

# CHAPTER NO.1

## INTRODUCTION

### 1.1 Background of the Study:

Capital asset pricing model demonstrate the relationship between the risk and expected return. In finance, CAPM is widely used for the pricing of the securities. Investors want to select the model which is used for the adjustment of risk, and generate the high returns. The milestone for the capital asset pricing is the Markowitz portfolio theory (1952). This theory provides the base for the development of risk return model. Sharpe (1964) describe risk return relationship through single factor asset pricing model.

There are a lot of studies that criticize the single factor asset pricing modal. Major criticism made by the Ross. In 1986 Ross argued that there are number of macroeconomic factors that affect the stock return. Ross present his APT theory. Criticism remain continue and researchers argued that Ross did not specify the factors which effect on the stock return. Fama and French, 1992 present three factors asset pricing model, in which they check the relationship between these three factors and stock return for the nonfinancial firms.

There are a lot of studies that show the validity of fama and French three factor model. Fama& French (1992) investigated the stock price behavior toward the size and Book-to-Market equity. They observed that there is no link between the BE/ME factor in the return and earning but size and market factor help to explain those in return. John & Andy (1998) investigate the relationship between the size, book- to- market and market beta with expected return. They found no evidence that supporting the positive relationship between beta and stock return. On the other hand they found strong significant relationship between the sizes and return. Lyon & Barber (1997) study on the Firm Size, Book-to-Market ratio, and Security Return.

Michael et al. (2003) tested the multifactor approach of assets pricing in one of the most emerging and challenging market. They found that in China market one factor is not sufficient to describe the cross section average return. E. Drew & Veeraraghavan (2002) investigate about the two questions such that in the Malaysian market the model of Fama and French (1996) capture the average stock return. Second is value and size premium marked outside the USA? The Fama & French multifactor model not properly defines expected return in Malaysian market. C Gaunt (2004) present the study on the book to market effect, size effect and the ability of Fama French model of three factor by using Australian literature. This study finds the three factor model provides significantly improved explanatory power over the Capital Assets Pricing Model and the evidence that BM factor plays a role in asset pricing.

Moreover, Peterkort and Nielsen (2005) developed an alternative asset pricing model to investigate the book-to-market ratio as a proxy of risk. Study shows that there is inverse relationship between book-to-market ratio and average stock return of firm with negative book value of equity. Wah ho at al. (2006) study on the assets pricing expanded their working from beta, size and book to market equity to examine the pricing of beta in the presence of risk factor that are market leverage. Some studied about the conditional beta and return relationship. The finding enhance the understanding the capital market behavior, should helpful for the investor and corporate manager in financial decision making.

Iqbal et al. in (2008) conducted to test the conditional assets pricing model. They investigate the validity of CAPM and Fama & French assets pricing model. They employ the conditional and unconditional model by using 16 Size\*Book to market portfolio test from Pakistan stock market and reject the unconditional version of CAPM and accept the conditional model with global risk. Michael et al. (2010) check Interaction of size, book to market and price momentum effect in Australia. Check the effect of book to market size and momentum on stock return. They found negative significant relationship between the size and return, average positive significant relationship book to market and return and between the momentum and return have significant

positive relationship. After that Kim et al. (2012) studied on the Capital assets pricing model conduct to compare the Capital assets pricing model and Arbitrage pricing theory. This study shows that six factor assets pricing model are best to explain the behavior of stock return in the Korea.

Present study is going to develop a new model that affect the return by including the ownership structure such as institutional ownership and insider holding that are known as corporate governance factors. Ownership structure is the part of corporate governance and corporate governance is a mechanism through which organizational whole structure can be controlled and directed. Moreover, D-CAPM by Estrada and VAR are also used as the measures of downside risk. From the last few decades it is discussed that weather mean variance behavior approaches are used to measure the risk. Today investor are more concerned about the downside risk. To calculate the downside risk, previously semi variance model were used by the Hogan & Warren. This model is more refined and explored by the Bawa and Lindenberg (1977) and then Estrada (2002) who also claim that his model is far better than the CAPM. In current study, the D.CAPM and VAR are used to measure the downside risk. D.CAPM is presented by the Estrada to measure the risk and value at risk is used to measure that how much loses from the investment in the given market condition. Downside risk is the probability that the investor fall in price. It will facilitate the investor not only focus on the statistical measure but also help them to plan for the worst and negative difficult market. The studies shows that stock having high downside risk having high return.

Present study also explore some corporate governance factors under the framework of downside risk. In previous studies, most of the studies were about upside risk, no one is conscious about the flip side of the risk, so this study incorporates D-CAPM and value at risk as the measure of downside risk. There is a different between the downside risk and upside risk. Through the downside risk the investor can take the rational decision, they do not only focus the statistical measurement of performance but also plan for the negative and worst market.

Corporate governance play an important role for the organizational success. Good CG practices can reduce the agency problems. A lot of studies show that a good corporate governance increase the stock returns and overall performance of the firm. Good corporate governance incorporates the accuracy, accountability and protection of interest of all the stakeholders. In the past, many studies explore the relationship between the corporate governance and corporate performance on the basis of governance standards (love and klapper 2002, Gompers et al. 2003, Brown and Caylor 2004).

Moreover, corporate governance is a way in which organizations are directed and controlled. In CG, the interest of the all organization's stakeholders are protected. In the success of any organization the stakeholder play an important role. Stakeholder may be define as any individual or group which have concerned and interest in the organization, it is not necessary it is owner of business. These stakeholders include CEO, BOD, managers, regulatory authorities, creditors, employees, suppliers, customers and community at large. Through the effective and efficient corporate governance, the organization can get there objective. It is the decision making system through which firm are organized. The investor before the making investment decision will noted that either organization have the effective or efficient corporate Governance practices. Bad governance practices affect the reliabilities and efficiencies of the organization and can create the doubt in the mind of investors. Due to the failure of CG, many companies go bankrupt and merge during the financial crisis of 2008 and 2009. So that if there is presence of CG practices not only reduce the risk but also increase the firm performance and stock return.

Pakistan is an emerging economy where dominance of family ownership exists. Corporate governance provide platform to achieve the organization objectives. Governance issues are mostly discussed after the serbanes-oxely act 1992. Today, there is a strong need of CG. It includes the environment practices, ethical behavior and other practices. It is analyzed that, for the success in the emerging market, corporate governance is the basic component. Security and exchange commission of Pakistan have taken many initiative for the effectiveness of the CG, and develop a code of corporate governance. This code include all those points are mentioned which are applied in the developed countries. With the passage of time, SECP change the policies for

maximum effectiveness of CG. In 2003, Government of Pakistan conduct a study with the name of “impact assessment of the code of CG”. Results shows that the listed companies in the Pakistan are bound to publish a statement about the CG best practices in the Annual report. This statement must be reviewed by the auditor. Asian developing bank also guide to the SECP about the code of best governance practices.

In the recent past decade’s dramatic change has been accord in the capital market. In the business world traditional way of making investment has been changed to compete each other. Individual investors now reliance on the institutional investor to increase the capital. Institutional investors have become a big source of the capital. Investors have many categories from which in the current study the institutional investors are discussed as a fourth variable. Institutional investor is the part of ownership structure and those are holding a large portion of the shareholding, and can affect the decision making process and the financial performance of the organization. Apart from external factors, studies shows that internal factor also influence the firm risk. Nguyen (2011) argued that if firm concentrated on the ownership structure would have great advantage and ability to risk taking. Wright et al. (1996) studied that the institutional ownership have positive influence on the firm risk taking capacity.

Financial markets also help in determination of prices of securities and portfolio diversification. Institutional investor also play very important role in the financial market because these organization made huge investment. This institutional investor such as mutual fund, pension fund and investment companies facilitate the small investors. In this study, the role of institutional investor is studied that how these effect on the pricing of assets. These organization have the expertise in making the investment. Serves &Tufao (2005) argued that institutional investor play important role in developed and emerging market for rapidly growth.

Pakistan is an emerging market that is developing gradually. Emerging market are those markets which have a lot of investment opportunities and potential to growth and important channel of fund raising and diversification. Institutional investor actively play their role to influence the

management that they follow the effective CG policies. They influence that management protect the shareholder interest instead of self-interest. Institutional investor eye view on the financial position, they have the expertise because they have investment in more than one organization. These investors have more influence because we analyze that mostly individual's investor raise voice for the compliance and governance implementation. It is not necessary in the same time these investor buy and sell same type of investment. They may have different strategies, goal and time frame for the investment. Current literature show that institutional investor is a stabilized factor. Buhl, (2009) argues that institutional investor can influence on the management of the firm by using their ownership rights that management take the decision that is in the best interest of the shareholders.

However, corporate governance protects the interest of all the stakeholders directly and indirectly. Insider investor are the one of these stakeholders. Insider holding includes the management, CEO and director, it may include the individuals and group that have more than 10 % of shares. These all may have an important role in the organization success. CEO is the highest rank officer of the firm that create relationship between the firm operation and BOD. Sometimes, he may have a position in the BOD, it has the role according to the structure and size of the organization. In the small firm, CEO take almost all type of the major decisions, but in the big organization, CEO take all type of high level of organizational decisions. CEO is responsible for all over the success of the organization and take step for achieving the organizational goals and for the maximization of the shareholder wealth. CEO established the organization vision and mission and take step for the implementation.

Moreover, CEO evaluates the management and makes sure that; social corporate responsibilities are meeting properly. They make sure that non-executive director must include in the meeting and take the opinion from them. CEO get the trust of the all stakeholders. Ulf & Stefan (2014) examined that, if CEO has significant number of shares it affects on the firm performance. Berle&Meanss (1996) studied that it can create principal and agent problem because there is different between the interest of management and shareholders. Chung &Prait (1996) study that CEO and Executive have effect on the return. Core &Larker (2002) study in the US and examine

that there is positive relationship between the CEO ownership and return. Lin & Howe (1990) argue that if CEO considered that firm is undervalued, he may get ownership for trade benefit. Gorton and Huang (2014) studied and analyze that firm that have high managerial ownership have high abnormal return.

On the other hand, BOD is the group of individuals which are selected by the shareholders to run the whole activities of the organization. BOD presented the shareholders and made the policies for the CG. BOD is the part of private, public, profit as well as nonprofit and govt. authorities. Right and duties of BOD may vary in all organizations. BOD consists of internal and external members and they protect the interest of managers and shareholders. BOD create link between who provide and create capital, they play important role in monitoring the management on the behalf of shareholders. BOD held the annual general meeting periodically and present the report about the firm performance to the shareholders. The shareholders can appoint and dismissed the BOD for which, majority of the votes are required. BOD defined the mission and vision of the organization and make policies for achieving the goal of the organization. They analyze the current and upcoming opportunities, risk that organization face from internal and external environment. BOD establish the organizational strategies and take step for implementation of these strategies.

Therefore, management, ownership and governance practices have become the important CG issues in the both developing and developed countries. If human history is going to be analyzed in beginning, individuals govern the small business units. Single individuals take all the decision of the organization and business success depend on his rational decision. With the passage of time, the economic efficiency increase and the rational decision making become impossible. For this reason, the expert professionals required that meet these needs. Shareholders elect the BOD and BOD appoint the management to run the day to day operations. If management not perform their duties and do not protect the interest of shareholders it ultimately create the principal agent problem while, if the management perform their duties efficiently it definitely affect the firm performance and the returns can increase. Hirshleifer & thakor (1992) argued that effective and efficient managers could avoid the risk.

Furthermore, insider ownership also effect on the stock returns of the organization. It is the common and traditional way of investment. In all over the world, in the developing and developed countries most successful firms are having family ownership business. Instead of mutual fund, insurance companies and other institutional investor ownership is with the single individual and group of family (having more than 20% of the share. if analyze the world there a lot of successful business that have family ownership Wall mart (US), Tata group (India), Samsung group (Korea) etc. In this business two or three director are drawn by the family in the BOD. On the other hand family ownership can create problem because it may possible that family owners prefer their own interest instead of overall interest of the organization. For example if a family member want to become the president but he is not competent as compare to the non-family member, it will create problems. A study conduct in the US and result shows that as compare to the non-family ownership, family ownership are more successful and profitable. After that a lot of studies support the argument that insider holding effect the stock return of the organization.

Moreover, Insider holding ownership positively effect on the firm performance, because they have the information, which outsiders do not have. This internal information help them to take the wise decisions. Jonchishyu (2011) examined the family member's ownership and firm performance. After analysis, he argued that firm performance and family members ownership are positively correlated. Julio et al (2008) studied about the insider holding shows that the non-family ownership firm have better performance because no family ownership have professionals, Barontni & caprio (2005) argued that family ownership and firm have significant positive relationship. Similarly, most of past studies focus on the corporate governance and firm evaluation or performance (Love and Klapper 2004, Brown and Caylor 2009). The relationship between the corporate governance and corporate risk also discussed (Andres 2008, Kim and Lu 2011, Wang et al 2015). It is generally stated the corporate governance reduce risk and increase return. This paper also contributes to the literature by including the corporate governance factors into the assets pricing model under the framework of downside risk. In this paper 160

nonfinancial listed companies on the Pakistan stock exchange for the period of 2011 to 2017 are considered.

## **1.2 Theoretical Background**

### **1.2.1 Modern portfolio theory:**

Mean variance theory is presented by the Herry Markowitz in 1952. This is very important theory that provide milestone for the building of assets pricing model. According to this theory, investor is risk averse and make that type of investment where he takes high return and less risk. If two portfolios are given , and one portfolio give the high risk adjusted return and second give less risk adjusted return . The investor surely prefers the portfolio, which give the high-risk adjusted return. According to this theory, if investor has complete knowledge about the risk and expected return in a certain condition, he can find efficient portfolio. The investor can get more return from available given risk and less risk from the given return. .

### **1.2.2 Capital Assets Pricing Model**

Sharpe in 1964 present the capital assets pricing theory which is the extinction of the Markowitz theory. This theory argued that there is the relationship between the expected return and risk. Capital assets pricing model present the single factor assets pricing model which is known as the market premium. For the pricing of individuals and portfolios CAPM is used. SML which is the extension of the CML is used for the calculation of expected return and risk of individual's securities in relation to the overall market.

Although, it is very well known theory among the assets pricing model to evaluate the risk and return of securities. The traditional working on the CAPM is presented by the Sharp (1964), Linter (1965) and Mossin (1966). They argued that there is positive relationship between the expected return and systematic risk. It argued that for the explanation of the expected return market beta is only factor. There is a lot of criticism on the working of capital asset pricing model, which is presented by Sharpe. Riched Roll (1976) criticized that there is not only one

factor that effect the risk and return. After that a lot of studies conduct on the assets pricing by the Banz(1981), Reinganum (1981), Blume and Stambaugh (1983) Ronsberg (1985) explain that these factors have effect on the securities prices.

### **1.2.3 Arbitrage Pricing Theory:**

Capital assets pricing model focus on the single factor assets pricing model which is the market premium. CAPM argued that there is only one factor that effect on the stock return. Ross criticize that there is not only one factor that effect on the stock return. To resolve this problem Ross (1986) present the multifactor assets pricing model by presenting the ATP theory. This theory argue that there are many macroeconomic factors other than the market premium that effect the expected return. It seems be the best alternative to the CAPM that is best to evaluate the expected return of a specific assets or securities. CAPM was more complex and APT was flexible. APT theory are based on the some assumption like (1) the market is perfect and competitive. (2).Investor chose more return instead of less return. (3). Generation of return in the speculative process is linear function of k. risk factor. Ross argue that investor use the speculative process by making the investment. Investor purchase where he got for cheap rate and sale where investor earn more return.

After the Ross work, academic debate was no end because the APT theory argued that there are many factors that effect on the stock return, but not mentioned the specific number of factors, that affect returns. So like CAPM, APT theory was rejected by the other researcher .Shanken (1985) criticize that APT theory is not best to explain the expected return. He argued that it is not possible with the existing assumption to get exact pricing relationship. So conclusion is that like the CAPM model APT also have the fundamental limitation

### **1.2.4 Fama and French Three Factor Model:**

After the CAPM and APT model Fama and French (1992) argued that there are more than one factor that explain the cross sectional return. they include the two new factor value premium and size premium into the single factor assets pricing factor that was market premium.

After three factor asset pricing model there a lot of studies that support the Fama and French work. Fama and French (1996) has been tested the efficacy of this model. Other most of studies found that as compare to the CAPM and APT model this model is more suitable to explain the expected return. Carhart (1997) study on the same topic and present a new four factor assets pricing model by including momentum into the three factor assets pricing model that was presented by the Fama and French. John & Andy (1998) explored the three factor model in emerging market to find that there is not positive relationship between the expected return and beta and but strong efficient relationship between the value and size premium with the expected return.

### **1.3 Problem statement**

According to classical portfolio theory, investors are risk averse and no prefer to invest where they face risk. They always choose a portfolio with maximum risk adjusted returns. Sharpe in 1964 presented the capital assets pricing model, which is the extinction of the Markowitz theory. This theory argued that there is the relationship between the expected return of an assets and risk. Capital assets pricing model present the single factor assets pricing model which is known as the market premium. Capital asset pricing model reveals that there is only one factor that is market premium, which affect returns. However, Roll (1977) opposed it by presenting arbitrage-pricing theory. Roll criticized that there is not only one factor that effect on the stock return. To resolve this problem, Ross (1986) present the multifactor assets pricing model by presenting the APT theory. This theory about that there are many factors other than the market premium that effect the expected return. In literature, many studies were undertaken by using conventional anomalies such as book to market ratio, profitability, liquidity, momentum, size i.e. (Rahman & Baten, 2006; Iqbal et al., 2012; Butt & Rehman, 2010). Contrary, this study aims to explore non-conventional anomalies in asset pricing domain such as institutional ownership and insider holding which are considered as important aspects of corporate governance, and there is need to identify the impact of such factors on equity returns in Pakistan stock market. Rather than using market premium, D.CAPM of Estrada is used because upside risk is studied in literature many times but downside risk is not studied widely. Moreover, VAR is also used as a measure of downside risk.

#### **1.4 Research Questions:**

Main purpose of this study is to present a new six-factor model by including the institutional ownership and inside holding and value at risk into the Fama and French three factor assets pricing model which include the market premium, value premium and size premium.

Research responds to the following questions:

- Does institutional ownership explain stock returns?
- Does insider holding explain stock returns?
- Is value at risk (VAR) better explain stock returns than D-CAPM or vice versa?

#### **1.5 Research Objectives:**

The research responds to following objectives:

- To provide insight about the role of ownership structure in explaining stock returns.
- To compare VAR and D-CAPM for better explaining stock returns.
- To propose a model for asset pricing in emerging economy (Pakistan).

#### **1.6 Significance of the Study:**

There are lot of studies on asset pricing that include one factor asset pricing, three factor assets pricing (value premium, size premium and market premium) and five factors asset pricing model (value premium, size premium, market premium, profitability and Investment). Moreover, in Pakistan, there are many studies on the assets pricing by using conventional and accounting anomalies. But literature on non-conventional anomalies is silent. So, major contribution of this study is to include ownership structure (institutional ownership and insider holding) under the framework of downside risk by using the D-CAPM and VAR as a measure of systematic risk into the Fama and French Three factor over the value premium, size premium and market

premium. To the best of our knowledge, the existing literature on asset pricing and its linkage with corporate governance is very limited. Despite few studies in the same vein, none has introduced these factors into the asset pricing model in similar spirit. Hence, there is a vigorous need to bridge the existing vacuum in the literature by exploring new factors. Consider the model under the framework of downside risk, which ultimately help the researcher academicians, corporate managers, policy makers and investors for better pricing the assets diversity from risk & increase their earning.

The importance of research on emerging market like Pakistan has become crucial because of investors' interest who view these markets as a good source of investment and portfolio diversification. The great transparency of government, best corporate governance practices and regulatory changes in emerging markets have created more flexibility for portfolio investment (Khilji and Nabi, 1993; Stulz, 1995).

