinants of capital structure choice of capital structure in their study of G7 nations based on the related factors that influence capital structure of US organizations. It showed many similarities than differences in the underlying factors of organization's debt-equity choices of the US with other countries. They noted, however, that asset tangibility is positive with leverage as suggested that companies that have more capital structure mix will use it as collateral for more loans or debt borrowing.

Furthermore, the market-to-book ratio, the proxy for growth, seemed to be negatively correlated with leverage except for Italy. Also, high market values of stocks will enable organizations to issue more stock than seek debt financing of their operations. Organization size is positively correlated, and profitability negatively associated with the leverage with all countries except Germany. Also, other nations' companies studied are Poland and Hungary by Devic and Krstic (2001). In Holland, the research was done by Chen and Jiang (2001). In the UK, France, and Germany, the study was done by Antoniou et al (2002). In Spanish organizations, it was by Padron et al (2005), and in Switzerland by Drobetz and Fix (2003).

The thesis will investigate the significant determinants of the capital structure decision of the "companies and the speed of adjustment towards their target level" (<http://nettt.ir/wp-content/uploads/edd/1-s2.0-S1877042812007215-main-11.pdf>). Also, it will examine whether some classical capital structure theories explain one's findings. Furthermore, one will be able to establish whether the result of the findings corresponds well with other capital structure analysis for the companies with industry-specific deviations.

The thesis at large will be looking at some established theories on the capital structure vis-à-vis the factors affecting such capital structure of the companies in the State of Qatar. Such arguments are:

- The traditional capital structure theory called the Naïve Theory based on the weighted average cost of capital (WACC) principle, (Prace, 2004)
- The Modigliani and Miller, 1958 and 1963
- The Trade-off theory (DeAngelo and Masulis, 1980 and Harjeet et al (2004)
- Pecking order model (Steward Myers, 1984)

- The Agency cost theory (Jensen and Meckling, 1976), (<https://www.ukessays.com/dissertation/thesis/capital-structure-across-developed>).
- The Signaling theory of capital structure, (Ross, 1977)
- The theoretical determinants of capital structure, (Titman and Wessels, 1988)

The naive theory: The naive theory of capital structure assumes that the value of the organization maximized when debt entirely finances the organization. Therefore, the cost of debt and the cost of equity remain stable irrespective of the amount of the debt or equity issued (Baver, 2004). The value of the organization is increased when more debt published as “the cost of debt is lower than the cost of equity”

([HTTP://www.investopedia.com/articles/fundamental-analysis/12/4-leverage-ratios-u](http://www.investopedia.com/articles/fundamental-analysis/12/4-leverage-ratios-u)). As more debt is issued, the organization would be able to reduce the weighted average cost of capital (WACC).

The WACC is the average after-tax “cost of a company’s various capital sources, including common stock, preferred stock, bonds, and any other long-term debt. A company has two primary sources of financing - debt and equity - and, in simple terms, WACC is the average cost of raising that money” (<http://www.qsstudy.com/accounting/how-to-calculate-weighted-average-cost-of-capi>). The calculation of WACC is by multiplying the cost of each capital source (debt and equity) by its appropriate “weight, and then adding the products together to determine the WACC value” (<http://www.investopedia.com/ask/answers/063014/what-formula-calculating-weighted>):

$$\text{WACC} = \frac{E}{V} * \text{Re} + \frac{D}{V} * \text{Rd} * (1 - \text{Tc})$$

Where:

- Re = cost of equity
- Rd = cost of debt
- E = the market value of the organization’s equity
- D = the market value of the organization’s debt
- V = E + D
- E/V = percentage of financing that is equity

- D/V = percentage of financing that is debt
- T_c = corporate tax rate

When calculating an organization's WACC, the first step is to determine what proportion of an organization is financed by equity and what (<http://www.qsstudy.com/accounting/how-to-calculate-weighted-average-cost-of-capi.>) debt finances proportion by entering the

appropriate values into the $\frac{E}{V}$ and $\frac{D}{V}$ components of the equation. Next, the ratio of equity ($\frac{E}{V}$) multiplied by the cost of equity (R_e), and the ratio of debt ($\frac{D}{V}$) multiplied by the cost of debt (R_d).

The debt side of the equation ($\frac{D}{V} * R_d$) then multiplied by $(1 - T_c)$ to get the after-tax cost of debt (there is a tax shield associated with interest). The final step is to add the equity side of the equation to the debt of the equation to determine WACC (<http://www.qsstudy.com/accounting/how-to-calculate-weighted-average-cost-of-capi.>).

Furthermore, Prace (2004) sees the following weak points in the theory:

- The assumption that the cost of debt remains the same for all levels of leverage is only applicable when changes in them are small. However, as leverages increase, the risk increases and investors demand a higher return for their debt funding. Also, the cost of debt at times grows and not remains the same.
- Ignore the cost of financial distress in this theory.

Capital structure irrelevance theory: M&M (1958) were the first researchers that introduced the capital structure “irrelevance” theorem in their famous “The Cost of Capital, Corporation Finance, and the Theory of Investment,” in which arbitrage concept was employed. Arbitrage process occurs when two sets of shares sold at different prices. Wherein, the undervalued shares were bought, and the overvalued shares were sold on the other hand at a profit in a perfect market situation. The forces of demand and supply cause the prices for the two assets to be equal.

However, there are assumptions for MM arbitrage process. These are as follows according to “Complete Guide to Corporate Finance – Investopedia.com”

(<http://www.investopedia.com/walkthrough/corporate-finance/5/capital-structure/mo>), accessed April 29, 2016):

- There are no personal or corporate “taxes
- No transaction costs(<https://www.coursehero.com/file/19313274/week-6/>)
- No bankruptcy costs(<https://www.coursehero.com/file/19313274/week-6/>)
- Equivalence in borrowing costs for both companies and investors(<https://www.coursehero.com/file/19313274/week-6/>)
- The symmetry of market information, meaning businesses and investors have the same information
- No effect of debt on a company's earnings before interest and taxes” (<https://www.coursehero.com/file/19313274/week-6/>)

One should note that M&M postulation was viewed with much seriousness by Somers (1955) as follows:

- The corporate finance specialist concerned with the techniques of financing organizations to ensure their survival and growth.
- The managerial economist is concerned with capital budgeting.
- “The economic theorist concerned with explaining investment behavior at both the micro and macro levels.” (<https://www.aeaweb.org/aer/top20/48.3.261-297.pdf>)

Given the preceding, M&M made two propositions:

M&M Proposition 1: “The perfect capital market of the total value of an organization is equal to the market value of the total cash flows that are generated by its assets, (<https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o.>). Also, Berk & DeMarzo(2007) postulated that they are not affected by their choice of capital structure. M&M argued with the law of one price, arbitrage possibilities, and homemade leverage.

A further cursory look at the three arguments is necessary and as follows:

- Law of One Price: In a perfect capital market, “the total cash flow paid out to all of the organization’s security holders is equal to the total cash flow generated by the” company’s assets ([https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o.](https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o/)). As long as the choice of securities does not change the cash flow produced by the assets, the value of the organization is given by the cash flows of the assets and not the choice of securities. The consequence of this claim is that decisions about financing and investments become independent ([https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o.](https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o/)).

- Arbitrage possibilities: M&M (1958) used the proof of a contradiction in Proposition 1. If Proposition 1 does not hold, investors could exploit arbitrage opportunities, by short selling overpriced stock and buy under-priced stock with same income streams. Since there are no transaction costs and the stocks are the same except for the price, the investor would immediately increase their wealth (Baker & Martin, 2011).

- Homemade leverage: If investors prefer an alternative capital structure to the one that the organization has chosen, he could borrow and lend on his own to achieve the superior leverage level ([https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o.](https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o/)). It is possible because as long as investors can borrow or lend at the same rate as the organization and there is no transaction cost, which is two of the stated assumptions. Then homemade leverage becomes a perfect substitute for the use of leverage for the organization, ([https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o.](https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o/)).

MM Proposition 2: It states that the expected rate of return on the common stock of levered organization increases “in proportion to the debt-equity ratio expressed in market values” ([https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o.](https://www.coursehero.com/file/p3d371c/2-There-are-no-taxes-transaction-costs-o/)). Berk and DeMarzo (2007), stated that “the cost of capital of levered equity increases with the company's market value debt-equity ratio.” Debt issues have an explicit and implicit cost.

The exact cost is the rate of interest charged on the organization’s debt. The implicit cost is that it increases the company's financial risk and therefore causes shareholders to demand a higher return on their investment (<https://www.coursehero.com/file/p3d371c/2-There-are-no->

taxes-transaction-costs-o.). The implicit and explicit cost together makes that debt is no cheaper than equity, and the return that the investors require on their investment is unaffected by the organization's capital structure (Brealey et al, 2007).

Equation 1: Cost of Capital

$$R_e = R_A + (D/E) * (R_A - R_d)$$

Where:

R_e = expected rate of return on equity

R_d = expected return on debt

R_A = expected return on asset

D = market value of debt

E = market value of equity

Equation 1, reveals the effect of leverage on the restitution of the levered equity. The levered equity return equals unlevered return, plus some additional caused by leverage. However, the insight from M&M can be used to understand the company cost of capital on new investments when leveraged. Thus, a levered organization financed with both equity and debt; and the risk of the "underlying assets will match the danger of a portfolio of its equity and debt" (<https://www.coursehero.com/file/prums6/Both-Modigliani-Miller-Propositions-offer/>). The appropriate cost of capital of this portfolio is the right price of capital for the organization's assets. It thus gives the weighted average of the company's equity and debt cost of capital.

Equation 2: The un-levered cost of capital (pre-tax WACC).

$$R_A = E / (D+E) * R_e + D / (D + E) * R_d$$

Where:

R_e = expected rate of return on equity

R_d = expected return on debt

R_A = expected return on asset

D = Market value of debt

E = market value of equity

Agency costs theory: The agency cost theory of capital structure emanated from the principal-agency theory where shareholders defined as principal that hired managers of the company to look after their interest, thereby maximizing the shareholders' value. The theory considered debt to be a factor that creates conflict between equity holders and managers (Jensen and Meckling, 1976). However, the two scholars argued that the probability distribution of cash flows provided by the organization is un-independent of its ownership structure and that this fact may be used to explain the optimal capital structure. The two theorists recommended that, given increasing agency costs with both equity-holders and debt-holders, there would be an optimum combination of external debt and equity to reduce total agency costs (<https://www.coursehero.com/file/p1jih0r/332-Agency-Cost-Theory-The-next-important.>).

Grossman and Hart (1982) argued that debt could reduce the “agency costs by increasing the possibility of bankruptcy and providing a managerial discipline”

(<https://www.coursehero.com/file/p1jih0r/332-Agency-Cost-Theory-The-next-important.>).

Bradley et al (1984) found that volatility in earnings would increase bankruptcy costs and thus, in turn, will increase the agency costs while companies will tend to use less debt. Ryan et al (1997) provided a general summary of the agency cost theory, in which two sets of agency problems faced by the organizations are explored. These problems are a conflict between managers and stockholders on the one hand, and conflict between stockholders and the bondholders. In the managers and stockholders conflict, the managers usually overspend or take less leverage, and they are seen not benefitting the stockholder. Managers make lesser leverage to avoid total risks such as the danger of losing a job, reputation, and wealth.

Otherwise, overspending by managers too, make opportunity loss of organizations' cash flow that could be used for the activities that may benefit stockholders.

Trade-off theory: The trade-off theory assumes that there are benefits to leveraging within a capital structure up until the optimal capital structure is reached. The theory recognizes the tax benefit from interest payments, (<https://quizlet.com/145924747/reading-37-measure-of->

leverage-flash-cards/). Studies suggest that most companies have less leverage than this theory would suggest optimally ([HTTP://www.investopedia.com/Walkthrough/corporate-finance/5/capital-structure/mo.](http://www.investopedia.com/Walkthrough/corporate-finance/5/capital-structure/mo.)).

In comparing M&M and trade-off theories, the main difference between them is the potential benefit from debt in a capital structure. This benefit comes from a “tax benefit of the interest payments. Since the MM capital-structure irrelevance theory assumes no taxes, the benefit not recognized, unlike the trade-off theory of leverage, where taxes and a tax benefit of interest payments are recognized” ([HTTP://www.investopedia.com/Walkthrough/corporate-finance/5/capital-structure/mo.](http://www.investopedia.com/Walkthrough/corporate-finance/5/capital-structure/mo.)). According to the static trade-off hypothesis, an organization’s performance affects its target debt ratio. That in turn reflected in the company’s choice of securities issued and its’ observed debt ratios, (Hovakimian et al, 2004). The trade-off theory states that optimal capital structure is obtained by balancing the tax advantage of debt financing and leverage-related costs, such as financial distress and bankruptcy that could hold an organization’s assets and investment constant.

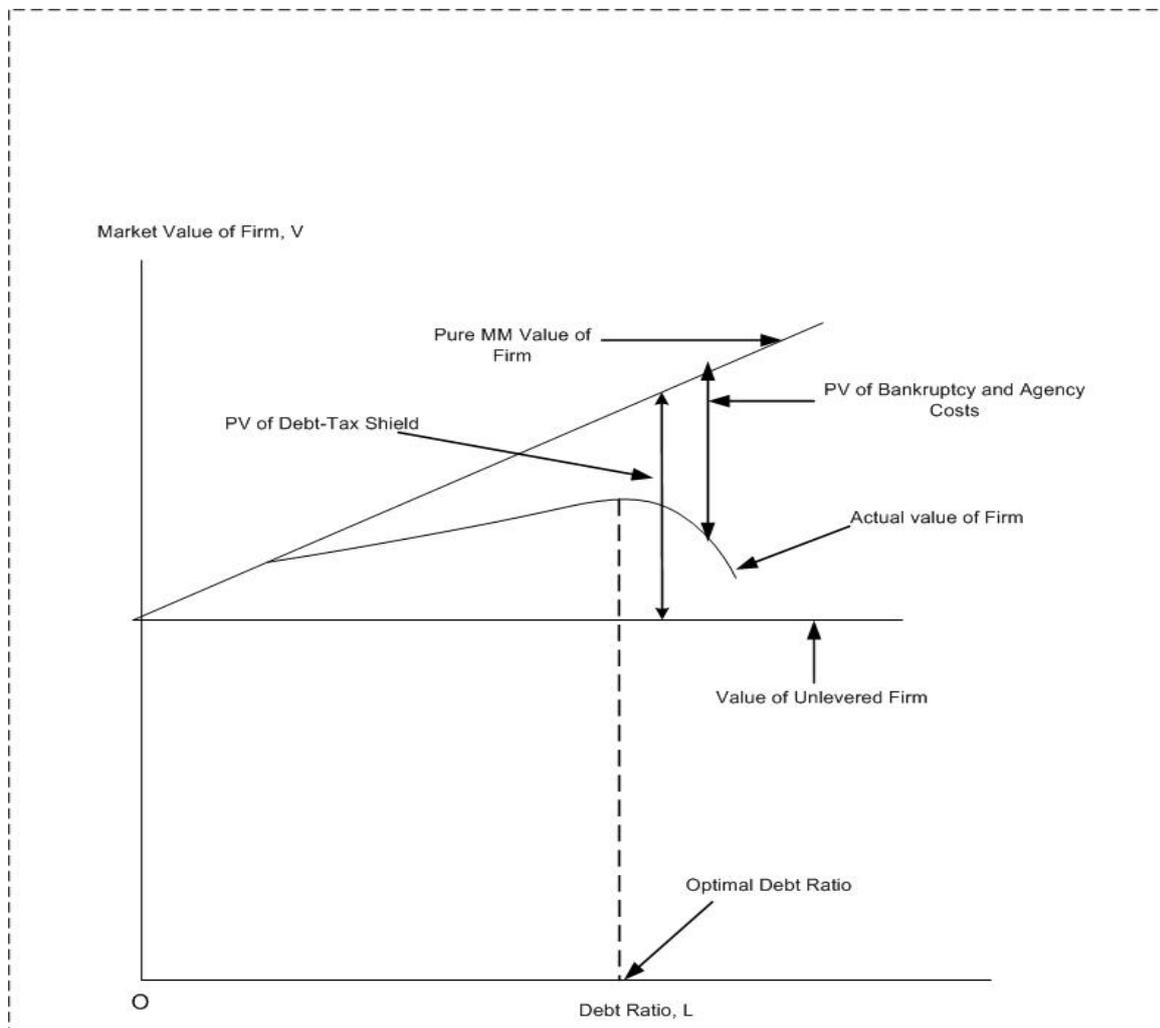
Bradley et al (1984) stated that the following conclusions about the static trade-off model as follows:

- An increase in the personal tax rate on equity increases the optimal debt level.
- “An increase in non-debt tax shields reduces the optimal debt level,” (<https://www.coursehero.com/file/10762587/33-Theory-of-Capital-Structure/>).
- “An increase in the costs of financial distress reduces the optimal debt level,” (<https://www.coursehero.com/file/p5e3l/The-market-value-of-debt-is-found-by-integrating.>).
- “At the optimal capital structure, an increase in the marginal bondholder tax rate decreases the optimal level of debt,” (<http://www.serialsjournals.com/serialjournalmanager/pdf/1436419592.pdf>).
- “The effect of risk is ambiguous even if uncertainty is assumed to be normally distributed” (<https://www.coursehero.com/file/p5e3l/The-market-value-of-debt-is-found-by-integrating.>).
- “The relationship between debt and volatility is negative,” (<https://www.coursehero.com/file/10762587/33-Theory-of-Capital-Structure/>)

In dynamic trade-off theory, Fischer et al (1989) observed a negative relationship between profitability and leverage, in which organizations passively accumulate earnings and losses. They let their debt ratios deviate from the target as long as the costs of adjusting the debt ratio exceed the cost of having a sub-optimal capital structure (<http://ijecm.co.uk/wp-content/uploads/2015/10/31029.pdf>). The organizations that were highly profitable in the past are likely to be less gearing (Hovakimian et al, 2004).

Miller (1988) exclaimed that “the optimal capital structure might be all debt!” The trade-off theory includes the cost of financial distress, whereby the debt levels given by trade-off between the present value of the tax shield implied by debt financing and the bankruptcy costs (HTTP://docplayer.net/22360110-Capital-structure-in-the-airline-industry-an-empirical.).

Figure 1
Trade-off Theory of Capital Structure



Gajurel (2005): Capital Structure Management in Nepalese Enterprises.

The bankruptcy costs are either direct or indirect in which Jensen and Meckling (1976) provided a further analysis. Direct costs consist of legal, consulting and restricting expenses when an organization experiences financial distress. However, indirect costs include lost sales and profits, poor credit terms, broken contracts, increased costs of issuing debt to finance current obligations and employee turnover. Therefore, the trade-off theory of the capital structure posits that there are an optimal debt-equity ratio and the organization's attempt to balance the tax benefit of higher leverage and the cost associated with bankruptcy and agency problem.

Pecking order theory: It is a model that is constructed from the asymmetric information theory that states that organization managers or insiders possess private information about the company's operations and investment opportunities that are not known to outside investors. Myers and Majluf (1984) developed a model in which the capital structure choice is designed to limit inefficiencies caused by information asymmetries. Another issue with asymmetric information theory is the adverse selection problem. A potential adverse selection problem arises as organizations with lower value opportunities have the "incentive to issue securities that imitate organizations with higher value opportunities" (<https://www.coursehero.com/file/p5tbfgf/problem-arises-as-firms-with-lower-value.>).

This behavior results in a situation where securities of the former organizations are overvalued while the latter organizations are undervalued. However, to avoid underinvestment and adverse selection problem, organizations prefer to use internally generated funds. Since they are of low risk, then they are less sensitive to mispricing and valuation errors. When internally generated funds are inadequate to meet the organizations' financial needs, they first turn "to risk-free debt, then risky debt, and finally equity" that is a top pecking order theory (<https://www.coursehero.com/file/p5tbfgf/problem-arises-as-firms-with-lower-value.>).

In the pecking order, no precise target debt-equity mix is based on two types of equity that are internal and external. One atop of pecking order and the other at the bottom whereby each organization observed debt ratio reflects its cumulative requirements for international finance. Myers (1984) argued that the pecking order theory might explain typical behavior by looking at the aggregates from non-financial Corporations over a decade from 1973-1982. It showed that the internally generated fund financed 62% of the capital expenditure. The bulk of

external financing came from borrowing. The remaining are new stock issues that were only 6%.

Signaling theory: M&M dividend irrelevance theory assumes that all investors have identical information regarding the organization’s future earnings and dividends. In reality, different investors have different opinions regarding the level of future dividend payments. The uncertainty inherent thereof as managers have better information prospects than public stockholders. M&M argued that investors’ reaction to changes in dividend policy not necessarily shows that investors prefer dividends to retained earnings, but argued that price changes following dividend actions indicate “that there are relevant information or signaling content in dividend” announcements, ([HTTP://www.chegg.com/homework-help/financial-management-14th-edition-chapter-14-](http://www.chegg.com/homework-help/financial-management-14th-edition-chapter-14-)). The below Table 1 shows the empirical study on the capital structure by different researchers:

Table 2.1
Empirical studies on capital structure

Study	Area of Study	Major Findings
Modigliani and Miller (1958)	Test of MM Independent hypothesis	The market value of any organization is independent of its capital structure (acceptance of the MM hypothesis).
Weston (1963)	Test of MM Independent hypothesis	Rejection of MM hypothesis, consistent with the existence of gains to leverage that is that the tax shield on a debt has value
Taggart (1977)	Financing decision	Timing considerations and market movement have significant influence of issuance of securities
Masulis (1980)	The exchange offer, or swap	Leverage-increasing offer expropriated the wealth of debt holders by the stockholder
Marsh (1982)	Financing decision and its determinants	Timing and market condition are different for debt issue, and equity issue; and size and assets have positive, and risk hurts leverage
Bradley et al (1984)	Determinants of capital structure	Strong industry influence; the inverse relation of leverage with cash-flow volatility and R&D and advertisement expenditure and positive relation with a non-debt tax shield

Titman and Wessels (1988)	Determinants of capital structure	Product uniqueness and profitability have a negative influence on leverage.
Friend and Lang (1988)	Impact of managerial self-interest on capital structure	Management in closely held corporations has a higher ability and desire to adjust the debt ratio. The level of debt decreases as that of management investment in the organization
Rajan and Zingales (1995)	Capital structure determinants in G-7 countries	The factors influencing bank oriented country (USA) also affect capital structure decision on other advanced economic countries, assets structure and size have a positive impact on leverage and profitability and growth have a negative influence
Booth et al(2001)	Capital structure in developing countries	Developing countries are less levered, low long-term debt, positive relation with size and assets structure, negative relation with profitability, macroeconomic and institutional context are important
Ozkan (2001)	Capital structure determinants and estimation techniques and target adjustment to long-run	GMM is the better estimation technique; the speed of adjustment is high; the positive influence of profitability, liquidity and non-debt tax and negative influence of non-debt tax shield on leverage
Cassar and Holmes (2003)	Capital structure and financing of SMEs	Profitability and assets structure have positive, and growth has a negative influence on leverage
Vasiliou et al (2003)	Determinants of capital structure	Profitability has negative, and property structure and size have a positive impact on leverage
Gaud et al(2005)	Capital structure determinants and long-run adjustment process to target leverage	Size and ownership have positive, and cost-effectiveness and growth have a negative influence on leverage, slow long-run adjustment process to target leverage
Shrestha (1985)	Capital structure in PEs	Low capital gearing and unbalanced capital structure pattern
Shrestha (1993)	The capital structure of listed organizations	Listed organizations are more leveraged as profitability, and interest payment is severe issues
Pradhan and Ang (1994)	Finance functions of organizations	Asset structure functions most importantly follow the working capital function; Agency relation is least significant; organizations prefer internal
Pradhan (1994)	Financial distress in Nepalese organizations	

K.C. (1994)	Financing of corporate growth	financing, and tax has a positive influence on the debt ratio.
Baral (1996)	Capital structure and cost of capital in PEs	Government policies, the problem of raw material, skilled workforce and poor management are the primary causes of financial distress.
Ghimire (1999)	Capital structure and cost of capital	<p>Positive relation of long-term debt ratio with assets structure, growth, and age</p> <p>Profitability, growth, non-debt tax shield, interest capacity, and operating cash flow have a positive relationship with leverage and volatility has a negative influence</p> <p>Leverage, profitability, growth, size and earning variability influence average cost of capital</p>

Gajurel, D. P., (2005). Capital Structure Management in Nepalese Enterprises.

However, the source of the data used for this study is Financial Statements of 41 companies published on the Qatar Stock Exchange (QSE) covering eight years from 2008 to 2015. These financial statements are divided into seven sectors of the economy vide:

- Banking and financial institutions
- Industry
- Insurance
- Real estate
- Service and consumer goods
- Telecommunication
- Transportation

1.2 Institutional environment

The institutional circumstances of the State of Qatar are viewed from the perspective of its origin, population, economy and social development. Following the Turkish Ottoman rule from 1871 to 1913, Qatar became an independent nation from Britain on 3 September 1971. However, 3 September every year had been recognized as a national holiday until 21 June 2007. After that, a Decree was promulgated to change the day to 18 December of every year as Qatar National Day (QND) or Founder's Day. The QND was in commemoration of the unification of all tribes that made up the State of Qatar by Sheikh Jassim bin Mohammed Al

Thani in 1878. The country is located in the Arabian Gulf region and shares a land border with Saudi Arabia and maritime boundary with Bahrain and the United Arab Emirates (UAE). (<https://en.wikipedia.org/wiki/Qatar>) accessed 15 April 2016.

Qatar has a population size of 2.5million comprising 1.9 million males and 600,000 thousand females as of 31 March 2016 from the Ministry of Development Planning and Statistics. (http://www.mdps.gov.qa/portal/page/portal/gsdg_en/statistics_en/monthly_preliminary_figures_on_population_en).

Qatar has a vibrant economy with the following statistics GDP USD 203.2 bn (2013 Statistics.), GDP per capita 93,714 USD (2013 Stat.) and life expectancy are 78.45 years (2012 Statistics) with the source (<https://www.google.com/#q=qatar+population>) accessed 15 April 2016. Her strong economy is hydrocarbon-based with the North Field gas reservoir discovered in 1971.

However, Qatar has been steadily diversifying her economy from hydrocarbon to knowledge-based economy. Therefore, Qatar Foundation for Education, Science, and Community Development established in 1995 under the Chairperson of Her Highness Sheikha Mozah bint Nasser Al-Missned to fill that niche of the knowledge-based economy.

According to Qatar Tribune, from the beginning, the mission of the Qatar Foundation has been to provide educational opportunities and “to improve the quality of life for the people” (http://sodexousa.com/usen/about_us/sodexo_in_usa.aspx) of Qatar and the region. The first projects included the Qatar Diabetes Association and the Social Development Centre, founded in 1995 and 1996 respectively. In 1996, the Learning Centre began working with students facing academic challenges. Qatar Academy opened its doors the same year. In 1998, Virginia Commonwealth University School of the Arts in Qatar opened its design school, and the far-reaching vision for an entire Education City began to coalesce.

The Academic Bridge Program began its college preparatory courses in 2001. Weill Cornell Medical College in Qatar started offering, according to "Working Overseas: Implementing Technology for a Branch ..." ([HTTP://er.educause.edu/articles/2005/1/working-overseas-implementing-technology-](http://er.educause.edu/articles/2005/1/working-overseas-implementing-technology-)), its medical programs in 2002. Texas A&M University at Qatar (<http://www.qatar.tamu.edu/2015/>) and the RAND-Qatar Policy Institute followed in 2003.

Carnegie Mellon University in Qatar started teaching its first classes in 2004. The newest addition to Education City, Georgetown University, began its programs in August 2005.

The branch campus concept, world-class universities bringing their best-regarded programs to Qatar as full-fledged “partners with Qatar Foundation; is unique in the history of education. Education City is, in essence, a University of universities, a community of educational and research institutions that serve the full citizen, from early childhood education to post-graduate study” (https://issuu.com/alia.alraouf/docs/the_3rd_knowledge_cities_summit_pap).

Construction on Education City’s 2,500 acres continues apace. Projects currently in the planning or building phases include Qatar Science and Technology Park, an all-digital Specialty Teaching Hospital (Sidra Medical & Research Centre) and a state-of-the-art conference and convention center.

Qatar Foundation Affiliates and Centres (<http://www.qf.org.qa/qf-entities/qf-entities>):

a) Education:

- Qatar Academy
- Qatar Academy Al-Khor
- Qatar Leadership Academy
- Academic Bridge Program
- The Learning Centre
- Carnegie Mellon University in Qatar
- Virginia Commonwealth University in Qatar
- Weill Cornell Medical College in Qatar
- Texas A&M University at Qatar
- Georgetown University School of Foreign Service in Qatar,
(<http://qatar.sfs.georgetown.edu/>)
- Faculty of Islamic Studies
- North-Western University in Qatar
- Hamad bin Khalifa University

b) Research and Science

- Qatar Science and Technology Park
- Research & Development Centre
- Qatar National Research Fund
- Sidra Medical and Research Centre
- Qatar Solar Technologies
- Qatar Computing Research Centre

c) Community

- Al Shaqab
- Reach Out to Asia (ROTA)
- The Social Development Centre
- Qatar Diabetes Association
- Cultural Development Centre
- Doha International Institute for Family Studies and Development
(<http://www.difi.org.qa/>)
- Al Jazeera Children's Channel
- The Doha Debates
- Qatar Debate
- Lakom Al Karar
- Qatar Philharmonic Orchestra

d) Joint Ventures or Affiliates

- FITCH Qatar
- MEEZA
- Bloomsbury Qatar Foundation Publishing
- Qatar MICE Development Institute
- Qatar National Convention Centre
- Vodafone Qatar

However, there is a need to explore the determinants of the capital structure of the country to determine the adjustment to the optimal capital structure choice of organizations operating in such an environment.

1.3 The objective of the study

The goals of this research study are as follows,

(<http://www2.uwstout.edu/content/lib/thesis/2001/2001dammenk.pdf>):

- To examine the determinants of capital structure as they affect the decision-making of the listed companies in the State of Qatar based on the (<http://www.mdpi.com/1660-4601/7/6/2526/pdf>) five organization-specific factors, which are asset tangibility, financial flexibility, liquidity, profitability, and organization size. Also, three macroeconomic factors, which are GDP growth, interest rate and inflation rate to measure the relationship between organization-specific factors and the leverage ratios.
- To examine which theories of the capital structure, explain the financing behavior of selected companies in the State of Qatar.
- To examine whether there are differences in the mean leverage ratios of the selected organizations of different industrial sectors in the State of Qatar (<https://wp.nyu.edu/hcs280/research/>).

1.4 Research problem

The research question deals on how to define and measure the leverage. Researchers described leverage in various ways. Rajan and Zingales (1995) used four different measures of leverage in their definition. The first definition of leverage is the ratio of total (non-equity) liabilities to total assets in which the action was viewed as a proxy of what the shareholders receive in case of liquidation. However, it did not indicate whether the organization is at risk of default shortly. Since total liabilities also include such items as account payable used for transaction purposes instead of for financing, which is likely to overstate the amount of leverage. Also, the leverage proxy is affected by provisions and reserves such as pension liabilities.

The second definition of leverage is the ratio of short-term and long-term debt to total assets. “This measure of leverage only covers debt in a narrower sense,”(www.medwelljournals.com/fulltext/?doi=pjssci.2010.205.213), for instance, interest-

bearing debt that excludes provisions, which does not include some assets that offset by non-debt liabilities. “For example, an increase in the gross amount of trade credit” leads a reduction in the leverage proxy (www.ukessays.co.uk/essays/finance/vital-role-of-finance-department.php).

The third definition of leverage is the ratio of debt to net assets, where net assets are total assets minus accounts payable and other current liabilities. This measure is unaffected by non-interest bearing indebtedness and working capital management, which influenced by other “factors that have nothing to do with financing (<https://www.coursehero.com/file/p12hg2e/Not-a-good-indication-of-whether-the-fir/>). For example, assets held against pension liabilities may decrease” the measure of leverage (www.ukessays.co.uk/essays/finance/vital-role-of-finance-department.php).

The fourth definition of leverage is “the ratio of total debt to capital, in which capital defined as total debt plus equity” (www.medwelljournals.com/fulltext/?doi=pjssci.2010.205.213). This measure of leverage, therefore, looks at the capital employed, that represents the effect of past financing decisions. That is directly related to the agency problem associated with debt financing.

Another issue is the choice of book or market leverage. Therefore, book leverage is debt divided by total assets. Market leverage is the “book debt divided by the sum of book debts plus the market value of equity,” according to CFA Digest: How Stable Are Corporate Capital Structures. However, Myers (1977) posits that “managers focus on book leverage because of assets better support debt in place than” by growth opportunities.

Also, Klock and Thies (1992) and Fama and French (2002) assert that book values better reflect an organization's target debt ratio because the market value of equity fluctuates and is dependent on some factors that are out of a company's direct control. However, the survey results in Graham and Harvey (2001) is correct with the notion that “market values may not reflect the underlying alterations” (www.medwelljournals.com/fulltext/?doi=pjssci.2010.205.213) initiated by managers. Hence, market leverage numbers may be an unreliable guide to corporate financing policy.

Using book leverage involves some limitations. Firstly, the book value of equity determined by the difference between the right side and the left aspect of the balance sheet, which cannot represent an organization's economic conditions as Welch (2004) postulated as a mere “plug-number,” that may be negative. He further argued that interest coverage ratios be more appropriate to measure the advantages of debt to organizations.

Secondly, the international accounting rules imply that book values of equity grow with cash flows and shrink with depreciation. Therefore, the profitability and asset tangibility are reliable predictors of book value-based debt ratios should not surprise, according to Shyam-Sunder and Myers (1999).

Thirdly, the book value-based measures of leverage are less volatile than market value-based measures as they tend to overstate the importance of corporate issuing activities. New securities are issued at market values and not at book values. The book value measurement is dependent on historical events as the market value measurement is forward-looking.

Fourthly, market-based debt ratios describe the relative ownership of the company by creditors and equity holders, as they are as relevant for the computation of the weighted average cost of capital (WACC).

The earlier research study of the effect of asset tangibility on the capital structure choice showed a positive relationship to the capital structure decision in the developed nations as was in Myers (1977), Friend and Lang (1988), Williamson and Oliver (1988). However, some researchers found a negative correlation with the capital structure as in Ferri and Jones (1979), Nivorozhkin (2005).

In developing nations, mixed results noted such as in Pandey (2005) in Malaysia study, Um (2001) in Korea, reported a positive relationship between asset tangibility and leverage as in Booth et al (2001)

(<https://www.coursehero.com/file/p6r56b8/Booth-et-al-2001-Results-from-10-develop>.)

However, Booth et al (2001), Huang and Song (2004), found a negative correlation between asset tangibility and the capital structure in China.

However, the static trade-off theory recommends positive relationship of asset tangibility with the capital structure choice, and the agency cost theory supports a negative correlation among the capital structure choices. The latter argument based on the fact that tangibility organizations are likely to have less information asymmetry as they issue equity than debt.

Financial flexibility as one of the organization-specific factors recently tested by the researchers as affecting the capital structure choice of companies in which pecking order theory of Myers (1984) shows a negative correlation to the capital structure choice. The study also confirmed this relationship carried out in developed nations by Dianne and Wilbur (1995), Chen and Jiang (2001), but lacking in the developing countries.

Liquidity is another factor that affects the capital structure choice of companies. “In the study carried out by Anderson et al (2002)” (<http://files.eric.ed.gov/fulltext/EJ1088260.pdf>), a positive relationship between capital structure and liquidity was found in the developed nation organizations. The study of US companies showed a negative correlation by Krenusz (2004) as the research was done by Ozkan (2000) and Antoniou et al (2002) for other developed nations. Bhole and Mahakud (2004) in their research of Indian organizations found a negative relationship between liquidity and capital structure choice.

In the State of Qatar, the research problem could emanate from the language issues as the availability of capital structure textbooks in The English language is difficult as the mother tongue is in Arabic. Since the language of the researcher of this thesis is English based, it is hard to find books or study done on the determinants of capital structure in the country. The published companies’ financial statements on the Qatar Stock Exchange are based on the English language to assist international investors in investing opportunities.

1.5 The significance of the study

The researcher hopes that the findings from the survey will strengthen companies and the business community in the State of Qatar in better understanding the determinant factors that could affect the capital structure of their organization and the appropriate mix of such elements in their decision-making.

The importance of the study will enlighten future researchers on the importance of factors that determine the capital structure of any business and highlight the areas for further research in the State of Qatar.

Macroeconomic factors such as GDP growth, inflation rate, and interest rate are explored to determine their influence on capital structure choice. Antoniou et al (2002), believe that most managers like to consider market conditions such as inflation, interest rate, stock market performance, and other economic factors when deciding the financial mix. Therefore, the importance of macroeconomic factors as affecting leverage ratios are recently studied by Booth et al (2002), Korajezky and Levy (2003), and Gianetti (2003).

This study utilizes both short-term and long-term debt ratios as measures of capital structure decision in addition to current debt ratio to justify better explanations on the leverage maturity as most of earlier studies used total debt over total capital or asset as a measure of leverage, according to Bhaduri (2002).

Lastly, the use of ‘mean’ capital structure by the industrial sector of the economy in the State of Qatar could probably be the pioneering research work in the country.

1.6 Preview of subsequent chapters

The research study is, therefore, organized in the following ways:

Chapter 1 introduces the research subject by giving a brief background of the earlier studies done by the researchers by incorporating their theories, thoughts, and solutions to the determinants of capital structure. Also, the institutional environment that is the State of Qatar, historical perspective, its population, economy that is gradually moving from the hydrocarbon-based to a more robust knowledge-based one by establishing Qatar Foundation for Education, Science, and Community Development. In this chapter, the objective of the study as well as the research problems including the significance of the survey is explored.

Chapter 2 explores the review of relevant literature and thoughts of previous researchers that dealt with the determinants of capital structure choice for organizations’ decision-making process and to apply the same methodology to the State of Qatar.

Chapter 3 explores the method of the research as concerning the design, nature, and sources of data as well as variables, measures, and the hypothesis of the study.

Chapter 4 deals with the analysis of data through descriptive, trend, ratio and decomposition analyses as well as the conclusion thereof.

Chapter 5 explores the findings, conclusion, and recommendation for further research as well as the limitations of the study.

Lastly, the bibliography and appendices of the study are enumerated.

Chapter 2 Review of relevant literature

2.1 Introduction

This chapter reviews the related empirical literature as presented by other researchers on the determinants of the capital structure of organizations and their relative adjustment to their target level in decision-making. The literature review consists of the determinants of capital structure in developing and developed countries as well as a look at the factors associated with them.

The literature review will assist in generating a framework for this study by identifying critical issues in the capital structure and the theories that are relevant to them. Appropriate research methodology could develop for this study. The researcher will be looking at the work of other scholars published on the subject of capital structure and the determinants thereof as well as the organization's adjustment toward their target level in the decision-making process.

2.2 Determinants of capital structure

The determinants of the capital structure of the listed organizations in the State of Qatar follow the same principles as applied to other nations of the world. A closer look at the following determinants suffices:

- Organization size
- The tangibility of assets or asset structure of the organization
- Profitability
- Organization risk
- Growth opportunity
- Energy intensity
- Ownership structure
- Debt rating
- Degree of competition
- Leasing
- Capital structure and industry effects
- Tax benefits

Titman and Wessel (1988) used some tangible assets, non-debt tax shields, growth, size, the volatility of revenue, the uniqueness of the organization, industry, and profitability to explain leverage variable model. In their research, they found both long-term and short-term debt-to-equity ratios are negatively related to uniqueness. They, however, interpreted the result as support for the Titman (1984) products market commitment model. Size and profitability found to hurt the short-term debt. The result shows that small organizations face high transaction costs when issuing long-term debt or equity.

However, Titman and Wessel (1988) did not find any significant effect of volatility, non-debt shield, and asset structure on short-term or long-term debt in their factor analysis model because of the first correlation between variables. They included both intangible assets with a negative weight and inventory and plant and equipment with real influence in their factor collateral value. The effect arising from the two variables could eliminate the impact of the collateral on the debt ratios as cited by Baker and Martin (2011).

