Determinants of Firm Financial Performance: A Case Study of Oil & Gas and Cement Sector of Pakistan

by

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I want to dedicate my research to my beloved parents, teachers and friends whose always support me at every stage of academic career

CERTIFICATE OF APPROVAL

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Abstract

A rapid change in business environment creates difficulties in firm operations and thus it affects the firm performance. Firm performance can be measured through the financial and nonfinancial determinants. Firm performance is a subjective measure of the firm's overall financial health over a period of time and is used to evaluate and compare firms across the same industry. It plays a vital and significant role in decision making of a firm. This study examines the association between firm performance and its determinants; leverage, tangibility, liquidity, and sales growth. As empirical evidence, this study has taken 13 companies in the oil and gas sector and 15 companies from Cement sector of Pakistan, listed in the Pakistan stock exchange for the period of 2009-2018. A secondary data from the financial statements of these companies have been used. The research methodologies used are descriptive analysis, correlation and regression analysis. Return on equity (ROE), Return on Assets (ROA), Price to Earnings Ratio (P/E) and Return on share price (ROSP) has been used as measures of firm performance in oil and gas sector, cement sector and further study includes, leverage, tangibility, liquidity, and sales growth as independent variables in order to determine their impact on firm performance. From the results of regression analysis, it is evident that the tangibility, liquidity and leverage show negative relationship with firm performance where, leverage, and sales growth have statistically significant impact on firm performance. The conclusion of this researcher is that the accounting-based measures and market-based measures are two separate streams to measure firm performance.

Keywords: Firm Performance, Leverage, Tangibility, Liquidity, Sales Growth, Oil and Gas Sector, Cement Sector of Pakistan.

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Chapter 1

Introduction

In an economy there are so many business firms that offer goods or services to end users. Likewise, in any sector there are number of firms that are competitors and are offering similar goods or services, then a question arises that how do these organizations compete with their competitors? They can compete with their competitors on the basis of performance. Firm performance is the major determinant in the organizational evaluation and the evaluation of actions and environment of the firm.

The researchers have used financial, non-financial and external factors to measure firm performance (Adnan, Sabli, & Abdullah, 2013; Al-Shammari & Al-Saidi, 2014; Appiadjei, 2014; Azar, Rad, & Botyari, 2014). Performance of organization can be measured in many ways. Good performance of a company has a reward for their stakeholders and it also encourages the shareholders to invest more money. All the publications regarding the firm performance were at its highest level in about 1994-1996 as these publications were mainly due to performance measurement rebellion and its literature (Neely, 1999). Organization performance is also a contributing factor in the economic growth if the performance is satisfactory it implies a positive impact and a poor performance leads to a negative impact towards the growth of economy.

Companies performance is always an area of interest for the researchers. There are two main factors that contribute towards the performance of a company; one is the

internal factors and the other is external factors. External factors like political instability, regulations by government are sector wide factors and it affects the whole sector. While on the other hand, internal factors are the internal decisions of a company. These factors vary from company to company because it totally depends on the management of a company. The stakeholders put a great emphasis on analysis of the measurement of the firm performance and its factors (Kakani, Saha, & Reddy, 2001).

Financial management comprises of decision making and these decisions are related to investment, financing, dividend policy etc., the Investment decisions lead towards the financing decision which is the most important and critical decision to be taken.

Financial performance is the extent to which a firm achieves or is achieving its financial objectives (Trivedi, 2010). Financial performance measures the change that occurs in the financial state of a firm (Carton & Hofer, 2006). Firm's financial performance basically demonstrates the financial health of that firm and its assessment and evaluation allows the competition comparison among other firms of an industry. The performance measures change from time to time. Those measures that were used previously, in the past; are not in use in today's era as they do not provide with full information about the performance of the firm (Harker, Zenios, et al., 2000). These measures can be categorized in to further sub-categories like market based, accounting based measures (Nkomani et al., 2013).

1.1 Theoretical Background

1.1.1 Agency Theory

This theory was proposed by Jensen and (Jensen & Meckling, 1976). It states that one party hires services of an agent and gives him decision making power on principal behalf. According to Eisenhardt (1989) agency problem is the result of different opinions of interest between the parties and for principal it is confusing and costly to detect what manager (agent) is up to. Moreover, because ownership

is separated, agents find it hard to fulfill their personal objectives as compared to those of shareholders. In such situation shareholders is the one paying the cost which is known as agency cost.

These conflicting interests are the outcome of monitoring mistakes of shareholder while assessing the managers actions and performance (Jensen & Meckling, 1976) indicated that firms pay high costs so the manager pursuit to achieve his personal goal such as the cost incurred by forming a contract, loss of decision taken by manager and cost occur while monitoring and controlling manager action. Therefore, company's earning ultimately reflects the effect of such behavior. The existence of agency problem can be identified through the practice of management. According to the study of Habbash (2010) in modern corporation management and ownership are separated and shareholders are not always a part of the firm's management therefore it sets the basis of agency problems.

1.1.2 Stakeholder Theory

Stakeholder theory is defined by (Hannan & Freeman, 1984) as individual stake holder or a group who have their interests in the operations of the firm and are interrelated by the operations. Carroll and Näsi (1997) studied that stakeholder word covers vast number of people related to the firms operations and are linked either directly or indirectly by their decisions. Stakeholder theory encourages a efficient way to manage the organization in a fast growing business world and provides an ethical understanding to operate a business in a competitive environment (Freeman, Harrison, & Wicks, 2007). It is a practical theory that allows management to operate efficiently fulfilling their liability towards stakeholders. Stakeholder theory is even more important today. An organization needs to be watchful not only of those who are shareholders, but also of those who are related to the operations of firm directly or indirectly.

Beside this, stakeholder theory faces huge objections that there is an enormous number of stakeholders with which company needs to align their objectives and at times it causes irreconcilable situation (Hoque, 2006). As indicated by Healy

(2003) when the managements objectives don't line up with investor's, they use stakeholder as a shield to guarantee that this contention is a direct result of thought given to fulfill stakeholder's interest.

1.1.3 Trade Off Theory

Firm's optimal capital structure is determined by weighing the costs and benefits associated with the debt financing. Benefits are the tax shields associated with financing and a cost of loss (Financial distress) associated with loan financing. A marginal benefit associated with debt financing starts declining and marginal cost starts increasing. So, the firms must set an optimal debt-equity ratio. The Trade-Off Theory, the most successful firms have capacity for a taking more loans benefiting from the debt tax shields (MacKie-Mason, 1990; Fama & French, 2002).

Another theory known as Signaling theory has also been discussed, which suggests that high leverage shows good quality of a firm and Pecking order theory statuses that companies prefer to use their own resources over the resources from outside. Two models have been discussed regarding the cash holdings of a firm; The Trade-off Model and the Financing Hierarchy Model. Trade-off model suggests that during the course of determining and evaluating the liquidity level of a entity there are certain pros and cons associated with the debt financing. Whereas, Financing Hierarchy Model states that cash balances of a firm are dependent on the financing needs and profits of the firm. According to the Trade-off Theory, it is stated that certain pros and cons associated with the debt financing, therefore; from this perspective debt financing is being favored by high tangibility ratio.

1.2 Problem Statement

When previous literature on firm performance is viewed, it is evident that all the available literature focused on single dimensional approach while measuring firm performance but it is quite evident in recent researches that firm performance is multi-dimensional and two basic approaches to evaluate firm performance are

accounting based model and market-based model. The previous research done been done in the non-financial sector of Pakistan but it does not focus on the impact of accounting-based and market-based models.

Therefore; the subject research has focused on the factors that matters while evaluating the firm performance in the O & G sector of Pakistan, where firm performance is measured with both.

1.3   Research Questions

This research will answer the following questions:

Research Question 1

Is there any relationship between accounting-based and market-based model of firm performance?

Research Question 2

What are the determinants of market-based measure of firm performance?

Research Question 3

What are the determinants of accounting-based measure of firm performance?

1.4   Research Objectives for This Study

Objectives of the study are as follows:

Research Objective: 1

To explore the relationship between accounting based and market-based measures of firm performance.

Research Objective: 2

To identify the determinants of market-based measure of firm performance.

Research Objective: 3

To identify the determinants of accounting-based measure of firm performance.

1.5   Significance of the Study

Good Firm performance not only attracts existing shareholders but also new investors. Investors decision mainly depends on the firm's past performance. Past literature regarding firm performance reveals not enough studies have been done considering multidimensional approach to measure firm performance. Different researchers have examined the effect of one dimension on performance of the firm. Therefore, the study under focus will contribute in literature regarding the impact of liquidity, leverage, sales growth & tangibility on firm performance from multidimensional approach.

