VALUTION MULTIPLES AND STOCK RETURNS

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This is to certify that **Miss. Kiran Aziz Mallik** bearing Registration No. MMS151031 has incorporated all observations, suggestions and comments made by the external evaluators as well as the internal examiners and thesis supervisor **Dr. Ahmad Fraz** at Capital University of Science and Technology, Islamabad. The title of the thesis is: **Equity Multiples and Stock Returns.**

Forwarded for necessary action

Dr. Ahmad Fraz

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All errors in this thesis are my sole responsibility.

Dedication

This thesis is dedicated to my Mother Mrs. Bushra Zubair and especially to my brother Mr. Umair Aziz Mallik who always appreciate me in every step. This journey would not have been possible without your loving support and encouragement.

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LIST OF ABBREVIATIONS

BTM	Book to Market
PE	Price Earnings Ratio
EV	Enterprise Value
EBITDA	Earnings before interest tax depreciation and amortization
MV	Mean Variance approach
EMH	Efficient markets hypothesis
CAPM	Capital Asset Pricing Model
APT	Arbitrage Pricing Theory
KSE	Karachi Stock Exchange
SSE	Shanghai Stocks Exchange
BSE	Bombay Stocks Exchange
MKT	Market
SMB	Small minus Big
HML	High minus Low

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Abstract

The study investigates the impact of size premium, book to market ratio, equity multiple (Price earnings ratio and two enterprise multiples using different proxies includes the EV to EBITDA multiple and EV to Sales multiple) on stocks return in India, Pakistan and China equity markets, for the period of June 2000 to June 2015 by using Fama and Macbeth (1973) approach. The results show that size premium, book to market ratio, price earning ratio, EV to EBITDA and EV to sales are priced by Indian, Pakistani and Chinese equity markets. The size premium, book to market ratio, price earning ratio, EV to EBITDA and EV to sales effects are present in equity market this result can help investors in allocating resources efficiently while a decision maker should include these factors making decisions related to investing, valuing and financing the financial instruments.

***Key words**:* CAPM, Size premium, Value premium, Equity Valuation, Multiples Valuation.

Chapter 01

Introduction

Before 1950 the focus of valuing securities in capital markets are based on simple rules as defined by the investors and managers. With the passage of time traditional finance emerged into modern finance in 1950's. For the valuing of broad range of assets the modern finance has created methodologies, which expand with time and it imposes complex risks on investor's decisions. The basic issue of finance is discovering the number of factors that have an impact on expected returns on the assets, also the sensitivity of expected returns to these factors, and the return for this sensitivity.

Multiples valuation is use broadly in practice on the basis of their capability to describe variations which are cross-sectional in the prices of stocks. The Equity multiple and the Enterprise multiple are two basic multiples. Equity multiple is the expression of shareholder's claim on companies' assets and cash flows, it express that performance metric claim which is confined to only shareholders i.e. The Price Earnings ratio. Whereas Enterprise multiples which is Value of an enterprise is firm's value of all its claim i.e. Enterprises Values to EBITDA (Earning before interests taxes depreciations and amortizations) and Enterprises Values to Sale. In this study the Multiples valuation, the prices to earning ratios, EV to EBITDA's multiples and EV to Sale multiples are use as a proxy for value premium.

Valuation multiple calculates some specific multiples for a group of benchmarked companies and then on the basis of benchmark multiples evaluating the implied values of a company. Even though various studies use this approach but no multiple is accepted uniformly for the process of valuation.

Bassu (1977) and Stattmen (1980) have observed the hypothesis of market efficiencies along with abnormal return of long term however they have used multiple instead of broad valuations models. The study concludes that the earning's plus book value multiple derived portfolios earn abnormal returns. Alford (1992) studies the impact of selection of comparable firms on accuracy of valuation by using P/E multiples. Fernandez (2015) says that multiples almost all the time have wide dispersion this is the reason the valuation perform by using of multiples is greatly debateable.

This study is appropriate for practitioners, investment bankers and analysts who value companies by using multiples and also for academic researchers. Multiples are use to value individual sections of a company and using the forecasted cumulative value to compare it with the value of market to find out the excess value formulated by the diversification (Berger and Ofek 1995, 1996, 1999; Denis and Sarin 1997).

1.1 Theoretical Background

Markowitz (1952) has set the foundation of modern portfolio theory, on the basis of three central assumptions: market is efficient, investors are rational and investors take advantage of potential arbitrage opportunities. Markowitz major contribution is to identify the Systematic risk and computation of risk and the returns of portfolio.

The capital asset pricing model (CAPM) of Sharpe (1964), Lintner (1965) and Mossin (1966) makes an insight to the understanding of the risk and return relationship. CAPM analyses the

process of construction of efficient portfolio and is based on mean variance analysis. Arbitrage pricing theory (APT) of Ross (1976) believes that return of equity depends on many factors however it does not deal with portfolio efficiency. But Ross has not recognize the factors. Hence many studies in the world have been conducted to identify the factors.

The CAPM and the APT both are rival theories that propose substitute descriptions of the association among risk and return. An appropriate technique is widely acknowledged for assessing financial assets is the CAPM. In subsequent studies Fama and French (1992, 1993, 1996, and 1998) develop a multi factor model by enhancing the single factor CAPM with size and value premium factors.

There are several theories that explain impact of anomalies on long term stock returns. In the past studies, specially the most common theories are:

1.1.1 Mean variance theory:

Markowitz (1952) has set the basis of modern portfolio theory. The theory explains the portfolios risk and return relationship through constructing an efficient portfolio frontier expressed as "a group of portfolio which offer more level of return at specified level of risk or suppose lowest possible level of risk for a specified level of return". Role of Markowitz comprises of the idea of diversification "Do not put all eggs in one basket," detection of the risk and return relationship of portfolios and identification of systematic risk. But he has not develop any formula or mathematical model for the measurement of the association of risk and return. Afterwards, Sharpe (1964) has formulated a sole period model for pricing of assets measure the systematic risk and portfolio risk. By means of the classical Mean Variance (MV) approach the portfolio form all the time result in severe portfolio weights that vary largely with the time and execute inadequately in the evaluation of sample plus the

forecasting is out-of-sample. A number of studies take no notice of the results, or discard the approach. Such as, Frankfurter, Phillips, and Seagle (1971) discover that the portfolio chosen on the basis of Markowitz MV standard is not as efficiently as a regularly weighted portfolio. Michaud (1989) reports that MV optimization is one of the exceptional mysteries in modern finance that has yet to meet with extensive acceptance by the investment community. The study has named this mystery the "Markowitz optimization enigma" and for the MV optimizers "estimation-error maximizer."

1.1.2 Efficient Market Hypothesis

The efficient markets hypothesis (EMH), commonly called as the Random Walk Theory, is the plan that existing information concerning the value of the firm, is completely imitated by the current stock prices and there is no way to be paid surplus profit, (supplementary to the market in general), through this information. It addresses the essential and exciting concerns in finance – why prices change in the security market and how these changes in the prices happen. It is commonly considered that markets of securities are tremendously competent in reflecting information regarding stocks of individuals and for the stock market overall. The established vision is that when information takes place, the spreading of news takes place very rapidly and it is integrated into the securities prices without any delay.

Fama (1970) ends up with the view that EMH sustain very comfortably, whereas Grossman and Stiglitz (1980) have discussed that it is not possible for a market to be completely efficient. Fama (1970) has proposed that efficient market is "a market in which the available information is fully reflected by prices." The examples of experiments carried out to state markets are inefficient contain Basu (1977), Stattman (1980), Loughran and Ritter (1995) and Frankel and Lee (1998). On the other hand, Fama (1998), Mitchell and Stafford (2000), and

Brav and Gompers (1997), argue on the opposite view. Mitchell and Stafford (2000) have observed the dependability of long term stocks prices execution approximations by means of mergers, SEOs and share repurchases. They discovered small indication of long- term abnormal returns as well once controlling the size premium and book to market effect. Finding is as well in accordance to the result of Brav and Gompers (1997) for initial public offering.

1.1.3 Capital Asset Pricing Model (CAPM)

The capital asset pricing model of Sharpe (1964), Lintner (1965) and Mossin (1966) has observed the expected rate of return on stock. William Sharpe provided the method to measure the systematic risk. Most academicians and practitioners use CAPM as the standard risk-return model. The fundamental idea of Capital Asset Pricing Model is that the investor is paid off for just that segment of risk which is un-diversifiable. This risk which is un-diversifiable with which expected return is correlated is termed as beta.

Expected returns can be examined with the actual rate of returns to determine if the asset or securities are overvalued, undervalued or they are accurately valued. Generally numbers of empirical studies support the fundamental capital pricing model because it is theoretically functional although several researchers have criticized to apply CAPM practicality. Black (1972) demonstrates that how the model needs to be accepted while borrowing which can be riskless is not available; the version of him is called the zero-beta CAPM. One more key alternative is from Brennan (1970), he has found that composition of the primary capital asset pricing model is reserved when taxes brought into the equilibrium Brennan (1972) explains that markets portfolios consists of non traded asset, but the model is the same as the formation of original CAPM. To encompass international investing the model can be

extended, (Solnik 1974 and Black 1974). Roll (1977) has criticized CAPM and argued that it cannot be examined as the market portfolios that contain all the assets which are risky are not observable. This discussion lead to a question for researchers worldwide to verify whether the CAPM is applicable or not

1.1.4 Arbitrage Pricing Theory

Ross (1976) has presented the arbitrage pricing theory (APT) which comes out as a substitute model that most likely conquer the problems that occur in CAPM although keeping up the fundamental message of the CAPM. The APT has approximated as an alternative and broader than the CAPM. Similar to CAPM, APT studies an association among expected return and risk via various assumption and measures. Like CAPM the APT is not severely depends on underlying market portfolios, which predict that expected return is affected only by market risk. APT believes that there are many factors like company specific, microeconomic, behavioural and statistical factors that affect return of portfolio. Ross argues to include other factors also to calculate return but he has not identify the factors or quality of factors. Chen and Roll (1986) choose the many macroeconomic and financial variables to serve as factors. The variables are return on equity, short and long term interest rates spread, default premium, aggregate consumption, growth rate and inflation rate.

Many anomalies have identified on the basis of APT in present literature Basu (1983) has observed the stock with less price earning ratio have returns which are high in comparison to stocks with high price earning ratio. In the same way Banz (1981) has studied that on the basis of risk adjustment the small stocks portfolio with low market capitalization all the time outperform large stocks portfolio. Bhandri (1988) has propose an additional variable for explaining expected returns he explained that high returns and high debt-equity ratios (leverage) are associated with each other as comparative to market beta. Similarly Stattman

(1980) and Rosenberg et al. (1985) have gave the concept of high BTM ratio stocks show high return as compared to CAPM betas.

Antoniou (1998) has found that factors which affect the returns of stocks in London Stock Exchange. Cho et al. (1986) as well observes the significance in result during test of the APT model in a site internationally. The validity of APT is also tested by Iqbal et al. (2012) in Pakistan market by means of many macro economic factors. So these macroeconomic factors are discovered which are extremely significant in describing fluctuations within stock returns and the positive results prove the validity as well as competency of APT in the prediction of stocks return for the future.

1.1.5 Fama and French three Factor Model

Fama and French (1992) have observe in explaining cross sectional variations in equity return the beta have little or no capability, but the variables like size premium and the book to market value of equity do. Supported upon APT framework Fama and French has contributed and proposed another model for asset pricing. Fama and French three factor model have study in many markets of the world however less work has done in the Pakistan.

The effect of size describes that small market capitalization firms show returns that exceed returns of big firms. The book-to-market effect of equity exhibit that returns is high for companies that have high book to market value ratio.

1.2 Problem Statement

An easy, theoretically sound and well-known approach to corporate valuation is valuing the firm as multiples on financials or operatings performances measures. The study explores whether equity multiple or Enterprise multiple has an impact on determination of stock

returns. A range of researches have investigate but little work has been done on comparative performance of equity and enterprise multiples. In this study the problem which is addressed through equity multiples is to examine whether equity multiple (P/E ratio) or enterprise multiple (EBITDA, Sale multiple) can be use to discover and forecast securities which are potentially mispriced, in Pakistan and emerging giants India and china.

1.3 Research Question

The study has following research question:

- Does enterprise multiple explain equity return in Emerging Asian Markets?
- Does equity multiple help in explaining equity returns in Emerging Asian Markets?
- Is value multiples priced by the markets?

1.4 Objective of the Study

The study aim following objectives:

- To investigates the effect of value multiple in Emerging Asian Markets.
- To examine the impact of value multiples is same or different.
- To provide the insight about the role of value multiple in explaining equity returns.

1.5 Significance of the Study

The study is conducted to explore the impact of two multiples, the Equity multiple and Enterprise multiple on stock returns, whether equity multiple or Enterprise multiple has an impact on determination of stock returns. Moreover, the study also explores whether the magnitude of effect is same or different for both enterprise and equity multiple in Pakistan,

India and China. The study further expands the model by investigating whether the value multiples are priced by the market.

Chordia and avramou (2006) have study the asset pricing model and anomalies the size, value premium and momentum anomalies use to explain the assets pricing model. The analysis from 1964 to 2001 concludes that size premium, book to market value and past return described by various assets pricing model.

Baker and Ruback (1999) investigate the issues which are econometric related to varying forms of computing multiples of the industry by comparing the multiples comparative performance on the basis of EBIT (earnings before interest and taxes), EBITDA and SALES. The study has empirical as well as theoretical proof the complete valuations error are relative with values.

Hassan and Javed (2011) have observed the association between size premium, value premium, and stock return in equity market of Pakistan. The results show that the size premium and BTM ratio are priced by the equity market and these are significant and positive for portfolio returns. Value premium is positively related to all portfolios except for stocks with low Book-to-Market ratio.

Yoon (2015) has conducted the study that broadly use three valuation multiples— the Price Earning ratio, EV-to-EBITDA multiples, and EV-to-Sales multiples—are able to recognize and forecast mispricing in security or not. In one factor CAPM, he discover that alphas of equal and value weighted both are economically and statistically significant, that suggests valuation multiples are capable of recognizing and forecast mispricing in securities.

There is less published research on complete and comparative performance of different multiples. Similarly in various markets of the world The Fama and French three factor model have been studied however little work has been done in Pakistan, India and China. This study

provides important insights to policy makers about how multiples affect abnormal returns. Findings of the study assist investors and firms in decision making about investing opportunities.

1.6 Plan of the Study

This study includes the plan as follows; Chapter 1 consists of introduction and theoretical background. Chapter 2 comprises of existing literature and Chapter 3 provides the methodology and data description is the third part of the study. Chapter 4 of the study contains empirical results and discussions. Finally, Chapter 5 consists of conclusion and directions for future research.

Chapter 02

Literature Review

The basic portfolio theory is develop by Markowitz (1952, 1959) who has gave the mathematical model for measuring expected rate of return for portfolios of asset and expected risk. (Markowitz, 1952) has argued that the investors can reduce the total risk of investment without giving up returns through investing in portfolios rather investing in single asset.

Sharpe (1964) has formulated basic portfolio analysis model. Sharp has extended the work of Markowitz (1952) that stocks are expected to go with the flow of market, he has presented model for computing expected systematic risk. The model of Sharpe believes that the returns of securities are linearly correlated to the variations in the market wide index, by a well known level of sensitivity; in addition, returns of securities are made with an already known mean and variance. Most important assumption of Markowitz model concerning the behaviour of investors is that investors prefer higher returns for a specified level of risk and in the same way less risk for specified range of expected returns.

One of the essential problems of modern financial economics has formalized only with the Capital Asset Pricing Model (CAPM): the measurements of the trade off among risk and expected returns. CAPM's proponents argue that, the measure of systematic risk comparative to the market portfolio is the only determinant of return. Sharpe describes that "through diversification, a few risk inherent in an asset be able to be avoid thus its whole risk is clearly not the related influence on the price of it.'' The CAPM predicts that securities expected returns are their market β s (Betas) positive linear function and β of market is sufficient to explain the expected return's cross-sections. CAPM relates to any asset's expected returns to

risk of market. It recognizes two kinds of risks – the risk linked with the market, systematic risk and company specific risk, unsystematic risk.

Black, Jensen and Scholes (1972) have examined the equity returns of New York stock exchange from 1926 to 1966, through relaxing number of assumptions in the traditional CAPM. The study finds efficient measure for mean of betas of the portfolios after making groups on the basis of beta and via dividing portfolio on the betas foundation, by eliminating several biases for instance measurement and selection bias. Pastor and Stambaugh (2000) have examined various investors' portfolio preference who modernizes the previous beliefs of them on the basis of asset pricing model of optimal portfolios. Though, the asset pricing model transformed significantly and with the modern approaches these differences are eliminated.

Black, Jensen and Scholes (1972) also observe the association among stock return and volatility from 1931 to 1965 the US market through using cross-section regression on monthly data. Findings suggest that it is significantly positive association present among return and beta. Therefore it has stated in US market the CAPM is a valid model. In the same way, Fama and MacBeth (1973) observe the behaviour of stocks for the period of 1926 to 1968 in US market. Stocks prices are obtain from companies listed at NYSE to calculate returns on monthly basis. The findings are link with the results of Black, Jensen and Sholes (1972) and reports significant and positive relationship with volatility and return. However with the passage of time Roll's evaluation has a lot of significance in provocation of the relevancy of Capital asset pricing model, so efficiency of CAPM experienced a lot of criticism. It is proved that practical and theoretical implication of Capital asset pricing model is different it is not possible to hold all the assets in portfolios otherwise taking the data of returns of a variety of assets category around the world. Roll (1977) has criticized the

isolated use of the CAPM and argued that markets portfolios that contain all the risky assets are not observable thus the CAPM is questionable. As a result this raises the subject of concern to scholars on the applicability of CAPM. Therefore, Fama and French (2004) have analysed value of CAPM and found out with the problems associated with applications of CAPM. Gupta and Sehgal (1993) find that CAPM didn't appear to be appropriate form of pricing the assets in the capital market of India the study finds weak relationship of risk and return.

Ross (1976) has projected the arbitrage model as an alternative to the CAPM given by Sharpe (1964), Lintner (1965) and Mossin (1966) which is constructed upon Markowitz portfolio theory, it is considered as main exploratory tool for explanation of the happening discovered for risky assets in capital market. But Ross did not discover the factor and total number of them. For identification of the factors many studies are conducted. So far the identified factors are macroeconomic factors, company specific factors and statistical factors. Then Roll and Ross (1983) have observed arbitrage-pricing theory as an improved measureable tool for equity capital's cost via contrasting it by CAPM of Sharpe.

