CHAPTER TWO: LITERATURE REVIEW

An extensive study has been made to examine the impact of equity multiples on returns on stock. Since Pakistan Stock Exchange market is abounding with day-to-day fluctuations in the share prices and the dividends investors get in return, it is not wrong to say that the market is volatile. It occurred as a result of any policy announced from the government side which compels the investors to sell out their shares, coupled with intermittent mishaps and disaster or any shock in terms of exchange rate or balance of payment (Khan, 2014). Latest financial market data is employed to analyse the effect of any particularly adverse event on the value of a specific share, and the volatile result emanated from it. The motivation behind taking such a study into account is that, given the market place rationality, any event and its effect is promptly reflected in the market shares.

A description of volatility can be made as the measure of the average return of stock on a particular share. A descriptive tool (Standard deviation) is generally used for the computation of volatility. It allows investors to assess how an equity return is attained around a mean return. Larger standard deviation implies higher volatility, that is, the share price is spread apart (Maio, 2016). In contrast, a smaller standard deviation implies lower volatility, that is, the share price is piled up together.

When it comes to equity multiples, Tiwari and Shah (2013) refers it to the ratio which is used to comprehend the total return of cash in the overall investment in terms of performance. It is regarded as an effective and imperative financial metric usually used in commercial real estate businesses. It compares the investment an investor has put with the cash generated over a specific time-span (Alam and Rashid, 2014). The calculation can be shown by dividing the total

equity invested and total cash received. Below is the formula of how equity multiple is calculated:

Equity Multiple = Total Distributions / Total Invested Capital

Equity multiple in a particular investment is gauged on the basis of following assumptions:

1. An investor purchase a real estate property for $100,000

2. That property is sold for $200,000

In this case, the result will be 2 x equity multiple. If, for instance, the investor receives only 120,000 in return, the deal will deliver a 1.2 x equity multiple.

2.1 Conceptualization of equity multiples, stock returns and stock volatility

According to Aroni (2011), equity multiples refers to the most significant and effective financial metrics which is utilized in commercial real estate. Equity multiple is usually used to compare the cash which an investor has put in an investment to the cash generated by the investment over a given time period. Patton and Sheppard (2015), stated that equity multiples are calculated for a property by dividing total cash received and total equity invested. For instance, an investor who bought a property for 4 million and received cash flows of 300,000 each year, and sold such property after 5 years, the investment would have an equity multiple of 1.37 i.e. (300,000*5) + 4 million which makes 5.5 million of total return as divided by 4 million to make 1.37. This is how equity multiple work, it is higher than 1 which shows profit out of the investment however, equity multiple lower than 1 indicates that the investor has received lower than what he invested and equal to 1 implies that he only received his investment back without any profit.

Stock return refers to the return received by shareholders of a company over their purchase stock (Al-Shubiri, 2010). An organisation may earn high return on equity however, shareholders may still suffer in case market value of stock reduces over the period. In same

manner, an organisation may generate low return on equity in case the company performs less terribly than expected by market. This implies that stock returns may not necessarily depend upon profitability of the company but market position and expectations of the stock of such company. According to Easley and O'hara (2010), returns on stock may be in form of dividends or capital appreciation however, shareholders expect positive returns but stock market volatility does not always result in positive movement. If market price of shares decrease, shareholders have to face the loss. It is responsibility of the company to provide positive returns to its shareholders so as to satisfy them and to attract potential shareholders.

Ouma and Muriu (2014) documented that stock volatility deals with the fluctuation in stock prices of a company at stock exchange which can be due to any reason even a rumour regarding company's upcoming loss may impact stock prices in significant way. If a company is facing any law suit, its stock prices may go down only on an assumption that it may be liable for penalties. This implies that stock prices are very sensitive to many issues. Therefore, management of a company must make sure that there is no rumour in market regarding its operations, profitability and internal environment. Al-Shubiri (2010), stated that stock volatility is a risky affair for both company and its shareholders since shareholders may lose their investment and company may lose its reputation and stakeholder trust. This is how stock volatility plays major role for management of the company and its owners. Equity multiples, stock return and stock volatility are three main factors to be studies in this research.

As per Maio (2016), stock volatility pertains to the variance in stock prices of a business corporation in the stock exchange. It is due to multiples reasons, even hearsay of that company's impending loss that may impact stock prices adversely. If the company is contending with any law suit of financial embezzlement, its stock prices gets depreciated on the presumption that the

company may face penalties (Engle and Sohn, 2013). It concludes that stock prices are sensitive, so is the assumption of investors.

