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Comparison of Market, Size and Value Premium of Random Samples in KSE and Non KSE 100 Companies

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Abstract *This study is directed towards the identification of key risk variables that explains the variations in expected stocks' returns and gives rise to Risk Premium for taking an extra risk in addition to the opportunity cost of risk free rate incorporated in stocks' returns. For this purpose, monthly returns of 37 companies (randomly 20 samples selected from KSE and non KSE-100 each) listed on the Karachi Stock Exchange were calculated for a period covering six years from January 2008 up till December 2013. The excess return (portfolio return minus risk-free rate) on these 37 companies is sorted in six size and value portfolios. KSE 100 Index was used as a proxy for benchmark Index, and six months T-bills' yield was used as a proxy for the risk-free rate. Regression results strongly evidenced size and value premium as factors explaining the variations in expected returns for the multifactor model. The variation explained by these factors found more in non KSE-100 than KSE. This study strongly supported two factors (SMB & HML) as risk factors explaining equity risk premium while remaining unsupportive for Market Premium. Therefore, the study suggested three factors model is a better stock valuation model in Karachi Stock Exchange.*

Key Words: Equity Risk Premium, Market Risk Premium, Size Premium, Value Premium, KSE 100 Index

Introduction

Background of Study

The term equity risk premium counts in most financial models of risk and return. It contributes to the estimation of the cost of equity and capital that represents itself the most important component. We always consider the return that is expected on any investment involving risk must be compensated for risk-free rate and premium. The financial theories such as asset pricing model and corporate capital budgeting addressed many questions regarding equity risk premium, which show the significant presence in models and their estimation. Calculation of stock returns always has been an issue for financial models. There is one variable to calculate stock return or portfolio return in CAPM, while three variables were introduced in Fama and French model for stock or portfolio return. Eugene Fame and Kenneth French designed three factors models for the calculation of stock's return. He added that there are two more variables other than the market that performed better. These are the stocks with small market capitalization and having a high BM ratio. The addressed two factors were value and size risk, e.g., HML and SMB. In Pakistan, there are three stock exchanges, Karachi, Islamabad, and Lahore. Karachi Stock Exchange is a hot favorite for trading stocks and market capitalization. Managers and investors traditionally use a single variable for their risk-return valuation. The FF model gives them a new structure of risk-return. Investors usually look for the rate they will compensate for their investment before inception in any deal. This compensated rate of return is usually expressed in percentage. Different companies operate in different industries with different functions or can be in the same industry. Their risk and return combination will be different and unique. An investor needs to be careful while selecting stocks or portfolios to invest in because the selection of stocks or portfolios is highly affected by the risk and return combination. The stocks evolved two types of risk that are a non-systematic and systematic risk. The companies specific risk is referred to as non-systematic risk, and this risk can be diversified by decreasing the riskiness of a portfolio as more and more stocks is added to it. The degree of

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correlation defines the risk reduction among the stocks. This form of risk can be diversified and eliminated by an investor so that it cannot be compensated. Companies against the company-specific risk are also exposed to macroeconomic variables of risk, and this kind of risk negatively affects all the companies, and therefore it is not possible to eliminate or reduce the systematic risk because of interest rate, global recession, inflation, etc. are the determinants of systematic risk. So an investor should be compensated for systematic risk. According to Markowitz assumption, the equity risk premium is calculated for the systematic risk of equity, so the returns from stock are a combination of opportunity cost and systematic risk, which cannot be diversified, i.e., systematic risk premium. The Fama and French model opposed this assumption, and two additional risk factors are considered for the compensation of an investor, which is not systematic but forms a part of the risk premium of stock return. This study comparatively evaluates the three factors, market, size and value premiums, that determine equity risk premium for security and attempts to explore the important variables that comparatively determine the expected return of domestic stocks listed on KSE.

Scope of the Study

Our research study is undertaken to estimate the expected return on domestic stocks, and for this reason, this research study is limited only to those stocks that are listed on Karachi Stock Exchange and specifically those stocks that are randomly picked from KSE 100 and non 100 indexes. This study looks at different aspects of the required rate of return of securities and is directed towards evaluating factors that determine equity risk premium for stocks.