Besides above-mentioned significance, study can also help the investors researches to explore the multidimensional approach towards measuring firm performance that helps overviewing the investment decision in broad spectrum.

Chapter 2

Literature Review

The previous studies on the factors affecting the firm's financial performance have focused on both financial and non-financial sectors. In non-financial sector there had been a lot of studies in different sectors like textile, cement and food. Researchers had observed various variables to analyze the firm's financial performance. Bashir, Abbas, Manzoor, and Akram (2013) used ROI to study firm performance in food and textile sector of Pakistan respectively. Different researchers over a period of time have used different approaches to measure the firm financial performance.

Hypotheses have been generated and a completed theoretical framework has been presented in this section of research. Non-financial sector has been selected for this research i.e. O & G sector of Pakistan. This study focuses on literature based on the determinants like leverage, liquidity, tangibility, sales growth, and the effect of these variables on firm performance which is the main variable of the study.

2.1   Firm Performance

At the point when one takes a gander at measures of performance, such as sales growth (Opler & Titman, 1994), growth of employment (Sharpe, 1994), and capital acquisitions (Lang, Ofek, & Stulz, 1996), then one is basically taking a gander at

incremental results connected with marginal investment and financing choices. Determined worst performance may prompt higher debt-asset ratios.

The difference of debt to equity particularly non-current and total debt proportion contrarily influence performance (Jauhari & Madan, 2007). Good liquidity administration could enhance working outcomes and upgrade firm performance whereas; poor liquidity administration can prompt frail working benefits and damage firm performance (Moyer, McGuigan, & Kretlow, 2001). Some exact studies supported a relationship between these (Baskin, 1987; Chathoth & Olsen, 2007; Opler & Titman, 1994), while other variable uncover a negative correspondence (Shin & Soenen, 1998). Grossman and Hart (1986); Zantout (1997), experimentally recorded a constructive relationship among debt to equity and performance of the firm, though (Capon, Farley, & Hoenig, 1990; John, 1993) demonstrated a negative effect of financial leverage on performance of the firm. Assets, efficiency, and firm performance have revealed a positive relationship (Kiymaz, 2006; Roenfeldt & Cooley, 1978).

Firms with capacity for growth may create more market share and cooperative energy impacts, accordingly prompting great performance. Growth did not altogether include value of firm or enhance its performance (Chathoth & Olsen, 2007). The minimum profits of a firm ought to be emphatically corresponded with performance of firm of market in principle. Profitability and firm performance have a positive relationship (Hoskisson, Hitt, Johnson, & Moesel, 1993; Jacobson et al., 1987; Varaiya, Kerin, & Weeks, 1987).

Firms can achieve good performance through bigger size via production increase, increased promotions, and enhanced effective use of assets and resources. Firm size can play a major role in the firm performance (Fama & French, 1993). Positive association among dividend payouts and performance is predicted. Firms can payout its dividends in order to minimize the uncertainty of the investors resulting in increased firm value. Gordon and Shapiro (1956); Gordon (1963). There exists an adverse influence of dividend payout on performance of firm (Mooradian & Yang, 2001). Some studies could not find any association between diversification

performance of firm (De, 1992). One of the major and important factors for firm success and performance is Capital Structure (Jauhari & Madan, 2007).

A number of monetary and non-monetary measures have been utilized for the performance. These measures represented the determinants of the firm performance. Financial measures include ROE, ROA, ROI, ROCE, ROS, size, age, sales growth of firm, income growth, net profit margin, dividend growth, earnings per share, employee growth rate, , profit before tax, interest and tax, depreciation and amortization, gross profit margin, book value, etc. A research conducted, concluded there is a positive influence of financial resources on performance in manufacturing sector of Pakistan. Measure that has been used in conducting this study was the profitability percentage for the firm performance.

Another research conducted on the firm performance determinants demonstrated that these determinants are used as common variables such as; variability in profitability, profitability growth, shareholders' equity, firm's market value, assets, equity, cash flows, sales growth, and book value of the firm. This research concluded with a significant and positive relationship between these measures and the firm performance (Capon et al., 1990). There is a negative but significant relationship between debt to equity and performance of the firm. The outcome of the capital structure has been studied in Indian mobile industry and found a positive impact of debt to equity on the firm performance.

The capital structure and profitability are negatively correlated; a research performed that shows how performance gets affected by the capital structure in the East African manufacturing companies and used (ROE), (ROA), and (EPS) as the measures of profitability. A firm must maintain an appropriate level of operational capital in order to enhance the profitability and enhance the firm performance. Diversity's conclusion on the financial performance has been studied and result are found to be significant positive.

Performance of the firm might be a subjective conception, with several meanings, aspects and dimensions although it is mainly considered as monetary and non-monetary variable so as to measure firm performance at the end. When comparisons are made to evaluate performance accurately, all the objectives and strategic

aims of company are translated into the financial statements. (Mihaela, 2017) The balanced record taken in conjunction with the triple bottom line, specific by company's social responsibility actions, can promote performance of company. The balanced record of a company expands conventional monetary measures with benchmarks in non-monetary domains for evaluating performance; a company's relationship with its end users, its learning, innovation, growth and its important internal operations (Saeidi, Sofian, Saeidi, Saeidi, & Saaeidi, 2015).

2.2 Leverage

As per the trade-off hypothesis, the profits of debt obligation include tax deductibility of the paid premium while the cost of debt rises up out of the excessive amount of debt and potential bankruptcy costs (Modigliani & Miller, 1958).

Agency cost of manager and stockholder pushes firm towards more debt to minimize free cash available with the manager (Jensen 1986), bigger debt obligations may act as an inducement for dismissal of project activities that may increase value (Myers, 1977) while proceeding with risky projects (Jensen & Meckling, 1976).

The leverage only reflects its necessities of external financing. A firm with more non-debt tax shield is probably less leveraged (DeAngelo & Masulis, 1980). Extensive debt must be utilized to discipline the conduct of management (Jensen & Meckling, 1976). Firms having extraordinary opportunities for ventures borrow more as their likelihood of running funds that are produced internally is larger (Shyam-Sunder & Myers, 1999). Greater use of loan increases the chances of bankruptcy. Capital gearing is significantly related to assets while have negative relation with profit margins (Hung, Ping Chuen Albert, & Chi Man Eddie, 2002).

Long-term and debt ratio has impacted the performance in negative while studied on SMEs (Jauhari & Madan, 2007). Exceptionally leveraged firms deal in a better way with risk while taking benefit of economies of scale in the meantime (Kyereboah-Coleman, 2007). Leverage works only for a few firms, and have negative impact on them (Jauhari & Madan, 2007). The debt to equity choice has essentially no effect on the firm and are major considerations and factors inducing

the success of the organization (Jauhari & Madan, 2007). Leverage is a stock variable that does not bind the stream of outside financing into new ventures.

The leverage of the firm demonstrates firm capacity to meet long-term obligations and helps measure the capital structure. Between leverage and performance there exists relationship that is positive and significant (Zantout, 1997; Harris & Raviv, 1990). Performance of the firm is negatively inclined by the leverage (John, 1993; Capon et al., 1990). There is a confident association between resources, efficiency, and firm recitals (Kiymaz, 2006; Roenfeldt & Cooley, 1978). As per a study performed that firms in distinctive locations may have different leverage level and capital structures, it was discovered that there are huge contrasts in capital structure between the two countries. however; no noteworthy changes in location based on market value capitalization ratios (Michel & Shaked, 1985).

The amount of total liabilities to total assets in the growing markets significantly higher as compared to developed markets (Glen & Singh, 2004). Bigger firms with low growth opportunities have insolvency chances utilize long-term debt, long term debt is borne due to higher fixed costs of long-term debt whereas, less secure firms have tendency to utilize more long-term debt (Dalbor & Upneja, 2002).

More successful firms have lower debt to equity ratio than less gainful firms (Titman & Wessels, 1988). It can be finalized that that medium debt may not be the optimal debt to equity but little use may be optimal. Trade-off between expenses and benefits of leverage results in ideal capital structure (Berens & Cuny, 1995; Fama & French, 2002).

Financial Leverage is significant mode for external financing. It demonstrates that a business needs fund to buy new resources, upgrade their production or operational exercises, monetary leverage is a better way for a firm as compared to other ways for accomplishing its objective, with the assistance of the monetary leverage an organization can accomplish its objectives as well as amplify the value of its associates (Iqbal & Usman, 2018).