Moreover, Rangel (2011) argued that volatility in the stock market is a perilous affair, both for the shareholder as well as for the company which invested in the stock market. If the shareholder is likely to lose the investment and resultantly, the company will face immense loss of its reputation and consequent trust of the shareholder. This is how the concept of stock volatility works in the overall market investment (Khan, 2014).

As far as stock markets returns are concerned, they refer to the returns that the investor generates from the stock market. This kind of return can be in the shape of dividends given by a particular company to its shareholders with the passage of time, or in the form of profit attained as a result of trading (Engle and Sohn, 2013).

Generally, in Pakistan, companies analyse the overall profit they get at the turn of each quarter and offer a part of their financial kitty to the shareholders. This is a significant source of stock return the investor can anticipate (Asghar and Suleman, 2011). Perhaps, the most used structure of the generation of stock return is through trade activities, which usually takes place in the secondary merchandises. In it, the investor earns return on stock by purchasing the share at a low price and sell that at a higher price. In Pakistan, returns on stock are usually contingent to market risks. And they may either positive or negative.

 Stock returns are heterogeneous and may alter from investor-to-investor, depending upon the extent to which an investor takes risk (Ahmad and Raoof, 2010). In contrast to the fixed returns, the returns on stock are inconsistent in nature, unlike the fixed returns in the form of bonds (Khan, 2014). The main perception behind stock return is to acquire at lower prices and

sell at higher prices. But threat is always a portion and pack of stock return and the investor also acknowledges unfavourable returns as a result of any wrong hypothesis.

2.2 Factors affecting stock returns

Rafique and Sultana (2014) analysed some important factors equity multiple that directly impact stock returns. All such factors result in the volatility of the stock market and consequent depreciation of share values.

2.2.1 Company performance

Both monetary and non-monetary performance of a company affects its stock returns since stakeholders expect the company to perform satisfactorily however, if it goes against their expectations, trust in stock of that company will be affected (Christensen and Zhu, 2010). Furthermore, worse performance of a company results in losses, this is the financial aspect over which shareholders significantly rely therefore, stock returns are affected as company does not have much to pay to their shareholders. Moreover, excellent performance of the company enhances market value of its shares due to increasing trust and increasing demand of stock of such company. In this manner, returns are positively affected.

2.2.2 Inflation

Inflation refers to the general increase in prices of products and services in economy. Inflation is without any doubt the most important macro-economic variable which is related to stock prices and returns. Easley and O'hara (2010), stated that higher inflation results in lots of issues within the economy since it decreased the output volume in total thus organisations tend to lay off employees which results in unemployment in an economy. Therefore, central bank has to implement procedures and policies for inflation by gining a rise to interest rates which decrease sum of funds moving around the market. Increase in interest rates will decrease stock prices as

two of them have inverse relationship between them. Inflation and interest rates are two extremely related variables as one variable has an affect upon another by going up or down.

Inflation, in literal terms, is the general increment in the prices of durable goods or commodities of a country. When the prices of commodities increase, their service also becomes expensive. That is, its exports becomes expensive that may sometimes results in depreciation in the overall exports. It is regarded as an essential macro-economic variable since it relates to the stock market prices and returns (Khan, 2014). The higher the inflation rate, the more the decrease in the output volume as a result of which companies seems to be compelled to desist from the employees. Consequently, the country contends with a raft of unemployment issue, keeping in the view the repercussions of the increase in inflation, it is liable upon the state bank to take such effective measures of inflation that could increase the stock return (Rafique and Sultana, 2014). One method is to give a rise in the interest rate, since it directly relates with the issue of inflation and thereby drives a fluctuation in the stock market return.

2.2.3 Exchange rates

Another major factor affecting stock returns is exchange rate and its volatilities. A nation whose stock market expect to outperform should expect its currency to enhance or deteriorate in value. This statement can be explained by policymakers, and equity investors. Peiro (2016) stated that an investor who holds foreign equities is exposed naturally to amendments in exchange rates. Policy makers consider the connection between stock returns and exchange rate as worth of currency changes. Although, the relationship has been determined in limited manner in literature but it is said that currency valuation plays important role in stock returns.

2.2.4 Crude oil prices

The link between between the prices of crude oil and returns on stock has been tested by Phan and Narayan (2015), through multifactor regression model which showed that overall stock market returns are influenced by variations in oil price. Further, according to Aloui and Njeh (2012), oil prices are very heplful predictors to recognize the returns on stock in most of the markets. However, this research also showed that the signs of likelihood of returns and capacity of oil prices varies notably among nations. Increased or decrease in oil price was found to impact stock return direction.