## CHAPTER NO. 2

### LITERATURE REVIEW

#### 2.1 Theoretical background

CAPM first developed by the Harry Markowitz (1952) through presenting his mean variance theory. Theory is defined as portfolio has expected return and risk. Expected return is related to securities and risk is related to individual component, this theory defines that investor is risk averse. If investor use the effective portfolio can get more return from given risk and less risk from given return. Later other investor and economist use CAPM. CAPM is used to check the relationship of risk and return. The fundamental work of art on resource estimated by means of Sharpe (1964), who proposed capital asset pricing model. Eugene (2005) “CAPM” accept that singular offers returns exhibit straight co-movement with the commercial center portfolio.

Most vital protest on CAPM is from Roll (1977) who contended that it is unfeasible to have a Portfolio that contains all advantages and liabilities inside the model and no genuine or true intermediary of the market portfolio exists. Chen, Roll and Ross (1977) provided opportunity clarification of the go-sectional return varieties by utilizing offering exchange valuing guideline (henceforth APT), dislike the CAPM, which rely on business sectors are immaculately green, APT expect advertises once in a while misprice securities, sooner than the market at some point or another redresses and securities pass again to honest expense. The utilization of APT, arbitrageurs want to exploit any deviations from pricing of securities. Nonetheless, this is certainly no way free activity inside the great feeling of exchange, because of the reality speculators are accepting that the model is precise and making directional exchanges – instead of securing danger detached benefits.

Fama & Eugene (1968) examined risk, return & Equilibrium. They investigated the validity of Fama and Lintner model. They argued that properly measure the risk of individual assets and

same relationship between risk of assets and its one period expected return. The conflict that are discussed by the Sharp & Lintner because they concentrate on a stochastic model. The result shows that model is valid to check the relationship of risk and return.

Robert et al., 1994 examined contrarian investment, extrapolation, and risk. For this purpose sample period is April 1963 to end of April 1990. Accounting data get from the COMPUSTAT and return data Center of research in security prices. The universe of stock is 50% firms of the American stock exchange and New York stock exchange. Construct portfolio by classifying individual stock on the basis on accounting ratios. They argued that the value strategies outperform the market that include buying the stocks that have low prices ,dividend ,book assets or other fundamental values strategies yield higher return because these exploit the sub optimal behavior of investor and these strategies are not riskier. The value strategies work so well as compare to the glamour strategies. These strategies are no riskier as compare to the glamour strategies.

Fama & French (1995) examined whether the behavior of stock price to the size and Book-to-Market equity .Low book to market to market show strong earning and high book to market show the poor earning. They focused on the six portfolios that formed on the yearly basis after collecting the data of 1963 to 1992. Rank the all stock of New York stock exchange in the CRSP data base on ME and size. Final portfolio are six which include the three BE/ME groups and two ME. Results shows that if a firm ranked on size and BE/ME after observing the stock prices predict the reversion of earning growth. They observed that there is no link between the BE/ME factor in the return and earning but size factor and market help to explain those in return.

Lyon & Barber (1997) studied the Firm Size, Book-to-Market ratio, and security return in 1992. Fama and French check the relationship between these three factors for the nonfinancial firm. In this study they investigate the on these factors in financial firm. Result of this study shows that the relationship between the book-to-market ratio, firm size and security returns in similar for both financial and nonfinancial firms. The research shows that book-to-market ratio and size firm define in an economically meaningful way cross-sectional variation in security return.

John & Andy (1998) investigated the relationship between the size, book- to- market and market beta with expected return in five emerging market: Malaysia, Taiwan, Hong Kong, Korea and Thailand. They collected the monthly data of given emerging market, accounting data from the PACAP for the period of July 1997 to June 1993. They employed Fama & MacBeth model to investigate the relationship between the stock return and firm size, Book-to-Market and market beta. They found no evidence that supporting the positive relationship between beta and stock return. On the other hand they found strong effective relationship between the size and expected return in all market except the Taiwan and book to market significant effect in Korea, Malaysia and Hong Kong. The relationship between the market beta and stock return is 'flat' and stock return is related more to firm two characteristics: book to market ratio and size. The large firm in Hong Kong and small in Korea have expected high return in January.

Heston et al., (1999) investigated the role of size and beta to explained the cross-sectional variation in the average returns. For this purpose, they collected the data of 12 European countries for the period of 1978 to 1995 of 2100 firms. These include the UK (494), Switzerland (154), Sweden (134), Spain (111), Norway (71), The Netherlands (101), Italy (223), Germany (228), France (427), Denmark (60), Belgium (127) and Austria (60) firms. They followed the Fama and French (1992) grouping procedure and size is computed as natural logarithm of market value and ranked on the basis of size and establish portfolios. They suggested that stock return are negatively related to firm size and positively related to beta. They rejected the hypothesis that difference between the beta and size sorted portfolio can be explained by the specification for the SMB that is proposed by the Fama and French. They found that consistent with US evidence there is no association between the average return and exposure to SMB after controlling the size.

Horowitz et al., (2000) analysed the firm size premium in three ways. They collect the data for the years of 1979-1995 of all the firms of NASDAQ, Amex and NYSE listed for research for security prices. They ranked the firms on the bases of market value by taking dependent variable is stock raw monthly return and independent variable is logarithm of firm size in the analyses they used the linear regressions, monthly cross sectional regression and annual compounded

return .after all those analyses they proposed that there is no consistent relationship between the size premium and realized return.

E. Drew & Veeraraghavan (2002) studied the value premium and size premium in the Kuala Lumpur stock exchange. They investigated about the two questions such that in the Malaysian market the model of Fama and French (1996) capture the average stock return. Second is value and size premium marked outside the USA. They collect data from December 1992 to December 1999 firms that have available return data. They investigated the relationship between the expected return and ME and BE/ME by using the Fama & French proposed model. Finding of this study shows that, as compared to the big and low book-to-market equity stock the small and high book-to-market equity stock generate high return in the Malaysian market and small firm with high book-to-market equity stock carry high risk premium.

Michael et al., (2003) seek to enhance the increasing evidence against the view that beta coefficient of the CAPM is sole measure of risk. They tested the multifactor approach of assets pricing in one of the most emerging and challenging market that is Shanghai Stock Exchange of China. They seek to determine that whether value and size premium exists in China or not. Secondly they address that change in the value and size premium are largely determined by the seasonal factors. They define the seasonal factor such as the January and Chinese New Year effect. In the finding they suggest that in the China mean variance investors in addition to market portfolio that generate superior risk adjusted return can select some combination of small and low book to market equity firm. There are no evidence that multifactor model effected by the seasonal factors. They found that, in China market factor alone not sufficient to describe the cross section average return.

Pettengill et al. (1995) utilized Fama & Macbeth (1973) method, address the inconvenience of St. Lucia (2004) stated the awful perceptions in evaluating risk and portfolio chance premiums experienced by researchers while looking at CAPM. They separate the records sets into high caliber and horrendous subsets and named them up-commercial center and down-business sectors individually. They, what's more subdivided test period into portfolio development, estimation, and experimenting with interims. For initial steps, it utilizes the procedure of Fama & Macbeth (1973), third step is changed with the guide of considering the bull and suffer risk-return wonder. Beta evaluations of the second one stage had been relapsed with returns of 0.33

length and record a straight anyway restrictive pursuing between discovered risk premiums and security betas for times of up-commercial center and a horrendous seeking in times of down-commercial center.

Faff (2001) used one-step multivariate take a look at model to analyse the stocks in Australian marketplace finding a sizable high quality dating between anticipated chance and the predicted results. The outcomes for the research of Elsas, Shaer and Theissen (2003) throughout 35 years from 1960 to 1995 inside the German market are also regular with the ones of Faff (2001), reporting some giant correlation between the connected chance and go back of stocks. Giffin and Lemmon (2002) observe the non-economic firms in NYSE marketplace for the period 1965 to 1996 and discover the huge impact of cost and anticipated risk at the returns of stock in American organizations. The examiner carried out the Fama and Macbeth (1973) method and effects propose that excessive chance is undoubtedly associated with the returns and occasional risk bearing shares rewards less in those markets. The look at similarly explored the difference between excessive and occasional B/M stocks and indicates that there is a tremendous impact of the price of B/M on returns.

Other influential studies of the relation among company governance and asset pricing, next to Gompers, Ishii, and Metrick (2003), encompass Cremers and Nair (2005), Ferreira and Laux (2007), Bebchuk, Cohen, and Ferrell, (2009), Johnson, Moorman and Sorescu (2009), and Acharya, Gottschalg, Hahn, and Kehoe (2011). Giannetti and Koskinen (2010) check out the impact of investor safety on stock returns and portfolio allocations for move-border portfolio investments, both theoretically and empirically. Most of this research begins with the statement that company governance is heterogeneous amongst firms or among international locations and look at its implications for percentage costs or strange fairness returns. None of these papers indigenizes corporate governance or deals with the relationship between betas, idiosyncratic coins go with the flow volatility, and company governance. Similarly, Drew et al. (2003) whilst analyzing Shanghai inventory marketplace explore the possibility of the use of F&F 3 factor model to explain danger and go back relationship, the earlier studies of Fama and French (1996), Drew and Veeraraghavan (2002) stated that, the massive corporations document high returns over time but this study found that beta isn't always the simplest measure that describe versions

in equity returns however there are some others as properly. The effects found out that small companies generate higher returns than larger ones.

Marshall and young (2003) explored the Australian marketplace to find out the impact of liquidity, chance and length the use of pass sections correlated time clever autoregressive (CSTA) version and Unrelated Regression (UR) model. Marketplace price is taken because the proxy for size degree and turnover, bid-ask spread are used as proxies for liquidity. The look at indicates that return on fairness is inversely correlated with liquidity and length inside the Australian equity market. On the contrary, Gaunt (2004) presented the study on the book to market effect , size effect and the ability of Fama French model of three factor by using Australian literature. In this study the methodology adopts same that is adopted by the Halliwell et al. (1999). Accounting data of July 1991 to June 2000 data sourced from Australian stock exchange for 1991-1997 and from IRESS for the period 1998-2000 and stock market capitalization data from AGSM. The finding of this study revealed that as compared to the Halliwell, Heaney and Sawicki, this study found the three factor model provides significantly improved explanatory power over the capital asset pricing model and the evidence that BM factor plays a role in asset pricing.

Fama and French (2004) examined objectives to check the application of capital asset pricing model (CAPM) in financial marketplace. It has divided into components, theory and practice of the CAPM. First, it discusses theoretical predictions about measuring the danger and its relation to anticipated go back. Secondly, it examines the realistic implications of this model thru its software on one-of-a-kind instances. This paper discusses the assumptions of CAPM in opposition to its utility in various researches. The research displays the distinction between the predictions and effects by using applying this model. It uses a couple of techniques like go-segment regression, correlation and time collection. Check of the CAPM is primarily based on three implications of the relation among anticipated return and marketplace beta implied through the version. First, expected returns on all assets are linearly associated with their betas and no different variable has minimum explanatory strength St. Lucia (200). However, Peterkort and Nielsen (2005) developed an alternative asset pricing model to investigate the book-to-market ratio as a proxy of risk. They collected data from the American stock exchange, New York stock exchange and NASDAQ for the period of June 30, 1978 to 1995. They used the 1996 Standard

and Poor's compustat current and research databases. Create portfolios that show the relationship among market leverage, book leverage, natural log of book-to-market ratio and monthly return. They calculate the average value for each portfolio each year. To investigate proxy for risk book-to-market ratio uses the traditional assets pricing model. Result shows that there is no relationship between average stock return and book-to-market ratio in all equity firms after controlling firm size. There is inverse relationship between book-to-market ratio and average stock return of firm with negative book value of equity.

Fama and French (2006) examined the value premium whether CAPM explain the value premium and CAPM is predict by the average return compensate beta. The regression of VMG, VMGS and VMGB is used and results showed that during 26-63 CAPM is predict with the portfolio market beta on size and B/M line up with average return and value and size premium are captured by the CAPM. But the beta variation is not related to B/M and size seems to carry little or no premium. During 63-04 value and size premium are similar to 26-63. The final finding of study shows that CAPM has more problems throughout the 26-04 period. B/M and size are important in expected return and beta has no or little independent role. While, Iqbal at al.,(2008) conducted a study in the Pakistan to test the conditional assets pricing model. They investigated the validity of CAPM and Fama-Frech asset pricing model. It is always a tough tack to modeling risky assets pricing because price are influenced by various factors which are both microeconomic development relevant to firm and microstructure of market. For this purpose time series data was collected from the Karachi stock exchange for the period of october 1992 to march 2006 eighty percent of market on the basis of capitalization. They constructed the portfolio by following the methodology that was used by the Fama and French in 1993. They employed the conditional and unconditional model by using 16 Size\*Book to market portfolio test from Pakistan stock market and reject the unconditional version of CAPM and accept the conditional model with global risk. Adding the Book to market and size factor in the framework of Fama-French improve the performance of CAPM.

Moreover, Wah ho at al. (2006) in the Hong Kong market on the corporate financial leverage and assets pricing. They expanded their working from beta, size and book to market equity to examine the pricing of beta in the presence of risk factor that are market leverage. For the period of 1980-1998 containing 117 common stock that are traded on Hong Kong markets. The result of

study showed strong support to the hypotheses that was originally developed by the Pettengill, Mathur and Sundaram (1995). The findings enhance the understanding of the capital market behavior, should be helpful for the investor and corporate manager in financial decision making. Therefore, Discoveries by means of Wah Ho, unprecedented, and Piesse (2008) and George and Hwang (2010) expressed evidence of odd returns for organizations with high financial influence than can be characterized through conventional resource estimating models. Peterkort and Nielsen (2005) broke down the components that would have contributed towards the presence of significant worth premium returns. They contended that digital book to advertise is an intermediary of danger premium because of its normal association with money related influence.

Iqbal et al. (2010) likewise led each other inspect inside the Pakistani rising business sector and they dismiss unequivocal CAPM. While size and book-to-market components are secured inside the CAPM, the observational discoveries sound better. Kim, Kim and Shin (2012) thought about the CAPM; APT empowered model (FF5 is developed by including liquidity component and extensive term inversion components to Fama-French 3 factor model); the utilization principally based CAPM; Intertemporal CAPM and Conditional CAPM. The discoveries help FF5 as most acceptably the different designs thought about inside the take a gander at Eugene F. Fama (2005).

Michael et al. (2010) studied on the interaction of size, book to market and price momentum effect in Australia. Check the effect of book to market size and momentum on stock return. Accounting data collected from annual reports for the period of 1981-2005 by company reporting services reports were collected and all the stocks ranked on the basis of book to market ratio. For this purposes portfolio are created of each characteristic by triple sorting. These findings showed that, in case of loser portfolio size premium is strongest, value premium is limited to the smallest portfolio and price momentum premium is evident for middle and large size portfolio. They found negative significant relationship between the size and return, average positive significant relationship book to market and return and between the momentum and return have significant positive relationship.

Adamia et al., (2010) additionally investigated a relationship between unusual stock returns and leverage. The examiner measured stock returns by using the asset pricing models of Sharpe and Lintner. The findings recommended that returns are negatively associated with company

leverage. Chai and Zhang, 2010 described that companies having high leverage increase their danger of failure to pay their debt and its projected price. If the default danger is valued, a significant enhance within the leverage ought to result in a better possibly future go back. The worth of a company is independent of its capital shape and the return on fairness capital is undoubtedly linked to leverage (Modigliani-Miller, 1958).

Kim et al. (2012) studied the Capital asset pricing model. They compared the Capital assets pricing model and arbitrage pricing theory. They collected trading volume and stock return data from Korean capital market institute database and accounting data from the Kis-Value database. Bond yield data, GDP and consumption data obtained from Bank of Korea. They include two new variables such as liquidity and long term reversal into Fama and French tree factor asset pricing model. By using various portfolio as well as Individual stocks, they applied cross-sectional regression and time series test based on individual *t*-test, R-squares, the Hansen and Jagannathan (1997) distance and joint F-test. The result depicted that five factor asset pricing model is best to explain the behavior of stock return in the Korea.

Mirza et al. (2013) constructed an influence thing, imitating length and expense factors dealt with based on monetary influence. The segment HLMLL was the refinement between stocks with high influence and espresso influence. Given that, influence is a supply of money related hazard; speculators will require better returns for making an interest in associations with more prominent monetary influence justifying a colossal HLMLL segment. The example created from nine emu universal areas among 1989 and 2008 and the take a gander at said enormous influence top class for the example stocks. The greatest venture to length and expense suggestion has been from Fama and French (2015) who tried a five issue form this is increased for benefit and subsidizing test. They expressed that five part show higher give a clarification to average returns of their example portfolios when contrasted with a 3 issue form.

From above literature, it is observed that asset pricing in relation with corporate governance attributes isn't studied extensively. Only few studies are there as mentioned in literature. So there's want to analyze corporate governance attributes in asset pricing domain.

In past work, tremendous writing situated for looking at CAPM, APT and Fama French Three Factor Model in unmistakable markets for one of a kind time length. Basu (1977) investigated that low P/E proportion securities lead to exorbitant hazard balanced market returns. Stattman (1980) and Rosenberg et al. (1985) found that digital book to market clarifies the profits of stocks. Banz (1981) inspected the relationship among the profits and market by method for utilizing resource estimating model. Results check that little organizations have high returns in qualification to enormous firms. In market cost the effect of size is never again direct the vital outcomes happen for the little firms and there is next to no refinement is seen among the profits of little and huge firms. Basu (1983) delayed the query and examined the connection between the gaining's yield, estimation and profits for securities of NYSE companies and exhibited that P/E proportion is valuable technique in the illumination of the profits despite the fact that P/E is never again absolutely unprejudiced of measurement and beta.

Chan et al., (1991) examined the varieties in move sectional returns by means of venture BTM proportion, size, pay and cash float yield by method for the utilization of SUR model, Fama and Macbeth (1973) technique and other measurable strategies. Results reasoned that acquiring rate proportion has agreed and essential effect on the stock returns. Researcher analyzed situation of magnitude, BTM reasonableness and E/P proportions in the resolve of standard returns. Normal standard returns had been utilized as a built up factor and size, book to advertise proportion, influence and charge income proportions have been utilized as a determinant of normal returns by method for developing portfolio based on size, book to showcase proportion and acquiring cost. Results uncover that measurement and BTM keep the adaptations in stock returns close by with the influence and E/P. In addition the measurement impact was once discovered substantially less compelling when contrasted with digital book to showcase proportion. Positive relationship used to be seen between BTM proportion and stock returns. What's more the E/P is additionally equipped for illuminate the deviation in stock returns.

Fama and French (1993) inspected the three risk components related to offers and two with bonds. The risk factors related with offers were estimate, BTM value and market factor. securities returns related risk factors have been default top rate and timeframe premium. Result showed that three stock related components clarify the unpredictability and variations in stock

returns. Portfolios that have great E/P have inordinate returns and the other way around. Additionally, they presumed that absolute best E/P portfolios have a HML indistinguishable of that most astounding BTM value. Fama and French (1995) inspected that both stock costs delineates the lead of income in association with size and BTM value. Portfolios have been framed and all portfolios arranged on the establishment of estimation and digital book to market value. Time series regression technique was once utilized for the investigation. Results demonstrated that organizations with over the top BTM value have low proportions of income and the other way around.

Stylist and Lyon (1997) examined the relationship of size, book to advertise proportion and stock returns. Discovering demonstrates that partnerships of little estimation flaunt exceptional yields whereas the vast firms demonstrate the low returns. What's more offers of unreasonable digital book to market value demonstrate that profits are higher for these offers and the other way around. Fama and French (1998) examined the connection between cost offers and blast stocks. Results displayed that there is the better in general execution of growth stocks in all business sectors all through the examined period. There is additionally a cost premium and this value premium is comparative when arranged on BTM, salaries value, C/P and D/P. Time arrangement relapse approach was utilized for examination. The impacts of the find out about presentation that BTM predicts the time variation in foreseen returns financially and essentially. Further they characterized that BTM unequivocally relate with the changes in hazard. Researcher explored the connection of stock returns, value beta, BTM value, and measurement by the utilization of Fama and Macbeth (1973) demonstrate. They found that there exist the helpless relationship in the midst of profits and market beta. Likewise discovered that BTM value can give a clarification for the cross-sectional adaptation of foreseen stock returns.