The connection between the financial leverage and performance of firm is negative when we see the fact that ratio of debt increases and decreases the firm's performance and vice versa. It is concluded from the study that organizations operations

of a firm depend on the ratio of debt (Rafique, 2011).

Monetary leverage influence negatively on performance of a firm and its productivity, also it cannot affect on the firm size and the firm development and it implies that expansion in monetary leverage results in decline of profitability of the firm. It is deduced from the study conducted that reduction in monetary leverage result in visible increment in firm.

Negative impact of financial leverage on performance is most important for small scale firms; nonetheless, impact reduces as firm develops, in the end evaporating when firm magnitude surpasses its threshold. This infers size also influences the connection among debt and performance, so that there exists a minimal level of firm size with the end goal that the connection among leverage and firm performances differs. The size of a firm gives some clarification to the ambiguous connection between performance of a firm and leverage. There is an ideal level size of firm at which leverage does not reduce (Ibhagui & Olokoyo, 2018).

2.2.1 Leverage and Firm Performance

The link between the level of debt and the firm is the key issues that is unsolved in the field of finance. This relationship is a center of focus for maximum of the theories of capital structure such as agency theory, signaling theory, asymmetric information theory, and the trade-off theory. Firms do have an inducement to use the debt and will be using it till the interest rates will be raised by the additional supply of the firm and will reach at a stage when advantages of tax and interest deduction is totally balanced through high rates. These tax shields are enough to control the un-relatedness of the capital structure theory and will ultimately result in the market equilibrium (DeAngelo & Masulis, 1980).

The internal managers of a firm have more knowledge and know how about the company's risks, capital structure, and values as compared to the investors from outside, and thus it leads to Pecking Order hypothesis that states that for financing choices firms have preference orders (Myers & Majluf, 1984). The debt to equity ratio of a firm shows the quantity of debt that is being used by the firm in order

to finance it activities and assets, and for this purpose of financing either debt or equity or a combination of both can be utilized by the firm. The Signaling theory states that high leverage shows high performance and quality of a firm.

The free cash flow is reduced by the debt usage and hence decreases the agency problem of investing into projects that are negative by paying fixed interests (Jensen 1986). Assets structure and performance show positive relation (Shergill & Sarkaria, 1999). The leverage which is outside the optimum level could lead to greater risk and thus decreases the firm value (Chen & Wong, 2004). The debt to equity of firm impacts negatively on the performance (Zeitun & Tian, 2014) The ROE analysis had not paid much attention on the association of high risk with high leverage. Leverage, size, and risk of play a vital role and are factors of performance (Ahmed, Ahmed, & Usman, 2011). The indebtedness incites the performance. Higher indebtedness leads to higher bankruptcy chances for the firm. The tangibility is the drives the leverage. Those firms with more ability to fulfill financial commitments are highly leveraged (Faulkender & Petersen, 2005). Firms that are close enough to credit rating prefer to be less leveraged (Kisgen, 2006).

Firm's leverage ratio is not the absolute measure to inspect associate contracting and performance (Fluck, 1998; Myers & Majluf, 1984). Firms that prefer to present its equity shares on one or more foreign stock exchange along with its domestic exchange are likely to use more equity and long-term debt. More liquid firms have less leverage. The businesses with more tangible assets are able to provide collateral for debt (Titman & Wessels, 1988). Mangers of firms have all the related information of distribution of income and when debt is issued, it triggers positive sign to the outsiders about the income distribution which states that the organization has enough income and has the ability to pay the all the installments and interests (Ross, 1977).

The performance of organization is highly influenced by the capital structure and focus on increasing performance and reducing financing costs through the maintenance of optimal capital structure. The debt to equity ratio of the firm has a negative effect on the firm's performance and events; ROA, sales growth, and pretax income (Gleason, Mathur, & Mathur, 2000). The leverage solely does not

affect the firm performance but also the debt maturity structure impacts the performance of the firm (Ozkan, 2002). Larger firms and those with low growth rates issues long term debts (Barclay & Smith Jr, 1995). The research on firm performance emerges from organization theory and strategic management (Murphy, 1996). The measures of performance of a firm can either be organizational or financial. According to the trade of theory, firms that are more profitable need to protect their earnings and also save their taxes by preferring for high leverage. It is evident that the performance of businesses and the high level of debt are related positively (Hadlock & James, 2002; Abor, 2005).

Trade off theories states that firm performance and leverage might be having a negative relation. The prospective advantages of leverage are followed by the potential bankruptcy costs. Greater debt financing by a firm for facing bankruptcy risk, there are some tax benefits that are associated with debt financing (Su and Vo, 2010). Equity ratio and productivity performance has significant relation and as a result of that the use of equity funding enable more elasticity and discretion leading to greater advanced activities than the use of debt(E. Kim, 2006). Firms are indulged in deciding on the capital structure choice that which one should be used. This particular decision is pivotal in creating an impact on the financial performance of firms. The capital structure of a firm is the mix of debt and equity the firm utilizes to finance its actions (Abor, 2005). A strategy used by the managers is use of equity and debt to progress performance (Gleason et al., 2000). Modigliani and Miller (1958) stated that Arbitrage would make sure that entity's exposure to risk will not change because internal leverage was as good as corporate leverage. After modifying their own hypothesis, (Modigliani & Miller, 1963) by lessening the supposition of no taxation, they argued that levered firms will have more worth as compared to the less levered companies due to the result that debt is a tax-deductible outflow.

A model has been introduced to demonstrate the result of leverage on the firm value. According to this suggested model, there are pros of corporate tax in the market equilibrium are negated by the effects of personal taxes. Myers (1977) states a major advantage of temporary debt that can be an improvement and

better tool for improving of the performance. On the other hand, some studies have shown that debt has a impact on performance and it has negative impact. The use of more loan generates agency problems among stakeholders and creditors and this can also result in negative relationship between leverage and firm performance (Fama & French, 2002). Leverage has a adverse effect on performance of firm (Majumdar & Chhibber, 1999). Gleason et al. (2000) researches outcomes show that there exists a negative relation between leverage and the profitability of the firm. Higher debt to equity ratio can result in greater chances of financial distress. Firms that are having higher debt have more chances of hedging as compared to the firm with a lower debt (Dolde, 1995; Graham & Rogers, 2002).

Derivatives increase the loan volume of the firm, and hedging and leverage have a positive relationship (Graham & Rogers, 2002). Increase in leverage can increase firm's performance. Leverage and performance have negative relationship (Zeitun & Tian, 2014). They made use of leverage, growth, size, tax, risk and tangibility as independent variable to see their effect on firm's performance. There exist a significant and negative relationship between debt ratio and financial performance of the firm (Onaolapo & Kajola, 2010). Krishnan and Moyer (1997) conducted a research study and determined that there is a negative and noteworthy relationship between leverage and performance of the firm. Higher the leverage there is decreasing conflict between management and shareholders.

The leverage can work as penalizing device that keeps the management away from wasting the resources of the firm (Grossman & Hart, 1986). (Modigliani & Miller, 1958) disclosed that it is not necessary that firm using leverage or not can have difference in their value. As the leverage of firm increases, the company's chances of surviving become difficult in eras of falling sales (Opler & Titman, 1994). Businesses that have high leverage have better performance than firms with less leverage (Adams & Buckle, 2003). Carson and Hoyt (1995) concluded that leverage has significant positive relation with the chances of insolvency. High leverage could raise financial performance as managers of the firms are not much capable of initiating negative NPV projects (Jensen, 1986).

According to the Agency theory the firms with leverage are improved for the shareholders (Boodhoo, 2009). The higher debt to equity might end up with less agency costs, decreased inefficiency and therefore; resulting in perfection in firm's performance (Kochhar, 1996; Akintoye, 2008; Onaolapo & Kajola, 2010). Leverage and firm performance are negatively related (Rao, Al-Yahyaee, & Syed, 2007). Leverage can increase the profit after taxes because of low borrowing rates and similarly, higher earnings may end up in the higher EPS or dividend payout ratios which might raise the firm's performance (Ferri & Jones, 1979). Net Income Approach emphasizes leverage in the determination of value of the firm (Aydın, Başar, & Coşkun, 2010) research results show that there is a negative relation between debt and profitability. According to Kabakci et al. (2008), lower debt of a firm results in high profitability. A negative connotation between debt ratio and financial performance has been found (Gürbüz, Aybars, & Kutlu, 2010). Return on Assets (ROA) has found to have a negative affect by using debt (Kebewar, 2013). (Mohamad & Abdullah, 2012) concluded that use of debt reduces ROA and firms prefer to utilize internal and external financing and in result performance improves. The firm performance (ROA) has been evaluated against the debt ratio and it has been concluded and found that performance is negatively influenced by raising the debt ratio (Memon, Bhutto, & Abbas, 2012).