Banz (1981) has discovered significant but negative association among size and return in NYSE with the help of two pass regression process of Fama and MacBeth (1973) from 1935 to 1976. It is accounted that size effect was not linear as well as not constant. Therefore smaller stock outperforms larger stock.

Reinganum (1981) concentrate on arbitrage pricing theory's capability to account for the dissimilarities in average return of both smaller and larger companies that were not discussed with capital asset pricing model. As compare to Reinganum work, Chen (1983) has presented contradictory findings as compare to APT with CAPM associated with the size effects. Similarly Cho et al. (1986) has observed significant outcomes by experimenting arbitrage

pricing theory in international surroundings. Same as above authors that give findings in the support of APT not the CAPM with the help of factor analysis and principal factor model, Priestley (1996) has observed a number of weaknesses in conventional method including 'autoregressive methodology' through establishing innovative methodology, in it Priestley used arbitrage pricing theory with existing specified variable. The research establish that traditional methods unsuccessful in identifying unpredicted part and this flaw condensed with the use of arbitrage pricing theory base on Kalman Filter.

Fama's and French's assets price models of is proposed for reaction of gathering empiricals confirmation CAPM execute inadequately in explanation of accomplished return. This model comprises of additional two risk factors which are size and book-to-market (BTM) correlated with stocks return. Findings of study point out that the companies with low BTM carry high ratios of earnings and with high BTM equity carry low ratios of earning. This model recognizes two factors which are value premium and size premium along with market premium that indicates variation in stock return. Fama and French (1993) outstretched the research by adding bond with stocks by using time-series regression through regressing returns of each month for bond as well as stocks upon five factors which were 1) return on the market portfolios (market premium), 2) a portfolio for book to market 3) size premium, 4) default and 5) term premium. The results point out that market, size and value premiums significantly affect stock return while term premium plus default premium have significant impact on return of bond. Three factor model has offered three factor asset price models upon these findings as an addition to CAPM. The new model explains cross sectional average return effectively as compare to CAPM on the basis of monthly data. The size premium effects suggest that the firms that had smaller market capitalization give higher return as compare to those which have high market capitalization. While the BTM value effect

concludes that the average returns of those corporations are low which contain low BTM value as compare to those corporations which have higher BTM ratio.

Aleati et al. (2000) have gathered the data from 1981 to 1993 to study the association among risk and return in stock market of Italy by using time series regression. The results show that fluctuations in market premium, interest rate, size premium and value premium signify that average Italian returns represent a sound summery of risk.

Chordia and avramou (2006) examine the asset pricing model and the anomalies size premium, value premium and momentum anomalies are use to describe asset pricing models from 1964 to 2001.Study concludes that size, BTM value and past return are explaine by various assets pricing models.

Yassalou and Liew (2000) examine that BTM, size and momentum are risk factors the study investigate that the profitability of value premium, size premium and momentum correlated with the future GDP growth. Study concludes that value premium and size premium contain significant information regarding future GDP growths.

Stattman (1980) has study the BTM effect for the first time in US market he finds that return is related positively to BTM ratio. Fama and French (1992) have explain a strong association among BTM ratio and average return and state that after controlling for size and BTM effects the average return and BTM still have strong association. The results show that firms with high BTM have high returns than low BTM firms and also BTM has ability to predict future returns. This result is observed by Rosenberg, Reid. Lanstein (1984), Lakonishok et al. (1994). Lakonishok, Shleifer and Vishny (1994) they have explained that investors depend much on past performance.

Bhandari (1988) has observed a positive relationship among leverage and average return. For the proxy of risk Bhandari used debt to equity ratio of a firm and propose an additional

variable for explaining expected returns i.e. leverage. In a cross-sectional analysis of size premium and market premium on New York Stock Exchange he tested all stocks and results show that leverage help to explain cross-sections of average returns. Rosenberg et al. (1985) in the US market studiy that average returns have positive relation with BTM of the firm. Similarly Chan et al. (1991) have studied in the Stock market of Japan that there exists a positive association among BTM and average returns. Chui and Wei (1998) in five emerging markets have investigated the association of BTM and average returns with size. Study concludes that the association among average stock returns is weak in all the five emerging markets. Though the BTM can describe the cross-section variations of average returns in Hong Kong, Korea and Malaysia whereas the size effect is significant in all the five markets but not in Taiwan.

Chan et al. (1991) have observed the association among stocks return along with the four variables i.e. size, BTM, cash flow yield and earning yield in stock market of Japan. The study concludes that size, BTM and cash flow yield value are priced by Japanese market. In contrast, Herrera and Lockwood (1994) report negative relationship of size with stocks return in Mexican stock exchange. Whereas, Berk (1997) gives argument that if size factor accurately integrated then small firms outperform large ones is not compulsory.

Daniel and Titman (1997) have described BTM effect and firm size as these variables are correlated through average returns of common stocks. The research is conducted on stock return of New York Stock Exchange during 1962 to 1991 and Fama & Macbeth (1973) regression is used for the analysis of data. Findings give the view that there exist no separate distresses factors. Stock containing smaller capitalization and high BTM ratio are said to have high returns.

Daniel et al (2001) have study the BTM effect in US and Japanese stock market from 1975 to 1997. The study concludes that the BTM ratio has weak tendency to forecast average stock returns in US market as compare to stock market of Japan. Lams (2002) has explain that there is positive association among BTM and average stock returns for Hong Kong Stock Exchange during July 1984 to June 1997.Wang and Lorio (2007) have explain that the BTM ratio has the adequate capacity for describing stocks retur in Chinese's stock market for 1994 to 2002 the provisional domestic betas and international betas are not associated with stock returns. Furthermore Lam (2002) has study that the beta is not capable to come out to describe the stock returns in Hong Kong, Nikkei Stock Exchange for 1984 to 1997. The study finds out that cross sectional changes in size, BTM and P/E ratio can be seen in Nikkei stock returns.

Ball and Brown (1968) are the pioneers to present proof of usefulness of the accounting earnings to investor in the valuation process of equity. Then Beaver, Clarke and Wright (1979) have document that earnings are key determinant for valuations of equity. Prior study on P/E ratio may come from 1934 when Graham and Dame have observed that key factors influencing P/E ratio are those factor which come from investor and firms. P/E ratio is not only important for banking sector for making good measures of regulation and also useful to differentiate stock investing risks and choose sensible investing strategy.

Boatsman and Baskin (1981) evaluate assessment precision of Price earnings multiple foundation of two set of similar companies from identical industry. Boatsman and Baskin find out the valuation error is minor when similar companies are selected on the comparable historical earning growths, comparative to when selected at random choice.

Shroff (1995) has examined that high P/E ratio and higher returns on equity of a firm's earnings show higher stock returns. As said by Barth et al. (1998) for equity valuation the

income statement plays vital role. Burgstahler and Dichev (1997) have observed that book value and earnings are related to each other perform as a part of equity values. So it states that the firm's value is described as function of earning and equity's book values. Therefore, high earning to book ratios results more related earnings as a determinant of equity value.

Penman (1998) has examined that the book value of equity gives more relevance as compared to earning in equity valuations for those firm which have higher earning to book ratios. Collin (1997) has stated earning's values plus book values of equities move in reverse with one another. Oau and Panmen (1988) observe the P/E ratio is a well forecaster of future's earning whereas share prices changes are bad forecasters of future earning.

Ou and Sepe (2002) have studied that the higher the spread among a firm's future and current earning prediction by analyst the low is the value relevant current earning and higher the market's relevancy on book value of equity. Nicholson (1960), McWilliams (1966), Latane et al. (1969), Dowen and Bauman (1986), Keim (1990) and Fama and French (1992) have given proof that stocks return and P/E ratios are correlated to each other.

Alford (1992) study the impact of selecting comparable on the basis of industry, size as well as earning growths upon accuracy of assessment by the use of price earnings multiple. Alford find the price error turn down when industry description selects similar companies is lessened by wide one digit SIC code to two and three digits categorizations, but when the four digits classifications is conceived there remains no additional enhancement.

Kaplan and Ruback (1995) have examined the properties of valuation and conclude the discount cash flows (DCF) assessment estimated executed value which is well rationally, the study concludes that simple EBITDA multiple end up with comparable valuations accuracy.

Tasker (1998) has investigated the cross industries pattern in the assortment of similar companies via investment banker and analyst in transactions of the acquisition. The results of the study explain that the ordinary use of multiples which are specific to industry is constant with many multiples which are highly appropriate in different industries.

Beatty, Riffe, and Thompson (1999) study many co-linear combination of value driver originated by earning, book value, dividend, and total assets. The study documents the advantages of usage of the harmonic mean, and initiated the price scaled regression. The study observes the most excellent performance is attained by the use of (1) derived weights of harmonic means book and earning multiple (2) on earnings and book value the coefficient from price scaled regression.

Baker and Ruback (1999) investigate the issues which are econometric related to varying forms of computing multiples of the industry they compared the multiples comparative performance on the basis of EBIT (earnings before interest and taxes), EBITDA and SALES. The study gives the empirical as well as theoretical proof that the complete valuations error are relative with values. Baker and Ruback further explain by the use of the harmonic mean the industry multiples estimation is closer to approximation of minimum variance estimator (MVE) on the basis of Monte Carlo imitations. By the use of MVE as a standard, they find the means lead substitute simple estimator as the means which are simple as well as medians, plus value weighted means. Ultimately, the study uses the estimator of the harmonic means for the calculation of multiples on the basis of EBITDA, EBIT, plus sale, and found out the EBITDA of industry adjusted executes well as compare to EBIT along with sale. Besides just focusing on historical accounting number, Kim and Ritter (1999), in their study about how initial public offering price is put by the use of multiples, to a conservative list of values driver include forecasted earnings, which contain book values, earning, cash flow, and sale.

They find that in valuation accuracy the forward price earning multiple lead other all multiples based on forecasted earning, means the Earnings per share prediction for next year lead the recent year's Earnings per share estimate. Huge sets of data lessen the multiples performance, as the researchers choose similar firms in an automatic way. In difference, participants of the market might carefully choose comparable firms and focus on factors which are situation specific are not considered by the researchers. Tasker (1998) investigates the cross industries pattern in the assortment of similar companies via investment banker and analyst in transactions of the acquisition. The results of the study explain that the ordinary use of multiples which are specific to industry is constant with many multiples which are highly appropriate in different industries.

Ansari (2000) have said that stocks return is discovered by its equal point of systematic risks or betas. Putting in other way, the markets do not compensate the unnecessary risks. These models have claim in a range of locations such as computing costs of capitals, event study, plus managing and assessment of the portfolio. It has facilitated economists for computation of risks and the compensation for holding it.

Liu, Nissim, and Thomas (2002) have studied comprehensive list of multiple's valuation performance and find that forward earnings derived multiples explain stock prices amazingly well. In following order they rank the multiples: first and most accurate are the forward-earnings measures and second are the historical measures. Third are the Cash flows measure and book value of equity and worst are the sale multiples.

Hassan & Javed (2011) have investigated in the Pakistani equity market the assets pricing mechanisms. Fama and French three-factor model have been tested to discover the combined effects of size and the value premium. The results show that the value premium factor is significantly positive for every portfolio apart from stocks with low book to market ratio.

They observe that the BTM effect is present in equity market of Pakistan. Higher BTM stocks outperform lower BTM stock. Size premium is significantly positive for smaller portfolios return however Size premium is not significant for big stocks portfolio. Though, variations can be seen for size effects.

Yoon (2015) conducts study if broadly use three valuations multiple— Price Earning ratio, EV-to-EBITDA multiples, and EV-to-Sales multiples—be able to recognize plus forecast mispricing in security. In one factor CAPM, he find the alphas of equally and value weighted both are significant economically and statistically that suggests valuation multiples be capable of recognizing and forecast mispricing in securities. Further he find the returns for equally weighted which are significant by controlling size premium and value premium in regression of three-factor. And by controlling size plus value, the returns which are value weighted, i.e. when less weight is given to small firms they lose the significance in them. These results show that the mispriced securities are concerned in small size firms and thus measurable in equally weighted designs or by controlling size in multi factor model.

Above mention literature offer empirical support that the Value premium factor is significantly positive for every portfolio apart from stocks having low BTM ratio and BTM effect is present in equity market of Pakistan. Higher BTM stocks outperform lower BTM stock. Size premium is significantly positive for smaller portfolios return however it is not significant for big stocks portfolio. Though, variations can be seen for size effects. Returns of firms with low BTM were low as compare to those firms which have higher BTM ratio. BTM effect and firm size are correlated through average returns of common stocks. Stocks containing smaller capitalization and high BTM ratio are said to have high returns. If size factor accurately integrated then small firms outperformed large ones is not compulsory. Many published papers on multiples studied a limited range of firm years and only a fix

number of multiples. The company specific multiples is constant with many multiples which are highly appropriate in different industries. Forward earnings derived multiples explain stock prices amazingly well. Three valuations multiple—Price Earning ratio, the EV-to-EBITDA multiples, and EV-to-Sales multiples—are of recognizing and forecast mispricing in securities.

Chapter 03

Data and Methodology

3.1 Data Description

The study explains the impact of equity and enterprise multiples on stock returns of stocks listed at the stock market of Pakistan, India and China. This study employs data of 240 companies listed at Karachi Stock Exchange (KSE), Shanghai Stocks Exchange (SSE), and Bombay Stocks Exchange (BSE) for the during June 2000 to June 2015.

The sample contains the stocks from non-financial sector and companies have been selected upon market capitalization from each country. The reason for not selecting companies from financial sector is the difference in accounting year dates. The accounting year dates. The accounting year in Pakistan for financial firms close on 31 December and for non-financial sector it closes on 30 June.

Monthly stock prices data for Pakistan is collected from Karachi stock exchange and business recorder website. For India, data has been taken from Bombay stock exchange of India. Monthly turnover rate and monthly stock prices for China have been collected from Shanghai Stock exchange and Taiwan Economic Journal Database (TEJ). The turnover ratio of the firms has been measured through dividing turnover by market capitalization. Data for Monthly risk free rate is downloaded from the website of the International Features Standards (IFS) for all the three emerging countries markets, while the data for index for all three countries has been collected from Yahoo Finance website.

Firms are required to have full data with no missing values for earnings per share (EPS), earnings before interest, tax depreciation and amortization (EBITDA).

3.1.1 Variable Description

The study examines the role of multiples in influencing stocks return. Multiples which are used as value premium in this study are: Book-to-market ratio, the Price Earning ratio, the EBITDA multiples, and the sales multiples, calculated as in equations:

Book-to-market ratio determines the value of securities either overvalue or undervalue by diving book-value of the firm by its market value. Stattman (1980) documented the BTM ratio effect for the first time.

$$\text{Book to market ratio} = \frac{\text{Book value of equity}}{\text{Market value of equity}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

The price earning ratio explains that how much an investor wants to pay for earnings per share of the firm. The P/E ratio effect was first studied by Nicholson (1960).

$$\frac{\text{Price}}{\text{Earnings}}\text{ratio} = \frac{\text{Price}}{\text{Earnigs Per Share}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The EBITDA Multiple determines a company's value by including the debt of the company which other multiples like P/E do not include. EBITDA multiple permit us to compare firms with different capital structures.

$$\text{EBITDA Multiple} = \frac{\text{Enterprise Value}}{\text{EBITDA}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Sales Multiple gives an investor a quantitative measure of the cost of purchasing sales of the company. High Sales Multiple shows that the sale will increase in future and low Sales Multiple is a sign of lower future sales.

$$\text{Sales Multiple} = \frac{\text{Enterprise Value}}{\text{Sales}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (4)$$

Enterprise Value is a measure of a company's total value, the worth of a company. Yoon (2015) calculated Enterprise Value as:

Enterprise Value = Market Value of Equity + Book Value of debt............ (5)

Where

Market Value of Equity = Price * Shares Outstanding

And Book Value of Debt = Short Term Debt + Long Term Debt

The study uses One-Factor CAPM regression analysis and Fama and French Three Factor Regression analysis.

Following is the construction of portfolios:

3.1.2 Portfolios Constructions:

i. For sizes sort portfolio, market's capitalizations of 80 firms are calculate. After that company is arrange upon markets capitalization.
ii. 40 large companies are categorized as B (big) and 40 small companies are categorized as S (small) on the basis of median. Then for big and small companies the average returns are calculated.
iii. Now the group of 40 B companies sorted first upon high book to market ratios and low book to market ratios (BTM), and divided into 20 high BTM ratio i.e B/H and 20 low BTM ratio B/L companies.
iv. These 40 big companies are again sorted on the basis of high and low Price earnings ratio (P/E) and then divided into 20 high P/E ratio B/H_P and 20 low P/E ratio B/L_P.

v. Then these 40 big companies are again sorted on the basis of high and low Enterprise value to EBITDA and then divided into 20 high EV-to-EBITDA B/H_E 20 low EV-to-EBITDA B/L_E.

vi. Again 40 big companies are sorted on the basis of high and low Enterprise value to Sales and then divided into 20 high EV-to- Sales B/H_S 20 low EV-to- Sales B/L_S.

vii. In the same way the 40 small companies are also categorized on the basis of high and low BTM ratios and divided into 20 high BTM ratio S/H, 20 companies with low BTM ratio as S/L.

viii. These 40 small companies are again sorted on the basis of high and low Price earnings ratio (P/E), and divided into 20 high P/E ratio S/H_P and 20 companies with low P/E ratio as S/L_P.

ix. Then these 40 small companies are again sorted on the basis of high and low Enterprise value to EBITDA, and divided into 20 high EV-to-EBITDA S/H_E and 20 companies with low EV-to-EBITDA as S/L_E.

x. Again 40 small companies are sorted on the basis of high and low Enterprise value to Sales. 20 companies with high EV-to- Sales are called as S/H_S, 20 companies with low EV-to- Sales as S/L_S. Average return for S/H and S/L companies is calculated.

xi. Portfolios which are expressed above have been created and the method has been repeated for period 2000 to 2015.