2.2.5 Foreign direct investment

The impact of Foreign Direct Investment (FDI) has been studied by Nazir and Ahmed (2010), in Pakistan. It was found that a strong link breathe between stock market and FDI. This relationship is better understood by comparing roles of FDI and stock market in economy. FDI enhances economic stability of a nation and also contributes to development of stock market. In same way, stock market has productive impact on economy and it additionally enhances funding possibilities. The impact was also studied by Yan (2011), who also stated that there is striking positive relationship between stock market growth and FDI.

2.2.6 Interest Rates

Interest rate is the amount that is imposed on the borrower in addition to the proportion of a loan. It is typically demonstratedas a percentage per annum of the outstanding loan. The whole interest rate on an amount lent varies from bank to bank (Ahmad and Raoof, 2010). They are generally established by the Federal Reserve Board of a state as well as commercial banks that directly impact the stock market. Lower interest rates means that money is cheaper to borrow and higher interest rates refer to increase in dollar value in market. In order to atone for a higher

interest, companies are lay off workers or cut spending (Rangel, 2011). It also means that companies cannot borrow the money as long as they a liable to pay of borrowed money. All these aspects result in depreciation of points in the stock market.

2.2.7 Exchange Rate

If an equity market of the country is expected to outweigh other countries' markets, the currency of that country would either face appreciation or depreciation. The fluctuation in equity market depends upon policymakers, economic academics and international equity investors. An investor who is having foreign equities can be exposed to a gradient in exchange rates (Ahmad and Raoof, 2010). The relations between exchange rate and stock returns alter as the value of national currency changes. The fluctuation in appreciation and depreciation of currency also depends upon how much foreign currency is kept by the investors or the common populace. The factor of remittance also positively impact exchange rate. Other than that, depreciation in production and export volume also volatiles exchange rate that impact the stock return (Engle and Sohn, 2013).

2.2.8 Foreign Direct Investment

Foreign Direct Investment (FDI) is one of the investmnt which refers to the form of controlling ownership. There is a secure connection between FDI and the country's stock market. FDI results in the enhancement of a country's economy, which results in the amplification of the stock market. When the stock market enhances, it ensues more investment opportunities (Khan, 2014).

Any investor who decides to put their money in the stock market also considers potential risk involved in the investment. Because of this, it is indispensable for the investors to have clear

information of the stock market performance and its enhancement with the increase in foreign direct investment (Khan, 2014).

Investment opportunities take place when foreign investors assess the increase in market shares, regardless of how much value is increased or decreased. When investment is marginal, it directly results in a lower return from the stock and thereby, weakens the potential of the stock market (Rafique and Sultana, 2014).

2.2.9 Commodity Price and Spending

When the prices of commodities fluctuate, it results in the change in the business and consumer spending. It then influences stock prices and profit margins. Consumers spend confidently when they know they have to spend less on a particular commodity (Engle and Sohn, 2013). When the factor of inflation occurs, consumers lose confidence in spending more on the commodities and the utility companies, such as Unilever, are liable to face immense depreciation in the production, distribution and purchase of commodities.

2.2.10 Global Economy

It is an acknowledged factor that global economic conditions directly impact equity returns of countries. It is because international companies spread their business across borders. For instance, if the US is grappling with weak economy, it could affect the profit margins and revenues of other North American countries such as Canada (Engle and Sohn, 2013). In the same manner, financial crisis in Europe that occurred between 2008 and 2010 immensely hurt business operations of American companies. Multinational companies with their operations in different countries frequently counterpart losses in one country while gain from other countries. For

instance, the economic growth in Asia could incur weakness in the European economy, which results in the maintenance of margins and stock prices (Asghar and Suleman, 2011).

2.3 Relationship between equity multiples, stock returns and risk

While investing, investors take into consideration potential risk of investment. Almost every investor wants high returns, however, to achieve such high returns they must be aware of the fact that high returns are coupled with high risks. This makes it mandatory for investors to have accurate information regarding financial indicators used to represent performance of the company since performance impacts stock returns significantly. Investors do this so that investment decisions are taken accurately and timely. Accurate and quick decisions effect stock return in investing capital, as per Aroni (2011), there are three approaches in which finding value of a firm; contingent claim, discounted cash flow, and relative valuation. Among these three, relative valuation is more commonly used for valuation of the company. Enterprise multiple is one of the measure of valuation utilizing accounting data and important elements generated from financial statements of companies.