Below is the summary of predicted signs as seen by the capital structure theories.

Table 2.2 Testable hypotheses of capital structure determinants

Determinants	Theories		
	Tradeoff	Pecking order	Agency cost
<i>Industry variables</i>			
Industry Leverage	+		
<i>Organization-specific variables</i>			
Organization Size	+	-	
Profitability	+	-	+
CVA	+	-	
Earnings volatility (risk)	-	-	+/-
Growth opportunities	-	+/-	-
Energy intensity	-	-	-
Ownership structure	+		
Rated vs. Non-rated	+	+/-	
Low-cost vs. Service	+/-	-	-
Leasing	+		
Non-debt Tax Shield	-		

2.2.1 Organization size

Organization size is one of the determinants of the capital structure of an organization made famous by the study carried out by Gupta (1969) on US organizations. However, Titman and Wessel (1988) claimed that fixed size functions as an accurate “diversification mechanism of company earnings, hence reducing the probability of default”

([https://www.coursehero.com/file/p1sdoi2/1-The-cost-of-relying-on-external-financ.](https://www.coursehero.com/file/p1sdoi2/1-The-cost-of-relying-on-external-financ/)). Big businesses should bear more debt and pay less to debt holders than smaller organizations do. Trade-off theory, thus, argues that there exists a positive relationship between the probability of default and leverage.

Organization size could also function as a proxy of transparency through asymmetric information as large businesses are subjected to a free analysis by both potential and existing investors than the smaller companies. Frank and Goyal (2009) study showed a “negative correlation between organization size and” debt as relating to the pecking order theory as larger organizations’ exhibit an increased preference for equity than obligation.

Titman and Wessel (1998), in their study of capital structure from 1974 to 1982 found that the organization size is negatively related to long-term debt that is divided by book value of assets and not long-term debt divided by the market value of equity. Small size business organizations’ capital structure consists of loans from banks and retained profits. While on the other hand, any significant business that has goodwill, stability and an established benefit can quickly go for the issuance of shares and debentures as well as loans and borrowings from financial institutions. The bigger the size, the more extensive is total capitalization.

2.2.2 Tangibility of Assets or Assets structure of the organization

Tangible assets are those assets that have a physical form and fixed in nature, such as buildings, machinery, and equipment, automobiles, and so on. Tangible assets are the most secured assets that could be used as collateral security for creditors to issue loan debt. A high ratio of fixed-to-total assets leaves significant collateral for the debtors, consequently inactive of lower risk debt and lower interest payments.

In Jensen and Meckling (1976), there is a positive relationship between high ratios of fixed to total assets and leverage in which classical shareholder versus bondholder conflict where the stockholders are prone to overinvest. Since tangible property secured against debt, the creditors have a higher probability of recovering their debt repayment. It may lead to lower agency cost and expected cost of distress according to trade-off theory, which may give the positive relationship between the size of tangible assets and debt.

Grossman and Hart (1982), there is a negative correlation between tangibility of assets and leverage using agency costs and pecking order theory. Organizations with a lower level of collateral goods have higher agency costs for managers consuming excessive perquisites than organizations with a higher level of collaterals. Equally, in Daskalakis and Psillaki (2006), it is found in their study of Greek and France companies that asset tangibility appeared negatively to leverage in those countries. In which results complied with the pecking order theory as they argued that businesses with more goods have already found a stable income, and there was less tendency to seek external financing.

Pandey (2002) study of 208 listed companies in Malaysia, wherein it measured leverage as the ratio of total debt to the overall asset at book value. Moreover, the tangibility of property as the ratio of capital to total assets and was proven a positive relationship between asset tangibility and leverage existing.

The tangibility of assets can be measured using various proxy variables such ‘as the ratio of net property, plant, and equipment to total assets’; the ratio of selling, general and administrative expenses to sales; and the ratio of research and development (R&D) expenses to sales.

2.2.3 Profitability

The determinant of profitability follows the idea of the organization being profitable with the high internal rate of return and able to generate fund internally through retained earnings. In trade-off theory, high profitability reduces the probability of financial distress or bankruptcy costs and induces organizations to increase debt level because of tax deductibility of interest payments. Frank and Goyal (2009) stated that the trade-off theory implies that there exists a positive relationship between leverage and profitability.

The pecking order theory explains the effect of profitability on leverage wherein an organization has an ordered preference for financing as retained earnings are used as a source of fund for investment, then followed by debt, Myers (1984). Private funding ranked as being the first and cheap as it is not subject to outside interference, though with the absence of financial risk. External debt ranked second as being more affordable and has little restrictions than issuing equity, which is seen to be a costly way to finance an organization.

In the study of US, large manufacturing organization from 1935 until 1983 by Thies et al (1992), profitability measured by the earnings before interest and tax (EBIT) over total net assets. The following five measurements used in the calculation of leverage:

- the ratio of short-term debt to total capital(<http://iosrjournals.org/iosr-jbm/papers/Vol18-issue10/Version-7/M1810078388.pdf>)
- long-term debt to total equity
- convertible debt to total equity
- preferred stock to total capital, and
- common stock to total capital

The study, therefore, indicated that profitability was significant in explaining organizations' leverage that was inversely related to each other.

However, Titman and Wessels (1998) found that profitability was negatively related to debt for both market and book values, whereby it is only significant for market values and not the book values of debt ratios. They suggested that an increase in the market value because of an increase in the operating income is not entirely offset by increasing the debt borrowing, which is in agreement with Myers' (1984), pecking order theory that organizations prefer internal to external financing.

Moreover, Daskalakis and Psillaki (2008), in their research on profitability took the operating surplus and divided by the total assets whereby the result showed a negative correlation to leverage. In like manner, Frank and Goyal (2007) calculated that organizations with higher profits tend to have lower leverage. Gaud et al (2005) found a negative relationship between debt and profitability where profitability measured by the return on total assets, i.e., the ratio

of EBIT to total assets, in which it showed pecking order theory and the trade-off theory in the short run.

2.2.4 Organization risk consideration

Risk levels are one of the determinants of the company's capital structure according to Kale et al (1991). It follows when a substantial operating risk is more volatile than the business's earnings stream in which the change of the company to default and expose to bankruptcy and agency costs is very high. Johnson (1997) found that companies with more volatile earnings growth might experience more situations in which cash flows are too low for debt service.

There are two types of substantial risks, which are the following:

- The operating risk or business risk:

The market risk refers to the risk of an organization's inability to discharge permanent operating costs (e.g., rent of the building, payment of salary, insurance installment, and so on.

- Financial risk:

The Financial risk refers to the risk of an organization's inability to pay fixed financial payments (e.g., amount of interest, preference dividend the return of the debt capital, and so on, as promised by the company. The total risk of a business depends on both of these types of threats. When the operating risk in business is less, the financial risk can be faced, which means that more debt capital utilized. On the other hand, if the driving risk is high, the financial risk is likely to occur, and the more use of debt capital should be avoided.

The high uncertainty of future cash flows increases the probability of financial distress and makes potential tax savings from using debt less predictable. The need for disciplinary actions against the organization's managers is insecure as an unknown amount of retained earnings available for costly investments. Trade-off theory and agency theory draw towards a negative relationship between the level of earnings volatility and leverage, Frank and Goyal (2009). Also, organizations with high business risk may have a lower agency cost of debt and thereby could borrow more. Agency theory could be used to explain both sides of the coin, negative and positive signs.

Earning volatility could be argued to have the same negative relationship when following pecking order theory; thereby high volatility earnings may induce lenders to demand an additional risk premium on the increased cost of debt, which reduces the motivation to choose debt when raising new capital as in Baker and Martin (2011).

2.2.5 Growth opportunity

“Organizations that are in the growth stage of their cycle typically finance that growth through debt, borrowing money to grow faster. The conflict that arises with this method is that the revenues of growth organizations are” unstable and unproven (<https://quizlet.com/130564492/chapters-10-13-flash-cards/>). “As such, a high debt load is usually not appropriate” (<https://www.bayt.com/en/specialties/q/61857/what-factors-are-influencing-the-det.>).

More stable and mature organizations typically need less debt to finance growth, as its revenues are stable and proven. These companies also generate cash flow, which can be used to fund projects when they arise.

Myers (1977) argues that companies with growth potential will tend to have less debt in the capital structure. Growth can produce moral hazard effect and push organizations to take more risk. In order to mitigate this problem, assets in growth opportunities should be financed with equity instead of debt due to minimizing the loss or risk per stockholder.

The growth opportunities are measured by using the market-to-book ratio (M/B). Also, the change in the logarithm of total assets; or the ratio of capital expenditures on goods, and the percentage change in the overall sales. The Pecking Order Theory predicts a positive relationship between growth opportunities and leverage. Since organizations need to take up debt when investments exceed retained earnings, in which if leverage increases when expenditures exceed retained earnings, and it decreases if investments are less than retained earnings.

Additionally, trade-off theory predicts that organizations with more investment opportunities have less leverage as they have stronger incentives to avoid under-investments and asset substitution that can arise from stockholder-bondholder agency conflicts, Frank and Goyal (2011). This proposition thus supported by Myers (1977), Jensen and Meckling (1976),

where managers of highly levered organizations have stronger incentives to engage in under-investment and asset substitution.

Growth is likely to place a higher demand on internally generated funds and push the organization into borrowing, Hall et al (2004). Moreover, Marsh (1982) believes that companies with high growth will capture relatively higher debt ratios. In the case of smaller companies with concentrated ownership, top growth organizations would require more external financing and display higher leverage as in Heshmati (2002).

Aryeetey (1994) believed that growing medium-sized enterprises appeared more likely to use external finance while challenging to determine whether finance induces the growth or the opposite or both. As organizations grow through different stages, they are likely to shift finance sources, from internally generated sources or externally generated sources according to Aryeetey (1994) with a different view from Myers (1977) that organizations with growth opportunities may have a smaller proportion of debt in their capital structure.

2.2.6 Dividends

Bhaduris (2002) carefully considered dividend as a signal of the financial health of an organization by the outsiders. As a dividend, payment is likely to play a prominent role in the financing mix decision mainly due to unstable market conditions. However, if any increase in profits signals increases in the future earnings, then the organization cost of equity will be lower by favoring equity to debt. Thus, this implies a negative relation between leverage and payout ratio according to Kuczynski (2005), Frank and Goyal (2003), and Rozeff (1982).

Donaldson (1961) suggested that “organizations set target dividend payout ratios based on future investment opportunities and future cash flows. Organizations may be reluctant to raise dividends unless they make a higher profit and are unwilling to cut the benefits,” as stated in (<http://www.slideshare.net/waqastariq16/impact-of-firm-specific-factors-on-capita.>).

2.2.7 Managerial ownership structure

The property structure states whether the company is a public or state-owned organization. Some studies indicate that there is a relationship between ownership concentration and the capital structure of an organization. According to agency theory, it is expected that there is a

correlation between ownership structure and leverage. Whereas, free cash flow theory states that managers with only small ownership interest have an incentive for reckless behavior or ill investment. Ellili and Farouk (2011) found an inverse relationship between low-level managerial control and leverage and a positive correlation between high-level administrative monitoring and leverage.

There is equally a positive relationship between financial performance and ownership concentration, according to Geldajlovic and Shapiro (2002), which implies that from the trade-off theory, the organizations may have a higher potential tax benefit from increasing their debt levels. Also, the pecking order theory may indicate a lower degree of leverage because of the high level of retained earnings. Duffield et al (2007) found a positive relationship between ownership concentration and leverage in Indonesian and Korean organizations.

Harris and Raviv (1991) affirm that managers increase the debt ratio to reinforce their control mainly to control a significant fraction of voting rights. Novaes and Zingales (1995), confirmed that the threat of takeover forces the managers to issue debts and to prove their alignment as Huang and Song (2006) confirmed such positive correlation.

2.2.8 Debt rating

According to the pecking order theory, which predicts that all organizations with a credit rating will use less debt and more equity, there is a negative relationship between leverage and credit rating. An organization with a strong credit rating will face a lower degree of information asymmetry, while it uses more equity and less debt. Thus, it follows when an organization uses debt financing for its operation, it faces financial risk and thus referred to as a levered organization. Financial risk is the probability that the earnings of the organization will not be as projected because of the financing method employed. Brigham and Houston (2007) defined financial risk as that additional risk placed on common stockholders because of the decision to finance through debt.

Financing risk arises because of the debt obligation in the form of interest paid when it falls due before shareholders participate in the sharing of retained earnings. Kisgen (2009) supported debt rating as a determinant factor for leverage. Organizations issue significantly

less debt whenever they are close to rating changes, i.e., setting a minimum credit rating level as a company envisages a decrease in its debt as the rating downgrades (Kisgen, 2006).

The main benefit of increased debt is the growing profit from the interest expense as it reduces taxable income. “With an increased debt load the following occurs” ([HTTP://www.investopedia.com/exam-guide/cfa-level-1/corporate-finance/debt-effect.](http://www.investopedia.com/exam-guide/cfa-level-1/corporate-finance/debt-effect.)):

- Cash flow needs to cover the rising interest expense ([HTTP://www.investopedia.com/exam-guide/CFA-level-1/corporate-finance/debt-effect.](http://www.investopedia.com/exam-guide/CFA-level-1/corporate-finance/debt-effect.)).
- Debt issues become nervous that the company will not be able to cover its financial responsibilities on the debt they are issuing (<http://www.investopedia.com/exam-guide/CFA-level-1/corporate-finance/debt-effect.>).
- Stockholders also become tense, if interest increases, EPS decreases, and lower stock price are valued. Additionally, if a company goes bankrupt, the stockholders are the last people to be paid retribution, if any at all (<http://www.investopedia.com/exam-guide/cfa-level-1/corporate-finance/debt-effect.>).

2.2.9 Degree of competition

The extent of competition is one of the specific factors that affect the choice of the capital structure of the organization. Opler and Titman (1994) suggested that highly levered organizations lose market share to their less levered rivals during industry downturns for the following reasons.

- Distressed companies that face under-investment problems are forced to sell off assets and reduce their selling efforts.
- Highly levered organizations have difficulty retaining and attracting customers that are concerned with long-term viability and quality of products.
- Rival competitors could consider highly levered organizations as a vulnerable competitor and divert customers to them.

The low-levered organizations are assumed to have an excellent financial position, thereby engage in predatory practices in a very competitive environment, which is designed financially to exhaust highly levered rival organizations while chasing them out of the market. Low-levered organizations may purposely follow a reduced price or low-cost strategy as

competitors to drive out highly levered companies from business as long as possible. Given previously mentioned, Baker and Martin (2011) believe that highly levered organizations may not survive such competitive behavior if they can no longer secure finance for their operating or investment costs. Hence, a high level of competition could replace debt as a managerial disciplinary mechanism that could induce more efficient behavior.

2.2.10 Non-debt tax shield

Cloyd (1997) claimed that the existence of non-debt tax shields provides an alternative means of reducing income taxes that may serve to mitigate the benefit of debt tax shields. A non-debt tax shield is recognized as another type of expense that has the power of generating tax shields like interest expenses, depreciation expenses and an investment tax credit that are considered tax-deductible expenses.

De Angelo and Masulis (1980) argued that organizations with significant non-debt tax shields about their expected cash flows include less debt in their capital structure. M&M theory maintained that the primary incentive to borrow is to take advantage of interest tax shields or tax-deductible of interest.

The existence of non-debt tax shields is believed to discourage leverage, and as a result, a negative relationship between non-debt tax shields and leverage is expected. Ozkan (2001) found an inverse relationship between non-debt tax protection and leverage in his study. Wald (1999) confirmed this result with the ratio of depreciation to total assets taken a proxy for nondebt tax shields. Also, Chaplinsky and Niehaus (1993) used the ratio of depreciation expense and investment tax credits to total assets to represent non-debt tax shields where it resulted in an inverse relationship between non-debt tax shield and leverage. Nevertheless, Graham (2006) found a positive correlation between non-debt tax shield and leverage.

According to Khaled and Nurwati (2012), “all Qatari-owned companies and joint ventures are exempted from corporate income taxes.” Qatar levies corporate income taxes on foreign corporations “at rates from 5 percent to 35 percent of net profits, including profits from majority-owned Qatari joint ventures exceeding 100,000 Qatari riyals (approximately US\$ 30,000). Under Law No. 13 of 2002, the Ministry of Finance may grant a tax holiday of up to ten years for new foreign investments in” the primary sectors

(<http://www.hrmars.com/admin/pics/805.pdf>). Other foreign companies may be given tax exemptions on a case-by-case basis by monarchical Decree.

In 2008 a new law was issued which exempts non-Qatari shareholders of individual Qatari shareholding companies from tax. This law is valid from 3 April 2008. Also, dividends not taxed as the fee “is assessed on the share of profits allocable to foreign shareholders according to the financial statements of a company, as adjusted for tax purposes. Capital gains are aggregated with other income and are subject to tax at the regular corporate income tax rates. Moreover, Zakat payment in Qatar is not institutionalized”, Khaled and Nurwati (2012). Qatar does have a Zakat Fund which is voluntary (<http://www.hrmars.com/admin/pics/805.pdf>).

Law No. 21 of 2009 relates to Income Tax Lawas Law No. 11 of 1993 was repealed for the same purpose and came to effect on 1 January 2010. The following are exempted from the Tax Law retrieved from

(<http://www.pkf.com/media/1958978/qatar%20pkf%20tax%20guide%202013.pdf>):

- Bank interest and returns due to natural persons other than those carrying on a taxable activity in the State, whether or not resident in the State
- Interest and returns on public treasury bonds, development obligations, and municipal corporation bonds
- Capital gains on the disposal of assets such as real estate and securities derived by natural individuals provided that the property and securities disposed of are not part of taxable assets
- Dividends and other income from shares if the amounts distributed during a taxable year taken from profits that were Subject to the tax under this law; or
- Distributed by a company the income of which is exempt from tax under this law or other laws.
- Gross revenue from handcraft activities that do not use machines provided that the gross proceeds “not exceed one hundred thousand (100,000) Riyals per year. The average number of employees does not exceed three during the taxable year, and the activity is carried on in one single establishment” (<http://www.hrmars.com/admin/pics/805.pdf>) by

“the limits and conditions provided for in the executive regulations of this law”(https://leaglobal.com/thought_leadership/Tax%20system%20in%20Qatar.pdf).

- “Gross income from agricultural and fishing activities.”
(https://leaglobal.com/thought_leadership/Tax%20system%20in%20Qatar.pdf).
- Gross income of non-Qatari air and sea transport companies operating in the State, subject to reciprocity
- Gross income of Qatari natural person resident in the State, including their shares in the profits of legal entities
- Gross income of corporations resident in the State and wholly owned by Qatari nationals

2.2.11 Organization liquidity

Pecking order theory predicted that companies with high liquidity borrow less for the fact that a company with more current assets is expected to generate more private inflows, which may be used to finance its operating and investments activities. Given the aforementioned, Pandey (2006) noted that it is essential for a business to meet its obligations as and when needed and that liquidity ratios measure the ability of an organization to meet current requirements.

When an organization has more liquid assets that sold faster enables an organization to place better collateral to seek financing, which thus allows more leverage and a positive relationship could that exist between asset liquidity and leverage as in Williamson and Oliver (1988). Also, trade-off theory suggests a positive correlation between leverage and liquidity because of higher liquidity ratio reflects the more exceptional ability of an organization to meet its immediate obligation on time.

Myers and Rajan (1998) found a negative relationship between asset liquidity and leverage with the belief that when an organization has more cash, it becomes difficult to predict the asset values and the managers find it challenging to commit to a specific course of action. The external creditors limit the amount of debt financing when organizations have more liquid assets, which may produce a negative relationship between asset liquidity and leverage.

Morellec and Erwan (2001) argued that the relationship between asset liquidity and leverage be insignificant. This proposition supported by Ozkan (2001) suggests that liquidity has an

ambiguous effect on the capital structure decisions as current assets to current liabilities proposition chosen as a proxy for liquidity.

It should be noted however in Lipson and Mortal (2007), which examined the relationship between capital structure decisions and equity market liquidity, where it found that organizations with more liquid equity tend to have lower leverage and more likely to choose equity over debt when raising capital. Organizations with more liquid capital employ more stake in their capital structure as they issue more equity shares than debt when borrowing money. More so, in Hsia (1981), Huang and Song (2004), there is a positive relationship between financial distress and leverage. Hsia (1981) explained that the positive correlation centered on the option pricing model, capital asset pricing model and the M&M theory whereby the variance of the organization's assets increases, the systematic risk of equity decreases in which business risk becomes positively related to leverage.

Also, Pandey (2005) explained that the most common ratios that indicate the extent of liquidity or the lack of it to include the following, current ratio and the quick ratio or acid test ratio. These two explained as follows retrieved from (<http://www.myaccountingcourse.com/financial-ratios/current-ratio>):

- **Current Ratio:** The current ratio is a liquidity and efficiency ratio that measures an organization's ability to pay off its short-term liabilities with its current assets. The ratio is an essential measure of liquidity because short-term obligations are due within the next season.

That means that a company has a limited amount of time to raise capital to pay for the liabilities. Current assets like cash and cash equivalents as well as marketable securities are readily converted into money in the short term. That means that companies with substantial current assets will be able to pay off their current liabilities as at when they are due with the requirement of not selling their long-term revenue-generating assets.

The “current ratio is calculated by dividing current assets with the current liabilities” ([https://www.coursehero.com/file/p6nq5k/II-Liquidity-Ratios-A-Liquidity-refers-to.](https://www.coursehero.com/file/p6nq5k/II-Liquidity-Ratios-A-Liquidity-refers-to/)). Here is the calculation:

Current ratio = current assets / current liabilities

“The GAAP (Generally Accepted Accounting Principles) required that companies separate existing and long-term assets and liabilities on the balance sheet” (<https://www.sec.gov/Archives/Edgar/data/1300938/000118518516005294/abcoenergy10q>.) . The separation allows investors and creditors to calculate important ratios like the current ratio. In financial statements, current accounts always reported before long-term accounts.

The current ratio helps investors and creditors understand the liquidity of a company, as well as how quickly that company will be able to pay off its current liabilities. This ratio expresses an organization's existing debt regarding current assets. A higher current ratio is always more favorable than a lower current ratio “because it shows that the company can more easily make current debt payments” (<https://www.coursehero.com/file/24068182/BUS-FP3061-McAndrewVanessa-Assessment5->). It should be noted that when a company sells its fixed assets to pay for current liabilities, it means that the company is not making enough profit from its operations. In other words, the company is losing money. Hence, the accounts receivable collection becomes difficult.

The current ratio sheds light on the overall debt burden of a company. When a company is weighed down by existing debt, its cash flow suffers (<http://www.myaccountingcourse.com/financial-ratios/current-ratio>). As a general rule, Pandey (2005) noted that a current ratio of 2:1 or more is considered satisfactory and that a proportion higher than one means that the business has more current assets than current claims against them (<https://www.coursehero.com/file/p6628m1/The-current-ratio-is-a-measure-of-the-fi->).

- Quick ratio or Acid-test ratio: This is a “liquidity ratio that measures the ability of a company to pay its current liabilities when they come due with only quick assets. Quick assets are current assets that could be converted to cash within 90 days or in the short-term” (<http://www.myaccountingcourse.com/financial-ratios/current-ratio>). “Cash, cash equivalents, short-term investments or marketable securities, and contemporary accounts receivable are considered quick assets” (<http://www.usingquickbooks.com/liquidity-ratios/>).

Short-term investments or marketable securities include trading securities and available for sale securities quickly converted into cash within the next 90 days and are marketable securities traded on an open market with a known price and readily available to buyers (<http://www.myaccountingcourse.com/financial-ratios/quick-ratio>). Any stock on the Stock Exchange would consider industrial safety because they can be sold quickly to investors in an open market (<http://www.myaccountingcourse.com/financial-ratios/quick-ratio>).

The quick ratio is always called the acid test ratio because of the historical use of acid to test metals for gold by the early miners. If the metal passed the litmus test, it was pure gold. If metal failed the litmus test by corroding from the acid, it was a base metal and of no value (<http://www.myaccountingcourse.com/other/financial-ratio-cheatsheet.pdf>). The litmus test of finance shows how well a company can quickly convert its assets into cash to pay off its current liabilities (<http://www.flashcardmachine.com/intermediate-chapter1314.html>). It also illustrates the level of quick assets to existing obligations.

The quick ratio calculated by adding cash, cash equivalents, short-term investments, and current receivables together than dividing them by current liabilities. For example, from <http://www.jaiibcaiibmocktest.com/ratio-lquick.php> (accessed 16-Jul-2016):

$$\textit{Acid test ratio or Quick ratio or} = \frac{\textit{Cash + cash equivalents + short-term investments + current receivable}}{\textit{current liabilities}}$$

Sometimes company financial statements do not give a breakdown of quick assets on the balance sheet. In such a case, one can still calculate the quick ratio even if some of the quick asset totals are unknown. Subtract inventory and any current prepaid assets from the current asset total for the numerator, for example from <HTTP://www.managementparadise.com/balajiv.ganesh/documents/7329/bharti-airtel-en>. (accessed 15-Jul-2016):

$$\textit{Quick ratio or Acid test ratio} = \frac{\textit{Total current assets - inventory - prepaid expenses}}{\textit{current liabilities}}$$

Pandey (2005) noted that the quick ratio or litmus test ratio established a relationship between quick or liquid assets and current liabilities, any ratio of **1:1** is considered satisfactory financial performance.

2.2.12 Capital structure and industry effects

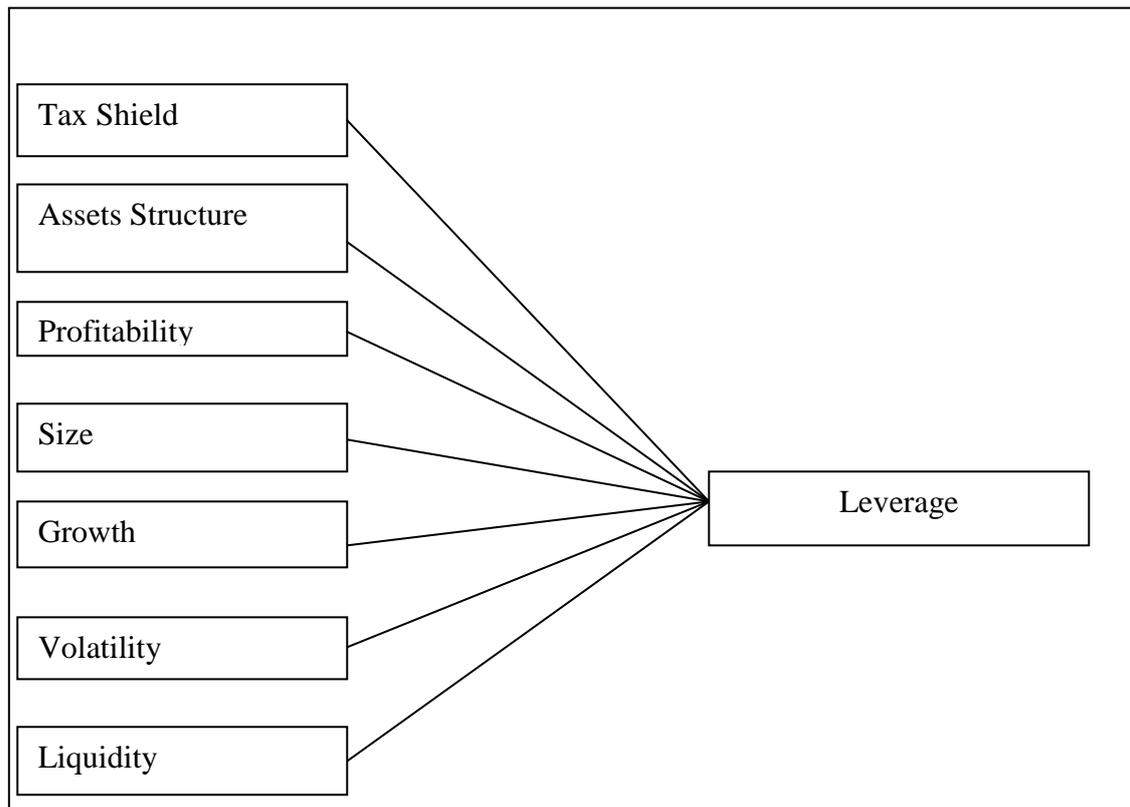
Organization-specific and industry characteristics have significant implications on the choice of capital structure. Industry characteristics may consist of the competitive nature of the industry, technological development and need of continuing innovation, barriers to entry, access to close substitute and regulations.

Titman and Wessels (1988), show that industry classification influences organizations' capital structure. Harris and Raviv (1991) accepted that companies in a given industry would have similar leverage ratios while leverage ratios vary across sectors. The empirical regression results of Abor (2007) indicated clearly that the sector effect is essential to explaining the capital structure and the variations in the capital structure across various sectors.

Scott (1972) found in his study of 77 organizations from 12 different categories of sectors that capital structure among industry was having more considerable variances when compared within industry group as well as the industry average for the period from 1959 to 1968. Clouse and Masson (1993), further evidence was established for industry effect on the capital structure of organizations. Kim (1978) stated in his research that the degree of influence on debt behavior from the determinant of leverage was expected to differ between industries as the optimal debt-equity mixes may vary.

Figure 2.4

Schematic diagram of the theoretical framework



Gajurel (2005): Capital Structure Management in Nepalese Enterprises.

2.2.13 Stock market conditions

Welch (2004) stated that organizations do not rebalance changes arising from the market value of equity-induced by share returns. He suggested that share returns are the primary determinants of capital-structure changes in the short-run. Baker and Wurgler (2002) stated that it follows the market-timing theory in which shares are issued at high prices and then repurchased at low prices to exploit temporary fluctuations in the cost of equity relative to the cost of other forms of capital. “Managers thus have incentives to time the market if they think it is possible and if they care about the shareholders’ returns,” (Baker and Wurgler 2002). Peyer and Vermaelen (2008) stated, “companies buying back their shares might experience a positive long-run excess return if a share price decline triggers the repurchase.”

A negative relationship between share price and leverage may arise; as a result of a market timing theory. “Market timing theory states that organizations consider conditions in the

securities market and time the raising of funds by market conditions” (Baker and Wurgler 2002). Organizations may tend to issue equity when share prices are high and when a high share price coincides with the less adverse selection. If the degree of information asymmetry is time-varying, the resulting unwanted selection cost is to some extent under the control of the organization. The organization will issue equity when it expects relatively little information asymmetry and low adverse selection cost.

Lucas and MacDonald (1990) stated that a price run-up (sudden increase in the share price) could be associated with reduced information asymmetry since the gradual resolution of information asymmetry may trigger the run-up. Dierkens (1991), Korajczyk et al (1992) stated that organizations tend to announce equity issues after information releases, even if it involves costly delays of issues. For example, Korajczyk et al (1992) study of NYSE, AMEX, and OTC companies that issued equity over the period 1978-1983, the result was consistent with the adverse selection affecting the pricing and timing of equity issues. Deesomsak et al (2004) study of “the effect of stock market performance in Thailand, Malaysia, Singapore, and Australia appeared inversely related to debt” (the use of debt to purchase an asset, with the expectation that the income from the asset will exceed the borrowed cost) for all the selected Asian countries.

2.2.14 Macroeconomic conditions

In the previous research on the relationship between macroeconomic factors and capital structure, there are several indicators of why macroeconomic conditions can have explanatory power. Hackbarth et al (2006) stated that if capital structure is determined through a balancing act, as the trade-off theory implies regarding default costs, “financing policies could be affected through idiosyncratic risk and the aggregate shock”(https://docplayer.net/60421847-Can-macroeconomic-factors-explain-the-choice-of-c.). Therefore, the aggregate shock represents the state of the economy in which if there is a shift between boom and recession, the shareholders' relationship to risk differs.

Korajczyk and Levy (2003) stated that tightly financially constrained organizations could be more affected by the fluctuations and then issue debt counter-cyclically and equity pro-cyclically. The less constrained organizations are insensitive to the cycles. Gertler and Gilchrist (1993) explained that macroeconomic conditions are a situation where the aggregate

debt issues of large companies increase due to monetary contractions because of economic recessions. “Regarding investment opportunities, Narayanan (1998) argued that because of the low cash flow and undervalued assets during economic recessions, it is essential to finance through debt to avoid the problem of underinvestment of projects”

(<https://docplayer.net/60421847-Can-macroeconomic-factors-explain-the-choice-of-c.>)

The underinvestment problem is a situation in which a company refuses to make low-risk investments to the detriment of debt holders. The company did this in order to placate its shareholders, who seek a higher return, but this exposes debt holders to more risk without the promise of a higher return

(<https://financial-dictionary.thefreedictionary.com/Underinvestment+problem>). Frank and Goyal (2009) averred that Agency problems (conflicts between shareholders and the management of large companies) are likely to be more severe during downturns as managers’ wealth is reduced relative to that of shareholders. If debt aligns managers’ incentives with those of shareholders, leverage should be counter-cyclical

(<https://www.coursehero.com/file/p43doov/Measures-i-Cumulative-raw-returns-and-ii.>)

“If pecking order theory holds, leverage should decline during expansions since private funds increase during expansions, all else equal. If corporate profits have shown an increase in the recent past, agency problems between shareholders and managers are less severe.

Consequently, organizations should issue less debt”

(<https://www.coursehero.com/file/p43doov/Measures-i-Cumulative-raw-returns-and-ii.>)

Cook and Tang (2010) stated that the rate of change is higher when economic prospects are good.

2.2.15 GDP Growth

Balla and Mateus (2004), Booth et al (2001), Muhammad (1999) conducted studies on the GDP as one of the macroeconomic variables affecting the capital structure of an organization. The study of Balla and Mateus (2004) centered on the capital structure of Hungary and Portugal. They collected financial statements between 1995 and 1999 of listed corporations. GDP was examined to determine the effect of leverage, in which the result indicated a significant impact on the corporate leverage of the listed organizations

(<http://www.investopedia.com/ask/answers/199.asp>).

2.2.16 Inflation rate

Gulati (1997) stated that inflation is represented by the percentage increase in the product prices and costs adjusted to get the effect of inflation on the capital structure. The result showed that inflation is significantly affecting leverage. Mutenheri and Green (2002) conducted research to measure inflation as the percentage change in the consumer price index of listed companies in Zimbabwe. The study involved 52 listed companies for the period 1990 to 1999. The result showed the non-significant effect of inflation on the capital structure therein.

Similarly, Sener (1989) conducted a study to determine the effect of inflation on the debt ratio. The period chosen for the survey was from 1970 to 1986 divided into three series. The first set was from 1970 to 1975 with average inflation of 6.7%; the second round was from 1976 to 1981 with an inflation rate of 9.2%, and the third set was 1982 to 1986 with an inflation rate of 3.8% with the following results:

- The debt ratio increased slightly when inflation rates rose.
- At low and moderate inflation rates, there was a direct relationship between inflation and leverage
- As inflation rises to a very high level, the debt ratio reduces due to the leverage-related costs or demand-side effect.

Hatzinikolaou et al (2002) conducted a study on the effect of inflation uncertainty on the capital structure of US organizations for 20 years' period from 1978 to 1997. The data from 30 Dow Jones companies were examined based on three independent variables to see the influence on the debt-to-equity ratio by using cross-sectional 'heteroskedastic' and time wise autoregressive model. They are:

- Inflation uncertainty
- Expected real interest
- Asset tangibility

The resultant effect indicated that inflation uncertainty and expected real interest rate were negatively related to the debt-equity ratio. The negative result showed that the inflation uncertainty could be because companies reduced their investment financed by debt.

2.2.17 Base lending rate or interest rate

Organizations usually consider market interest rates when deciding on the type of capital structure that would suit them. Interest on loans relates to an extended fixed commitment. Organizations generally do not obtain further credit when the market interest rate is high, to avoid the risk of bankruptcy. Antoniou et al (2002) study showed that the interest rate is negatively related to leverage.

Muhammad (1999) conducted a study on the effect of bank interest or base lending rate on the leverage of listed companies in the nations of Japan, Pakistan, and Malaysia. The result showed an interest rate as a deciding factor for leverage in Japan and Malaysia but without any significant effect in Pakistan. Gau and Wang (1990) conducted a study of capital structure decisions in real estate investment in Vancouver, Canada from 1971 to 1985. They concluded that as interest rates rose, organizations took debt to finance their capital as they are worried about the increase in the cost of debt, which could lead to the default risk of debt repayment.

2.2.18 Legal system and corruption

La Porta et al (1998) argued that the content of the laws of the countries and their quality of enforcement appear to be among the determinants of the capital structure choice of organizations (<http://repository.um.edu.my/897/3/Phd%20thesis-content.pdf>). According to La Porta, countries with conventional law systems offer outside investors' better protection than that of civil law. The quality of law enforcement in a country may refer to the level of corruption in such a state.

Fan et al (2003) examined the influence of the institutional environment on "capital structure and debt maturity choices of organizations in 39 developed and developing countries" (<http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.717.613>). In their study, they found that:

- "A country's legal and tax system, the level of corruption and the preferences of capital suppliers explain a significant portion of the variation in leverage and debt maturity ratios (<http://www.nber.org/papers/w16445>)
- Organizations in countries that are viewed as more corrupt tend to use less equity and more debt, especially short-term debt, while organizations operating within legal

systems that provide better protection for financial claimants tend to have capital structures with more equity, and relatively more long-term debt (<http://www.nber.org/papers/w16445>)

- The existence of explicit bankruptcy code and deposit insurance is associated with higher leverage and more long-term debt (<http://www.nber.org/papers/w16445>)
- Organizations tend to use more debt in countries where there is a higher tax gain from leverage, while organizations in countries with larger government bond markets have lower leverage, suggesting that government bonds tend to crowd out corporate debt (<http://www.nber.org/papers/w16445>)
- Countries with substantially defined benefit pension funds have higher debt ratios and longer debt maturities, whereas those with more extensive defined contribution fund activities have lower debt ratios (<http://www.nber.org/papers/w16445>)
- Debt ratios are lower in countries that limit the bond holdings of pension funds (<http://www.nber.org/papers/w16445>)
- There is no significant association between financing choices and the size of the insurance industry” (<http://www.nber.org/papers/w16445>)

2.3 Review of empirical studies

Many researchers have delved very well into the study of the capital structure and its determinants as well as its effects on decision-making by financial managers of organizations. Numerous empirical works came after the Modigliani and Miller (M&M) studies in 1958 and 1963. Early researchers’ studies were concentrated on the MM hypothesis. They examined the determinants of capital structure from different perspectives.

Gajurel (2005) reviewed the empirical evidence from researchers for capital structure and its determinants as follows:

2.3.1 The Modigliani and Miller study

Modigliani and Miller (1958) used the cross-sectional data taken from 43 electric utilities during 1947-1948 and 42 oil companies during 1953. M&M estimated the weighted average cost of capital (WACC) (<https://samples.edusson.com/the-miller-and-modigliani-capital-structure-irreleval>.) as net operating cash flows after taxes are divided by the market value of the organization (<http://www.aabri.com/manuscripts/121213.pdf>). The financial leverage,

measured as the ratio of the market value of debt to the market value of the enterprise, was considered as an explanatory variable. When regressed, the results were:

$$\text{Electric utilities: WACC} = 5.3 + 0.006d, r = 0.12 \quad \dots (2.1)$$

(0.008)

$$\text{Oil companies: WACC} = 8.5 + 0.006d, r = 0.04 \quad \dots (2.2)$$

(0.024)

Where d is the financial leverage of the organization and r is the correlation coefficient, and standard errors are in parenthesis. Based on these results, M&M suggested that the cost of capital not be affected by the capital structure and is negative to leverage. The M&M study was based on minimal assumptions of continuous cash flow, and electric utilities and oil companies are under the same business risk class.

M&M made the following assumptions:

- There are no taxes
- There are no transaction costs
- All market participants have the same information and equal opportunities; there is no information asymmetry
(https://www.philadelphiafed.org/publications/speeches/plosser/2010/10-20-10_unio.)
- “Lending and borrowing at the risk-free interest rate.”
(<https://www.coursehero.com/file/p3rfnarf/expected-return-of-an-asset-predicted-b>.)
- Organizations issue two types of claims: risk-free debt and risky equity
- Cash flows streams are perpetuities
- Operating cash flow stream is independent of debt or equity considerations
(<https://www.coursehero.com/file/p3ra0v/2-There-are-no-transaction-costs-3-All-ma>.)