Lewellen (1999) researched the association between anticipated return and BTM proportion. Aleati et al., (2000) dissected the association among risk and returns. Factor examination and time arrangement relapse approach was once utilized and impacts unveil that size and expense top class features are possible for molding the advantage returns for Italian stocks. Notwithstanding SMB and HML they likewise anticipate some different components are also essential in discovering the advantage returns. The foremost discoveries demonstrate that threat premium for the market and for the BTM part saw to be phenomenal essentially an estimate

hazard top class found obviously negative. However, Researcher contemplated the measurement and value top class exists in the China. The results tested the discoveries researcher and saw that mean-fluctuation condition amicable financial specialists can select some blend of little and low book to market reasonableness firms in China and market portfolio create highest quality level possibility balanced returns. No Evidence used to be found in help of regular impacts. Researcher examined the size, BTM proportion and found reliable discoveries that huge gigantic connection between size, BTM proportion and gatherings with little size and low BTM proportion have more serious hazard, anyway the size impact is littler when contrasted with book to showcase proportion impact., researcher investigated the usefulness of charge winning proportion on the expectation of future stock execution. Results dismiss the second theory of the find out about that high charge procuring proportion will prompt future stock decreases. Another find out about that performed in Pakistani decency market and this find out about researched the advantage estimating system for the length 1998-2007 with the guide of utilizing the month to month costs. To investigate the effect of estimation and esteem premium, Fama and French three factor demonstrate was tried. Esteem returns found definitely related to all portfolios other than low BTM stocks. After effects of the get some answers concerning demonstrate that showcase top rate impact is existing in Pakistani reasonableness markets. Stocks having intemperate BTM proportion work superior to low BTM stocks. Estimate top rate is found definitely related to little portfolio returns yet it is found immaterial for arrangement of extensive stocks. Researcher Results found that market put together proportions have informative power with respect to each the alterations of the profits of current stocks as appropriately as one term ahead of time stock returns.. The discoveries of their find out about are basic for brokers to accomplish conventional returns in monetary markets.

Accomplishment of the Fama-French three issue demonstrates is, essentially, uniqueness in CAPM and rose as a most well-known justification for the continuous contention on resource estimating. Evidence including the presence, criticalness, increased forms and time different conduct of the peril premiums and the three-consider mannequin the financial exchanges.

Researcher tried that measurement and book-to-market components are shockingly associated with the normal offers returns anyway there is no different pain and the majority of the co-development of the value shares is never again because of upset stocks being revealed to

an interesting hopelessness factor. They characterized that it is attributes as an option than viewpoint loadings that seem to give a clarification.

St. Lucia (2004) dissected consequences 3 factor of CAPM. Frameworks exchanged in the 500 Indian stock market have been occupied as an example. This influences afterward the utilization of Wald records affirmed that 3 out of 6 collections consumed across the board blocks for CAPM, while, in the Michael Brien (2010) mannequin every one of the six portfolios had unimportant captures. At last, based on their discoveries, it was presumed that the 3 elements display performs higher in Indian market Eugene F. Fama (2005).

Around about 3 created markets, Researcher discovered that the basic three elements mannequin canister extensively give a clarification to the varieties in the segment of anticipated stock returns in the stock markets. Michael et al., (2010) broke down the influence of estimation and value factors on stocks' normal returns in five Asian rising markets. Their discoveries prescribed a durable measurement impact for the majority of the business sectors. Ross Levine (1998) conversely the CAPM with elements display. Outcomes forewarned that the three-factor display characterized practically seventy percent of the varieties consequently that prompted arrangement of a feeling with 3 factor mannequin is an invaluable and helpful exemplary for clarifying the adaptation in anticipated stock returns. Zang et al., (2016). recognized time-differing value premium in the financial exchanges. Be that as it may, they found an esteem markdown in the securities exchange.

Zang et al., (2016) examined the Chinese offers in approved of presence in estimation and book-to-market results for profits for Chinese stocks. Researcher inspected components distinguishing the standard costs on the Refinement stock market. Discoveries upheld presence in measurement of esteem issues alongside the flea market jeopardy premium, while fluidity viewpoint was at one time never again evaluated in refinement stocks Judith (2010).

Chen at al., 2015 experimentally examined the basic 3-factor of Fama and recognized a few drawbacks happen in the product of the 3 factors explaining Chinese stock returns. So as to assess the consequence of many diverse highlights in China, that attempt different things with explicit techniques to collect 3 components. Researchers reasoned that development in 3

components can have a critical observational research in which watches 3 factor mannequin in Chinese market. According to this equivalent way, Researcher analyzed in excess of a couple of strategies to gather collections and planned additional proof in Australian market.

Researcher played out an experimental investigation, through method for concentrating to the exceptional highlights in Chinese market. They get some answers concerning comprised of offers exchanged at SSE A-share somewhere in the different range. Discoveries prescribed estimation expense premiums are gigantic in marketplace and the 3 factor show through large outbursts. Research comprises of the speculation and gainfulness components in the mannequin as these elements weaken the esteem factor.

Muhammad Abbas (2017) dissected the restrictive Fama's 3 factor exemplary in the stocks exchanged of Pakistan. Techniques are utilized on month to month, week by week and every day insights of 89 stocks for the term of the span somewhere. They charted in a graphical assessment that molding factors regularly upshot in rising predisposition. Researcher presumed unlimited three-factor mannequin performs better. Researcher conveyed a different structure to investigate the legitimacy of the 3 -factor demonstration. The outcomes approved the measurement top class yet recommended a value rebate. Their discoveries, as a rule, strengthened the 3 influence demonstration. Islam Azzan (2010) analyzed a lot of macroeconomic factors nearby with the market chance top class on 49 shares exchanged .The consequences maintained that the financial factors play a gradual stage in clarifying the disparity in returns and this inconstancy has some occupational series interactions (Fahad, 2011).

Inside a tremendous global examination John et al., (2017) inspected connection Fama's 3 variables and upcoming budgetary development in different nations. The outcomes showed that has been emphatically connected to forthcoming currency related development. Prescient capability of the Fama's components is originate fair-minded accessible factor. They battled on discoveries bolster the exposure based translation of the Fama– French variables. Additional, a normal informative intensity of the Fama s variables for stock returns within the sight of macroeconomic danger components is seen with the guide of many research. Researcher inspected the appropriateness of the Fama-French components and investigates the capacity of these components to anticipate future financial in South Africa GDP. The discoveries show the importance of little companies and value stocks on the South-African stock market. Also, the

consequences demonstrates a broadly awesome connection about future monetary development. The discoveries continue strong to incorporation of big business sequence factors in the exemplary. The value risk top rate ("MRP") is the normal return that purchasers require over the solid rate for tolerating the higher fluctuation in returns that are regular for value ventures (for example the MRP mirrors an insignificant limit for purchasers so as to be happy to contribute).

Since alpha just identifies with organization explicit changes, it very well may be disregarded if contemplating the ordinary market ( $\alpha = 0$ ). Besides it is essential to know that for the normal market, beta will by methods for definition continually be 1.0, because of the way that the entirety of all profits of man or lady shares levels with the general return of the market, and subsequently, the two are immaculately associated. As decide under shows, the required return for the common market is characterized completely by utilizing the sheltered expense and the decency showcase chance premium.

## **2.2. Downside risk measurement**

Over the past couple of numerous years, basic inquiries had raised over the explanatory power of CAPM by methods for that spend significant time in whether Beta dependent on mean variance behavior is the correct measure of risk. Since in this circumstance, Beta stems from equilibrium wherein purchasers augment a utility function that relies upon the mean-variance returns of portfolios (Akbar et al., 2012). Besides this fluctuation appropriates in case returns are orderly and usually circulated. In any case, the symmetry and ordinariness of profits are questionable issues for some observational confirmations. Serajur (2013) Essentially, difference similarly viewed as upward and descending unpredictability. Be that as it may, financial specialists are progressively included around the drawback peril. To begin with, it's miles the ideal amount and reoccurrence pursues appropriation or uneven. In addition, variance equally considered downward and upward volatility. However, investors are more concerned about the downside risk. Therefore, the semi-variance is more suitable measure for various reasons. First, it is an appropriate measure whether the return follows symmetric distribution or asymmetric. Second, the semi-variance combines the variance and skewness information into one measure. Therefore, making it thinkable to use one factor model to calculate investors required rate of returns based mean-semi-variance (MSB) behavior (Levy & Markowitz, 1979).

The first semi-variance model was proposed by the Hogan and Warren (1974) to calculate the downside systematic risk. Later one Hogan and Warren (1974) framework is also generalized by Bawa and Lindenberg (1977) in the form of mean-lower partial moment model (MLPM) and they claimed that their model can better explain the data as compared to CAPM. Bawa and Lindenberg uses risk free rate as the standard return. Recently Estrada measure the downside beta.

Likewise, the exacting consistence of corporate administration is relied upon to amplify the firm execution. (Schmid, 2011) contended that level headed purchasers foresee improved represented companies to must intemperate functioning proficiency that gainfulness to augment investor's riches. Further, those partnerships likewise must inferior charge of following and control Fama (2005).

### **2.3. The ownership structure and downside risk**

The specialist ordinary alternative strategies provided organizational representatives lessen silly misuse. The administrative proprietorship prominently lessens the primary Agent by method for alleviating the skirmish of intrigue. One of these perfect situation forces the top control to take elevated decisions to monitor the overall population intrigue. However, loss of administrative proprietorship could make a vacuum of doubt the different included partners. These undesirable conditions cause recklessly aggressive determinations in exceedingly shaky ventures by the operator (Singh and Harianto, 1989). In any case, the contrary school of idea presumes that chiefs are indeed concerned roughly their calling, which can be destructive at the organization cost. Hirshleifer and Thakor (1992) analyzed that directors have an inclination avoid danger. In view of their aloof conduct, directors some time misfortunes a brilliant benefit accepting open door.

The contention is really disputable due to mixed observational confirmations. On behalf of instance, Serajur (2013) investigated connection of administrative proprietorship and friend's jeopardy. The examination shows directors' of ownership stocks decreases the organization peril up-to a colossal degree. Associated, Chen et al. (2003) likewise found a considerably horrendous

dating between the administrative proprietorship and friend's peril. Yet, Hutchinson and Gull (2004) stated a great seeking among the administrative proprietorship and friend's chance. What's more, Abid and Iqbal (2008) examined the connection between administrative belonging and firm generally execution for example of term 2003-08. The watch displayed a factually gigantic positive relationship.

Minority investors once in a while uncover the operational peculiarities of a recorded undertaking on account of absence of control. In any case, a large portion of the general population investors have an unmistakable fascination for following the organization's execution over a length. Christina (2017) commonly, an organization with focussed possession measured like unrivaled entertainer dispensed proprietorship. Researcher considered the connection with firms in general execution and ownership mindfulness. The examination forewarned that concentrated belonging make commitments without a doubt to the commercial center expense of firm. So also, the watch contended that concentrated belonging structure supplements worker productiveness.

The square holders have more noteworthy budgetary stake in organizations. In this way, they've sharp side interest and capacity to moderate the business bother (Andres, 2008). Particularly, the square holders observing yields exceptional yield. In like manner, the vigorous checking systems weight the control to works of art additionally accurately (Maury and Pajuste, 2005). Never the significantly less, square holders have get admission to inward certainties which produces quirky instability. Therefore, it very well may be reasoned that high square holder proprietorship may development the downside peril.

The situation of institutional speculators snatched huge thought in writing with perceive to corporate administration. Ordinarily, institutional brokers have higher comprehension and measurements contrasted with character purchasers. Along these lines, the nearness of institutional purchasers decreases the organization danger (Rubin and Smith, 2009).

Earlier examinations archived that institutional financial specialist have an urgent capacity in following the CEO direct (Johnson et al., 1999). Nearby checking of the official speculator lessens opportunity introduction that upgrades foreseen profit. Researcher determined an awful

alliance among institutional financial specialists and friends risk in sharp lower institutional possession cause high unpredictability.

## **2.4 Internal's governance**

Developing chiefs' possession stick with unchanging declines that associates with clashes. In any case, administrative proprietorship past a beyond any doubt factor gives upward push to some other inconvenience. Jensen et al., (1983) deal with that better administrative proprietorship makes the directors settled in from procedure showcase risks or assume control over dangers. Dug in directors are better situated to separate leases as exceptional profits, advantages, or rewards. Administrative results that contract mining charges are thought of additional in nations wherein assurance of purchasers' and resources privileges are defense less and legal effectiveness is low. And numerous additional creating worldwide areas, this is anti-coated that financial specialists' security is powerless and legal productivity is little in Pakistan. Further, numerous organizations are possessed through family units and organizations wherein directors keep generous segment of the general stocks. Managerial lease extraction might be controlled to a point if there are investors inside the firm who have following aptitudes. Monstrous investors, institutional investors, and related partnerships are such associations of investors who may address and confinement administrative activities. Administrative payment abstraction might be measured to a point in case of investors in the organization following abilities. Huge investors, institutional investors, and related partnerships are such organizations of investors who may address and restrict administrative developments.

Chagati & Damanpour (1991) examined the relationship between the Institutional ownership, capital structure and firm performance by focusing on the role of institutional owners. The study related to two questions. First, what is the relationship between the firm performance and Institutional shareholders? Second, does the stockholdings size by the corporate executive, insider institutional, family ownership, modify those relationship or not. For the research data collected for the period of three year of 40 Paris manufacturing firm. For the firm data they take the percentage of stock holding by the institutional and insider holder, divided into high and low shareholdings. The results showed that outsiders institution, stock holders have significant effect

on the firm capital structure, corporate executives, shareholdings. Supplement the relationship between outside institutional shareholdings and firm performance.

Hamid Mehran (1994) examined the relationship between the executive compensation structure, ownership and firm performance. Random selection of sampling technique are used and collect the 153 firm data for the period of 1973 to 1983. He collected data on the COMPUSTAT annual Industrial File of number of options granted and their exercise prices, number of top management, age of CEO, number and affiliations, number and identity of outside block holders and their equity investment in the firm, properties and insurance, saving plans, dividend units, phantom stock, restricted stock and salary. The results showed that firm performance is positively related to the percentage of equity held by the management and the percentage of their compensation that is equity based. Firm in which higher percentage of share held by the insider and outsider used less equity based compensation.

Gorriiz&fuma's (1996) studied on the topic of impact of ownership structure and firm performance. For this purpose they collected data of 81 non- financial firms registered on the Spanish stock exchange. They divided these firms into two parts such that family and non-family controlled ownership. Out of total sample size 34 firms are considered the family controlled and others 47 consider non-family ownership firms that are controlled by the institutions. They collect ownership data from the Maxwell Espinosa shareholdings directory and Spanish security exchange commission. If the firm produces more value added per worker it consider more efficient than other. Value added is measured through the firm purchase, sale and services offered by the firm. The result showed that in favor of contractual theory. According to which choose their ownership structure maximizing economic value not of contractual cost.

Perter et al. (1996) examined the impact of institutional equity, Block holder and corporate insider on the firm risk taking. Public traded company's data collected on the basis of various requirement. First requirement is availability of ownership data and obtained data by corporate insider, block holders and institutional investors from the value line investment survey. Second requirement was availability of data of institutional brokers Estimate System. To measure of risk

used forecasted earning per share. Third, requirement that financial data available in COMPISTANT files so that Tobin could be calculated. The final sampling consist of data of 358 firm for 1986 and 514 firm for 1992. The cross sectional regression analysis are used in which risk taking was regressed again various measure of equity ownership. Result showed that wealth portfolio of corporate insiders may influence firm risk taking. Institutional ownership also helpful for the firm in risk taking.

Danielsson&Devies (1997) proposed a semi parametric method for VaR evaluation. They compared the semi parametric method with historical simulation and JP Morgan risk metrics technique on portfolio stock return. There are several methods to estimation of VaR. some are used the GARCTL based risk metrics method, which is based on the conditional volatilities. Some based on the conditional historical distribution of return, such as historical simulation. They proposed that extreme value method as a semi-parametric method for estimation of tail probabilities. They argued that no doubt the performance of historical simulation is better in the prediction of VaR but suffered from a high variance and discrete sampling far out in the tails. The performance of extreme value estimator method is better other than all.

Institutional purchasers are a vital partner in corporate administration components since they can assume the observing job Vishny et al., 1986). Various thought processes exist, institutional purchasers are commonly thought to have longer financing skylines which thusly urge to become stressed inside issues in organization. Their eagerness to show is in like manner identified with their ability to screen. Their capacity thusly is related with a few elements: above all else, they've higher get section to different assets of records to acknowledge about administrative contract extractions (Lev, 1988); and, also, they can without a doubt scare the organizations' control either through deal in their stocks or by the use of their balloting privileges

Experimental indication shows once official investors are not possessing a substantial division in general interests in well-founded, their dimension of responsibility would little. In intemperate cases, vast outer investors might be inactive natives and might plot through administrators to confiscate other underground investors. Various investigations that tried the likelihood of whether institutional speculators can affect a firm esteem have did not discover any relationship Intentions in the back of the detached job of institutional purchasers comprise of absence of

capacity to show (Taylor, 1990), speedy timeframe financing skylines (espresso, 1992) free rider issues and administrative confinements

In the event that a firm is a piece of a major association of associations, the firm can get a few points of interest from the association connection. To begin with, association offices can go about as extensive outside investor's confiscations through the apex the executives. Researcher gives thought through contending that the possession detained with guide of the related companies are additional prominent extended haul in nature and this very capacity of unmitigated circle of venture finishes in effective key determinations. Some other contention that is going in need of related belonging is that an organization can profit by the generosity and notoriety of the association. Moreover, association offices help others.

Presently, various research have moved the focal point toward inner clashes of welfares, the large commercial of investors offices can appreciate, it is important that undertaking organizations is not act astutely because of acknowledgment as those companies are eminently observed. This deceivability may be a result of their extensive sizes and additionally for the most part the well-known business endeavor investors or identities with administrative and dogmatic foundations in administrative sheets, a mind boggling net of -establishment exchanges may make it additional troublesome for experts who dealers to perceive around crafty conduct. Consequently intricacy of intra-organization exchange cans development the likelihood of astute lead. In an organization system, a higher belonging percent of gathering gatherings ought to lessen business undertaking fight among investors and supervisors, anyway in the meantime, it'd result in extraordinary clashes of pastime between greater part insiders and minority-outcasts. Subsequently, if the foundation notoriety theory holds, association offices should grandstand higher commercial center and bookkeeping in general execution than non-establishment associations, in light of the fact that the exchange charges of such organizations are thought with little direct consequence of the gathering bulk and prominence. On the off chance that multifaceted nature of exchange theory is legitimate, at that point bunch offices could indicate helpless execution, which would suggest that the association offices are worried in minority investor's misuse, or potentially the organization has substandard acknowledgment and is confronting higher exchange costs.

Annaert et al., (2013) utilized extraordinary intermediaries for memorable instability to mannequin bank CDS premiums in the eurozone. One of the intermediaries they lease for market instability is to figure week by week memorable general deviations on stock returns; they likewise use volatilities dependent on monstrous home windows of day by day records and outright week by week returns, squared week by week returns, levels and mean total deviations to test the strength of their outcomes. Cao and Zhong (2010) use market value stipulations while dissecting CDS premiums, they contend that CDS contracts are like out-of-the-cash put decisions on record that both give a low cost and superb security towards downside hazard. They find that the inferred unpredictability from put choices is a fundamental determinant of CDS singular companies' placed choice suggested instability rules noteworthy unpredictability in clarifying the time-arrangement form in CDS premiums. Their outcome can be characterized through reality that suggested unpredictability is a greater domain inviting conjecture for future acknowledged instability than notable instability.

Ben Graham (2002) stated the effect of monetary influence as a determinant of CDS premiums was once first and foremost put ahead by method. In their investigation, Researcher additionally think about the capacity of budgetary influence with respect to the market cost as a market marker influencing CDS premium. Researcher use bank stock comes back to intermediary for the alterations in the certificate of fiscal influence. Stock returns decline, the phase of influence as and a few of market price increases. They contend that paying little mind to the way that week by week stock returns are utilized as an intermediary for influence, it is likewise more than likely that week after week stock profits would affect for the association's future execution and practicality. In this manner, if stock returns are sure, this can be taken as a sign of right execution and result in reduction CDS premiums and the other way around. Eugene (2010) CDS premiums are utilized as market cautioning indications of money related foundation chance, in view of on impossible to miss stock returns, advertise file restores, the swap spread and the offer ask spread. Researcher displays that hypothetically suggested factors, for example, influence and instability give a clarification to a broad level of CDS variances, find that influence, characterized as the book cost of obligation isolated by utilizing the total of digital volume estimation of obligation and the market estimation of value is a sizeable justification of vacillations in the CDS premium.