3.1.3 Variable construction:

All portfolios S, B, B/H, S/H, B/L and S/L average return is calculated and after that these averages are utilize to construct size and value premium. The construction of the size premium and value premiums is as follows:

$$\text{Size premium} = SMB = 1/2\ [(S/H - B/H) + (S/L - B/L)] \quad \text{..... (i)}$$

Value premium = HML = ½[(S/H – S/L) + (B/H – B/L)]..... (ii)

1. Book to Market = HML = 1/2[(S/H_{BTM} – S/L_{BTM}) + (B/H_{BTM} – B/L_{BTM})]..... (iii)
2. Price Earnings Ratio = LMH = 1/2[(S/L_p – S/H_p) + (B/L_p – B/H_p)]..... (iv)
3. EV-to-EBITDA = HML = 1/2[(S/H_E – S/L_E) + (B/H_E – B/L_E)]..... (v)
4. EV-to-Sales = HML = 1/2[(S/H_S – S/L_S) + (B/H_S – B/L_S)]..... (vi)

Market premium = MKT = (R_{mt} – R_{ft})..... (vii)

And

$$R_{mt} = I_n (I_t/I_{t-1})$$

R_{mt} is the market returns for the month‘t’ and I_t and I_{t-1} are the closing values of index for month ‘t’ and ‘t_{-1}’. R_{ft} is the risk free rates (Treasury bill rates).

3.1.4 Model Specification:

The study measures abnormal return comparative to the two models of expected returns: the Sharpe (1964) - Lintner (1965) one factor CAPM and the Fama-French three-factor model (Fama and French 1993). The Sharpe-Lintner CAPM defines expected return on securities as a positive linear function of their market betas. Fama and French (1996) explain that the three factor model:

Rt - Rft = α + β1 (Market premium) + error term

$R_t - R_{ft} = \alpha + \beta_1 MKT_t + e_t$ ..... (3)

$R_t - R_{ft} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 BTM_H\text{-}BTM_L$ ..... (3.1)

$R_t - R_{ft} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 P/E_L\text{-}P/E_H$ ..... (3.2)

$R_t - R_{ft} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3$ EV-to-EBITDA$_H$- EV-to-EBITDA$_L$ ..... (3.3)

$R_t - R_{ft} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3$ EV-to-Sales$_H$- EV-to-Sales$_L$ .... (3.4)

This explains the most anomalies from the Capital Asset Pricing Model addressed in the former empirical literature. The need for broaden the One Factor CAPM to the three factor model of Fama and French is to acquire the effects of size and value that are consistently related with the return.

Here,

- R_t= Predicted rate of return of portfolio for period ' *t* '
- R_{ft} = Risk free rate
- α = The management's impact (Alpha)
- MKT_t = Market Premium = Rm-Rf
- SMB_t = Size Premium = Small- Big
- HML_t = Value Premium = High- low
- BTM_H-BTM_L = Book To Market Ratio = High- low
- P/E_L-P/E_H = Price Earnings Ratio = low- High
- EV-to-EBITDA$_H$- EV-to-EBITDA$_L$ = Enterprises Values to Earning Before Interests Taxes Depreciations & Amortizations = High- low
- EV-to-Sales$_H$- EV-to-Sales$_L$ = Enterprise Value-to-Sales = High- low

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Results

Descriptive statistic is use to explain the behaviour of the data. The mean is the measure of central tendency and deviation from mean is reflected by standard deviation. Along with mean and standard deviation the median, maximum, minimum, Skewness and Kurtosis are also observed in the table.

Table 4.1 (a) Descriptive statistics Size-B/M ratio sorted portfolio (India)

Variable	P	S	S/H	S/L	B	B/H	B/L
Mean	0.0087	0.0137	0.0151	0.0109	0.0119	0.0122	0.0103
Median	0.0119	0.0105	0.0131	0.0101	0.0097	0.0202	0.0072
Maximum	0.2317	0.2586	0.3375	0.2532	0.2081	0.2353	0.2177
Minimum	-0.3138	-0.2395	-0.2438	-0.3283	-0.4053	-0.3095	-0.5012
Std. Dev.	0.0718	0.0780	0.0790	0.0804	0.0750	0.0905	0.0839
Skewness	-0.5027	-0.0311	0.1724	-0.4535	-1.1027	-0.4697	-1.6442
Kurtosis	2.4917	1.4406	1.3360	1.8514	4.7315	1.6063	7.3165

Note: P demonstrates average portfolio of 80 companies, S 40 small companies, B 40 big companies, S/H 20 high companies sorted on book to market ratio among 40 small companies, S/L 20 low companies among small, B/H among big companies the 20 high and B/L 20 low companies among 40 big companies.

Statistical properties of portfolio sorted on size (market capitalization) and value premium (book-to-market) India is report on above tables. Result shows S/H is high returns and low risks portfolios as compare to B/H, so S/H outperform B/H. But the S/L is high return and low risk portfolios than B/L.

The mean value and standard deviation of S is 0.0137 and 0.0780 and for B is 0.0119 and 0.0750. Maximam values for B is 0.2081 whereas S is 0.2586. Likewise, the values for minimum of B is -0.4053 for S it is -0.2395. For BTM ratios, the mean values of B/H, S/H are 0.0122 and 0.0151 and value of standard deviation for B/H, S/H are 0.0905, 0.0790 the

maximum value and minimum value of B/H and S/H is 0.2353 and 0.3375 and -0.3095 and -0.2438. The B/L and S/L mean value is 0.0103 and 0.0109, standard deviation 0.0839 and 0.0804 and maximum values of both are 0.2177 and 0.2532 whereas minimum values are -0.5012 and -0.3283.

Skewness demonstrates the data distribution. Skewness must be zero if the data is normally distributed, which shows that the data is symmetrical and it has graph of bell shape. However, for the real world data the perfect zero skewness is unlikely to a certain extent. If it is positive that shows the data is skewed positively and skewed at right means the longer is the right tail than the left and if it is showing negatives value which reveals the data is skewed negative and left tails are longer as compare to right.

In the table 4.1 (a) the results of skewness are negative for all portfolios except S/H, the values are B (-1.1027), B/H (-0.4697), B/L (-1.6442), S (-0.0311) and S/L (-0.4535) which show negatively skewed distribution of data while positive for only S/H (0.1724). However the skewness here is marginal.

The values of kurtosis show the comparative pointedness or smoothness of distribution of data contrast to the data's normal distribution. Data with value of approximately 3 is normaly distributed. More than 3 Kurtosis means the data's distributed pointed and leptokurtic distribution (very tall) wherease below 3 kurtosis means the data is smooth and platykurticaly distributed (very flat) , the results of Kurtosis point out that data distribution is relatively pointed for B and B/L portfolios while smooth for other all portfolio.

Table 4.1 (b) Descriptive statistics Size- P/E Ratio sorted portfolios (India)

Variable	S/H_P	S/L_P	B/H_P	B/L_P
Mean	0.0124	0.0179	0.0111	0.0141
Median	0.0144	0.0108	0.0088	0.0202
Maximum	0.2755	0.3310	0.2331	0.1830
Minimum	-0.2807	-0.2873	-0.4721	-0.3385
Std. Dev.	0.0791	0.0791	0.0831	0.0911
Skewness	-0.3478	0.2555	-1.4895	-0.6650
Kurtosis	1.8806	1.3617	6.2283	1.8507

Note: S/H_P demonstrates 20 high companies sorted on the basis of price earnings ratio among 40 small companies, S/L_P 20 low companies among small, B/H_P among big companies the 20 high and B/L_P 20 low companies among 40 big companies.

Sorted on size (market capitalization) and value premium (Price earning ratio) Statistical properties of Indian portfolios report on above table. Result shows S/L_p are higher return and lower risks portfolio compare to B/L_P, so S/L_P outperform B/L_P. But S/H_P is high return and low risk portfolios than B/H_P.

For Price earning ratio, the mean values of B/L_P and S/L_P are 0.0141 and 0.0179 and value of standard deviation for B/L_P and S/L_P are 0.0911 and 0.0791 the maximum value and minimum value of B/L_P and S/L_P is 0.1830 and 0.3310 and -0.3385 and -0.2873 and for the B/H_P and S/H_P mean value is 0.0111 and 0.0124, standard deviation 0.0831 and 0.0791 and maximum values of both are 0.2331 and 0.2755 whereas minimum values are -0.4721 and -0.2807.

In the table 4.1 (b) the results of skewness are negative for all portfolios except S/H_P, the values are B/L_P (-0.6650), B/H_P (-1.4895), and S/H_P (-0.3478) which show negatively skewed distribution of data while positive for only S/L_P (0.2555). However the skewness here is marginal.

The results of Kurtosis point out that data distribution is relatively pointed for B/H_P portfolios while smooth aimed at other portfolio.

Table 4.1(c) Descriptive statistics Size- EV to EBITDA sorted portfolios (India)

Variable	S/H_E	S/L_E	B/H_E	B/L_E
Mean	0.0185	0.0109	0.0161	0.0095
Median	0.0157	0.0094	0.0202	0.0132
Maximum	0.2777	0.2454	0.2148	0.2014
Minimum	-0.2396	-0.3305	-0.4028	-0.4078
Std. Dev.	0.0813	0.0814	0.0862	0.0819
Skewness	0.1727	-0.3614	-0.9445	-1.2004
Kurtosis	1.0217	1.9894	3.5834	4.1852

Note: S/H_E demonstrates 20 high companies sorted on EV to EBITDA among 40 small companies, S/L_E 20 low companies among small, B/H_E among big companies the 20 high and B/L_E 20 low companies among 40 big companies.

Statisticals property for portfolio sort on size (market capitalization) and value premium (enterprise value to EBITDA) of Indian reports in table 4.1(c). Result shows the S/H_E are higher returns and lower risks portfolios compare to B/H_E, so S/H_E outperform B/H_E. But compare B/L_E the S/L_E are higher returns and low risks portfolios.

For enterprise value to EBITDA, the mean values of B/H_E and S/H_E are 0.0161 and 0.0185 and value of standard deviation for B/H_E and S/H_E are 0.0862 and 0.0813 the maximum values and minimum value of B/H_E and S/H_E is 0.2148 and 0.2777 and -0.4028 and -0.2396 and for the B/L_E the S/L_E mean value is 0.0095 and 0.0109, standard deviation 0.0819 and 0.0814 and maximum values of both are 0.2014 and 0.2454 whereas minimum values are -0.4078 and -0.3305.

In the table 4.1 (c) the results of skewness are negative for all portfolios except S/H_E, the values are B/H_E (-0.9445), B/L_E (-1.2004) and S/L_E (-0.3614) that shows negative skeweness distributions for data while positively skwed for only S/H_E (0.1727). However the skewness here is marginal.

The results of Kurtosis point out that data distribution is relatively pointed B/L_E portfolios while smooth for all other portfolios.

Table 4.1 (d) Descriptive statistics Size- EV to sales sorted portfolios (India)

Variable	S/H_S	S/L_S	B/H_S	B/L_S
Mean	0.0164	0.0119	0.0154	0.0113
Median	0.0113	0.0086	0.0067	0.0114
Maximum	0.3199	0.2310	0.2440	0.1722
Minimum	-0.3008	-0.2710	-0.3551	-0.4555
Std. Dev.	0.0798	0.0766	0.0917	0.0810
Skewness	0.0102	-0.1841	-0.6690	-1.2843
Kurtosis	1.5406	1.2752	2.9581	5.2129

Note: S/H_S demonstrates 20 high companies sorted on EV to sales multiple among 40 small companies, S/L_S 20 low companies among small, B/H_S among big companies the 20 high and B/L_S 20 low companies among 40 big companies.

Statistical properties of portfolios sorted on size (market capitalization) and value premium (enterprise value to sales) of Indian reportes on table 4.1(d). Result shows the S/H_S are higher returns and lower risks portfolios compare to B/H_S, S/H_S outperform B/H_S. But as compared to B/L_S the S/L_S is higher returns and lower risks portfolios.

For enterprise value to sales, mean values of B/H_S and S/H_S are 0.0154 and 0.0164 and value of standard deviation for B/H_S and S/H_S are 0.0798 and 0.0917 the maximum value and minimum value of B/H_S and S/H_S is 0.2440and 0.3199 and -0.3551and -0.3008 and for the B/L_S and S/ mean value is 0.00113 and 0.0119, standard deviation 0.0810 and 0.0766 and maximum values of both are 0.1722 and 0.2310 whereas minimum values are -0.4555 and -0.2710.

In the table 4.1 (d) the results of skewness are negative for all portfolios except S/H_S, the values are B/H_S (-0.6690), B/L_S (-1.2843) and S/L_S (-0.1841) that shows negative skeweness distributions for data but positively of only S/H_S (0.0102). However the skewness here is marginal. The results of Kurtosis point out that data distribution is relatively pointed for B/L_S portfolios while smooth for all other portfolios.

Above tables indicates that high return portfolios are S/H and B/H but S/H portfolio more efficiently proposes higher returns at low levels of risks. On SMB and HML the positive

coefficient estimate recommend that on average the small firms had high return as compared to large firms. In small as well as big stock divisions higher BTM stock have high return as compare to lower BTM stock, B/L gives lower return.

It is also reported that S and S/L performs well compare to B and B/L that are consistent to the size effects report in different equity's market around globe. The risk based explanations of high return is support via standards deviations for dissimilar portfolio. In the same way, this extra returns appear to be effect of high risks association by small size portfolio. Low price earning stocks outperformed high price earning stocks (Huberts and Levinson 1993). High Enterprise value to EBITDA and high enterprises values to sale outperform low Enterprises values to EBITDAs and low enterprises values to sale. It is aligned to empiricals works the bigger company earns low rates for returns. Stock with lower BTM ratios underperform as compared to stock having higher BTM returns (Stattmen 1980). So the finding for this study are aligned with Fma and French's (1992, 1993, and 1996).

Table 4.1.1 (a) Descriptive statistics Size-B/M ratio sorted portfolios (Pakistan)

Variable	P	S	S/H	S/L	B	B/H	B/L
Mean	0.0089	0.0140	0.0159	0.0121	0.0070	0.0122	0.0019
Median	0.0089	0.0085	0.0083	0.0104	0.0086	0.0119	0.0060
Maximum	0.2317	0.2586	0.3375	0.2532	0.2081	0.2353	0.2177
Minimum	-0.3138	-0.2395	-0.2438	-0.3283	-0.4053	-0.3095	-0.5012
Std. Dev.	0.0656	0.0728	0.0697	0.0705	0.0668	0.0878	0.0746
Skewness	-0.7021	0.0426	0.1944	-0.6510	-1.5946	-0.5422	-2.3306
Kurtosis	4.6630	2.6479	1.8619	4.5083	9.0995	3.5962	13.2926

Note: P demonstrates average portfolio of 80 companies, S 40 small companies, B 40 big companies, S/H 20 high companies sorted on book to market ratio among 40 small companies, S/L 20 low companies among small, B/H among big companies the 20 high and B/L 20 low companies among 40 big companies.

Statistical properties of portfolio sorted on size (market capitalization) and value premium (book-to-market) of Pakistan's report on table 4.1.1(a). Result shows the S/H are higher returns and lower risks portfolios compare to B/H, so S/H outperform B/H. But compare to B/L the S/L is high returns and lower risks portfolio.

The mean value and standard deviation of S is 0.0140 and 0.0728 and for B is 0.0070 and 0.0668. Maximum value of S is 0.2586 and B is 0.2081. Likewise, the value of minimum for S it is -0.2395 and for B is -0.4053. For BTM ratio, the mean values of S/H and B/H are 0.0159 and 0.0122 and value of standard deviation for S /H and B /H are 0.0697 and 0.0878 the maximum value and minimum value of S /H and B /H is 0.3375 and 0.2353 and -0.2438 and -0.3095. The S/L and B/L mean value is 0.0121 and 0.0019, standard deviation 0.0705 and 0.0746 and maximum values of both are 0.2532 and 0.2177 whereas minimum values are -0.3283 and -0.5012.

Skewness demonstrates the data distribution. Skewness must be zero if the data is normally distributed, which shows that the data is symmetrical and it has graph of bell shape. However, for the real world data the perfect zero skewness is unlikely to a certain extent. If it is positive that shows the data is skewed positively and skewed at right means the longer is the right tail than the left and if skewned showing negatively valued that mean the data skeweness negatively and left tailed is long as compare to right.

In the table 4.1.1 (a) the results of skewness are negative for B, B/H, B/L and S/L and positive for S and S/H, the values are B (-1.5946), B/H (-0.5422), B/L (-2.3306), and S/L (-0.6510) that shows negative skeweness distributions for data but positively S (0.0426) and S/H (0.1944).

The values of kurtosis show the comparative pointedness or smoothness of distribution of data contrast to the data's normal distribution. Data with normally distributed have kurtosis value of approximately 3. More than 3 Kurtosis means the data's distributed relative pointed and leptokurtic distributions (very taller) and less to 3 kurtosis means the data is smooth and platykurticaly distributed (very flat) , the results of Kurtosis point out that data distribution is relatively pointed for B, B/H, B/L and S/L portfolios while smooth for other portfolio.

Table 4.1.1 (b) Descriptive statistics Size- P/E Ratio sorted portfolios (Pakistan)

Variable	S/H_P	S/L_P	B/H_P	B/L_P
Mean	0.0083	0.0099	0.0082	0.0093
Median	0.0063	0.0070	0.0067	0.0081
Maximum	0.0931	0.1346	0.0819	0.1120
Minimum	-0.0555	-0.1306	-0.0692	-0.0515
Std. Dev.	0.0178	0.0197	0.0198	0.0292
Skewness	-0.7567	0.2611	-0.3639	-1.2656
Kurtosis	3.2130	11.2512	3.8743	5.3808

Note: S/H_P demonstrates 20 high companies sorted on the basis of price earnings ratio among 40 small companies, S/L_P 20 low companies among small, B/H_P among big companies the 20 high and B/L_P 20 low companies among 40 big companies.

Statistical properties of portfolios sorted on size (market capitalization) and value premium (Price earning ratio) of Pakistan's reports in table 4.1.1(b). Result shows the S/L_P is higher returns and lower risks portfolios compare to B/L_P, so S/L_P outperform B/L_P. But compared to B/H_P the S/H_P is high return and low risk portfolios.

For Price earning ratio, the mean values of S/L_P and B/L_P are 0.0099 and 0.0093 and value of standard deviation for S/L_P and B/L_P are 0.0197 and 0.0292 the maximum value and minimum value of S/H_P and B/H_P is 0.1346 and 0.1120 and -0.1306 and -0.0515 and for the S/H_P and B/H_P mean value is 0.0083 and 0.0082, standard deviation 0.0178 and 0.0198 and maximum values of both are 0.0931 and 0.0819 whereas minimum values are -0.0555 and -0.0692.

In the table 4.1.1 (b) the results of skewness are negative for all portfolios except for S/H_P, the values are B/L_P (-1.2656), B/H_P (-0.3639), and S/H_P (-0.7567) which show negatively skewed distribution of data while positive S/L_P (0.2611). However the skewness here is marginal.