Conversely, to increase the value of the organization, M&M argued that, the company could only do it on the left-hand side of the balance sheet, which is to invest in positive assets(<https://www.coursehero.com/file/p3ra0v/2-There-are-no-transaction-costs-3-All-ma>.). The left-hand aspect of the balance sheet, which is known as the capital side, does not contribute anything to the value, so taking debt or no debt has nothing to do with increasing the amount significantly, according to <https://www.coursehero.com/file/p3ra0v/2-There-are-no-transaction-costs-3-All-ma>.

M&M (1958) found that the cost of capital and the value of the organization are independent of the capital structure. The overall cost of capital increases in a manner to offset precisely the use of debt financing, and therefore, the average cost of capital remains constant irrespective of the capital structure employed by a company (<https://www.coursehero.com/file/p3ra0v/2-There-are-no-transaction-costs-3-All-ma.>).

Five years later, Modigliani and Miller (1963) introduced corporate taxes into their earlier model by setting free the first assumption of no taxes. Their proposition recognizes the tax advantage from interest payments as the interest paid on debt is tax deductible. The issuing of bonds reduces a company's tax liability as paying dividends on equity does not. The actual rate of interest paid on bonds issued is less than the nominal rate of interest because of the tax savings.

M&M showed that when corporate taxes are included, the value of the levered organization is equal to the value of an unlevered organization plus the present value of the tax shields associated by debt. In this way, the optimal capital structure that maximizes the value of an organization consists of 100% debt. So many researchers felt that M&M failed to discuss in their article the practical applications of their theory to individual organizations and on how well the theory explained the observed facts such as debt ratios, market reactions to security issues, and so on (<https://www.coursehero.com/file/p3ra0v/2-There-are-no-transaction-costs-3-All-ma.>).

Weston (1963) in his study criticized the M&M study on their assumptions and signified the merit of leverage. In his study, he incorporated organization size and growth rate as explanatory variables in addition to financial leverage.

His empirical estimates of 59 electrical utilities in 1959 were as follows:

$$\text{WACC} = 5.91 - 0.0265d + 0.00A - 0.0822E, r = 0.527 \quad \dots (2.3)$$

(0.008) (0.000) (0.002)

Thus, A is the organization size measured as the book value of assets, and E is the compounded growth in earnings per share (1949-1959). He observed that a WACC decrease with leverage, which is consistent with the existence of gain to leverage, i.e., that the tax shield on a debt has value.

Modigliani and Miller (1966) found results that were consistent with gains from leverage. The practicability of the M&M preposition on WACC may be a bit difficult in the State of Qatar since the published data on QSE belongs to more than 95% of organizations indigenously owned, as Qatari Tax Law does not levy a tax on the profits of such companies. The tax rate which is one of the elements of calculating M&M WACC is absent in the State of Qatar.

The method adopted by the State of Qatar for the weighted average cost of capital is the average of the cumulative of the cost of equity and debt (<https://seekingalpha.com/article/3970585-weighted-average-cost-capital-best-wors>). The cost of equity is the dividend rate with the associated risk, and that of the debt (loan) is the interest rate. For a more straightforward explanation, the formula for the cost of capital comprised separate calculations for debt, preferred stock, and equity that are combined to derive the total cost of capital on a weighted average basis. They are from <https://www.accountingtools.com/articles/2017/5/13/cost-of-capital-formula>

- Cost of debt equals:
 $(\text{Interest expense} \times (1 - \text{Tax Rate}) / \text{Amount of debt less debt acquisition fees plus a premium on debt less discount on debt})$
- Cost of preferred stock equals:
 $\text{Interest expense} / \text{Amount of preferred stock}$
- Cost of common stock (equity) equals:
 $\text{Risk-Free Return} + (\text{Beta} \times (\text{Average Stock Return} - \text{Risk-Free Return}))$

2.3.2 The Taggart (1977) study

Taggart's (1977) study presented an integrated model of the corporate financing system. In the research, he used data from the FTC-SEC Quarterly Financial Reports for Manufacturing Companies for the period 1957 to 1972 for nonfinancial organizations. By using stock-adjustment models, he observed that the sales increase had a positive effect on liquid assets. Timing considerations appeared to exert a significant influence on corporate financing decisions. He stated that when the debt-equity ratio is below target, organizations issue more bonds and less stock. When ordinary share capitals are below the required target, organizations issued more bonds or debentures and stock.

The debt-equity ratio is a determinant of long-term debt capacity by using an estimation technique that explicitly accounts for balance sheet interrelationships. Companies base their stock and bond (fixed-income security debt instrument issued to raise capital in which the bond issuer pays a specified amount of money at specified future dates) issue decision on the need for permanent capital and their long-term debt capacity. Taggart's study was more concerned with financing decision of how and when a company issues corporate securities. Therefore, the study has not shed light on capital structure determinants.

2.3.3 The Masulis study

The Masulis (1980) study was concerned with exchange offers or swaps. Exchange offers and swaps are noncash transactions, which alter the capital structure of the organization without changing its current asset portfolio. For a sample containing 106 leverage-increasing and 57 leverage-decreasing exchange offers for the period 1962-1976, he found highly significant announcement effects” (<https://www.passeidireto.com/arquivo/23866740/livro-financial-theory-and-corpora.>).

Masulis (1980) examined a sample of 18 nonconvertible debt issues without any covenants to protect against the issuance of new debt with equal seniority. The announcement period returned -0.84%, and it was statistically significant. He found a 3.3% two-day announcement return for a sample of 43 preferred-for-common stock exchange offers, and a 3.6% return for 43 debt-for-preferred exchange offers (<https://www.passeidireto.com/arquivo/23866740/livro-financial-theory-and-corpora.>).

From the cross-sectional study, he concluded that stock prices are positively related to leverage changes due to increase in the value induced by the debt-tax shield (for instance, interest on the debt is a tax-deductible expense and taking on debt creates tax shield) as well as a positive signaling effect. The leverage changes induced wealth transfers across security classes with the most significant impact on unprotected convertible debt. For example, the convertible debenture is a type of debt that can be converted into stock.

Masulis' findings were consistent with capital structure theories that explained that there is a valuable tax shield on increased leverage. It indicates both corporate debt tax-shield effect and a wealth redistribution effect across security classes. There is no direct evidence of an

expected cost of bankruptcy effect. The higher leverage is a signal of management's confidence in the future of the organization” ([https://www.coursehero.com/file/p79pavs/b-Suppose-Unlevered-Ltd-plans-to-issue-1.](https://www.coursehero.com/file/p79pavs/b-Suppose-Unlevered-Ltd-plans-to-issue-1/)). However, the empirical evidence did not support the bondholder expropriation hypothesis.

2.3.4 The Marsh Study

Marsh (1982), in his study, used UK data from 1959-1974 focusing on an organization's choice of financing instruments. He developed the model of choice between long-term debt and equity and the coefficients of the models estimated by using ‘logit’ function analysis of a sample of 748 issues of equity and debt made by companies over the period 1959-70. His study has thrown light on some interesting capital structure issues such as target debt ratio, market conditions, operating risk, company size, the composition of the business assets and retention rate. His empirical models were as follows:

Company's choice of financing instrument is a function of the difference between the current and target debt ratios (<https://www.ukessays.com/essays/finance/the-choice-of-debt-equity-for-funds-fina.>) in the following way:

$$\Pr(Z_{jt} = 1) = \Pr (D_{jt}^* - D_{jt} < 0) \quad \dots (2.1)$$

Where $\Pr(Z_{jt} = 1)$ is the probability that company j will issue equity at time t ; given that it will make an issue of either equity or bonds and D_{jt}^* and D_{jt} are the company's target and actual debt ratios respectively. Moreover,

$$D_{jt}^* - D_{jt} = B'x_{jt} + u_{jt} \quad \dots (2.2)$$

Where x_{jt} is a vector of explanatory variables, B' is the corresponding vector of coefficients, and u_{jt} is a stochastic error term.

The final model is:

$$\Pr(Z_{jt} = 1) = \Pr (B'x_{jt} + u_{jt} < 0) \quad \dots (2.3)$$

Three variables were used as determinants of the target debt ratio, viz.: size (logarithm of capital employed), risk (standard deviation of EBIT) and asset structure (ratio of fixed to total assets). From the experimental result, he observed a positive relationship between organization size and debt ratio, fixed assets, and debt ratio. Risk and debt ratio showed a negative relationship.

He concluded that timing and market conditions are different for debt and equity issues. The organization's history and market condition profoundly influence the choice between debt and equity financing. His findings agreed with the conclusions of Taggart (1977).

2.3.5 Bradley et al (1984)

Bradley et al (1984) directed their research to the issue of capital structure determinants. In their study, they took samples of 851 organizations (regulated and non-regulated) and tested three organization-specific attributes (volatility, non-debt tax shields, and intensity of R&D and advertising expenditure) for their impact on the leverage ratio.

In a methodological approach, they measured instability with a standard deviation of the difference in annual earnings before interest, taxes, and depreciation (EBITDA) divided by the average value of the organization's total assets over the period. Similarly, the non-debt tax shield (non-debt having tax credit factor, example depreciation and tax credit) is measured by the sum of the annual depreciation charge and investment tax credit, divided by the annual earnings before interest, taxes, and depreciation. Moreover, the advertising and R&D intensity expenses were calculated as the sum of yearly advertising and R&D expenses divided by the annual net sales. R&D intensity is defined as expenditures by a company on its R&D divided by the company's sales.

In their cross-sectional study of 20 years' average measure of dependent and independent variables, the researchers observed that the volatility was negatively related to the leverage ratio. The advertisement and R&D intensity expenditures were also negatively associated with the leverage ratio. Non-debt tax shield was positively associated with leverage, and industry class was found to be a significant factor for debt-equity choice.

Bradley et al (1984) found that volatility and financial distress costs were consistent with capital structure theory as having an inverse relationship. Nevertheless, the conclusion of non-debt tax shield was somewhat puzzling. In this regard, the authors said: “non-debt tax shields are an instrumental variable for the securability of the organization's assets, with more securable assets leading to higher leverage ratios” (<http://webuser.bus.umich.edu/ehkim/articles/onexistence-jof1983.pdf>). In their study, they did not explain how profitability determines the debt-equity choice.

2.3.6 The Titman and Wessels study

Titman and Wessels (1988) delineated the appropriate proxies to organization-specific characteristics of capital structure determinants. In their study, they incorporated eight independent variables, viz.: the collateral value of the asset, non-debt tax shield, growth, product uniqueness, industry classification, size, volatility, and profitability as determinants of capital structure.

With the dataset of 469 organizations from 1974 to 1982, and using the maximum-likelihood method of estimation, they found that the product uniqueness and profitability were statistically significant and negatively related to the leverage ratio. Their empirical estimate for product uniqueness stated that the costs companies could impose on their suppliers, workers, and customers in the event of liquidation are relevant to their capital structure decisions.

2.3.7 Other studies

Some recent studies have focused on country-specific determinants of capital structure. Bhaduri (2002) studied the capital structure determinants of the Indian corporate sector. He found that cash flow, growth, product, and size, as well as industry characteristics, were significant determinants of capital structure.

Cassar and Holmes (2003) studied the capital structure and financing for small and medium-sized enterprises in Australia. They found that profitability, assets structure, and growth are important determinants of capital structure and financing. They further, concluded that factors affecting large companies are equally applicable to small and medium-sized businesses. The Vasiliou et al (2003) study of Greek companies, found that assets structure

and size were positively related to leverage while profitability was negatively associated with leverage.

Gaud et al (2005) followed the same methodology as Ozkan (2001), studied 106 companies listed on the Swiss Stock Exchange. The result of the research showed that “the size of companies, the asset structure, and business risk are positively related to leverage. Profitability and growth were found to be negatively related to leverage. The result showed the presence of both trade-off and pecking order theories in the capital structure of Swiss companies. The speed of adjustment to the target capital structure was prolonged (<http://ipedr.com/vol4/13-F00030.pdf>). The adjustment coefficient was less than 0.20”.

2.4 Chapter conclusion

In concluding the literature review of the capital structure of organizations, it is necessary to look at the survey evidence from other researchers that were based on multivariable factors.

Graham and Harvey (2001) researched 4,440 chief financial officers (CFOs) of US organizations by asking them about their financial decisions. Out of the 392 CFOs that completed the survey, the majority makes capital decisions based on simple rules. The result showed 37% of the CFOs had soft target debt-equity ratio, 34% had less target debt-equity ratio, 19% did not have any target debt-equity ratio, and 10% developed a strict target debt-equity ratio. The response, therefore, showed that the majority of organizations had various target debt-equity ratios, which “provide moderate support for trade-off theory” Graham and Harvey (2001).

Graham and Harvey (2001) asked the CFOs further about the factors affecting their financial decisions in issuing debt while maintaining the flexibility in preserving the unused portion of the debt capacity and target credit rating. From the result of the survey, 59% responded that financial flexibility is vital. Moreover, the result seems to have supported the pecking order theory while the responses are unrelated to information asymmetry. Significant organizations’ CFOs with high dividend payments view financial flexibility to be more vital in more prominent organizations than smaller ones. The businesses with low dividend payments are at variance with pecking order theory postulations.

Furthermore, what affects the issuance of debt is the organization's credit rating, which was viewed as the proxy for potential financial distress costs with the result seen as supporting the trade-off theory. From the result, 23% believed that there is a significant influence on bankruptcy costs or financial distress costs on the decision-making process of their organizations (<https://www.nytimes.com/1996/11/10/books/heroes-with-mixed-motives.html>). The earnings derived from investments and cash flows are relevant factors for business debt issues. High cash flow volatility often leads to potentially high costs of financial distress. "There is a negative relationship between volatility and leverage in both trade-off theory and the pecking order theory" (HTTP://www.lyxor.com/fileadmin/user_upload/pdf/714093A_219676_Lyxor_Smart_Beta_I.).

Some respondents believed that insufficient internal funds are responsible for the decision to issue debt that "is in line with the pecking order theory." (<http://finance.expertjournals.com/23597712-407/>). Then, the respondents that view corporate tax advantage of debt as necessary are in line with the predictions of the trade-off theory. Other factors considered for the issuance of debt are transaction costs, equity under-valuation or overvaluation, customer/support comfort, and industry debt levels. The claim to time debt issuance to take advantage of expected changes of the credit rating is another factor. Many of the respondents agreed that the market interest rate could be timed when issuing debt when the market level rate is low. It agrees with the study done by Henderson et al (2006) and Baker et al (2003) on interest rate timing.

The Graham and Harvey (2001) survey also addressed the factors that affect the issuance of common stock, where earnings per share and equity valuations are relevant. From the results of the research, 69% of respondents consider these factors as essential or very important. They postulated that earnings dilution will not affect the value of the organization and should not deter companies from issuing equity provided the following two conditions are there.

- The business is fairly valued, based on the management perception at the time of offering
- The company expects to earn the minimum required rate of returns on the new equity raised.

If the stock is undervalued, there is real rather than just accounting dilution of value. The importance of equity under-or over-valuation is consistent with the pecking order theory. The pecking order theory depends on the premise that managers avoid issuing securities, such as equity, when the company is undervalued.

The result of the study showed that 50% of the CFOs believed that maintaining a target debt-to-equity ratio plays an important or vital role in their decision to issue equity. Also, their findings support the trade-off theory that organizations follow a target debt ratio.

Chapter 3 Methodology of research

3.1 Introduction

In both research proposal and thesis, research methodology forms Chapter 3. However, the research method is a strategy of inquiry that moves from the underlying assumptions to research design and data collection (Myers, 2009). The research methods can be classified as qualitative and quantitative.

Quantitative research methods were initially developed in natural sciences to study natural phenomena. Moreover, qualitative research methods were formulated in the social sciences for researchers to examine social and cultural events. Some researchers prefer to use the mixed methods approach by taking advantage of the differences between quantitative and qualitative methods and combine the two methods for use in a single research project depending on the kind of study and its methodological foundation according to Brysman and Burgess (1999).

Stake (1995) describes three significant differences in qualitative and quantitative methods. “Noting, a distinction between explanation and understanding as to the purpose of the inquiry”(https://www.coursehero.com/file/p1gabp4/Stake-1995-describes-three-major-differe.). The personal and impersonal role of the researcher. The knowledge discovered and knowledge constructed(https://www.coursehero.com/file/p1gabp4/Stake-1995-describes-three-major-differe.). Stainback and Stainback (1988) list three essential purposes of quantitative research as

- To describe
- To compare and
- To attribute causality

Maxwell (1998) enumerates five research purposes for which qualitative studies are particularly useful (<http://www.slideshare.net/ELIMENG/05-chap-4-research-methodology-and-design1>).

- Understand the meaning that participants in a study given to the events, situations, and actions that they are involved with as well as the accounts they provide of their lives and experiences(<http://ijds.org/Volume5/IJDSv5p039-053Gardner293.pdf>).

- “Understanding the particular context within which the participant acts and the” influence it has on their actions (<https://files.eric.ed.gov/fulltext/ED457815.pdf>).
- Identifying unanticipated phenomena and impacts, and generating new, grounded theories about them
- Understanding the process by which events and measures take place; and
- Developing causal explanations

Among factors of determinants of capital structure examined in this study are asset tangibility, liquidity, profitability, organization size, financial flexibility and so on. Therefore, this chapter focuses on research design, nature and sources of data, variables, measures, and hypotheses.

3.2 Research design

The research design is the master plan of research that throws light on how the study is to be conducted. It shows all the significant parts of the research study, i.e., the samples or groups, measures, treatments or programs that work together in an attempt to address the research questions.

The research design is thus similar to an architectural outline. The research design is “the actualization of logic in a set of procedures that optimizes the validity of data for a given research problem”

(http://shodhganga.inflibnet.ac.in/bitstream/10603/18809/12/12_chapter4.pdf.pdf.)

According to Mouton (1996), the research design serves to "plan, structure and execute" the research to maximize the “validity of the findings.”It, therefore, gives directions from the underlying philosophical assumptions to research design, as well as data collection. Yin (2003) adds further that “colloquially a research design is an action plan for getting from here to there where ‘here’ may be defined as the initial set of questions to be answered and ‘there’ is some set of (conclusions) answers.”

“This study attempts to analyze the determinants of the”

(http://hrmars.com/hrmars_papers/Article_34_The_Determinants_of_Financial_Perform) capital structure of the State of Qatar organizations. The study tries to explain and describe the magnitude and the directional relationship between the leverage known as dependent

variables and the organization-specific attributes such as asset structure, profitability, organization size, non-debt tax shield and the growth opportunities known as independent variables. The empirical study follows both analytical and descriptive research design.

The methodology suggested by Rajan and Zingales (1995) in which four factors are used to determine the debt decisions at the organization level was adopted. Rajan and Zingales (1995) used cross-section analysis for 1991 organizations in G-7 countries based on (a) market-to-book ratio, (b) organization size, (c) profitability, and (d) tangibility.

This study incorporates other components of leverage and examines their effect on selected determinants.

3.3 Nature and source of data

In the words of Ghauri and Gronhaug (2005), “research design provides a plan or a framework for data collection and its analysis, which contains the research method and the priorities of the researcher.” The data for this study is obtained from the audited annual financial reports published by the listed companies on the Qatar Stock Exchange (QSE) website from 2008 to 2015. The data for these listed companies are used in assessing the factors or determinants of capital structure and their implications on the performance of the companies in the State of Qatar. This paper, however, is based on the primary data collected from the QSE.

Below is the list of companies in QSE website:

Table 3.1: Listed Companies on the Qatar Stock Exchange

S/No	Name of Company	Sector
1	Ahli Bank	Banking and Financial Institutions
2	Al Khaliji Bank	
3	CBQ	
4	Dlala Brokerage	
5	Doha Bank	
6	Islamic Financial Security Co	
7	Masraf Al Rayan	
8	Qatar Int'l Islamic Bank	
9	Qatar Islamic Bank	
10	Qatar Oman Investment Co	
11	QNB	
12	Salam Int'l Investment Ltd	
13	Aamal Co	Industry
14	Industries Qatar	
15	Mannai Corporation	
16	National Leasing Holding Co - Alijarah Holding	
17	Qatar Fuel (WOQOD)	
18	Qatar Industrial Manufacturing Co	
19	Qatar National Cement	
20	Qatar Navigation	
21	United Development Co	
22	Widam (Mawashi) Food Co.	
23	Zad Holding Co	Insurance
24	Al Khaleeji Insurance	
25	Doha Insurance	
26	Qatar General Insurance & Re-Insurance Co	
27	Qatar Insurance Co	
28	Qatar Islamic Insurance Co	
29	Barwa Real Estate Co	Real Estate
30	Ezdan Real Estate	
31	Mazaya Qatar Real Estate Development Co	
32	Al Ameera	Service and Consumer Goods
33	Gulf International Services	
34	Medicare Group	
35	Qatar Cinema & Film Distribution Co	
36	Qatar Electricity and Water Co	
37	Qatari German Co for Medical Devices	Telecommunication
38	Ooredoo	
39	Vodafone Qatar	Transportation
40	GWC	
41	Qatar Gas Transport Co	

Source: Qatar Stock Exchange

This study based on the Financial Statements (FS) of the listed organizations published in the Qatar Stock Exchange (QSE) from 2008 to 2015. The FS comprised 41 companies divided into seven broad categories or sectors of the economy:

- 12 - Banking and financial institutions
- 11 - Industry
- 5 - Insurance
- 3 - Real estate
- 6 - Service and consumer goods
- 2 - Telecommunication
- 2 - Transportation

These documents are in **Appendix A1-12** to the study.

A structured questionnaire used for data collection forms the secondary data source. The survey mainly consisted of close-ended questions using the five-step Likert scale. Open-ended questions were employed in some of the issues of the questionnaire to ensure clarity in responses. The sampling of the survey is in **Appendix B** to the study.

The questionnaire was circularized by SurveyMonkey.com, an online platform for surveys, to the email addresses of the 41 listed organizations in the QSE.

3.4 Variables, measures, and hypotheses

Variables, both dependent and independent, are used in this study and described below:

3.4.1 Dependent variables

The leverage or gearing ratio is defined as the debt-to-equity ratio, Attiya, and Qaisar (2012). Different organization-specific factors determine other measures of leverage. Furthermore, to examine the sensitivity of the definition of leverage variable, it is necessary that the variable is constructed by alternative interpretations of leverage suggested by other researchers in the empirical literature such as Rajan and Zingales (1995). Decomposing the individual organization's leverage would give more insight into the factors that influence the components of leverage and the extent of their influence in determining the corporate financial structure.

According to Rajan and Zingales (1995), the ratio of the book value of total debt to total assets is defined as a leverage ratio, and it is “more appropriate definition of financial leverage.” Also, two proxies are equally considered to analyze the debt composition, i.e., decomposition study on total capital structure vide the ratio of long-term debt to total assets; and the ratio of short-term debt to total assets. In simpler term, leverage ratio (LR) is:

- i) Total debt ratio (TD) = Total debt (Short-term + Long-term) / total assets
- ii) Long-term debt ratio (LTD) = Total long-term / Total assets
- iii) Short-term debt ratio (STD) = Total current liabilities / Total assets

Therefore, decomposing the individual organization’s leverage will give more insight into the factors that influence the components of leverage and the extent of their influence in determining corporate financial structure as succinctly put by Attiya and Qaisar (2012).

Therefore, the hypothesis for the leverage ratio will be as follows:

H1a: There is a relationship between the selected determinants and capital structure decision

H1b: There is no connection between the chosen determinants and capital structure decision

In a nutshell, below table summarizes both dependent and independent variables and their proxy measures:

Table 3.2
Variables and Their Proxies

Variables	Proxy Measures
Leverage Ratio	Total debt ratio = Total debt / Total assets Long-term debt ratio = Long-term debt / Total assets Short-term debt ratio = Short-term debt / Total assets
Organization Size	In sales
Non-debt tax shield	Annual depreciation / total assets
Asset structures	(Capital + inventories) / total assets
Profitability	EBITDA / total assets
Growth	Percentage change in sales i.e. $(S_t - S_{t-1}) / S_{t-1}$
Liquidity	Current assets / current liabilities
Volatility	The standard deviation of EBITDA

The hypothesis development is dependent on the previous studies on the capital structure theory such as agency theory, trade-off theory, and the pecking order theory and their determinants. The examination of the specific factors that affect the capital structure decision of organizations in the State of Qatar is liquidity, asset tangibility, financial flexibility, and profitability and organization size. However, volatility and financial distress excluded from the study.

Attempts have been made from the previous studies of the determinants of capital structure to examine the country-specific factors in understanding their effect on leverage, such as in Antoniou (2002), Booth et al (2001), Gianetti (2003), and Demirguc and Maksimovic (1999). However, Gleason et al (2000) argued that the country-specific factors such as the legal environment and economic condition could affect the capital structure decision of companies. Moreover, Korajczyk and Levy (2003) concluded in their study that macroeconomic factors such as GDP growth, inflation rate, and interest rate could affect the capital structure decision of organizations.

However, the hypothesis states the relationship between the factors or determinants of capital structure. They are as follows: the company size, GDP growth, financial flexibility, liquidity, profitability, asset tangibility, inflation rate, and interest rate; as well as the three leverage ratios: short-term debt/total assets, long-term debt/total assets and total debt/total assets. The first hypothesis is as follows:

H1i: There is no relationship between the selected determinants and capital structure decision

H1ii: There is a relationship between the chosen determinants and capital structure decision

The dependent variables are the leverage ratios that represent the capital structure choice. They are the short-term debt to total assets, the long-term debt to total assets and the gross debt to total assets. These are explanatory variables or proxies used for the determinants of the capital structure.

Other hypotheses for the determinants of capital structure are stated below:

3.4.2 Independent variables

According to the literature review, factors affecting or determining the capital structure could be controversial from the views of the researchers such as Titman and Wessels (1988), Harris and Raviv (1990). Thus, this paper follows the opinions of Rajan and Zingales (1995) on the four independent variables that are usually considered as well as other researchers available for this discourse.

3.4.2.1 Organization size

The size of an organization is a significant

(<https://portal.nifa.usda.gov/web/crisprojectpages/0226614-micro-econometric-anal.>)

determinant factor of the capital structure decision of a company as explained in the research conducted by Booth et al (2001) and Ferri and Jones (1979). From the past studies, mixed results were obtained about the effect of organization size on the determinants of the capital structure choice decision of a company. Most of the reviews led to positive relations to leverage as in Gupta (1969), Rajan and Zingales (1995), Titman and Wessels (1988). According to Rajan and Zingales (1995), the inconclusive relationship between the size of the organization and the debt may be accounted for by the nature of large organizations leaving fewer chances to fail by making it possible to measure size as the logarithm of net sales. When inverted, it could be used as a probability of bankruptcy as quoted by Attiya and Qaisar (2012).

Titman and Wessels (1988) suggested that the natural logarithm of sales is an indicator of size. Thus, in this study, as indicated by Titman and Wessels (1988), net sales have been taken and transferred into a natural log. Thus, organization size is measured by the natural log of its transactions. Larger organizations are more likely to have a better credit rating that could make available to them non-bank debt financing, which is usually not open to smaller organizations. Moreover, this could necessitate a positive relationship between organization size and leverage (Titman and Wessels, 1988) as adopted by Attiya and Qaisar (2012).

However, a negative result came up in the study conducted by Chaplinsky and Niehaus (1993) between organization size and leverage. Moreover, Marsh (1982) found a negative relationship

in the survey carried out between debt ratios and the business size with the explanation that small companies tend to rely heavily on bank loans as they have limited access to the capital or equity market. The result was supported by Titman and Wessels (1988) with their finding that small companies rely less on equity as a result of high issuing cost. Moreover, larger businesses have a large capital base that is more diversified as well as less prone to bankruptcy and may result in the advantage of using more debts in their asset capitalization.

Huang and Song (2004) argued that organization size affects leverage non-linearly as the usage of the natural logarithm of sales as a proxy for organization size ensures the linear relationship with leverage. However, Chen and Jiang (2001) used the natural logarithm of the total number of workers and the natural logarithm of equity market value as proxies for organization size. However, Dang (2005) used the natural logarithm of total assets as a proxy for organization size in his study of the determinants of the capital structure of UK organizations.

Therefore, the hypothesis for organization size will be as follows:

H2a: Organization size is positively related to capital structure decision

H2b: Organization size is not positively related to capital structure decision

3.4.2.2 Non-debt tax shield

Titman and Wessels (1988), Ozkan (2001), stated that the ratio of annual depreciation to total assets is taken as a proxy for non-debt tax shield. However, in the State of Qatar, Income Tax Law of the Law Number 11 of 2009 that came to effect on 1 January 2010 allows depreciation expense to be a deductible one in the calculation of income tax. Therefore, the calculation for non-tax shield is as follows:

$$\text{Non-debt tax shield (NDT)} = \text{Annual depreciation} / \text{Total assets}$$

Therefore, the hypothesis for non-debt tax shield will be as follows:

H3a: Non-debt tax shield is positively related to capital structure decision

H3b: Non-debt tax shield not positively connected to capital structure decision

3.4.2.3 Asset structure or asset tangibility

Tangible assets are those assets that have physical (<https://www.coursehero.com/file/p18ife7/Tangible-assets-are-those-assets-that-ha.>) form and fixed in nature, such as buildings, machinery, and equipment, automobiles, and so on. Tangible assets are the most secure assets that can be used as collateral security for creditors to issue debt. Therefore, a high ratio of fixed-to-total assets leaves significant collateral for the debtors, consequently inactive of lower risk debt and lower interest payments.

In Jensen and Meckling (1976), there is a positive relationship between high ratios of fixed to total assets and leverage in which classical shareholder versus bondholder conflict where the stockholders are prone to overinvest. Therefore, since tangible property secured against debt, the creditors, therefore, have a higher probability of recovering their debt repayment. It may lead to lower agency cost and expected cost of distress according to trade-off theory, which may give the positive relationship between the size of tangible assets and debt.

However, in Grossman and Hart (1982), there is a negative correlation between tangibility of assets and leverage using agency costs and pecking order theory [<http://docplayer.net/22360110-Capital-structure-in-the-airline-industry-an-empirical-study-of-determinants-of-capital-structure.html>]. Therefore, organizations with a lower level of collateral goods have higher agency costs for managers consuming excessive perquisites than organizations with the higher level of collaterals. Equally, in Daskalakis and Psillaki (2006), it is found in their study of Greek and French companies that asset tangibility appeared negatively to leverage in those countries. In which results complied with the pecking order theory as they argued that businesses with more goods have already found a stable income, and there was less tendency to seek external financing.

Pandey (2002) did a study of 208 listed companies in Malaysia, wherein the leverage was measured as the ratio of total debt to the total asset (<https://www.macroaxis.com/invest/ratioCompare/GOL--Total-Debt--Total-Asset>) at book value. Moreover, the tangibility of property as the ratio of capital to total assets was proven to have a

positive relationship between asset tangibility and leverage

(<https://www.coursehero.com/file/p6r56b8/Booth-et-al-2001-Results-from-10-develop>).

The tangibility of assets can be measured using various proxy variables such as the ratio of net property, plant, and equipment to total assets, the ratio of selling, general and administrative expenses to sales, and the ratio of research and development (R&D) expenses to sales.

Capital structure theorists believe that the type of capital structure owned by companies affects their choice and decision-making. Therefore, it may have a positive relationship between the asset tangibility and the leverage. However, agency theory states that organizations that have high leverage or low equity-to-asset ratio reduce the agency costs of outside equity and increases organization value by constraining or encouraging managers to act more in the interests of shareholders. Also, the static trade-off theory suggests that organizations with higher fixed assets can obtain more external debt by using their assets as collateral.

Myers (1977) stated that when companies have more tangible assets in their capital composition, they will have a higher capacity to raise debt. Also, they could be used as collateral in raising such finance. Therefore, banks require the collateral asset to secure a loan that the debtor would forfeit in case of bankruptcy. This process could lead to a positive relationship between tangibility of property and leverage as in Wald (1999), Friend and Lang (1988), and Williamson and Oliver (1988).

There are divergent views expressed in the research conducted by Cornelli et al (1996), Huang and Song (2004), and Booth et al (2001) regarding the asset structure of the developed nations. The result from their research studies showed a negative relationship between tangibility of assets and the leverage. Equally, Bauer (2004) stated that empirical studies explained that “a negative relationship exists between leverage and asset tangibility in developing countries, while developed nations exhibit a positive correlation.”

Other argument proffered by Chittenden et al (1996), stated that the effect of the tangibility of asset on the capital structure of a company depends on the type of debt, either in the short-term

or long-term. Brealey and Myers (1996) stated that asset tangibility seems to be positively correlated with long-term debt and negatively correlated with short-term debt.

However, Titman and Wessels (1988), Gaud et al (2005), used a ratio of fixed assets plus inventory to total assets as a proxy for collateral assets. Therefore,

$$\text{Collateral assets structure (AS)} = (\text{Fixed assets} + \text{Inventories}) / \text{Total assets}$$

According to Attiya and Qaisar (2012), the pecking order theory, suggests that organizations with low levels of fixed assets could also face problems of information asymmetry by pushing them to raise more debt than equity since they could only issue capital when it is under-priced (Harris and Raviv, 1990). Given this, large organizations have more significant fixed assets and are in a better position to issue equity at a fair price and do not need debt to finance new investments. Therefore, organizations with a higher percentage of fixed assets would have higher debt ratios.

Therefore, the hypothesis for asset structure will be as follows:

H4a: Asset structure is positively related to capital structure decision

H4b: Asset structure is not positively related to capital structure decision

In the measurement of asset tangibility, Bhaduri (2002) used the detail tangibility proxies by calculating the ratio of land and building to total assets the ratio of the “plant and equipment to total assets and the ratio of inventories to total assets”(http://iosrjournals.org/iosr-jbm/papers/Vol19-issue3/Version-3/M190303102113.pdf). Pandey (2002) represented tangibility of assets as the ratio of fixed assets over total assets on his study of Malaysia organizations. Also, Drobetz and Fix (2003) used the ratio of fixed assets to total assets as a proxy to measure asset tangibility.

However, Hosono (2003) used the market value of assets over the total amount of assets to measure the asset tangibility. The results of all these studies showed that asset tangibility negatively related to bank loans.

3.4.2.4 Profitability

According to Titman and Wessels (1988), Ozkan (2001) and Gaud et al (2005), the ratio of “earnings before interest, tax, and depreciation, EBITDA to” (<https://www.afr.com/personal-finance/shares/carsalescom-is-one-highquality-busin.>) total assets considered as the proxy to profitability. Below is the formula for the calculation:

$$\text{Profitability (PRO)} = \text{EBITDA} / \text{Total assets}$$

In the study done by Rajan and Zingales (1995), it showed that profitability has a negative correlation in debt to equity ratio in four of the G7 countries studied. In pecking order theory preference, it believed that companies seek to finance in three ways: retained earnings, debt and issuing equity according to the opinion of Myers (1984). Therefore, the relationship between profitability and leverage is expected to be negative. Such behavior is in concurrence with the postulations of Friend and Lang (1988), Titman and Wessels (1988) (<https://www3.nd.edu/~finance/020601/news/Campello%20Paper.pdf>), and Kester (1986). They assert that the more companies are profitable, the less they would use debt in their financing operations since they can generate funds internally.

However, in the static trade-off theory, there is a positive correlation between leverage and profitability as Frank and Goyal (2005). With the argument that profitable companies borrow more funds to finance their operations thereby shield their income from business tax. According to Um (2001), “companies that have higher profit level may give rise to higher debt capacity and tax shields.” The argument thus falls in line with the view of Hovakimian et al (2001) that companies with “relatively high profitability are likely to have a more valuable asset” and thus have more appetite for higher debt (<https://www.coursehero.com/file/p3853jg/The-variable-representing-persistence-of.>).

For traded companies in Saudi Arabia, Al-Sakran (2001) used the return on assets (ROA) and the return on sales (ROS) to measure the profitability. Huang and Song (2004) used the earnings before interest and taxes (EBIT) over total assets to measure the profitability of Chinese organizations. Bhaduri (2002) used the cash-flow ratio over total assets and the cash-flow over sales as proxies for profitability, in which the result revealed that both proxies are insignificant in affecting the leverage. Deesomsak et al (2004) used the ratio of earnings before interest, taxes, and depreciation over total assets as a proxy for profitability in selected Asia Pacific countries. Also, Saugata et al (2000) and Sayilgan et al (2006) used the ratio of profit after tax over total assets to represent profitability in their study.

However, in Attiya and Qaisar (2012) research stated that there are mixed opinions concerning the organization's profitability and its debt decisions. One idea noted that the supply-side argument suggests that the more successful organizations are, the more they would have debt available to them as a source of finance. However, it may hurt profitability and leverage.

Modigliani and Miller (1963) stated that taxes are paid after interest payments. Organizations may favor debt over equity. Moreover, more successful organizations will select high levels of debt to gain more favorable tax shields. This assertion countered by Miller (1977) with the addition of the effect of personal taxation. DeAngelo and Masulis (1980) assert that some organizations have other tax shields that include depreciation and may not find interest tax shields as attractive. The pecking order argument presented by Myers and Majluf (1984) and Myers (1984) is that information asymmetry pushes organizations to favor private financing over external sources.

Successful organizations would choose private funding through retained earnings rather than through external debt. There was a negative result of profitability and debt in Rajan and Zingales (1995), Titman and Wessels (1988), Tong and Green (2005), Kester (1986), Rafiq et al (2008), and Toy et al (1974), which is in line with the prediction of pecking order theory . This result was as also adopted by Attiya and Qaisar (2012).

However, Deesomsak et al (2004) proxy of earnings before interest, taxes, and depreciation is applied in this study. Therefore, the hypothesis for profitability will be as follows:

H5a: Profitability is negatively related to capital structure decision

H5b: Profitability is not negatively related to capital structure decision

3.4.2.5 Growth

Ozkan (2001) and Gaud et al (2005) used a ratio of book-to-market equity as a proxy for growth in their research. However, Titman and Wessels (1988) considered the growth rate of sales as the proxy for growth that is based on simple arithmetic growth rate. For instance,

$$\text{Growth (GW)} = (S_t - S_{t-1}) / S_{t-1}$$

Where,

S_t = Current year sales

S_{t-1} = Previous year sales

In the view of Attiya and Qaisar (2012), the market-to-book ratio is used to capture the growth opportunities that exist for the organization in which a negative relationship is expected to survive between growth potential and the level of debt. This relationship agrees with the agency theory as proposed by Jensen and Meckling (1976) as well as in Myers's (1977) argument of information asymmetry. Organizations with a high level of debt may have the possibility of not exercising care with excellent investment opportunities. However, organizations with significant investment opportunities may have low debt-to-equity ratios. Also, as growth opportunities do not make available immediate revenue, organizations may not be willing to take substantial contractual liabilities immediately.

Since growth opportunities are intangible, they may be considered having limited collateral values or liquidation values for organizations. Hence, organizations with growth potentials may not seek debt financing sources. However, many research studies find a negative relationship between debt and growth. This argument is supported by Chung (1993), Barclay et al (1995), Rafiq et al (2008), Titman and Wessels (1988), Rajan and Zingales (1995), Shah and Hijazi

(2004). These are in line with the views expressed by Jensen and Meckling (1976), Myers (1977) that “organizations with a high level of growth opportunities have low levels of debt” (<https://accounting.wharton.upenn.edu/profile/bushee/>).

Kester (1986) does not find evidence for a negative relationship between growth opportunities and debt decisions for organizations. Decloure (2007) and Rafiq et al (2008) find a positive correlation between growth and leverage as “organizations with higher growth opportunities have a higher advantage” (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2007051).

The hypothesis for growth will be as follows:

H6a: Growth is positively related to capital structure decision

H6b: Growth is not positively related to capital structure decision

3.4.2.6 Liquidity

Pecking-order theory states that companies prefer private funds as the primary source of capital. The liquid assets that can convert to cash quickly such as inventories, demand and time deposits do not require raising external debt to finance the operation of a company. Companies with enough liquid assets would not need external financing and will experience lower leverage and the negative correlation between liquidity and leverage.