Limitations of the Study

To conduct the research in a full flow, it needs a full length of time to conduct it in a perfect way, but still, a great effort was applied to come up with comprehensive research.

- It is not possible to touch each and every aspect of factors that affect stock returns
- The research problem demands to have a reasonable magnitude of data to be included in order to test the effect of various variables on the required rate of return on stocks which includes the incorporation of daily trade data of prices of stocks which is essential to better performance of the report. However, this cannot be made possible in a short period of time, and an alternate method of monthly return is undertaken.

Literature Review

Fama & French (1992) extended the single-factor CAPM model and remained satisfied with his three-factor model. Market premium got an extension with other two factors e.g., were, size, and value premium. NASDAQ, AMEX, and NYSE were taken as a data collection from 1062 to 1089, and 10 size-based portfolios were constructed. The analysis showed that the size and value premium are more significant for the stock return rather than beta alone expressed the variation in support of the stock's return. Fama & French (1993) examined the stock return by applying a time-series regression approach. This time they took the return of stocks and bonds were regressed on five other factors. They found that term and default premium were significant for bond return and market portfolio, while size and book to market portfolios were significant for stock return. In their study, they found that a portion of returns that was not captured by CAPM can be captured by these variables. On this basis, they tried to develop a model that used three factors in order to explain stocks returns that are following:

- The excess return in relation to market factor,
- Difference between returns of portfolios with small companies and portfolios with large companies based on the market value of equity,
- Difference between the return of portfolios with high and low B/M ratio.

In their study, they concluded the existence of size and value premium in US stock markets.

Senghal & Cornor (2001) compared the single and multifactor models in the Indian Stock Market in their worthy study. The data was based on CRISIL 500 as a benchmark index selection. The data was sorted into six portfolios after the selected samples of stock that were based on size and value portfolios. The groups had been made of size and value stock as big, medium, and small. The ratios represented their weightages as 30% High and Low each, while 40% represented medium. The standards of comparison of both the models were represented by intercepts. At the end, the FF model was superior to CAPM by explaining better variation in stock's return.

Drew & Veerarghavan (2002) by testing the size and value premium signification in developing markets using the data of Malaysia from 1991 to 1999. They found that the CAPM didn't observe

the size and value premium and where it existed. They found that size and value portfolios generate an average return of more than 17%, while variations of 5 % to 6% observed that index returns for the period were substantially lower.

Drew & Veeraraghavan (2003) tested the three factors model with a single index that was a powerful model to be considered at that time. The markets for examination were taken, i.e., Malaysia, Hong Kong, Philippines, and Korea. The conclusion was summed up on the superiority of the FF model and elaborated that the size and value premium better explained the variations than CAPM, and these returns are the compensation for the risk that was not accounted for by CAPM.

Billou (2004), in his study, compared CAPM with the FF model and tested the validity of both models. The data was from 12 industries' portfolios and made 25 size and value portfolios. The standardization comparison was taken as a mean absolute value of alpha of the model. The researcher took two time periods, 1926, 1963 to 2003 each. Data of 25 SMB and HML portfolios and 12 industries portfolios were regressed on time series regression. The first period of 1926 to 2003 and of 25 size and value portfolios evidenced FF model was superior rather than CAPM while 12 industries portfolios showed support for CAPM, so researcher further commented that better CAPM model to be needed.