The results of Kurtosis point out the data's distributed relative pointed for all portfolio.

Table 4.1.1(c) Descriptive statistics Size- EV to EBITDA sorted portfolios (Pakistan)

Variable	S/H_E	S/L_E	B/H_E	B/L_E
Mean	0.0094	0.0071	0.0076	0.0063
Median	0.0074	0.0066	0.0070	0.0089
Maximum	0.1026	0.1529	0.0738	0.1112
Minimum	-0.0640	-0.1189	-0.0554	-0.0630
Std. Dev.	0.0167	0.0246	0.0189	0.0289
Skewness	0.6705	-0.4832	-0.5066	-1.2142
Kurtosis	4.3742	11.3216	3.3804	3.2442

Note: S/H_E demonstrates 20 high companies sorted on EV to EBITDA among 40 small companies, S/L_E 20 low companies among small, B/H_E among big companies the 20 high and B/L_E 20 low companies among 40 big companies.

Statistical properties of portfolios sorted on size (market capitalization) and value premium (enterprise value to EBITDA) of Pakistan's report in table 4.1.1(c). Result shows the S/H_E is higher returns and lower risks portfolios compare to B/H_E, so S/H_E outperform B/H_E. But compare to B/L_E the S/L_E portfolio higher returns and low risks portfolios.

For enterprise value to EBITDA, the mean values of S/H_E and B/H_E are 0.0094 and 0.0076 and value of standard deviation for S/H_E and B/H_E are 0.0167 and 0.0189 the maximum value and minimum value of S/H_E and B/H_E is 0.1026 and 0.0738 and -0.0640 and -0.0554 and for the S/L_E and B/L_E mean value is 0.0071 and 0.0063, standard deviation 0.0246 and 0.0289 and maximum values of both are 0.1529 and 0.1112 whereas minimum values are -0.1189 and -0.0630.

In the table 4.1.1 (c) the results of skewness are negative for all portfolios except for S/H_E, the values are B/H_E (-0.5066), B/L_E (-1.2142), and S/L_E (-0.4832) which show negatively skewed distribution of data while positive for S/H_E (0.6705). However the skewness here is marginal.

The results of Kurtosis point out the data's distributed is relative pointed whole portfolio.

Table 4.1.1 (d) Descriptive statistics Size- EV to sales sorted portfolios (Pakistan)

Variable	S/H_S	S/L_S	B/H_S	B/L_S
Mean	0.0091	0.0089	0.0090	0.0087
Median	0.0055	0.0061	0.0071	0.0065

Maximum	0.1342	0.1288	0.1048	0.0978
Minimum	-0.0758	-0.1266	-0.0404	-0.0893
Std. Dev.	0.0179	0.0225	0.0205	0.0299
Skewness	1.6136	-0.1104	-1.5202	-0.5757
Kurtosis	10.3761	8.7662	6.2119	4.5536

Note: S/H_S demonstrates 20 high companies sorted on EV to sales multiple among 40 small companies, S/L_S 20 low companies among small, B/H_S among big companies the 20 high and B/L_S 20 low companies among 40 big companies.

Statistical properties of portfolios sorted on size (market capitalization) and value premium (enterprise value to sales) of India's report on table 4.1(d). Result shows the S/H_S is higher returns and lower risks portfolios compare to B/H_S, so S/H_S outperform B/H_S. In the same way, as compared to B/L_S the S/L_S portfolio higher returns and lower risks portfolios.

For enterprise value to sales, the mean values of S/H_S and B/H_S are 0.0091 and 0.0090 and value of standard deviation for S/H_S and B/H_S are 0.0179 and 0.0205 the maximum value and minimum value of S/H_S and B/H_S is 0.1342 and 0.1048 and -0.0758 and -0.0404 and for the S/L_S and B/L_S mean value is 0.0089 and 0.0087, standard deviation 0.0225 and 0.0299 and maximum values of both are 0.1288 and 0.0978 whereas minimum values are -0.1266 and -0.0893.

In the table 4.1.1 (d) the results of skewness are negative for all portfolios except for S/H, the values are B/H (-1.5202), B/L (-0.5757), and S/L (-0.1104) which show negatively skewed distribution of data while positive for S/H (1.6136).

The results of Kurtosis point out that data distribution is relatively pointed for all portfolios.

Above tables indicates that high return portfolios are B/H and S/H portfolios. Though, S/H is efficient because it proposes higher returns at low levels of risks. On SMB and HML the positive coefficient estimate recommend that on average the small firms had high return as compared to large firms. In small as well as big stock divisions, higher BTM stock have high return compare to lower BTM stock, B/L gives lower return.

It is also reported that S and S/L performs well compare to B and B/L consistent with the sizes effects report on different equity's market around globe. The risk based explanations of high return is support via standards deviations of different portfolio. In the same way, this extra returns appear to be effect for high risks associate with smaller size portfolio. Low price earning stocks outperformed high price earning stocks (Huberts and Levinson 1993). High Enterprise value to EBITDA and high enterprises values to sale outperform low Enterprises values to EBITDAs and low enterprises values to sale. It is aligned to empiricals works the bigger company earns low rates for returns. Stock with lower BTM ratios underperform as compared to stock having higher BTM returns (Stattmen 1980). So the finding for this study are aligned with Fma and French's (1992, 1993, and 1996).

Table 4.1.2 (a) Descriptive statistics Size-B/M ratio sorted portfolios (China)

Variable	P	S	S/H	S/L	B	B/H	B/L
Mean	0.0092	0.0169	0.0135	0.0090	0.0066	0.0097	0.0048
Median	0.0082	0.0158	0.0135	0.0136	0.0033	0.0089	0.0051
Maximum	0.1417	0.2228	0.1700	0.2767	0.1344	0.1493	0.1373
Minimum	-0.1358	-0.2167	-0.1627	-0.3233	-0.1059	-0.1353	-0.1709
Std. Dev.	0.0420	0.0540	0.0405	0.0512	0.0391	0.0485	0.0707
Skewness	-0.0045	-0.1462	0.0345	-0.5908	-0.0674	-0.1787	-0.3138
Kurtosis	1.5111	4.2221	1.8646	4.9086	0.5913	2.9155	0.7587

Note: P demonstrates average portfolio of 80 companies, S 40 small companies, B 40 big companies, S/H 20 high companies sorted on book to market ratio among 40 small companies, S/L 20 low companies among small, B/H among big companies the 20 high and B/L 20 low companies among 40 big companies.

Statistical properties of portfolio sorted on size (market capitalization) and value premium (book-to-market) for China are report in table 4.1.2 (a). Result shows the S/H portfolio are higher returns and lower risks portfolios compare to B/H, so S/H outperform B/H. But compare to B/L the S/L is high returns and low risks portfolio.

The mean value and standard deviation of S is 0.0169 and 0.0540 and for B is 0.0066 and 0.0391. Maximum value of S is 0.2228 and B is 0.1344. Likewise, the value of minimum for S is -0.2167 and for B it is -0.1059. For BTM ratios, the mean values of S/H and B/H are

0.0135 and 0.0097 and value of standard deviation for S/H and B/H are 0.0405 and 0.0485 the maximum value and minimum value of S/H and B/H is 0.1700 and 0.1493 and -0.1627 and -0.1353. The S/L and B/L mean value is 0.0090 and 0.0048, standard deviation 0.0512 and 0.0707 and maximum values of both are 0.2767 and 0.1373 whereas minimum values are -0.3233 and -0.1709.

Skewness demonstrates the data distribution. Skewness must be zero if the data is normally distributed, which shows that the data is symmetrical and it has graph of bell shape. However, for the real world data the perfect zero skewness is unlikely to a certain extent. If it is positive that shows the data is skewed positively and skewed at right means the longer is the right tail than the left.

In the table 4.1.2 (a) the results of skewness are negative for all portfolios except S/H, the values are B (-0.0674), B/H (-0.1787), B/L (-0.3138), S (-0.1462) and S/L (-0.5908) and positively for only S/H (0.0345). However the skewness here is marginal.

The values of kurtosis show the comparative pointedness or smoothness of distribution of data contrast to the data's normal distribution. The results of Kurtosis point out that data distribution is relatively pointed for S and S/L portfolios while smooth for all other portfolios.

Table 4.1.2 (b) Descriptive statistics Size- P/E Ratio sorted portfolios (China)

Variable	S/H_P	S/L_P	B/H_P	B/L_P
Mean	0.0096	0.0132	0.0081	0.0121
Median	0.0151	0.0132	0.0139	0.0102
Maximum	0.2767	0.1700	0.1373	0.1540
Minimum	-0.3233	-0.1627	-0.1709	-0.1353
Std. Dev.	0.0506	0.0417	0.0707	0.0489
Skewness	-0.5760	0.0310	-0.3675	-0.0388
Kurtosis	4.9027	1.7839	0.7411	2.7754

Note: S/H_P demonstrates 20 high companies sorted on the basis of price earnings ratio among 40 small companies, S/L_P 20 low companies among small, B/H_P among big companies the 20 high and B/L_P 20 low companies among 40 big companies.

Statisticals property of portfolio sorted on size (market capitalization) and value premium (Price earning ratio) for China reported on table 4.1.2 (b). Result shows the S/L_P are higher returns and lower risks portfolios compare to B/L_P, so S/L_P outperform B/L_P. In the same way, compared to B/H_P the S/H_P are higher returns and low risks portfolios.

For Price earning ratio, the mean values of S/L_P and B/L_P are 0.0132 and 0.0121 and value of standard deviation for S/L_P and B/L_P are 0.0417 and 0.0489 the maximum value and minimum value of S/L_P and B/L_P is 0.1700 and 0.1540 and -0.1627 and -0.1353 and for the S/H_P and B/H_P mean value is 0.0096 and 0.0081, standard deviation 0.0506 and 0.0707 and maximum values of both are 0.2767 and 0.1373 whereas minimum values are -0.3233 and -0.1709.

In the table 4.1.2 (b) the results of skewness are negative for all portfolios except S/H, the values are B/L (-0.0388), B/H (-0.3675) and S/H (-0.5760) which show negatively skewed distribution of data while positive for only S/L (0.0310). However the skewness here is marginal.

The results of Kurtosis point out that data distribution is relatively pointed for S/H portfolios while smooth for other portfolio.

Table 4.1.2(c) Descriptive statistics Size- EV to EBITDA sorted portfolios (China)

Variable	S/H_E	S/L_E	B/H_E	B/L_E
Mean	0.0109	0.0084	0.0097	0.0049
Median	0.0118	0.0087	0.0056	0.0072
Maximum	0.2271	0.2184	0.1984	0.1518
Minimum	-0.2821	-0.2409	-0.1445	-0.1440
Std. Dev.	0.0467	0.0454	0.0626	0.0574
Skewness	-0.2508	-0.5223	0.1087	-0.1313
Kurtosis	3.4713	3.7424	2.0284	1.9072

Note: S/H_E demonstrates 20 high companies sorted on EV to EBITDA among 40 small companies, S/L_E 20 low companies among small, B/H_E among big companies the 20 high and B/L_E 20 low companies among 40 big companies.

Statisticals property for portfolio sorted on size (market capitalization) and value premium (enterprise value to EBITDA) for China are reported in table 4.1.2(c). Result shows the S/H_E are higher returns and lower risks portfolios compare to B/H_E, so S/H_E outperform B/H_E. In the same way, compare to B/L_E the S/L_E are higher returns and low risks portfolios.

For enterprise value to EBITDA, the mean values of S/H_E and B/H_E are 0.0109 and 0.0097 and value of standard deviation for S/H_E and B/H_E are 0.0467 and 0.0626 the maximum value and minimum value of S/H_E and B/H_E is 0.2271 and 0.1984 and -0.2821 and -0.1445 and for the S/L_E and B/L_E mean value is 0.0084 and 0.0049, standard deviation 0.0454 and 0.0574 and maximum values of both are 0.2184 and 0.1518 whereas minimum values are -0.2409 and -0.1440.

In the table 4.1.2 (c) the results of skewness are negative for all portfolios except B/H_E, the values are B/L_E (-0.1313), S/H_E (-0.2508) and S/L_E (-0.5223) that shows negative skewenes distributions for data but positively for only B/H_E (0.1087). However the skewness here is marginal.

The results of Kurtosis point out that data distribution is relatively pointed for S/H_E and S/L_E while smooth for all other portfolios.

Table 4.1.2 (d) Descriptive statistics Size- EV to sales sorted portfolios (China)

Variable	S/H_S	S/L_S	B/H_S	B/L_S
Mean	0.0184	0.0085	0.0153	0.0063
Median	0.0127	0.0129	0.0070	0.0088
Maximum	0.2705	0.1864	0.1978	0.1502
Minimum	-0.3249	-0.1814	-0.1394	-0.1465
Std. Dev.	0.0461	0.0451	0.0633	0.0560
Skewness	-0.5941	-0.3178	0.0679	-0.2277
Kurtosis	7.1025	1.6529	1.7664	1.4314

Note: S/H_S demonstrates 20 high companies sorted on EV to sales multiple among 40 small companies, S/L_S 20 low companies among small, B/H_S among big companies the 20 high and B/L_S 20 low companies among 40 big companies.

Statistical properties of portfolios sorted on size (market capitalization) and value premium (enterprise value to sales) of China reports on table 4.1.2 (d). Result shows the S/H_S are higher returns and lower risks portfolios compare to B/H_S, so S/H_S outperform B/H_S. But compare to B/L_S the S/L_S are higher returns and lower risks portfolios.

For enterprise value to sales, the mean values of S/H_S and B/H_S are 0.0184 and 0.0153 and value of standard deviation for S/H_S and B/H_S are 0.0633 and 0.0461 the maximum value and minimum value of S/H_S and B/H_S is 0.2705 and 0.1978 and -0.3249 and -0.1394 and for the S/L and B/L mean value is 0.0085 and 0.0063, standard deviation 0.0560 and 0.0451 and maximum values of both are 0.1864 and 0.1502 whereas minimum values are -0.1814 and -0.1465.

In the table 4.1.2 (c) the results of skewness are negative for all portfolios except B/H_S, the values are B/L_S (-0.1313), S/H_S (-0.5941) and S/L_S (-0.3178) which show negatively skewed distribution of data while positive for only B/H_S (0.0679). However the skewness here is marginal.

The results of Kurtosis point out that data distribution is relatively pointed for S/H while smooth for all other portfolios.

Above tables indicates that high return portfolios are B/H and S/H portfolios. Though, S/H is efficient because it proposes higher returns at low levels of risks. On SMB and HML the positive coefficient estimate recommend that on average the small firms had high return as compared to large firms. In small as well as big stock divisions, higher BTM stock have high return compare to lower BTM stock, B/L gives lower return.

It is also reported that S and S/L performs well compare to B and B/L consistent with the sizes effects report on different equity's market around globe. The risk based explanations of

high return is support via standards deviations of different portfolio. In the same way, this extra returns appear to be effect for high risks associate with smaller size portfolio. Low price earning stocks outperformed high price earning stocks (Huberts and Levinson 1993). High Enterprise value to EBITDA and high enterprises values to sale outperform low Enterprises values to EBITDAs and low enterprises values to sale. It is aligned to empiricals works the bigger company earns low rates for returns. Stock with lower BTM ratios underperform as compared to stock having higher BTM returns (Stattmen 1980). So the finding for this study are aligned with Fma and French's (1992, 1993, and 1996).

Table 4.2(a) Descriptive statistics: Fama and French three factor (India)

Variable	MKT Premium	Size Premium	B/M ratio Premium	P/E Ratio Premium	EV to EBITDA Premium	EV to sales Premium
Mean	0.0100	0.0080	0.0070	0.0060	0.0010	0.0013
Median	0.0079	0.0086	0.0094	0.0053	0.0004	0.0010
Maximum	0.1830	0.2433	0.1490	0.1393	0.1684	0.1506
Minimum	-0.1223	-0.2783	-0.1604	-0.0911	-0.1432	-0.1228
Std. Dev.	0.0528	0.0675	0.0480	0.0437	0.0451	0.0477
Skewness	0.4390	-0.5543	-0.0265	-0.4078	-0.2704	-0.2230
Kurtosis	0.6488	2.4013	0.9039	0.1910	1.1830	0.3731

Note: MKT is market premium, Size is Size premium i.e. market capitalization, B/M is book to market ratio, P/E the price earnings ratio, EV to EBITDA is Enterprise value to earning before interest, tax, depreciation and amortization and finally the EV to sales is Enterprise value to sales.

Table 4.2(a) explains the statistical properties of variable constructed that contains market premium, size and value premiums. 0.0100 is the mean value of market premium and its standard deviation is 0.0528. Mean value of size is 0.080 and standard deviation is 0.0675. Book-to-market ratio (Value premium) has mean value of 0.0070 and value of standard deviation is 0.0480, mean value and standard deviation of Price Earning ratio is 0.0060 and 0.0437, EV to EBITDA mean and standard deviation are 0.0010 and 0.0451 similarly for EV to sales the values of mean and standard deviation are 0.0013 and 0.0477.Result show that the

all market premium, value premium and size premium are positive. Values of maximum for market, size, B/M, P/E, EV to EBITDA and EV to sales are 0.2433, 0.1830, 0.1490, 0.1393,0.1684, and 0.1506 showing that this is the maximum market, size and value premium demand by investors for taking risk. Whereas minimum premiums require by the investor are -0.2783, -0.1223,-0.1604, -0.0911, -0.1432 and -0.1228.

Skewness is negative for all except size premium the values are for market premium -0.5543, B/M ratio -0.0265, P/E ratio -0.4078 EV to EBITDA -0.2704 and EV to sales -0.2230.which shows deviation from normal data distribution and positive for size premium only 0.4390. Kurtosis for market, size, B/M, P/E, EV to EBITDA and EV to sales are 2.4013, 0.6488, 0.9039, 0.1910, 1.1830 and 0.3731 explains that the distribution of data is peaked to some extent for market premium only.

Table 4.2(a) indicates the average market premium, size premium and value premium all are positive. Market premium is found more volatile as compared to size premium and value premium. It is important to mention that market premium is on higher side as compare to market and value effects may be because of exceptional performance of equity market of Pakistan from period 2000-2015.