Companies are affected in negative way and are affected by the short-term loan whereas, the case of long-term liability affects the performance of the firm in positive and significant way, shortly, the total debt negatively influences the firm performance. When a firm shifts itself from unlevered to levered, the income is increased due to the tax benefit and as a result it increases the firm performance (Modigliani & Miller, 1963). According to (Majumdar & Chhibber, 1999) it has been found that by using debt the firm performance is influenced, in a case where ROE in a negative direction. Those firms with high leverage are capable of managing the risk and that is why outperforming firms with lower leverage. The relation among leverage and profitability has been noted (Sarkar & Zapatero, 2003). A positive relationship has been suggested by (Jensen, 1986; Jensen & Meckling, 1976; Easterbrook, 1984).

Leverage that is far beyond the optimum level can lead to high risk for the firm and ultimately low firm value (Chen & Wong, 2004). The leverage of a firm only reflects its external financing needs and requirements. Leverage works only for some firms, and negatively influence them (Jauhari & Madan, 2007). Significant effect of the leverage on firm's financial performance is noted. There are several measures that exist to measure the firm's financial performance. Different concepts are differently offered to establish the relationship between leverage and firm performance. As signaling theory shows that firms that are highly leveraged reveals good and high performance as a result. According to Zantout (1997) there is a positive relation between leverage and the firm performance. So, from the literature of this research it is obvious that firm performance and leverage are positively significantly related.

2.3   Liquidity

It refers to the firm capacity to meet its current obligations and how quickly the assets of firm convert to money at a reasonable market price (Ardalan, 1999). Liquidity is an amount of cash that firms kept to meet near term obligations (Ascher, 2006). There are three motives behind the cash holding, one is transaction motive that firm has sufficient cash to meet day to day expenses, second is precautionary that firm should kept sufficient cash to handle unexpected cash requirements and last is speculative motive that firm has that much cash to take the advantage of sudden opportunities (Keynes, 1936). How much cash a firm should kept with itself, is a critical issue, to solve this issue a new concept is introduce that is Cash conversion cycle, a cash conversion cycle is used to quantify the liquidity level its organization and firm performance (Richards & Laughlin, 1980).

The value of a firm is prized by the cash conversion cycle (J. A. Gentry, Vaidyanathan, & Lee, 1990). If the cycle increase it decrease the liquidity requirement of a firm and if cash conversion cycle decrease it increase by liquidity requirement of a firm as it is proved by (Schilling, 1996). Company profitability is depending on cash and working capital of a company (Lyroudi & Lazaridis, 2000). Liquidity level of a

firm depends upon the account receivable, account payable and inventory conversion cycle policy (P. Singh, 2004). Organization's with high market-to-book ratio experienced high level of liquid assets (C.-S. Kim, Mauer, & Sherman, 1998). Equity financing also effect the liquidity position of a firm, and a study conducted on Karachi stock exchange 225 listed firms provides the evidence that equity financing influences the liquidity position of a firm, Equity and fixed assets are related to the liquidity position of a firm.

Working capital is significant part when it is related to administrative choice of a firm. The idea of working capital management can be accomplished by firm dealing in exchange off among productivity and liquidity. According to the theory of risk and return, speculation with more risk will result to more return. In this way, firms with high liquidity of working capital may have generally safe at that point of low productivity. On the other hand, firm that has low liquidity of working capital, confronting high risk results to high benefits. The problem is of handling working capital, firm should contemplate the things in the both books and attempt to adjust the risk and return. Liquidity in terms of working capital is responsible for under-utilization, poor limit and expenditure. There exists a connection between profitability indicators and liquidity (Khan, Akash, Hamid, & Hussain, 2011), a Study of Managing Liquidity.

Liquidity management is an idea that is receiving genuine consideration around the world comprehensively for the most part with the current financial circumstances and the condition of the world economy. The concern of entrepreneurs, business owners and managers throughout the world is the means by which to devise a better plan of managing with their everyday tasks as to meet their commitments as they fall due, increment in profit and investors' wealth. Liquidity as an independent variable is notably successful while working for a business firm. The study related to liquidity is a major significance to both interior and exterior investigators due to its close association with everyday operations of the firm. (Khan et al., 2011).

2.3.1   Liquidity and Firm Performance

The efficient management of liquidity and working capital are important for a firm's profitability and its performance. Various studies identify liquidity as a determinant of firm profitability, (Velnampy & Pratheepkanth, 2012). Firm performance and its operations depend on the liquidity, proper and efficient liquidity management leads toward good firm performance and good firm operations whereas improper and inefficient liquidity management leads toward bad firm performance and bad firm operations (Moyer et al., 2001).

Cash receivable period should be kept short for the good performance of a company (Deloof, 2003). For a good firm performance, convert inventory into cash as earlier as possible (Nobanee, Abdullatif, & AlHajjar, 2011). High inventory level disturbs the liquidity position and profit (Padachi, 2006). Firm profitability improves by the reduction in cash collection period, conversion of inventory and the length cash conversion cycle (Juan García-Teruel & Martinez-Solano, 2007). Return on investment of a firm is significantly associated with the cash conversion cycle (Dong & Su, 2010). Delay in cash payments, for a better and efficient firm performance (Juan García-Teruel & Martinez-Solano, 2007).

Firm can perform best by keeping the cash collection period short (Raheman & Nasr, 2007). Short cash conversion cycle improves the liquidity state of a firm that result in better firm performance (Churchill & Mullins, 2001). Firms with more liquid assets perform well and face low liquidity risk (Shiu, 2004). There are different views regarding firm performance and liquidity as it is related to agency theory, high liquidity can increase agency cost for shareholders because it provides managers to use cash in excess cash investing in a negative net present value project. Firm performance and liquidity have a significant relationship, firm decrease their current liabilities and increase current assets due to the direct and positive relationship between firm performance and liquidity (Almajali, Alamro, & Al-Soub, 2012).

Firms with more cash and near to cash assets have less chance to fail because they are able to meet cash requirements in difficult or unpredicted situations. Firm

can perform outclass with optimal liquidity level. The portion of liquid assets in total assets are in positive relation with firm performance (Browne & Hoyt, 1995). Liquid assets face reinvestment risk because the residual cash should be reinvestment and can be factor to affect the performance of a firm. Firms involve in more risky activities face more volatile cash flows then those of firm that are risk aversive (Fama & French, 1993). This implies that firm with more cash flows perform better than the firm with low cash flows.

Limited current assets create problem in firm operations while excess current assets positively affect the return on investment of a firm. Duration of account receivable, account payable, inventory turnover and cash conversion cycle can affect the return on assets which leads toward bad firm performance because return on investment use a proxy of firm performance (Padachi, 2006). Liquidity arise risk for the firm, a study conducts to find the affiliation between the liquidity and risk. This research study shows that there is a moderate relationship between the liquidity and risk (Khan et al., 2011). High level of current ratio indicates high investment in current assets, this means low return on investment and low profitability and poor firm performance (Vishnani & Shah, 2007).

Liquidity management required perfect planning and controlling of current ratio so it eliminates risk of meeting short term obligations (Eljelly, 2004). Some studies and researches show that liquidity is not significantly related to the firm performance. By maintaining an optimal level of liquidity, a firm can increase its productivity as optimal level positively affects the firm in positive manner. Liquidity of a firm is certainly related to the firm performance (Maina & Muturi, 2013). In conclusion we can say liquidity is significantly positively related with the firm's performance.

2.4   Tangibility

Firms with a more prominent rate of their aggregate holdings of assets including assets that are tangible and have a higher capability for raising debt (Myers, 1977). Assets that are more tangible are significant and valuable on the grounds that they

are simpler to repossess and exchange. Asset's tangibility can offset significance of managerial human capital in contract re arrangements, giving validity to financial specialists' risk to take the firm to liquidation court and/or to release its managers.