Bhavna (2006) evaluated the models in India listed on BSE-100 Index as FF model and CAPM. He realized the strong evidence on the basis of the adjusted R2, he confirmed that the FF model showed better variations rather than the CAPM in the returns of the stock. The average adjusted R2 was 87% for Fama and French and 76% for the CAPM model. He further made a combined test on the constant term in the portfolio regressions using the GRS test statistics to check that any abnormal returns are not captured by the factor portfolios. By using this, he again found that the three factors model of FF Model in cross-section returns performed good at explaining variations than CAPM. He further checked for any seasonal effects that can affect the return series and affect his conclusions but had found none. The results were in favor of the FF Model in terms of variation and return and recommended for using in Applications like Selection, Performing, Evaluating and Performance of portfolios, cost of capital estimation, and abnormal returns in event studies. The variables he used were size, B/M, and market portfolio as an independent, while excess return on portfolio as a dependent variable. Then he tested the zero intercepts hypothesis, i.e. to test the restriction of setting the constant term equal to zero. He used the share prices of 79 out of 100 companies listed on the Bombay stock exchange sample. He used the data from June 2001 to 2006, and the frequency of data was monthly. The stock data had been obtained from "Capital line plus, "a financial database that provides fundamental and market data on more than 13000 Indian listed and non-listed companies. When the sample was selected, he sorted the data on the basis of market capitalization. He made six portfolios to test the data, and these portfolios were formed on the basis of two sizes and three books to market portfolios. These portfolios were B/H, B/M, B/L, S/H, S/M, and S/L. On these portfolios, he applied the time series and cross-sectional regression models. There were two ways that he used for testing his hypothesis by examining the t-statistics for each intercept and using the Gibbons, Ross, and Shanken (GRS) F-statistics to jointly test the intercepts equal to zero.

Mirza (2008) conducted research to test the FF model that is significant for KSE Indexes or not, which was Size and Value factors. He selected 81 stocks from Karachi Stock Exchange, used KSE 100 Index as the benchmark Index, and replaced that for the market portfolio required for calculation of market risk premium. The daily returns on selected stock's data represented the five years that were Jan 2003 to Dec 2007, reflecting the boom of economic activity in Pakistani markets. Six monthly T-bills were taken into consideration for the risk-free rate. The stocks were divided on the basis of size into two categories as big and small, using the median as a breakpoint after sorting on the basis of market capitalization. Another categorization was done on the basis of BM ratio of the companies by sorting the stocks on B/M ratio. Three groupings were made of 30% high B/M ratio, 40% as medium B/M ratio, and 30% as low BM value. On the basis of these two sizes and three value categories, six portfolios of stocks were made on the intersection of size and value stocks. The result was significant for the presence of size and value premium in the Karachi Stock Exchange as the portfolios were regressed.

Methodology

The methodology of the report (for collection of data) is mostly secondary data. The data required here for the study mostly revolve around daily stock prices. These observations are being recorded from different database sources (secondary sources) used for recording share prices on a monthly basis for the duration of six years from 2008 to 2013. The methodology of the report and selection

of data requires a detailed explanation, so this research is discussed in detail at analysis section below.

Research Question

What will be the impact of three factors model on KSE and Non-KSE-100 random samples?

Research Objectives

To comparatively evaluate the different factors (market risk premium, size premium, and value premium) that determine equity risk premium for securities. To sort out the important variables that determine the expected return of stock listed in stock exchange.

Hypothesis Development

To test the FF model superiority, Regression model was used for this study. It was tested for six size and value premium portfolios. Three factors were involved in regression for excess return in each portfolio i.e. Market, Size and Value Premiums. The model is given below:

$(Ri,pi – Rf) = \alpha + \beta1 (Rm – Rf) + \beta2 (SMB) + \beta3 (HML)$

Since this is a multivariate regression model, the following hypotheses will be tested.

H1 (a) $\alpha p = 0$

H1 (b) $\beta1 \neq 0$

H1(c) $\beta2 \neq 0$

H1 (d) $\beta3 \neq 0$

Where αp shows intercept of regression and $\beta1$, $\beta2$, and $\beta3$ show risk associated that changes in the portfolio returns.

Sources of Data

In order to facilitate the research with data, it required monthly data of closing share prices of KSE was taken from the database source of financial daily Business Recorder and official site of Karachi stock exchange(www.Kse.org.pk). These monthly closing share prices were used to calculate the monthly returns on stocks. These individual stock returns were used to calculate the weighted portfolio returns. The Government's treasury bills for six months were assumed as risk free asset, and returns on these assets were assumed risk-free returns. The reason for making this selection is its free ness from default risk. However, being a default risk-free, a treasury bill is still exposed to risks such as inflation risks.