Table 4.2(b) Descriptive statistics: Fama and French three factor (Pakistan)

Variable	MKT Premium	Size Premium	B/M ratio Premium	P/E Ratio Premium	EV to EBITDA Premium	EV to sales Premium
Mean	0.0098	0.0070	0.0070	0.0008	0.0017	0.0003
Median	0.0151	0.0016	0.0050	0.0014	0.0009	0.0016
Maximum	0.1983	0.1830	0.1306	0.0867	0.0746	0.0818
Minimum	-0.4605	-0.1223	-0.1604	-0.0680	-0.0661	-0.0701
Std. Dev.	0.0757	0.0479	0.0428	0.0199	0.0187	0.0180
Skewness	-1.7055	0.7229	-0.1841	-0.2743	-0.0475	-0.0702
Kurtosis	8.6871	1.8133	2.0086	5.0251	4.1665	4.5824

Note: MKT is market premium, Size is Size premium i.e. market capitalization, B/M is book to market ratio, P/E the price earnings ratio, EV to EBITDA is Enterprise value to earning before interest, tax, depreciation and amortization and finally the EV to sales is Enterprise value to sales.

Table 4.2(b) explains the statistical properties of variable constructed that contains market premium, size and value premiums. 0.0098 is the mean value of market premium and its standard deviation is 0.0757. Mean value of size is 0.0070 and standard deviation is 0.0479. Book-to-market ratio (Value premium) has mean value of 0.0070 and value of standard deviation is 0.0428, mean value and standard deviation of Price Earning ratio is 0.0008 and 0.00199, EV to EBITDA mean and standard deviation are 0.0017 and 0.0187 similarly for EV to sales the values of mean and standard deviation are 0.0003 and 0.0180.Result show that all the market premium, value premium and size premium are positive. Values of maximum for market, size, B/M, P/E, EV to EBITDA and EV to sales are 0.1983, 0.1830, 0.1306, 0.0867, 0.0746, and 0.0818 showing that this is the maximum market, size and value premiums demand by investors for taking risk. Whereas minimum premiums require by the investor are -0.4605, -0.1223,-0.1604, -0.0680, -0.0661 and -0.0701.

Skewness is negative for all except for size premium, market premium -1.7055, B/M ratio -0.1841, P/E ratio -0.2743, EV to EBITDA -0.0475 and EV to sales -0.0702 which shows deviation from normal data distribution and for size premium it is 0.7229. Kurtosis for market, size, B/M, P/E, EV to EBITDA and EV to sales are 8.6871, 1.8133, 2.0086, 5.0251, 4.1665 and 4.5824 explains that the distribution of data is peaked to some extent for market premium, P/E ratio, EV to EBITDA and EV to sales .

Table 4.2(b) indicates the average market premium, size premium and value premium all are positive. Market premium is found more volatile as compared to Size premium and value premium. It is important to mention that market premium is on higher side as compare to size and value effects may be because of exceptional performance of equity market of Pakistan from period 2000-2015.

Table 4.2(c) Descriptive statistics: Fama and French three factor (China)

Variable	MKT Premium	Size Premium	B/M ratio Premium	P/E Ratio Premium	EV to EBITDA Premium	EV to sales Premium
Mean	0.0072	0.0065	0.0045	0.0064	0.0011	0.0062
Median	0.0053	0.0067	0.0059	0.0029	0.0001	0.0013
Maximum	0.2740	0.2085	0.1710	0.8898	0.1175	0.8050
Minimum	-0.4263	-0.1297	-0.6727	-0.0937	-0.4358	-0.1242
Std. Dev.	0.0883	0.0525	0.0698	0.0798	0.0489	0.0713
Skewness	-1.0419	0.4960	-5.3306	-8.2079	-4.0940	-8.4554
Kurtosis	4.1638	1.5837	5.8279	8.5082	6.9615	9.8175

Note: MKT is market premium, Size is Size premium i.e. market capitalization, B/M is book to market ratio, P/E the price earnings ratio, EV to EBITDA is Enterprise value to earning before interest, tax, depreciation and amortization and finally the EV to sales is Enterprise value to sales.

Table 4.2(c) explains the statistical properties of variable constructed that contains market premium, size and value premiums. 0.0072 is the mean value of market premium and its standard deviation is 0.0883. Mean value of size is 0.0065 and standard deviation is 0.0525. Book-to-market ratio (Value premium) has mean value of 0.0045 and value of standard deviation is 0.0698, mean value and standard deviation of Price Earning ratio is 0.0064 and 0.0798, EV to EBITDA mean and standard deviation are 0.0011 and 0.0498 similarly for EV to sales the values of mean and standard deviation are 0.0062 and 0.0713.Result show that the all market premium, value premium and size premium are positive.

Values of maximum for market, size, B/M, P/E, EV to EBITDA and EV to sales are 0.2740, 0.2085, 0.1710, 0.8898, 0.1175, and 0.8050 showing that this is the maximum market, size and value premiums demand by investors for taking risk. Whereas minimum premiums require by the investor are -0.4263, -0.1297,-0.6727, -0.0937, -0.4358 and -0.1242.

Skewness is negative for all premiums except for size premium which shows deviation from normal data distribution the values of skewness are market premium, B/M ratio, P/E ratio, EV to EBITDA and EV to sales which are -1.0419, -5.3306, -8.2079, -4.0940 and -8.4554

and positive for size premium which is 0.4960. Kurtosis for market, size, B/M, P/E, EV to EBITDA and EV to sales are 4.1638, 1.5837, 5.8279, 8.5082, 6.9615 and 9.8175 explains that the distribution of data is peaked for all but smooth for size premium only.

Table 4.2(c) indicates the average market premium, size premium and value premium all are positive. Market premium is found more volatile as compared to Size premium and value premium. It is important to mention that market premium is on higher side as compare to size and value effects may be because of exceptional performance of equity market of Pakistan from period 2000-2015.

Table 4.3 (a) Fama and French three factor model of size & B/M ratio (India)

$$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$$

	P	P	S	S	S/H	S/H	S/L	S/L
Intercept	0.002	-0.001	0.008	-0.001	0.010	-0.004	0.006	0.002
T value	0.62	-0.254	1.655	-0.258	1.595	-1.009	1.249	0.577
MKT	0.785	0.826	0.720	0.827	0.667	0.845	0.772	0.806
T value	14.101	15.095	10.274	15.134	7.379	13.688	10.949	13.297
SMB		0.235		0.735		0.833		0.637
T value		3.236		10.130		10.161		7.917
HML		0.087		0.089		0.607		-0.437
T value		1.088		1.113		6.734		-4.936
Adj. R^2	0.543	0.576	0.385	0.642	0.242	0.661	0.416	0.586
F stat	199.096	76.582	105.551	100.712	54.454	109.450	119.872	79.727
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	B	B/H	B/H	B/L	B/L
Intercept	-0.003	-0.001	0.003	0.002	-0.009	-0.004
T value	-0.847	-0.249	0.624	0.577	-2.072	-1.009
MKT	0.850	0.825	0.789	0.806	0.911	0.845
T value	15.331	15.055	11.769	13.297	13.909	13.688
SMB		-0.265		-0.363		-0.167
T value		-3.637		-4.507		-2.035
HML		0.085		0.563		-0.393
T value		1.063		6.364		-4.358
Adj. R^2	0.584	0.610	0.452	0.571	0.535	0.605
F stat	235.026	88.049	138.517	75.029	193.451	86.113
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and book to market ratio as value premium. F sig shows the significance of the variables.

In table 4.3(a) P (average return of all stocks) of book to market (value premium) is regressed only with market premium, results are significant and positive with t value of 14.11 indicates that MKT positively explain variations in stock returns. The value of adjusted R^2 is 0.543 that show independent variables explain 54.3% of changes in dependent variable. Further when other variables which are size premium and value premium are added then market premium, size premium and value premium all are found positive and significant which indicates that they significantly explain variations in stock returns. The value of adjusted R^2 for the three factor model increases from 0.543 to 0.576 shows that independent variable explains 57.6% of variations in P.

Now S (small portfolios return) is regressed only with market premium results are significant and positive with t value of 10.274 indicates that market premium significantly explain variation in returns. The value of adjusted R^2 is 0.385 that show market premium explains 38.5% of changes in the dependent variable return. When the size premium and value premium are also added then market premium, size premium and value premium all are found significant and positive. Results indicate that market, size and value premium significantly explain variations in returns. The adjusted R^2 for the three factor model increases from 0.385 to 0.642 that show MKT, size and value variables explain 64.2% of variations in S portfolio.

When portfolio S/H is regressed only with market premium, results are significant and positive its t value is 7.379 and 0.242 is the value of adjusted R^2, that show market premium explains 24.2% of variations in S/H. When the size premium and value premium are also regressed along with market premium then market, size and value all are found significant and positive. The value of adjusted R^2 is 0.661 that show market, size and value premium explain 66.1% of variations in S/H portfolio.

S/L portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 10.949 and 0.416 the R^2 value shows that market explains 41.6% variation in S/L. Then by adding size and value premiums results show significant and positive for market and size premium that indicates that these variables significantly explain variations in stock returns but negative and significant for value premium. Significant and negative behaviour of value premium indicates the negative relationship of value premium with returns which shows that increase in HML lead to decrease in stock returns 0.586 adjusted R^2 shows that 58.6% of variation is S/L is explain through market, size and value premiums.

B (big portfolios return) when regress along only market premium, the result is significantly positive having t value 15.331with R^2 0.584, that show the 58.4% variations on B are explain through market premium. By adding size, value premiums results show that the market and value premium are significantly positive, while size is significantly negative. 0.610 adjust R^2 shows 61% of variation in B are explain through market premium, size and value.

B/H portfolios when regress along only market premium the results are significant and positive the t value is 11.769 with 0.452 adjusted R^2 value that show only 45.2% variation in B/H explain by MKT. By adding size premium and value premium the results show that market and value premium are significantly positive but size premium is significantly negative. Behaviour of size premium indicates the negative relationship of size premium with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. 0.571 is the adjusted R^2, which shows that 57.1% of variation in B/H is explained by these variables.

The B/L portfolio when regressed with market premium only the result is significantly positive with values of t 13.909 and adjusted R^2 0.535 that show only 53.5% variations in B/L

is explained by market premium. Then by adding size and value premiums the result for MKT is significantly positive while, size premium and value premium are significant negative. Significant and negative behaviour of size and value premium indicates the negative relationship of size and value with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.605 is the adjusted R^2 that shows 60.5% of variation in B/L is explained by these variables.

Table 4.3(b) Fama and French three factor model of size & P/E Ratio (India)

$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_P**	**S/H_P**	**S/L_P**	**S/L_P**
Intercept	0.002	-0.001	0.008	-0.001	0.010	-0.002	0.006	0.001
T value	0.620	-0.145	1.655	-0.145	1.546	-0.526	1.339	0.352
MKT	0.785	0.818	0.720	0.818	0.660	0.769	0.781	0.867
T value	14.110	14.972	10.274	14.972	7.228	11.454	11.505	15.680
SMB		0.248		0.748		0.770		0.726
T value		3.264		9.843		8.241		9.445
HML		0.023		0.023		-0.572		0.525
T value		0.255		0.255		-5.131		5.728
Adj. R^2	0.543	0.572	0.385	0.638	0.235	0.598	0.440	0.640
F stat	199.096	75.497	105.551	98.957	52.239	83.945	132.357	99.760
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	**B**	**B/H_P**	**B/H_P**	**B/L_P**	**B/L_P**
Intercept	-0.003	-0.001	0.001	0.001	-0.008	-0.002
T value	-0.847	-0.145	0.300	0.352	-1.545	-0.526
MKT	0.850	0.818	0.895	0.867	0.806	0.769
T value	15.331	14.972	15.223	15.680	11.160	11.454
SMB		-0.252		-0.274		-0.230
T value		-3.314		-3.558		-2.464
HML		-0.023		-0.475		0.428
T value		-0.255		-5.176		3.845
Adj. R^2	0.584	0.608	0.580	0.640	0.425	0.518
F stat	235.026	87.338	231.736	99.826	124.550	60.749
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and book to market ratio as value premium. F sig shows the significance of the variables.

In table 4.3(b) P by using price earning ratio as value premium is regressed only with market premium, results are significant and positive with t value of 14.11 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.543 that show independent variables explain 54.3% of changes in dependent variable. Further when other variables which are size and value premium are added then market premium size premium and value premium are found positive and significant which indicates that they significantly explain variations in stock returns. 0.576 The value of adjusted R^2 for three factor model increases from 0.543 to 0.576. Shows that independent variable explains 57.6% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 10.274 indicates that market premium significantly explain variations in returns. The value of adjusted R^2 is 0.385 that show market premium explains 38.5% of changes in the dependent variable return. When the size premium and value premium are also added then market, size and value premium are found significant and positive. Results indicate that market and size and value premium significantly explain variations in returns. The value of adjusted R^2 for three factor model increases from 0.385 to 0.638 that show MKT, size and value variables explain 63.8 % of variations in S portfolio.

When portfolio S/H_P is regressed only with market premium, results are significant and positive its t value is 7.228 and 0.235 is the value of adjusted R^2, that show market premium explains 23.5% of variations in S/H_P. Then by adding size and value premiums results show significant and positive for market premium and size premium that indicates that these variables significantly explain variations in stock returns but negative and significant for value premium. Significant and negative behaviour of value premium indicates the negative

relationship of value premium with returns which shows that increase in HML lead to decrease in stock returns.The value of adjusted R^2 is 0.598 that show market, size and value premium explain 59.8% of variations in S/H portfolio.

S/L_P portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 11.505 and 0.440 the R^2 value shows that market explains 44.0% variation in S/L_P. Then by adding size and value premiums results show significant and positive for market, size and value premium that indicates that these variables significantly explain variations in stock returns. 0.640 adjusted R^2 shows that 64.0% of variation on S/L is explain through market, size and value premiums.

B is when regress along only market premium, this is significantly positive having t value 15.331 with adjust R^2 is 0.584, that show the 58.4% variations on B are explain through market. By adding size and value premiums results show that the market is significantly positive, whereas size and value premium are significantly negative. Significantly negative behavior of size and value premium indicates the negative relationship of size and value with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. 0.608 adjusted R^2 shows 60.8% of variation in B is being explained by MKT only.

B/H_P portfolio when regressed with only market premium the results are significant and positive the t value is 15.223 with 0.580 adjusted R^2 value that show only 58.0% variation in B/H_P can be explained by market premium. By adding size and value premiums results show that the market is found significant and positive, whereas size and value premium are significantly negative. Significant and negative behaviour of size and value premium indicates the negative relationship of size and value with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. 0.640 is the adjusted R^2, which shows that 64.0% of variation in B/H is explained by MKT only.

The B/L_P portfolio when regressed with market premium only the result is significantly positive with values of t 11.160 and adjusted R^2 0.425 that show only 42.5% variations in B/L_P is explained by market premium. Then by adding size and value premiums the result for market premium and value premium are significant and positive while, size premium is found significant negative. Significant and negative behaviour of size indicates the negative relationship of size with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. Results indicate that MKT and HML positively explain variations in stock returns.0.518 is the adjusted R^2 that shows 51.8% of variation in B/L is explained by these variables.

Table 4.3(c) Fama and French three factor model of size & EV to EBITDA (India)

$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_E**	**S/H_E**	**S/L_E**	**S/L_E**
Intercept	0.002	0.000	0.008	0.000	0.011	0.002	0.005	-0.003
T value	0.620	-0.128	1.655	-0.124	1.924	0.455	0.999	-0.746
MKT	0.785	0.818	0.720	0.817	0.727	0.808	0.716	0.830
T value	14.110	14.959	10.274	14.937	8.929	12.864	9.522	14.377
SMB		0.255		0.754		0.754		0.758
T value		3.651		10.786		9.398		10.281
HML		0.003		0.004		0.475		-0.472
T value		0.038		0.055		5.108		-5.520
Adj. R^2	0.543	0.572	0.385	0.637	0.320	0.608	0.349	0.629
F stat	199.096	75.435	105.551	98.767	79.720	87.415	90.662	95.339
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	**B**	**B/H_E**	**B/H_E**	**B/L_E**	**B/L_E**
Intercept	-0.003	-0.001	-0.005	-0.003	-0.001	0.002
T value	-0.851	-0.138	-1.208	-0.746	-0.243	0.455
MKT	0.851	0.820	0.879	0.830	0.822	0.808
T value	15.325	14.970	13.764	14.377	11.858	12.864
SMB		-0.244		-0.242		-0.246
T value		-3.481		-3.278		-3.062
HML		0.002		0.528		-0.525
T value		0.025		6.172		-5.637
Adj. R^2	0.583	0.608	0.530	0.628	0.455	0.567
F stat	234.865	87.165	189.443	94.928	140.617	73.759
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and EV to EBITDA as value premium. F sig shows the significance of the variables.

In table 4.3(c) by using EV-to- (value premium) P is regressed only with market premium, results are significant and positive with t value of 14.11 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.543 that show independent variables explain 54.3 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium, size premium and value premium all are found positive and significant which indicates that they significantly explain variations in stock returns. The value of adjusted R^2 for three factor model increases from 0.543 to 0.572 which shows that independent variable explains 57.2% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 10.274 indicates that market premium significantly explain variations in returns. The value of adjusted R^2 is 0.385 that show market premium explains 38.5% of changes in the dependent variable return. When the size premium and value premium are also added then market, sizes and values premiums all found significant and positive. Results indicate that market, size and value premium significantly explain variations in returns. The adjusted R^2 is 0.637 that show MKT, size and value variables explain 63.7% of variations in S portfolio.

When portfolio S/H_E is regressed only with market premium, results are significant and positive its t value is 8.929 and 0.320 is the value of adjusted R^2, that show market premium explains 32.0% of variations in S/H_E. When the size premium and value premium are also regressed along with markets premiums then market, size and value all are significantly positive. The values for adjusted R^2 is 0.608 that show market, size and value premium explain 60.8% of variations in S/H_E portfolio.

S/L_E portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 9.522 and 0.349 the R^2 value shows that market explains 34.9% variation in S/L_E. Then by adding size and value premiums results show significant

and positive for market and size premium that indicates that these variables significantly explain variations in stock returns but negative and significant for value premium. Significant and negative behaviour of value premium indicates the negative relationship between value premium and returns which shows that increase in HML lead to decrease in stock returns 0.629 adjusted R^2 shows that 62.9 % of variation on S/L_E is explain by market, size and value premiums.

B regressed with only market premium, that significantly positive having t value of 15.325 and adjust R^2 is 0.583, that show the 58.3 % variations on B are explain by market. By adding size and value premiums results show that the market and value premium are significantly positive, but size premium is significantly negative. 0.608 adjust R^2 shows 60.8% of variation in B is explain by market, size and value.