The strategy expands on the idea that managers' motivators to embrace performance improving arrangements under outside financing develops with the tangibility of their organizations' assets in the wake of financing happens. Greater tangibility leads creditors to pick liquidation of assets over contract renegotiation when firms fail to meet expectations and get to be troubled (Gilson, John, & Lang, 1990). A firm will have an especially troublesome time liquidating its assets when the circumstances heading it to monetary trouble additionally influence the financial practicality of its assets best option clients (Shleifer & Vishny, 1992; Pulvino, 1998; Acharya, Bharath, & Srinivasan, 2007). Firm particular managerial data influences execution and performance, differentiates profitable stakes/assets from its present controllers those assets get to be fundamentally less important.

2.4.1 Tangibility and Firm Performance

The performance not only plays an important role to enhance and increase the market value of that particular organization but it also led positively towards the sector growth which as a result move towards the economic prosperity. In the case of assets, tangibility means something that actually and physically exists. A relationship significant and positive exists between tangibility of assets and profitability (Malik, 2011).

Tangibility has been measured through by dividing fixed assets by total assets ratio by (Bashir et al., 2013) and his research results show that it has a significant positive relation with the performance of the firm. According to Li (2007), there exists no significant relationship and association among tangibility of assets and profitability of firm. The several shareholders' impact on the value of the firm has been researched and studied by (Maury & Pajuste, 2005) and they have found that tangibility has insignificant relationship with the value of the firm. More tangible assets are much easier to verify, which as a result increases the value for

investors that are outside the firm and which they may recover in liquidation. Tangibility has negative relationship with firm's performance (Zeitun & Tian, 2014). Significant and positive relationship exists between tangibility and the firm performance (Mehari & Aemiro, 2013; Bashir et al., 2013; Chinaemerem & Anthony, 2012).

A great importance is given to the tangible assets by the creditors in a case where contract frictions are present, and because in this way they can take possession of those tangible assets if a firm goes bankrupt (Almeida & Campello, 2007; Campello & Giambona, 2010). Tangibility is the only variable that affects the ROE (Agustinus & Rachmadi, 2008). Ratio of Fixed net assets to total assets been used for the measurement of tangibility (Chinaemerem & Anthony, 2012) and concluded that tangibility affects positively on the performance of the firm. According to Sambasivam and Ayele (2013) tangibility is not significantly related with the profitability of the firm. (Mehari & Aemiro, 2013) measured tangibility and results conclude that tangibility has a significant positive relationship with firm performance. Fixed assets to total assets have been used for the measurement of tangibility and according to that tangibility and performance of firm has insignificant and negative relationship (Abbas, Bashir, Manzoor, & Akram, 2013). A significant positive relationship between tangibility and the firm performance (Ahmed et al., 2011).

The hypothesis that tangibility and firm performance is insignificant but positive. Tangible assets are also known as the real assets. These types of assets are reproducible assets like building and non-reproducible assets like land. By increasing the tangibility ratio, liquidation of value of the firm increases and as a result of this mispricing chances can be reduced in case of bankruptcy (Deesomsak, Paudyal, & Pescetto, 2004). It all can be concluded as; tangibility has a significant positive impact on the firm performance (Sambasivam & Ayele, 2013). Ahmed et al. (2011) has measured tangibility with fixed assets to total assets and found that there is a noteworthy positive relationship between tangibility and firm performance.

2.5   Sales Growth

Firm is influenced by the income development (De Wet & Hall, 2006). Firms can bring about great execution when they have limit with regards to development and in this manner; can build their piece of the pie. Firms with such quick improvements may confront genuine competition and may find them sensitive towards the varieties in the economy (Idol, 1978).

The achievement of development by the executives may likewise be at the burden of the abundance of proprietor and subsequently, bringing about a negative relationship among development and the estimation of the firm. All out resources have been utilized in models of firm development by (Diambeidou, François, Gailly, Verleysen, & Wertz, 2008). Resources profit and moreover returns for value are alluded to speculatively as being essential for firm improvement and development (Demirgüç-Kunt & Maksimovic, 1998; Gulati & Zantout, 1997). A decent and successful check of productivity is the Gross edge and is related to development of the association (Davidsson, Delmar, & Wiklund, 2006). Development did not on a very basic level incorporate firm worth or improve firm execution and execution (Chathoth & Olsen, 2007).

2.5.1   Sales Growth and Firm Performance

Growing size of effects profitability is a positive way to show the certain amount (Athanasoglou, Brissimis, & Delis, 2008). Sales growth, in some situations might be supported by technological advancement and equipment instead of addition of employees (Dunne, Foster, Haltiwanger, & Troske, 2004). A positive relation among growing size and profitability is concluded by many researchers. However, in very large firms, other factors might ad on and show negative impact (Li, 2007). Hence the growth and profitability may be nonlinear therefore most studies conducted contain logarithmic assets square to capture possible nonlinear relationship.

Size can verily affect the performance, as the larger firms can leverage their size to maximize the benefits and obtain efficient financial and other market factors

(Beaver, 1998). It is easier for large firms to reach for cheaper financial resources but (A. Singh, Whittington, & Burley, 1968; Banz, 1981) contradicted to the point and said the size might create a negative impact because sustainability would be difficult for large organization and this might cause an impact on financial performance. A positive connection among size and execution mostly on the grounds that working cost efficiencies through expanding yield a streamlining on unit of expense (Hardwick, 1997).

Bigger organizations additionally guarantee to successfully expand their hazard and responding to market changes is simple. Development is deals is the perceived proportion of the firm execution (Capon et al., 1990). Bain (1968); Scherer (1987) have contended huge firms appreciate syndication that give them ideal to set costs and in some cases over the financial costs which causes them in extra benefit. (Adams & Buckle, 2003), Large organizations can build their portfolio helping them enhance to decrease the danger of misfortune. Enormous firms beat littler ones utilizing monetary apparatuses for their advantage, for example, economies of scale and they have assets to appealingly show their administrative quality, subsequently execution is legitimately identified with size of organization. The most utilized measure for development is exacerbated yearly development pace of offers and all out resources (Dess & Robinson Jr, 1984). At the point when the chances of development are given to the firm, it makes the firm to perform much better (Memon et al., 2012) and enables firm to produce benefits (Zeitun & Tian, 2014). Development is fundamentally an addition or increment in the item advancement, workers, deals, resources, and business extension (Kouser, Bano, Azeem, & Ul Hassan, 2012).

The development of the firm is a pointer of the association's prosperity (Davidsson, Steffens, & Fitzsimmons, 2009). Development is likewise another significant influencers of firm execution (Agustinus & Rachmadi, 2008; Almajali et al., 2012; Duncombe, 1959; Hovakimian, Opler, & Titman, 2001). An audit on a few exhibition viewpoints and measurements has been led and discovered that business development is one of the most significant and real proportions of the company's monetary presentation measurements (Venkatraman & Ramanujam, 1987). A

decent and powerful measure of benefit is the Gross edge and is related to development of the association (Davidsson et al., 2006). Firms can bring about great execution when they have limit with regards to development and along these lines; can build their piece of the overall industry. Consequently, it is inferred that business development has a noteworthy effect on the firm execution in positive way, as both are emphatically corresponded. Deals development is the known proportion of the firm execution (Capon et al., 1990).

Chapter 3

Data Description and Methodology

3.1   Data Description

This study analyzes the impact of liquidity, tangibility, leverage & sales growth on firm performance in multidimensional approach i.e. accounting-based model & market-based model in Oil and gas and Cement sector of Pakistan. The study uses 13 listed companies from oil and gas and 15 companies from cement sector of PSX and the time period considered for this research is 10 years and data for all the companies is available. The sample period starts from 01 July 2008 to 31 July 2018.

Objective of this research is to find that accounting based and market-based measures of firm execution are two separate streams and are not connected to one another. Firm monetary execution is the way to quantify whether firm is accomplishing its objectives, this has been under the investigation for a long while now. Barney (2002); Hult et al. (2008); Richard, Devinney, Yip, and Johnson (2009). Scientists in early years utilized bookkeeping based estimates, for example, ROE, ROA (Porter, 1981). In mid-1980's market-based measures were brought into the board investigate (Bromiley, 1990; Lubatkin & Shrieves, 1986). Idea of Shareholders riches boost was presented in these years (Useem et al., 1993). This move

facilitated the way toward utilizing market-based measures. Grossman and Hart (1986); Luigi, Sorin, et al. (2009); Akhtar, Javed, Maryam, and Sadia (2012); Almajali et al. (2012) dissected and result propose that there is certain relationship among influence and firm execution. Liquidity has a positive and critical effect on firm execution as concentrated by (Ahmed et al., 2011), Ongore and Kusa (2013). Effect of substantial quality and firm execution can be obtained from previous research of (Rajan & Zingales, 1995) and their exploration recommend that substantial quality has unimportant effect on firm execution. (Chinaemerem & Anthony, 2012) Forthright (1988); considered the effect of offers development and firm execution and they inferred that deals has positive and huge connection.