Marcia et al., (2003) examined the relationship between the involvement of institutional investment and firm performance. Corporate governance variables including director and executive stock ownership, age and tenure of CEO board of director characteristics. CEO pay for performance, board size. They collected data for the period of 1993 through 2000. The sample is firm in the S&P 100 (standard and poor) and collected sample of 737 firm performance is measure on the basis of ROA and measured performance in each year by industry-adjusted ROA. Institutional investor data for the period of 1993- 2000 obtained from CDA spectrum data based and also collected data about total share outstanding , number of shares owned by all institutional investment, number of share owned by investment companies and individuals. Stock ownership of officers and directors. The study estimate multivariate regression and according to the 737 sample firms. The observations across firm are pooled in one regression. Found significant relationship between firm operating cash flow and number of institutional stockholder. The result suggested that institutional investor need to protect actual or promote potential business relationship with firm in which they invested.

Bauer et al. (2003) examined the relationship between the corporate governance and stock return. They analyzed whether corporate governance increased the stock return and enhanced the firm performance. To measure the CG Deminor corporate governance ratings are used by taking the sample size of 300 Euro top firm for the period of 2001 to 2011. The study based on the 300 different criteria which can be attributed to four broader categories. Range of takeover defenses, rights and duties of shareholdings, disclosure on CG and board structure. They build portfolios on the impact of CG on the firm performance. The results showed that there are positive relationship between the CG and firm valuation.

Zhang et al., (2016) affirmed that the monetary essentials two of two value two firms two react contrarily to budgetary stuns while this is never again valid for development stocks. Researcher verified that an esteem portfolio relentlessly outflanks a development portfolio sooner or later of the business cycle and that the advantages of cost contributing are significantly bigger amid times of constriction than for the span of times of extension. Zhanget al., (2106) discovered two that the basics two of charge organizations decay two forcefully in subsidence. While increment organizations likewise trip a decrease in essentials, the decay experienced isn't as profound as that of value firms.

Researcher demonstrated that the vast majority of the esteem top rate originates from offers with low dimensions of institutional possession, which represent exclusively 7 percent of financial exchange capitalization. This finding recommends that the cost premium is made by means of the propensity of certain purchasers to misprice certain stocks that are likewise steeply-valued to exchange.

Nieholsen and Geofry (2007) tested the corporate governance three theories and test that weather directors of firm impact the performance. These theories included the agencies theory, stewardship theory and resource dependence theory. They employed case-based methodology on the basis of two reason. First the link between then BODS to corporate governance is not well understood, second to test the theories. They follow the Yin (1994) and Eisenhardt (1989) to build methodology. For the data collection process three phases are adopt. First of all interviews the director on the bases of semi-structure Interviews. After the interview key document of firm acquired (including annual report and board minutes). After analyzes that data present to the board of each organization to ensure that construct validity has been achieved. They develop hypothesis to link the BOD and performance .findings showed that each theory explained a particular case.

Margarities and Psillaki (2008) investigated the relationship between the ownership structure, capital structure and firm performance of firm. The variable of this study included profitability, assets structure, ownership structure, growth opportunities and firm efficiency. EBIT used to measure profitability. Fixed tangible assets are used to measure assets structure. Intangible assets to total assets to measure the intangibles. Logarithm of firm sale is used to measure the size and percentage of large shareholdings used to measure the ownership structure. They collected the data of manufacturing firms of French and used non-parametric. Data envelopment analysis method to empirically construct the industry best practice considered efficiency of firm choose on the basis of more or less debt in capital structure. To get the results they used the quantile regression and throughout the analysis they consider role of ownership structure on capital structure and firm performance. Results showed that there is no significant relationship between the ownership structure with firm performance, leverage and ownership has reverse relationship.

Athanassakos (2009) provides proof on the esteem premium the utilization of Canadian information for two the period 1985– 2005 two and an inquiry two procedure including each cost

– to-benefits (P/E) and rate – to-book expense (P/B) proportions. They get some answers concerning archived a reliably solid charge top rate over the example time frame, which proceeded in both bull and bear markets, just as in subsidence and recuperations.

Pakistan is an emerging market that is developing gradually. Emerging markets are those markets which have a lot of investment opportunities and potential for growth and an important channel of fund raising. Institutional investors actively play their role to influence the management so that they follow the effective CG policies. They influence that management protect the shareholder interest instead of self-interest. Institutional investors have an eye view on the financial position, they have the expertise because they have investment in more than one organizations. These investors have more influence because we analyze that mostly individual's investors raise voice for the GC. It is not necessary in the same time these investors buy and sell same type of investment. They may have different strategies, goals and time frames for the investment.

Literature showed that institutional investors are a stabilized factor. Buhl, (2009) argues that institutional investors can influence on the management of the firm by using their ownership rights so that management take the decision that is in the best interest of the shareholders. Marcial et al (2007) argued that institutional investors and firm operating cash flow have a positive significant relationship. Allen (2001) argued that institutional investors have an effect on the assets pricing. Suleyman & Anna (2010) study that is institutional investor effect on assets pricing. After investigation they argued that institutional investors have an effect on the assets pricing. Current study discusses the effect of institutional investors on the stock return in the assets pricing domain as a fourth variable.

Islam Azzam (2010) investigates the impact of dividend policy and institutional shareholding on volatility and stock return in Egypt. His sample population is 373 listed companies in Egyptian stock exchange and use the sample size 50 most actively traded companies for the period of 2004 to 2007 without any discrimination of small, medium and large firms. In this study dependent variables are the payout ratio, risk and return. Independent variables of this study are ownership percentage held by the public, private companies, public private banks, management, insurance companies and individuals. The result showed that private institutional ownership has a significant effect on the volatility but not with return and negative effect on with the dividend payout ratio.

Jose Afonso et al., (2010) investigated that institutional ownership have matter for the movement of the international stock return .they take the sample size of all stock from the world scope data base . Sample period is January 2001 to December 2007 and take the 48720 stocks monthly return from all over the world. for the proxy of risk free rate , three month T- bill from the FRED is used .they develop two method , a general factor and other is dummy model for the industries and country impact and used the cross sectional regression. Finding of this study showed that industry impact are relatively more important than the country impact.

Siqi li & Ketting (2013) investigate the impact of bank leverage and institutional holding on the stock return volatility .they collect data of US firm by taking the, volatility, institutional holding and leverage as variable .data period is more than the 30 year data from 1980 to 2013 and collect data form the three sources. For the stock return and stock price they use the Center for Research in security price, compustat Merged database for the accounting data and Thomson-Reuters institutional holding database for the percentage of institutional holding. They collected the 1970 firm and final sample make the 7191 observations and used the regression technique. The study result shows that bank leverage and institutional holding have negative relationship with the stock return volatility. So, Xuemin & zhe (2013) studied the institutional investor effect on the equity return and trading behavior of the short-term institutions. For the collection of data they used four resources such as VASDAQ, AMEX and NYSE quarterly data from 1979 to 2003. Collect data about the share prices, stock return, turnover and number of share outstanding from Center of Research in security prices. The finding of this study is that institutional investment has positive relationship with the future stock return and short-term institutions trade actively on the basis of having better information.

Mirza and Javed. (2013) examined the association between financial performance of a firm and economic indicators, risk management, capital structure, ownership structure and corporate governance. In this study there are various determinants of firm performance in the developing country (Pakistan) are examine. This study examine 60 Pakistani corporate firms listed on the Karachi stock exchange for the period of 2007 to 2011. Sample include 9 firm each from oil and gas, 5 each from garnel industries , 4 from construction , 3 from automobile They construct two model one for shareholder return and other for performance to find the result.

Allan Chang (2014) investigated the corporate governance practices effect on the firm financial performance. For that purpose he collected data of seventy seven Malaysian companies that are listed on the Kuala Lumpur stock exchange. To analyze the performance of the firm combination of time series and cross sectional data and regression techniques were used. Data collected for the period of 1996- 1999. Data about the CG were gathered from the annual edition of KLSE handbook. For the analysis of data regression analysis were used to test the ownership & value of firm. Dividend payout and return on the equity used as dependent variables and there are seven independent variables. The returns showed that size of firm proportion of institutional investor share and gearing ratio influenced significantly on the firm performance.

Ulf & Stefan (2014) examined the relationship between the CEO ownership on the stock market performance. They collected data about the CEO ownership US large number of corporation for the period of 12 year from 1988 to 2010. They collect data about the CEO abstained from the insider holding .developed portfolio on the bases of CEO ownership by using the Fama and French modal construction method. To test the impact study use the standard regression and overall results were statistically significant. The results showed that if investor invest in the firm having 10% or more shares lead to large number of abnormal return.

Roger et al (2015) examine the institutional investor demand to stock return anomalies. they use anomalies such as investment –to-assets , book-to-market, O-score, undervalued-minus-overvalued, gross profitability, net operating performance and momentum .data of these anomalies collect from the Center for Research in security prices , Thompson –Reuters SDC Global new issue databases and Compustat form the period of 1981 to 2012. By excluding stock priced under \$5 , financial and utilities this study sample consist of US common stock share codes of 10 or 11 traded on the Nasdaq, Amex and NYSE. They used methodology the Fama and French (1993) for the construction of portfolios. The finding of study showed that institutions buy stock classified as overvalued and the stock have particularly negative ex post abnormal return. The result of this study is differing from many other studies a positive relationship between the institutional investor demand and future stock return.

Marcia et al., (2007) examine the relationship between the institutional investor and stock performance .they obtain the data od S&P 100 because these firm are most prominent in the equity market for the period of 1993 to 2000. They follow Hartzell & stark (2003) to measure

the institutional investment and calculate the percentage of institutional ownership of each firm. They use the multivariate regression as a statistical technique and check the effect of institutional investor on firm performance. The result shows that institutional ownership are majority owner in the most of US firm. Due to having large portion of shareholding they effect on management to protect the shareholding interest. Finally result show that institutional ownership have significant positive relation with the stock return.

Galina Ovtcharove (1997) investigated the relationship between the long term stock return and percentage of institutional ownership. Average return adjustment technique to compare return of high and low institutional ownership. He use the additive accumulation procedure as a statistical technique. Data collect from three sources spectrum, compustat and CRSP database. Return data from the NASDAQ, AMEX and NYSE. Sample collection period is July 1982 to December 1994. Result of this study shows that percentage of high institution ownership outperform the low institutional ownership on the stock return.

Hongweichuang (2015) examined the relationship between the institutional ownership and stock return. He collect data percentage of institutional monthly common stock holding on the Taiwan Stock exchange. Sample period is 2010 to 2014 collect data from the Taiwan economic journal. These institutional investor include the foreign investor, investment trust and dealer. Stock price, return, size, share turnover, trading value and other firm characteristic from the Taiwan database. Regression model and portfolio analysis used in this study as a statistical technique to check the relationship between the institutional investment and stock return. Study finding it that short term change in institutional ownership positively correlate with the future stock return and long term change negatively correlate to the stock return.

Muhammad &imtiyaz (2017) study on the effect of institutional investor and stock return volatility in the Pakistan. They take the sample size of 195 non-financial companies which are registered on the Pakistan stock exchange by using the penal data. In this study statistical technique are GMM regression and multivariate OLS. The result shows that investor will prefer the low volatile stock because investor is risk averse. The effect of institutional investor are negative on stock return volatility .another finding of this study is that for the stability of Pakistan stock exchange the institutional investor play significant role.

Jie Cao et al (2017) studied about the constraints of institutional investment and stock prices by excluding stock of American depository receipts, closed end funds, real estate investment trust and stock price below the \$5. They used the common stock data that listed on the American stock exchange, New York stock exchange and NASDAQ that appear in the Compustat database and CRSP. Institutional shareholding and other accounting data obtain from the Thomson Reuters Institutional Holding Database .they used the Fama & MacBath cross sectional regression and finding of this study shows that stock with good new are overweighed by the institution and the with bad news underweighted by the institution.

Solikehah & Wahyudin (2017) examined the corporate governance practices impact on the financial performance. For this data of 88 firms listed on the Indonesian stock exchange. Those companies that participated in corporate governance perception Index awards in 2008 to 2012. Penal data are used for this research study and independent variable of that study is CG implementation and company growth firm value and financial performance are dependent variable. The listing age, leverage, company age and size are controlled variables. Findings of study showed that firm participated in GPPL experience increase in both quantity and quality.

Muhammad & Shahzad (2017) studied on the corporate governance and downside systematic risk. They considered the corporate governance factors such as institutional ownership, concentrated ownership, CEO duality, board meetings, managerial ownership, audit committee and audit quality. Along with the controlled variables like return on equity, debt to assets ratio and firm size study used assassination and terrorism to measure the socio- political. They used the DCAPM of Estarada (2002) to measure the downside risk. Sample size of this study was the 201 non-financial firm for the period of 2003 to 2014 and used the regression approach to check the relationship. The findings of this study revealed that the corporate governance significantly affects the downside systematic risk. Managerial ownership and board size increase the downside volatility. audit committee , audit quality, big 5 ownership, CEO duality, institutional ownership, concentrated ownership, board meetings and board independence have considerable power to reduce the firm downside risk. Overall results showed that the CG increase the stock return and reduce the firm downside risk.

Jo-Yu et al. (2019) examined the relationship between the corporate governance and performance of firm to reduce the risk. In order to check the influence of CG on the stock return six proxies are used. These proxies included the independent directors, CEO duality, Board ownership, Management ownership, Block holders' ownership, institutional ownership and Value at risk was the proxy to measure the risk. They collected data of Taiwanese based listed companies for the period of 2002 to 2016. Simple regression model are used to test the corporate governance effect on firm performance and risk. The finding of that study showed that board ownership, managerial ownership, block holders ownership and independent directors have significant effect on the performance of the firm. Institutional investor and CEO shareholdings reduce the firm risk. They argued that better corporate governance reduce the risk and increase the stock return.

From above literature, it is indicated that no detailed studies has been done by using corporate governance factors in asset pricing domain. So, this study provides and insight about the role of various anomalies linked with corporate governance in explaining stock returns under the framework of downside risk.

## **2.5 Hypotheses Development:**

Following hypotheses are made:

H1: Market premium (D-CAPM) has significant relationship with stock return.

H2: Size premium has significant relationship with stock return.

H3: Value premium has significant relationship with stock return.

H4: Institutional ownership has significant relationship with stock returns.

H5: Insider holding has significant relationship with stock returns.

H6: Value at risk has significant relationship with stock return.

## **CHAPTER NO. 3**

## **RESEARCH METHODOLOGY**

### **3.1 Methodology:**

Multivariate regression (Stambaugh 1982, Shanken, 1990, Pastor, 2000, Kan et al. 2013, Shanken & Barillas, 2018 ), Estrada method for D-CAPM ( Hussain & Muhammad 2017 ) models are used incorporating market premiums (downside beta), size premium, value premium institutional ownership and insider holding and value at risk are used to measure the risk return relationship in Pakistan stock exchange. The study of Fama and French (1992, 2014) is limited to the time-series regression only. This study not only takes ownership structure (institutional ownership, insider holding) but also account for downside risk.

### **3.2 Population and Sample:**

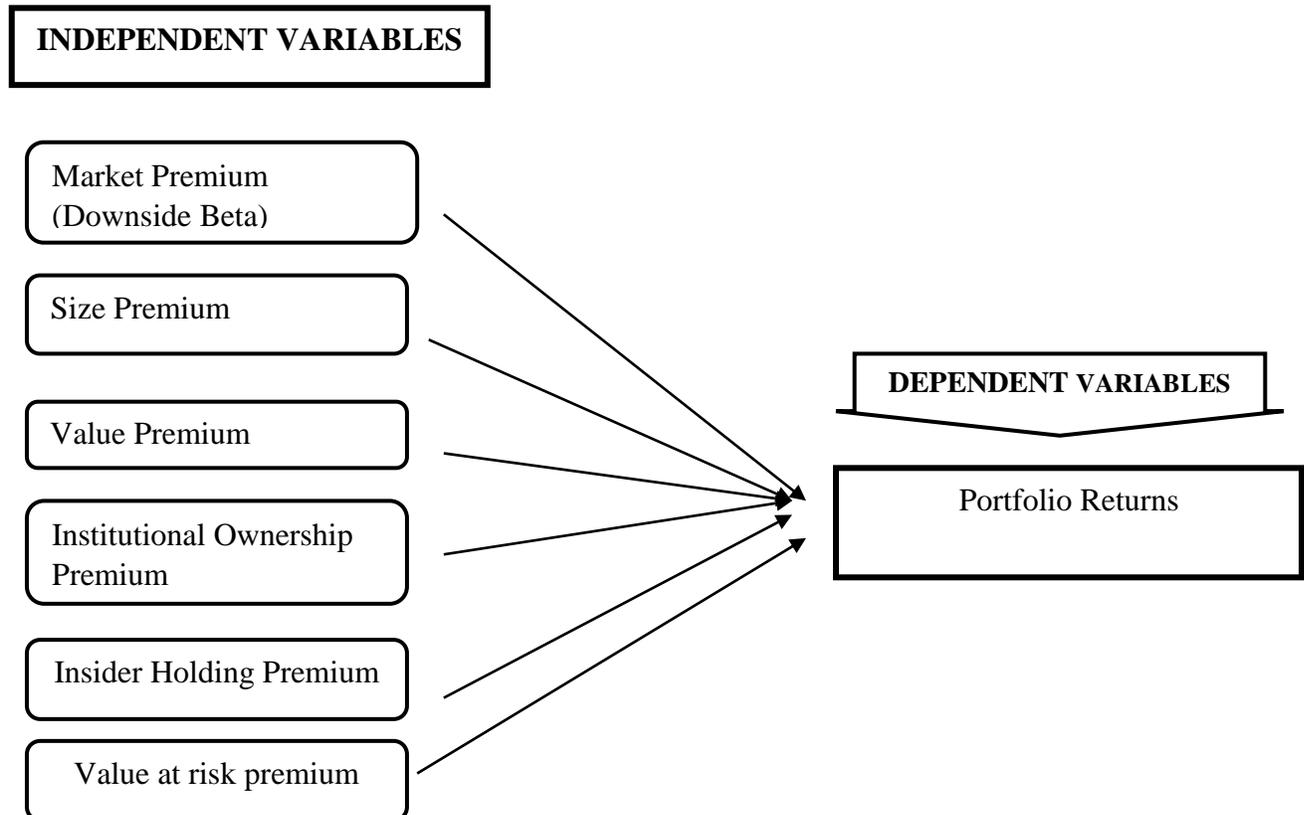
Population for the current study is all the non-financial firm which are registered on the Pakistan stock exchange. This study used the sample size of 160 non-financial companies and data is collected for the period of 2011 to 2017 and convenient sampling is used. Fama and French or various other studied argued that sample size and time period is very important for the significant results. Thus, this study used data for the period of 8 years.

### **3.3 Time period and Data:**

This study includes the accounting and market data, and study in quantitative in nature. The market data include the market return, market capitalization and risk free rate. This study uses the 3 month T- bill rate as a proxy of the risk free rate, the closing share price of the last trading day of the month. T.bill data collected from yahoo finance, accounting data about the institutional investment and inside holding form the company's annual reports that companies publish at the end of June. Size premium is calculated on the basis of market capitalization which data collect from the annual report. Value premium is calculated on the basis Book to market which data collect from annual reports. Data is collected from the Pakistan stock exchange,

business recorder website and OSIRIS database. For calculation of value at risk, daily data of returns is used for calculating monthly VARs for each company.

### 3.4 Conceptual Framework:



### 3.5 Portfolio Construction:

- First of all, 160 companies are selected on the basis of market capitalization which are then divided into big and small companies.
- Further size sorted companies will be divided into high value and low value portfolios such as SH, SL, BH, BL.
- Again the size and value sorted portfolios further divided on the basis of institutional ownership as S/H/HIO, S/H/LIO, S/L/HIO, S/L/LIO, B/H/HIO, B/H/LIO, B/L/HIO, and B/L/LIO.