The above postulation is in line with Antoniou et al (2002) argument that the negative coefficient found in the liquidity was because organizations with sufficient liquid assets would not need external financing of their operations. “Liquidity ratios are used to measure an organization’s ability to meet its” (<https://quizlet.com/85782021/chapter-4-business-finance-flash-cards/>) short-term obligations as in Bhole and Mahakud (2004) where two lines of argument held. First, those companies with higher liquidity ratio may have higher debt ratios as a result of higher ability to meet short-term needs. Thus, a positive correlation between liquidity and leverage is experienced. Secondly, the argument centers on the fact that if companies have higher liquidity ratio, they will utilize such asset to finance their operations with a lesser appetite to borrow funds. They would experience a positive correlation between liquidity and leverage.

Eriotis et al (2007) conducted research on 129 Greek listed companies during 1997, and 2001 and “liquidity is one of the variables examined and measured by the ratio of current assets minus inventories divided by current liabilities”(https://www.coursehero.com/file/p1ghmfe/According-to-the-pecking-order-theory-a-.) resulted in the negative correlation between liquidity and debt ratio. Also, Ozkan (2001), the ratio of current assets to current liabilities applied as a proxy for liquidity. Therefore, liquidity (CR) = current assets / current liabilities. This measurement, therefore, applied in this study.

The hypothesis for liquidity is as follows:

H7a: Liquidity is positively related to capital structure decision

H7b: Liquidity is not positively related to capital structure decision

3.4.2.7 Volatility

According to Titman and Wessels (1988), the proxy to the volatility is the standard deviation of the percentage change in the operating income and ‘it is the single value for all the years’, Booth et al (2001). Therefore,

$$\text{Volatility (RISK)} = \text{Standard deviation of EBITDA } (\sigma\text{EBITDA})$$

The hypothesis for volatility is as follows:

H8a: Volatility is positively related to capital structure decision

H8b: Volatility is not positively related to capital structure decision

However, in calculating these variables, the following key terms are defined:

- The Annual Report is the financial account statement published on the Qatar Stock Exchange.

- Sales as in the service organization as relates to organizations means income or revenue made from services provided by them.
- EBIT means earnings before income and tax
- EBITDA means earnings before income and tax plus depreciation, which measures the operating cash flow.
- Depreciation and amortization: Depreciation is the annual charges calculated from the use of fixed assets while amortization is the charges made from the intangible assets such as software license, intellectual property, goodwill, and trademark.
- Fixed assets are those assets that owned by the organizations such as land, building, motor vehicles, machinery, warehouses, investment property, software license, and construction in progress (CIP) and so on.
- Total assets are the total of all assets
(<https://www2.ed.gov/inaid/prof/resources/finresp/finalreport/edlite-ratios2.htm>.) owned by the companies. They are both non-current and current assets. The current assets are inventories, trade and other receivables
(<https://www.ukessays.com/essays/accounting/Malaysian-financial-reporting-standar>.), cash and bank balances.
- Long-term debts or non-current liabilities are those debts that are secured, and the employee's gratuities held on the balance sheet of such organizations.
- Short-term debt or current liabilities such as trade payables and accruals, short-term loans and borrowing, retention payable take place on the stock of such companies.
- Total debt encompasses both non-current and current liabilities

3.4.2.8 GDP growth rate

Gross domestic product (GDP) is one of the (<http://www.investopedia.com/ask/answers/199.asp>) economic indicators that reflect the brightness of the nation's economy. GDP helps in the reality check on the performance of the economy. It measured by the monetary value of all goods and services produced in an economy. The proper economic performance through high GDP often necessitates organizations to borrow more funds to grow businesses with the prosperous economy.

Thus, thereby entails companies to have a positive relationship between the GDP growth and the capital structure type as could be seen in the study carried out by Hall and Jorgensen (2006) of the Central and Eastern European countries. Also, Booth et al (2001) believe that high growth rate as a result of the gross national product (GNP) may make companies increase leverage. The argument supported by the research conducted by Muhammad (1999) of Japan and Malaysia where it found that the growth in their GNP had a positive relationship with the leverage of their companies.

The hypothesis to test the effect of GDP growth on leverage is as follows:

H9a: GDP growth is positively related to capital structure decision

H9b: GDP growth is not positively related to capital structure decision

3.4.2.9 Interest rate

When the interest rate is high, organizations tend not to borrow funds to execute their operations thereby incurring a negative relationship between capital structure and the interest rate.

According to the research conducted by Antoniou et al (2002) of the large organizations in the UK, France, and Germany, there was a negative correlation between the interest rate and the choice of capital structure. Therefore, the business will tend to raise equity when such a condition arises.

However, companies will use more debt when the cost of borrowing is somewhat not too high to avoid the risk of associating with financial distress. In the study conducted by Ooi (1999) where the risk-free rate is used as the proxy for the interest rate of 83 organizations in the UK, a negative relationship between the leverage and interest rate was established.

Conversely, in the study conducted by Thies et al (1992), a positive correlation between the interest rate and the capital structure was created. The same positive relationship between the capital structure and the interest rate was set up by the research conducted by Deesomsak et al (2004) of Malaysia companies.

The hypothesis of the effect of interest rate on capital structure is as follows:

H10a: The interest rate is positively related to capital structure decision

H10b: The interest rate is not positively related to capital structure decision

3.4.3 Inflation rate

According to Investopedia “inflation is the rate at which the general level of prices for goods and services is rising and, consequently, the purchasing power of the currency is falling. The central bank takes necessary measures to limit inflation and avoid deflation and keeps the economy running smoothly”; (<https://www.investopedia.com/terms/i/inflation.asp>).

Booth et al (2001) stated that the higher the inflation, the lesser leverage organizations are as they usually borrow against investment opportunities in the economy and inflationary growth chances. In the study carried out by Taggart (1995), it stated that inflation had a positive correlation with the leverage as the value of the deducted tax on debt is higher when inflation is higher.

However, in the research conducted by Mateus (2006) on many unlisted companies in Europe 1994 to 2004 with 19,752 sample sizes, the result showed a high inflation rate with negative correlation to the debt ratios. Thus, the high inflation rate could discourage companies from borrowing to finance their operations.

The hypothesis to examine the effect of inflation rate on the capital structure choice is as follows:

H11a: Inflation rate is not negatively related to capital structure decision

H11b: Inflation rate is negatively related to capital structure decision

3.5 Method of analysis

The method of analysis of the financial structure can be from the viewpoint of time duration based on short-term and long-term funds, ordinary shareholders (extent of capital gearing) and

the relative contribution of owners and creditors (trading on equity). The following methods are employed in this study:

- Trend analysis of leverage ratio
- Ratio analysis
- Decomposition analysis

3.5.1 Trend analysis of leverage ratio

The financial structure is analyzed by using trend analysis of the leverage ratio from the quantum of short-term and long-term funds as a percentage of the total asset of the listed companies on QSE (<http://link.springer.com/content/pdf/bfm%3A978-1-349-04021-6/1.pdf>). The short-term funds include trade payable and accruals, short-term loans and borrowings and retention payable. The long-term funds include equity capital, long-term investments, and borrowings, employees' end of service benefits. Therefore, the following analysis will look at:

- Short-term funds trend analysis
- Long-term funds trend analysis
- Quantum of short-term and long-term funds as a percentage of total assets

3.5.2 Ratio analysis

The different ratios related to assessing the determinants of capital structure in this study have been used and analyzed. These ratios are the following:

- Debt-asset ratio
- Non-debt tax shield (NDT)
$$\text{NDT} = \text{Annual Depreciation} / \text{Total Assets}$$
- Assets Structure (AS)
$$\text{AS} = \text{Fixed Assets} + \text{Inventories} / \text{Total Assets}$$
- Profitability (PRO)
$$\text{PRO} = \text{EBITDA} / \text{Total Assets}; (\text{Earnings before interest, tax and depreciation of assets} / \text{Total Assets})$$
- Liquidity of organization ratio (LR)

$$LR = \text{Current Assets} / \text{Current Liabilities}$$

3.5.3 Decomposition analysis

The decomposition analysis is used to decompose the total debt ratio into long-term debt ratio and short-term debt ratio in which correlations among these ratios are analyzed. Therefore, for the decomposition analysis study, the sample period is restricted to eight years from 2008-2015.

3.6 Chapter conclusion

In concluding the chapter on the methodology of research, it is noteworthy to mention the difficulty involved in collecting the primary data through SurveyMonkey.com, the online survey platform used for such purpose. The structured questionnaire was sent to the 41 listed companies whose financial statements could be found on the QSE platform. For two months, there was no single reply. Two reminders were sent, which yielded 12 answers in four months. The primary data to be used in this research will be based on the published ones from the Qatar Stock Exchange (QSE). For the analyze the primary data only 12 respondents' views will be considered.

The secondary data for the study will be based on the financial statements of the listed companies obtained from the QSE for the periods 2008 to 2015 as shown in Appendix A.1 to A.12

Chapter 4 Presentation and data analysis

4.1 Introduction

This chapter outlines the findings of the study that are derived from both primary and secondary data and presented in the tables and graphs. The relationship between the variables ascertained by correlation and simple regression analysis is based on published data in the QSE between the periods of eight years from 2008 to 2015.

The interpreted findings of the research objectives are in correlation with the reviewed literature. The first session dealt with the descriptive summary statistics, background information characterized by individual and organization characteristics all derived from the secondary data elicited from the questionnaire. The second section presented the findings from the primary source obtained from the Financial Statements of the 41 companies for eight years from 2008 to 2015.

Analysis of secondary data

4.2 Background characteristics or descriptive data analysis

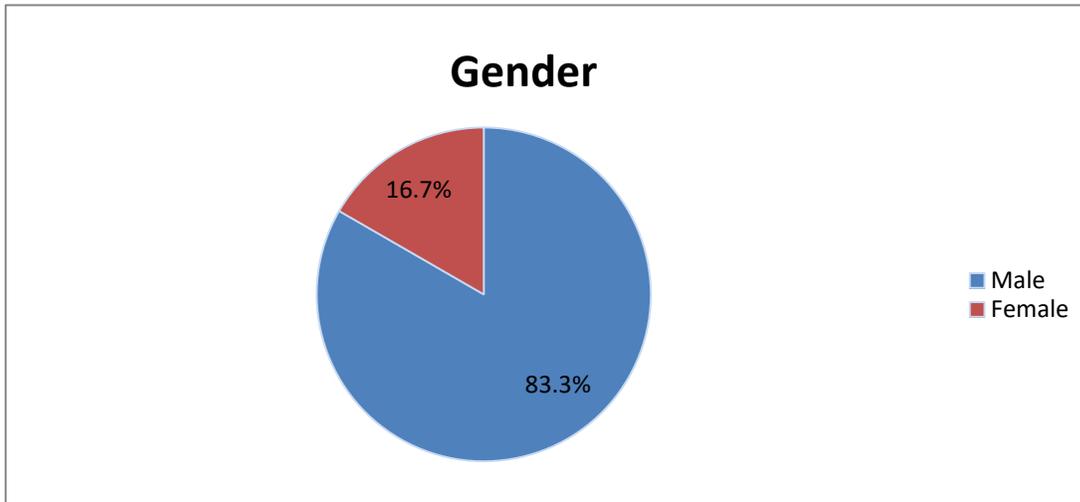
The background information consisted of individual features that included gender, age, rank in the organization and academic qualifications. The organization characteristics covered the period of existence of the business, the number of employees, the capital size of the company and the division of operation.

4.2.1 Gender of respondents

Table 4.2.1 below represent the sex of the interviewees in the organizations

Table 4.2.1: Gender of respondents

Gender		
Answer options	Response percent	Response count
Male	83.3%	10
Female	16.7%	2
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data –SurveyMonkey.com

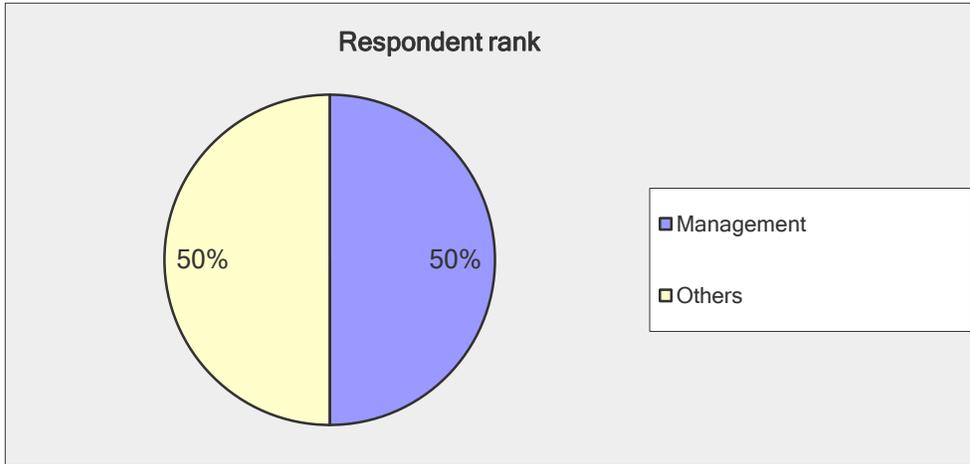
From the above table and chart, 83.3% of the respondents to the questionnaire are males and 16.7% females. The reason why there are fewer female participants in the survey is due in large part to the environmental factor. They are susceptible to their environment being an Islamic nation where there is less gender interaction in public.

4.2.2 Rank/position held in the organization

Table 4.2.2 shows the area occupied by the respondents in the questionnaire circularized in the organization.

Table 4.2.2: Rank in the organization

Respondent rank		
Answer Options	Response Percent	Response Count
Management	50.0%	6
Others	50.0%	6
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data - SurveyMonkey.com

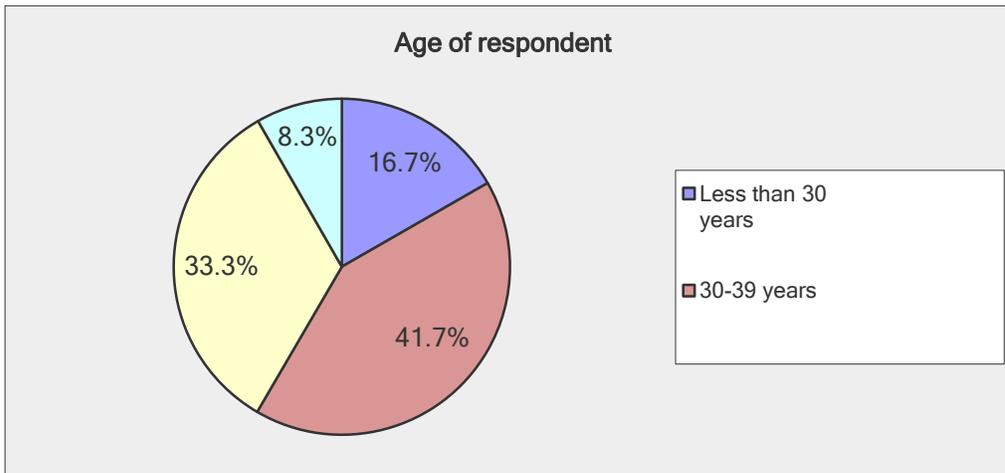
In the above table, 50% with a frequency of six respondents each are management and others, while business owners have 0% rating in the position held in the organization.

4.2.3 Age of respondents

Table 4.2.3 below represents the generation of the respondents that participated in the survey of the questionnaire circulated. Respondents below 30 years are 16.7% with a frequency of 2. The age bracket of 30 to 39 years of the interviewees represented 41.7% with a rate of 5, between age brackets of 40 to 49 years, the respondents were 4 and represented 33.3% and above 50 years was one respondent representing 8.3% of the participants.

Table 4.2.3: Age of respondents

Age of respondent		
Answer Options	Response Percent	Response Count
Less than 30 years	16.7%	2
30-39 years	41.7%	5
40-49 years	33.3%	4
50 and above	8.3%	1
<i>answered question</i>		12
<i>skipped question</i>		0



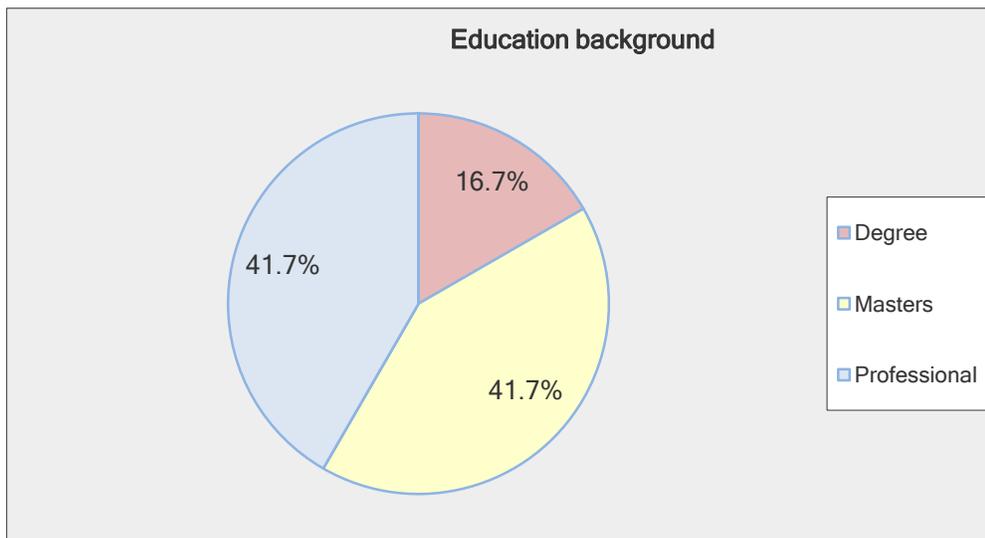
Source: Secondary Data – SurveyMonkey.com

4.2.4 Education background of respondents

Table 4.2.4 represents the educational qualification of the respondents that participated in the survey. The chart shows 16.7% of the interviewees with the frequency of 2 have degree certificates, 41.7% respondents with the rate of 5 have masters’ degree certificates, and additional professional certifications such as CIMA, ACCA, and CFE.

Table 4.2.4: Education background of respondents

Education background		
Answer Options	Response Percent	Response Count
Degree	16.7%	2
Masters	41.7%	5
Professional	41.7%	5
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data – SurveyMonkey.com

The explanation for the result above thus shows that the respondents are educated thereby can understand the questionnaire correctly.

4.3 Organization characteristics

The following organization characteristics elicited from the respondents from the questionnaire of the survey circularized. They are as follows:

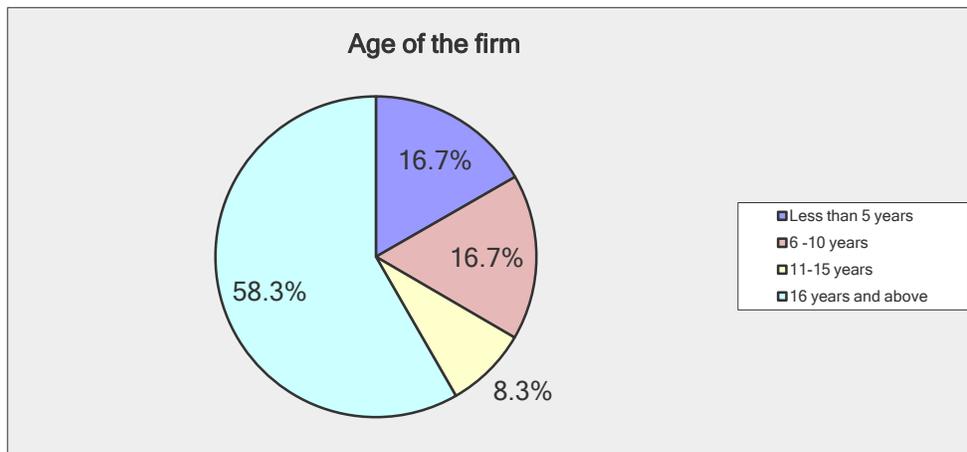
- Period of existence or age of the organization
- Number of employees of the organization
- Sector of the business operations
- The capital size of the organization
- Division of company operations

4.3.1 Period of existence or age of the organization

Table 4.3.1 shows the number of respondents and the percentage of participation. According to the following chart, the period of life of the business, as stated by two respondents each representing 16.7% believe that their organization is either below five years or between 5 to 10 years in operation. One respondent representing 8.3% of the total respondents of the survey believe that their organization has been in operation for 11 to 15 years. Seven respondents representing 58.3% of the study state that their organization has been in operation for more 16 years.

Table 4.3.1: Period of existence or age of the organization

Age of the organization		
Answer Options	Response Percent	Response Count
Less than 5 years	16.7%	2
6-10 years	16.7%	2
11-15 years	8.3%	1
16 years and above	58.3%	7
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data – SurveyMonkey.com

The period of existence or the age of the organizations ranges as follows:

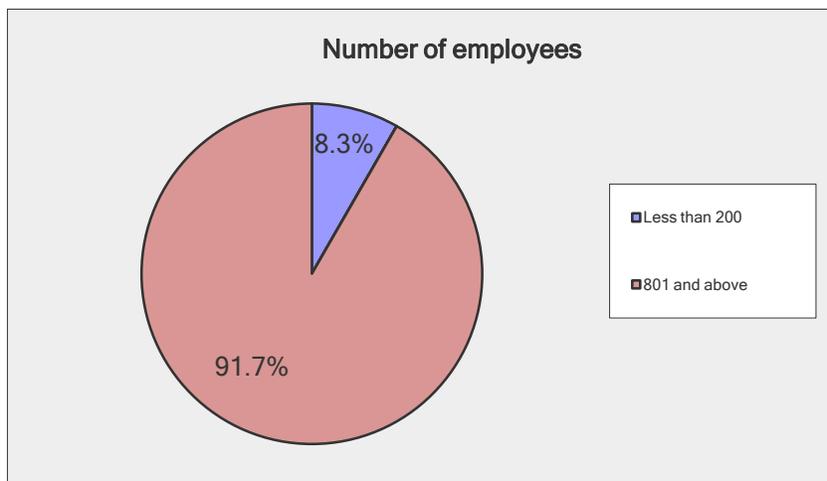
- Less than five years has a frequency of 2 with 16.7%
- 6-10 years has a rate of 2 with 16.7%
- 11-15 years has a scale of 1 with 8.3%
- 16 years and above has a range of 7 with 58.3%

4.3.2 Number of employees of the organization

The Table 4.3.2 below confirms the range of employees in the surveyed organizations. 8.3% of companies with one respondent have less than 200 employees. Moreover, 91.7% of companies with 11 respondents have 800 and above employees in their workforce.

Table 4.3.2 Number of employees

Number of employees		
Answer Options	Response Percent	Response Count
Less than 200	8.3%	1
801 and above	91.7%	11
		<i>answered question</i>
		12
		<i>skipped question</i>
		0



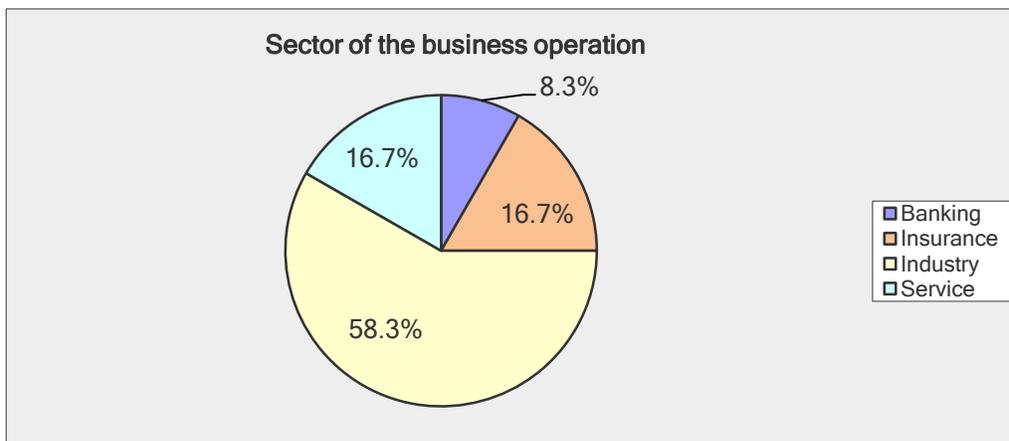
Source: Secondary Data – SurveyMonkey.com

4.3.3 Sector of the operation of the organization

Table 4.3.3 below shows the outline of industries that the survey organizations may belong such as banking, insurance, industry, and service.

Table 4.3.3: Sector of organization operation

Sector of the business operation		
Answer Options	Response Percent	Response Count
Banking	8.3%	1
Insurance	16.7%	2
Industry	58.3%	7
Service	16.7%	2
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data – SurveyMonkey.com

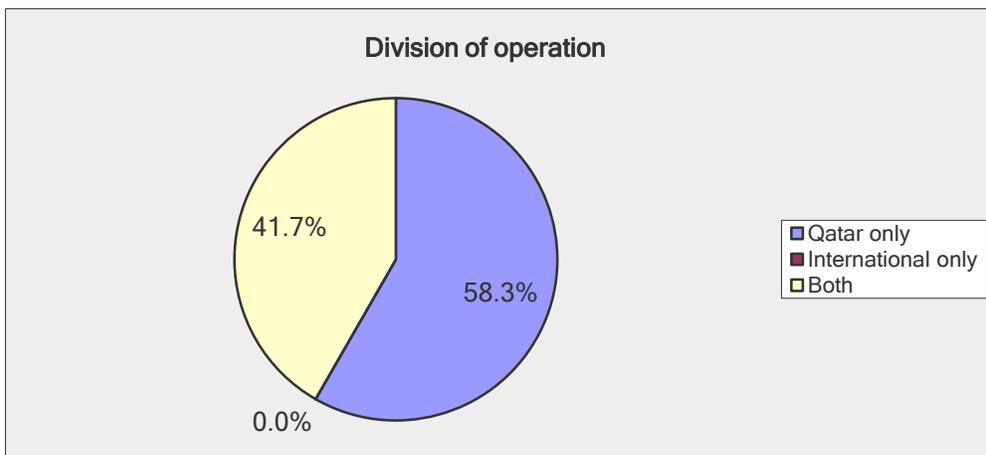
From the above table and figure, 8.3% of the respondent organizations with the frequency of one represent the banking sector. Insurance has two respondents with 16.7%. The industry with seven respondents has 58.3%, and the service sector with two respondents has 16.7%.

4.3.4 Division of operation

Table 4.3.4 below shows the tabulation of the division of operation of surveyed organizations in the State of Qatar. The researcher tries to know whether the organizations only based in the State of Qatar, or they have branches in other countries.

Table 4.3.4: Division of operation

Division of operation		
Answer Options	Response Percent	Response Count
Qatar only	58.3%	7
International only	0.0%	0
Both	41.7%	5
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data – SurveyMonkey.com

The above table shows the response received from the survey in which seven respondents representing 58.3% mentioned that their organizations are base in Qatar only. However, five respondents representing 41.7% cited their companies operate both in Qatar.

4.4 Asset structure

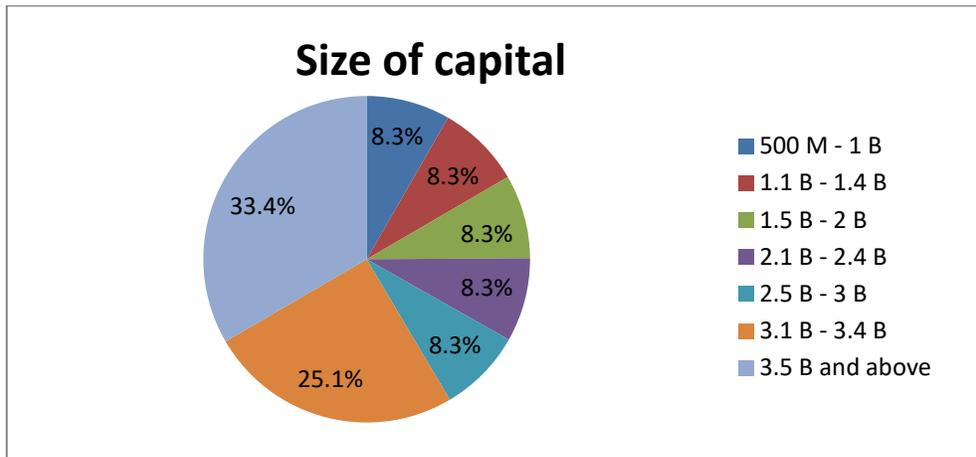
4.4.1 The size of the organizations' capital

The size of capital employed by the companies in the State of Qatar determines how debt financing is engaged in their operations. The employed capital size ranges as follows from the survey conducted.

Table 4.4.1 below shows the size of the capital structure of the surveyed organizations with a set range from 500 million to above 3 billion Qatari Riyals.

Table 4.4.1: Size of the capital of the organization

Size of capital		
Answer Options	Response Percent	Response Count
500 M - 1 B	8.3%	1
1.1 B - 1.4 B	8.3%	1
1.5 B - 2 B	8.3%	1
2.1 B - 2.4 B	8.3%	1
2.5B - 3 B	8.3%	1
3.1 B - 3.4 B	25.1%	3
3.5B. and above	33.4%	4
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data – SurveyMonkey.com

From the table above, one respondent representing 8.3% stated that the size of the organization capital is between 500 million to 1 billion Qatari Riyals for small-scale industry. One respondent representing 8.3% indicated that the size of their capital structure is between 1.1 billion to 1.4 billion and 1.5 billion to 2 billion Qatari Riyals. Also, one respondent representing 8.3% stated that the scale of the capital of their organization is between 2.1 billion to 2.4 billion as well as 2.5 billion to 3 billion Qatari Riyals. Three respondents representing 25.1% said that their organization financial structure is from 3.1 billion to 3.4 billion Qatari Riyals. Finally, four respondents representing 33.4% indicated that their capital structure size is from 3.5 billion and above Qatari Riyals for large-scale industry.

From the above response, more companies have a significant capital base and are prone to more debt funding. It is positively correlated to leverage.

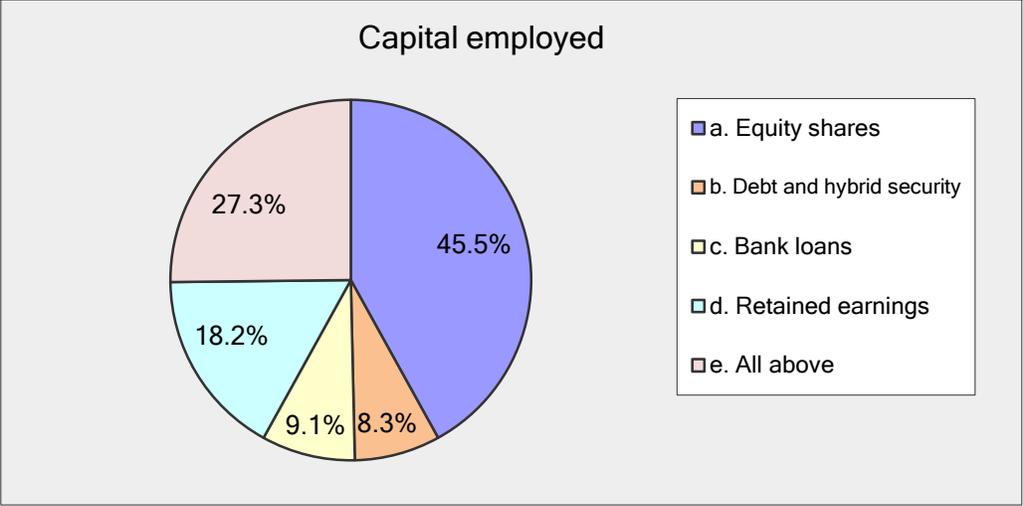
4.4.2 Capital employed

Table 4.4.2 below refers to the type of finance used in respondent's organizations in the State of Qatar. The financial capital structure of Qatari organizations is equity financing, debt and hybrid security financing, bank loan, and retained earnings. Therefore, the respondents from the surveyed companies have the following to say:

- i. Equity takes 45.5% of their funding with five responses
- ii. Debit and hybrid security represent 8.3% of their financial structure
- iii. Bank loans take 9.1% of the asset structure
- iv. Retained earnings formed 18.2% of the property structure
- v. 27.3% of surveyed companies have both equity, debt and hybrid security, bank loans, and retain earnings constituting their financial structure

Table 4.4.2 Capital employed

Capital employed		
Answer Options	Response Percent	Response Count
a. Equity shares	45.5%	5
b. Debt and hybrid security	8.3%	1
c. Bank loans	9.1%	1
d. Retained earnings	18.2%	2
e. All the above	27.3%	3
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data – SurveyMonkey.com

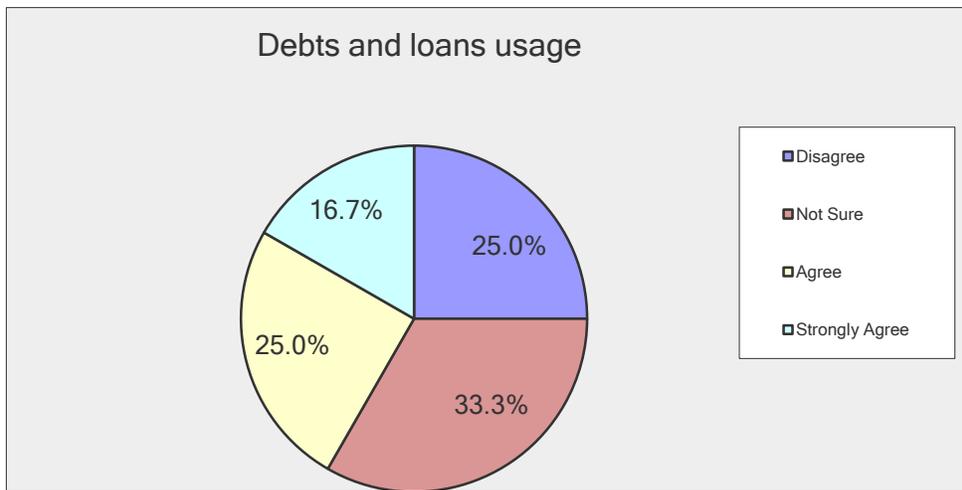
4.4.3 Debt and loan usage

Following the question on the size of capital as well as the type of finance employed, the researcher wants to know about the respondents’ opinion whether their organization’s debt or loan usage has increased over-time.

The table below shows that 25% of the respondents either agreed or disagreed. While 33.3% was not sure and 16.7% strongly agreed.

Table 4.4.3 Debt and loan usage

Debts and Loans Usage		
Answer Options	Response Percent	Response Count
Disagree	25.0%	3
Not Sure	33.3%	4
Agree	25.0%	3
Strongly Agree	16.7%	2
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary Data – SurveyMonkey.com

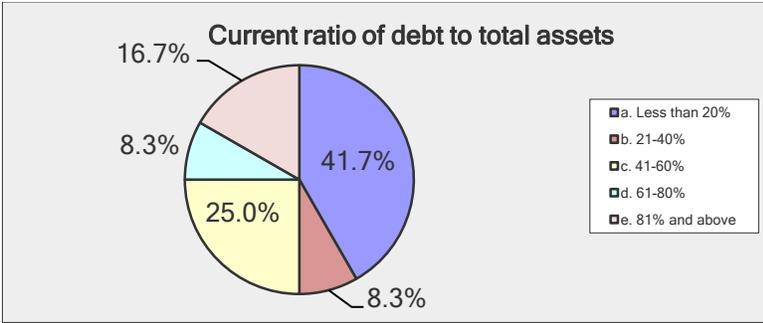
4.4.4 The current ratio of debt to total assets

According to Investopedia.com, current asset ratio is defined as “a financial ratio that measures the extent of a company's or consumer's leverage. The debt ratio is defined as the ratio of total – long-term and short-term – debt total assets, expressed as a decimal or percentage. It can be interpreted as the proportion of a company's assets that are financed by debt”. Current asset ratio to total asset ratio is calculated by dividing the total current assets by the total assets expressed in percentage.

From Table 4.4.4 below, the researcher wants to know the current ratio of debt to total assets in various companies.

Table 4.4.4 Current ratio of debt to total assets

The current ratio of debt to total assets		
Answer Options	Response Percent	Response Count
a. Up to 20%	41.7%	5
b. 21-40%	8.3%	1
c. 41-60%	25.0%	3
d. 61-80%	8.3%	1
e. 81% and above	16.7%	2
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

From the above table:

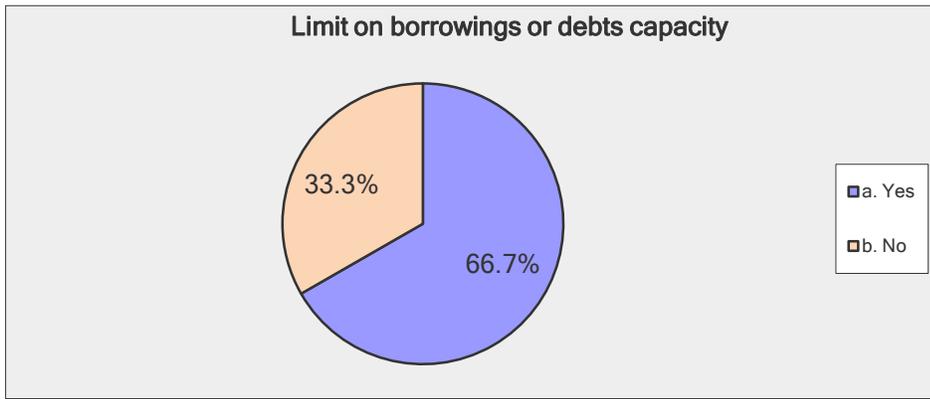
- 41.7% of response rate shows that the current ratio of debt to total assets is up to 20%.
- 8.3% of response rate believes that it is between 21-40%
- 25% responded that it is between 41-60%
- 8.3% answered that it is between 61-80%
- 16.7% responded that it is above 81%

4.4.5 Limit on borrowings or debts

From the questionnaire, the researcher wants to know from the respondents whether there is a limit on the capacity of the organizations in their borrowings financing. The finding is shown in the table below.

Table 4.4.5 Limit on borrowings or debts capacity

Limit on borrowings capacity		
Answer Options	Response Percent	Response Count
a. Yes	66.7%	8
b. No	33.3%	4
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

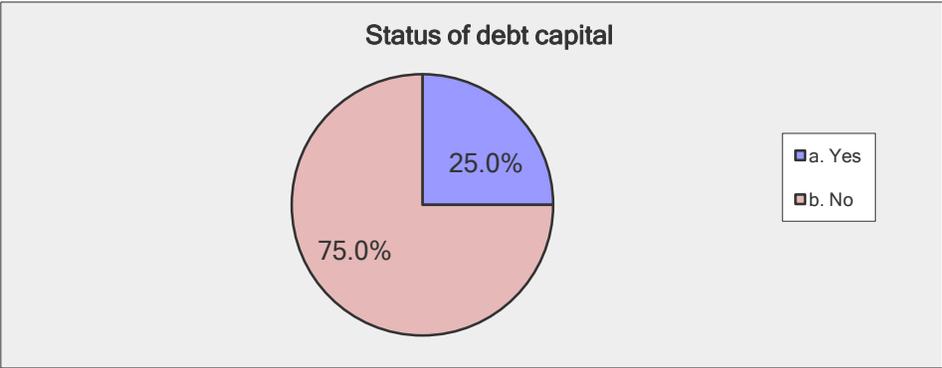
From the above table and figure, it is evident that there is a limit on the borrowing capacity of some of the organizations with the respondent rate of 66.7% agreeing with the statement. While in some organizations, 33.3% respondent rate disagreed that there is no limit on their borrowing capacity.

4.4.6 Status of debt capital

The researcher wants to know whether the organization is at or very near the limit of its debt capital. From the table below, 25% representing three persons answered ‘Yes’ that their organizations are close to the limit of their debt capital structure. Seventy-five percent representing nine individuals answered ‘No’ that their organizations are not very close to the limit of their debt financing.