Easley and O'hara (2010), stated that equity multiples, stock return and risk are positively and directly related to one another therefore, there are two types of investors; risk averse and risk seekers based on their risk tolerating capability. Risk averse investors are not prepared to take high risk for higher returns because they do not have huge amount for investment but have invested only to receive average returns as their regular income. These investors may include retired individuals who want to secure their retirement amount and receive regular dividends in return. They may not be able to afford higher risk for higher return therefore; they stick to average returns. On the other hand, risk seekers are those who are ready to take high risk for

higher returns. These investors are young professionals looking for maximum profits. They invest huge amount of money and diversify investment in different industries however, they are not afraid of risk as they are aware that high risk will lead them to higher returns.

These two types of investors represent the correlation between risk and return. As stated by Al-Shubiri (2010), this relationship is interrupted by diversification of investment which implies that an investor splits his amount of investment in different industries to minimize risk. One industry may face few difficulties due to which there may be high risk, however, if investment is spread among different industries, it is less likely that e very industry will face a hit. This is only a measure to minimize risk, however, relationship between risk and return still remains the same. Investment decision is a difficult decision specifically for a new uninformed investor who is not aware of the relationship between risk and return, portfolio diversification etc. On the other hand, Mukherji and Lee (2013), stated that informed investors take great benefit of the relationship of risk and return and diversification. Equity multiple and stock return can be increased by taking higher risk i.e. investing in highly volatile securities.

Patton and Sheppard (2015), stated that investors are risk seekers when they have huge amount of money and market information to some extent. This information provides them with certain level of confidence based on which they are ready to take higher risks. However, this confidence may result in loss in case of a negative movement in stock prices since no share guarantees positive returns. Any rumour regarding the company can impact stock returns significantly. Nazir and Ahmed (2010), stated that equity multiples help an investor to depict in a simple manner what return its investment is providing and should he/she continue with the stock or dispose it. Equity multiple is the basic way to look after an investment however, it does not

always provide same result. An equity multiple of 1.5 in current period may reduce to 0.5 in next period.

Normal relationship between return and risk has been criticized based on the fact that there does not exists an efficient market. This positive relationship is only possible in case of efficient market which says that equal and all information regarding a stock is available to every investor. However, Fabozzi and Markowitz (2011), says that there is no efficient market therefore, such positive relationship is not guaranteed. There have been number of studies in different markets to depict connection between stock returns, equity multiples and stock volatility, this research has been specifically made to the case of Pakistan stock exchange. Results of the research may be different from previous researches because it only focuses on Pakistan stock exchange which considers Pakistan's economic and political conditions and Pakistan stock exchange.

The aim of every investor is to gain higher returns on their investments with a minimum possibility of risk. Though investors must know that high returns are directly correlated to high risks and to achieve this, investors must be completely aware of the situation of the economy and achievement of the financial merchandises because they indicate the performance of the firms and have an influence on the stock returns. Studies have revealed that there is a direct and positive relationship between the stock returns, equity multiples and the potential risk (Engle and Sohn, 2013). The investor's investment goals are expressed in terms of risk and returns.

Based on the risk tolerance of an investor, an investor can be a risk averse or a risk taker. A risk averse is an individual who has a low appetite for risk and look for higher returns on their investments, whereas a risk taker is an individual with a risk appetite seeking higher returns on their investments (Rangel, 2011). Risk adverse individuals are reluctant to take risks and usually

involve those individuals who are retired. These individual prefer investments that can provide regular streams of income for example fixed income bonds. Their goal is mainly capital preservation. Risk takers are prepared to take high risk to achieve high returns. These individuals include youngsters or professionals looking for profit maximization and capital appreciation opportunities (Rangel, 2011).
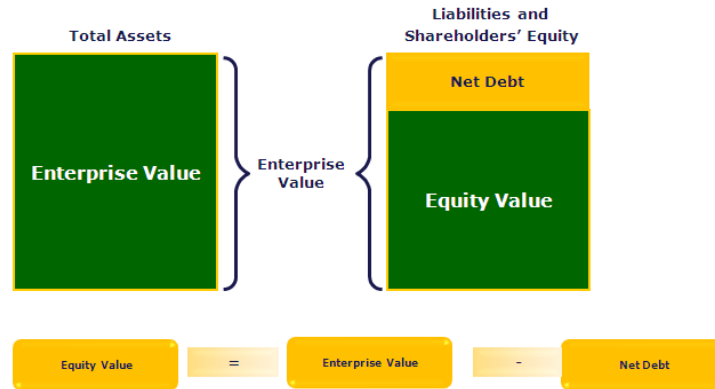
An investor is able to diversify the level of potential risk by investing into different assets classes and portfolios but the level of risk remains the same. Making an investment decision seems challenging for an investor who doesn't know the link between risk and return and diversification of asset portfolios. Investors are more likely to take advantage of this relationship (Khan, 2014). Moreover, stock return and equity multiple can be increased by taking a high risk through investing in cyclical stocks or securities which have a high beta. Studies reveal that individuals who are completely aware of market conditions and have complete market information are risk seekers. Maio (2016) has mentioned that an equity multiple helps an investor making a decision regarding buying and selling of stock because the association between risk and return is only positive in the efficient market, when all the past data and information regarding the company has been adjusted to the stock market prices, but the efficient market system does exist in Pakistan as per Rafique and Sultana (2014), the relationship risk and return can be proven.