On the basis of these studies we can hypothesize that liquidity, leverage, tangibility and sales growth have influence on firm performance.

$\mathbf{H}_o$: There is no significant relationship among accounting-based and market-based measures of firm performance.

$\mathbf{H}_1$: There is significant relationship among accounting-based measures and firm performance.

$\mathbf{H}_2$: There is significant relationship among market based measures and firm performance.

3.2 Variable Description

In this study Firm performance is main dependent variable. Firm performance is rate of profitability (Hoskisson et al., 1993). It is evaluated by measuring in multi-dimensional way i.e. through market-based model and accounting based model. For accounting-based we have used ROA and ROE and for market-based measures we have used EPS & ROSP.

Other set of variables i.e. Independent variables used in this study and their measures are Leverage (Debt to Equity Ratio), Liquidity (Current Ratio), Tangibility (assets turnover ratio) and Sales Growth (Change in sales).

3.3 Variable Specification

Dependent Variable

3.3.1 Firm Performance

Return on Equity Firm performance is defined as the success of a firm during a specific period as compared to previous period (Jauhari & Madan, 2007) There are several proxies that are studied to measure the performance of the firm. In this research we have used ROE, ROA, P/E ratio & ROSP to measure firm performance. (Almajali et al., 2012) used ROE to evaluate the firm performance. ROE is measured by dividing Net income minus Preferred equity to Common equity. For this study ROE is used to evaluate the firm performance of companies in oil and gas & cement sector of Pakistan.

Formula:

$$\text{Return on Equity} = \frac{\text{(Net income - Preferred Equity)}}{\text{(Common Equity)}}$$

Return on Assets

The ratio of ROA determines how efficient the management is in using its assets to produce revenues. Menaje (2012) conducted a study by dividing a company's total annual earnings to its total assets. ROA is presented as a percentage and is also referred to as "return on investment". Al-Malkawi, Arabia, Pillai, Dhabi, et al. (2012) conducted a researchon Amman Stock Exchange which helps understand the impact of Liquidity on firm performance Thee measure used for firm performance is ROA and calculated the value of ROA by below given formula:

$$\text{Return on Assets} = \frac{\text{(Net income)}}{\text{(Total Assets)}}$$

Price to Earnings Ratio

The price to-earnings ratio is a proportion of market trust in the shares of a firm. The normal method to register the ratio (by separating business sector cost

by earnings per share) is handy, since examiners can watch value per share and historical earnings per share for generally firms. The Wall Street Journal Reports P/E ratio as a feature of the day by day inclusion of stock costs and exchanging exercises (Stickney, Brown, & Wahlen, n.d.). The ratio is determined utilizing the present share cost and current earnings, as the formula demonstrates.

$$\text{Price to Earning} = \frac{\text{(Market Price Per Share)}}{\text{(Earning Per Share)}}$$

Return on Share Price

(Menaje, 2012) aimed to understand the impact of share price of listed firms on firm performance. To conclude this he used the Share Price to find the returns per year. Similarly, in another study conducted by Irungu (2013) concluded that the impact of the determinants of performance of firm using return on share price.

Formula for this calculation is as under:

$$\text{Return on Share Price} = \frac{\text{(Current year share price-Previous year share price)}}{\text{(Previous year share price)}}$$

Independent Variable

3.3.2   Leverage

Leverage is used both as a degree of firm performance and the amount of loan use to finance the firm assets (Gleason et al., 2000). As Appiadjei (2014); Myers and Majluf (1984) used debt to equity ratio to measure the Leverage. For this study debt to equity ratio used to evaluate the firm performance of companies in oil & gas and cement sector of Pakistan.

Formula:

$$\text{Debt toEquity ratio} = \frac{\text{(Total liabilites)}}{\text{(Total equity)}}$$

3.3.3 Liquidity

The term liquidity defines the capacity of firm to meet its current obligations and how quickly the assets of firm convert in cash at a market price (Ardalan, 1999). The amount of cash that firms kept to meet near term obligations in known as liquidity (International Financial Reporting Standards (2006). There are several proxies that are used to measure the liquidity of the firm. Dong and Su (2010); Omondi and Muturi (2013) used current ratio to estimate the liquidity. Current ratio is obtained by dividing Current assets by Current liabilities. For this research total assets turnover ratio is used to measure the tangibility in oil & gas and cement sector of Pakistan.

Formula:

$$\text{Current ratio} = \frac{\text{(Current assets)}}{\text{(Current liabilities)}}$$

3.3.4 Tangibility

Tangibility is the quantity of assets a company uses to produce goods (Acharya et al., 2007). Tangibility is a number of total tangible assets (Gilson et al., 1990). There are several proxies that are used to measure the tangibility of the firm (Omondi & Muturi, 2013; Ahmed et al., 2011) used total assets turnover ratio to measure firm performance. Total assets turnover ratio is obtained by dividing Net revenue to Average total assets. For this research total assets turnover ratio is used to measure the tangibility in O&G sector of Pakistan.

Formula:

$$\text{Total assets turnover ratio} = \frac{\text{(Net revenue)}}{\text{(Average total assets)}}$$

3.3.5 Sales Growth

A change in sales refers to sales growth (Sinthupundaja & Chiadamrong, 2015; Deloof, 2003) used change in sales growth to evaluate sales. Sales growth is measured by dividing Current year sales to Previous year sale's minus one. For this study change in sales is used as a proxy to measure the variable sales growth.

Formula:

$$\text{Change in sales} = \frac{(\text{Sale in current year})}{(\text{Sales in previous year})} - 1$$

3.4 Model Description

The study used simple regression model for the study. According to variables impacts the regression model is taken as under:

The Eviews-8 was used for data analyses. Descriptive statistics was used to find out the mean and standard deviation of study variables. Correlation analysis was used to determine the degree of relationship and direction of relation between variables. Regression analysis was used to find out how much variance in dependent variable caused by the predictor variables. The regression equation for this research is: it.

$$ROE_{i,t} = \alpha + \beta_1 \text{ SGi}_{i,t} + \beta_2 \text{ Lev}_{i,t} + \beta_3 \text{ Liq}_{i,t} + \beta_4 \text{ Tan}_{i,t} + \epsilon \text{.......} (3.1)$$

$$ROA_{i,t} = \alpha + \beta_1 \text{ SGi}_{i,t} + \beta_2 \text{ Lev}_{i,t} + \beta_3 \text{ Liq}_{i,t} + \beta_4 \text{ Tan}_{i,t} + \epsilon \text{.......} (3.2)$$

$$P/E_{i,t} = \alpha + \beta_1 \text{ SGi}_{i,t} + \beta_2 \text{ Lev}_{i,t} + \beta_3 \text{ Liq}_{i,t} + \beta_4 \text{ Tan}_{i,t} + \epsilon \text{.........} (3.3)$$

$$ROSP_{i,t} = \alpha + \beta_1 \text{ SGi}_{i,t} + \beta_2 \text{ Lev}_{i,t} + \beta_3 \text{ Liq}_{i,t} + \beta_4 \text{ Tan}_{i,t} + \epsilon \text{......} (3.4)$$
WHERE:

ROE= Return on Equity

ROA= Return on Assets

P/E= Price to Earning

ROSP= Return on Share Price

SG= Sales growth

Lev= Leverage

Liq= Liquidity

Tan= Tangibility

β= Beta

e= Error term

3.4.1 Sampling

The oil and gas & cement sector represent the primary engine of economic activity. Whenever immediate and circuitous linkages are considered this area shapes noteworthy segments of an economy. Normally these segments are depicted short-sightedly as solid enormous oil and gas organizations and cement organizations, when in truth there is an immense variety in the size and job of firms. As opposed to regular discernment it is exceptionally intricate and dynamic industry given the complexities and modernity related with investigation, improvement, generation and advertising of this segment items. The time span for this specific research is after the retreat of 2008.

Chapter 4

Results

4.1 Descriptive Statistics

At first, we examine the behavior of data to assure if it is accurate or not. For this purpose, descriptive statistics technique is used and it shows the behavior of both dependent as well as independent variables. The descriptive statistic table shows the value of mean, minimum values, maximum values, skewness, kurtosis and values of standard deviations of all variables of the sample.