- Again size, value and institutional sorted portfolio will be further divided on the basis of Insider holding such as S/H/HIO/HINDH, S/H/HIO/LINDH, S/H/LIO/HINDH, S/H/LIO/LINDH, S/L/HIO/HINDH, S/L/HIO/LINDH, S/L/LIO/HINDH, S/L/LIO/LINDH, B/H/HIO/HINDH, B/H/HIO/LINDH, B/H/LIO/HINDH, B/H/LIO/LINDH, B/L/HIO/HINDH, B/L/HIO/LINDH, B/L/LIO/HINDH, B/L/LIO/LINDH.
- Again size, value , institutional and insider holding sorted portfolio will be further divided on the basis of Value at risk such as S/H/HIO/HIND/HVAR , S/H/HIO/HIND/LVAR, S/H/HIO/LIND/HVAR, S/H/HIO/LIND/LVAR, S/H/LIO/HIND/HVAR, S/H/LIO/HIND/LVAR, S/H/LIO/LIND/HVAR, S/H/LIO/LIND/LVAR, S/L/HIO/HIND/HVAR, S/L/HIO/HIND/LVAR, S/L/HIO/LIND/HVAR, S/L/HIO/LIND/LVAR, S/L/LIO/HIND/HVAR, S/L/LIO/HIND/LVAR, S/L/LIO/LIND/HVAR, S/L/LIO/LIND/LVAR , B/H/HIO/HIND/HVAR, B/H/HIO/HIND/LVAR, B/H/HIO/LIND/HVAR, B/H/HIO/LIND/LVAR, B/H/LIO/HIND/HVAR, B/H/LIO/HIND/LVAR, B/H/LIO/LIND/HVAR, B/H/LIO/LIND/LVAR, B/L/HIO/HIND/HVAR, B/L/HIO/HIND/LVAR, B/L/HIO/LIND/HVAR, B/L/HIO/LIND/LVAR, B/L/LIO/HIND/HVAR, B/L/LIO/HIND/LVAR, B/L/LIO/LIND/HVAR, B/L/LIO/LIND/LVAR.
- The process is repeated from 2001 to 2017 to calculate average returns.

### 3.6 Variables Construction:

Following variables are constructed by using 2\*2\*2\*2\*2 sorting as discussed by Fama and French (2015).

$$\begin{aligned}
 \text{Size Premium} = \text{SMB} = & 1/16 * [(SHHIOHINDHVAR - BHHIOHINDHVAR) + \\
 & (SHHIOHINDLVAR - BHHIOHINDLVAR) + (SHHIOLINDHVAR - BHHIOLINDHVAR) + \\
 & (SHHIOLINDLVAR - BHHIOLINDLVAR) + (SHLIOHINDHVAR - BHLIOHINDHVAR) + \\
 & (SHLIOHINDLVAR - BHLIOHINDLVAR) + (SHLIOLINDHVAR - BHLIOLINDHVAR) + \\
 & (SHLIOLINDLVAR - BHLIOLINDLVAR) + (SLHIOHINDHVAR - BLHIOHINDHVAR) + \\
 & (SLHIOHINDLVAR - BLHIOHINDLVAR) + (SLHIOLINDHVAR - BLHIOLINDHVAR) +
 \end{aligned}$$

(SLHIOHINDLVAR- BLHIOHINDLVAR) + (SLLIOHINDHVAR-BLLIOHINDHVAR) +  
 (SLLIOHINDLVAR-BLLIOHINDLVAR) + (SLLIOLINDHVAR-BLLIOLINDHVAR) + (  
 SLLIOLINDLVAR- BLLIOLINDLVAR)]

**Value Premium= HML=**1/16\*[(SHHIOHINDHVAR-SLHHIOHINDHVAR) +  
 (SHHIOHINDLVAR - SLHIOHINDLVAR) + (SHHIOLINDHVAR-SLHIOLINDHVAR) +  
 (SHHIOLINDLVAR-SLHIOLINDLVAR) + (SHLIOHINDHVAR- SLLIOHINDHVAR) +  
 (SHLIOHINDLVAR-SLLIOHINDLVAR) + (SHLIOLINDHVAR-SLLIOLINDHVAR) + (  
 SHLIOLINDLVAR-SLLIOLINDLVAR) +(BHHIOHINDHVAR-BLHHIOHINDHVAR) +  
 (BHHIOHINDLVAR - BLHIOHINDLVAR) + (BHHIOLINDHVAR-BLHIOLINDHVAR) +  
 (BHHIOLINDLVAR-BLHIOLINDLVAR) + (BHLIOHINDHVAR- BLLIOHINDHVAR) +  
 (BHLIOHINDLVAR-BLLIOHINDLVAR) + (BHLIOLINDHVAR-BLLIOLINDHVAR) + (  
 BHLIOLINDLVAR-BLLIOLINDLVAR) ]

**Institutional Ownership= IO=**1/16\* [(SHHIOHINDHVAR-SHLIOHINDHVAR) + (  
 SHHIOHINDLVAR-SHLIOHINDLVAR) + (SHHIOLINDHVAR-SHLIOLINDHVAR) +(  
 SHHIOLINDLVAR-SHLIOLINDLVAR) + ( SLHIOHINDHVAR-SLLIOHINDHVAR) +  
 (SLHIOHINDLVAR-SLLIOHINDLVAR) + (SLHIOLINDHVAR-SLLIOLINDHVAR) + (  
 SLHIOLINDLVAR-SLLIOLINDLVAR) + (BHHIOHINDHVAR-BHLIOHINDHVAR) + (  
 BHHIOHINDLVAR-BHLIOHINDLVAR) + (BHHIOLINDHVAR-BHLIOLINDHVAR) +(  
 BHHIOLINDLVAR-BHLIOLINDLVAR) + ( BLHIOHINDHVAR-BLLIOHINDHVAR) +  
 (BLHIOHINDLVAR-BLLIOHINDLVAR) + (BLHIOLINDHVAR-BLLIOLINDHVAR) + (  
 BLHIOLINDLVAR-BLLIOLINDLVAR)]

**Insider Holding = INDH =** 1/16\*[(SHHIOHINDHVAR- SHHIOLINDHVAR) +  
 (SHHIOHINDLVAR- SHHIOLINDLVAR) + (SHLIOHINDHVAR-SHLIOLINDHVAR) +  
 (SHLIOHINDLVAR-SHLIOLINDLVAR) + (SLHIOHINDHVAR-SLHIOLINDHVAR) +  
 (SLHIOHINDLVAR-SLHIOHINDLVAR) + ( SLLIOHINDHVAR-SLLIOLINDHVAR) +  
 (SLLIOHINDLVAR-SLLIOLINDLVAR) +(BHHIOHINDHVAR- BHHIOLINDHVAR) +

$$\begin{aligned}
& (\text{BHHIOHINDLVAR} - \text{BHHIOLINDLVAR}) + (\text{BHLIOHINDHVAR} - \text{BHLIOLINDHVAR}) + \\
& (\text{BHLIOHINDLVAR} - \text{BHLIOLINDLVAR}) + (\text{BLHIOHINDHVAR} - \text{BLHIOLINDHVAR}) + \\
& (\text{BLHIOHINDLVAR} - \text{BLHIOHINDLVAR}) + (\text{BLLIOHINDHVAR} - \text{BLLIOLINDHVAR}) + \\
& (\text{BLLIOHINDLVAR} - \text{BLLIOLINDLVAR})]
\end{aligned}$$

$$\begin{aligned}
\text{Value at Risk} = \text{VAR} = & 1/16 * (\text{SHHIOHINDHVAR} - \text{SHHIOHINDLVAR}) + \\
& (\text{SHHIOLINDHVAR} - \text{SHHIOLINDLVAR}) + (\text{SHLIOHINDHVAR} - \text{SHLIOHINDLVAR}) + \\
& (\text{SHLIOLINDHVAR} - \text{SHLIOLINDLVAR}) + (\text{SLHIOHINDHVAR} - \text{SLHIOHINDLVAR}) + \\
& (\text{SLHIOLINDHVAR} - \text{SLHIOLINDLVAR}) + (\text{SLLIOHINDHVAR} - \text{SLLIOHINDLVAR}) \\
& + (\text{SLLIOLINDHVAR} - \text{SLLIOLINDLVAR}) + \text{BSSHIOHINDHVAR} - \text{BHHIOHINDLVAR}) + \\
& (\text{BHHIOLINDHVAR} - \text{BHHIOLINDLVAR}) + (\text{BHLIOHINDHVAR} - \text{BHLIOHINDLVAR}) + \\
& (\text{BHLIOLINDHVAR} - \text{BHLIOLINDLVAR}) + (\text{BLHIOHINDHVAR} - \text{BLHIOHINDLVAR}) + \\
& (\text{BLHIOLINDHVAR} - \text{BLHIOLINDLVAR}) + (\text{BLLIOHINDHVAR} - \text{BLLIOHINDLVAR}) \\
& + (\text{BLLIOLINDHVAR} - \text{BLLIOLINDLVAR})]
\end{aligned}$$

$$\text{Market Premium (Downside beta)} = \text{MKT}_D = \text{cov}[\min(R_u - u_i, 0) \cdot \min(R_{mt} - u_m, 0)] / \text{Var}[\min(R_{mt} - u_m, 0)]$$

### 3.7 Variables Description:

The table below gives a details of the variables used in the study, their abbreviations, and descriptions.

Variable Description	Abbreviation	Description
Portfolio Return	$R_{pt}$	Excess return of the portfolio at time $t$
Market Premium (Downside beta)	$\text{MKT}_{Dt}$	Downside beta at time $t$
Size Premium	$\text{SMB}_t$	Difference between the returns of the small size firms and the large size firms at time $t$

Value Premium	$HML_t$	Difference between the returns of high BV/MV and low BV/MV firms at time $t$
Institutional ownership premium	$IO_t$	Difference between the returns of the firms having high institutional ownership and the low institutional ownership at time $t$ .
Insider Holding premium	$INDH_t$	Difference between the return of the firm having high Inside holding and the low Inside holding at time $t$
Value at risk premium	$VAR_t$	Difference between the return of the firm having high value at risk and low value at risk at time $t$

### 3.8 Model Construction:

The following six factor model is proposed for empirical testing:

$$R_{pt} - R_{ft} = \alpha + \beta_1 MKT_{Dt} + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 IO_t + \beta_5 INDH_t + \beta_6 VAR_t + \varepsilon_t$$

Where,

$R_{pt}$  = the expected return of portfolio at time  $t$

$R_{ft}$  = risk free rate at time  $t$

$R_{mt}$  = return of market at time  $t$

$SMB_t$  = difference between the return of small size portfolio minus return of big size Portfolio at time “ $t$ ”

$HML_t$  = return of high BE/ME ratio portfolio minus return of low BE/ME ratio Portfolio at time “ $t$ ”

$IO_t$  = difference between the return of firms having high institutional ownership Minus return of firms having low institutional ownership at time “ $t$ ”

$INDH_t$ =Difference between the return of the firm having high insider holding and the low insider holding at time  $t$

$VAR_t$ = Difference between the return of the firm having high value at risk and low value at risk at time  $t$

### **3.9 Describing Variables:**

Value, size and market premium are those factors, which are discussed by the Fama & French in (1992) to explain the portfolio return. Current study includes the institutional ownership and insider holding, value at risk and D-CAPM by Estrada along with the Fama and French three factor assets pricing model to explain the portfolio expected return. Following proxies are used to measure the variables.

#### **3.9.1 Market Premium (downside beta):**

D.CAPM is an alternative model of CAPM to measure the downside risk .

$$\text{Beta} = \text{cov}[\min(R_u - u_i, 0) \cdot \min(R_{mt} - u_m, 0)] / \text{Var}[\min(R_{mt} - u_m, 0)]$$

#### **3.9.2 Size Premium:**

For the measurement of the size premium market capitalization is used.

Market capitalization = number of shares outstanding \* per share price

#### **3.9.3 Value Premium:**

Value premium is the greater risk adjusted return of value stock over the growth stock. This premium is firstly used by the Fama& French in 1992 by using the HML. In the current study to measure the value premium Book to Market ratios are used.

$$\text{Book to Market} = \text{Book value} / \text{Market value}$$

#### **3.9.4 Institutional Ownership:**

Institutional ownership are held by the institutional investor which invest on the behalf of others. It includes the institutions such as mutual fund, pension fund, insurance companies and investment companies. In the current study, take the percentage of the ownership held by the institution which include the mutual fund, pension fund, investment and join stock companies.

IO= percentage of ownership of share held by the institution and investment companies.

### **3.9.5 Insider Holding:**

Insider holding or ownership are the share held by the director, management and the person held form then the 10 percent of the voting share. Insider holding include the share held by the CEO, director, management and family member and minor share holder.

INDH= percentage of share held by the director, management CEO and family member.

### **3.9.6 VAR :**

To measure the risk of losses on investment statistical measure are used which is known as value at risk at a normal market condition. It is used by the financial industry and firms to estimate how much amount of assets is required to compensate the possible losses. This is most commonly risk measurement technique used by the most of commercial banks and investment organization.

# CHAPTER NO. 4

## DATA ANALYSIS

### 4.1 Data Analysis

Descriptive statistics are used to show the important characteristics of the data such as central tendency and variability of data. A sample measure of central tendency of the data is mean and standard deviation reflects both the deviation from the mean.

**Table 4.1(a) Descriptive Statistics**

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
<b>B</b>	0.019159	0.024949	0.159441	-0.10914	0.057779	-0.05418	2.655918
<b>B_H_HIO</b>	0.010043	0.009046	0.158497	-0.11867	0.06283	0.057714	2.423919
<b>B_H_HIO_HINS</b>	0.012055	0.018044	0.178318	-0.20923	0.07282	-0.14466	3.025
<b>B_H_HIO_LINS</b>	0.008032	0.009716	0.18464	-0.15005	0.065319	0.084188	2.793796
<b>B_H_LIO</b>	0.014361	0.011114	0.210303	-0.12388	0.067105	0.180464	2.822558
<b>B_H_LIO_HIND</b>	0.015454	0.016815	0.233929	-0.13499	0.068221	0.512289	3.767039
<b>B_H_LIO_LINS</b>	0.013269	0.009599	0.186678	-0.14964	0.077087	0.114315	2.423814
<b>B_HV</b>	0.016132	0.017652	0.124446	-0.12095	0.056515	-0.23083	2.649552
<b>B_L_HIO</b>	0.026308	0.032735	0.174135	-0.1382	0.059746	-0.43715	3.656496
<b>B_L_HIO_HINS</b>	0.028295	0.027946	0.27378	-0.20223	0.084086	0.203992	3.663738
<b>B_L_HIO_LINS</b>	0.020129	0.023878	0.154017	-0.16514	0.061804	-0.54456	3.42959
<b>B_L_LIO</b>	0.027452	0.028546	0.176063	-0.10401	0.058657	0.032783	2.428645
<b>B_L_LIO_HINS</b>	0.030494	0.027044	0.25554	-0.21734	0.078054	-0.21207	3.841841
<b>B_L_LIO_LINS</b>	0.024372	0.021143	0.146064	-0.09951	0.060345	0.003541	2.063745
<b>B_LV</b>	0.026391	0.035679	0.136998	-0.10018	0.054154	-0.4233	2.748757
<b>BHHINLINSLVAR</b>	0.002446	0.005868	0.159514	-0.16617	0.068937	0.012652	2.674791

<b>BHHIOHNINHV</b>	0.009123	0.005642	0.240612	-0.1584	0.083588	0.260145	2.516563
<b>BHHIOHNIOLV</b>	0.015473	0.027206	0.246998	-0.38764	0.093403	-0.63865	6.351551
<b>BHHIOLINSHVAR</b>	0.013618	0.017216	0.219042	-0.19725	0.076366	0.028826	3.055589
<b>BHLIOHINHHVAR</b>	0.019548	0.014747	0.240541	-0.2435	0.087274	0.063118	3.435001
<b>BHLIOHINHLVAR</b>	0.01136	0.007652	0.227317	-0.13191	0.06796	0.683869	3.800071
<b>BHLIOLINHVAR</b>	0.018766	0.012921	0.221591	-0.19823	0.095072	0.043645	2.640425
<b>BHLIOLINLVAR</b>	0.007772	0.009522	0.214576	-0.15961	0.074242	0.147588	3.029076
<b>BLHIOHINHVAR</b>	0.033536	0.036824	0.421036	-0.29657	0.106878	0.175348	5.052184
<b>BLHIOHINLVAR</b>	0.023568	0.019475	0.279101	-0.21172	0.085496	0.153081	3.356595
<b>BLHIOLINHVAR</b>	0.029076	0.034577	0.202203	-0.21923	0.076422	-0.37777	3.588714
<b>BLHIOLINLVAR</b>	0.011183	0.011914	0.171882	-0.16487	0.072056	-0.00567	2.49334
<b>BLLIOHINHVAR</b>	0.038153	0.033588	0.253326	-0.46895	0.112735	-0.89374	6.366088
<b>BLLIOHINLVAR</b>	0.022911	0.021957	0.242299	-0.11065	0.067618	0.509593	3.750629
<b>BLLIOLINHVAR</b>	0.031449	0.028354	0.225637	-0.12743	0.073397	0.295017	2.962284
<b>BLLIOLINLVAR</b>	0.017295	0.024312	0.192952	-0.11047	0.065036	0.027173	2.638663
<b>S</b>	0.013373	0.005199	0.25842	-0.16607	0.081149	0.617941	3.7995
<b>S_H_HIO</b>	0.01173	0.006156	0.244489	-0.20885	0.080887	0.301673	3.680817
<b>S_H_HIO_HINS</b>	0.011782	0.004626	0.260661	-0.21345	0.077732	0.317823	3.900156
<b>S_H_HIO_LINS</b>	0.012143	-0.00784	0.295034	-0.20425	0.100492	0.392292	3.19994
<b>S_H_LIO</b>	0.010137	-0.00631	0.302089	-0.15735	0.087973	0.985728	4.853092
<b>S_H_LIO_HINS</b>	0.012441	-0.00177	0.268208	-0.1749	0.084773	0.770641	3.987965
<b>S_H_LIO_LINS</b>	0.005609	-0.01388	0.461805	-0.24372	0.10545	1.340555	7.106146
<b>S_HV</b>	0.010502	0.006655	0.266257	-0.16634	0.079665	0.658676	4.294487
<b>S_L_HIO</b>	0.0146	0.007652	0.240869	-0.1485	0.089364	0.475468	2.901576
<b>S_L_HIO_HINS</b>	0.018175	0.005561	0.303817	-0.19227	0.102775	0.699603	3.304703
<b>S_L_HIO_LINS</b>	0.011025	0.002921	0.284431	-0.17688	0.089355	0.407549	3.38199
<b>S_L_LIO</b>	0.018794	0.003707	0.306928	-0.22772	0.101786	0.541239	3.913625
<b>S_L_LIO_HINS</b>	0.021257	0.001281	0.284658	-0.22708	0.104274	0.408699	2.803045
<b>S_L_LIO_LINS</b>	0.014459	0.008001	0.3919	-0.32099	0.120504	0.569246	4.38259
<b>S_LV</b>	0.018257	0.004536	0.258599	-0.17315	0.084697	0.585102	3.706232
<b>SHHIOHINHVAR</b>	0.010978	0.000246	0.225046	-0.2384	0.094846	0.179739	2.849768

<b>SHHIOHINLVAR</b>	0.012587	0.012878	0.318226	-0.1885	0.085601	0.495278	4.486456
<b>SHHIOLINHVAR</b>	0.016636	-0.00098	0.379082	-0.24476	0.120257	0.510585	3.405996
<b>SHHIOLINLVAR</b>	0.007649	0.003445	0.295698	-0.23418	0.106395	0.537162	3.525772
<b>SHLIOHINHVAR</b>	0.010844	-0.00567	0.274445	-0.2504	0.10528	0.61489	3.193883
<b>SHLIOHINLVAR</b>	0.014039	0.001598	0.266468	-0.15165	0.091099	0.918535	3.972874
<b>SHLIOLINHVAR</b>	0.010561	0.00383	0.358723	-0.19442	0.114006	0.706338	3.50681
<b>SHLIOLINLVAR</b>	0.004466	-0.01493	0.579823	-0.38015	0.130255	1.058777	8.258896
<b>SLHIOHINHVAR</b>	0.028851	0.002361	0.543652	-0.29841	0.147193	0.807839	4.265086
<b>SLHIOHINLVAR</b>	0.008464	0.002665	0.32597	-0.25559	0.094912	0.388064	3.866015
<b>SLHIOLINHVAR</b>	0.012485	0.005169	0.399739	-0.2721	0.122744	0.573759	4.266925
<b>SLHIOLINLVAR</b>	0.009566	0.002036	0.234048	-0.16921	0.083536	0.326433	2.712207
<b>SLLIOHINHVAR</b>	0.018823	0.007024	0.377237	-0.32589	0.126112	0.341774	3.731974
<b>SLLIOHINLVAR</b>	0.023691	0.010789	0.333938	-0.21628	0.110568	0.636721	3.112123
<b>SLLIOLINHVAR</b>	0.019364	0.015154	0.40887	-0.27449	0.144693	0.445631	2.90611
<b>SLLIOLINLVAR</b>	0.013298	-0.0111	0.524841	-0.36748	0.15001	0.95566	4.689853

Result shows that B Value 0.019159 with standard deviation is 0.057779 which is more efficient than the S. BHHIOHINS is high return and low risk portfolio as compared to the SHHIOHINS, BHLIO witch mean value is 0.014361 and standard deviation is 0.067105 have more return and less risk as compare to the SHLIO. BHLIOLINS is the high return and less risk portfolio as compare to the SHLIOLINS. BLHIOHINS which mean value is 0.028295 and stander deviation is 0.084086 are more efficient as compared to the SLHIOHINS witch mean value is 0.018175 and stander deviation is 0.102775. BLLIO is high return and less risky portfolio as compare to the SLLIO, BLLIOLIN is high return and less risk portfolio as compare to the SLLIOLIN.