2.4 Impact of Equity Multiples on Stock Returns and Volatility

As explained Maio (2016), it has been observed that the valuation digis are the monetary measurement tools that assess the financial metric ratios and also make different price competitive proportions for the companies. It has been assessed that the multiples are the financial proportions of the organisations that evaluates different distinct of multiples that can be

used by the businesses for managing the activities related to business valuation. The study of Majewski, Bormetti and Corsi (2015) has emphasised on two of the major kinds of the valuation multiples that are provided to be equality multiples and the enterprise value multiples that predict the methods for analysing the financial performance of the organisiaotn that can be used for organisations comparisons and making comparative analysis of the companies accordingly. Additionally, based on the arguments of Zhao (2017), the valuation multiples are generally based on making judgements for the company's current financial performance for making investment decision in the future. However, according to the arguments of Zaremba, Umutlu and Maydybura (2018), it has also been observed that the investment decision of the companies is based on several other factors therefore it is difficult for the companies to take investment decision on the basis of the valuation factors. Moreover, it has also been argued by Abraham, Harris and Auerbach (2017) that the factor of valuation simplifies the financial data and creates it less manageable as compared to other factors. Therefore, it is often difficult for the companies to take investment decision accordingly.

The equity multiples are often used in the valuation analysis and allows the investors to take decisions accordingly. The commonly used equity multiples in the analysis are found to be in the P/E Ratio and the Price/Book ratio respectively according to the analysis of Stafford (2017). Moreover, it has been observed that the equity value is found to be favourable for the shareholder as it facilitates the shareholders and the debt holders of the company as discussed in the report of Corporate Finance Institute (2019). Therefore it can be understood that the equity worth of the company is the market capitalisation of the organization that can be calculated by the market value per share and the number of shares outstanding. It also denotes the liabilities and the shareholders equity. The formula can be used as provided under;

Total Assets

Liabilities and Shareholders' Equity

Enterprise Value

Enterprise Value

Net Debt

Equity Value

| Equity Value | = | Enterprise Value | - | Net Debt |

On the other hand, the vitality of the company is the dispersion of returns that are there for the given security and is also considered as a riskier security. According to Carvalho (2018), the vitality can be measured and utilised by the effective use of standard deviation or the variances for getting the explanation for the returns from the same security or the market index. According to the considerable assessment of the financial theory, it has been observed that the stock and vitality can be related to the asset and the notion of variance in the companies. Moreover, found on the considerable research of Ramiah et al (2015), the purchased stock includes the conditional title and also creates the purchasing stock that can be effective for settlement and checking the clearing procedures in this regard. According to the discussions of Luss and d'Aspremont (2015), there is an ample amount of evidence that provides with the association between the returns on stock and equity that creates the factors of economic expansion for the forms and also provides asymmetries in the stock market for considering the movements in the business cycle. Ewing and Malik (2016) has discussed that the market equity returns also considers the dispersion of macroeconomic indicators that can be figured out for better assessment and integration of the future aggregate and stock market.