B/H_E portfolios when regress along only market premium the results are significant and positive the t value is 13.764 with 0.530 adjusted R^2 value that show only 53.0% variation in B/H_E explain through market premium. By adding size premium and value premium the results show that market and value premium are significantly positive whereas size premium is significantly negative. Behaviour of size premium indicates the negative relationship of size premium with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. 0.628 is the adjusted R^2, which shows that 62.8% of variation in B/H_E is explained by these variables.

The B/L_E portfolio when regressed with market premium only the result is significantly positive with values of t 11.858 and adjusted R^2 0.455 that show only 45.5% variations in B/L_E is explained by market premium. Then by adding size and value premiums the result for market premium is significantly positive while, sizes and value are significantly negative. Significant and negative behaviour of size and value premium indicates the negative

relationship between size premium, value premium and returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.567 is the adjusted R^2 that shows 56.7% of variation in B/L_E is explained by these variables.

Table 4.3(d) Fama and French three factor model of size & EV to Sales (India)

$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_S**	**S/H_S**	**S/L_S**	**S/L_S**
Intercept	0.002	0.000	0.008	0.000	0.005	-0.002	0.010	0.001
T value	0.620	-0.066	1.739	0.077	0.936	-0.419	2.085	0.303
MKT	0.785	0.812	0.720	0.807	0.813	0.859	0.627	0.766
T value	14.110	14.695	10.142	14.746	9.625	14.243	8.548	12.915
SMB		0.244		0.754		0.748		0.740
T value		3.404		10.630		9.573		9.614
HML		0.054		0.125		0.592		-0.485
T value		0.681		1.594		6.873		-5.715
Adj. R^2	0.543	0.573	0.379	0.651	0.354	0.689	0.301	0.568
F stat	199.096	75.813	102.868	104.755	92.643	124.533	73.061	74.324
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	**B**	**B/H_S**	**B/H_S**	**B/L_S**	**B/L_S**
Intercept	-0.003	0.000	-0.003	0.001	-0.004	-0.002
T value	-0.847	-0.066	-0.623	0.303	-0.826	-0.419
MKT	0.850	0.812	0.845	0.766	0.855	0.859
T value	15.331	14.695	13.193	12.915	13.082	14.243
SMB		-0.256		-0.260		-0.252
T value		-3.569		-3.382		-3.218
HML		0.054		0.515		-0.408
T value		0.681		6.079		-4.734
Adj. R^2	0.584	0.609	0.509	0.602	0.505	0.602
F stat	235.026	87.683	174.059	85.222	171.143	85.174
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and EV to sales as value premium. F sig shows the significance of the variables.

In table 4.3(d) P of EV-to-sales (value premium) is regressed only with market premium, results are significant and positive with t value of 14.11 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.543 that show independent variables explain 54.3 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium, size premium and value

premium all are found positive and significant which indicates that they significantly explain variations in stock returns. The value of adjusted R^2 for the three factor model increases from 0.543 to 0.573 which shows that independent variable explains 57.3% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 10.142 indicates that market premium significantly explain variations in returns. The value of adjusted R^2 is 0.379 that show market premium explains 37.9% of changes in the dependent variable return. When the size premium and value premium are also added then market, size and value premium all are found significant and positive. Results indicate that market, size and value premium significantly explain variations in returns. The adjusted R^2 is 0.651 that show MKT, size and value variables explain 65.1% of variations in S portfolio.

When portfolio S/H_S is regressed only with market premium, results are significant and positive its t value is 9.625 and 0.354 is the value of adjusted R^2, that show market premium explains 35.4% of variations in S/H_S. When the size premium and value premium are also regressed along with MKT then market, size and values all are significantly positive. The values of adjusted R^2 is 0.689 that show market, size and value premium explain 68.9% of variations in S/H_S portfolio.

S/L_S portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 8.548 and 0.301 the R^2 value shows that market explains 30.1% variation in S/L_S. Then by adding size and value premiums results show significant and positive for market and size premium that indicates that these variables significantly explain variations in stock returns but negative and significant for value premium. Significant and negative behaviour of value premium indicates the negative relationship of value

premium with return which shows that increase in HML lead to decrease in stock returns 0.568 adjusted R^2 shows that 56.8% of variation on S/L_S is explain by market, size and value premiums.

B is when regress with only market premium, significantly positive having t value for 15.331 and adjust R^2 is 0.584, that show the 58.4 % variations on B are explain by market. By adding size and value premiums results show that the market and value premium are significantly positive, whereas size is significantly negative. 0.609 adjust R^2 shows 60.9% of variation in B are explain by market, size and value.

B/H_S portfolios when regress along only market premium the results are significant and positive the t value is 13.193 with 0.509 adjusted R^2 value that show only 50.9% variation in B/H_S explain through market's premiums. By adding size premium and value premium the results show that market and value premium are significantly positive however size premium is significantly negative. Significantly negative behaviour of size premium indicates the negative relationship of size premium with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. 0.602 is the adjusted R^2, which shows that 60.2% of variation in B/H_S is explained by these variables.

The B/L_S portfolio when regressed with market premium only the result is significantly positive with values of t 13.082 and adjusted R^2 0.505 that show only 50.5% variations in B/L_S is explained by market premium. Then by adding size and value premiums the result for market premium is significantly positive while size and value find significantly negative. Significant and negative behaviour of size and value premium indicates the negative relationship of size and value with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain

variations in stock returns. 0.602 is the adjusted R^2 that shows 60.2% of variation in B/L_S is explained by these variables.

Table 4.3.1(a) Fama and French three factor model of size & B/M ratio (Pakistan)

$$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$$

	P	P	S	S	S/H	S/H	S/L	S/L
Intercept	0.002	0.000	0.018	0.002	0.005	0.002	0.010	-0.001
T value	1.620	0.066	2.739	0.447	1.966	0.849	2.682	-0.232
MKT	0.725	0.772	0.639	0.771	0.853	0.879	0.428	0.765
T value	22.180	23.695	14.142	18.746	14.825	14.943	8.854	15.715
SMB		0.513		1.594		1.578		1.440
T value		3.914		11.163		9.573		9.814
HML		0.046		0.085		1.032		-1.185
T value		0.416		0.659		7.473		-9.475
Adj. R^2	0.779	0.794	0.632	0.787	0.635	0.819	0.362	0.708
F stat	439.096	201.813	102.868	104.755	242.643	214.533	75.061	123.324
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	B	B/H	B/H	B/L	B/L
Intercept	-0.002	0.000	-0.006	-0.006	0.003	0.002
T value	-0.870	0.126	-1.963	-0.293	0.856	0.579
MKT	0.815	0.782	0.984	0.765	0.635	0.759
T value	25.431	27.625	13.197	18.965	13.582	14.948
SMB		-0.456		-0.557		-0.452
T value		-3.519		-3.682		-2.218
HML		0.035		0.870		-0.948
T value		0.381		7.682		-7.134
Adj. R^2	0.820	0.849	0.809	0.862	0.556	0.672
F stat	687.026	253.683	574.059	385.222	181.143	115.174
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and book to market ratio as value premium. F sig shows the significance of the variables.

In table 4.3.1(a) P (average return of all stocks) of book to market (value premium) is regressed only with market premium, results are significant and positive with t value of 22.180 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.779 that show independent variables explain 77.9 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium, size premium and value premium all are found positive and significant which indicates that they significantly explain variations in stock returns. The value of

adjusted R^2 for three factor model increases from 0.779 to 0.794 which shows that independent variable explains 79.4% of variations in P.

Now S (small portfolios return) is regressed only with market premium results are significant and positive with t value of 14.142 indicates that market premium significantly explain variation in returns. The value of adjusted R^2 is 0.632 that show market premium explains 63.2 % of changes in the dependent variable return. When the size premium and value premium are also added then market, sizes and values premium's all found significant and positive. Results indicate that market, size and value premium significantly explain variations in returns. The adjusted R^2 is 0.787 that show market, size and value variables explain 78.7 % of variations in S portfolio.

When portfolio S/H is regressed only with market premium, results are significant and positive its t value is 14.825 and 0.635 is the value of adjusted R^2, that show market premium explains 63.5% of variations in S/H. When the size premium and value premium are also regressed along with market's premiums so market size and values premiums found significantly positive. The values of adjusted R^2 is 0.819 that show market, size and value premium explain 81.9% of variations in S/H portfolio.

S/L portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 8. 854 and 0.362 the R^2 value shows that market explains 36.2% variation in S/L. Then by adding size and value premiums results are significant and positive for market and size premium that indicates that these variables significantly explain variations in stock returns but negative for value premium. 0.708 adjusted R^2 shows that 70.8% variation on S/L explain by market, size and value premiums.

B (big portfolios return) when regress along only market premium, results significantly positive having t value 25.431 and adjust R^2 is 0.820, that shows the 82.0% variations on B explain by market. By adding size and value premiums results show that the market and value

premium are find significantly positive, wbut size is significantly negative. 0.849 adjust R^2 shows 84.9% of variation in B is explain through market, size and value.

B/H portfolios when regress along only market premium the results are significant and positive the t value is 23.197 with 0.809 adjusted R^2 value that show only 80.9% variation in B/H explain through MKT. By adding size premium and value premium the results show that market premium and value premium are significantly positive however size is significantly negative. Behaviour of size indicates the negative relationship of size premium with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. 0.862 is the adjusted R^2, which shows that 86.2% of variation in B/H is explained by these variables.

The B/L portfolio when regressed with market premium only the result is significantly positive with values of t 13.582 and adjusted R^2 0.556 that show only 55.6% variations in B/L is explained by market premium. Then by adding size and value premiums the result for market is significant and positive while size and value premium are found significant negative. Significant and negative behaviour of size and value premium indicates the negative relationship of both with return which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.672 is the adjusted R^2 that shows 67.2% of variation in B/L is explained by these variables.

Table 4.3.1(b) Fama and French three factor model of size & P/E Ratio (Pakistan)

$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_P**	**S/H_P**	**S/L_P**	**S/L_P**
Intercept	0.002	0.000	0.018	0.002	0.005	0.002	0.010	-0.001
T value	1.620	0.066	2.739	0.447	1.966	0.849	2.682	-0.232
MKT	0.725	0.772	0.639	0.771	0.853	0.879	0.428	0.765
T value	22.180	23.695	14.142	18.746	13.216	14.943	10.854	15.715
SMB		0.513		1.594		1.578		1.440
T value		3.914		11.163		9.573		9.814
HML		0.046		0.085		-1.032		1.185
T value		0.416		0.659		-7.473		9.475

Adj. R^2	0.779	0.794	0.612	0.747	0.651	0.801	0.562	0.608
F stat	439.096	201.813	102.868	104.755	242.643	214.533	75.061	123.324
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	**B**	**B/H_P**	**B/H_P**	**B/L_P**	**B/L_P**
Intercept	-0.002	0.000	-0.006	-0.006	0.003	0.002
T value	-0.870	0.126	-1.963	-0.293	0.856	0.579
MKT	0.815	0.782	0.984	0.765	0.635	0.759
T value	25.431	27.625	14.127	18.965	9.502	14.948
SMB		-0.456		-0.557		-0.452
T value		-3.519		-3.682		-2.218
HML		-0.035		-0.870		0.948
T value		-0.381		-7.682		7.134
Adj. R^2	0.810	0.839	0.813	0.845	0.536	0.652
F stat	687.026	253.683	574.059	385.222	181.143	115.174
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and book to market ratio as value premium. F sig shows the significance of the variables.

In table 4.3.1(b) P by using price earning ratio as value premium is regressed only with market premium, results are significant and positive with t value of 22.180 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.779 that show independent variables explain 77.9% of changes in dependent variable. Further when other variables which are size premium and value premium are added then market premium size premium and value premium are found positive and significant which indicates that they significantly explain variations in stock returns. 0.794 adjusted R^2 shows that independent variable explains 79.4% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 14.142 indicates that market premium significantly explain variations in returns. The value of adjusted R^2 is 0.612 that show market premium explains 61.2% of changes in the dependent variable return. When the size premium and value premium are also added then market size premium and value premium are found significant and positive. Results indicate that market size premium and value premium significantly explain variations in returns. The

adjusted R^2 is 0.747 that show market, size and value variables explain 74.7 % of variations in S portfolio.

When portfolio S/H_P is regressed only with market premium, results are significant and positive its t value is 13.216 and 0.651 is the value of adjusted R^2, that show market premium explains 65.1% of variations in S/H_P. Then by adding size and value premiums results are significant and positive for market and size premium that indicates that these variables significantly explain variations in stock returns but value premium is reported negative. The value of adjusted R^2 is 0.801 that show market and size premium explain 80.1% of variations in S/H_P portfolio.

S/L_P portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 10.854 and 0.562 the R^2 value shows that market explains 56.2% variation in S/L_P. When the size premium and value premium are also added then market size premium and value premium are found significant and positive. Results indicate that market, size premium and value premium significantly explain variations in returns. 0.608 adjusted R^2 shows that 60.8% variation on S/L_P explain by market, size and value premiums.

B is when regress along only market premium, significantly positive having t value 22.431 and adjust R^2 is 0.810, that show the 81.0% variations on B explain through market. Then by adding size and value premiums the result for market is significantly positive while size and value premium are significantly negative. Significant and negative behaviour of size and value premium indicates the negative relationship of size premium and value premium with return which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.839 adjusted R^2 shows 83.9% of variation on B explain through market, size and value.

B/H_P portfolios when regress along only market premium the results are significant and positive the t value is 14.127 with 0.813 adjusted R^2 value that show only 81.3% variation in B/H_P can be explained by market premium. Then by adding size and value premiums the result for market is significant and positive while size and value premium are found significant negative. Significant and negative behaviour of size and value premium indicates the negative relationship of size premium and value premium with return which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.845 is the adjusted R^2, that show the 84.5% of variations on B/H_P explain through these variables.

The B/L_P portfolio when regressed with market premium only the result is significantly positive with values of t 9.502 and adjusted R^2 0.536 that show only 53.6% variations in B/L_P is explained by market premium. Then by adding size and value premiums the result for market and value premium are significant and positive while size premium is found significant negative. Significant and negative behaviour of size indicates the negative relationship of size premium with return which shows that increase in SMB lead to decrease in stock returns and vice versa. Results indicate that only MKT and HML positively explain variations in stock returns. 0.652 is the adjusted R^2 that shows 65.2% of variation in B/L_P is explained by these variables.

Table 4.3.1(c) Fama and French three factor model of size & EV to EBITDA (Pakistan)

$R_t - R_{rf} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_E**	**S/H_E**	**S/L_E**	**S/L_E**
Intercept	0.002	0.000	0.018	0.002	0.005	0.002	0.010	-0.001
T value	1.620	0.066	2.739	0.447	1.966	0.849	2.682	-0.232
MKT	0.725	0.772	0.639	0.771	0.853	0.879	0.428	0.765
T value	22.180	23.695	14.142	18.746	14.825	14.943	8. 854	15.715
SMB		0.513		1.594		1.578		1.440
T value		3.914		11.163		9.573		9.814
HML		0.046		0.085		-1.032		1.185
T value		0.416		0.659		-7.473		9.475

Adj. R^2	0.779	0.794	0.632	0.787	0.635	0.819	0.362	0.708
F stat	439.096	201.813	102.868	104.755	242.643	214.533	75.061	123.324
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	**B**	**B/H_E**	**B/H_E**	**B/L_E**	**B/L_E**
Intercept	-0.002	0.000	-0.006	-0.006	0.003	0.002
T value	-0.870	0.126	-1.963	-0.293	0.856	0.579
MKT	0.815	0.782	0.984	0.765	0.635	0.759
T value	25.431	27.625	13.197	18.965	13.582	14.948
SMB		-0.456		-0.557		-0.452
T value		-3.519		-3.682		-2.218
HML		0.035		-0.870		0.948
T value		0.381		-7.682		7.134
Adj. R^2	0.820	0.849	0.809	0.862	0.556	0.672
F stat	687.026	253.683	574.059	385.222	181.143	115.174
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and EV to EBITDA as value premium. F sig shows the significance of the variables.

In table 4.3.1(c) by using EV-to- EBITDA (value premium) P is regressed only with market premium, results are significant and positive with t value of 22.180 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.779 that show independent variables explain 77.9% of changes in dependent variable. Further when other variables which are size and value premium are added then market premium, size premium and value premium all are found positive and significant which indicates that they significantly explain variations in stock returns. The value of adjusted R^2 for three factor model increases from 0.779 to 0.794 shows that independent variable explains 79.4% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 14.142 indicates that market premium significantly explain variation in returns. The value of adjusted R^2 is 0.632 that show market premium explains 63.2% of changes in the dependent variable return. When the size premium and value premium are also added then market, sizes and values premium's all found significant and positive. Results indicate that

market, size and value premium significantly explain variations in returns. The adjusted R^2 is 0.787 that show market, size and value variables explain 78.7% of variations in S portfolio.

When portfolio S/H_E is regressed only with market premium, results are significant and positive its t value is 14.825 and 0.635 is the value of adjusted R^2, that show market premium explains 63.5% of variations in S/H_E. When the size premium and value premium are also regressed along with market premium then market and size are found significant and positive but value premium is negative. The value of adjusted R^2 is 0.819 that show market, size and value premium explain 81.9% of variations in S/H_E portfolio.

S/L_E portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 8. 854 and 0.362 the R^2 value shows that market explains 36.2% variation in S/L_E. Then by adding size and value premiums results show significant and positive for market, size and value premium that indicates that these variables significantly explain variations in stock returns. 0.708 adjusted R^2 shows that 70.8% of variation on S/L_E explain by market, size and value premiums.

B is when regress along only market premium, significantly positive having t value of 25.431 and adjust R^2 is 0.820, that show the 82.0% variations on B explain through market. By adding sizes and value premiums results show that the market and value premium significantly positive while size is significantly negative. 0.849 adjust R^2 shows 84.9% of variation in B explain through market, size and value.

B/H_E portfolios when regress along only market premium the results are significant and positive the t value is 23.197 with 0.809 adjusted R^2 value that show only 80.9% variation in B/H_E explain through market premium. By adding size premium and value premium the results show that market premium is significantly positive but size and value premium are significantly negative. Behaviour of size and value premium indicates the negative

relationship of size and value with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. 0.862 is the adjusted R^2, which shows that 86.2% of variation in B/H_E is explained by these variables.