Table 4.4.6 Status of debt capital

Status of debt capital		
Answer Options	Response Percent	Response Count
a. Yes	25.0%	3
b. No	75.0%	9
<i>answered question</i>		12
<i>skipped question</i>		0



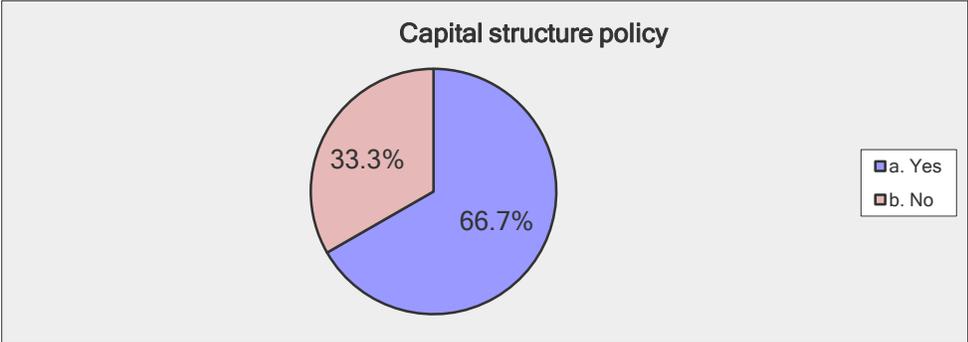
Source: Secondary data – SurveyMonkey.com

4.4.7 Capital structure policy

From the questionnaire, the researcher wants to know if the organization has a written policy for its capital structure. Eight individuals responded with ‘yes’ with a response rate of 66.7% that their companies have written or formal policy on capital structure. However, four respondents responded ‘no’ with a 33.3% response rate that their organizations do not have any written policy about the capital structure. This is shown in the table and figure below.

Table 4.4.7 Organization’s capital structure policy

Capital structure policy		
Answer Options	Response Percent	Response Count
a. Yes	66.7%	8
b. No	33.3%	4
<i>answered question</i>		12
<i>skipped question</i>		0



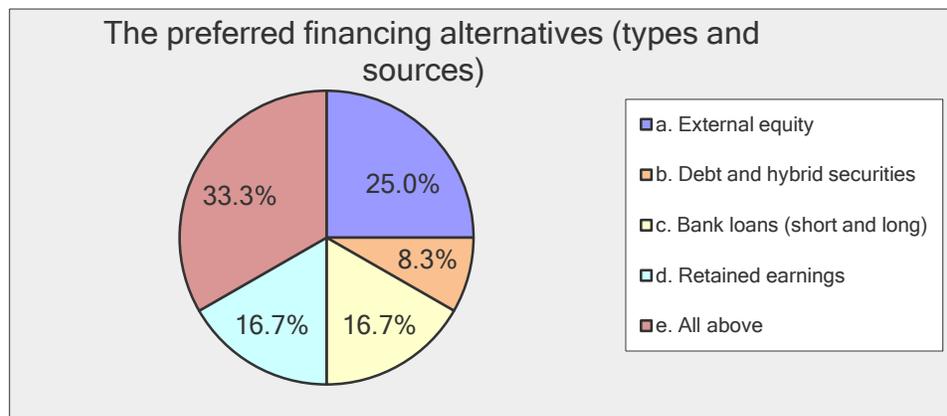
Source: Secondary data – SurveyMonkey.com

4.4.8 Preferred financing alternatives

The nature and source of financing alternatives preferred by 12 respondents of the circulated questionnaire of the listed companies in QSE as depicted in the table and figure below:

Table 4.4.8 Preferred financing alternatives –types and sources

The preferred financing alternatives (types and sources)		
Answer Options	Response Percent	Response Count
a. External equity	25.0%	3
b. Debt and hybrid securities	8.3%	1
c. Bank loans (short and long)	16.7%	2
d. Retained earnings	16.7%	2
e. All the above	33.3%	4
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

- i. External equity: 3 respondents with a 25% response rate answered
- ii. Debt and hybrid securities: 1 respondent with 8.3% response rate answered
- iii. Bank loans (short and long-term): 2 respondents with 16.7% response rate responded
- iv. Retained earnings: 2 respondents with 16.7% response rate answered
- v. All sources stated above: 4 respondents with 33.3% response rate answered

4.5 Effect of organization-specific attributes on leverage

Organization characteristics are said to have a significant role in explaining the level of substantial earnings. Organization characteristics are referred to as those incentive variables that

are relatively sticky at organizations' level across time. They are variables that affect the organization's decisions both internally and externally (Shehu, 2012). The incentive variable ranges from ownership structures, organization size, leverage, profitability, liquidity, growth among others.

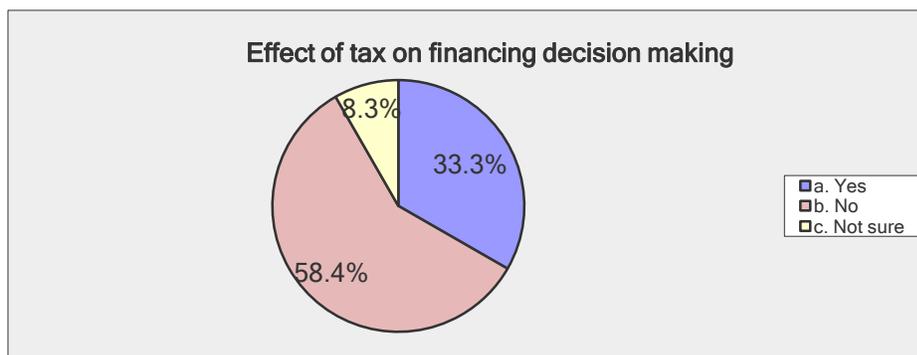
4.5.1 Effect of tax on financing decision-making

The tax effect on the organization's financial decision could be enormous as some of the listed companies are engaging in multinational enterprises where double taxation could occur. In order to avoid such dual taxation, there must be a tax treaty between the State of Qatar and the foreign nation in which Qatari companies operate. The effect of the different compliance costs emanating from the multinational corporation tax system could put more pressure on the financial decision-making and the capital structure of organizations in the State of Qatar.

From the table and figure below, it is evident that four respondents with 33.3% response rate from the questionnaire circularized stated 'yes' that there is the effect of taxation on the financial decision-making of the organizations in the State of Qatar. Seven respondents with 58.4% response rate stated that there is no effect of taxation on the business decision of their organizations. However, one person with 8.3% of response rate was not sure whether the tax has any impact on the financial structure decision-making of his/her organization.

Table 4.5.1 Effect of tax on financial decision-making

Effect of tax on financing decision-making		
Answer Options	Response Percent	Response Count
a. Yes	33.3%	4
b. No	58.4%	7
c. Not sure	8.3%	1
<i>answered question</i>		12
<i>skipped question</i>		0



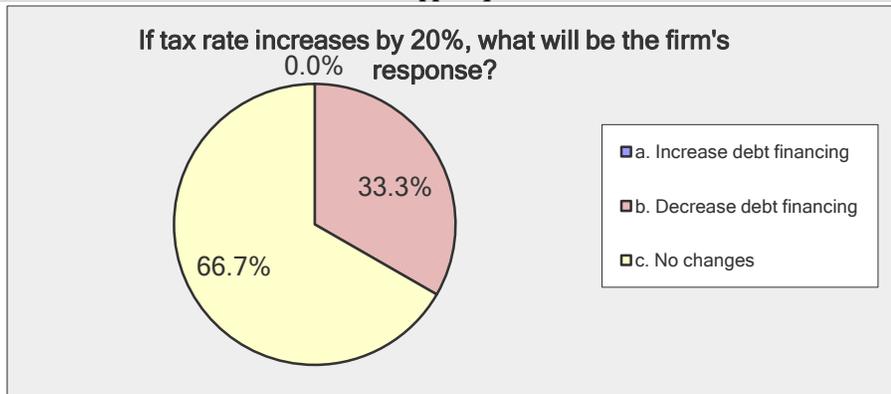
Source: Secondary data – SurveyMonkey.com

Consequently, related to the effect of taxation on the decision-making of organizations, the researcher asked a further question that ‘If tax rate increases by 20%, what will be the organization's response?’ The result in the table and figure 4.5.1.b below refers.

- a) 33.3% response rate with 4 participants stated that it would decrease debt financing in their organizations
- b) 66.7% response rate with 8 participants indicated that it would not have any effect on the financial decision-making of their organizations.

Table 4.5.1.1 If 20% increases the tax rate

If the tax rate increases by 20%, what will be the organization's response?		
Answer Options	Response Percent	Response Count
a. Increase debt financing		0
b. Decrease debt financing	33.3%	4
c. No changes	66.7%	8
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

Further analysis of the effect of organization-specific attributes on leverage ratio is viewed from the following perspective from the respondents' viewpoints:

- Non-debt tax shield
- The tangibility of asset structure
- Profitability
- Organization size

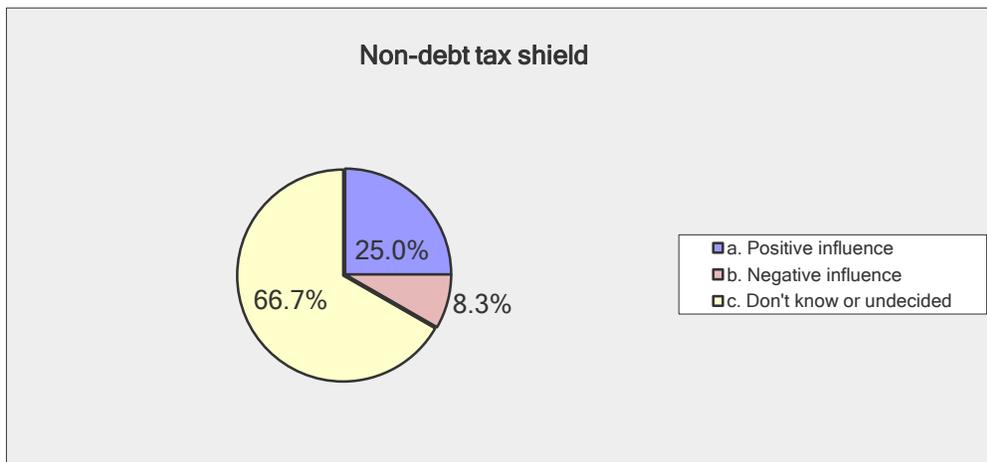
- Growth
- Liquidity
- Business risk

4.5.2 Non-debt tax shield

From the below table, it is evident that three respondents with a response rate of 25% believe that non-tax shield has a positive influence on the capital structure choice of their organizations. Only one respondent with 8.3% response rate affirms that non-debt tax shield has a negative impact on the capital structure of his/her organization. However, 66.7% response rate representing eight individuals were undecided to say whether non-debt tax shield neither has a positive nor negative influence on the capital structure of their organizations.

Table 4.5.2: Non-debt tax shield

Non-debt tax shield		
Answer Options	Response Percent	Response Count
a. Positive influence	25.0%	3
b. Negative influence	8.3%	1
c. Don't know or undecided	66.7%	8
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

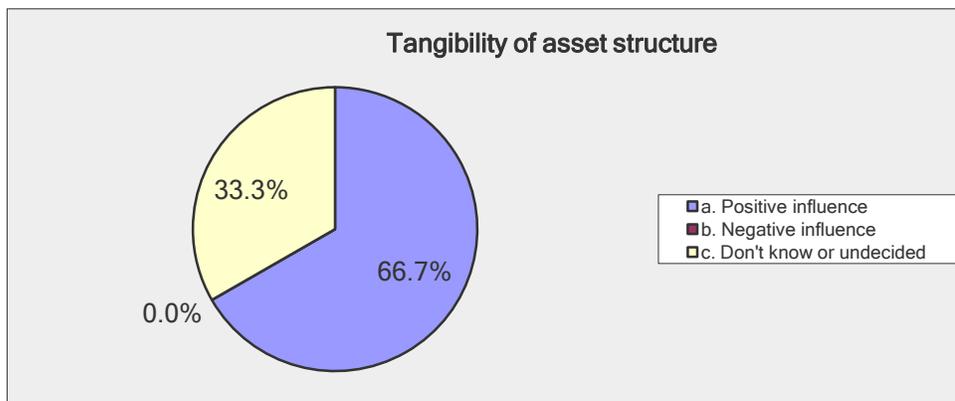
4.5.3 The tangibility of asset structure

According to Investopedia.com (<http://www.investopedia.com/terms/t/tangibleasset.asp>), tangible assets include both fixed assets, such as machinery, buildings, and land, and current assets, such as inventory. The opposite of a tangible asset is an intangible asset. Nonphysical assets, such as patents, trademarks, copyrights, goodwill and brand recognition, are all examples of intangible assets.

Table 4.5.3 below shows, eight individuals with 66.7% response rate that believe that asset tangibility is positively influencing the asset structure of their organizations; while four people with 33.3% response rate are undecided.

Table 4.5.3 Tangibility of asset

The tangibility of asset structure		
Answer Options	Response Percent	Response Count
a. Positive influence	66.7%	8
b. Negative influence	0.0%	0
c. Don't know or undecided	33.3%	4
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

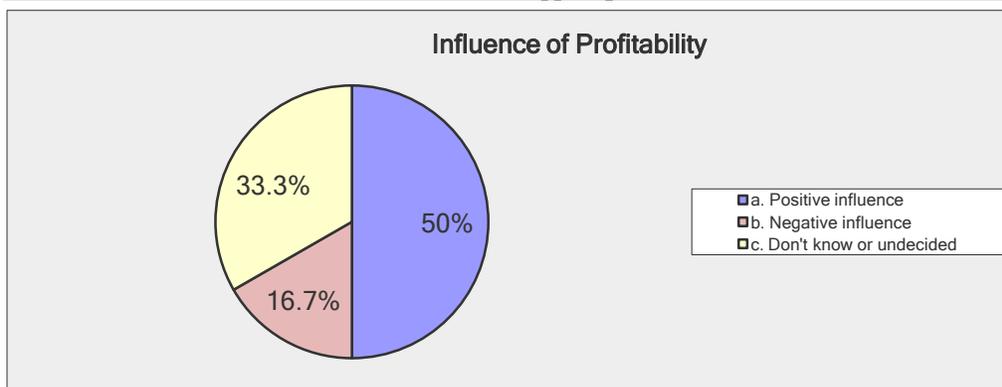
4.5.4 Profitability

As cited by Myers (1984) as evidenced from Donaldson (1961), Brealey and Myers (1992) suggest that organizations would prefer raising capital from retained earnings in the first instance, followed by debt and finally from issuing new equity. He indicated that this behavior might be due to the costs of issuing new equity that was discussed in Myers and Majluf (1984), which may arise because of asymmetric information or transaction costs. In either case, the past profitability of an organization, and the amount available as retained earnings should be an essential determinant of its current capital structure.

The response to the questionnaire about the effect of profitability on Qatari companies is as shown below.

Table 4.5.4 Influence of profitability on Qatari companies

Influence of Profitability		
Answer Options	Response Percent	Response Count
a. Positive influence	50.0%	6
b. Negative influence	16.7%	2
c. Don't know or undecided	33.3%	4
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

From the above table and figure, six respondents representing 50% stated that profitability influenced their organization positively. In addition, two respondents with 16.7% indicated that

profitability affects their organizations negatively, while four respondents with 33.3% are undecided.

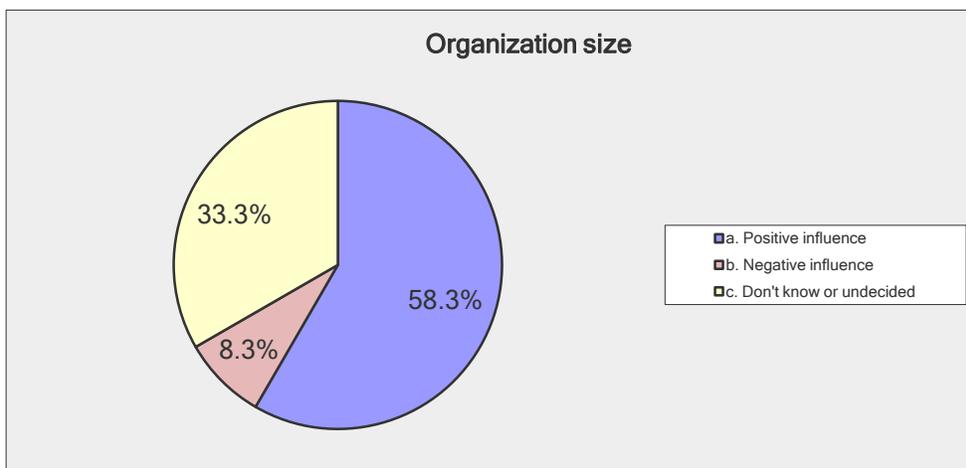
4.5.5 The organization size

Many capital structure researchers opined that leverage ratios might be related to the size of the organization. However, other researchers opined that direct bankruptcy costs might constitute a more substantial proportion of a organization's value as that value decreases, such as Warner (1977), Ang et al (1982), as well as large organizations, tend to be more diversified and less prone to bankruptcy. In fact, these arguments suggest that large organizations should be more highly leveraged than smaller ones.

The cost of issuing debt and equity securities is equally related to the size of the organization as smaller organizations pay much more than larger organizations to issue new equity, Smith (1977) and somewhat more to issue long-term debt. This argument thus suggests that smaller organizations may be more leveraged than larger organizations that may prefer to borrow short-term bank loans rather than issue long-term debt as there is a lower fixed cost associated with this type of capital.

Table 4.5.5: Organization size

Organization size		
Answer Options	Response Percent	Response Count
a. Positive influence	58.3%	7
b. Negative influence	8.3%	1
c. Don't know or undecided	33.3%	4
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

From Table 4.5.5 above, the researcher wants to know whether organization size has any influence on the capital structure of the respondent companies in the State of Qatar. However, seven respondents with 58.3% response rate believe that organization size has a positive influence on the capital structure of their companies. Also, one person with an 8.3% response rate says it hurts his/her organization; and four respondents with 33.3% response rate are undecided.

4.5.6 Growth

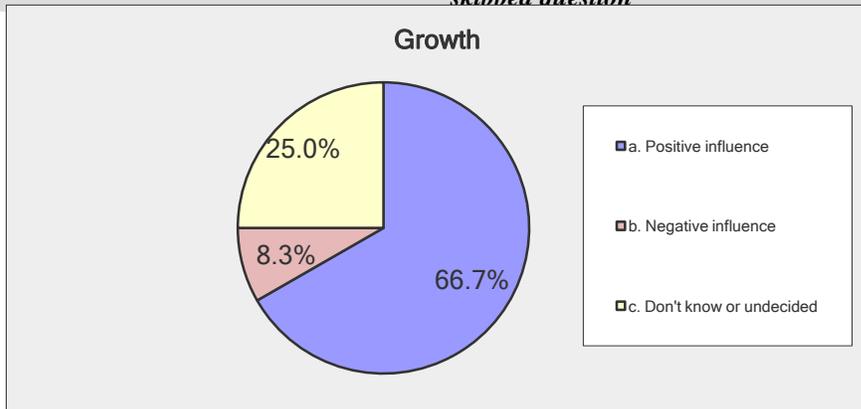
It is a known fact that equity-controlled organizations tend to invest sub-optimally to expropriate wealth from the organization's bondholders; therefore, the cost associated with the type of agency relationship is likely to be higher for organizations in growing industries in which there is more flexibility in the choice of future investments. Therefore, future growth could thus be negatively related to long-term debt levels. However, Myers (1984) noted that agency problem is mitigated when organization issues short-term as against long-term debt. Short-term debt ratios may be positively related to growth rates when an organization in growing industry substitutes short-term funding for a long-term one.

Smith and Warner (1979), Jensen and Meckling (1976), and Green (1984) believed that the agency costs would be reduced if organizations issue convertible debt that could translate to a positive relationship with growth opportunities. It should also be noted that growth opportunities are capital assets that add value to an organization but cannot be collateralized and do not generate current taxable income as cited in Titman and Wessels (1988).

As noted by Titman and Wessels (1988), the “indicators of growth include capital expenditures over total assets (*CE/TA*). Also, the growth of total assets measured by the percentage change in total assets (*GTA*). Since organizations generally engage in research and development to generate future investments, research and development over sales (*RD/S*) also serve as an indicator of the growth attribute.”

Table 4.5.6 Growth

Growth		
Answer Options	Response Percent	Response Count
a. Positive influence	66.7%	8
b. Negative influence	8.3%	1
c. Do not know or undecided	25.0%	3
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

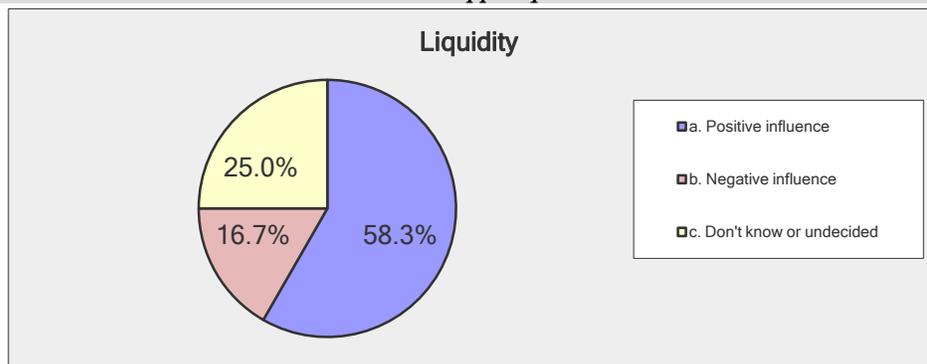
From the table and fig. above, the researcher wants to know the influence of growth in the capital structure of the surveyed companies. Eight respondents with 66.7% response rate stated that their capital structure is positively correlated with the increase. One respondent with 8.3% response rate believes that there is a negative correlation between growth and capital structure. Twenty-five percent of the respondents were undecided.

4.5.7 Liquidity

As mentioned earlier during this research, liquidity is another factor that affects the capital structure choice of companies. Anderson et al (2002) found a positive relationship between capital structure and liquidity in their study of organizations in the developed nations. Krenusz (2004) in the survey of US companies found a negative correlation. Likewise, the survey that was done by Ozkan (2000) and Antoniou et al (2002) for the developed nations of France, UK, and Germany, showed the insignificant relationship between liquidity and leverage. Bhole and Mahakud (2004) in their research of Indian organizations found a negative correlation between liquidity and capital structure choice.

Table 4.5.7 Liquidity

Liquidity		
Answer Options	Response Percent	Response Count
a. Positive influence	58.3%	7
b. Negative influence	16.7%	2
c. Do not know or undecided	25.0%	3
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

From the above table and Fig. 4.5.7, it is noted that seven respondents with 58.3% response rate agree that there is a positive relationship between their organizations' liquidity and the leverage. Two respondents with 16.7% stated that their organization capital structure is negatively correlated with the organization liquidity. Three respondents with a 25% response rate are undecided.

4.5.8 Business risk

As earlier stated risk levels are one of the determinants of the company's capital structure according to Kale et al (1991). It follows when a substantial operating risk is more volatile than the business's earnings stream in which the chance of the company to default and expose to bankruptcy and agency costs is very high. Johnson (1997) found that companies with more volatile earnings growth might experience more situations in which cash flows are too low for debt service.

Two types of risks are usually considered when planning the capital structure of an organization. They are the business risk and financial risk. Business risk refers to relative variability in the organization's expected earnings before interest and taxes (EBIT). The nature of the organization's operations causes its business risk. This type of risk may be affected by the organization's cost structure, product demand characteristics, and intra-industry competitive competition. The business risk may be due to internal or external factors. Internal risks arise from factors such as endogenous variables that can be controlled such as

- Human factors such as talent management, strikes
- Technological factors such as emerging technologies
- Physical factors such as failure of machines, fire or theft
- The operational factors such as access to credit, cost-cutting, and advertisement

External risks arise from factors such as exogenous variables that cannot be controlled such as

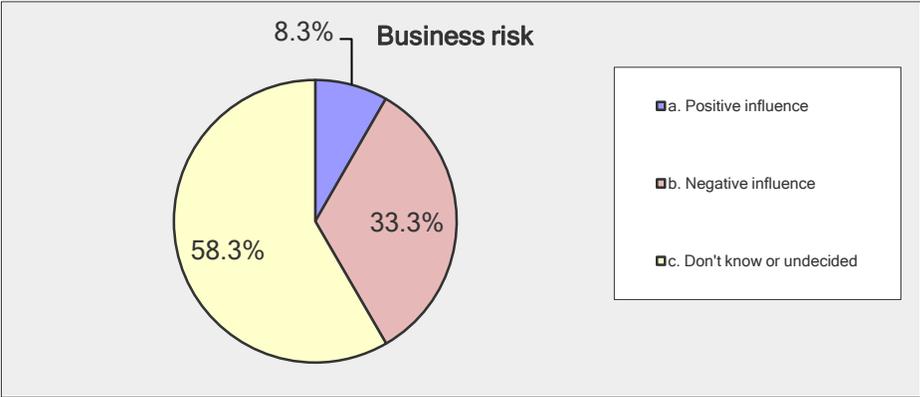
- Economic factors such as market risks, pricing pressure
- Natural elements such as floods and earthquakes
- Political factors such as compliance and regulations of the government

The inherent danger is due to improper products mix because of the unavailability of raw materials and the absence of strategic management ability cum the incompetence to face competition. The apparent business risk arises due to change in operating conditions caused by the circumstances beyond the control of the organization, for example, the business cycle planning.

Financial risk is that type of risk that is associated with financing, which includes financial transactions such as company loans at risk of default. Often it is understood to include only downside risk, meaning the potential for financial loss and uncertainty about its extent (https://en.wikipedia.org/wiki/Financial_risk).

Table 4.5.8 Business risk

Business risk		
Answer Options	Response Percent	Response Count
a. Positive influence	8.3%	1
b. Negative influence	33.3%	4
c. Don't know or undecided	58.3%	7
<i>answered question</i>		12
<i>skipped question</i>		0



Source: Secondary data – SurveyMonkey.com

From the above table and figure, one respondent with 8.3% response rate affirms a positive influence of business risk on their organization type. Four respondents with 33.3% response rate believe that business risk is negatively influencing their organization nature. Seven respondents with 58.3% response rate are undecided about the kind of influence business risk has on their organizations.

Analysis of primary data from the Financial Statements 2008-2015

4.6 Trend analysis of leverage ratio

The trend analysis of the leverage ratio follows Rajan and Zingales (1995) and is calculated on eight years of financial statements from 2008 to 2015 of 43 listed organizations on QSE in the State of Qatar

- Short-term funds trend analysis
- Long-term funds trend analysis
- Quantum of short term and long term funds or total debt trend analysis as a percentage of total assets

4.6.1 Short-term funds trend analysis

The short-term funds of 43 Qatari listed organizations from the Financial Statements from 2008 to 2015 include the following composition:

- Banks and financial institutions
- Industrial sector
- Insurance sector
- Real estate sector
- Service and consumer goods sector
- Telecommunication sector
- Transport sector

Short-term funds (SF) include provisions, sundry creditors, cash and bank balances and accrued charges. In short, SF comprises the total current liabilities.

Table 4.6.1

Short-term funds trend analysis (expressed as a percentage of total assets) with the base year 2008

Short Term Fund Trend Analysis											
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecommunication QR'000	Transport QR'000	Total Short-Term Funds (SF) QR'000	Total Assets (TA) QR'000	SF as % of TA	Trend
2008	256,029,493	12,114,938	5,168,147	19,594,771	5,738,758	20,774,493	374,377	319,794,977	567,220,428	56.38	100
2009	280,108,104	8,979,528	5,781,157	30,090,697	4,263,743	16,439,831	675,841	346,338,901	689,242,338	50.25	112.20
2010	346,652,494	12,416,643	6,825,648	61,930,636	6,856,487	18,288,300	1,167,055	454,137,263	848,265,050	53.54	105.30
2011	436,981,114	17,045,223	7,272,124	53,603,105	7,365,730	28,159,545	1,506,362	551,933,203	995,226,322	55.46	101.66
2012	524,379,484	14,229,989	7,972,870	37,949,796	4,942,922	21,108,761	1,374,489	611,958,311	1,084,578,043	56.42	99.93
2013	649,205,295	15,249,597	9,893,930	31,255,829	3,546,086	24,536,229	1,522,022	735,208,988	1,246,977,813	58.96	95.62
2014	719,811,435	17,658,740	14,147,668	13,662,750	5,371,533	27,423,462	1,472,556	799,548,144	1,359,389,217	58.82	95.85
2015	802,256,421	19,296,467	22,218,797	12,433,704	6,147,262	27,333,237	1,614,021	891,299,909	1,481,003,855	60.18	93.69
Total	4,015,423,840	116,991,125	79,280,341	260,521,288	44,232,521	184,063,858	9,706,723	4,710,219,696	8,271,903,066	56.94	99.02
Average	501,927,980	14,623,891	9,910,043	32,565,161	5,529,065	23,007,982	1,213,340	588,777,462	1,033,987,883	56.94	99.02

Source: Computed from Financial Statements of Listed Companies at QSE from 2008-2015

From the Table 4.6.1 above, it should be noted that the short-term fund trend analysis in which the base year is taking as 2008, there is an increase in the trend in 2009 to 112.20% and a decrease in trend in 2010 to 105.30% while in 2011 it further decreased to 101.66%. Furthermore, from 2012 to 2015, it decreased from 99.93%, 95.62 %, 95.85%, and 93.69% respectively. The average trend for the eight years was 99.02%.

It should be noted that the percentage of short-term funds to the total assets decreased to 50.25% in 2009 from 56.38% in 2008 (base year). It translates to QR 346,338,901 of short-term funds with total assets of QR 689,242,338. The short-term fund percentage slightly rose from 53.54% in 2010 to 60.18% over the total assets compared to the figure of 2009. The trend analysis slightly decreased from 112.20 points in 2009 to 93.69 points in 2015. Therefore, the average percentage of the total short-term fund to that of the total assets stood at 56.94% with the trend of 99.02 points. The overall average of short-term funds was QR 588,777,462 to total assets of QR 8,271,903,066.

Therefore, as hypothesized, there is a positive relationship between the capital structure decisions taken by the organizations in the State of Qatar.

4.6.2 Long-term funds trend analysis

The long-term funds of the listed Companies from their Financial Statement from 2008 to 2015 include the following items:

- Equity capital
- Long-term loans and borrowings
- Employees' end of service benefits
- Others

The composition of long-term funds is derived from the following sectors:

- Banks and Financial Institutions
- Industrial Sector
- Insurance Sector

- Real Estate Sector
- Service and Consumer Goods Sector
- Telecommunication Sector
- Transport Sector

Therefore, long-term funds (LF) include total equity and non-current or long-term liabilities.

Table 4.6.2

Long-Term Funds Trend Analysis (as a percentage of Total Assets) with Base Year 2008

Long-Term Fund Trend Analysis											
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecommunication QR'000	Transport QR'000	Total Long Term Funds (LF) QR'000	Total Assets (TA) QR'000	LF as % of TA	Trend
2008	93,992,339	47,076,705	5,147,716	11,643,475	12,706,451	25,437,191	24,483,333	220,487,210	567,220,428	38.87	100
2009	122,224,187	52,889,422	5,460,623	35,495,362	18,977,349	77,104,076	30,972,419	343,123,438	689,242,338	49.78	78.08
2010	131,976,126	65,012,833	7,585,826	45,157,626	21,170,098	91,437,584	31,471,395	393,811,488	848,265,050	46.43	83.72
2011	176,577,193	77,773,957	7,655,173	46,191,812	21,726,072	82,218,465	31,150,449	443,293,121	995,226,322	44.54	87.27
2012	202,122,371	83,918,424	8,048,562	52,198,023	14,085,416	81,148,943	31,097,991	472,619,730	1,084,578,043	43.58	89.19
2013	226,269,395	89,410,535	12,018,594	56,415,740	15,971,101	80,633,122	31,050,336	511,768,823	1,246,977,813	41.04	94.71
2014	261,723,790	91,907,748	14,043,406	60,540,997	21,821,974	78,104,690	31,698,469	559,841,074	1,359,389,217	41.18	94.39
2015	288,938,124	92,746,830	14,719,252	65,030,366	22,169,985	73,992,437	32,106,952	589,703,946	1,481,003,855	39.82	97.61
Total	1,503,823,525	600,736,454	74,679,152	372,673,401	148,628,446	590,076,508	244,031,344	3,534,648,830	8,271,903,066	42.73	90.97
Average	187,977,941	75,092,057	9,334,894	46,584,175	18,578,556	73,759,564	30,503,918	441,831,104	1,033,987,883	42.73	90.97

Source: Computed from the Financial Statements of Listed Companies at QSE from 2008-2015

From the Table 4.6.2 above, the components of the long-term funds are the equity, non-current loans and borrowings, and the employees' end of service benefits and others. The long-term fund trend analysis shows a decrease from the base year of 2008 to 78.08% in 2009 and 83.72% in 2010. After that it decreased further in 2011 by 87.27%; 2012 by 89.19%; 2013 by 94.71%; 2014 by 94.39%; and in 2015 by 97.61%. The average trend analysis stood at 90.97%.

Also, the percentage of the total long-term funds (LF) to total assets (TA) in 2008 considered as the base year was 38.87% that translated to QR 220,487,210 of LF and QR 567,220,428 of TA. From 2008 to 2015, the average LF stood at QR 441,831,104 and that of the TA was QR 8,271,903,066.

The employees' end of service is a benefit mandated by the Qatari Labour Law to be paid to the expatriate employees at the end of their employment contract with the Company. Hence, companies accrue for such payment to be made in the future in their Balance Sheets.

Therefore, as hypothesized, there is a positive relationship between the capital structure decisions taken by the organizations in the State of Qatar.

4.6.3 Quantum of short-term and long-term funds as a percentage of total assets

The quantum of short-term and long-term funds as a percentage of total assets means the minimum amount of both short-term funds and long-term funds that form the total assets of listed companies in the State of Qatar. It is represented in the table below:

Table 4.6.3**Quantum of short term and long term funds as a percentage of total assets**

Quantum of short-term and long-term funds trend analysis					
Year	Short-term Funds (SF) QR'000	Long-term Funds (LF) QR'000	Total Assets (TA) QR'000	SF as % of TA	LF as % of TA
2008	319,794,977	220,487,210	567,220,428	56.38	38.87
2009	346,338,901	343,123,438	689,242,338	50.25	49.78
2010	454,137,263	393,811,488	848,265,050	53.54	46.43
2011	551,933,203	443,293,121	995,226,322	55.46	44.54
2012	611,958,311	472,619,730	1,084,578,043	56.42	43.58
2013	735,208,988	511,768,823	1,246,977,813	58.96	41.04
2014	799,548,144	559,841,074	1,359,389,217	58.82	41.18
2015	891,299,909	589,703,946	1,481,003,855	60.18	39.82
Total	4,710,219,696	3,534,648,830	8,271,903,066	56.94	42.73
Average	588,777,462	190,545,242	1,329,209,566	44.30	14.34

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Table 4.6.3 above shows that the constituents of the quantum of short-term and long-term funds are a combination of the components of the long-term fund. It is equity capital, loans, and borrowings, and employees' end of service benefits, etc.; and the whole elements of short-term funds such as trade payables and accruals, short-term investments and borrowings, and retention payable, etc.

The Table 4.6.3 shows long-term funds that have an average percentage of 14.34% of the total asset structure, and short-term funds have an average rate of 44.30%. Therefore, companies in the State of Qatar as represented by the listed organizations' financial statements as obtainable on the Qatar Stock Exchange fund their asset structure through both short-term funds and long-term funds.

Therefore, as hypothesized, there is a positive relationship between the capital structure decisions taken by the listed companies in the State of Qatar.

4.7 Ratio analysis

The following ratio analysis will be considered for the calculation of the capital structure of companies in the State of Qatar as represented by the listed organizations on the QSE:

- Debt-asset ratio
- Non-debt tax shield (NDT)

- $NDT = \text{Annual depreciation} + \text{Amortization} / \text{Total assets}$
- Assets structure (AS)
 - $AS = \text{Fixed assets} + \text{Inventories} / \text{Total assets}$
- Profitability (PRO)
 - $PRO = \text{EBITDA} / \text{Total assets}; (\text{Earnings before interest, tax and depreciation of assets} / \text{Total assets})$
- Organization liquidity ratio (LR)
 - $LR = \text{Current assets} / \text{Current liabilities}$

4.7.1 Debt-asset ratio

Another way of expressing the quantum of short-term and long-term funds as a percentage of total assets is the use of debt-asset ratio. The debt-asset ratio measures the extent to which borrowed funds support the acquisition of assets of the company. Total debts comprise long-term debt (non-current liabilities) and the current liabilities, while total assets consist of permanent assets (non-current assets) and current assets. The ratio can be calculated thus:

$$\text{Debt-assets ratio} = \text{Total debt} / \text{Total assets}$$

The lower debt-asset ratio indicates a sufficient margin of safety to the creditor that is desirable for them while shareholders will be deprived of the benefits of trading on equity if the debt is not being exploited. More so, a high debt-asset ratio will expose creditors to higher risk. In the end, the company's position will be stable for lower dependence on external funds. Therefore, an organization should have neither very high ratio nor meager ratio.

Total debt – Total assets ratio

Table 4.7.1

Total debt ratio (TDR)			
Year	Total Debt QR'000	Total Assets (TA) QR'000	TD/TA
2008	425,742,598	567,220,428	0.75:1
2009	495,428,026	689,242,338	0.72:1
2010	621,399,565	848,265,050	0.73:1
2011	726,265,764	995,226,322	0.73:1
2012	796,214,516	1,084,578,043	0.73:1
2013	932,538,471	1,246,977,813	0.75:1
2014	1,031,238,654	1,359,389,217	0.76:1
2015	1,139,944,311	1,481,003,855	0.77:1
Total	6,168,771,905	8,271,903,066	0.75
Average	771,096,488	1,033,987,883	0.75
STD	253,574,014	322,124,678	0.017

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

From the Table 4.7.1 above, it is evident that the trend of the ratio decreases from 0.75 times in 2008 to 0.72 times in 2009; and from 2010 onwards, it rose to 0.73 times until 2012. Thereafter, it rose to 0.75 times in 2013. In addition, it rose in 2014 by 0.76 times and 0.77 times in 2015. It has an average ratio of 0.75 times and standard deviation of 0.017 times. It shows that companies in Qatar partly fund their assets through debt financing with a standard deviation of 253,574,014 total debts to 322,124,678 total assets.

Therefore, as hypothesized, the debt-asset ratio is positively related to capital structure decisions taken by the organizations in the State of Qatar.

4.7.2 Non-debt tax shield (NDT)

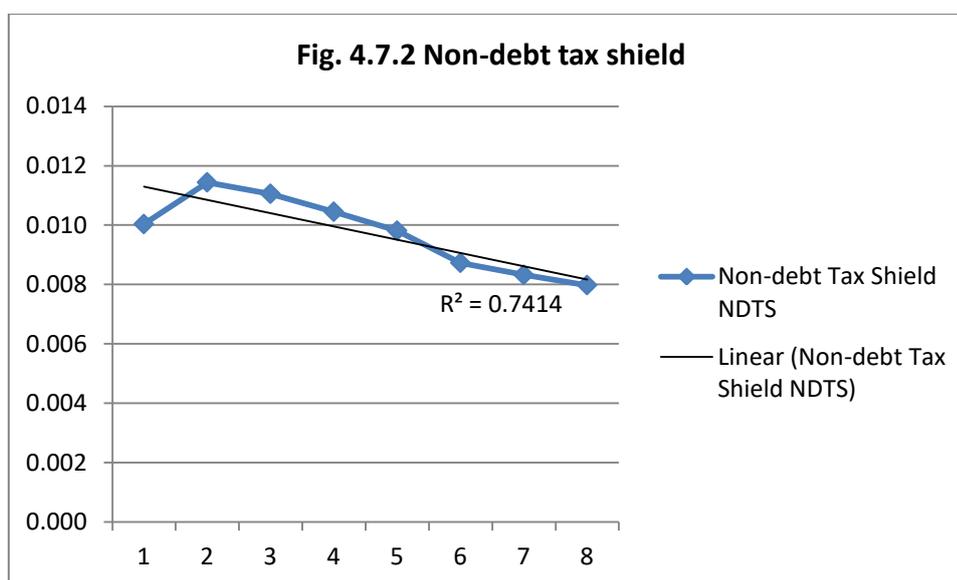
The non-debt tax shield (NDT) follows Titman and Wessels (1988) and Ozkan (2001) where the ratio of annual depreciation and amortization to total assets was taken as a proxy from the method of calculation as follows:

$$\text{NDT} = \text{Annual depreciation} + \text{Amortization} / \text{Total assets}$$

Table 4.7.2

Non-debt tax shield			
Year	Depreciation & Amortization (A) QR'000	Total Assets (TA) (B) QR'000	A / B
2008	5,690,910	567,220,428	0.010
2009	7,884,337	689,242,338	0.011
2010	9,375,649	848,265,050	0.011
2011	10,397,533	995,226,322	0.010
2012	10,640,768	1,084,578,043	0.010
2013	10,884,572	1,246,977,813	0.009
2014	11,314,412	1,359,389,217	0.008
2015	11,814,951	1,481,003,855	0.008
Total	78,003,132	8,271,903,066	0.078
Average	9,750,392	1,033,987,883	0.010
Min.	5,690,910	567,220,428	0.008
Max.	11,814,951	1,481,003,855	0.011
STD	836,054	236,588,216	0.00124

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015



Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Annual depreciation and amortization are the charges made for the utilization of both tangible and intangible fixed assets by the organizations in Qatar. They are deducted from the cost of the assets over time and charged to Profit and Loss account. Therefore, from the Table 4.7.2 above, the percentage of non-tax shield utilization of assets is 0.12% from 2008 to 2015 standard deviation and

not very significant to the leverage. Also, NTD from Fig. 4.7.2 above is R^2 at 0.7414 that is not significant to the leverage.