Additionally, according to the arguments of Mishra (2016), the companies require to take investment decisions on the basis of its credibility and its role in the potential market that can be
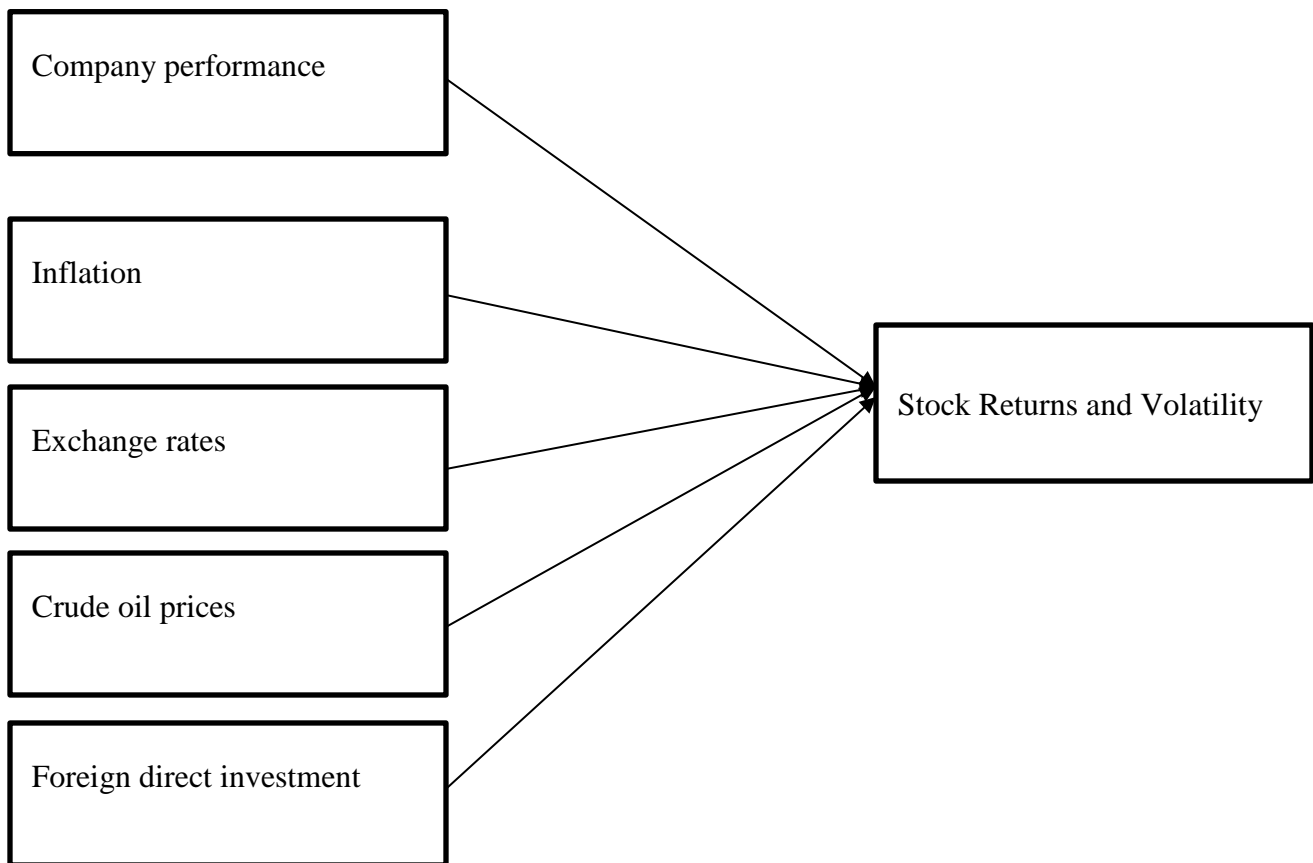
assessed using the systematic arrangements of the company's equity. There are several predictable variables in the organisations that provides consideration for the organisations examination and its effectiveness for the company's growth and decision for future investment. Other evidences provided by Ewing and Malik (2016), shows that the organisations often link their liabilities and the payables with the stock return and investment measures for the dispersion of explanatory power and considering the amount that can be effectively measured by the companies for gaining favourable outcomes. It has also been discussed that the value of return dispersion creates the measures for future investments in the organisations for the betterment of company's causality and multivariate tests to take into account for future considerations according to Crawford et al (2017). Moreover, according to the discussions of Cremers, Halling and Weinbaum (2015) it has been observed that the companies need to report their global intelligence alliance and to stay in the competition using the outcomes gained from the company's stock return. Moreover, in the words of Diaz, Molero and de Gracia (2016), the investment decision may differ for the companies belonging to the financial and non-financial backgrounds that are considerable for the companies to assess its returns and make considerable changes for the companies in the future.

There are several studies conducted for the investigation of the correlation and affect of equity multiple and the stock returns of the company that can be assessed and can be maintained using the previous company's data for the assessment of company's low enterprises and the stock returns. The researches like Apergis et al (2018) and Adam, Marcet and Nicolini (2016) have also considered to play a major role in the company's enterprise by gaining valuation and considering an important aspect of the company for the future role. According to Maio (2016), the variables of enterprise multiple shows a unfavorable association with the stock returns and

creates association between the companies and its stock return in this manner. It has also been assessed that the companies generally undergo the use of financial measures for taking investment decisions in the companies for gaining long term benefits and gaining higher returns for the organisations as a whole. It is considered to be one of the major responsibilities of the companies to invest wisely and make considerable changes in the organisations for gaining better financial returns.