The B/L_E portfolio when regressed with market premium only the result is significantly positive with values of t 13.582 and adjusted R^2 0.556 that show only 55.6% variations in B/L_E is explained by market premium. Then by adding size and value premiums the results for market and value premium are significant and positive while size found significant negative. Significant and negative behaviour of size premium indicates the negative relationship between size premium and return which shows that increase in SMB lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.672 is the adjusted R^2 that shows 67.2% of variation in B/L_E is explained by these variables.

Table 4.3.1(d) Fama and French three factor model of size & EV to Sales (Pakistan)

$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_S**	**S/H_S**	**S/L_S**	**S/L_S**
Intercept	0.002	0.000	0.018	0.002	0.005	0.002	0.010	-0.001
T value	1.620	0.066	2.739	0.447	1.966	0.849	2.682	-0.232
MKT	0.725	0.772	0.639	0.771	0.853	0.879	0.428	0.765
T value	22.180	23.695	14.142	18.746	14.825	14.943	8. 854	15.715
SMB		0.513		1.594		1.578		1.440
T value		3.914		11.163		9.573		9.814
HML		0.046		0.085		-1.032		1.185
T value		0.416		0.659		-7.473		9.475
Adj. R^2	0.779	0.794	0.632	0.787	0.635	0.819	0.362	0.708
F stat	439.096	201.813	102.868	104.755	242.643	214.533	75.061	123.324
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	**B**	**B/H_S**	**B/H_S**	**B/L_S**	**B/L_S**
Intercept	-0.002	0.000	-0.006	-0.006	0.003	0.002
T value	-0.870	0.126	-1.963	-0.293	0.856	0.579
MKT	0.815	0.782	0.984	0.765	0.635	0.759
T value	25.431	27.625	13.197	18.965	13.582	14.948
SMB		-0.456		-0.557		-0.452
T value		-3.519		-3.682		-2.218

HML		0.035		-0.870		0.948
T value		0.381		-7.682		7.134
Adj. R^2	0.820	0.849	0.809	0.862	0.556	0.672
F stat	687.026	253.683	574.059	385.222	181.143	115.174
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and EV to sales as value premium. F sig shows the significance of the variables.

In table 4.3.1(d) by using EV-to- sales (value premium) P is regressed only with market premium, results are significant and positive with t value of 22.180 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.779 that show independent variables explain 77.9 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium, size premium and value premium all are found positive and significant which indicates that they significantly explain variations in stock returns. The value of adjusted R^2 for three factor model increases from 0.779 to 0.794 shows that independent variable explains 79.4% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 14.142 indicates that market premium significantly explain variation in returns. The value of adjusted R^2 is 0.632 that show market premium explains 63.2 % of changes in the dependent variable return. When the size premium and value premium are also added then market, sizes and values premium's all are found significant and positive. Results indicate that market, size and value premium significantly explain variations in returns. The adjusted R^2 is 0.787 that show market, size and value variables explain 78.7 % of variations in S portfolio.

When portfolio S/H_S is regressed only with market premium, results are significant and positive its t value is 14.825 and 0.635 is the value of adjusted R^2, that show market premium explains 63.5% of variations in S/H_S. When the size premium and value premium are also regressed along with market premium then market and size are found significant and positive

but value premium is negative. The value of adjusted R^2 is 0.819 that show market, size and value premium explain 81.9% of variations in S/H_S portfolio.

S/L_S portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 8. 854 and 0.362 the R^2 value shows that market explains 36.2% variation in S/L_S. Then by adding size and value premiums results show significant and positive for market, size and value premium that indicates that these variables significantly explain variations in stock returns. 0.708 adjusted R^2 shows that 70.8% of variation on S/L_S explain by market, size and value premiums.

B is when regress along only market premium, significantly positive having t value of 25.431 and adjust R^2 is 0.820, that show the 82.0% variations on B explain through market. By adding size and value premiums results show that the market and value premium significantly positive, while size is significantly negative. 0.849 adjust R^2 shows 84.9% of variation in B is explain through market, size and value.

B/H_S portfolios when regress along only market premium the results are significant and positive the t value is 23.197 with 0.809 adjusted R^2 value that show only 80.9% variation in B/H_S explain through market premium. By adding size premium and value premium the results show that market premium is significantly positive but size and value premium are significantly negative. Behaviour of size and value premium indicates the negative relationship of size and value with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. 0.862 is the adjusted R^2, which shows that 86.2% of variation in B/H_S is explained by these variables.

The B/L_S portfolio when regressed with market premium only the result is significantly positive with values of t 13.582 and adjusted R^2 0.556 that show only 55.6% variations in B/L_S is explained by market premium. Then by adding size and value premiums the results

for market and value premium are significant and positive while size found significant negative. Significant and negative behaviour of size premium indicates the negative relationship of size with return which shows that increase in SMB lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.672 is the adjusted R^2 that shows 67.2% of variation in B/L_S is explained by these variables.

Table 4.3.2 (a) Fama and French three factor model of size & B/M ratio (China)

$$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$$

	P	P	S	S	S/H	S/H	S/L	S/L
Intercept	0.006	0.007	0.009	0.007	0.009	0.010	0.010	0.004
T value	2.562	3.202	4.126	4.186	2.769	4.518	2.679	1.437
MKT	0.852	0.826	1.073	0.982	1.132	0.945	0.977	1.016
T value	12.565	15.095	13.644	14.341	14.579	14.788	12.535	15.223
SMB		-0.165		0.835		0.873		0.791
T value		-2.013		9.997		9.094		7.309
HML		0.212		0.212		1.217		-0.784
T value		1.968		1.962		9.764		-5.634
Adj. R^2	0.502	0.522	0.431	0.592	0.776	0.795	0.537	0.731
F stat	127.096	95.582	115.321	102.712	54.454	111.450	109.872	89.727
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	B	B/H	B/H	B/L	B/L
Intercept	0.003	0.007	-0.002	0.005	0.008	0.009
T value	1.247	4.279	-0.502	2.737	2.762	4.511
MKT	0.820	0.855	1.005	1.016	0.798	0.735
T value	13.038	18.775	2.437	3.597	15.932	17.302
SMB		-0.265		-1.206		-1.126
T value		-3.637		-11.170		-11.725
HML		0.085		1.213		-0.783
T value		1.063		8.640		-6.328
Adj. R^2	0.594	0.776	0.503	0.531	0.557	0.621
F stat	105.026	88.049	87.525	69.834	121.451	71.113
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and book to market ratio as value premium. F sig shows the significance of the variables.

In table 4.3.2(a) P (average return of all stocks) of book to market (value premium) is regressed only with market premium, results are significant and positive with t value of 12.565 indicates that MKT has positively explain variations in stock returns. The value of

adjusted R^2 is 0.502 that show independent variables explain 50.2 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium and value premium are found positive and significant but size premium is negative. The value of adjusted R^2 for three factor model increases from 0.502 to 0.522 shows that independent variable explains 52.2% of variations in P.

Now S (small portfolios return) is regressed only with market premium results are significant and positive with t value of 13.644 indicates that market premium significantly explain variation in returns. The value of adjusted R^2 is 0.431 that show market premium explains 43.1 % of changes in the dependent variable return. When the size premium and value premium are also added then market, size and value premium all are found significant and positive. Results indicate that market and size premium significantly explain variations in returns. The adjusted R^2 is 0.592 that show market, size and value variables explain 59.2 % of variations in S portfolio.

When portfolio S/H is regressed only with market premium, results are significant and positive its t value is 14.579 and 0.776 is the value of adjusted R^2, that show market premium explains 77.6% of variations in S/H. When the size premium and value premium are also regressed along with market premium then market, size and value premium all are found significant and positive. The value of adjusted R^2 is 0.795 that show market, size and value premium explain 79.5% of variations in S/H portfolio.

S/L portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 12.535 and 0.537 the R^2 value shows that market explains 53.7% variation in S/L. Then by adding size and value premiums results show significant and positive for market, and size that indicates that these variables significantly explain variations in stock returns but value premium is negative. 0.731 adjusted R^2 shows that 73.1% of

variation on S/L explain by market, size and value premiums.

B is when regress along only market premium significantly positive having t value of 13.038 and adjust R^2 is 0.594, that show the 59.4% variation in B is being explained by MKT. By adding size and value premiums results show that the market and value premium are found significant and positive whereas size significantly negative. 0.776 adjusted R^2 shows 77.6% of variations on B explain through market, size and value.

B/H portfolio when regress along only market premium the results are significant and positive the t value is 2.437 with 0.503 adjusted R^2 value that show only 50.3% variation in B/H explain through market premium. By adding size premium and value premium the results show that market premium and value premium are significantly positive but size is significantly negative. Behaviour of size premium indicates the negative relationship of size with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. 0.531 is the adjusted R^2, which shows that 53.1% of variation in B/H is explained by these variables.

The B/L portfolio when regressed with market premium only the result is significantly positive with values of t 15.932 and adjusted R^2 0.557 that show only 55.7% variations in B/L is explained by market premium. Then by adding size and value premiums the result for market is significant and positive but size and value premium are found negative. Significant and negative behaviour of size and value premium indicates the negative relationship of size and value with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.621 is the adjusted R^2 that shows 62.1% of variation in B/L is explained by these variables.

Table 4.3.2(b) Fama and French three factor model of size & P/E Ratio (China)

$$\mathbf{R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t}$$

	P	P	S	S	S/H_P	S/H_P	S/L_P	S/L_P
Intercept	0.006	0.007	0.009	0.007	0.009	0.010	0.010	0.004
T value	2.562	3.202	4.126	4.186	2.769	4.518	2.679	1.437
MKT	0.852	0.826	1.073	0.982	1.132	0.945	0.977	1.016
T value	12.565	15.095	13.644	14.341	15.319	14.788	13.355	15.223
SMB		-0.165		0.835		0.873		0.791
T value		-2.013		9.997		9.094		7.309
HML		0.212		0.212		-1.217		0.784
T value		1.968		1.962		-9.764		5.634
Adj. R^2	0.502	0.522	0.431	0.592	0.797	0.813	0.571	0.631
F stat	127.096	95.582	115.321	102.712	54.454	111.450	109.872	89.727
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	B	B/H_P	B/H_P	B/L_P	B/L_P
Intercept	0.003	0.007	-0.002	0.005	0.008	0.009
T value	1.247	4.279	-0.502	2.737	2.762	4.511
MKT	0.820	0.855	1.005	1.016	0.798	0.735
T value	13.038	18.775	3.314	3.597	11.932	17.302
SMB		-0.265		-1.206		-1.126
T value		-3.637		-11.170		-11.725
HML		-0.085		-1.213		0.783
T value		-1.063		-8.640		6.328
Adj. R^2	0.594	0.776	0. 513	0.530	0.567	0.637
F stat	105.026	88.049	87.525	69.834	121.451	71.113
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and book to market ratio as value premium. F sig shows the significance of the variables.

In table 4.3.2(b) the P of Price earning ratio (value premium) is regressed only with market premium, results are significant and positive with t value of 12.565 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.502 that show independent variables explain 50.2 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium and value premium are found positive and significant but size premium is significant and negative. The value of adjusted R^2 for three factor model increases from 0.502 to 0.522 shows that independent variable explains 52.2% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 13.644 indicates that market premium significantly explain variation in returns. The value

of adjusted R^2 is 0.431 that show market premium explains 43.1 % of changes in the dependent variable return. When the size premium and value premium are also added then market premium, size premium and value premium are found significant and positive. Results indicate that market premium size premium and value premium significantly explain variations in returns. The adjusted R^2 is 0.592 that show market, size and value variables explain 59.2 % of variations in S portfolio.

When portfolio S/H_P is regressed only with market premium, results are significant and positive its t value is 15.319 and 0.797 is the value of adjusted R^2, that show market premium explains 79.7% of variations in S/H_P. Then by adding size and value premiums results show significant and positive for market premium, and size premium that indicates that these variables significantly explain variations in stock returns but negative for value premium. The value of adjusted R^2 is 0.813 that show market and size premium explain 81.3% of variations in S/H_P portfolio.

S/L_P portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 13.355 and 0.571 the R^2 value shows that market explains 57.1% variation in S/L_P. Then by adding size and value premiums results show significant and positive for market premium, size and value premium that indicates that these variables significantly explain variations in stock returns. 0.631 adjusted R^2 shows that 63.1% of variations in S/L_P are being explained by market, size and value premiums.

B is when regressed with only market premium, it is found significant and positive with t value of 13.038 and adjusted R^2 is 0.594, which shows that 59.4% variation in B is being explained by MKT. Then by adding size and value premiums the results for market is significant and positive but size and value premium are found negative. Significant and negative behaviour of size premium and value premium indicates the negative relationship of size and value premium with returns which shows that increase in SMB and HML lead to

decrease in stock returns and vice versa. 0.776 adjusted R^2 shows 77.6% of variation in B is being explained by MKT only.

B/H_P portfolio when regressed with only market premium the results are significant and positive the t value is 3.314 with 0.513 adjusted R^2 value that show only 51.3% variation in B/H_P can be explained by market premium. Then by adding size and value premiums the results for market is significant and positive but size and value premium are found negative. Significant and negative behaviour of size premium and value premium indicates the negative relationship of size and value premium with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. 0.530 is the adjusted R^2, which shows that 53 % of variation in B/H_P is explained by MKT only.

The B/L_P portfolio when regressed with market premium only the result is significantly positive with values of t 11.932 and adjusted R^2 0.567 that show only 56.7% variations in B/L_P is explained by market premium. Then by adding size and value premiums the results for market and value premium are significant and positive but size premium is found negative. Significant and negative behaviour of size premium indicates the negative relationship of size with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.637 is the adjusted R^2 that shows 63.7% of variation in B/L_P is explained by these variables.

Table 4.3.2(c) Fama and French three factor model of size & EV to EBITDA (China)

$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_E**	**S/H_E**	**S/L_E**	**S/L_E**
Intercept	0.006	0.007	0.009	0.007	0.009	0.010	0.010	0.004
T value	2.562	3.202	4.126	4.186	2.769	4.518	2.679	1.437
MKT	0.852	0.826	1.073	0.982	1.132	0.945	0.977	1.016
T value	12.565	15.095	13.644	14.341	11.059	14.788	17.153	15.223
SMB		-0.165		0.835		0.873		0.791

T value		-2.013		9.997		9.094		7.309
HML		0.212		0.212		-1.217		0.784
T value		1.968		1.962		-9.764		5.634
Adj. R^2	0.502	0.522	0.439	0.592	0.771	0.782	0.553	0.703
F stat	127.096	95.582	115.321	102.712	54.454	111.450	109.872	89.727
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	**B**	**B/H_E**	**B/H_E**	**B/L_E**	**B/L_E**
Intercept	0.003	0.007	-0.002	0.005	0.008	0.009
T value	1.247	4.279	-0.502	2.737	2.762	4.511
MKT	0.820	0.855	1.005	1.016	0.798	0.735
T value	13.038	18.775	1.437	3.597	14.312	17.302
SMB		-0.265		-1.206		-1.126
T value		-3.637		-11.170		-11.725
HML		0.085		-1.213		0.783
T value		1.063		-8.640		6.328
Adj. R^2	0.594	0.776	0.523	0.551	0.657	0.671
F stat	105.026	88.049	87.525	69.834	121.451	71.113
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and EV to EBITDA as value premium. F sig shows the significance of the variables.

In table 4.3.2(c) the P of EV to EBITDA (value premium) is regressed only with market premium, results are significant and positive with t value of 12.565 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.502 that show independent variables explain 50.2 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium is found positive and significant but size and value premium are significant and negative. The value of adjusted R^2 for three factor model increase from 0.502 to 0.522 shows that independent variable explains 52.2% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 13.644 indicates that market premium significantly explain variation in returns. The value of adjusted R^2 is 0.431 that show market premium explains 43.1 % of changes in the dependent variable return. When the size premium and value premium are also added then

market and size are found significant and positive but value premium is negative. Results indicate that market and size premium significantly explain variations in returns. The adjusted R^2 is 0.592 that show market, size and value variables explain 59.2 % of variations in S portfolio.

When portfolio S/H_E is regressed only with market premium, results are significant and positive its t value is 11.059 and 0.771 is the value of adjusted R^2, that show market premium explains 77.1% of variations in S/H_E. When the size premium and value premium are also regressed along with market premium then market and size are found significant and positive but value premium is negative. The value of adjusted R^2 is 0.782 that show market, size and value premium explain 78.2% of variations in S/H_E portfolio.

S/L_E portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 17.153 and 0.553 the R^2 value shows that market explains 55.3% variation in S/L_E. Then by adding size and value premiums results show significant and positive for market, size and value premium that indicates that these variables significantly explain variations in stock returns. 0.703 adjusted R^2 shows that 70.3% of variations in S/L_E are being explained by market, size and value premiums.

B is when regressed with only market premium, it is found significant and positive with t value of 13.038 and adjusted R^2 is 0.594, which shows that 59.4% variation in B is being explained by MKT. By adding size and value premiums results show that the market found significant and positive, whereas size and value premium are significantly negative. 0.776 adjusted R^2 shows 77.6% of variation in B is being explained by MKT, size and value.

B/H_E portfolio when regressed with only market premium the results are significant and positive the t value is 1.437 with 0.523 adjusted R^2 value that show only 52.3% variation in B/H_E can be explained by market premium. By adding size premium and value premium the results show that market premium is significant and positive but size and value premium are

found significantly negative. Significant and negative behaviour of size and value premium indicates the negative relationship of size premium and value premium with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. 0.551 is the adjusted R^2, which shows that 55.1% of variation in B/H_E is explained by these variables.

The B/L_E portfolio when regressed with market premium only the result is significantly positive with values of t 14.312 and adjusted R^2 0.657 that show only 65.7% variations in B/L_E is explained by market premium. Then by adding size and value premiums the results for market and value premium are significant and positive but size found negative. Significant and negative behaviour of size premium indicates the negative relationship between size premium and returns which shows that increase in SMB lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.671 is the adjusted R^2 that shows 6.71% of variation in B/L_E is explained by these variables.