Therefore, as hypothesized, non-debt tax shield is positively related to capital structure decisions of organizations as represented by the listed companies in the State of Qatar.

4.7.3 Asset structure (AS)

Asset structure refers to the relative magnitudes of a company's balance sheet asset categories such as plants and machinery, land and buildings, motor vehicles, goodwill, trademarks, software license, and inventory. However, Titman and Wessels (1988), Gaud et al (2005) used fixed assets plus inventory to total assets as a proxy for collateral assets. It is calculated as follows:

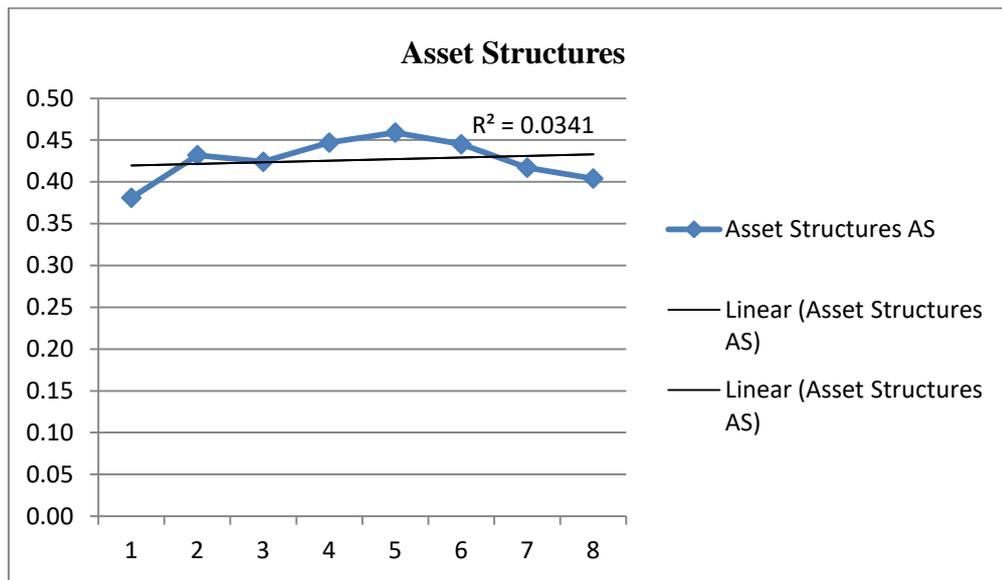
$$\text{Collateral assets structure (AS)} = (\text{Fixed assets} + \text{Inventories}) / \text{Total assets}$$

Table 4.7.3

Asset structure			
Year	Total Fixed Asset + Inventory (A) QR'000	Total Assets (TA) (B) QR'000	A / B
2008	215,836,920	567,220,428	0.381
2009	297,923,618	689,242,338	0.432
2010	360,078,690	848,265,050	0.424
2011	445,233,452	995,226,322	0.447
2012	497,937,471	1,084,578,043	0.459
2013	555,005,149	1,246,977,813	0.445
2014	567,055,234	1,359,389,217	0.417
2015	598,352,628	1,481,003,855	0.404
Total	3,537,423,162	8,271,903,066	0.428
Average	442,177,895	1,033,987,883	0.428
STD	138,673,906	322,124,678	0.025

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Fig. 4.7.3 Asset structure (AS)



Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Table 4.7.3 above, the leverage ratio stood at 38.1% in 2008; and in 2009 it stood at 43.2%. In addition, it stood at 42.4% in 2010 and 41.7% in 2014. It decreased from 41.7% in 2014 to 40.4% in 2015. Thereafter, it slightly increased from 44.7% in 2011 to 45.9% in 2012. In Fig. 4.7.3, the curve slopes unevenly from 38% to 43%, 42% and after that increases to 45% and down to 40% with $R^2 = 0.0341$. Trade-off theory states that there is an advantage to financing with debt, the tax benefits of debt. In addition, there is a cost of financing with debt, the costs of financial distress including bankruptcy costs of debt and non-bankruptcy costs such as staff leaving, suppliers demanding disadvantageous payment terms, bondholder/stockholder infighting. The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a organization that is optimizing its overall value will focus on the trade-off when choosing how much debt and equity to use for financing (https://en.wikipedia.org/wiki/Trade-off_theory_of_capital_structure). The empirical evidence is consistent with the trade-off theory that signifies the notion of ‘optimal capital structure.’

Therefore, as hypothesized, asset structure is positively related to capital structure decisions of organizations as represented by the listed companies in the State of Qatar.

4.7.4 Profitability (PRO)

The measure of proxy used in measuring the profitability of organizations in the State of Qatar is earnings before interest, tax, depreciation, and amortization (EBITDA) to total assets. This measure is as follows:

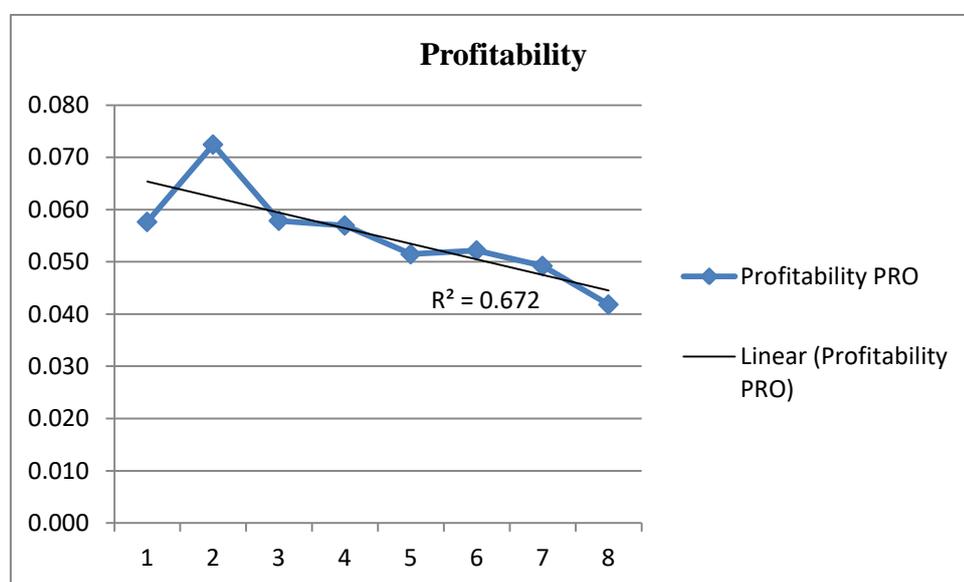
$$\text{PRO} = \text{EBITDA} / \text{Total assets}$$

Table 4.7.4

Profitability			
Year	Profit (EBITDA) (A) QR'000	Total Assets (TA) (B) QR'000	A / B
2008	32,687,910	567,220,428	0.058
2009	49,931,322	689,242,338	0.072
2010	49,078,430	848,265,050	0.058
2011	56,675,678	995,226,322	0.057
2012	55,806,483	1,084,578,043	0.051
2013	65,053,996	1,246,977,813	0.052
2014	66,889,122	1,359,389,217	0.049
2015	61,927,934	1,481,003,855	0.042
Total	438,050,875	8,271,903,066	0.440
Average	54,756,359	1,033,987,883	0.055
Min.	32,687,910	567,220,428	0.042
Max.	66,889,122	1,481,003,855	0.072
STD	6,650,697	236,588,216	0.00582

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Fig. 4.7.4 EBITDA



Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

From the Table 4.7.4 above, it is evident that organizations' profitability ranges from 6% in 2008 to 7% in 2009, 6% in 2010 through 2011 and 5% in 2012 through 2014 but down to 4% in 2015. The average ratio is 6%. Therefore, in Fig. 4.7.4, the profitability of organizations with adjusted R² of 0.672. However, the profitability measures that belong to the less levered organizations are lower than that of moderately levered organizations as that of highly levered organizations are higher. Thus, this follows the idea of Titman and Wessels (1988), Gaud et al. (2005) postulations.

Therefore, as hypothesized, profitability is positively related to capital structure decisions of organizations as represented by the listed companies in the State of Qatar.

4.7.5 The organization liquidity ratio (LR)

The liquidity ratio follows the proxy used by Ozkan (2001) that is based on the ratio of current assets to current liabilities. Therefore, the liquidity ratio is calculated as follows:

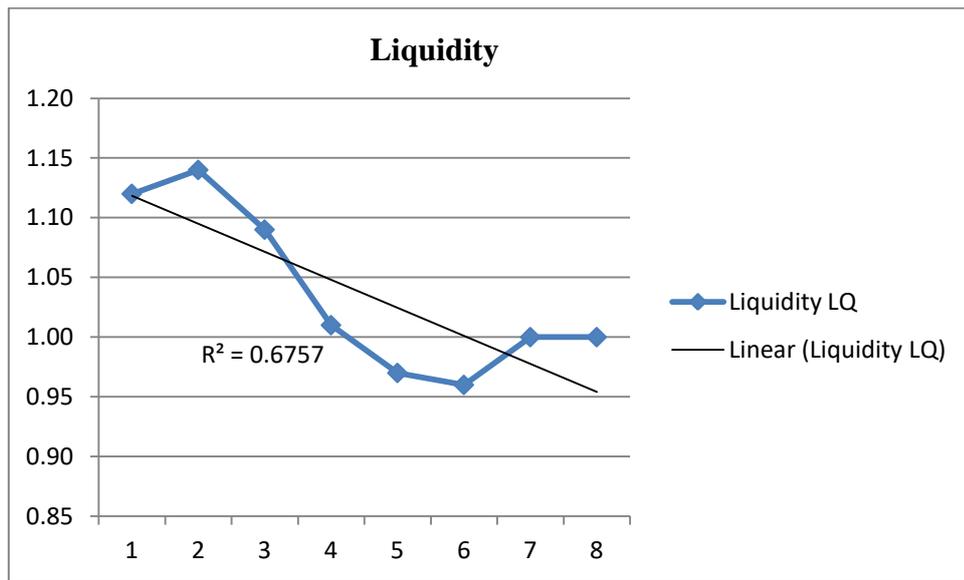
$$\text{Liquidity} = \text{Current assets} / \text{Current liabilities}$$

Table 4.7.5 Liquidity Ratio

Liquidity ratio analysis (LR)			
Year	Total Current Asset (TCA) QR'000	Total Current Liabilities (TCL) QR'000	Liquidity Ratio LR / TA
2008	356,599,715	319,794,977	1.12
2009	395,731,224	346,338,901	1.14
2010	493,431,370	454,137,263	1.09
2011	558,318,162	551,933,203	1.01
2012	595,990,322	611,958,311	0.97
2013	702,345,576	735,208,988	0.96
2014	802,006,254	799,548,144	1.00
2015	891,560,205	891,299,909	1.00
Total	4,795,982,828	4,710,219,696	1.02
Average	599,497,854	588,777,462	1.02
Min.	356,599,715	319,794,977	0.960
Max.	891,560,205	891,299,909	1.140
STD	189,120,610	209,944,609	0.070

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Fig. 4.7.5 Liquidity ratio



Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Table 4.6.4.4 above, it is evident that the liquidity ratio is positive for leverage. The industrial normal for acceptable liquidity ratio is 1:1. However, in 2012 and 2013, the liquidity ratio was below the industrial average. Therefore, the acid-test ratio from the above table is higher than one from 2008 to 2011 but normal in 2014 and 2015. The resultant effect will enable companies in the State of Qatar to discharge their current obligations on time. Equally, from Fig. 4.6.4.4 above, the liquidity ratio of organizations with adjusted R^2 is 0.6757. Therefore, the positive relationship between asset liquidity and leverage of organizations follow the postulation of Williamson and Oliver (1988) and Pandey (2005).

As hypothesized, liquidity is positively related to capital structure decisions of organizations as represented by the listed companies in the State of Qatar.

4.8 Growth of an organization

Following Titman and Wessels (1988), the growth rate of sales is considered as the proxy for growth that is based on simple arithmetic growth rate. It is calculated as follows:

Growth rate: End Year = XY

Base Year 2008 = X

Difference between End Year and Base Year = Xi

$$\text{Difference/Base Year} = X_i/X$$

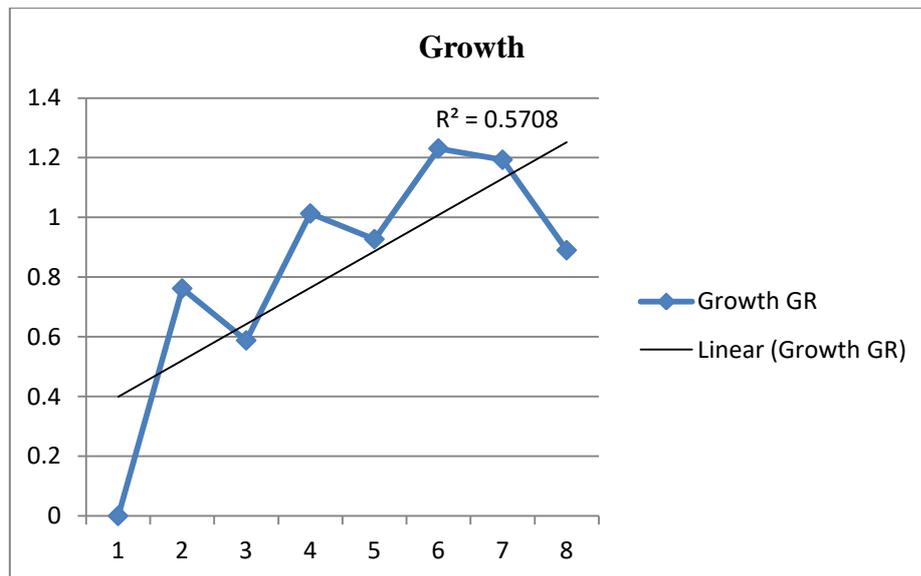
After that, the Table 4.8 below is established:

Table 4.8 Growth

Growth			
Year	Revenue QR'000	The difference from Base Yr.	Diff/Base Yr.
2008	20,146,547	0	0.000
2009	35,503,541	15,356,994	0.762
2010	31,988,498	11,841,951	0.588
2011	40,563,037	20,416,490	1.013
2012	38,826,364	18,679,817	0.927
2013	44,939,406	24,792,859	1.231
2014	44,186,351	24,039,804	1.193
2015	38,072,384	17,925,837	0.890
Total	294,226,128	133,053,752	6.604
STD	7,953,963	7,953,963	0.395

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Fig. 4.8 Growth



Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Table 4.8 above showed 2008 as the base year. In 2009, the growth rate was 76.2%; and in 2010, it was 58.8% as well as 89% in 2015. The growth rate increased considerably from 101.3% in 2011 to 123.1% in 2013 and dropped to 119.3% in 2014 for all the sectors of the Qatari organizations as presented by the published data on QSE from 2008 to 2015. Equally, in Fig. 4.8, it is evident that the growth rate of R^2 is 0.5708, which is 57%.

Therefore, as hypothesized, growth is positively related to the capital structure decisions of organizations.

4.9 Decomposition analysis

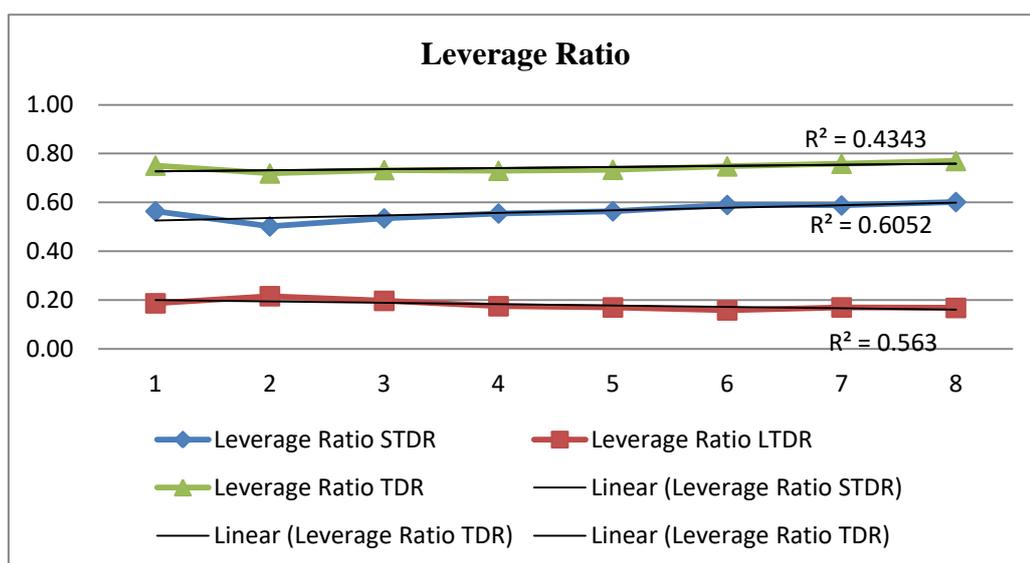
The proxy used in the leverage ratio for Qatari organizations as represented by the listed companies at the QSE from 2008 to 2015, is the total debt ratio decomposition analysis in which total debt ratio is decomposed to long-term debt ratio and short-term debt ratio based on the organizations eight years financial statement from 2008 to 2015.

Table 4.9

Decomposition analysis of total debt into long-term and short-term debt from 2008 to 2015 QR'000							
Year	Total Short-Term Debt Ratio (STDR) QR'000	Total Long Term Debt Ratio (LTDR) QR'000	Total Debt Ratio QR'000	Total Assets (TA) QR'000	STD as % of TA	LTD as % of TA	TD as % of TA
2008	319,794,977	105,947,621	425,742,598	567,220,428	0.56	0.19	0.75
2009	346,338,901	149,089,125	495,428,026	689,242,338	0.50	0.22	0.72
2010	454,137,263	167,262,302	621,399,565	848,265,050	0.54	0.20	0.73
2011	551,933,203	174,332,561	726,265,764	995,226,322	0.55	0.18	0.73
2012	611,958,311	184,256,205	796,214,516	1,084,578,043	0.56	0.17	0.73
2013	735,208,988	197,329,483	932,538,471	1,246,977,813	0.59	0.16	0.75
2014	799,548,144	231,690,510	1,031,238,654	1,359,389,217	0.59	0.17	0.76
2015	891,299,909	248,644,402	1,139,944,311	1,481,003,855	0.60	0.17	0.77
Total	4,710,219,696	1,458,552,209	6,168,771,905	8,271,903,066	4.50	1.44	5.94
Average	588,777,462	182,319,026	771,096,488	1,033,987,883	0.56	0.18	0.74
Min.	319,794,977	105,947,621	425,742,598	567,220,428	0.50	0.16	0.72
Max.	891,299,909	248,644,402	1,139,944,311	1,481,003,855	0.60	0.22	0.77
STD	209,944,609	45,186,869	253,574,014	322,124,678	0.03	0.02	0.02

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Fig. 4.9 Leverage ratio



Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Table 4.9 above, it is evident that the short-term debt ratio as a percentage of total assets in 2008 was 56%. In 2009, the short-term debt ratio was 50%, and slightly increased in 2010 54% as well as 55% in 2011. Thereafter, it increased from 56% in 2012 as well as 59% in 2013 and 2014; and 60% in 2015. Thus, the average ratio stood at 56% with a standard deviation of 3% of the total asset of the organization. Fig. 4.9 above showed R^2 at 60.52%.

Equally, the long-term debt ratio was 19% in 2008. It rose to 22% in 2009. It decreased to 20% in 2010 and 18% in 2011. In 2012, it further reduced to 17% and 16% in 2013. In 2014 and 2015, the long-term debt ratio was 17% respectively. The overall average ratio stood at 18% with a standard deviation of 22% of the total asset value of the organization. Fig. 4.9 above, the R^2 stood at 56.30%.

However, the total debt ratio is 75% in 2008, 72% in 2009, and 73% in 2010 to 2012 respectively. It increases from 75% in 2013 to 76% in 2014 and 77% in 2015. The average ratio stood at 74% with a standard deviation of 2% of the total asset of the organization. Fig. 4.9 above shows that R^2 stands at 56.30%.

As hypothesized, there is a positive relationship between the selected determinants and capital structure decisions as to the leverage ratio.

Chapter 5 Findings, conclusions, and recommendations

5.1 Introduction

This study aims at examining the effects of determinants of the capital structure of companies as denoted by listed companies in the State of Qatar. Its specific objectives are as follows:

- To review the determinants of capital structure as they affect the decision-making of the listed companies in the State of Qatar based on the (<http://www.mdpi.com/1660-4601/7/6/2526/pdf>) five organization-specific factors, which are asset tangibility, financial flexibility, liquidity, profitability, and organization size. Also, there are three macroeconomic factors, which are GDP growth, interest rate and inflation rate to measure the relationship between organization-specific factors and the leverage ratios.
- To examine which theories of the capital structure, explain the financing behavior of selected companies in the State of Qatar.
- “To examine whether there are differences in the mean leverage ratios” of the selected organizations of different industrial sectors in the State of Qatar (https://repository.asu.edu/attachments/114455/content/Kelly_asu_0010E_13189.pdf).

The researcher affirms that this is the first research study on the determinants of the capital structure of the State of Qatar at the Ph.D. level. Although, there was an article by Khaled and Nurwati (2012) on the determinants of the capital structure of Qatari listed companies covering 2004 to 2008 for 19 companies. However, Khaled and Nurwati (2012) study excluded the banking and financial sectors as well as the insurance industry data from their analysis. The current research study includes data of the banking and financial sector and insurance sectors in its analysis. It results in a divergent view on some of the findings.

The present study based its data analysis on 41 listed companies in the QSE from 2008 to 2015 covering eight years as listed below.

Table 5 Listed Companies on the Qatar Stock Exchange

S/No	Name of Company	Sector
1	Ahli Bank	Banking and Financial Institutions
2	Al Khaliji Bank	
3	Commercial Bank of Qatar (CBQ)	
4	Dlala Brokerage	
5	Doha Bank	
6	Islamic Financial Security Company	
7	Masraf Al Rayan	
8	Qatar Int'l Islamic Bank	
9	Qatar Islamic Bank	
10	Qatar Oman Investment Company	
11	QNB	
12	Salam Int'l Investment Ltd	
13	Aamal Company	Industry
14	Industries Qatar	
15	Mannai Corporation	
16	National Leasing Holding Company - Alijarah Holding	
17	Qatar Fuel (WOQOD)	
18	Qatar Industrial Manufacturing Company	
19	Qatar National Cement	
20	Qatar Navigation	
21	United Development Company	
22	Widam (Mawashi) Food Company	
23	Zad Holding Company	
24	Al Khaleeji Insurance	Insurance
25	Doha Insurance	
26	Qatar General Insurance & Re-Insurance Company	
27	Qatar Insurance Company	
28	Qatar Islamic Insurance Company	
29	Barwa Real Estate Company	Real Estate
30	Ezdan Real Estate	
31	Mazaya Qatar Real Estate Development Company	
32	Al Meera	Service and Consumer Goods
33	Gulf International Services	
34	Medicare Group	
35	Qatar Cinema & Film Distribution Company	
36	Qatar Electricity and Water Company	
37	Qatari German Co for Medical Devices	
38	Ooredoo	Telecommunication
39	Vodafone Qatar	
40	GWC	Transportation
41	Qatar Gas Transport Company	

Source: Financial Statements of Listed Companies at QSE 2008-2015

5.2 Findings

Asset structure

According to researchers, the asset structure of the organization plays a significant role in determining its capital structure. The extent to which the organization's assets are tangible should result in the organization to have a higher value at liquidation. Naveed et al (2010), Dong (2011), Najjar and Petrov (2011) stated that organizations that invested heavily in the tangible assets might have higher financial leverage. Also, when the organizations borrowed at lower interest rates and their loans are secured with such assets. Ahmed et al (2011) believed that the loan might be secured when durable assets are used as collateral security.

Empirical research suggested a positive relationship between asset structure and leverage for the organizations and a negative correlation between depreciation expenses as a percentage of total assets and financial leverage, according to the view of Nivorozhkin (2005), Miao (2005), and Dong (2011). Cassar et al (2003), Hall et al (2004), Jordan et al (1998) suggested a positive relationship asset structure and long-term debt, and a negative relationship between asset structure and short-term debt. Esperanca et al (2003) found a positive relationship between asset structure and both short-term and long-term debt. The tangibility of the fixed asset may assist organizations to obtain more long-term debt.

Nivorozhkin (2005) based the research on dynamic unrestricted capital structure model on examining the determinants of an organization's financial leverage in the Czech Republic and Bulgaria between 1993 and 1997. The tangibility of asset structure was considered as one of the variables for the study. The result indicated a negative relationship between asset tangibility and leverage. Bhaduri (2002) used three proxies: the ratio of land and building to total assets, the ratio of plant and equipment to total assets, and the ratio of inventory to total assets for asset tangibility in order to see the effect of asset class used on leverage. From the result of the study, Bhaduri believed that the organizations that finance long-term assets do not always use short-term loans.

Organization size

The trade-off theory proposes a positive relationship between organization size and debt. Titman and Wessels (1988) stated that small organizations tend to rely on low leverage as they face high costs when issuing long-term debt or equity, and also because of the risk factors underlying the small organization effect. From the lenders point of view, small organizations are risky, and they maintain

low business with the financial institutions, which makes them less preferable clients. Also, in some cases when they are preferred, they are charged higher interest rates. Large organizations are essential corporate clients and thus offered competitive rates.

Deesomsak et al (2004) argued that large organizations have lower agency costs of debt, smaller monitoring costs, more stable cash flows, and easier access to a credit market that increase their dependence on debt. Also, they stated higher bankruptcy risk, bankruptcy costs, and agency costs associated with the asset substitution might result in underinvestment problem and restriction on the length of maturity of debt for small organizations.

Ferri and Jones (1979) suggested that large organizations have easier access to the capital market than the small organizations as they are more credible in their financial decision making based on vast cash reserves or assets that could be sold off to raise capital. Small organizations are more prone to the economic downturn and a higher chance of liquidation when faced with financial distress as postulated by Ozkan (2000). Small organizations also have fewer resources available to them to get out of financial distress. Thus, they are expected to have less long-term debt but possibly more short-term debt than the larger organizations.

The reason for taking size as the organization-specific determinant is essential in some ways by using organization size as a natural log of sales and the explanatory variable is related to risk and bankruptcy costs, Bennett and Donnelly (1993). The size was used as one of the operational characteristics of an organization that has the potential to determine equity and debt choice. It is supported by many research studies such as Rajan and Zingales (1995), Titman and Wessels (1988), and Whited (1992).

Organization age

As an organization continues in business, it establishes itself as a going concern. Thereby increases its appetite to take more loans in its financing. Naveed et al (2011) believed that the age of an organization brings goodwill as an intangible asset in its capital structure model. As the organization continues to be in business for a more extended period, it increases its capacity to take on more debt. Thereby making age positively related to debt.

Peterson and Rajan (1994) found that older organizations should have higher debt ratios since they should be higher quality organizations that possess the four components of quality planning, assurance, control, and improvement. Hall et al (2004) agreed that age is positively related to long-term debt but negatively related to short-term debt. However, Esperanca et al (2003) found that age is negatively related to both long-term and short-term debt. Green et al (2002) found that age has a negative influence on the probability of incurring debt in their earlier capital equation, and no impact in the additional debt in their following capital equation as cited in Gatsi (2016).

Organization risk

Organizational risk level is one of the specific determinants of the capital structure according to Kale et al (1991). When an organization's operating risk becomes more volatile than its earnings stream, the chance of such organization defaulting and being exposed to bankruptcy and agency cost is very high. Johnson (1997) stated that organizations with volatile earnings growth might experience more situations in which cash flows are too low to service its debt.

Titman et al (1988) and Bradley et al (1984) showed an inverse relationship between risk and debt ratio. The results from Michaelas et al (1999) and Jordan et al (1998) showed a positive relationship. Equally, Esperanca et al (2003) found a positive relationship between organization risk and both long-term and short-term debt.

Liquidity

Ozkan (2001) stated that liquidity ratios might have a mixed impact on the capital structure decision of an organization. As organizations with higher liquidity ratios might use relatively higher debt ratio due to greater "ability to meet short-term obligations when they are due"(<https://renzoreffo20.wordpress.com/category/financial-analysis-of-exxonmobil/>). Organizations with liquid assets may use them to finance their investments that might hurt their leverage ratios.

The current asset over current liabilities ratio is used as a proxy for the liquidity of the organization's assets that judges the organization's ability to meet its short-term obligations. Therefore, the higher the ratio, the better the organization will be. Ozkan (2011) results showed a negative relationship between liquidity and gearing. For a better result, the quick ratio, i.e., the ratio of current assets less inventory to current liabilities was included. The ratio is different from liquidity ratio as it excludes inventory as in some industries, inventory might be turned into cash slowly as it is considered as least

liquid. Inventory may be considered as the least liquid asset that may suffer losses when liquidated on short notice according to Walton and Aerts (2006).

Other ratios used with liquidity ratio are the days of credit given and days of credit obtained by organizations. They are calculated as debtors/creditors divided by sales/purchases multiplied by 365, Walton and Aerts (2006). It showed the liquidity position of an organization by showing the available cash position. Thus, an organization with high credit given days means that its bank account would be credited after a long time that may impact the operational needs of the day-to-day running of the business.

From the analysis of the quantum of short-term and long-term funds as the percentage of the total assets of the listed companies in the State of Qatar from Table 5.1 reproduced below:

Table 5.1 Quantum of short-term and long-term funds as a percentage of total assets with Trend Analysis

Quantum of Short-Term and Long-Term Funds as Percentage of Total Assets with Trend Analysis							
Year	Short-Term Funds (SF) QR100M	Long-Term Funds (LF) QR100M	Total Assets (TA) QR100M	SF as % of TA	SF Trend	LF as % of TA	LF Trend
2008	3,197.95	2,204.87	5,672.20	56.38	100	38.87	100
2009	3,463.39	3,431.23	6,892.42	50.25	112.20	49.78	78.08
2010	4,541.37	3,938.11	8,482.65	53.54	105.30	46.43	83.72
2011	5,519.33	4,432.93	9,952.26	55.46	101.66	44.54	87.27
2012	6,119.58	4,726.20	10,845.78	56.42	99.93	43.58	89.19
2013	7,352.09	5,117.69	12,469.78	58.96	95.62	41.04	94.71
2014	7,995.48	5,598.41	13,593.89	58.82	95.85	41.18	94.39
2015	8,913.00	5,897.04	14,810.04	60.18	93.69	39.82	97.61
Total	47,102.20	35,346.49	82,719.03	56.94	99.02	42.73	90.97
Average	5,887.77	4,418.31	10,339.88	56.94	99.02	42.73	90.97

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

One could deduce that in 2008, the percentage of the short-term funds to total assets was 56.38% that translates to QAR 320 billion of the short-term fund from QAR 567 billion of the total assets. The short-term funding of the total assets rose to 60.18% in 2015, which translates to QAR 891 billion against QAR 1.481 trillion of total assets. The mean (average) short-term funding was 56.94% with

QAR 589 billion as against total assets of QAR 1.034 trillion. Therefore, Qatari listed companies rely more on the short-term financing of their property.

In 2008, the percentage of the long-term fund to total assets was 38.87%, which translates to QAR 220 billion as against the total assets of QAR 567 billion. The long-term funding of total assets marginally rose to 39.82% in 2015, which translates to QAR 590 billion as against total assets of QAR 1.481 trillion. However, the mean (average) long-term funding was 42.73% of the total assets, which translates to QAR 442 billion to QAR 1.034 trillion of the total assets. Thus, Qatari listed companies utilize lower long-term financing in their asset structure.

Also, the trend analysis of the SF (short-term fund) increased from 100% in 2008 (the base year) to 112.20% in 2009 and a decrease in trend in 2010 to 105.30% while in 2011 it further decreased to 101.66%. Furthermore, from 2012 to 2015, it decreased from 99.93%, 95.62 %, 95.85%, and 93.69% respectively. The average trend for the eight years was 99.02%.

The long-term fund trend analysis shows a decrease from the base year of 2008 to 78.08 percentage point in 2009 and 83.72% in 2010. After that, there is a further decrease in 2011 by 87.27%; 2012 by 89.19%; 2013 by 94.71%; 2014 by 94.39%; and in 2015 by 97.61%. The average percentage of the trend analysis stood at 90.97%.

To understand the quantum analysis of short-term funds and long-term funds further is the use of a debt-asset ratio in acquiring assets for organizations. Table 5.2 reproduced as follows:

Table 5.2 Total Debts – Total Assets Ratio

Total Debt Ratio (TDR)			
Year	Total Debt QR100M	Total Assets (TA) QR100M	TD/TA
2008	4,257.43	5,672.20	0.75:1
2009	4,954.28	6,892.42	0.72:1
2010	6,214.00	8,482.65	0.73:1
2011	7,262.66	9,952.26	0.73:1
2012	7,962.15	10,845.78	0.73:1
2013	9,325.38	12,469.78	0.75:1
2014	10,312.39	13,593.89	0.76:1
2015	11,399.44	14,810.04	0.77:1
Total	61,687.72	82,719.03	0.75
Average	7,710.96	10,339.88	0.75
STD	2,535.74	3,221.25	0.017

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

The study uses the book-value measurement of leverage in ascertaining the total debt-total asset ratio as was employed by Khaled and Nurwati (2012), which follows the idea of Shad and Khan (2007), “that book value-based measurement of leverage is more relevant than market value based measurement of leverage. In Shah and Khan (2007), the primary cost of borrowing is the increased chance of bankruptcy, and if a company falls in financial distress and goes into bankruptcy, then the relevant value of the debt is the book value of debt”. Therefore, the total debt to total asset ratio for the research period from 2008 to 2015 was 0.75 times. While total debts value was QAR 6.168 trillion, the total asset value was QAR 8.272 trillion. The average debt value was QAR 771 billion to total assets QAR 1.034 trillion. However, the total debt to total asset ratio rose from 0.75 in 2008 to 0.77 times in 2015 with value QAR 426 billion in 2008 of total debt and QAR 1.481 trillion of a total asset in 2015.

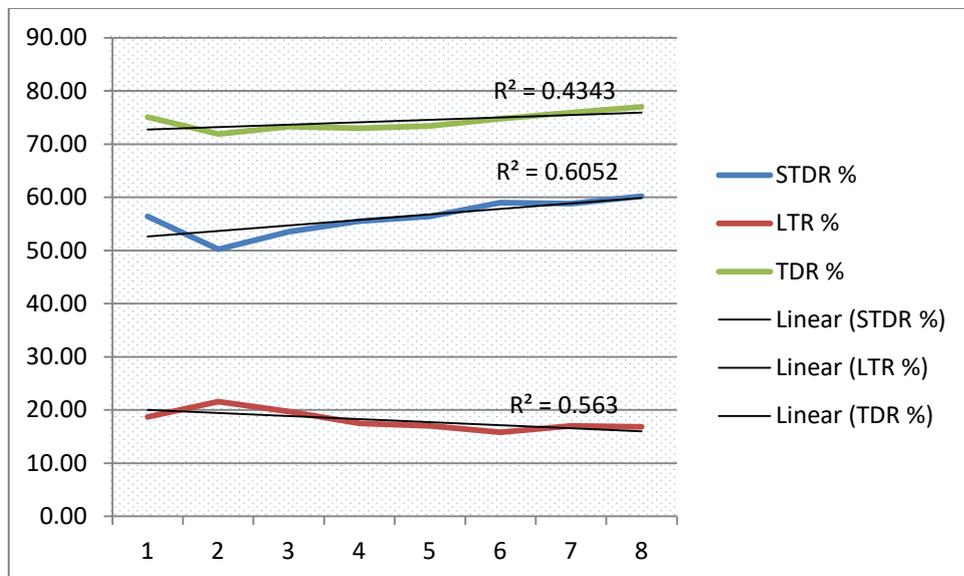
Under decomposition analysis of leverage ratio into TD, SDT and LTD as in Table 5.3 below, it is evident that the total debt was 75.10% of the total fund injected in the capital structure of companies in 2008. The total debt went down to 71.90% in 2009 and remained a little above 73% from 2010 to 2012. It rose to 74.80% in 2013 and 75.90% in 2014 as well as in 2015 it rose to 77%. However, the R^2 of the TD ratio stands at 0.4343; SDT ratio stands at 0.6052 and LTD ratio stands at 0.563 as shown in Fig. 5.1 below.

Table 5.3

Leverage Ratio (LR)			
Year	STDR %	LTR %	TDR %
2008	56.40	18.70	75.10
2009	50.20	21.60	71.90
2010	53.50	19.70	73.30
2011	55.50	17.50	73.00
2012	56.40	17.00	73.40
2013	59.00	15.80	74.80
2014	58.80	17.00	75.90
2015	60.20	16.80	77.00

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Fig. 5.1 Leverage ratio



Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

The above shows the evolution of capital structure in the State of Qatar regarding leverage ratio via the measurement of the short-term debt ratio, long-term debt ratio and the total debt ratio under decomposition analysis from the above table and figure.

5.3 Conclusion

The conclusion of the study based on the analysis of the Financial Statements data of 41 companies listed on QSE retrieved covering eight years from 2008 to 2015. The QSE Financial Statements of the following sectors of the economy are considered:

- Banks and financial institutions
- Industrial sector
- Insurance sector
- Real estate sector
- Service and consumer goods sector
- Telecommunication sector
- Transport sector

The result is therefore analyzed based on the short-term fund, long-term fund and quantum of the short-term fund and long-term fund trend analysis. Also, the ratio analysis of non-tax shield, asset structure, profitability, and liquidity ratio was analyzed. Finally, the proxy of a decomposition analysis of total debt ratio into long-term debt and the short-term debt ratio are used.

Firstly, under the short-term fund trend analysis, there was a positive relationship between the capital structure decisions taken by the companies in the State of Qatar. Based on the analysis of data as shown in the Table 4.6.1 as follows as there is an increase in the trend in 2009 to 112.20% from the base year of 2008, a decrease in trend in 2010 to 105.30% while in 2011 it further decreased to 101.66%. Furthermore, from 2012 to 2015, it decreased from 99.93%, 95.62 %, 95.85%, and 93.69% respectively. The average percentage of the trend analysis for the eight years was 99.02%.

The percentage of short-term funds to the total assets decreased to 50.25% in 2009 from 56.38% in 2008 (base year). It translated to QR 346,338,901 of short-term funds with total assets of QR 689,242,338. The short-term fund percentage of total assets rose to 53.54% in 2010 compared with the 2009 figure. It started rising from 2011 with percentage of 55.46%; 56.42% in 2012; 58.96% in 2013; 58.82% in 2014; and 60.18% in 2015. The average percentage of the total short-term fund to that of the total assets stood at 56.94%. The total average of short-term funds was QR 588,777,462 per thousand to total assets of QR 1,033,987,883 per thousand.