According to the assessment of Majewski, Bormetti and Corsi (2015), it has been observed that the accounting data of the company can be measured and can be further assessed for taking decision regarding the company's future investment. It has also been observed that the companies need to take the investment decision regarding its present performance and the amount of return it gains from the company's performance. The studies like Balcilar et al (2017) and Bali, Hu and Murray (2019) has also provided with the evidence that the companies usually have low enterprise multiple that creates possible measures for the company to carry out the future investment and creates the linear time period for the companies to create sustainable measures for the company's future investment and the opportunities for gaining better returns according to the assessment of Singhal and Ghosh (2016). Furthermore, it has been observed that the companies face differences in stock values due to the methods of investments provided by them for gaining long term benefits. As argued by Majewski, Bormetti and Corsi (2015), the companies need to gain higher benefits from the companies to gain better returns in this regard. There are different technical and political factors within the investment decisions that creates the opportunities for gaining better returns from the stocks.

2.5 Conceptual Framework

| Company performance |

| Inflation |

| Exchange rates |

| Crude oil prices |

| Foreign direct investment |

| Stock Returns and Volatility |

The findings has been focused on the stock returns and volatility that is considered to be the dependent variable that has an impact from different independent variables that are found to

be company performance, inflation rate of the company, exchange rates, crude oil prices and the foreign direct investment of the companies that creates an affect on the stock return and volatility of the companies. It has been assessed that all of these factors are having direct and indirect impact on each other. The framework provided above has highlighted the factors that are provided the major factors that are having impact on each other. The factors of inflation and exchange rates that are there in the organisations provide with the major independent variables that can be assessed and can be observed having relationship with each other. These factors are further assessed using the data collected from different primary and secondary sources.

2.6 Theoretical Background

2.6.1 Efficient market theory

According to Ferreira and Santa-Clara (2011), efficient market theory states that all participants in market receive and behave on all associated information immediately as soon as it becomes accessible. No approach was stronger than a coin toss, if it were true however, proponents of the theory are of the view that there are ideal facts and figures in stock market. This implies that whatever information exists regarding a stock for one investor is also obtainable for all investors. Because every person has same information regarding a stock, stock price should reflect expectations and knowledge of all investors.

2.6.2 The theory of risk and return

A simplified link between risk and return as identified by the efficient market theory that risk and return are positively and directly related cannot be seen in this imperfect world. According to Al-Shubiri (2010), this theory states that in real world, nobody has perfect information but every investor holds imperfect information based on which he takes his

investment decisions. Therefore, these investors are expected to deal with perceived risks and expected returns. At any degree of perceived risk, there is wide range of possible outcomes. This range increases even more when risk increases making it even more difficult to predict outcomes. Actual return of an investment can be significantly higher than expected, even if perfect information exists, it cannot be guaranteed that high risk provides higher future returns.

2.6.3 Modern portfolio theory

According to Ferreira and Santa-Clara (2011), this theory shows how risk-averse investors can develop portfolios to maximize forecasted return on the basis of given degree of market risk focusing that risk is a part of higher reward even it is inherent. As per the judgement, an investor can build efficient frontier of maximum portfolios which provide biggest attainable anticipated return at specific level of risk. The modern theory of portfolio was coined by Harry Markowitz in 1952 in his paper 'Portfolio Selection'. This theory states that attributes of risk and return of an investment cannot be considered solely but they must be evaluated by the way investment impacts overall risk and return of portfolios. The theory further states that an investor can develop a portfolio of two or more assets which will optimize returns at a given degree of risk. Similarly, Yan (2011), stated that at a desired degree of expected return, an investor is able to develop portfolio with lowest risk. On the basis of statistical measures like correlation and variance, investment return is less necessary than how investments act in entire portfolio context. In an efficient frontier, all possible combinations of assets are plotted on a graph on x-axis with portfolio risk and expected return is plotted on Y-axis. The graph shows most required portfolios.

When taking into consideration the impact of equity multiple on stock returns, it is obvious that those impacts make the conglomerate of macroeconomic variables, which are

further bifurcated into independent and dependent variables. They include market interest rate, exchange rate, inflation, foreign direct investment (FDI), spending, and global economy, which have already been comprehensively discussed above.