Table 4.3.2(d) Fama and French three factor model of size & EV to Sales (China)

$R_t - R_{rt} = \alpha + \beta_1 MKT_t + \beta_2 SMB_t + \beta_3 HML_t$								
	P	**P**	**S**	**S**	**S/H_S**	**S/H_S**	**S/L_S**	**S/L_S**
Intercept	0.006	0.007	0.009	0.007	0.009	0.010	0.010	0.004
T value	2.562	3.202	4.126	4.186	2.769	4.518	2.679	1.437
MKT	0.852	0.826	1.073	0.982	1.132	0.945	0.977	1.016
T value	12.565	15.095	13.644	14.341	15.319	14.788	13.355	15.223
SMB		-0.165		0.835		0.873		0.791
T value		-2.013		9.997		9.094		7.309
HML		0.212		0.212		-1.217		0.784
T value		1.968		1.962		-9.764		5.634
Adj. R^2	0.502	0.522	0.431	0.592	0.797	0.813	0.571	0.631
F stat	127.096	95.582	115.321	102.712	54.454	111.450	109.872	89.727
F sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	B	B	B/H_S	B/H_S	B/L_S	B/L_S
Intercept	0.003	0.007	-0.002	0.005	0.008	0.009
T value	1.247	4.279	-0.502	2.737	2.762	4.511
MKT	0.820	0.855	1.005	1.016	0.798	0.735
T value	13.038	18.775	3.314	3.597	11.932	17.302
SMB		-0.265		-1.206		-1.126
T value		-3.637		-11.170		-11.725
HML		0.085		-1.213		0.783
T value		1.063		-8.640		6.328
Adj. R^2	0.594	0.776	0.513	0.530	0.567	0.637
F stat	105.026	88.049	87.525	69.834	121.451	71.113
F sig	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table is presenting the result of Regression Analysis for Market premium, Size premium and EV to sales as value premium. F sig shows the significance of the variables.

In table 4.3.2(d) the P of EV to Sales (value premium) is regressed only with market premium, results are significant and positive with t value of 12.565 indicates that MKT has positively explain variations in stock returns. The value of adjusted R^2 is 0.502 that show independent variables explain 50.2 % of changes in dependent variable. Further when other variables which are size and value premium are added then market premium is found positive and significant but size and value premium are significant and negative. The value of adjusted R^2 for three factor model increases from 0.502 to 0.522 shows that independent variable explains 52.2% of variations in P.

Now S is regressed only with market premium results are significant and positive with t value of 13.644 indicates that market premium significantly explain variation in returns. The value of adjusted R^2 is 0.431 that show market premium explains 43.1 % of changes in the dependent variable return. When the size premium and value premium are also added then market and size are found significant and positive but value premium is negative. Results indicate that market and size premium significantly explain variations in returns. The adjusted R^2 is 0.592 that show market, size and value variables explain 59.2 % of variations in S portfolio.

When portfolio S/H_S is regressed only with market premium, results are significant and positive its t value is 15.319 and 0.797 is the value of adjusted R^2, that show market premium explains 79.7% of variations in S/H_S. When the size premium and value premium are also regressed along with market premium then market and size are found significant and positive but value premium is negative. The value of adjusted R^2 is 0.813 that show market, size and value premium explain 81.3% of variations in S/H_S portfolio.

S/L_S portfolio is regressed only with market premium results here are significant and positive with t value and adjusted R^2 are 13.355 and 0.571 the R^2 value shows that market explains 57.1% variation in S/L_S. Then by adding size and value premiums results show significant and positive for market, size and value premium that indicates that these variables significantly explain variations in stock returns. 0.631 adjusted R^2.

By only market premium, it is found significant and positive with t value of 13.038 and adjusted R^2 is 0.594, which shows that 59.4% variation in B is being explained by MKT. By adding size and value premiums results show that the market found significant and positive, whereas size and value premium are significantly negative. 0.776 adjusted R^2 shows 77.6% of variation in B is being explained by MKT, size and value.

B/H_S portfolio when regressed with only market premium the results are significant and positive the t value is 3.314 with 0.513 adjusted R^2 value that show only 51.3% variation in B/H_S can be explained by market premium. By adding size premium and value premium the results show that market premium is significant and positive but size and value premium are found significantly negative. Significant and negative behaviour of size and value premium

indicates the negative relationship of size and value premium with returns which shows that increase in SMB and HML lead to decrease in stock returns and vice versa. 0.530 is the adjusted R^2, which shows that 53 % of variation in B/H_S is explained by these variables.

The B/L_S portfolio when regressed with market premium only the result is significantly positive with values of t 11.932 and adjusted R^2 0.567 that show only 56.7% variations in B/L_S is explained by market premium. Then by adding size and value premiums the results for market and value premium are significant and positive but size found negative. Significant and negative behaviour of size premium indicates the negative relationship between of size with returns which shows that increase in SMB lead to decrease in stock returns and vice versa. Results indicate that only MKT positively explain variations in stock returns. 0.637 is the adjusted R^2 that shows 63.7% of variation in B/L_S is explained by these variables.

Table 4.4 (a) Two Pass Regression Result (India)

Variable	B/M ratio	P/E Ratio	EV to EBITDA	EV to sales
Intercept	0.144	-0.066	-0.103	0.058
T value	3.695	-4.016	-1.333	3.741
MKT	-0.162	0.093	0.140	-0.059
T value	-3.429	4.607	1.480	-3.092
SMB	0.003	0.005	0.002	0.003
T value	2.178	2.942	1.367	2.207
HML	0.008	0.010	0.009	0.008
T value	4.524	5.290	4.352	4.703
Adj. R^2	0.836	0.892	0.774	0.844
F stat	11.198	17.582	7.850	11.816
F sig	0.039	0.021	0.062	0.036

Note: This is the table representing Two Pass Regression results for Market premium, Size premium and four variables as value premium i.e. book to market ratio, price earnings ratio, EV to EBITDA and EV to sales.

Table 4.4(a) shows the two pass regression for India run at confidence level 95%. It is used to predict the returns for future from historical betas. T value $\geq \pm 1.96$ means the variables are

forecasting the future returns successfully by today's price. In case of book to market ratio the T value of MKT is -3.429, SMB 2.178 and HML 4.524 which shows MKT, SMB and HML all are significant and predicting future returns. But MKT is negative and significant. 83% Adjusted R^2 shows that independent variables are significantly explaining variation in return by using book to market as value premium in Fama and French three factor model. For Price earnings ratio the T values of MKT, SMB and HML are 4.607, 2.942 and 5.290 which shows all variables are significantly and positively explaining future returns with 89% Adjusted R^2. By using Enterprise multiple as value premium i.e. EV to EBITDA the T value of MKT is 1.480, for SMB it is 1.367 and T value for HML is 4.352, here MKT, SMB are insignificant and fail to predict future returns but HML is significantly predicting the future return with 77% adjusted R^2. Same is for EV to sales T values are MKT -3.092, SMB 2.207 and HML is 4.703 significantly predicting the future with 84% adjusted R^2.

Table 4.4 (b) Two Pass Regression Result (Pakistan)

Variable	B/M ratio	P/E Ratio	EV to EBITDA	EV to sales
Intercept	0.039	0.042	0.009	0.049
T value	1.487	1.953	0.995	2.030
MKT	-0.049	-0.043	-0.043	-0.046
T value	-2.155	-2.548	-1.278	-2.676
SMB	0.004	0.002	0.003	0.002
T value	3.828	2.365	2.814	2.367
HML	-0.004	-0.002	0.004	-0.002
T value	-2.907	-1.601	2.339	-2.250
Adj. R^2	0.784	0.642	0.709	0.733
F stat	8.256	7.042	20.995	11.913
F sig	0.058	0.062	0.016	0.034

Note: This is the table representing Two Pass Regression results for Market premium, Size premium and four variables as value premium i.e. book to market ratio, price earnings ratio, EV to EBITDA and EV to sales.

Table 4.4(b) shows the two pass regression for India run at confidence level 95%. It is used to predict the returns for future from historical betas. T value $\geq \pm 1.96$ means the variables are

forecasting the future returns successfully by today's price. In case of book to market ratio the T value of MKT is -2.155, SMB 3.828 and HML -2.907 which shows MKT, SMB and HML all are significant and predicting future returns. But MKT is negatively significant. 78% Adjusted R^2 shows that independent variables are significantly explaining variation in return by using book to market as value premium in Fama and French three factor model. For Price earnings ratio the T values of MKT, SMB and HML are -2.548, 2.365 and -1.601 which shows that MKT and SMB are significantly and positively explaining future returns but HML is negatively insignificant and is failed to predict future returns with 64% Adjusted R^2. By using Enterprise multiple as value premium i.e. EV to EBITDA the T value of MKT is-1.278, for SMB it is 2.814 and T value for HML is 2.339, here SMB and HML both are significantly predicting the future returns but MKT is negative and insignificant with 70% adjusted R^2. Similarly for EV to sales T values are MKT -2.676, SMB 2.367 and HML is -2.250 significantly predicting the future with 73.3% adjusted R^2.

Table 4.4 (c) Two Pass Regression Result (China)

Variable	B/M ratio	P/E Ratio	EV to EBITDA	EV to sales
Intercept	0.104	-0.106	-0.143	0.018
T value	3.655	-4.056	-1.373	3.701
MKT	-0.202	0.052	0.100	-0.099
T value	-3.469	4.567	1.440	-3.132
SMB	-0.037	-0.035	-0.038	-0.037
T value	2.137	2.902	1.327	2.167
HML	-0.032	-0.030	-0.031	-0.032
T value	4.484	5.250	4.312	4.663
Adj. R^2	0.796	0.852	0.734	0.804
F stat	11.158	17.542	7.810	11.776
F sig	-0.001	-0.019	0.022	-0.004

Note: This is the table representing Two Pass Regression results for Market premium, Size premium and four variables as value premium i.e. book to market ratio, price earnings ratio, EV to EBITDA and EV to sales.

Table 4.4(c) shows the two pass regression for India run at confidence level 95%. It is used to predict the returns for future from historical betas. T value $\geq \pm 1.96$ means the variables are

forecasting the future returns successfully by today's price. In case of book to market ratio the T value of MKT is -3.469, SMB 2.137 and HML 4.484 which shows MKT, SMB and HML all are significant and predicting future returns. But MKT is negatively significant. Adjusted R^2 79% shows that independent variables are significantly explaining variation in returns. For Price earnings ratio the T values of MKT, SMB and HML are 4.567, 2.902 and 5.250 which shows all variables are significantly and positively explaining future returns with 85% Adjusted R^2. By using Enterprise multiple as value premium i.e. EV to EBITDA the T value of MKT is 1.440, for SMB it is 1.327 and T value for HML is 4.312, here HML is significantly predicting the future returns with 73% adjusted R^2 but MKT and SMB are failed to predict future returns. In case of EV to sales T values are MKT -3.132, SMB 2.167 and HML is 4.663 significantly predicting the future with 80.4% adjusted R^2.

4.2 Discussion:

The three factor model and explanatory power of CAPM has been explored by regressions analysis performe for capturing the relationships between markets premium, size premium and value premium in India, Pakistani and China. The result have reported in tables above.

For India Size premium is found significant and positive for small portfolios return like S, S/H and S/L but it is significant and negative for big portfolios return like B, B/H and B/L which shows that SMB is not significant influence return of the stocks which are big. Value premium is significant and positive for all the portfolios except S/L and B/L. The results of above tables show that market factor significantly explains the equity return but it is not able for explaining the return completely. So size premium and values premiums confine those return that are not explaine by markets factors. Size premium is not significantly influence returns of big stocks (Hassan and Javed 2011).

Results show that Indian market is priced by size premium (market capitalization) and value premium (Book-to-market, Price earning ratio, Enterprise value to EBITDA and Enterprise value to sales). The P/E ratio and EV-to-EBITDA multiple are associated more with stock prices as compare to EV-to-sales multiple (Liu, Nissim and Thomas 2002).

For Pakistan Size premium is found significant and positive for small portfolio returns i.e. S, S/H and S/L and it is significant and negative for big portfolio returns i.e. B, B/H and B/L which mean that Size premium (SMB) are not significant influences return of big stock. In case of BTM and P/E Values premiums are significant and positive for all portfolio except S/L and B/L but for EV to EBITDA and EV to sales value premium is significant and positive for all portfolios except S/H and B/H portfolios.

Results show that Pakistani market is priced by size premium (market capitalization) and value premium (Book-to-market, Price earning ratio, EV to EBITDA and EV to sales). The P/E ratio and EV-to-EBITDA multiple are associated more with stock prices as compare to EV-to-sales multiple (Liu, Nissim and Thomas 2002).

Size premium for China is found significant and positive for small portfolio returns i.e. S, S/H and S/L and it is significant and negative for big portfolio returns i.e. P, B, B/H and B/L which mean that Size premium (SMB) are not significant influences return of big stock. In case of BTM and P/E Values premiums are significant and positive for all portfolio except S/L and B/L but for EV to EBITDA and EV to sales value premium is significant and positive for all portfolios except S/H and B/H portfolios.

Results show that Chinese market is priced by size premium (market capitalization) and value premium (Book-to-market, Price earning ratio, EV to EBITDA and EV to sales). The P/E ratio and EV-to-EBITDA multiple are associated more with stock prices as compare to EV-to-sales multiple (Liu, Nissim and Thomas 2002).

Hence, we can say that markets factors significantly explains equities return however it is not able for explaining return completely. So sizes and values premiums confine return that is not explaine by markets factors.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Conclusions:

The study explores the cross-sectional behaviour of Book-to-Market ratio, the Equity multiple (P/E ratio) and Enterprise multiple (EBITDA, Sale multiple) on abnormal returns whether these three valuation multiples can be use to recognize and predict misprice securities or not across the three emerging countries which are India, Pakistan and China. Results showed that stock returns in all these developing countries are related positively with the value premium except low stock returns but in case of valuation multiples value premium is negative related to high stocks. These findings are similar to (Hassn and Javad 2011) that Value premiums are positively related to portfolio but not for stocks with low Book-to-Market ratio. While Joon Sang Yoon (2015) showed that the Price earning ratio and EBITDA multiples are more associated with stock returns as compare to Sales multiple and generate similar range of abnormal returns. He further found that these three multiple are successful in identifying mispricing in securities when size premium and value premium are not controlled.

The study concentrate on the valuation multiples effect in explaining stocks return in equity market of India, Pakistan and China to explore the assets pricing mechanism in these emerging markets via use of stock prices monthly data from June 2000 to June 2015.

Fama and French (1992, 1993) study many factors like size and Book-to-market ratio except the market premium, and reported positive effect of size and Book-to-market ratio on monthly return. Three new factors the P/E ratio, EV-to-EBITDA and EV-to-sales as value premiums have been selected for this study to explore their effect on stock returns. In this study the combine effect of size, market, book-to-market and new factors the valuation multiples P/E ratio, EV-to-EBITDA and EV-to-sales is explore by using the Fama and French (1992, 1993) methodology. Market value of equity, stock prices to earnings per share, EV to EBITDA and EV to sale the portfolios have been constructed. One-Factor CAPM regression analysis, Fama-French Three Factor Regression analysis and two pass regression have been use to investigate the effect of valuation multiples on stock returns. Further it compare the results with CAPM to find if equity or enterprise multiples are systematic risk and priced by market or not.

The results of India show the consistency with conventional assets pricing model the market premium is positive and significant for portfolio returns it means that factor of market is explaining stock returns significantly. The size premium is positive for small portfolios whereas negative for big portfolios i.e. B, B/H and B/L, it shows SMB's are not significant influences return of big portfolio stock (Hassn and Javad, 2011).So variations are discovered for size effect. Value premiums (Book-to-market, P/E ratio, EV-to-EBITDA and EV-to-sales) are positive for portfolio except S/L and B/L. Hence concludes the value premium is discovered in India stocks markets and India markets price Book-to-market ratio, P/E ratio, EV-to-EBITDA and EV-to-sales factors.

The results of Pakistan show that market premium is positively associated with portfolio returns it means that market is explaining stock returns significantly. The size premium is positive for small portfolios whereas negative for big portfolios it shows SMB's are significant influences return of big portfolio stock (Hassn and Javad, 2011). So variations are discovered for size effect. For BTM and P/E Value premium is significant and positive for all portfolios except S/L and B/L but for EV to EBITDA and EV to sales value premium is significant and positive for portfolio excepts S/H and B/H portfolios. Hence concludes value premium is discovered in Pakistan stocks markets and Pakistan markets price Value factor.

Market premium for Chinese positively associated with portfolio returns. The size premium is positive for small portfolios whereas negative for big portfolios it shows SMB's are not significant influences return of big portfolio stock (Hassn and Javad, 2011). So variations are discovered for size effect. For BTM and P/E Value premium is significant and positive for all portfolios except S/L and B/L but for EV to EBITDA and EV to sales value premium is significant and positive for all portfolios except S/H and B/H portfolios. Hence it can be concluded that value premium effect is discovered in Chinese stock market.

In two-pass regression, on the basis of market, size, BTM, P/E, EV to EBITDA and EV to sales the betas are measured and regressed with the means of descriptive statistics. The two-pass regressions for India results predict that BTM, P/E, and EV to sales are significant and are capable of predicting the future returns but in EV to EBITDA MKT and SMB are insignificant and are not able to predict the future returns. Therefore in case of India it can be said that value premiums are able in predicting future returns.

For Pakistan in case of book to market ratio MKT, SMB and HML all are significant and predicting future returns however MKT is reported negatively significant. For Price earnings ratio, MKT and SMB are significantly and positively explaining future returns but HML is

negatively insignificant and is failed to predict future returns. When using EV to EBITDA as value premium SMB and HML both are significantly predicting the future returns but MKT is negative and insignificant. Similarly for EV to sales MKT, SMB and HML are significantly predicting the future with 73.3% adjusted R^2.

In China the results for two pass regression in case of book to market ratio MKT, SMB and HML all are significant and predicting future returns. For Price earnings ratio MKT, SMB and HML all variables are significantly and positively explaining future returns. When using EV to EBITDA HML is significantly predicting the future returns but MKT and SMB are failed to predict future returns. In case of EV to sales all variables MKT, SMB and HML significantly predicting the future.

Recommendation and Policy Implementation

The positive association of value premium and stocks return discovered in Asia emerging market (Indian, Pakistani and Chinese) insist policies maker for thinking about implementations of the policy which improve effect of valuation multiples. Investors and portfolio managers must consider the factors (size, market premium, Book-to-market ratio, P/E ratio, EV-to-EBITDA and EV-to-sales) when making decisions regarding investments, resource allocation and making investment strategies.

Directions for Future Research

More research work needs to be done for complete understanding of the effect of Equity and enterprise multiples on all the sectors of India, Pakistan and China including financial and non-financial sectors. Moreover in this research, portfolios are constructed only on two categories the high and low Book-to-market ratio, P/E ratio, EV-to-EBITDA and EV-to-sales. They can also be constructed on high, medium and low basis. And in future other attractive proxies can be use as value premium to measure and describe return variations.

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