SHHIOHINHVAR which mean value is 0.010978 and stander deviation 0.094846 is that have high return and highly risky portfolio as compare to the BHHIOHINHVAR which mean value is 0.002446 and stander deviation is 0.068937. SHHIOLINHVAR is higher return and high risk as compare to the BHHIOLINHVAR which is low return and low risk portfolio. Similarly SHLIOHINLVAR is high return and high risk portfolio as compare to the BHLIOHINLVAR

that have low return and low risk portfolio. On the other hand BHLIOLINLVAR is high return and low risk portfolio as compare to SHLIOLINLVAR, Similarly BLHIOHINLVAR is high return and low risky portfolio and SLHIOHINLVAR portfolio is low return and high risk oriented.

BLLIOHINHVAR is the high return and low risk oriented as compare to the SLLIOHINHVAR that have low return and high risky. On the other hand SLLIOHINLVAR which mean value is 0.023691 and stander deviation is 0.110568 and the other portfolio BLLIOHINLVAR which have mean value is the 0.022911 and stander deviation is 0.067618. BLLIOLINLVAR is the high return and less risky portfolio as compare to the SLLIOLINLVAR that have low return and highly risky.

Skewness shows the distribution of data. For normal distribution, skewness must be zero means data is symmetrical and has bell shaped graph. But, exactly zero skewness is quite unlikely for real world data. If skewness is positive it means that data is positively skewed or skewed at right means right tail is longer than left side. If skewness is negative it means that data is negatively skewed means left tail is longer than right.

Skewness result are negative of B ( -0.05418) ,BHHIOHINS (-0.14466) ,BHV (-0.23083), BLHIO (-0.43715), BLLIOHIN (-0.21207), BHHIOHINLV (-0.63865), BLHIOLINHVAR (-0.3777) and BLLIOHINHVAR (-0.89374) which show negatively skewed distribution of data while positive for BHHIO (0.057714), BHHIOLIN (0.084188) , BHLIOLINS (0.114315), BLLIO (0.032783) , BHLIOHINHVAR ( 0.063118) , BHLIOLINHVAR (0.043645), BLLIOHINLVAR (0.509593) , S (0.617941), SHHIOLIN (0.392292) , SHLIOLIND ( 0.408699), SLLIOLINS ( 0.569246) , SHHIOLINHVAR (0.510585), SHLIOHINHVAR (0.61489) , SLHIOHINLVAR (0.388064) such as all the small portfolio have the positive skewness . Here zero value of skewness is because the data is in returns form.

Kurtosis shows the relative peakness or flatness of a data distribution as compared to normal distribution. Normal distribution has kurtosis of about 3. Kurtosis greater than 3 shows that data distribution is relatively peaked or leptokurtic distribution (too tall) and kurtosis less than 3 shows that data platykurtic distribution (too flat). Kurtosis results indicate that data distribution is relatively peaked for all portfolios.

**Table 4.1 (b) Descriptive statistics: Fama and French augmented six factors:**

	<b>MKT</b>	<b>SMB</b>	<b>HML</b>	<b>IO</b>	<b>INS</b>	<b>VAR</b>
Mean	-0.05702	-0.00519	-0.00974	-0.00232	0.00477	0.00555
Median	-0.03759	-0.01418	-0.01109	-0.00286	0.002445	0.002432
Maximum	0.075642	0.158203	0.044279	0.064645	0.067088	0.126495
Minimum	-0.79125	-0.09464	-0.09628	-0.09919	-0.05099	-0.06976
Std. Dev.	0.100129	0.046694	0.027577	0.030915	0.026337	0.032764
Skewness	-4.8468	0.823785	-0.56587	-0.21252	-0.05982	0.573662
Kurtosis	35.68207	4.11276	3.695148	3.702531	2.667402	4.166591

Table 4.1 (b) shows statistical properties of variables constructed which includes Value premium, market premium, size premium, institutional ownership, insider holding and value at risk. Descriptive statistics is used to explore the behavior of data either it is normal or not. Mean value of MKT is -0.05702 and standard deviation is 0.100129. Mean value of SMB is -0.00519 and standard deviation is 0.046694. Mean value of HML is -0.00974 and standard deviation is 0.027577. Mean value of IO is -0.00232 and standard deviation is 0.030915. Mean value of INS is 0.00477 and standard deviation is the 0.026337. Mean value of VAR is 0.0055 and standard deviation is the 0.032764. Result shows that average MKT, SMB, HML and IO is negative and average INS and VAR is positive.

Skewness is negative in MKT, HML, IO and INS but positive in the SMB and VAR .Kurtosis is greater than 3 in MKT, SMB, HML, IO and VAR but lesser then three in case of INS.

**Table 4.2 Correlation-Six Factor Model**

	<b>MKT</b>	<b>SMB</b>	<b>HML</b>	<b>IO</b>	<b>INS</b>	<b>VAR</b>
<b>MKT</b>	1	-0.14773	0.027807	0.032078	-0.10732	-0.11281
<b>SMB</b>	-0.14773	1	0.087259	-0.43431	0.079166	0.127435
<b>HML</b>	0.027807	0.087259	1	-0.07163	0.111787	-0.22014
<b>IO</b>	0.032078	-0.43431	-0.07163	1	0.003619	-0.06333
<b>INS</b>	-0.10732	0.079166	0.111787	0.003619	1	-0.10348
<b>VAR</b>	-0.11281	0.127435	-0.22014	-0.06333	-0.10348	1

Table 4.2 result shows that the positive relation between the MKT and HML, also positive relation between the MKT and IO. The correlation between the MKT with SMB, INS and VAR is negative. The correlation between the SMB with MKT and IO is negative. But SMB correlation with the HML, INS and VAR is positive. Correlation of HML with MKT, SMB and INS is positive, HML have negative correlation with the IO and VAR. the correlation result of IO shows that IO is positive correlation with MKT and INS but IO have negative correlation with the SMB, HML and VAR. the result of correlation of INS shows that INS have positive correlation with the SMB,HML and IO but negative correlation with the MKT and VAR. the result of correlation of VAR shows that VAR have positive correlation with the SMB but have the negative correlation with the MKT, HML,IO and INS . Most of the correlations are negative so diversification benefits can be achieved.

### **4.3 Multivariate Regression (Six factor model)**

In this study, Institutional ownership, insider holding and value at risk has been studied along market, value and size premium to explain portfolio returns. The explanatory power of six factor model has been explored through multivariate regression analysis performed to capture the relationship among market, size, value, institutional ownership, insider holding and VAR in Pakistan, and results have been reported.

**Table 4.3(a) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio P*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0234	0.3791	0.7056
<b>SMB</b>	0.8090	5.489	0
<b>HML</b>	-0.099	-0.4367	0.6635
<b>IO</b>	0.3362	1.5421	0.1271
<b>INS</b>	0.0386	0.1649	0.8694
<b>VAR</b>	0.4570	2.3619	0.0207
Adjusted R-square	0.301		
F-Stat	6.9521		

Table 4.3(a) shows that When P is regress along with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR, the SIZE premium and VAR found positively significant but MKT,HML, IO and INS found insignificant . Adjusted R<sup>2</sup> is 0.300833 which shows that 30.0833 variation in P are being expressed by the independent variable.

**Table 4.3(b) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio B*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0196	0.3151	0.7535
<b>SMB</b>	0.3102	2.0895	0.0400
<b>HML</b>	-0.0952	-0.4148	0.6795
<b>IO</b>	0.3431	1.5621	0.1224
<b>INS</b>	0.0101	0.0426	0.9661
<b>VAR</b>	0.4687	2.4045	0.0186
Adjusted R-square	0.0745		
F-Stat	2.1136		

Table 4.3(b) shows that When B is regressed with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR, the size premium and Value at risk found positive and significant but MKT, HML, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.0745 which shows that 7.45 % of change being expressed by the independent variables.

**Table 4.3(c) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio S*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0286	0.4589	0.6476
<b>SMB</b>	1.3168	8.8619	0.0000
<b>HML</b>	-0.1142	-0.4973	0.6204
<b>IO</b>	0.3407	1.5499	0.1253
<b>INS</b>	0.0464	0.1963	0.8449
<b>VAR</b>	0.4493	2.3027	0.0240
Adjusted R-square	0.5301		
F-Stat	16.6026		

Table 4.3(c) shows that When S regressed with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR, the size premium and VAR found positively significant but MKT, HML, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.530053 which shows that 53.0053 % change being expressed by the independent variables.

**Table 4.3(d) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHHIO*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0178	0.2643	0.7922
<b>SMB</b>	0.4787	2.9864	0.0038
<b>HML</b>	0.0822	0.3318	0.7409
<b>IO</b>	0.6788	2.8631	0.0054
<b>INS</b>	0.0107	0.0419	0.9667
<b>VAR</b>	0.2359	1.1211	0.2657

Adjusted R-square	0.0878
F-Stat	2.3313

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Table 4.3(d) shows that When BHHIO regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR, the size premium and IO found positively significant but MKT, HML, VAR and INS found insignificant. Adjusted  $R^2$  is 0.087792 which shows that 8.78 % change being expressed by the independent variables.

**Table 4.3(e) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHHIOHIN*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0218	0.2884	0.7738
<b>SMB</b>	0.5939	3.2978	0.0015
<b>HML</b>	0.1851	0.6650	0.5080
<b>IO</b>	0.8102	3.0416	0.0032
<b>INS</b>	0.4478	1.5619	0.1224
<b>VAR</b>	0.2725	1.1526	0.2527
Adjusted R-square	0.14280		
F-Stat	3.3042		

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Table 4.3(e) shows that When BHHIOHINS is regressed with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the size premium and IO found positively significant but MKT, HML, VAR and INS found insignificant is c adjusted 0.14278 which shows that 14.278 % change being expressed by the independent variables.

**Table 4.3(f) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHHIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0138	0.1925	0.8479
<b>SMB</b>	0.3635	2.1334	0.0361
<b>HML</b>	-0.0207	-0.0786	0.9376
<b>IO</b>	0.5474	2.1723	0.0329
<b>INS</b>	-0.4264	-1.5721	0.1200
<b>VAR</b>	0.1994	0.8912	0.3756
Adjusted R-square	0.0465		
F-Stat	1.6746		

Table 4.3(f) shows that When BHHIOLINS is Regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the size premium found positively significant but MKT, HML, IO, VAR and INS found insignificant .Adjusted R<sup>2</sup> is 0.046498 which shows that 4.65 % change being expressed by the independent variables.

**Table 4.3(g) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHLIO*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0403	0.5612	0.5763
<b>SMB</b>	0.3884	2.2690	0.0261
<b>HML</b>	0.2405	0.9087	0.3663
<b>IO</b>	0.1217	0.4807	0.6321
<b>INS</b>	-0.0518	-0.1902	0.8497
<b>VAR</b>	0.5644	2.5111	0.0141

Adjusted R-square	0.0878
F-Stat	2.3321

---

Table 4.3(g) shows that When BHLIO is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the size premium and VAR found positively significant but MKT, HML, IO, and INS found insignificant. Adjusted R<sup>2</sup> is 0.087837 which shows that 8.7837% change being expressed by the independent variables.

**Table 4.3(h) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHLIOHIN*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0792	1.1119	0.2997
<b>SMB</b>	0.5014	2.9556	0.0041
<b>HML</b>	0.0693	0.2641	0.7924
<b>IO</b>	0.0398	0.1585	0.8745
<b>INS</b>	0.3514	1.3008	0.1972
<b>VAR</b>	0.4715	2.1166	0.0375

Adjusted R-square	0.1332
F-Stat	3.1263

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Table 4.3(h) shows that When BHLIOHINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the size premium and VAR found positively significant but MKT, HML, IO, and INS found insignificant. Adjusted R<sup>2</sup> is 0.133231 which shows that 13.32% change being expressed by the independent variables.

**Table 4.3(i) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHLIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0015	0.0177	0.9859
<b>SMB</b>	0.2754	1.3891	0.1688
<b>HML</b>	0.4117	1.3430	0.1832
<b>IO</b>	0.2037	0.6943	0.4896
<b>INS</b>	-0.4551	-1.4413	0.1535
<b>VAR</b>	0.6574	2.5248	0.0136
Adjusted R-square	0.0725		
F-Stat	2.0820		

Table 4.3(i) shows that When BHLIOLINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the VAR found positively significant but MKT, SMB, HML, IO, and INS found insignificant. Adjusted R<sup>2</sup> is 0.072541 which shows that 7.25% change is being expressed by the independent variables.

**Table 4.3(j) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHV*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0109	0.1728	0.8633
<b>SMB</b>	0.1943	1.2901	0.2009
<b>HML</b>	0.1200	0.5154	0.6078
<b>IO</b>	0.2763	1.2399	0.2188
<b>INS</b>	-0.2374	-0.9901	0.3252
<b>VAR</b>	0.3191	1.6132	0.1108
Adjusted R-square	0.0043		

F-Stat

1.0596

Table 4.3(j) shows that When BHV is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. MKT, SMB, HML, IO, VAR and INS found insignificant. Adjusted R<sup>2</sup> is 0.004291 which shows that 0.43% change being expressed by the independent variables.

**Table 4.3(k) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLHIO*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0513	0.8060	0.4227
<b>SMB</b>	0.2461	1.6224	0.1088
<b>HML</b>	-0.4983	-2.1256	0.0367
<b>IO</b>	0.3977	1.7729	0.0802
<b>INS</b>	0.0490	0.2028	0.8398
<b>VAR</b>	0.3751	1.8835	0.0634
Adjusted R-square	0.0968		
F-Stat	2.4822		

Table 4.3(k) shows that When BLHIO is regress with the MKT, SIZE, VALUE PREMIUM , IO,INSD and VAR. the VAR and IO found positively significant , HML found negatively significant MKT,SMB and INS found insignificant .Adjusted R<sup>2</sup> is 0.096779 which shows that 9.68% change being expressed by the independent variables.

**Table 4.3(l) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLHIOHINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0160	0.1787	0.8586
<b>SMB</b>	0.4934	2.3144	0.0233
<b>HML</b>	-0.3811	-0.11565	0.2511

<b>IO</b>	0.7971	2.5276	0.0135
<b>INS</b>	0.3962	1.1672	0.2467
<b>VAR</b>	0.4567	1.6315	0.1069
Adjusted R-square	0.0990		
F-Stat	2.5205		

---

Table 4.3(l) shows that When BLHIOHINS is regress with the MKT, SIZE , VALUE PREMIUM , IO,INSD and VAR. the SMB and IO found positively significant but MKT,,HML , VAR and INS found insignificant. Adjusted R<sup>2</sup> is 0.099032 which shows that 9.903% change being expressed by the independent variables.

**Table 4.3(m) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLHIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0263	0.4255	0.6717
<b>SMB</b>	0.0318	0.2159	0.8296
<b>HML</b>	-0.3664	-1.6077	0.1120
<b>IO</b>	0.4608	2.1131	0.0378
<b>INS</b>	-0.3265	-1.3910	0.1682
<b>VAR</b>	0.6769	3.4971	0.0008
Adjusted R-square	0.2026		
F-Stat	4.5144		

---

Table 4.3(m) shows that When BLHIOLINS is regress with the MKT, SIZE , VALUE PREMIUM , IO,INSD and VAR. the VAR and IO found positively significant but MKT,,HML , SMB and INS found insignificant . Adjusted R<sup>2</sup> is 0.202586 which shows that 20.26% change is expressed by the independent variables.

**Table 4.3(n) Multivariate Regression. Six factor model:***Dependent Variable: Portfolio BLLIO*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0176	0.2768	0.7827
<b>SMB</b>	0.1502	0.9933	0.3237
<b>HML</b>	-0.3232	-0.13832	0.1706
<b>IO</b>	-0.0556	-0.2485	0.4958
<b>INS</b>	0.1647	0.6844	0.4958
<b>VAR</b>	0.4871	2.4542	0.0164
Adjusted R-square	0.0691		
F-Stat	2.0269		

Table 4.3(n) shows that The results of table no. 3 that When BLLIO is regress with the MKT, SIZE, VALUE PREMIUM , IO,INSD and VAR. the VAR found positively significant but MKT,,HML , SMB, IO and INS found insignificant . Adjusted R<sup>2</sup> is 0.069104 which shows that 6.9104 % change is being expressed by the independent variables.

**Table 4.3(o) Multivariate Regression. Six factor model:***Dependent Variable: Portfolio BLLIOHINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0051	-0.0181	0.9856
<b>SMB</b>	0.2851	1.4762	0.1440
<b>HML</b>	-0.4284	-1.4350	0.1533
<b>IO</b>	-0.1792	-0.6272	0.5324
<b>INS</b>	0.8075	2.6260	0.0104
<b>VAR</b>	0.5587	2.2030	0.0306

Adjusted R-square	0.1417
F-Stat	3.2847

---

Table 4.3(o) shows that When BLLIOHINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the INS and VAR found positively significant but MKT, HML, SMB and IO found insignificant. Adjusted R<sup>2</sup> is 0.141749 which shows that 14.17% change is being expressed by the independent variables.

**Table 4.3(p) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLLIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0432	0.6629	0.5094
<b>SMB</b>	0.0739	0.4760	0.6354
<b>HML</b>	-0.2317	-0.9652	0.3375
<b>IO</b>	0.1189	0.5176	0.6062
<b>INS</b>	-0.4352	-1.7606	0.0823
<b>VAR</b>	0.4508	2.2113	0.0300

Adjusted R-square	0.0721
F-Stat	2.0749

---

Table 4.3(p) shows that When BLLIOLINS is regress with the MKT, SIZE , VALUE PREMIUM , IO,INSD and VAR. the INS and VAR found positively significant but MKT,,HML , SMB and IO found insignificant . Adjusted R<sup>2</sup> is 0.072099 which shows that 7.2099% change is being expressed by the independent variables.