Sample Selection

The study is undertaken to evaluate the variables for estimating expected returns on domestic stock, therefore for this purpose, stock listed on Karachi Stock Exchange are selected. However, due to time limitations, 20 samples were randomly selected from KSE-100 and 20 from non-KSE100. So the model will be tested on both KSE and non-KSE-100 samples for fitness and comparison. The data of share prices for the duration of six years as 2008 to 2013. Stocks from all the sectors were randomly selected to contribute to the analysis. The following criteria were used to select stocks from KSE and non KSE-100 index.

- The selected stocks must be the representation of publically limited and KSE listed.
- Sampled stocks, monthly price data, book value, market value, and market capitalization should be available.
- The stocks data must be available for a period of six years. Based on the criteria, 37 stocks were selected to undertake the research with monthly share prices of six years.

Model Specification

A multifactor model will lead us to the relationship between the stock/portfolio return variations with more than one variable and judge whether testing more variables against returns variations justifies the stock returns. I will be using Fama and French Model as my Multi-Factor Model. Fama and French Three-Factor Model is an extension of the Single Index Model. Besides the traditional beta associated with the market portfolio, this model comprises of two additional betas. These two additional betas account for two additional factors known as size and value factor. Three factor Model can be represented as follows.

$$Ri,pi = Rf + \beta1(Rm-Rf) + \beta2\ (SMB) + \beta3(HML)$$

Where *Ri,pi* represents expected return on stock/ portfolio i , *Rm-Rf* is the excess return on a market portfolio. This is the same variable and factor that is used in the 11 single index model. A difference here is that this is tested in a combination of the other two factors in the Three-Factor Model. *SMB* is the size premium, while *HML* is the value premium. The two betas *β2* and *β3* are the risk sensitivities of returns for size and value.For testing the three-factor model, we follow the traditional multivariate regression framework and transform the three-factor model equation into a time series model represented as

$$(Ri,pi - Rf) = \alpha + \beta1\ (Rm - Rf) + \beta2\ (SMB) + \beta3\ (HML)$$

Where (Ri,pi – Rf) is excess return on stock/ portfolio, Rm – Rf is the excess return on a market portfolio, or we can say that risk premium on market portfolio, SMB is the size premium, and HML is the value premium. is the intercept of the equation and represents any return that has not been captured by the three factors. As discussed in the previous section smaller the value of intercept and the closer it is to zero, the better the model represents the variations in returns in stock or portfolio under observation.

Portfolio Returns

However, the two models represented above are for both individual stocks as well as portfolios. The return of a portfolio of stocks is the weighted average of returns of all the stocks that are included in the portfolio. So

$$(Rpi) = \Sigma wiRi$$

Where Rpi is the expected return of the portfolio while wi is the weight of the stock in the portfolio. Therefore the excess return on the portfolio can be represented as

$$Rpi - Rf = \Sigma wiRi - Rf$$

Dependent and Independent Variables

Dependent Variable

In this study, we are testing the three factors model to carry out the comparative analysis of the relationship of variations in stock returns with three variables (Market, Size, and Value premium). However, the analysis is carried out to test the dependency of stock variations on market risk premium, size premium and value premium. So we have to distinguish between dependent and independent variables in the model. In multi factors model we are testing the dependency of excess stock or portfolio return, therefore in both of our models ***Ri,pi – Rf*** is our dependent variable.

Independent Variables

The three factors Fama and French model is an extension of the single-index model. This model contains the variable that is already been included in CAPM with addition of two more factors. So, in all, we have three independent variables these are market risk premium, size factor and value factor.

Market risk premium (Rm – Rf) is the excess return on a market portfolio, the difference between the return on market portfolio and return from risk free asset. The risk-free rate represents that part of the return which would have been earned if the investor had invested that in a risk free asset rather than stock or portfolio, while the excess return on portfolio is that return which would have been earned by investing in the market portfolio rather than stock/ portfolio under study.