The mean value shows average while standard deviation shows how it deviates from mean. Minimum and maximum value is the high and low difference in the data. Skewness is a measure of symmetry. It shows how the data looks form distribution point from left to right. Kurtosis show the tail of the data either it is lightly or highly tailed from the center.

Results of descriptive statistics of all variables are given below in Table 4.1. These variables are Firm performance (D.V) for which accounting-based measures are (ROE), (ROA) and market-based measures are represented by (PE) & (ROSP) while the Independent variables are Tangibility (ATO), Sales growth (CIS), Liquidity (CR) and Leverage (DE).

<div align="center">

TABLE 4.1: Descriptive Statistics

</div>

	ROA	ROE	PE	ROSP	ATO	CIS	CR	DE
Mean	3.6395	7.8813	8.6378	0.3227	1.2657	0.1982	1.568	0.9628
Median	0.2093	0.4372	7.1906	0.0745	0.6300	0.0975	1.1	0.46
Maximum	24.3900	277.6900	314.000	7.8794	6.5800	7.9801	13.41	89.14
Minimum	-18.36	-265.2	-198.5	-0.7555	0.0100	-0.8789	0.15	-8.24
Std. Dev.	7.7303	27.40894	24.6313	1.0930	1.3805	0.7121	1.4301	5.5074
Skewness	0.4333	0.0127	5.0074	4.1209	1.8575	7.6604	3.1081	15.2604
Kurtosis	3.7429	15.4393	10.7272	12.4489	5.7936	7.5727	20.7515	11.9.222

Table 4.1, represents the descriptive analysis. The proxy used to evaluate firm performance ROA has a mean value of 3.6395 showing upward direction. S.D is about 7.73% while the maximum and minimum value of ROA is 24.3900 and -18.3600 showing maximum upward or downward trend over the selected time period. The value of skewness is 0.4333, which shows that the values of data are dispersed towards positive direction. The value of Kurtosis is 3.7429 which show that the data is on a high peak.

Similarly, ROE has a mean value of 7.8813 showing upward direction with a S.D of 27.4089. The maximum and minimum value is 277.6900 and -265.2000 which mean that the maximum upward or downward trend over the selected time period. The value of skewness is 0.0127, which shows that the data is distributed towards positive direction. The value of Kurtosis is 15.4393 which shows that the data is on a high peak.

Table: 4.1 also shows the mean value of PE 8.6378 with a S.D 24%. The average implies that sample firms are having upward direction. The maximum and minimum value of PE is 314.00 and -198.5000 which shows the maximum upward or downward trend over the time period selected. The value of skewness is 5.0074, which shows that the data is distributed towards positive direction. The value of Kurtosis is 10.7272 shows that the data is on a high peak.

ROSP results show that means value is 0.3227 with a S.D of about 1.0934. The average implies that about 32% on average of ROSP in sample firms are having upward direction. The maximum and minimum value of ROSP is 7.8794 and -0.7555 which mean that the maximum upward or downward trend over the selected time period. The value of skewness is 4.12094, which shows that the data is distributed towards positive direction. The value of Kurtosis is 12.4489 which show that the data is on a high peak.

Looking at the independent variables in Table 4.1 it is shown that the mean value of ATO 1.2657 with a standard deviation of about 1.3805 The average of sample firms regarding this variable implies upward direction. The maximum and minimum value of ATO is 6.5800 and 0.0100 which shows the maximum upward or downward trend over the time period selected. The value of skewness is 1.8575 which shows that the data is distributed towards positive direction. The value of Kurtosis is 5.7936 shows that the data is on a high peak.

Similarly, CIS and CR have Mean values 0.1982 and 1.5680 respectively with a standard deviation of 0.7121 and 1.4301. The average implies upward direction in both variables. While the maximum and minimum value of CIS and CR are 7.9801 to -0.8789 and 13.4100 to 0.1500 respectively showing the upward and downward trend. The value of skewness in CIS is 7.6604 showing data is in positive direction and for CR value is 20.7515 also showing positive direction. The value of Kurtosis for both variables show that is on high peak. As for the DE the mean value is 0.9628 with a standard deviation of 5.507. The maximum and minimum value of DE is 89.1400 and -8.2400 show the upward and downward trend. Skewness of DE is 15.2504 which show the data is positively distributed. The kurtosis value is on high peak.

4.1.1 Correlation Analysis

TABLE 4.2: Correlation Matrix

	ROE	ROA	PE	ROSP	ATO	CIS	CR	DE
ROE	1							
ROA	0.5296	1						
PE	0.0745	0.0400	1					
ROSP	0.0935	0.0759	0.2724	1				
ATO	-0.1226	-0.1446	0.0025	-0.0624	1			
CIS	-0.0133	-0.1393	-0.036	0.0081	-0.0997	1		
CR	0.0437	0.3208	0.0174	-0.102	-0.0942	0.1064	1	
DE	-0.6882	-0.1072	0.0066	-0.0654	0.1935	0.0431	-0.076	1

This portion of study answers one of the main objectives i.e. whether accounting-based measures and market-based measures are correlated. As seen in table 4.2 it is evident that the maximum correlation between ROE and PE is 0.0935 (9%) which is not enough to use both these measures in substitution to each other while measuring firm performance. R. J. Gentry and Shen (2010) in a similar study mentioned that there exists maximum of 10% correlation among accounting-based and market-based measures of firm performance. So, these are two different streams to calculate firm performance and must be evaluated separately.

The relationship among both accounting based measure is 52% while both market based measures show 27%. These results can be better if we add more sectors and increase the time frame of study. Table also shows the correlation relationship among the independent variables. The value of Sales and Tangibility is -0.0997 indicating the variables negative relationship. It shows that 1-unit change in Sales will decrease Tangibility by 9%.

Similarly, value of Leverage and Tangibility is 0.1935 indicating the positive relationship among variables. It shows 1 unit change in Leverage will increase Tangibility by 19%. Liquidity and Tangibility shows negative relation -0.0942 resulting

in 1 unit change liquidity causing 9% decrease in Tangibility. Above driven results also shows the value of correlation among Leverage and Sales is 0.00431 and Liquidity and sales is 0.1064 indicting a positive relationship. It also shows the negative relation among Liquidity and Leverage with a value of -0.07606.

It is worth mentioning that no variable shows relationship of more than 70% resulting in not dropping any variable for our research.

4.2 Regression Analysis

4.2.1 Hausman Test ROE

TABLE 4.3: Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	35.3644	4	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ATO	1.1312	-2.3122	4.5478	0.1064
CIS	-3.4346	-2.5228	0.1393	0.0145
CR	1.2182	0.1968	0.2532	0.0424
DE	-3.7981	-3.6311	0.0008	0.0000

The probability is less than 5 % so we will apply fixed effect model.

The below **Table: 4.4**, explains the effect of independent variables on dependent variable (ROE).

4.2.1.1 Regression Analysis ROE

TABLE 4.4: Dependent Variable: ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.8767	3.4618	2.5641	0.0110
ATO	-1.1312	2.3785	0.4756	0.6348
CIS	-3.4346	1.5547	-2.2093	0.0281
CR	1.2182	0.9753	1.2490	0.2129
DE	-3.7981	0.1927	-19.7100	0.0000
R-squared	0.66	Mean dependent var		7.88
Adjusted R-squared	0.62	S.D. dependent var		27.41
S.E. of regression	16.90	Akaike info criterion		8.60
Sum squared resid	684.59	Schwarz criterion		9.01
Log likelihood	-1130.05	Hannan-Quinn criteria.		8.77
F-statistic	15.61	Durbin-Watson stat		2.14
Prob(F-statistic)	0.00			

According to the results reported in table 4.4 prediction power of model is 61% and it is statistically significant and the Durbin Watson value shows no issue of Hetrerostacticity. Tangibility and Firm performance show insignificant and negative relation consistent with the study conducted by (Campello, 2006).

However, diverse relationships can be expected between firm's performance and tangibility as the nature of the relationship is contingent upon the degree of efficient utilization of tangible assets by the firm. If a firm utilizes its tangible assets efficiently then a positive relationship between tangibility and performance can be expected, otherwise the relationship is negative. Research shows that sales and firm performance show negative significant relation consistent with the research done by Fasih (2013).

Among liquidity and firm performance there is a positive significant relation which is also in consistent with the research of (Waswa & Mukanzi, 2018). Leverage and firm performance indicate negative significant relation as also quoted by (Mule & Mukras, 2015) while calculating the firm performance.