**Table 4.3(q) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLV*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0035	-0.0586	0.9534
<b>SMB</b>	0.0601	0.4261	0.6712
<b>HML</b>	-0.2944	-1.3507	0.1808
<b>IO</b>	0.1531	0.7342	0.4651
<b>INS</b>	-0.0618	-0.2751	0.7840
<b>VAR</b>	0.4302	2.3236	0.0228
Adjusted R-square	0.0499		
F-Stat	1.7269		

Table 4.3(q) shows that When BLV is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the VAR found positively significant but MKT, HML, SMB, INS and IO found insignificant. Adjusted R<sup>2</sup> is 0.049923 which shows that 4.9923% change is being expressed by the independent variables.

**Table 4.3 (r) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHHIOLINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.029	0.4003	0.6900
<b>SMB</b>	0.516	2.9276	0.0045
<b>HML</b>	-0.383	-1.4076	0.1633
<b>IO</b>	0.605	2.3226	0.0228
<b>INS</b>	-0.259	-0.9239	0.3584
<b>VAR</b>	0.103	0.4483	0.6552

Adjusted R-square	0.082
F-Stat	2.247

---

Table 4.3(r) shows that When BHHIOLINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the SMB and IO found positively significant but MKT, HML, INS and VAR found insignificant. Adjusted R<sup>2</sup> is 0.082699 which shows that 8.27% change is being expressed by the independent variables.

**Table 4.3(s) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHHIOHINHVAR*

Variable	Coefficient	T-Statistic	Prob.
MKT	0.038	0.4292	0.6690
SMB	0.404	1.8954	0.0618
HML	0.248	0.7537	0.4533
IO	0.725	2.2982	0.0243
INS	0.083	0.2464	0.8060
VAR	0.724	2.5826	0.0117

Adjusted R-square	0.085
F-Stat	2.295

---

Table 4.3(s) shows that When BHHIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the SMB, IO and VAR found positively significant but MKT, HM and INS found insignificant. Adjusted R<sup>2</sup> is 0.085604 which shows that 8.56% change is being expressed by the independent variables.

**Table 4.3(t) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHHIOHINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.008	0.0893	0.9290
<b>SMB</b>	0.801	3.5415	0.0007
<b>HML</b>	0.180	0.5163	0.6071
<b>IO</b>	0.983	2.9382	0.0044
<b>INS</b>	0.869	2.4124	0.0182
<b>VAR</b>	-0.108	-0.3647	0.7163
Adjusted R-square	0.177		
F-Stat	3.987		

Table 4.3(t) shows that When BHHIOHINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the SMB, IO and INS found positively significant but MKT, HM and VAR found insignificant. Adjusted R<sup>2</sup> is 0.17762 which shows that 17.762% change is being expressed by the independent variables.

**Table 4.3(u) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHHIOLINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.002	0.0249	0.9802
<b>SMB</b>	0.210	1.0456	0.2990
<b>HML</b>	0.342	1.0996	0.2749
<b>IO</b>	0.489	1.6413	0.1048
<b>INS</b>	-0.593	1.8506	0.0681
<b>VAR</b>	0.294	1.1152	0.2683
Adjusted R-square	0.024		

Table 4.3(u) shows that When BHHIOLINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the INS found negatively significant but MKT, HML, SMB IO and VAR found insignificant. Adjusted R<sup>2</sup> is 0.024944 which shows that 2.4944% change is being expressed by the independent variables.

**Table 4.3(v) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHLIOHINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.077	0.891	0.3754
<b>SMB</b>	0.727	3.5229	0.0007
<b>HML</b>	0.5019	1.5714	0.1202
<b>IO</b>	0.119	0.3907	0.6971
<b>INS</b>	0.2552	0.7759	0.4402
<b>VAR</b>	0.7989	2.9448	0.0043
Adjusted R-square	0.2144		
F-Stat	4.7748		

Table 4.3(v) shows that When BHLIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. the SMB and VAR found positively significant but MKT, HML, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.214378 which shows that 21.438% is being expressed by the independent variables.

**Table 4.3(w) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHLIOHINLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.081	1.077	0.285
<b>SMB</b>	0.275	1.534	0.129
<b>HML</b>	-0.363	-1.311	0.194
<b>IO</b>	-0.040	-0.150	0.881
<b>INS</b>	0.447	1.568	0.121
<b>VAR</b>	0.144	0.612	0.542
Adjusted R-square	0.025		
F-Stat	1.355		

Table 4.3(w) shows that When BHLIOHINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. The MKT, SMB, HML, IO, INS and VAR found insignificant. Adjusted R<sup>2</sup> is 0.02502 which shows that 2.502% change is being expressed by the independent variables.

**Table 4.3(x) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHLIOLINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.007	-0.0073	0.9942
<b>SMB</b>	0.0286	0.1194	0.9053
<b>HML</b>	0.3513	0.9485	0.3458
<b>IO</b>	0.1217	0.3433	0.7323
<b>INS</b>	-0.5729	-1.5018	0.1372
<b>VAR</b>	1.1118	3.5343	0.0007

Adjusted R-square	0.1099
F-Stat	2.7073

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Table 4.3(x) shows that When BHLIOLINSHVAR is regressed with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. VAR found positively significant but MKT, SMB, HML, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.109862 which shows that 10.99% change is being expressed by the independent variables.

**Table 4.3(y) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BHLIOLINLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0037	0.0459	0.9635
<b>SMB</b>	0.5223	2.7328	0.0078
<b>HML</b>	0.4721	1.5979	0.1142
<b>IO</b>	0.2857	1.0105	0.3154
<b>INS</b>	-0.3372	-1.1082	0.2712
<b>VAR</b>	0.2029	0.8087	0.4212

Adjusted R-square	0.0712
F-Stat	2.0604

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Table 4.3(y) shows that When BHLIOLINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB found positively significant but MKT, VAR, HML, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.071201 which shows that 7.12% change is being expressed by the independent variable.

**Table 4.3(z) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLHIOHINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0865	0.6079	0.5450
<b>SMB</b>	0.3745	1.3954	0.1669
<b>HML</b>	-0.5848	-1.4098	0.1626
<b>IO</b>	0.5088	1.2818	0.2038
<b>INS</b>	0.5658	1.3241	0.1894
<b>VAR</b>	1.0256	2.9107	0.0047
Adjusted R-square	0.1163		
F-Stat	2.8206		

Table 4.3(z) shows that When BLHIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. VAR found positively significant but MKT, SMB, HML, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.116305 which shows that 11.6305% change is being expressed by the independent variable.

**Table 4.3(a1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLHIOHINLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0416	-0.4550	0.6504
<b>SMB</b>	0.5384	2.7432	0.0156
<b>HML</b>	-0.2251	0.6690	0.5055
<b>IO</b>	1.0948	3.3999	0.0011
<b>INS</b>	0.1591	0.4590	0.6475
<b>VAR</b>	-0.0790	-0.2763	0.7830
Adjusted R-square	0.0913		

Table 4.3(a1) shows that When BLHIOHINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and IO found positively significant but MKT, HML, VAR and INS found insignificant. Adjusted R<sup>2</sup> is 0.091315 which shows that 9.1315% change is being expressed by the independent variables.

**Table 4.3(b1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLHIOLINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0818	-1.0853	0.2812
<b>SMB</b>	-0.2109	-1.1741	0.2440
<b>HML</b>	-0.4225	-1.5218	0.1322
<b>IO</b>	0.2197	0.8270	0.4108
<b>INS</b>	-0.1650	-0.5770	0.5656
<b>VAR</b>	0.9924	4.2084	0.0001
Adjusted R-square	0.2259		
F-Stat	5.0372		

Table 4.3(b1) shows that When BLHIOLINHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. VAR found positively significant but MKT, SMB, HML, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.225913 which shows that 22.59% change is being expressed by the independent variables.

**Table 4.3(c1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLHIOLINLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.134	1.7847	0.0783
<b>SMB</b>	0.274	1.5293	0.1303
<b>HML</b>	-0.310	-1.1180	0.2670
<b>IO</b>	0.701	2.6433	0.0099
<b>INS</b>	-0.487	-1.7073	0.0918
<b>VAR</b>	0.361	1.5332	0.1293
Adjusted R-square	0.130		
F-Stat	3.069		

Table 4.3(c1) shows that When BLHIOLINLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. IO found positively significant and INS found negatively significant but MKT, SMB, HML and VAR found insignificant. Adjusted R<sup>2</sup> is 0.130115 which shows that 13.02% change is being expressed by the independent variables.

**Table 4.3(d1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLLIOHINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.007	-0.0648	0.9485
<b>SMB</b>	0.057	0.2040	0.8389
<b>HML</b>	-0.722	-1.6590	0.1012
<b>IO</b>	0.541	-1.2986	0.1980
<b>INS</b>	1.153	2.5723	0.0120
<b>VAR</b>	0.849	2.2968	0.0243
Adjusted R-square	0.125		

Table 4.3(d1) shows that When BLLIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR .INS and VAR found positively significant but MKT, SMB, HML and IO found insignificant. Adjusted R<sup>2</sup> is 0.125315 which shows that 12.5315% change is being expressed by the independent variables.

**Table 4.3(e1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLLIOHINLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.008	-0.1145	0.9092
<b>SMB</b>	0.395	2.2347	0.0283
<b>HML</b>	-0.107	-0.3923	0.6959
<b>IO</b>	0.080	0.3091	0.7581
<b>INS</b>	0.376	1.3347	0.1859
<b>VAR</b>	0.197	0.8504	0.3977
Adjusted R-square	0.040		
F-Stat	1.582		

Table 4.3(e1) shows that When BLLIOHINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR .SMB found positively significant but MKT, INS, VAR, HML and IO found insignificant. Adjusted R<sup>2</sup> is 0.040377 which shows that 4.0377% change is being expressed by the independent variables.

**Table 4.3(f1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLLIOLINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.014	0.1868	0.8523
<b>SMB</b>	0.067	0.3644	0.7165
<b>HML</b>	-0.082	-0.2871	0.7748
<b>IO</b>	0.032	0.1189	0.9057
<b>INS</b>	-0.695	-2.3494	0.0214
<b>VAR</b>	0.630	2.5817	0.0117
Adjusted R-square	0.099		
F-Stat	2.532		

Table 4.3(f1) shows that When BLLIOLINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR .VAR found positively significant and INS found negatively significant but MKT, SMB, HML and IO found insignificant. Adjusted R<sup>2</sup> is 0.099731 which shows that 9.97% change is being expressed by the independent variables.

**Table 4.3(g1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio BLLIOLINLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.071	0.9893	0.3256
<b>SMB</b>	0.080	0.4627	0.6449
<b>HML</b>	-0.380	-1.4243	0.1584
<b>IO</b>	0.205	0.8016	0.4252
<b>INS</b>	-0.174	-0.6344	0.5277
<b>VAR</b>	0.271	1.1937	0.2362
Adjusted R-square	0.008		

Table 4.3(g1) shows that When BLLIOLINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. MKT, SMB, INS, VAR, HML and IO found insignificant. Adjusted R<sup>2</sup> is 0.00885 which shows that 0.89% change is being expressed by the independent variables.

**Table 4.3(h1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHHIO*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.004	0.0664	0.94
<b>SMB</b>	1.184	7.7359	0
<b>HML</b>	0.766	3.2382	0.001
<b>IO</b>	0.869	3.8375	0.003
<b>INS</b>	0.046	0.1924	0.847
<b>VAR</b>	0.608	3.025	0.003
Adjusted R-square	0.497		
F-Stat	14.697		

Table 4.3(h1) shows that When SHHIO is regressed with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML, IO and VAR found positively significant but MKT and INS found insignificant. Adjusted R<sup>2</sup> is 0.497443 which shows that 49.74% change is being expressed by the independent variables.

**Table 4.3(i1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHHIOHINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.072	1.101	0.274
<b>SMB</b>	1.054	6.783	0.000
<b>HML</b>	0.845	3.517	0.001
<b>IO</b>	0.759	3.299	0.002
<b>INS</b>	0.312	1.261	0.211
<b>VAR</b>	0.418	2.047	0.044
Adjusted R-square	0.439		
F-Stat	11.841		

Table 4.3(i1) shows that When SHHIOHINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML, IO and VAR found positively significant but MKT and INS found insignificant. Adjusted R<sup>2</sup> is 0.439356 which shows that 43.94% change is being expressed by the independent variables.

**Table 4.3(j1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHHIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	1.3545	6.5537	0.000
<b>SMB</b>	0.6623	2.0728	0.0728
<b>HML</b>	0.9804	3.2068	0.0020
<b>IO</b>	-0.3135	-0.9527	0.3437
<b>INS</b>	0.7296	2.6885	00.008
<b>VAR</b>	0.4071	3.025	0.003
Adjusted R-square	0.497		

Table 4.3(j1) shows that When SHHIOLINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML, IO and VAR found positively significant but MKT and INS found insignificant. Adjusted R<sup>2</sup> is 0.407121 which shows that 40.712% change is being expressed by the independent variables.

**Table 4.3(k1) Multivariate Regression. Six factor model:**

<i>Dependent Variable: Portfolio SHLIO</i>				
	<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>		0.033	0.486	0.629
<b>SMB</b>		1.180	7.261	0.000
<b>HML</b>		0.482	1.921	0.058
<b>IO</b>		-0.351	-1.462	0.148
<b>INS</b>		0.191	0.738	0.463
<b>VAR</b>		0.401	1.879	0.064
Adjusted R-square		0.522		
F-Stat		16.113		

Table 4.3(k1) shows that When SHLIO is regressed with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML and VAR found positively significant but MKT, IO and INS found insignificant. Adjusted R<sup>2</sup> is 0.522107 which shows that 52.2107% change is being expressed by the independent variables.

**Table 4.3(l1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHLIOHINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.020	0.292	0.771
<b>SMB</b>	0.933	5.798	0.000
<b>HML</b>	0.443	1.780	0.079
<b>IO</b>	-0.375	-1.575	0.119
<b>INS</b>	0.724	2.825	0.006
<b>VAR</b>	0.684	3.235	0.002
Adjusted R-square	0.495		
F-Stat	14.534		

Table 4.3(11) shows that When SHLIOHINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML, INS and VAR found positively significant but MKT and IO found insignificant. Adjusted R<sup>2</sup> is 0.494523 which shows that 49.45% change is being expressed by the independent variables.

**Table 4.3(m1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHLIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.052	0.585	0.560
<b>SMB</b>	1.443	6.879	0.000
<b>HML</b>	0.502	1.548	0.126
<b>IO</b>	-0.243	-0.782	0.436
<b>INS</b>	-0.250	-0.750	0.456
<b>VAR</b>	0.181	0.656	0.514
Adjusted R-square	0.445		

Table 4.3(m1) shows that When SHLIOLINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB found positively significant but MKT, HML, INS, VAR and IO found insignificant. Adjusted R<sup>2</sup> is 0.445345 which shows that 44.5345% change is being expressed by the independent variables.

**Table 4.3(n1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHV*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.019	0.317	0.752
<b>SMB</b>	1.193	8.216	0.000
<b>HML</b>	0.641	2.853	0.006
<b>IO</b>	0.306	1.425	0.158
<b>INS</b>	0.107	0.464	0.644
<b>VAR</b>	0.541	2.838	0.006
Adjusted R-square	0.534		
F-Stat	16.859		

Table 4.3(n1) shows that When SHV is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB HML and VAR found positively significant but MKT, INS and IO found insignificant. Adjusted R<sup>2</sup> is 0.53411 which shows that 53.41% change is being expressed by the independent variables.

**Table 4.3(o1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLHIO*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.051	0.702	0.485
<b>SMB</b>	1.315	7.527	0.000
<b>HML</b>	-0.823	-3.045	0.003
<b>IO</b>	1.147	4.437	0.000
<b>INS</b>	0.127	0.456	0.650
<b>VAR</b>	0.466	2.032	0.046
Adjusted R-square	0.464		
F-Stat	12.976		

Table 4.3(o1) shows that When SLHIO is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB IO and VAR found positively significant and HML found negatively significant but MKT and INS found insignificant. Adjusted R<sup>2</sup> is 0.464017 which shows that 46.4017% change is being expressed by the independent variables.

**Table 4.3(p1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHLIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.046	0.523	0.603
<b>SMB</b>	1.479	7.014	0.000
<b>HML</b>	-0.692	-2.121	0.037
<b>IO</b>	1.145	3.669	0.000
<b>INS</b>	0.563	1.677	0.098
<b>VAR</b>	0.405	1.462	0.148
Adjusted R-square	0.410		

Table 4.3(p1) shows that When SHLIOLINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB IO and INS found positively significant and HML found negatively significant but MKT and VAR found insignificant. Adjusted R<sup>2</sup> is 0.40969 which shows that 40.969% change is being expressed by the independent variables.

**Table 4.3(q1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLHIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.057	0.747	0.457
<b>SMB</b>	1.151	6.371	0.000
<b>HML</b>	-0.954	-3.413	0.001
<b>IO</b>	1.149	4.298	0.000
<b>INS</b>	-0.310	-1.-076	0.285
<b>VAR</b>	0.528	2.224	0.029
Adjusted R-square	0.427		
F-Stat	11.293		

Table 4.3(q1) shows that When SLHIOLINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB IO and VAR found positively significant and HML found negatively significant but MKT and INS found insignificant. Adjusted R<sup>2</sup> is 0.426618 which shows that 42.6618% change is being expressed by the independent variables.

**Table 4.3(r1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLLIO*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.004	0.057	0.955
<b>SMB</b>	1.538	9.102	0.000
<b>HML</b>	0.826	-3.163	0.002
<b>IO</b>	-0.374	-1.496	0.139
<b>INS</b>	-0.140	-0.522	0.603
<b>VAR</b>	0.340	1.534	0.129
Adjusted R-square	0.614		
F-Stat	23.001		

Table 4.3(r1) shows that When SLLIO is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB found positively significant and HML found negatively significant but MKT, IO, VAR and INS found insignificant. Adjusted R<sup>2</sup> is 0.613968 which shows that 61.40% change is expressed by the independent variables.

**Table 4.3(s1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLLIOHINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.060	-0.693	0.491
<b>SMB</b>	1.240	6.022	0.000
<b>HML</b>	-0.776	-2.437	0.017
<b>IO</b>	-0.297	-0.975	0.332
<b>INS</b>	0.784	2.391	0.019
<b>VAR</b>	0.455	1.682	0.097
Adjusted R-square	0.453		

Table 4.3(s1) shows that When SLLIOHINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, INS and VAR found positively significant and HML found negatively significant but MKT and IO found insignificant. Adjusted R<sup>2</sup> is 0.453415 which shows that 45.3415% change is being expressed by the independent variables.

**Table 4.3(t1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLLIOLINS*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.089	1.082	0.283
<b>SMB</b>	1.855	9.471	0.000
<b>HML</b>	-0.964	-3.184	0.002
<b>IO</b>	-0.424	-1.464	0.147
<b>INS</b>	-1.047	-3.357	0.001
<b>VAR</b>	0.127	0.493	0.623
Adjusted R-square	0.630		
F-Stat	24.511		

Table 4.3(t1) shows that When SLLIOLINS is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB found positively significant and HML and INS found negatively significant but MKT, VAR and IO found insignificant. Adjusted R<sup>2</sup> is 0.629575 which shows that 62.96% change is being expressed by the independent variable.

**Table 4.3(u1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLV*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.022	-0.347	0.729
<b>SMB</b>	1.350	9.136	0.000
<b>HML</b>	-0.861	-3.771	0.000
<b>IO</b>	0.312	1.426	0.158
<b>INS</b>	0.069	0.293	0.771
<b>VAR</b>	0.339	1.745	0.085
Adjusted R-square	0.574		
F-Stat	19.610		

Table 4.3(u1) shows that When SLV is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and VAR found positively significant and HML found negatively significant but MKT, INS and IO found insignificant. Adjusted R<sup>2</sup> is 0.573622 which shows that 57.3622% change is being expressed by the independent variables.

**Table 4.3(v1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHHIOHINSHAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.028	0.306	0.761
<b>SMB</b>	1.004	4.631	0.000
<b>HML</b>	0.724	2.160	0.034
<b>IO</b>	1.059	3.300	0.002
<b>INS</b>	0.088	0.254	0.800
<b>VAR</b>	0.689	2.421	0.018
Adjusted R-square	0.267		

Table 4.3(v1) shows that When SHHIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HM, IO and VAR found positively significant but MK and INS found insignificant. Adjusted R<sup>2</sup> is 0.26702 which shows that 26.70% change is being expressed by the independent variables.