Secondly, under the long-term fund trend analysis, there was a positive relationship between the capital structure decisions taken by the companies in the State of Qatar. It is based on the analysis of the data shown in the Table 4.6.2 with the components of the long-term funds as the equity, non-current loans and borrowings, and the employees' end of service benefits and others. The long-term

fund trend analysis showed a decrease from the base year of 2008 to 78.08 percentage point in 2009 and 83.72% in 2010. After that, there is a further decrease in 2011 by 87.27%; 2012 by 89.19%; 2013 by 94.71%; 2014 by 94.39%; and in 2015 by 97.61%. The average percentage of the trend analysis stood at 90.97%.

The percentage of the total long-term funds (LF) to total assets (TA) in 2008 considered as the base year was 38.87% that translated to QR 220,487,210 of LF and QR 567,220,428 of TA per thousand. From 2008 to 2015, the average LF stood at QR 441,831,104; and that of the TA was QR 1,033,987,883 per thousand.

The employees' end of service is a benefit mandated by the Qatari Labour Law paid to employees at the end of their employment contract with the Company. Hence, companies accrue for such payment on their Balance Sheets.

Thirdly, under the quantum of short-term fund and long-term fund trend analysis as a percentage of total assets, there was a positive relationship between the capital structure decisions taken by the companies in the State of Qatar. Based on the analysis of data as shown in Table 4.6.3 with the constituents of the quantum of short-term and long-term funds as the combination of the constituents of the long-term fund. They are equity capital, loans, and employees' end of service benefits, e.t.c.; and the total constituents of short-term funds such as trade payables and accruals, short-term loans and borrowings, and retention payable, e.t.c.

From Table 4.6.3 long-term funds have an average percentage of 14.34% of the total asset structure, and short-term funds have an average percentage of 44.30%. Therefore, companies in the State of Qatar as represented by the listed organizations' financial statements as obtainable on the Qatar Stock Exchange fund their asset structure through short-term funds rather than long-term funds.

Fourthly, under non-tax shield ratio analysis, which followed Titman and Wessels (1988) and Ozkan (2001) where the ratio of annual depreciation and amortization to total assets taken as a proxy for the method of calculation. From Table 4.7.2, the percentage of non-tax shield utilization of assets is 0.12% from 2008 to 2015 standard deviation and not very significant to the leverage. Also, NTDS from Fig. 4.7.2 the R^2 stood at 0.7414 and not significant to the leverage. Therefore, non-debt tax shield is positively related to capital structure decisions of organizations as represented by the listed

companies in the State of Qatar. However, it followed Bradley et al (1984) positive relationship between non-debt tax shields and leverage postulation.

Fifthly, under the asset structure that comprised the plants and machinery, land and buildings, motor vehicles, goodwill, trademarks, copyrights, software license, and the inventory. As in Titman and Wessels (1988), Gaud et al (2005) where fixed assets plus inventory to total assets as a proxy to collateral assets used. Therefore, Table 4.7.3 showed the leverage ratio stood at 38% in 2008; 43% in 2009; 42% in 2010 and 2014; and 40% in 2015. After that, it increased to 45% in 2011 and 46% in 2012 through 2013 respectively. In Fig. 4.7.4, the curve slopes unevenly from 38% to 43%, 42% and after that increases to 45% and down to 40% with R^2 0.0341.

Trade-off theory states that increasing debt capital increases the debt-tax shield but lowers level of leverage, the bankruptcy cost; agency costs and financial distress cost may not exist. Therefore, the empirical evidence is consistent with the trade-off theory that signifies the notion of 'optimal capital structure.' However, the asset structure is favorable to the capital structure decisions of organizations as represented by the listed companies in the State of Qatar.

In fact, from the literature review, the asset structure or tangibility of Malaysia, Philippines, and Indonesia are positively related to total debt ratio of the selected countries by the static trade-off theory. Thus, the postulation supported by Myers (1977), Williamson and Oliver (1988), March (1982), Friend and Lang (1988), Um (2001), Pandey (2002), Wald (1999), and Wiwattanakantang (1999).

Sixth, under the profitability ratio in which the proxy used, was earning before interest, tax, depreciation, and amortization (EBITDA) to total assets. It found from Table 4.7.4 that organizations' profitability ranges from 6% in 2008 to 7% in 2009, 6% in 2010 through 2011 and 5% in 2012 through 2014 but down to 4% in 2015. The average ratio is 6%. In Fig. 4.7.4, the profitability of the organization is with adjusted R^2 of 0.672. The profitability measures that belong to the less levered organizations are lower than that of moderately levered organizations as that of highly levered organizations are higher. Thus, this follows the idea of Titman and Wessels (1988), Gaud et al (2005) postulations.

The profitability ratio is positively related to capital structure decisions of organizations as represented by the listed companies in the State of Qatar. The result follows that of Bufernaet al

(2005) report a positive relationship between profitability and both long-term debt and short-term debt ratios, cited by Khaled and Nurwati (2012). Also, in Jensen et al (1992), the analysis showed a positive relationship.

Seventh, under organization liquidity ratio, which followed the use of current assets to current liabilities proxy as used by Ozkan (2001), in Table 4.7.5, it was evident that the liquidity ratio is positive to leverage. The standard industrial ratio for acceptable liquidity ratio is 1:1. In 2012 and 2013, the liquidity ratio was below the industrial average. The acid-test ratio from the above table is higher than one from 2008 to 2011 but standard in 2014 and 2015. Hence, companies in the State of Qatar will be able to discharge their current obligations on time. Equally, from Fig. 4.7.5 the liquidity ratio of organizations with adjusted R^2 was 0.6757. The positive relationship between asset liquidity and leverage of organizations follow the postulation of Williamson and Oliver (1988) and Pandey (2005).

Eighth, under the growth of the organization, following Titman and Wessels (1988), the growth rate of sales was considered as the proxy for growth that based on pure arithmetic growth rate. From Table 4.8 2008 is considered the base year. In 2009, the growth rate is 76%; 59% in 2010 and 89% in 2015. However, the growth rate increases over 101% in 2011; 123% in 2013 and 119% in 2014 respectively for all sectors of the Qatari organizations as represented by the published data of the listed companies at the QSE from 2008 to 2015. Equally, from Fig. 4.8, it is evident that the growth rate R^2 is 0.5708, which is 57%.

The growth of organizations was positively related to capital structure decisions of the Qatari listed companies.

Ninth, under decomposition analysis whereby total debt ratio was decomposed to long-term ratio and short-term ratio respectively of the financial statements Qatari listed companies on QSE from 2008 to 2015 as depicted in Table 4.9 and Fig. 4.9. It was evident that the short-term debt ratio as a percentage of total assets in 2008 was 56%; in 2009 it was 50%; in 2010 it was 54%, and in 2011 it was 55%. In 2012 it was 56%; 59% in 2013 and 2014 while in 2015 it was 60%. Thus, the average was 56% and a standard deviation of 3% of the total asset of the organization. From Fig. 4.9, the R^2 stands at 60.52%.

Equally, the long-term debt ratio was 19% in 2008, 22% in 2009, 20% in 2010 and 18% in 2011, 17% in 2012, 16% in 2013, in 2014 and 2015 it was 17% respectively. The average ratio was 18% and 22% standard deviation of the total asset of the organization. From Fig. 4.9, the R^2 stood at 56.30%.

The total debt ratio was 75% in 2008, 72% in 2009, and 73% in 2010 to 2012 respectively. It increased from 75% in 2013 to 76% in 2014 and 77% in 2015. The average ratio was 74% and a standard deviation of 2% to the total asset of the organization. From Fig. 4.9, the R^2 stood at 56.30%.

There is a relationship between the selected determinants and capital structure decisions as the leverage ratio is favorable.

It concludes according to Chuang (2004) that a sound corporate governance mechanism helps an organization avoid and lower agency cost while improving organizational performance and building a mechanism that ensures it is managed and monitored in its best interest.

From the literature review and the research findings, it should be noted that Qatari companies' choice of capital structure follows the same way as the earlier proven determinants of the capital structure of an organization with a positive variable measure of trade-off theory as well as pecking order theory.

The study fulfilled the research study of the factors or determinants of the capital structure of Qatari organizations' choice of a determinant for their capital structure.

5.4 Recommendation for further research

From the perspective of this study, it recommends that a further research study should be carried out by other researchers that may include both listed companies on Qatar Stock Exchange (QSE) and non-listed or private companies for a fuller understanding of the determinants of capital structure as applicable to them in the State of Qatar. That could positively affect the financial decision-making processes in those companies.

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Appendix A:1 Listed Qatari Banks & Financial Institutions

Consolidated Statement of Financial Position 2008 - 2015

	2,008 QR'000	2,009 QR'000	2,010 QR'000	2,011 QR'000	2,012 QR'000	2,013 QR'000	2,014 QR'000	2,015 QR'000	Grand Total QR'000
ASSETS									
Non-current assets									
Property, plant and equipment	3,617,629	3,685,917	4,144,456	4,290,634	4,344,948	5,122,625	6,013,740	6,244,152	37,464,101
Other Investments	1,691,696	1,203,429	1,114,862	1,206,119	13,355,758	14,851,841	15,954,396	18,840,086	68,218,187
Other assets	4,924,212	5,870,347	6,471,335	6,349,960	8,501,590	14,380,635	12,879,439	14,554,100	73,931,618
Investment securities	16,589,875	33,080,127	34,071,386	62,115,248	79,225,544	114,785,936	99,203,248	118,679,540	557,750,904
Investment in associates	8,797,069	9,020,341	10,996,488	11,443,926	12,688,721	12,761,862	14,307,505	14,416,293	94,432,205
Retention receivables	39,520	32,426	29,823	41,102	50,936	52,409	63,840	89,935	399,991
Loans to an associate company	2,852	2,852	5,572	78,808	18,062	18,062	19,339	5,754	151,301
Investment property held for leasing	11,397	20,578	74,764	236,279	0	0	0	0	343,018
Investment property held for trading	423,735	436,005	565,004	1,174,718	520,058	590,769	354,688	262,414	4,327,391
Financial investments	11,472,692	13,342,260	22,307,188	52,475,809	86,133,897	91,254,666	111,376,908	119,771,962	508,135,382
Investment properties	817,931	851,389	2,598,783	3,963,020	4,267,325	3,881,780	3,326,217	3,067,038	22,773,483
Intangible assets & goodwill	519,168	494,928	449,308	513,182	876,983	7,238,626	7,012,044	6,716,435	23,820,674
Total Non-current assets	48,907,776	68,040,599	82,828,969	143,888,805	209,983,822	264,939,211	270,511,364	302,647,709	1,391,748,255
Current assets									
Trading/inventory properties	333,069	263,576	263,235	353,506	539,490	416,344	472,537	581,145	3,222,902
Excess of revenue over billings	129,339	116,320	153,003	202,989	132,098	132,976	483,808	455,518	1,806,051
Retention receivables	39,216	57,870	66,643	85,504	69,213	71,259	64,558	72,298	526,561
Financial/Investment assets at fair value	6,139	7,505	30,591	15,079	3,889	27,853	51,417	4,936	147,409
Dues from banks and other financial institutions	116,120,441	125,031,560	99,255,313	137,946,455	72,297,552	55,708,858	80,711,200	64,214,516	751,285,895
Loans and advances and financing activities	156,829,481	161,315,139	210,405,147	289,729,676	359,350,874	456,693,392	507,414,602	578,028,083	2,719,766,394
Accounts receivable and prepayments	385,431	358,847	283,414	305,245	345,712	371,338	454,477	499,841	3,004,305
Other assets	93,017	88,521	99,255	165,449	225,344	396,162	191,611	159,662	1,419,021
Due from customers/related parties	463,380	339,298	549,919	436,684	283,416	511,506	937,488	757,341	4,279,032
Balances and investments with banks and others	9,774,741	17,023,409	22,568,122	17,376,989	45,764,488	51,474,133	63,284,303	89,598,179	316,864,364

Bank balances and cash	16,939,800	29,469,646	62,441,309	23,051,924	37,505,958	44,731,659	56,957,859	54,175,316	325,273,471
Total Current assets	301,114,054	334,071,691	396,115,951	469,669,500	516,518,034	610,535,480	711,023,860	788,546,835	4,127,595,405
TOTAL ASSETS	350,021,830	402,112,290	478,944,920	613,558,305	726,501,856	875,474,691	981,535,224	1,091,194,544	5,519,343,660
EQUITY AND LIABILITIES									
Equity									
Share capital	19,184,174	20,297,657	22,466,570	28,164,243	29,474,251	30,022,996	30,899,113	31,423,407	211,932,411
Advance against share capital	368,611	2,292,504	0	0	0	0	0	0	2,661,115
Legal reserve	21,010,097	24,738,165	27,045,358	44,633,623	47,056,124	48,575,786	49,113,503	49,673,540	311,846,196
General reserve	574,152	693,071	693,071	693,071	108,435	108,435	108,435	108,435	3,087,105
Fair value reserve	(991,800)	758,254	1,324,930	1,103,818	1,120,545	1,528,313	756,996	65,100	5,666,156
Risk reserve	2,875,110	2,994,556	2,999,630	4,005,110	5,783,933	8,213,653	10,265,950	13,055,116	50,193,058
Foreign currency translation reserve	(38,547)	22,948	(49,043)	(49,688)	(661,240)	(1,214,558)	(1,795,705)	(2,931,519)	(6,717,352)
Other reserves	2,128,902	2,206,738	2,243,149	2,186,704	2,800,079	2,919,681	3,147,080	2,733,862	20,366,195
Other equity	0	0	0	0	0	(512,761)	(723,721)	(651,052)	(1,887,534)
Treasury shares	(106)	(106)	(106)	(106)	0	0	0	0	(424)
Property revaluation surplus	4,263	747	499	252	4	0	0	0	5,765
Proposed dividends	6,979,851	5,251,785	8,871,022	6,500,930	2,463,800	2,808,695	2,737,000	2,518,054	38,131,137
Proposed bonus shares	660,462	903,362	1,238,858	1,160,509	0	0	0	0	3,963,191
Proposed transfer to statutory reserve	821,239	903,362	1,174,371	636,118	0	0	0	0	3,535,090
Hedge reserve	(97,251)	(52,689)	(44,039)	(23,576)	0	0	0	0	(217,555)
Share-based payment reserve	0	0	0	0	0	0	0	6,216	6,216
Retained earnings/Losses	1,905,651	4,310,916	4,348,225	9,104,385	18,868,225	22,823,854	28,324,742	32,896,028	122,582,026
Equity attributable to the equity holders of the parent	55,384,808	65,321,270	72,312,495	98,115,393	107,014,156	115,274,094	122,833,393	128,897,187	765,152,796
Sukuk eligible as additional capital	0	0	0	0	0	0	0	2,000,000	2,000,000
Instrument eligible for additional capital	0	0	0	0	0	4,000,000	4,000,000	6,000,000	14,000,000
Non-controlling interests	7,310	194,207	764,649	2,519,766	2,818,398	3,669,558	3,887,644	3,775,824	17,637,356
Total equity	55,392,118	65,515,477	73,077,144	100,635,159	109,832,554	122,943,652	130,721,037	140,673,011	798,790,152
Non-current liabilities									
Unrestricted investment account holders	38,070,654	56,204,539	58,561,090	74,884,829	90,743,897	101,729,300	129,594,925	146,844,125	696,633,359
Minority interest	225,910	193,722	0	0	0	0	0	0	419,632

Retention payables	14,750	10,901	5,329	47,828	47,690	13,002	15,636	13,603	168,739
Loans & borrowings	257,058	227,569	289,855	944,304	1,428,779	1,512,977	1,314,087	1,324,256	7,298,885
Notes payable	2,690	37,661	7,319	4,777	932	322	0	176	53,877
Other liabilities	4,922	3,720	338	17,420	16,753	9,794	8,561	8,459	69,967
Employees' end of service benefits	24,237	30,598	35,051	42,876	51,766	60,348	69,544	74,494	388,914
Total non-current liabilities	38,600,221	56,708,710	58,898,982	75,942,034	92,289,817	103,325,743	131,002,753	148,265,113	705,033,373
Current liabilities									
Due to banks, Qatar Exchange and related parties	54,058,550	54,256,059	40,007,942	79,785,048	70,488,865	61,234,176	81,296,468	104,283,446	545,410,554
Short-term loans	3,932	0	0	0	0	0	0	0	3,932
Islamic financing facility	0	0	0	0	112,387	0	0	0	112,387
Sukuk financing instruments	0	0	2,713,290	2,716,691	7,955,966	7,986,159	7,994,152	7,996,571	37,362,829
Excess of billings over revenues	48,190	36,280	39,732	62,615	65,651	54,724	49,123	77,690	434,005
Customers' deposit	169,980,027	190,275,392	260,438,846	311,736,851	394,645,738	502,566,336	539,857,755	596,736,369	2,966,237,314
Subordinated debt	1,541,634	1,138,013	1,070,109	1,068,589	302,018	307,327	292,656	281,453	6,001,799
Borrowing under repurchase agreements	781,226	367,936	907,285	1,150,810	3,471,515	7,345,717	9,339,678	12,074,417	35,438,584
Unrestricted investment accounts	5,736,180	5,256,232	3,843,480	608,040	0	0	0	0	15,443,932
Certificate of deposits	0	0	0	0	1,458,624	1,067,695	2,392,800	1,549,900	6,469,019
Advance from customers	15,575	9,320	20,230	8,444	75,424	128,385	130,565	142,521	530,464
Retention payables	12,980	27,475	22,460	53,677	13,562	15,984	19,688	19,657	185,483
Accounts/Trade and other payables	201,926	192,726	179,144	266,835	278,106	318,323	313,783	305,088	2,055,931
Notes payables	50,012	37,225	31,985	16,989	8,700	7,443	7,850	3,802	164,006
Liabilities of subsidiary held for sale	0	0	0	195,282	205,182	5,267	18,688	3,399	427,818
Other borrowings and liabilities	15,035,405	16,369,931	24,164,022	26,394,619	21,295,911	32,275,269	42,332,558	49,413,875	227,281,590
Bank overdrafts	200,349	131,305	36,107	42,265	49,345	28,647	63,353	79,411	630,782
Debt securities issued	8,363,507	12,010,210	13,177,862	12,874,359	23,952,490	35,863,843	35,702,318	29,288,822	171,233,411
Total current liabilities	256,029,493	280,108,104	346,652,494	436,981,114	524,379,484	649,205,295	719,811,435	802,256,421	4,015,423,840
Total Liabilities	294,629,714	336,816,814	405,551,476	512,923,148	616,669,301	752,531,038	850,814,188	950,521,534	4,720,457,213
TOTAL EQUITY AND LIABILITIES	350,021,832	402,332,291	478,628,620	613,558,307	726,501,855	875,474,690	981,535,225	1,091,194,545	5,519,247,365

Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.2: Listed Qatari Industries

Consolidated Statement of Financial Position 2008 - 2015

	2008 QR'000	2009 QR'000	2010 QR'000	2011 QR'000	2012 QR'000	2013 QR'000	2014 QR'000	2015 QR'000	Grand Total QR'000
ASSETS									
Non-current assets									
Property, plant and equipment	13,845,937	16,267,757	19,450,310	21,831,694	14,755,509	15,237,552	16,873,997	18,961,100	137,223,856
Retention and other non-current assets	1,280	1,125	2,120	3,379	773	676	43,619	112,292	165,264
Advances for capital nature assets	48,670	16,352	15,886	20,869	27,850	40,986	355,854	81,484	607,951
Financial investments	30,473	55,452	47,505	97,070	104,125	81,767	124,302	56,803	597,497
Available for sale investments	6,135,103	6,045,691	4,795,326	5,446,324	4,757,461	6,243,401	7,307,700	6,875,748	47,606,754
Investment property	5,071,014	6,541,136	7,582,380	13,792,317	14,558,901	15,925,535	17,004,750	17,959,108	98,435,141
Investment in associates/Joint ventures	2,381,121	2,441,211	6,761,511	7,721,931	27,156,264	26,995,366	28,763,537	27,992,305	130,213,246
Projects/Constructions in progress	5,219,387	7,666,152	10,701,893	11,938,280	30,552	30,560	22,596	21,040	35,630,460
Equity accounted investees	0	0	0	0	126,670	133,107	150,305	192,842	602,924
Due from related parties	60,369	68,369	143,935	146,801	223,187	244,092	99,177	151,214	1,137,144
Deferred dry docking costs	14,096	11,901	0	0	0	0	0	0	25,997
Note receivable	349	622	159	1,821	1,914	2,847	0	0	7,712
Loans to LNG and LPG companies	0	0	382,244	338,340	844,798	534,932	425,317	235,513	2,761,144
Other financial assets	0	0	0	0	158,543	195,440	194,787	163,189	711,959
Catalysts	118,981	133,697	127,039	106,886	48,982	41,538	37,310	32,274	646,707
Accounts receivable and prepayments	18,403	10,371	8,114	12,906	76,374	32,535	56,062	181,617	396,382
Intangible assets & goodwill	130,862	159,652	492,593	520,979	1,438,094	1,443,164	1,380,419	1,572,037	7,137,800
Total Non-current assets	33,076,045	39,419,488	50,511,015	61,979,597	64,309,997	67,183,498	72,839,732	74,588,566	463,907,938
Current assets									
Inventories	4,181,997	3,342,773	4,187,583	7,071,015	7,815,951	8,793,430	7,824,323	6,897,686	50,114,758
Excess of revenue over billings	0	0	0	4,385	5,173	6,302	6,350	28,637	50,847
Due from State of Qatar	29,164	7,736	14,917	19,560	18,999	11,512	81,329	86,934	270,151
Accounts/Trade and other receivables	5,094,371	5,403,376	6,647,136	9,262,378	8,023,415	9,188,367	8,772,535	8,434,744	60,826,322
Due from customers/related parties	580,715	580,487	902,320	885,749	318,554	303,075	446,396	936,005	4,953,301

Assets held for sale	125,051	221,525	246,646	7,141	10,682	1,327,708	16,535	0	1,955,288
Investment in commodities and precious metals	0	0	0	0	0	0	91,242	205,317	296,559
Biological assets	0	0	6,256	3,117	1,541	111	1,779	1,562	14,366
Advance to suppliers	47,715	74,492	47,324	46,414	0	0	0	0	215,945
Prepayment and other debit balances	98,562	90,492	180,158	221,976	220,953	156,632	363,813	496,074	1,828,660
Work in progress	2,279,805	2,764,473	3,941,082	2,316,832	1,540,874	0	0	0	12,843,066
Finance assets at fair value	59,680	61,578	200,321	202,457	496,444	583,807	627,666	502,724	2,734,677
Other financial assets	120,755	2,277	0	0	0	0	0	0	123,032
Bank balances and cash	13,497,784	9,900,254	10,544,718	12,798,559	15,385,831	17,105,691	18,494,790	19,865,049	117,592,676
Total Current assets	26,115,599	22,449,463	26,918,461	32,839,583	33,838,417	37,476,635	36,726,758	37,454,732	253,819,648
TOTAL ASSETS	59,191,644	61,868,951	77,429,476	94,819,180	98,148,414	104,660,133	109,566,490	112,043,298	717,727,586
EQUITY AND LIABILITIES									
Equity									
Share capital	12,624,915	12,908,865	14,486,838	15,489,631	18,131,063	19,366,000	19,893,360	20,242,460	133,143,132
Development reserve	0	0	0	0	406,589	406,589	406,589	406,589	1,626,356
Legal reserve	3,103,271	3,339,710	7,076,099	8,180,458	9,493,631	9,584,086	9,746,115	9,912,600	60,435,970
General reserve	734,253	734,286	723,957	697,591	697,591	697,591	697,591	697,591	5,680,451
Fair value reserve	2,773,137	2,896,931	3,619,343	3,840,954	3,475,236	4,503,179	5,169,394	4,347,533	30,625,707
Acquisition reserve	0	0	0	0	0	(283,820)	(588,058)	(588,058)	(1,459,936)
Foreign currency translation reserve	0	(3,209)	(5,058)	(7,077)	(17,492)	(21,078)	(25,577)	(30,843)	(110,334)
Other reserves	744,122	744,985	923,292	2,007,378	1,581,334	1,612,627	1,680,128	1,594,006	10,887,872
Treasury shares	0	0	0	0	(2,076)	(75,592)	(75,592)	(75,592)	(228,852)
Revaluation reserve	277,616	277,616	277,616	277,616	202,129	202,129	202,129	202,129	1,918,980
Proposed dividends	5,568,603	3,568,775	723,380	704,471	315,651	325,126	273,715	228,096	11,707,817
Proposed bonus shares	164,430	170,700	47,520	84,641	84,641	84,641	0	0	636,573
Hedge reserve	(634,665)	(307,165)	(727,501)	(1,552,683)	(1,494,800)	(577,035)	(626,243)	(431,129)	(6,351,221)
Retained earnings/Losses	12,349,818	16,170,062	23,706,879	33,093,998	39,419,825	43,295,509	44,243,369	45,485,799	257,765,259
Equity attributable to the equity holders of the parent	37,705,500	40,501,556	50,852,365	62,816,978	72,293,322	79,119,952	80,996,920	81,991,181	506,277,774
Non-controlling interests	696,861	763,229	1,042,122	1,610,676	1,746,869	1,149,555	915,173	1,027,096	8,951,581
Total equity	38,402,361	41,264,785	51,894,487	64,427,654	74,040,191	80,269,507	81,912,093	83,018,277	515,229,355

Non-current liabilities									
Retention payables	276,498	396,720	331,355	393,663	232,504	122,409	111,063	100,139	1,964,351
Loans/Advances & borrowings	7,494,566	10,619,699	11,833,686	11,953,517	9,083,528	8,437,284	9,323,213	9,007,626	77,753,119
Notes payable	18,329	19,665	12,075	7,301	1,482	1,798	1,704	373	62,727
Other liabilities	608,326	275,506	566,066	553,400	171,395	129,416	47,592	47,592	2,399,293
Employees' end of service benefits	276,625	313,047	375,164	438,422	389,324	450,121	512,083	572,823	3,327,609
Total non-current liabilities	8,674,344	11,624,637	13,118,346	13,346,303	9,878,233	9,141,028	9,995,655	9,728,553	85,507,099
Current liabilities									
Accounts/Trade and other payables	5,306,102	4,300,591	4,708,076	7,293,328	8,377,801	9,914,123	10,341,894	9,263,230	59,505,145
Loans and borrowings	3,190,392	840,980	3,371,830	4,938,608	4,948,047	4,310,144	5,854,911	8,478,116	35,933,028
Advances from customers	48,133	104,042	243,622	465,093	0	0	0	0	860,890
Accruals and other credit balances	159,710	157,969	177,526	166,502	0	0	0	0	661,707
Bank overdrafts	657,379	400,999	65,829	258,426	195,107	393,808	352,514	293,033	2,617,095
Liabilities classified as held for sale	0	771	786	0	0	21,072	0	0	22,629
Due to related parties	2,232,730	1,702,402	3,371,867	3,425,945	233,834	148,305	180,359	584,121	11,879,563
Other financial liabilities	171,278	1,086,504	32,687	27,485	8,899	3,899	216,572	75,944	1,623,268
Islamic financing under Wakala arrangements	222,595	217,625	188,204	241,599	267,588	187,737	354,607	247,341	1,927,296
Deferred revenue	0	0	0	0	0	0	198,547	180,909	379,456
Retention payables	126,619	167,645	256,216	228,237	198,713	270,509	159,336	173,773	1,581,048
Total current liabilities	12,114,938	8,979,528	12,416,643	17,045,223	14,229,989	15,249,597	17,658,740	19,296,467	116,991,125
Total Liabilities	20,789,282	20,604,165	25,534,989	30,391,526	24,108,222	24,390,625	27,654,395	29,025,020	202,498,224
TOTAL EQUITY AND LIABILITIES	59,191,643	61,868,950	77,429,476	94,819,180	98,148,413	104,660,132	109,566,488	112,043,297	717,727,579

Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.3: Listed Qatari Insurance Companies
Consolidated Statement of Financial Position 2008 - 2015

	2008 QR'000	2009 QR'000	2010 QR'000	2011 QR'000	2012 QR'000	2013 QR'000	2014 QR'000	2015 QR'000	Grand Total QR'000
ASSETS									
Non-current assets									
Property, plant and equipment	113,418	117,170	124,088	213,322	224,381	189,530	177,998	161,897	1,321,804
Projects in progress	152,549	150,565	1,284	10,500	14,857	4,633	20,362	47,477	402,227
Available for sale investment	1,312,584	1,271,715	1,561,035	1,631,311	1,061,515	1,201,648	1,353,936	1,149,196	10,542,940
Re-insurance contract assets	573,812	511,670	1,495,070	1,036,943	1,144,508	1,054,204	911,895	1,072,137	7,800,239
Investment securities	0	0	0	0	378,928	395,031	382,928	334,983	1,491,870
Investment in associates	242,723	294,136	312,645	296,436	365,156	493,203	529,209	504,099	3,037,607
Takaful participants' assets	25,945	56,675	92,722	114,113	191,186	205,119	298,464	281,001	1,265,225
Equity accounted investments	0	50,500	61,895	63,797	70,403	81,611	77,065	83,125	488,396
Financial investments	210,540	199,538	254,568	260,312	424,697	529,484	797,347	732,343	3,408,829
Investment properties	3,844,963	3,735,191	5,318,402	5,475,973	5,990,566	9,587,535	12,405,224	14,444,985	60,802,839
Intangible assets & goodwill	0	0	0	0	0	0	420,006	418,560	838,566
Total Non-current assets	6,476,534	6,387,160	9,221,709	9,102,707	9,866,197	13,741,998	17,374,434	19,229,803	91,400,542
Current assets									
Contributions/Insurance and other receivables	688,002	759,548	943,107	1,058,912	1,065,473	1,518,071	3,192,256	6,960,410	16,185,779
Dues from reinsurers/related parties	24,025	124,207	142,858	137,513	18,795	14,632	15,636	24,090	501,756
Dues from shareholders	0	0	0	0	0	0	2,062	2,084	4,146
Other assets/receivable and prepayments	3,387	11,834	99,987	12,528	275,345	167,244	239,046	319,224	1,128,595
Takaful balances receivable	61,116	41,412	52,751	47,219	54,192	64,468	57,603	65,970	444,731
Retakaful contract assets	944,434	1,128,329	1,671,550	1,844,006	2,010,096	2,233,263	3,348,732	5,706,902	18,887,312
Retakaful/Reinsurance receivables	16,764	19,573	21,468	20,635	24,777	53,934	40,619	39,586	237,356
Retakaful share of unearned contribution	56,824	57,508	68,290	62,669	62,294	62,672	72,915	67,095	510,267
Retakaful share of gross outstanding claims	20,446	53,156	47,928	43,222	61,707	83,731	62,703	86,154	459,047
Prepayment and other assets	12,454	6,613	7,865	9,426	6,524	6,387	10,300	13,927	73,496
Dividends receivable	0	0	0	0	4,233	0	5,030	5,030	14,293

Time/Statutory deposits	6,100	6,100	13,900	6,100	100	100	100	100	32,600
Bank balances and cash	2,005,776	2,646,339	2,120,060	2,582,359	2,571,700	3,966,024	3,769,636	4,417,674	24,079,568
Total Current assets	3,839,328	4,854,619	5,189,764	5,824,589	6,155,236	8,170,526	10,816,638	17,708,246	62,558,946
TOTAL ASSETS	10,315,862	11,241,779	14,411,473	14,927,296	16,021,433	21,912,524	28,191,072	36,938,049	153,959,488
EQUITY AND LIABILITIES									
Equity									
Share capital	1,101,606	1,471,289	1,535,227	1,663,102	1,919,457	2,438,939	3,169,139	3,547,008	16,845,767
Legal reserve	886,058	777,488	788,194	815,606	851,578	1,918,851	2,481,486	2,684,712	11,203,973
General reserve	288,590	288,590	288,590	288,590	288,590	288,590	288,590	288,616	2,308,746
Fair value reserve	1,203,187	1,044,491	1,619,152	1,496,674	822,049	953,810	869,485	267,811	8,276,659
Revaluation reserve	77,355	77,355	77,355	77,355	506,563	628,433	698,919	529,693	2,673,028
Risk reserve	0	0	100,000	129,498	159,090	189,606	227,251	277,344	1,082,789
Foreign currency translation reserve	(924)	(1,663)	(13,058)	(16,640)	(52)	(5,278)	(4,692)	(4,692)	(46,999)
Cash-flow hedge reserve	0	0	0	(49,752)	0	0	0	0	(49,752)
(Deficit)/surplus in participants' fund	0	0	274	(4,507)	(29,631)	(58,625)	(24,244)	(8,808)	(125,541)
Proposed dividends	87,689	45,000	128,189	87,689	37,630	51,480	83,297	75,527	596,501
Proposed bonus shares	0	0	0	54,000	23,400	0	0	0	77,400
Retained earnings/Losses	1,200,595	1,448,060	2,569,490	2,637,534	2,904,628	4,964,851	5,610,556	6,425,691	27,761,405
Equity attributable to the equity holders of the parent	4,844,156	5,150,610	7,093,413	7,179,149	7,483,302	11,370,657	13,399,787	14,082,902	70,603,976
Non-controlling interests	126,203	125,452	183,946	190,235	173,554	196,081	220,838	183,994	1,400,303
Total equity	4,970,359	5,276,062	7,277,359	7,369,384	7,656,856	11,566,738	13,620,625	14,266,896	72,004,279
Non-current liabilities									
Accounts payable and other liabilities	111,575	121,987	231,065	150,795	130,708	233,055	250,686	231,067	1,460,938
Islamic bank facilities	0	0	0	0	127,553	97,849	53,313	95,522	374,237
Retakaful balances payable	27,578	15,756	29,858	33,813	66,178	46,970	42,085	33,173	295,411
Loans and borrowings	0	0	0	46,333	0	0	0	0	46,333
Dividends payable	10,866	16,656	17,493	20,125	23,562	26,902	28,465	32,375	176,444
Due to policy holders	0	0	0	0	0	0	2,062	2,084	4,146
Employees' end of service benefits	27,338	30,162	30,051	34,723	43,705	47,080	46,170	58,135	317,364
Total non-current liabilities	177,357	184,561	308,467	285,789	391,706	451,856	422,781	452,356	2,674,873

Current liabilities									
Dues to reinsurers & related party	13,296	30,924	49,722	55,815	21,919	22,563	23,577	73,660	291,476
Takaful/Insurance contract liabilities	2,719,616	3,034,078	4,674,237	4,707,109	5,252,137	6,157,332	9,818,954	16,942,169	53,305,632
Takaful participants' liabilities	25,945	56,675	92,722	114,113	191,186	205,119	298,464	281,001	1,265,225
Payables and other liabilities	979,566	1,118,870	1,060,526	1,237,688	1,201,627	1,353,042	2,119,796	2,980,998	12,052,113
Distributable surplus	19,798	22,469	11,436	19,265	14,973	15,896	14,477	17,517	135,831
Derivative financial instruments	0	0	0	0	51,029	39,129	34,853	28,515	153,526
Fair value reserve	9,625	602	(5,982)	(4,561)	(6,187)	(1,196)	(10,236)	(10,369)	(28,304)
Unclaimed surplus	36,456	32,916	30,405	27,844	30,544	31,832	30,954	28,957	249,908
Foreign currency translation reserve	0	0	0	0	0	(5,197)	(4,610)	(4,610)	(14,417)
Retained surplus	84,205	89,032	106,443	104,529	109,140	109,895	112,614	101,272	817,130
Unexpired risks	113,191	120,856	0	0	0	0	0	0	234,047
Unearned contributions	0	0	135,027	124,546	123,114	126,564	138,700	132,829	780,780
Gross outstanding claims	51,464	89,153	84,769	72,665	86,803	109,757	84,445	110,268	689,324
Short term borrowings	1,114,985	1,185,582	586,343	813,111	896,585	1,729,194	1,485,680	1,536,590	9,348,070
Total current liabilities	5,168,147	5,781,157	6,825,648	7,272,124	7,972,870	9,893,930	14,147,668	22,218,797	79,280,341
Total Liabilities	5,345,504	5,965,718	7,134,115	7,557,913	8,364,576	10,345,786	14,570,449	22,671,153	81,955,214
TOTAL EQUITY AND LIABILITIES	10,315,863	11,241,780	14,411,474	14,927,297	16,021,432	21,912,524	28,191,074	36,938,049	153,959,493

Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.4: Listed Qatari Real Estate Companies
Consolidated Statement of Financial Position 2008 - 2015

	2008 QR'000	2009 QR'000	2010 QR'000	2011 QR'000	2012 QR'000	2013 QR'000	2014 QR'000	2015 QR'000	Grand Total QR'000
ASSETS									
Non-current assets									
Property, plant and equipment	1,034,988	1,376,027	895,267	632,406	895,561	445,212	722,117	673,866	6,675,444
Projects in progress	12,428,064	35,546,587	68,182	9,335	127,813	92,097	98,596	99,249	48,469,923
Investment properties	6,247,445	14,621,382	43,867,251	42,595,087	46,383,488	44,375,898	46,072,226	48,864,610	293,027,387
Other financial assets	0	0	0	0	0	385,799	0	0	385,799
Advances for projects and investments	0	0	0	0	596,998	317,329	7,144,954	4,747,151	12,806,432
Investments in equity accounted investees	828,499	1,854,047	1,951,115	3,182,421	4,689,006	4,985,699	5,190,446	5,534,114	28,215,347
Investment in associates	0	0	0	0	2,285,001	500,564	3,870,887	3,926,150	10,582,602
Available for sale financial assets	3,319,168	938,063	2,757,140	3,117,743	3,084,129	8,372,261	667,056	245,831	22,501,391
Wakala investment	0	65,000	65,000	65,000	65,000	61,354	30,677	30,677	382,708
Deferred tax assets	0	0	0	76,083	5,782,985	2,651	1,175	1,068	5,863,962
Asset at fair value	3,987	4,073	3,959	4,137	6,704	8,776	7,577	27,884	67,097
Trading properties	104,732	104,732	31,694,512	38,270,273	18,396,769	19,818,842	3,566,196	3,792,753	115,748,809
Intangible assets & goodwill	105,565	228,584	413,809	126,411	126,411	126,411	126,411	126,411	1,380,013
Total Non-current assets	24,072,448	54,738,495	81,716,235	88,078,896	82,439,865	79,492,893	67,498,318	68,069,764	546,106,914
Current assets									
Inventories	2,438	107,916	28,134	40,483	8,477	13,158	21,702	20,280	242,588
Accounts receivable and prepayments	839,552	1,188,455	2,946,895	1,331,643	920,866	1,084,512	1,131,379	1,652,765	11,096,067
Prepayments and other debit balances	0	5,759	10,356	10,536	48,984	46,376	0	0	122,011
Finance lease receivables	0	0	1,806,641	3,056,434	2,792,229	2,508,058	2,191,389	1,843,823	14,198,574
Advances for projects and investments	3,097,100	2,278,434	6,048,411	2,861,036	0	0	0	0	14,284,981
Due from customers under Islamic financing	0	510,979	186,334	230,771	0	0	0	0	928,084
Due from related parties	2,522,977	4,466,027	9,468	463,904	2,751,244	2,923,774	376,605	239,963	13,753,962
Other financial assets	0	0	0	0	0	110,989	871,202	1,159,379	2,141,570
Bank balances and cash	703,731	2,289,994	14,335,788	3,721,215	1,186,153	1,491,809	2,113,152	4,478,096	30,319,938