Rangel (2011) helped in measuring the importance of correlation between these variables and stock returns. While these macroeconomic factors are regarded as independent variables, the affect of these factors on stock return and the consequent volatility of the market are considered to be a dependent variable. The adverse effects of the macroeconomic variable have a negative impact on the stock return. The empirical evidences have shown a significant relation between macroeconomic variables and stock return, correlated with each other in all states (Rangel, 2011). Regarding Pakistan Stock Exchange, these factors keep on playing a major role in stock returns and thereby, the stock market often falls prey to fragility (Khan, 2014).

2.7 Empirical Model

To conduct the research over the topic of the affect of equity multiples on stock returns and stock volatility, it is important to decide dependent and independent variables for the study. There is one individual variable while two dependent variables of the study. Equity multiples of selected companies is independent variable over which stock returns and stock volatility depends. These two variables are dependent on equity multiples. Based on these variables, following regression equation has been developed;

$$SR = m\,EM + FP + IG + \alpha$$

$$SV = m\,EM + FP + IG + \alpha$$

Where,

SR= stock return

SV= stock volatility

EM= equity multiples

FP = Firm performance

IG = Industry growth

m= slope

Apart from this, there are few control variables which have some impact on the relationship. These variables include firm performance and industry growth. Stock return and risk is somehow affected by firm performance and industry growth which also have an impact on the correlation of equity multiples with stock return and volatility. Regression equation is the equation which shows dependence of one variable over another therefore, to assess the impact of one variable over another, this equation is used.

2.8 Estimation Method

Regression and correlation analysis has been adopted for this particular study since these two analysis techniques are useful to depict impact and relationship of one variable over another. According to Montgomery and Vining (2012), regression analysis is used to evaluate the influence of one variable over another, in this case the affect of stock volatility on stock returns. In simple linear equation, connection between dependent and independent variable is described through the model; independent variable is x while dependent variable is y.

$$Y = a_0 + a_1 + k$$

In this equation, a1 and a0 are the parameters and is a probabilistic error term which proves variability in Y that cannot be discussed by linear relationship with x. The model would have been deterministic if error term was not present. In such case, knowledge of x value would

have been sufficient to depict value of y. Regression and correlation analysis are associated in the sense that both models depict links among variables.

Correlation coefficient is considered as a measure of linear relationship among two variables. In correlation coefficient, values are between -1 and +1; correlation coefficient equivalent to +1 shows that there is absolute positive correlation between two variables while -1 shows absolute negative correlation. However, correlation coefficient of 0 represents that no connection exists between the two variables. According to Mehmood et al. (2012), correlation and regression analysis do not help in establishing cause and effect relationship but they only prove how and to what extent variables are connected to each other. Correlation only measures extent of linear association of two variables. For the purpose of this research, independent variable is equity multiples while dependent variables include stock return and volatility. Relationship and impact of equity multiples will be assessed on stock returns and volatility through regression and correlation analysis. These models are considered suitable since they both are concerned with relationship and influence of independent variable on dependent variable.

2.9 Data and Sample

For the resolution of carrying on this analysis, statistics has been extracted using secondary sources i.e. websites like Morningstar and Yahoo finance. These websites have helped the researcher to obtain data associated with equity multiples, stock returns and stock volatility. Data for past 10 years have been extracted associated with 46 companies listed on Pakistan stock exchange. Monthly data has been extracted and analysed of 10 listed Pakistani manufacturing companies, no financial institution has been included in the study to make it specific and more accurate. Equity multiples, stock returns and stock volatility has been obtained for the years 2009

to 2018. Equity multiple is the independent variable while stock returns and stock volatility are dependent variables. Companies included in the sample are represented in the following table;

Companies selected

1. Indus Motor company

2. Atlas battery limited

3. Ferozsons Laboratories Limited

4. Attock refinery limited

5. Lucky cement

6. Engro foods

7. Hub power company

8. GlaxoSmithkline Pakistan

9. National foods limited

10. Mitchells

2.10 Chapter Summary

A successful relation between the impacts of equity multiple on stock returns has been made by the analyst. The main independent variables in this finding entail interest rate, exchange rate, foreign direct investment (FDI), inflation, consumer spending, and global economy, while its impression on the stock return was regarded as a dependent variable. Pakistan Stock Exchange is teeming with unscrupulous fluctuation in the stock market prices and abrupt appreciation or depreciation in the overall points. The encouragement behind analysing the relation between independent and dependent variable is deciphering the condition financial market in the country. The analysis of macroeconomic variables will be helpful for forthcoming research studies.