4.2.2 Hausman Test ROA

TABLE 4.5: Hausman Test

Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		18.25988	4	0.0011
Cross-section random effects test comparisons:				
Variable	**Fixed**	**Random**	**Var(Diff.)**	**Prob.**
ATO	1.3696	0.4692	0.1501	0.0202
CIS	-0.5304	-0.5586	0.0018	0.5144
CR	1.6038	1.6402	0.0037	0.549
DE	0.0062	-0.0037	0.0001	0.0015

According to Hausman test the probability is less than 5% so we will apply fixed effect model.

4.2.2.1 Regression Analysis ROA

TABLE 4.6: Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.5098	0.8944	-0.5699	0.5692
ATO	1.3696	0.6145	2.2287	0.0268
CIS	-0.5304	0.4016	-1.3207	0.1879
CR	1.6038	0.2519	6.3647	0.0000
DE	0.0062	0.0497	0.125	0.9006
R-squared	0.716	Mean dependent var		3.640
Adjusted R-squared	0.681	S.D. dependent var		7.730
S.E. of regression	4.367	Akaike info criterion		5.894
Sum squared resid	4557.479	Schwarz criterion		6.307
Log likelihood	-764.637	Hannan-Quinn criter.		6.060
F-statistic	20.133	Durbin-Watson stat		1.143
Prob(F-statistic)	0.000			

Results of **Table: 4.6** show that Tangibility and Firm performance (ROE) shows significant and positive relation consistent with the study conducted by (Campello, 2006). Sales and firm performance show negative insignificant consistent with the research done by (Abor, 2005; Campello, 2006). Liquidity and firm performance show positive and significant relation and the relation of Leverage and firm performance was studied by (Grossman & Hart, 1986; Akhtar et al., 2012) shows positive and significant results.

4.2.3 Hausman Test PE

TABLE 4.7: Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.941047	4	0.2934

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ATO	4.1299	0.0095	11.1605	0.2174
CIS	-0.9467	-1.1844	0.5906	0.7571
CR	0.5237	0.2478	0.9136	0.7728
DE	0.1340	0.0306	0.004	0.1044

Hausman test show the probability of less that 5% so fixed model is used.

4.2.3.1 Regression Analysis PE

TABLE 4.8: Dependent Variable: PE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.6476	5.1272	0.5163	0.6061
ATO	4.1299	3.5227	1.1723	0.2422
CIS	-0.9467	2.3024	-0.4111	0.6813
CR	0.5237	1.4444	0.3625	0.7172
DE	0.1340	0.2854	0.4697	0.6390
R-squared	0.0823	Mean dependent var		8.6378
Adjusted R-squared	-0.0328	S.D. dependent var		24.631
S.E. of regression	25.032	Akaike info criterion		9.3859
Sum squared resid	149765.4	Schwarz criterion		9.799
Log likelihood	-1236.098	Hannan-Quinn criter.		9.5518
F-statistic	0.7147	Durbin-Watson stat		2.2434
Prob(F-statistic)	0.8641			

Hausman test show probability is more that 5% so random effect model is used Results of table show that the model is insignificant. There is probability that if the data volume is enhanced and more sectors are considered for the subject research the model will become significant.

4.2.4 Hausman Test ROSP

Hausman test show higher value than 5% so we will use random effect model.

4.2.4.1 Regression Analysis ROSP

Hausman test show probability is more that 5% so random effect model is used Results of table show that the model is insignificant. There is probability that if the data volume is enhanced and more sectors are considered for the subject research the model will become significant and prediction power of model will also increase.

Table 4.9: Hausman Test

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	6.164491	4	0.1872
** WARNING: estimated cross-section random effects variance is zero.			
Cross-section random effects test comparisons:			

Variable	Fixed	Random	Var(Diff.)	Prob.
ATO	0.2346	-0.06	0.022	0.0474
CIS	-0.0237	-0.0213	0.0011	0.944
CR	-0.1627	-0.0889	0.0018	0.0829
DE	-0.015	-0.015	0.0008	0.9855

Table 4.10: Dependent Variable: ROSP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.3001	0.2281	1.3156	0.1895
ATO	0.2346	0.1567	1.4972	0.1357
CIS	-0.0237	0.1024	-0.2314	0.8172
CR	-0.1627	0.0642	-2.5320	0.0120
DE	-0.0150	0.0126	-1.1867	0.2365

R-squared	0.0777	Mean dependent var	0.3227
Adjusted R-squared	-0.0380	S.D. dependent var	1.0930
S.E. of regression	1.1136	Akaike info criterion	3.1608
Sum squared resid	296.4200	Schwarz criterion	3.5740
Log likelihood	-395.7170	Hannan-Quinn criter.	3.3267
F-statistic	0.6712	Durbin-Watson stat	2.1783
Prob(F-statistic)	0.9043		

Chapter 5

Conclusion and Recommendations

5.1 Conclusion

The research study was aimed at finding the relation among accounting-based measures and market-based measures of firm performance. The accounting-based measures are return on equity & return on assets while the market-based measures are Piece to earnings ratio and return on share price. Independent variables are leverage, tangibility, liquidity, and sales growth. Different models and theories have been studied including Agency Theory, Stakeholder theory and trade off theory. Previous literature has been focusing on the one-dimensional approach to determine firm performance neglecting the assumption of accounting-based and market-based approach for measuring firm performance. So, in this research multi-dimensional approach is considered for measuring the financial performance along with other variables. The study has focused on the determinants of financial performance by taking empirical evidence from the oil & gas sector and cement sector of Pakistan. The reasons for selecting this particular sector for research are that; oil & gas sector and cement has a considerable and noteworthy impact on the economy of Pakistan; it provokes the investment and increases the revenues. The objectives of the study include; determining the correlation among accounting

based and market-based measures and impact of leverage, tangibility, liquidity, and sales growth on the firm performance both in accounting-based and market-based models where firm performance is the dependent variable and sales growth, leverage, tangibility and liquidity are independent variables.

Review of the literature has found that many researches have been conducted for examining the firm performance. Similarly, this study has viewed those researches and found the impact of determinants of firm performance and hypotheses have been generated out of it. These hypotheses have been generated to test and evaluate their results. According to these hypotheses, there is less than 10% correlation among accounting based and market-based measures (R. J. Gentry & Shen, 2010) also mentioned that as these variables are not correlated so they cannot be replaced while evaluating firm performance. The results of this study is aligned to these results.

The study took 13 companies of oil & gas sector and 15 companies from cement sector of Pakistan, listed in PSX as the study model and empirical evidence. The secondary data was taken for the period of 2009-2018 i.e. 10 years data from the annual reports of these firms.

Research methodologies/techniques used were descriptive analysis, correlation analysis, and regression analysis respectively for the analysis of data. Return on Equity (ROE), Return on Assets (ROA) were taken as accounting-based measures of the firm performance and Price to Earning (P/E) and Return on Share Price (ROSP) were taken as market-based measures while liquidity (CR), leverage (DE), tangibility (ATO) & sales growth (CIS) are the independent variables.

The regression results of this particular study using accounting-based measure ROE of firm performance shows that leverage, sales growth and tangibility have negative insignificant impact on the firm performance, while sales are positively insignificant. For assessing the results of ROA the tangibility show negative insignificant results. Sales and Leverage show positive significant impact while liquidity show positive insignificant results which are consistent with the previous findings.

The study conducted and its findings will be helpful for the managers in oil & gas and cement sector to analyze these particular sectors according to the multi-dimensional way these findings will also help in decision making. The answers of this research will surely be a summarized and authentic document for shareholders to analyze the stocks and share price and compare it with the performance of sector. These show that accounting based and market-based measures have different impact on firm performance and can never be used instead of one while evaluating firm performance.

As an important aspect multidimensional approach increases the importance of this research to investors as they can well see the results that both the measures are not correlated. This research is also a document that helps the general public to get to know how market-based and accounting- based measures vary and there is a possibility both show different trends while measuring the impact of firm performance at same time.

5.2 Recommendation

On the basis of this study certain recommendations are as under for future researchers:

- Most of the studies conducted use accounting-based measures and market-based measures as a replacement to evaluate firm performance. While it is established that these cannot be used instead of other so in future impact of each be evaluated separately.

- Our data included only one sector and a specific time period i.e. 2009 to 2018, However the scope can be enhanced by increasing more years, variables and sectors.

- In future the searches be designed in such a way that accounting-based and market-based measures are calculated separately because there is highly likely chance that one measure be indicating positive impact while other at same time indicates negative.

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