Total Current assets	7,165,798	10,847,564	25,372,027	11,716,022	7,707,953	8,178,676	6,705,429	9,394,306	87,087,775
TOTAL ASSETS	31,238,246	65,586,059	107,088,262	99,794,918	90,147,818	87,671,569	74,203,747	77,464,070	633,194,689
EQUITY AND LIABILITIES									
Equity									
Share capital	7,194,000	29,649,967	31,416,213	31,416,213	31,416,213	31,416,213	31,416,213	31,466,213	225,391,245
General reserve	1,041,697	1,041,697	4,639,231	4,639,231	4,639,231	4,639,231	4,639,231	4,639,231	29,918,780
Other reserves	0	0	0	0	(325,916)	(36,484)	(90,436)	(210,026)	(662,862)
Legal reserve	318,695	976,462	1,130,658	1,295,321	1,672,929	1,789,822	2,210,678	2,677,608	12,072,173
Revaluation reserve	0	0	0	0	(46,798)	335,980	0	0	289,182
Foreign currency translation reserve	0	0	0	0	3,192	1,954	1,954	1,954	9,054
Fair value reserve	0	0	0	0	0	0	1,264,808	605,559	1,870,367
Risk reserve	0	0	27,722	0	0	0	0	0	27,722
Accumulated other comprehensive loss	(30,666)	(40,063)	(45,154)	(49,533)	0	0	0	0	(165,416)
Treasury shares	0	(872)	(4,991)	(4,119)	(4,119)	(4,119)	(4,119)	(4,119)	(26,458)
Retained earnings/Losses	2,406,082	1,405,982	2,500,697	3,576,108	4,112,180	5,522,665	7,698,252	9,752,026	36,973,992
Equity attributable to the equity holders of the parent	10,929,808	33,033,173	39,664,376	40,873,221	41,466,912	43,665,262	47,136,581	48,928,446	305,697,779
Non-controlling interests	329,776	635,360	1,869,460	475,435	503,926	499,484	159,399	551,198	5,024,038
Total equity	11,259,584	33,668,533	41,533,836	41,348,656	41,970,838	44,164,746	47,295,980	49,479,644	310,721,817
Non-current liabilities									
Islamic financing facilities	366,000	1,791,290	3,622,975	4,841,985	10,225,395	12,249,768	13,244,074	15,549,486	61,890,973
Profit payable on Islamic financing facilities	15,829	25,944	0	0	0	0	0	0	41,773
Employees' end of service benefits	2,062	9,595	815	1,171	1,790	1,226	943	1,236	18,838
Total non-current liabilities	383,891	1,826,829	3,623,790	4,843,156	10,227,185	12,250,994	13,245,017	15,550,722	61,951,584
Current liabilities									
Trade payables and accruals	1,900,876	3,505,644	9,277,627	5,399,617	3,289,315	2,975,593	5,179,744	3,661,378	35,189,794
Islamic financing facilities	0	251,327	0	0	60,000	35,000	0	0	346,327
Liabilities of a subsidiary held for sale	0	0	0	62,939	11,540	612	0	0	75,091
Due to related parties	656,725	466,352	24,363,587	16,830,844	7,785,449	455,740	396,997	867,017	51,822,711
Liabilities for purchase of land	3,414,871	3,432,151	3,272,667	2,486,437	0	0	0	0	12,606,126
Profit payable on Islamic financing facilities	0	32,365	0	0	0	0	0	0	32,365

Unrestricted investment accounts for Islamic banking contracts	0	1,088,728	0	0	0	0	0	0	1,088,728
Obligations under Islamic financing contracts	12,476,365	20,050,837	24,178,951	28,371,134	26,661,159	27,788,091	7,919,983	7,697,837	155,144,357
Liabilities under derivative contracts	106,699	284,875	674,820	452,134	142,128	0	0	0	1,660,656
Loans and borrowings	0	0	138,000	0	0	0	0	0	138,000
Deferred tax liabilities	108,190	42,250	24,984	0	205	793	1,088	444	177,954
Provisions	909,271	936,168	0	0	0	0	164,938	207,028	2,217,405
Liabilities related to assets classified as held for sale	21,774	0	0	0	0	0	0	0	21,774
Total current liabilities	19,594,771	30,090,697	61,930,636	53,603,105	37,949,796	31,255,829	13,662,750	12,433,704	260,521,288
Total Liabilities	19,978,662	31,917,526	65,554,426	58,446,261	48,176,981	43,506,823	26,907,767	27,984,426	322,472,872
TOTAL EQUITY AND LIABILITIES	31,238,246	65,586,059	107,088,262	99,794,917	90,147,819	87,671,569	74,203,747	77,464,070	633,194,689

Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.5: Listed Qatari Service & Consumer Companies

Consolidated Statement of Financial Position 2008 - 2015

	2008 QR'000	2009 QR'000	2010 QR'000	2011 QR'000	2012 QR'000	2013 QR'000	2014 QR'000	2015 QR'000	Grand Total QR'000
ASSETS									
Non-current assets									
Property, plant and equipment	12,117,041	13,435,298	8,899,249	8,510,162	6,690,949	7,059,054	13,682,237	14,774,090	85,168,080
Advance against purchases of property & equipment	87	16,083	25,300	14,320	0	0	0	0	55,790
Investment property	126,728	239,794	212,022	171,958	131,322	127,629	107,240	281,253	1,397,946
Available for sale investments	311,658	394,722	594,572	582,660	643,961	825,745	1,065,085	926,855	5,345,258
Investment in associates	206,394	249,562	1,388	1,052	1,307,810	1,396,276	279,678	0	3,442,160
Subordinated loan receivable from a joint venture	0	0	0	0	114,596	115,487	0	0	230,083
Investment in joint venture companies	0	0	0	0	247,196	703,845	2,567,039	2,626,834	6,144,914
Financial lease receivable	1,478,533	3,820,652	11,699,832	11,647,155	1,912,934	1,775,050	1,637,081	1,490,605	35,461,842
Financial investments at fair value	0	0	0	0	47,682	35,973	38,874	32,285	154,814
Other non-current assets	0	0	23,815	16,675	15,810	25,441	23,731	21,871	127,343
Deferred tax assets	0	0	0	0	0	490	421	299	1,210
Held-to-maturity investments	0	0	0	72,598	85,413	85,448	85,484	85,521	414,464
Intangible assets & goodwill	28,202	28,967	174,641	404,949	700,606	814,122	815,937	802,207	3,769,631
Total Non-current assets	14,268,643	18,185,078	21,630,819	21,421,529	11,898,279	12,964,560	20,302,807	21,041,820	141,713,535
Current assets									
Inventories	426,439	427,247	438,060	493,347	578,536	552,436	622,617	637,228	4,175,910
Accounts receivable and prepayments	752,588	757,695	1,965,291	1,676,936	1,418,718	1,363,498	1,467,220	2,031,639	11,433,585
Assets classified as held for sale	0	10,053	2,368	685	30,531	30,531	0	0	74,168
Cheques under collection	5,584	4,078	0	0	0	0	7	5,660	15,329
Finance assets at fair value	73,126	147,985	142,712	98,154	409,624	260,656	218,331	206,417	1,557,005
Financial lease receivable	24,806	27,400	135,836	465,437	96,648	137,884	137,969	146,477	1,172,457
Insurance receivable	187,256	217,388	290,134	422,049	460,036	363,099	266,579	328,237	2,534,778
Due from related parties	262,663	264,082	301,134	194,936	267,006	242,722	634,452	598,460	2,765,455
Bank balances and cash	2,444,104	3,200,086	3,120,231	4,318,729	3,868,960	3,601,801	3,543,525	3,321,309	27,418,745

Total Current assets	4,176,566	5,056,014	6,395,766	7,670,273	7,130,059	6,552,627	6,890,700	7,275,427	51,147,432
TOTAL ASSETS	18,445,209	23,241,092	28,026,585	29,091,802	19,028,338	19,517,187	27,193,507	28,317,247	192,860,967
EQUITY AND LIABILITIES									
Equity									
Share capital	2,749,235	2,874,465	2,900,418	2,900,418	3,040,766	3,140,766	3,612,448	3,618,158	24,836,674
General reserve	2,363,384	2,785,069	3,319,013	3,319,013	3,319,013	3,319,013	3,319,013	3,319,013	25,062,531
Optional/Other reserves	0	21,751	21,751	21,751	21,751	21,751	21,751	21,751	152,257
Legal reserve	651,656	693,329	749,217	766,481	702,227	1,569,761	1,848,977	1,921,370	8,903,018
Revaluation reserve	560,820	479,054	476,466	472,429	459,397	455,574	421,645	560,540	3,885,925
Foreign currency translation reserve	0	0	0	(154)	(161)	(337)	(349)	871	(130)
Fair value reserve	(19,574)	(25,520)	18,923	25,189	29,566	49,229	367,167	193,829	638,809
Proposed bonus shares	8,134	0	12,977	12,977	0	0	0	0	34,088
Proposed dividends	53,099	48,075	28,144	30,959	62,079	95,852	11,420	9,421	339,049
Hedge reserve	(2,928,601)	(1,118,198)	(1,579,040)	(3,015,616)	(1,727,312)	(1,402,570)	(1,825,125)	(1,759,479)	(15,355,941)
Retained earnings/Losses	785,124	1,070,251	1,419,104	2,206,639	3,286,634	4,440,801	5,771,933	6,109,206	25,089,692
Equity attributable to the equity holders of the parent	4,223,277	6,828,276	7,366,973	6,740,086	9,193,960	11,689,840	13,548,880	13,994,680	73,585,972
Non-controlling interests	2,720	3,515	175,570	199,367	217,689	269,531	282,844	296,217	1,447,453
Total equity	4,225,997	6,831,791	7,542,543	6,939,453	9,411,649	11,959,371	13,831,724	14,290,897	75,033,425
Non-current liabilities									
Loans and borrowings	7,801,683	11,561,656	13,135,549	14,383,629	4,443,142	3,866,392	7,745,893	7,664,936	70,602,880
Interest rate swaps for hedging	563,885	457,913	351,941	225,971	100,000	0	68,105	20,010	1,787,825
Deferred income	47,543	40,751	33,959	27,167	20,375	13,583	6,791	0	190,169
Employees' end of service benefits	67,343	85,238	106,106	149,852	110,250	131,755	169,461	194,142	1,014,147
Total non-current liabilities	8,480,454	12,145,558	13,627,555	14,786,619	4,673,767	4,011,730	7,990,250	7,879,088	73,595,021
Current liabilities									
Accounts payable and accruals	1,688,477	1,911,381	3,121,774	3,301,950	2,959,322	2,749,188	2,840,234	3,317,219	21,889,545
Due to related parties	37,549	97,195	62,868	107,009	2,754	10,412	25,259	33,893	376,939
Derivatives	2,967,394	1,202,169	1,806,480	3,232,689	289,468	168,907	0	0	9,667,107
Deferred income	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	54,336
Dividends payable	3,710	3,880	4,032	5,073	5,892	6,386	7,024	7,377	43,374

Borrowings	899,530	852,804	1,733,807	570,367	1,536,844	488,523	2,388,436	2,671,227	11,141,538
Retention payable	14,763	14,763	14,763	14,763	14,763	14,763	0	417	88,995
Revenue received in advance	6,930	5,251	0	0	0	0	0	0	12,181
Other credit balances	44,528	59,382	0	0	0	0	0	0	103,910
Bank overdrafts	3,109	1,511	0	0	0	0	0	0	4,620
Advance rent received	0	0	0	1,113	1,113	1,115	1,127	3,012	7,480
Interest rate swaps for hedging	65,976	105,973	105,971	125,974	125,974	100,000	102,661	107,325	839,854
Liabilities related to assets classified as held for sale	0	2,642	0	0	0	0	0	0	2,642
Total current liabilities	5,738,758	4,263,743	6,856,487	7,365,730	4,942,922	3,546,086	5,371,533	6,147,262	44,232,521
Total Liabilities	14,219,212	16,409,301	20,484,042	22,152,349	9,616,689	7,557,816	13,361,783	14,026,350	117,827,542
TOTAL EQUITY AND LIABILITIES	18,445,209	23,241,092	28,026,585	29,091,802	19,028,338	19,517,187	27,193,507	28,317,247	192,860,967

Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.6: Listed Qatari Telecommunication Companies
Consolidated Statement of Financial Position 2008 - 2015

	2008 QR'000	2009 QR'000	2010 QR'000	2011 QR'000	2012 QR'000	2013 QR'000	2014 QR'000	2015 QR'000	Grand Total QR'000
ASSETS									
Non-current assets									
Property, plant and equipment	23,351,567	30,254,975	33,186,158	34,341,317	33,854,231	33,769,170	34,890,513	34,997,843	258,645,774
Other non-current assets	920,743	1,274,514	967,889	910,238	908,160	697,244	750,626	665,115	7,094,529
Investment in associates	1,873,892	1,944,635	2,126,315	1,591,341	1,873,384	1,752,172	2,604,367	2,296,421	16,062,527
Investment property	0	0	0	0	66,459	60,363	55,112	49,861	231,795
Available for sale investment	1,916,947	1,698,758	1,862,006	2,189,939	2,633,650	2,704,493	1,627,146	747,196	15,380,135
Deferred tax asset	435,664	353,202	357,998	286,776	74,581	50,703	59,884	54,561	1,673,369
Intangible assets & goodwill	32,671,282	41,562,852	40,333,964	43,392,294	41,014,257	37,337,765	39,336,687	35,485,516	311,134,617
Total Non-current assets	61,170,095	77,088,936	78,834,330	82,711,905	80,424,722	76,371,910	79,324,335	74,296,513	610,222,746
Current assets									
Inventories	272,257	270,450	326,798	355,540	372,196	563,021	697,537	740,758	3,598,557
Account receivable and prepayments	3,862,268	4,341,029	4,911,921	5,983,694	6,316,259	7,382,547	7,887,946	8,007,866	48,693,530
Asset held for distribution	0	0	0	0	6,504	375,136	0	0	381,640
Bank balances and cash	7,845,307	11,843,492	25,652,835	21,326,871	15,138,023	20,476,737	17,618,334	18,280,537	138,182,136
Total Current assets	11,979,832	16,454,971	30,891,554	27,666,105	21,832,982	28,797,441	26,203,817	27,029,161	190,855,863
TOTAL ASSETS	73,149,927	93,543,907	109,725,884	110,378,010	102,257,704	105,169,351	105,528,152	101,325,674	801,078,609
EQUITY AND LIABILITIES									
Equity									
Share capital	1,466,667	9,920,667	9,920,667	10,214,000	11,657,200	11,657,200	11,657,200	11,657,200	78,150,801
Legal reserve	6,494,137	6,505,579	6,505,579	6,505,579	12,445,724	12,445,825	12,461,276	12,463,870	75,827,569
Hedging reserve	0	0	0	0	0	0	(715)	0	(715)
Fair value reserve	(458,678)	(185,501)	49,996	672,843	1,084,494	1,326,369	892,562	448,184	3,830,269
Foreign currency translation reserve	(363,719)	955,055	1,780,473	1,586,124	757,096	(1,665,232)	(3,503,511)	(5,565,599)	(6,019,313)
Accumulated other comprehensive income	0	0	17,196	(2,112)	2,458	0	0	0	17,542
Proposed dividends	0	0	0	0	0	0	151,765	23,535	175,300

Other reserves	0	0	404,580	706,036	825,245	980,788	1,057,820	1,094,696	5,069,165
Employment benefit reserve	0	0	0	0	(110,958)	43,165	17,659	39,102	(11,032)
Retained earnings/Losses	5,561,908	6,246,652	7,571,084	8,070,240	7,222,376	6,138,265	6,385,606	6,751,819	53,947,950
Equity attributable to the equity holders of the parent	12,700,315	23,442,452	26,249,575	27,752,710	33,883,635	30,926,380	29,119,662	26,912,807	210,987,536
Non-controlling interests	14,237,928	13,826,899	15,196,832	18,336,947	9,095,772	7,459,448	6,980,354	6,563,076	91,697,256
Total equity	26,938,243	37,269,351	41,446,407	46,089,657	42,979,407	38,385,828	36,100,016	33,475,883	302,684,792
Non-current liabilities									
Loans and borrowings	20,155,201	34,172,677	44,249,199	32,347,347	33,171,631	37,968,557	35,641,221	36,108,055	273,813,888
Deferred tax liability	1,334,232	1,530,687	1,631,787	1,637,849	1,370,136	879,216	755,494	466,953	9,606,354
Other non-current liabilities	3,446,131	3,520,481	3,185,399	1,325,285	2,676,470	2,625,857	3,658,173	2,016,333	22,454,129
Employees' end of service benefits	501,627	607,395	918,058	808,012	938,520	696,964	837,458	812,142	6,120,176
Provision	0	3,485	6,734	10,315	12,779	34,452	39,122	49,015	155,902
Accounts and other payables -long term	0	0	0	0	0	42,248	40,692	45,988	128,928
Wakala liabilities	0	0	0	0	0	0	1,032,514	1,018,068	2,050,582
Total non-current liabilities	25,437,191	39,834,725	49,991,177	36,128,808	38,169,536	42,247,294	42,004,674	40,516,554	314,329,959
Current liabilities									
Accounts payable and accruals	9,709,397	10,348,477	11,065,586	11,873,880	11,600,699	13,335,813	17,783,019	18,201,069	103,917,940
Current account with State of Qatar	1,905,921	2,803,015	2,891,194	0	0	0	0	0	7,600,130
Loans and borrowings	7,820,082	1,884,409	2,518,853	14,249,674	7,307,914	8,399,658	7,155,509	6,663,787	55,999,886
Deferred revenue	746,650	1,012,438	1,351,216	1,610,770	1,658,471	1,739,333	1,914,890	1,775,181	11,808,949
Liabilities held for distribution	0	0	0	0	36,658	500,303	0	0	536,961
Income tax payable	592,443	391,492	461,451	425,221	505,019	561,122	570,044	693,200	4,199,992
Total current liabilities	20,774,493	16,439,831	18,288,300	28,159,545	21,108,761	24,536,229	27,423,462	27,333,237	184,063,858
Total Liabilities	46,211,684	56,274,556	68,279,477	64,288,353	59,278,297	66,783,523	69,428,136	67,849,791	498,393,817
TOTAL EQUITY AND LIABILITIES	73,149,927	93,543,907	109,725,884	110,378,010	102,257,704	105,169,351	105,528,152	101,325,674	801,078,609

Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.7: Listed Qatari Transport Companies
Consolidated Statement of Financial Position 2008 - 2015

	2008 QR'000	2009 QR'000	2010 QR'000	2011 QR'000	2012 QR'000	2013 QR'000	2014 QR'000	2015 QR'000	Grand Total QR'000
ASSETS									
Non-current assets									
Property, plant and equipment	2,555,316	22,461,958	26,756,918	26,417,610	25,816,908	25,786,743	25,581,142	25,188,622	180,565,217
Loans to joint venture companies	587,919	1,108,006	1,121,414	1,118,524	1,084,733	804,651	342,961	266,313	6,434,521
Available for sale investments	107,830	134,695	129,973	126,675	145,036	175,865	177,293	126,520	1,123,887
Projects in progress	17,663,840	3,624,184	41,741	95,377	351,881	256,146	250,843	250,725	22,534,737
Investment properties	16,912	0	0	154,681	99,428	131,972	172,969	186,252	762,214
Investment in joint venture companies	1,464,444	2,076,984	2,037,987	1,809,991	2,018,819	2,641,403	2,872,025	3,422,374	18,344,027
Intangible assets & goodwill	0	0	2,570	1,863	148,034	141,387	134,740	128,669	557,263
Deferred financing costs	252,911	245,531	0	0	0	0	0	0	498,442
Total Non-current assets	22,649,172	29,651,358	30,090,603	29,724,721	29,664,839	29,938,167	29,531,973	29,569,475	230,820,308
Current assets									
Inventories	7	542	1,200	11,401	35,100	34,523	33,555	31,881	148,209
Accounts receivable	155,511	159,992	294,441	581,608	550,138	472,895	527,716	778,428	3,520,729
Due from a related company	3,155	1,704	29,221	21,889	9,506	20,993	15,943	18,900	121,311
Bank balances and cash	2,049,865	1,834,664	2,222,985	2,317,192	2,212,897	2,105,780	3,061,838	3,322,289	19,127,510
Total Current assets	2,208,538	1,996,902	2,547,847	2,932,090	2,807,641	2,634,191	3,639,052	4,151,498	22,917,759
TOTAL ASSETS	24,857,710	31,648,260	32,638,450	32,656,811	32,472,480	32,572,358	33,171,025	33,720,973	253,738,067
EQUITY AND LIABILITIES									
Equity									
Share capital	5,787,655	5,787,812	5,788,003	5,934,790	5,934,797	6,014,068	6,014,093	6,014,100	47,275,318
Share capital not yet issued	0	0	0	0	0	0	0	429,361	429,361
Legal reserve	108,051	167,876	239,443	476,359	552,909	635,974	731,620	829,850	3,742,082
Fair value reserve	50,040	59,992	83,253	79,248	98,568	129,397	130,825	80,052	711,375
Foreign currency translation reserve	24,042	28,626	28,626	28,626	28,626	28,626	0	0	167,172
Proposed dividends	0	277,013	415,520	470,922	554,026	609,423	664,832	692,533	3,684,269

Retained earnings/Losses	230,171	491,881	702,710	995,094	1,134,329	1,172,457	1,348,644	1,624,812	7,700,098
Equity attributable to the equity holders of the parent	6,199,959	6,813,200	7,257,555	7,985,039	8,303,255	8,589,945	8,890,014	9,670,708	63,709,675
Hedging reserve	(5,915,253)	(2,609,248)	(3,484,908)	(5,843,176)	(5,836,454)	(3,443,428)	(4,225,498)	(3,816,518)	(35,174,483)
Non-controlling interests	4,464	4,362	4,763	8,734	5,229	2,981	4,573	746	35,852
Total equity	289,170	4,208,314	3,777,410	2,150,597	2,472,030	5,149,498	4,669,089	5,854,936	28,571,044
Non-current liabilities									
Borrowings	19,174,184	24,625,657	24,855,681	24,149,341	23,785,157	23,045,301	23,182,666	22,646,492	185,464,479
Fair value of interest rate swaps	5,015,695	2,130,977	2,827,970	4,830,831	4,814,759	2,824,135	3,627,748	3,363,099	29,435,214
Other liabilities	0	0	0	0	0	0	178,963	197,574	376,537
Employees' end of service benefits	4,284	7,471	10,334	19,680	26,045	31,402	40,003	44,851	184,070
Total non-current liabilities	24,194,163	26,764,105	27,693,985	28,999,852	28,625,961	25,900,838	27,029,380	26,252,016	215,460,300
Current liabilities									
Accounts payable and accruals	233,427	194,728	234,493	428,848	435,966	478,981	649,780	691,370	3,347,593
Loans and borrowings	136,657	480,193	915,496	1,052,845	911,666	1,009,362	820,516	919,755	6,246,490
Due to related party	83	607	0	0	1,690	4,825	2,260	2,896	12,361
Retention payable	4,210	313	17,066	24,669	25,167	28,854	0	0	100,279
Total current liabilities	374,377	675,841	1,167,055	1,506,362	1,374,489	1,522,022	1,472,556	1,614,021	9,706,723
Total Liabilities	24,568,540	27,439,946	28,861,040	30,506,214	30,000,450	27,422,860	28,501,936	27,866,037	225,167,023
TOTAL EQUITY AND LIABILITIES	24,857,710	31,648,260	32,638,450	32,656,811	32,472,480	32,572,358	33,171,025	33,720,973	253,738,067

Source: From computation of the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.8: Long Term Fund Trend Analysis											
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecom. QR'000	Transport QR'000	Total Long Term Funds (LF) QR'000	Total Assets (TA) QR'000	LF as % of TA	Trend
2008	93,992,339	47,076,705	5,147,716	11,643,475	12,706,451	25,437,191	24,483,333	220,487,210	567,220,428	38.87	100
2009	122,224,187	52,889,422	5,460,623	35,495,362	18,977,349	77,104,076	30,972,419	343,123,438	689,242,338	49.78	78.08
2010	131,976,126	65,012,833	7,585,826	45,157,626	21,170,098	91,437,584	31,471,395	393,811,488	848,265,050	46.43	83.72
2011	176,577,193	77,773,957	7,655,173	46,191,812	21,726,072	82,218,465	31,150,449	443,293,121	995,226,322	44.54	87.27
2012	202,122,371	83,918,424	8,048,562	52,198,023	14,085,416	81,148,943	31,097,991	472,619,730	1,084,578,043	43.58	89.19
2013	226,269,395	89,410,535	12,018,594	56,415,740	15,971,101	80,633,122	31,050,336	511,768,823	1,246,977,813	41.04	94.71
2014	261,723,790	91,907,748	14,043,406	60,540,997	21,821,974	78,104,690	31,698,469	559,841,074	1,359,389,217	41.18	94.39
2015	288,938,124	92,746,830	14,719,252	65,030,366	22,169,985	73,992,437	32,106,952	589,703,946	1,481,003,855	39.82	97.61
Total	1,503,823,525	600,736,454	74,679,152	372,673,401	148,628,446	590,076,508	244,031,344	3,534,648,830	8,271,903,066	42.73	90.97
Average	187,977,941	75,092,057	9,334,894	46,584,175	18,578,556	73,759,564	30,503,918	441,831,104	1,033,987,883	42.73	90.97

Source: Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.9: Short Term Fund Trend Analysis											
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecom. QR'000	Transport QR'000	Total Short Term Funds (SF) QR'000	Total Assets (TA) QR'000	SF as % of TA	Trend
2008	256,029,493	12,114,938	5,168,147	19,594,771	5,738,758	20,774,493	374,377	319,794,977	567,220,428	56.38	100
2009	280,108,104	8,979,528	5,781,157	30,090,697	4,263,743	16,439,831	675,841	346,338,901	689,242,338	50.25	112.2
2010	346,652,494	12,416,643	6,825,648	61,930,636	6,856,487	18,288,300	1,167,055	454,137,263	848,265,050	53.54	105.3
2011	436,981,114	17,045,223	7,272,124	53,603,105	7,365,730	28,159,545	1,506,362	551,933,203	995,226,322	55.46	101.66
2012	524,379,484	14,229,989	7,972,870	37,949,796	4,942,922	21,108,761	1,374,489	611,958,311	1,084,578,043	56.42	99.93
2013	649,205,295	15,249,597	9,893,930	31,255,829	3,546,086	24,536,229	1,522,022	735,208,988	1,246,977,813	58.96	95.62
2014	719,811,435	17,658,740	14,147,668	13,662,750	5,371,533	27,423,462	1,472,556	799,548,144	1,359,389,217	58.82	95.85
2015	802,256,421	19,296,467	22,218,797	12,433,704	6,147,262	27,333,237	1,614,021	891,299,909	1,481,003,855	60.18	93.69
Total	4,015,423,840	116,991,125	79,280,341	260,521,288	44,232,521	184,063,858	9,706,723	4,710,219,696	8,271,903,066	56.94	99.02
Average	501,927,980	14,623,891	9,910,043	32,565,161	5,529,065	23,007,982	1,213,340	588,777,462	1,033,987,883	56.94	99.02

Source: Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.10: Ratio Analysis

1: Total Debt Ratio (TDR)										
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecom. QR'000	Transport QR'000	Total Debt Ratio QR'000	Total Assets (TA) QR'000	TDR/TA
2008	294,629,714	20,789,282	5,345,504	19,978,662	14,219,212	46,211,684	24,568,540	425,742,598	567,220,428	0.75:1
2009	336,816,814	20,604,165	5,965,718	31,917,526	16,409,301	56,274,556	27,439,946	495,428,026	689,242,338	0.72:1
2010	405,551,476	25,534,989	7,134,115	65,554,426	20,484,042	68,279,477	28,861,040	621,399,565	848,265,050	0.73:1
2011	512,923,148	30,391,526	7,557,913	58,446,261	22,152,349	64,288,353	30,506,214	726,265,764	995,226,322	0.73:1
2012	616,669,301	24,108,222	8,364,576	48,176,981	9,616,689	59,278,297	30,000,450	796,214,516	1,084,578,043	0.73:1
2013	752,531,038	24,390,625	10,345,786	43,506,823	7,557,816	66,783,523	27,422,860	932,538,471	1,246,977,813	0.75:1
2014	850,814,188	27,654,395	14,570,449	26,907,767	13,361,783	69,428,136	28,501,936	1,031,238,654	1,359,389,217	0.76:1
2015	950,521,534	29,025,020	22,671,153	27,984,426	14,026,350	67,849,791	27,866,037	1,139,944,311	1,481,003,855	0.77:1
Total	4,720,457,213	202,498,224	81,955,214	322,472,872	117,827,542	498,393,817	225,167,023	6,168,771,905	8,271,903,066	0.75
Average	590,057,152	25,312,278	10,244,402	40,309,109	14,728,443	62,299,227	28,145,878	771,096,488	1,033,987,883	0.75

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

2: Short Term Debt Ratio (STDR)										
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecom. QR'000	Transport QR'000	Total Short-Term Debt Ratio (STDR) QR'000	Total Assets (TA) QR'000	STDR/TA
2008	256,029,493	12,114,938	5,168,147	19,594,771	5,738,758	20,774,493	374,377	319,794,977	567,220,428	0.56:1
2009	280,108,104	8,979,528	5,781,157	30,090,697	4,263,743	16,439,831	675,841	346,338,901	689,242,338	0.50:1
2010	346,652,494	12,416,643	6,825,648	61,930,636	6,856,487	18,288,300	1,167,055	454,137,263	848,265,050	0.54:1
2011	436,981,114	17,045,223	7,272,124	53,603,105	7,365,730	28,159,545	1,506,362	551,933,203	995,226,322	0.56:1
2012	524,379,484	14,229,989	7,972,870	37,949,796	4,942,922	21,108,761	1,374,489	611,958,311	1,084,578,043	0.56:1
2013	649,205,295	15,249,597	9,893,930	31,255,829	3,546,086	24,536,229	1,522,022	735,208,988	1,246,977,813	0.59:1
2014	719,811,435	17,658,740	14,147,668	13,662,750	5,371,533	27,423,462	1,472,556	799,548,144	1,359,389,217	0.59:1
2015	802,256,421	19,296,467	22,218,797	12,433,704	6,147,262	27,333,237	1,614,021	891,299,909	1,481,003,855	0.60:1
Total	4,015,423,840	116,991,125	79,280,341	260,521,288	44,232,521	184,063,858	9,706,723	4,710,219,696	8,271,903,066	0.57
Average	501,927,980	14,623,891	9,910,043	32,565,161	5,529,065	23,007,982	1,213,340	588,777,462	1,033,987,883	0.57

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

3: Long Term Debt Ratio (LTDR)										
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecom. QR'000	Transport QR'000	Total Long-Term Debt Ratio (LTDR) QR'000	Total Assets (TA) QR'000	LTDR/TA
2008	38,600,221	8,674,344	177,357	383,891	8,480,454	25,437,191	24,194,163	105,947,621	567,220,428	0.19:1
2009	56,708,710	11,624,637	184,561	1,826,829	12,145,558	39,834,725	26,764,105	149,089,125	689,242,338	0.22:1
2010	58,898,982	13,118,346	308,467	3,623,790	13,627,555	49,991,177	27,693,985	167,262,302	848,265,050	0.20:1
2011	75,942,034	13,346,303	285,789	4,843,156	14,786,619	36,128,808	28,999,852	174,332,561	995,226,322	0.18:1
2012	92,289,817	9,878,233	391,706	10,227,185	4,673,767	38,169,536	28,625,961	184,256,205	1,084,578,043	0.17:1
2013	103,325,743	9,141,028	451,856	12,250,994	4,011,730	42,247,294	25,900,838	197,329,483	1,246,977,813	0.16:1
2014	131,002,753	9,995,655	422,781	13,245,017	7,990,250	42,004,674	27,029,380	231,690,510	1,359,389,217	0.17:1
2015	148,265,113	9,728,553	452,356	15,550,722	7,879,088	40,516,554	26,252,016	248,644,402	1,481,003,855	0.17:1
Total	705,033,373	85,507,099	2,674,873	61,951,584	73,595,021	314,329,959	215,460,300	1,458,552,209	8,271,903,066	0.18
Average	88,129,172	10,688,387	334,359	7,743,948	9,199,378	39,291,245	26,932,538	182,319,026	1,033,987,883	0.18

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

4: Asset Structure										
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecom. QR'000	Transport QR'000	Total Fixed Asset + Inventory (A) QR'000	Total Assets (TA) (B) QR'000	A / B
2008	49,240,845	37,258,042	6,476,534	24,074,886	14,695,082	61,442,352	22,649,179	215,836,920	567,220,428	0.381
2009	68,304,175	42,762,261	6,387,160	54,846,411	18,612,325	77,359,386	29,651,900	297,923,618	689,242,338	0.432
2010	83,092,204	54,698,598	9,221,709	81,744,369	22,068,879	79,161,128	30,091,803	360,078,690	848,265,050	0.424
2011	144,242,311	69,050,612	9,102,707	88,119,379	21,914,876	83,067,445	29,736,122	445,233,452	995,226,322	0.447
2012	210,523,312	72,125,948	9,866,197	82,448,342	12,476,815	80,796,918	29,699,939	497,937,471	1,084,578,043	0.459
2013	265,355,555	75,976,928	13,741,998	79,506,051	13,516,996	76,934,931	29,972,690	555,005,149	1,246,977,813	0.445
2014	270,983,901	80,664,055	17,374,434	67,520,020	20,925,424	80,021,872	29,565,528	567,055,234	1,359,389,217	0.417
2015	303,228,854	81,486,252	19,229,803	68,090,044	21,679,048	75,037,271	29,601,356	598,352,628	1,481,003,855	0.404
Total	1,394,971,157	514,022,696	91,400,542	546,349,502	145,889,445	613,821,303	230,968,517	3,537,423,162	8,271,903,066	0.428
Average	174,371,395	64,252,837	11,425,068	68,293,688	18,236,181	76,727,663	28,871,065	442,177,895	1,033,987,883	0.428

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

5: Liquidity Ratio Analysis (LR) - Current Asset/Current Liabilities										
Year	Banks & Financial Institutions QR'000	Industry QR'000	Insurance QR'000	Real Estate QR'000	Service & Consumer Goods QR'000	Telecom. QR'000	Transport QR'000	Total Current Asset (TCA) QR'000	Total Current Liabilities (TCL) QR'000	Liquidity Ratio LR / TA
2008	557,143,547	38,230,537	9,007,475	26,760,569	9,915,324	32,754,325	2,582,915	356,599,715	319,794,977	1.12:1
2009	614,179,795	31,428,991	10,635,776	40,938,261	9,319,757	32,894,802	2,672,743	395,731,224	346,338,901	1.14:1
2010	742,768,445	39,335,104	12,015,412	87,302,663	13,252,253	49,179,854	3,714,902	493,431,370	454,137,263	1.09:1
2011	906,650,614	49,884,806	13,096,713	65,319,127	15,036,003	55,825,650	4,438,452	558,318,162	551,933,203	1.01:1
2012	1,040,897,518	48,068,406	14,128,106	45,657,749	12,072,981	42,941,743	4,182,130	595,990,322	611,958,311	0.97:1
2013	1,259,740,775	52,726,232	18,064,456	39,434,505	10,098,713	53,333,670	4,156,213	702,345,576	735,208,988	0.96:1
2014	1,430,835,295	54,385,498	24,964,306	20,368,179	12,262,233	53,627,279	5,111,608	802,006,254	799,548,144	1.00:1
2015	1,590,803,256	56,751,199	39,927,043	21,828,010	13,422,689	54,362,398	5,765,519	891,560,205	891,299,909	1.00:1
Total	8,143,019,245	370,810,773	141,839,287	347,609,063	95,379,953	374,919,721	32,624,482	4,795,982,828	4,710,219,696	1.02
Average	1,017,877,406	46,351,347	17,729,911	43,451,133	11,922,494	46,864,965	4,078,060	599,497,854	588,777,462	1.02

Source: Computed from the Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.11: Quantum of Short Term and Long-Term Funds Trend Analysis					
Year	Short-Term Funds (SF) QR'000	Long-Term Funds (LF) QR'000	Total Assets (TA) QR'000	SF as % of TA	LF as % of TA
2008	319,794,977	220,487,210	567,220,428	56.38	38.87
2009	346,338,901	343,123,438	689,242,338	50.25	49.78
2010	454,137,263	393,811,488	848,265,050	53.54	46.43
2011	551,933,203	443,293,121	995,226,322	55.46	44.54
2012	611,958,311	472,619,730	1,084,578,043	56.42	43.58
2013	735,208,988	511,768,823	1,246,977,813	58.96	41.04
2014	799,548,144	559,841,074	1,359,389,217	58.82	41.18
2015	891,299,909	589,703,946	1,481,003,855	60.18	39.82
Total	4,710,219,696	3,534,648,830	8,271,903,066	56.94	42.73
Average	588,777,462	190,545,242	1,329,209,566	44.3	14.34

Source: Financial Statements of Listed Companies at QSE 2008-2015

Appendix A.12: Non-debt Tax Shield Calculation					
Year	Profit (EBITDA) QR'000	Revenue QR'000	Tax QR'000	Interest QR'000	Depreciation & Amortization QR'000
2008	32,687,910	20,146,547	21,435	6,829,018	5,690,910
2009	49,931,322	35,503,541	24,690	6,518,754	7,884,337
2010	49,078,430	31,988,498	477,603	7,236,680	9,375,649
2011	56,675,678	40,563,037	881,387	4,833,722	10,397,533
2012	55,806,483	38,826,364	900,877	5,438,474	10,640,768
2013	65,053,996	44,939,406	1,355,023	7,874,995	10,884,572
2014	66,889,122	44,186,351	1,493,688	9,894,671	11,314,412
2015	61,927,934	38,072,384	1,193,042	10,847,558	11,814,951
Total	438,050,875	294,226,128	6,347,745	59,473,872	78,003,132

Source: Financial Statements of Listed Companies at QSE 2008-2015

Appendix B

Questionnaire

Dear Respondent,

Am a student of the St Clements University, Grand Turk, Turks & Caicos Islands - British West Indies pursuing a degree in *Doctor of Philosophy, Financial Management* conducting a study on the Determinants of Capital Structure of Companies in the State of Qatar. It is purely academic, and the information obtained shall not be used for any other purpose other than for the intended purpose and will be treated with the utmost confidentiality. The assistance rendered in this research shall be highly appreciated.

Thanks for the cooperation and invaluable contributions provided in this regard.

THANK YOU

Olayemi Tahir Adam
Senior Fixed Assets Accountant
Finance Directorate, Qatar Foundation

Background information

Please tick answer as applicable to you

1. Gender: Male Female:
2. Age of respondent:
Less than 30years 30-39years 40-49years 50 and above
3. What is the respondent rank in the organization?
Management Business Owner Others
4. Education Background:
Diploma Degree Masters Ph.D. Professional
All above Others

Organization Characteristics

5. How long has this firm been in operation?
Less than 5years 5-10years 10-15years 15 and above
6. How many employees does the organization have?
Less than 200 200-400 400-600 600-800 800 and above
7. In what sector does the business operate?
Banking Insurance Industry Service

8. The size of firm capital in Qatari Riyals
 Less than 500M 500M-1B 1-1.5B 2B and above
9. Where does the business operate?
 Qatar only Int'l only Both

Asset Structure

10. Currently, what type of capital you have employed?
 a. Equity Shares
 b. Debt and Hybrid Securities
 c. Bank Loans
 d. Retained Earning
 e. Others (If any, specify)
11. Our loans have been increasing overtime
 a. Strongly disagree
 b. Disagree
 c. Not sure
 d. Agree
 e. Strongly agree
12. Roughly, what is your current ratio of debt to total assets?
 Less than 20% 20-40% 40-60% 60-80% over 80%
13. Is there a limit on what you can borrow (debts)?
 a. Yes
 b. No
14. Are you at or very near the limit?
 a. Yes
 b. No
15. What is your preferred leverage ratio?
 a. Below 40%
 b. 40-60%
 c. Above 60%
16. Do you have a formal or written capital structure policy?
 a. Yes
 b. No
16. What are your preferred financing alternatives (types and sources)? (Please rank 1 to most preferred and 5 for least preferred).
 a. External Equity
 b. Debt and Hybrid Securities
 c. Bank Loans (Short and Long)
 d. Retained Earning
 e. Others (if any, specify)
18. Do tax issues have a major influence on your financing decision?
 a. Yes
 b. No

Effect of Firm Specific Attributes on Leverage

19. If tax rate increases by 20%, what will be your response?
 a. Increase debt
 b. Decrease debt
 c. No changes

20. In your opinion, how the following firm specific attributes affect leverage ratio?

Organization Specific Attributes	Positive Influence	Negative Influence	Don't Know/Undecided
Non-Debt Tax Shield			
Assets Structure			
Profitability			
Organization Size			
Growth			
Liquidity			
Business Risk			

21. Do you think that the product market and/or industry class also influence the leverage ratio?

- a. Yes
- b. No
- c. Don't Know/Undecided