**Table 4.3(w1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHHIOHINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.116	1.602	0.113
<b>SMB</b>	1.105	6.411	0.000
<b>HML</b>	0.967	3.629	0.001
<b>IO</b>	0.459	1.800	0.076
<b>INS</b>	0.536	1.956	0.054
<b>VAR</b>	0.146	0.647	0.520
Adjusted R-square	0.432		
F-Stat	11.529		

Table 4.3(w1) shows that When SHHIOHINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HM, IO and INS found positively significant but MK and VAR found insignificant. Adjusted R<sup>2</sup> is 0.432194 which shows that 43.22% change is expressed by the independent variable.

**Table 4.3(x1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHHIOLINSHAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.124	-1.317	0.192
<b>SMB</b>	1.690	7.525	0.000
<b>HML</b>	0.280	0.806	0.423
<b>IO</b>	1.057	3.182	0.002
<b>INS</b>	-0.427	-1.195	0.236
<b>VAR</b>	1.242	4.213	0.000
Adjusted R-square	0.511		
F-Stat	15.477		

Table 4.3(x1) shows that When SHHIOLINHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, IO and VAR found positively significant but MK, HML and INS found insignificant. Adjusted R<sup>2</sup> is 0.511361 which shows that 51.1361% change is expressed by the independent variables.

**Table 4.3(y1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHHIOLINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0076	-0.0711	0.9435
<b>SMB</b>	1.0193	3.9908	0.000
<b>HML</b>	1.0447	2.6459	0.0099
<b>IO</b>	0.9039	2.3923	0.0192
<b>INS</b>	-0.1997	-0.4911	0.6247
<b>VAR</b>	0.2171	0.6473	0.5193

Adjusted R-square	0.1922
F-Stat	4.2908

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Table 4.3(y1) shows that When SHHIOLINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML and IO found positively significant but MK, INS and VAR found insignificant. Adjusted R<sup>2</sup> is 0.192174 which shows that 19.22% change is expressed by the independent variable.

**Table 4.3(z1) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHLIOHINSHAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0358	0.4298	0.6685
<b>SMB</b>	0.9404	0.7392	0.000
<b>HML</b>	0.6120	0.19953	0.0495
<b>IO</b>	-0.6505	-2.2164	0.0296
<b>INS</b>	0.6142	1.9442	0.0555
<b>VAR</b>	1.3380	5.1354	0.000

Adjusted R-square	0.5021
F-Stat	14.9494

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Table 4.3(z1) shows that When SHLIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML, INS and VAR found positively significant and IO found negatively significant but MKT found insignificant. Adjusted R<sup>2</sup> is 0.502089 which shows that 50.2089% change is expressed by the independent variables.

**Table 4.3(a2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHLIOHINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0036	0.0418	0.9668
<b>SMB</b>	0.9265	4.4978	0.000
<b>HML</b>	0.2738	0.8598	0.3926
<b>IO</b>	-0.0995	-0.3267	0.7448
<b>INS</b>	0.8340	2.5428	0.0130
<b>VAR</b>	0.0297	0.1098	0.9129
Adjusted R-square	0.2834		
F-Stat	4.4700		

Table 4.3(a2) shows that When SHLIOHINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and INS found positively significant but MKT, HML, IO and VAR found insignificant. Adjusted R<sup>2</sup> is 0.28337 which shows that 28.337% change is expressed by the independent variables.

**Table 4.3(b2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHLIOLINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0779	0.8328	0.4075
<b>SMB</b>	1.3964	6.2662	0.000
<b>HML</b>	0.9002	2.6133	0.0108
<b>IO</b>	0.0856	0.2598	0.7957
<b>INS</b>	0.6092	-1.7169	0.0900
<b>VAR</b>	1.1162	3.8146	0.000

Adjusted R-square	0.4645
F-Stat	12.9975

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Table 4.3(b2) shows that When SHLIOLINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, HML and VAR found positively significant and INS found negatively significant but MK and IO found insignificant. Adjusted R<sup>2</sup> is 0.464464 which shows that 46.45% change is expressed by the independent variables.

**Table 4.3(c2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SHLIOLINSLVAR*

Variable	Coefficient	T-Statistic	Prob.
<b>MKT</b>	0.0502	0.1705	0.8651
<b>SMB</b>	1.4960	5.2230	0.000
<b>HML</b>	0.3633	0.8205	0.4145
<b>IO</b>	-0.5109	-1.2057	0.2316
<b>INS</b>	-0.1053	-0.2309	0.8180
<b>VAR</b>	-0.5297	-1.4085	0.1630

Adjusted R-square	0.3222
F-Stat	7.5764

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Table 4.3(c2) shows that When SHLIOLINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB found positively significant but MKT, HML, IO, VAR and INS found insignificant. Adjusted R<sup>2</sup> is 0.322219 which shows that 32.22% change is being expressed by the independent variables.

**Table 4.3(d2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLHIOHINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.1342	1.1176	0.2672
<b>SMB</b>	2.0098	7.0255	0.000
<b>HML</b>	-1.0592	-2.3951	0.0190
<b>IO</b>	1.9565	4.6472	0.0000
<b>INS</b>	0.7813	0.7153	0.0903
<b>VAR</b>	1.2186	3.2442	0.0017
Adjusted R-square	0.4705		
F-Stat	13.2939		

Table 4.3(d2) shows that When SLHIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, IO, INS and VAR found positively significant and HML found negatively significant but MKT found insignificant. Adjusted R<sup>2</sup> is 0.47054 which shows that 47.05% change is being expressed by the independent variables.

**Table 4.3(e2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLHIOHINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0280	-0.2885	0.7737
<b>SMB</b>	1.0236	4.4251	0.000
<b>HML</b>	-0.3798	-1.0622	0.2915
<b>IO</b>	0.5219	1.5253	0.1313
<b>INS</b>	0.2922	0.7934	0.4300

<b>VAR</b>	-0.3628	-1.1943	0.2360
Adjusted R-square	0.1674		
F-Stat	3.7813		

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Table 4.3(e2) shows that When SLHIOHINLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and INS found positively significant and VAR found negatively significant but MKT, HML and IO found insignificant. Adjusted R<sup>2</sup> is 0.1674 which shows that 16.74% change is being expressed by the independent variables.

**Table 4.3(f2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLHIOLINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.1089	1.0708	0.2876
<b>SMB</b>	1.4033	5.7920	0.000
<b>HML</b>	-1.1101	-2.9640	0.0040
<b>IO</b>	1.2573	3.5083	0.0008
<b>INS</b>	-0.2187	-0.5662	0.5729
<b>VAR</b>	1.3837	4.3496	0.0000
Adjusted R-square	0.4539		
F-Stat	12.4979		

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Table 4.3(f2) shows thatWhen SLHIOLINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB, VAR and IO found positively significant and HML found negatively significant but MKT and INS found insignificant. Adjusted R<sup>2</sup> is 0.453902 which shows that 45.3902% change is being expressed by the independent variables.

**Table 4.3(g2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLHIOLINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.0045	0.0547	0.9566
<b>SMB</b>	0.8997	4.6234	0.000
<b>HML</b>	-0.7970	-2.6494	0.0098
<b>IO</b>	1.0407	3.6151	0.0005
<b>INS</b>	-0.4007	-1.2932	0.1998
<b>VAR</b>	-0.3282	-1.2843	0.2029
Adjusted R-square	0.2993		
F-Stat	5.3520		

Table 4.3(g2) shows that When SLHIOLINLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and IO found positively significant and HML found negatively significant but MKT, VAR and INS found insignificant. Adjusted R<sup>2</sup> is 0.23935 which shows that 23.9315% change is being expressed by the independent variables.

**Table 4.3(h2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLLIOHINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0566	-0.5176	0.6062
<b>SMB</b>	1.4142	5.4339	0.000
<b>HML</b>	-0.6129	-1.5231	0.1318
<b>IO</b>	-0.4011	-1.0417	0.3008
<b>INS</b>	0.5228	1.3337	0.1862

<b>VAR</b>	0.8033	2.3504	0.0213
Adjusted R-square	0.4028		
F-Stat	10.3320		

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Table 4.3(h2) shows that When SLLIOHINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and VAR found positively significant but MKT, HML, IOand INS found insignificant. Adjusted R<sup>2</sup> is 0.402843 which shows that 40.2843% change is being expressed by the independent variables.

**Table 4.3(i2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLLIOHINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	-0.0106	-0.6073	0.5454
<b>SMB</b>	1.0656	4.2966	0.0001
<b>HML</b>	-0.9386	-2.4483	0.0166
<b>IO</b>	-0.1931	-0.5264	0.6001
<b>INS</b>	1.0150	2.5704	0.0121
<b>VAR</b>	0.1064	0.3266	0.7448
Adjusted R-square	0.2948		
F-Stat	6.7829		

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Table 4.3(i2) shows that When SLLIOHINLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and INS found positively significant and HML found negatively significant but MKT, VAR and IO found insignificant. Adjusted R<sup>2</sup> is 0.294801 which shows that 29.48% change is being expressed by the independent variables.

**Table 4.3(j2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLLIOLINSHVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.073	0.630	0.530
<b>SMB</b>	1.755	6.368	0.000
<b>HML</b>	-0.510	-1.196	0.235
<b>IO</b>	0.033	0.081	0.935
<b>INS</b>	-0.782	-1.782	0.079
<b>VAR</b>	1.597	4.413	0.000
Adjusted R-square	0.491		
F-Stat	14.359		

Table 4.3(j2) shows that When SLLIOLINSHVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB and VAR found positively significant and INS found negatively significant but MKT, HML and IO found insignificant. Adjusted R<sup>2</sup> is 0.491286 which shows that 49.1286% change is being expressed by the independent variable.

**Table 4.3(k2) Multivariate Regression. Six factor model:**

*Dependent Variable: Portfolio SLLIOLINSLVAR*

<b>Variable</b>	<b>Coefficient</b>	<b>T-Statistic</b>	<b>Prob.</b>
<b>MKT</b>	0.063	0.532	0.596
<b>SMB</b>	1.915	6.780	0.0001
<b>HML</b>	-1.243	-2.847	0.006
<b>IO</b>	-0.935	-2.237	0.028
<b>INS</b>	-1.347	-2.997	0.004

<b>VAR</b>	-1.146	-3.091	0.003
Adjusted R-square	0.503		
F-Stat	15.012		

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Table 4.3(k2) shows that When SLLIOLINSLVAR is regress with the MKT, SIZE, VALUE PREMIUM, IO, INSD and VAR. SMB found positively significant and HML, IO, INS and VAR found negatively significant but MKTfound insignificant. Adjusted R<sup>2</sup> is 0.503202 which shows that 50.3202% change is being expressed by the independent variable.

The value of F is found significant and reports that model is fit to explain the relationship between the independent and dependent variables.

These results show that market premium (downside beta by Estrada) is found insignificant and VAR is significant in most of the portfolios which shows that downside risk is insignificant to explaining the equity returns for D-CAPM but not for VAR.

Overall, regression results shows that market premium (downside beta) is not priced by Pakistani market, while size premium, value premium, institutional ownership, insider holding and value at risk are partially priced by Pakistan's equity market. So, it can be said that VAR is better measure than downside beta in explaining stock returns. Therefore, other than hypothesis 1, all other hypotheses are accepted.

## CHAPTER NO. 5

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Results discussion:

This study investigates the impact of ownership structure (institutional ownership and insider holding) on the stock return under the downside risk framework including D-CAPM and VAR. This is basically Fama and French 3 factor model extension including all variables of 3 factor also i.e  $MKT_D$ , SMB, HML, INS, Insider holding and VAR.

This study explores the join effect of size, value, market, value at risk and ownership factors including institutional ownership and insider holdings. Portfolios have been constructed according to the methodology that is used by the fama and french as  $2*2*2*2*2$  sorting the variables. Multivariate Regression is used to study the impact of these six factors on the equity returns. D.CAPM of Estrada and value at risk is used in this study to measure the downside risk.

Results indicate with reference to conventional assets pricing model , size premium is found significant positively related to big like B, BHHIO, BHHIOLINS, BHLIO ,BHLIOHIN, BLHIOHINS ,BHHIOLINSLVAR ,BHHIOHINSHVAR, BHHIOHINSLVAR, BHLIO, BHLIOHINS, BLHIOHINS, BLLIOHINS, BHHIOLINSLVAR, BHHIOLINSLVAR, BHHIOHINSLVAR, BHLIOHINSHVAR, BHLIOLINSLVAR, BLHIOHINSLVAR, BLLIOHINSLVAR, and insignificant in case of BHLIOLINS, BHV, BLHIO, BLHIOLINS, BLLIO, BLLIOHINS, BLV,BHHIOLINSHVAR, BHLIOHINSLVAR, BLHIOHVAR,BLHIOLINSHVAR, BLHIOLINSLVAR, BLLIOLINSHVAR and BLLIOLINSLVAR. Size premium found significant positively related to all small portfolios from S to SLLLIOLINSLVAR. Portfolio returns.

Value premium is found significant positively related to SHHIO, SHHIOHINS, SHHIOLINS, SHLIO, SHLIOHINS, SHV, SHHIOHINSHVAR, SHHIOHINSLVAR, SHHIOLINSLVAR, SHLIOHINSHVAR, SHLIOLINSHVAR portfolio returns but found significant negatively

related to SLHIO, SHLIOLINS, SLHIOHINS, SLLIO, SLLIOHINS, SLV, SLHIOHINSHVAR, SLHIOLINSLVAR, SLLIOHINSLVAR, SLLIOLINSLVAR portfolios returns .value premium found insignificant in case of P , S, SHLIOLINS, SHHIOLINSLVAR, SHLHIOHINSLVAR, SHLIOLINSLVAR, SLHINOHINSLVAR, SLLIOHINSHVAR, SLLIOLINSHVAR and all big portfolios from B to BLLIOLINSLVAR portfolios returns .

Institutional ownership is found significant positively related to BHHIO, BHHIOHINS, BHHIOHINS, BLHIO, BLHIOHINS, BLHIOLINS, BHHIOLINSLVAR, BHHIOHINSHVAR, BHHIOHINSLVAR, BLHIOHINSLVAR, BLLIOHINSHVAR , SHHIO, SHHIOHINS, SHHIOLINS, SLHIO, SHLIOLINS, SLHIOLINS, SHHIOHINSHVAR, SHHIOHINSLVAR, SHHIOLINSHVAR, SHHIOLINSLVAR, SLHIOHINSHVAR, SLHIOLINSHVAR, SLHIOLINSLVAR portfolios returns but found negatively significant related to SHLHIOHINSHVAR and SLLIOLINSLVAR portfolios.

Insider holding found significant positively in case of BLLIOHINS, BHHIOHINSLVAR, BLLIOHINSHVAR, SHLHIOHINS, SHLIOLINS, SLLIOHINS, SHHIOHINSLVAR, SHLHIOHINSHVAR, SHLHIOHINSHVAR,SLHIOHINSHVAR, SLLIOHINSLVAR but negatively significant in case of BLLIOLINS, BHHIOLINSHVAR, BLLIOHINSHVAR, BLLIOHINSLVAR, SLLIOLINS, SHLIOLINSHVAR, SLLIOLINSHVAR and SLLIOLINSLVAR portfolio return .

Value at Risk found significant effect in case of P, B,BHLIO, BHLIOHIN, BHLIOLINS, BHV, BLHIO,BLHIOHINS, BLHIOLINS, BLLIO, BLLIOHINS, BLLIOLINS, BLV, BHHIOHINSHVAR, BHLIOHINSHVAR, BHLIOHINSHVAR, BHLIOLINSHVAR, BLHIOHINSHVAR, BLHIOLINSHVAR, BLLIOHINSHVAR, BLLIOLINSHVAR, SHHIO,SHHIOHINS, SHHIOLINS, SHLIO, SHLHIOHINS, SHV, SLHIO, SLLIOHINS, SLV, SHHIOHINSHVAR, SHHIOLINSHVAR, SHLHIOHINSHVAR, SHLIOLINSHVAR, SLHIOHINSHVAR, SLHIOLINSHVAR, SLLIOHINSHVAR,SLLIOLINSLVAR portfolio returns but have negatively significant effect in case of SLLIOLINSLVAR portfolio returns. .

Overall, results shows that market premium (downside beta) is not priced by Pakistani market, while size premium, value premium, institutional ownership, insider holding and value at risk are partially priced by Pakistan's equity market. So, it can be said that VAR is better measure than downside beta in explaining stock returns. Therefore, other than hypothesis 1, all other hypotheses are accepted.

## **5.2 Conclusion**

This study examines the impact of institutional ownership and insider holding on equity returns under the frame work of downside risk and present a six factor assets pricing model. In addition in literature, this study aims to explore non-conventional anomalies in asset pricing domain such as institutional ownership and insider holding which are considered as important aspects of corporate governance and the part of ownership structure, and there is need to identify the impact of such factors on equity returns in Pakistan stock market. D.CAPM of Estrada and value at risk is used in this study to measure the downside risk. An analysis of results reveal that market premium in the presence of all other factors i.e SMB, HML (Jhone & Andy , INS, Inisder holing and VAR is found insignificant. On the contrary, Value at risk is somehow significant and positive but partially, not for all portfolios. It enlighten the fact that Pakistan stock market partially pricing the value at risk. Furthermore, size premium is significant positive and institutional ownership also significant positive for most of the portfolios but insider holding is partially priced. Therefore, this six factor model facilitates investors in making valuable decisions about investments and resource allocation in emerging economy like Pakistan. Moreover, it is concluded that all the factors are priced in Pakistan equity market except market premium (downside beta). However, value at risk is far better than market premium (downside beta) in explaining returns. Furthermore, institutional ownership and insider holding are partially priced in Pakistan stock market. Therefore, all the hypotheses under study are accepted except hypothesis 1.

## **5.3 Recommendation and Policy Implementation**

Investor should consider factors (market downside risk, value premium, size of the business, value at risk and corporate governance factors such as institutional ownership and insider

holdings) while making investment and resource allocation decisions. In this way, they can form an efficient portfolio to better estimate the return.

#### **5.4 Limitation of study**

Present study is about only Pakistan. This study can be extended to other emerging economies. Moreover, this study make the portfolios by using 2\*2\*2\*2\*2 sorting. Other sorting can also be used to form stylized portfolios to achieve more benefits of diversification.

#### **5.5 Direction for Future Research**

More research work is required in the assets pricing model including the financial and non-financial sectors. The proxies of variables can be change and may use the others attributes of corporate governance. A new factor expected short fall can be used because it show the expected loss and VAR do not fulfill the sub-additivity condition. Moreover, comparative study of six factor model with single factor model and downside risk model with upside risk model can also be studied in future.

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## APPENDIX

### Abbreviations used in Portfolio Construction portion:

- SH = small company high value. SL = small company low value
- BH = big company high value. BL = big company low value
- SHHIO = small company high value high institutional ownership.
- SHLIO = small company high value low institutional ownership.
- SLHIO = small company low value high institutional ownership.
- SLLIO = small company low value low institutional ownership.
- BHHIO = big company high value high institutional ownership.
- BHLIO = big company high value low institutional ownership.
- BLHIO = big company low value high institutional ownership.
- BLLIO = big company low value low institutional ownership.
  
- SHHIOHINDH = small company high value high institutional ownership high insider holding.
  
- SHHIOLINDH = small company high value high institutional ownership low insider holding.
  
- SHLIOHINDH = small company high value low institutional ownership high insider holding.
  
- SHLIOLINDH = small company high value low institutional ownership low insider holding.
  
- S/L/HIO/HINDH = small company low value low institutional ownership low insider holding.

- S/L/HIO/LINDH = small company low value high institutional ownership low insider holding.
- S/L/LIO/HINDH = small company low value low institutional ownership high insider holding.
- S/L/LIO/LINDH = small company low value low institutional ownership low insider holding.
- B/H/HIO/HINDH = big company high value high institutional ownership high insider holding.
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- B/L/LIO/LINDH = big company low value low institutional ownership low insider holding.
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