The second factor is *Size premium* (*SMB*) is the return that is offered by small companies as categorized by their size in comparison to big companies. It is a difference between return offered by companies having small size and returns paid by big sized companies. Similarly, *Value premium (HML)* is the additional return offered by companies having high book to market value in comparison to those companies having a low book value to market value.

Analysis Results and Discussions

Table 1. Factors Correlation for KSE-100

	Rm-Rf	SMB	HML
Rm-Rf	1		
SMB	-0.0565	1	
HML	0.0099	-0.214	1

The correlation Table 4.1 shows the correlation between these three factors for KSE-100 samples. The result shows that the SMB is 5% correlated with market premium that is weak and negative. That inverse and weak correlation is a good sign for the fitness of the model. In other hand HML indicates -21% correlations with SMB that is quite good for this study. HML looks very weak if we compare its correlation with market premium with about negligible percentage.

Table 2. Correlation Factors for Non KSE-100

	Rm-Rf	SMB	HML
Rm-Rf	1		
SMB	-0.11066	1	
HML	0.118424	-0.91782	1

In table 4.2 we are discussing correlation factors for non KSE-100. The result interprets that SMB and HML having weak correlation about 11% with market premium but there is a very strong and negative correlation between these variables (SMB & HML) about 91%.

Regression Results of Three-factor Model for KSE-100

Table 3. KSE-100

Three factor regression on portfolio sorted for Market premium, size premium and Value premium						
		Rm-Rf	SMB	HTML		
	α	β1	β2	β3	R-squared	Adj. R-squared
B/H	-1.860	0.177	-0.262*	0.978*	0.518	0.497
B/M	1.051	0.980	-0.532*	0.090	0.194	0.158
B/L	0.499	0.899	-0.374*	-0.083*	0.108	0.069
S/H	0.112	0.847	-0.034	0.711*	0.337	0.307
S/M	1.826	1.083	1.788*	0.501*	0.573	0.554
S/L	-2.247	0.125	0.078	-0.228*	0.093	0.053

*N.B: the * indicates the significance on the basis of 0.05 (significance level of 5%)*

Table 3 indicates three factor regression on portfolio sorted for Market premium, size premium and Value premium for the randomly selected companies in KSE-100. This study undertakes six portfolios like (B/H, B/M, B/L, S/H, S/M and S/L), for the analysis of Fama & French three factor Model (Rm-Rf, SMB and HML).

The intercept and Beta show the relationship towards the dependent variable (Ri). The intercept coefficient (-1.860) of B/H portfolio shows the negative relationship towards Ri (excess return). The negative sign indicates a per-unit change in the Ri (excess return) due to Rm-Rf (Market premium) in the B/H portfolio. The β1 coefficient (0.177) of B/H portfolio shows the positive relationship towards Ri (excess return). The positive sign indicates a per-unit change in the Ri (excess return) due to Rm-Rf (Market premium) in the B/H portfolio. The β2 coefficient (-0.262) of B/H portfolio shows the negative relationship towards Ri (excess return). The negative sign indicates a per-unit change in the Ri (excess return) due to difference between the Small and Big firms. The β3 coefficient (0.978) of B/H portfolio shows the positive relationship towards Ri (excess return). The positive sign indicates a per-unit change in the Ri (excess return) due to difference between the High and Low firms. R-squared: that determines the proportion of variations in the dependent variable (Ri), which is explained by the independent variables. The R-squared of S/M portfolio (0.573 or 57.3%) which signify the highest variation which is explained by the market premium, size premium and Value premium in the Ri. The R-squared of S/L portfolio (0.093 or 9.3%) which signify the lowest variation which is explained by the market premium, size premium and Value premium in the Ri. Adjusted R-squared: that determines the proportion of variance or dispersion in the dependent variable, which is explained by the independent variables.

The Adjusted R-squared of S/M portfolio (0.554 or 55.4%) which signify the highest variance, which is explained by the market premium, size premium and Value premium in the Ri. The Adjusted R-squared of S/L portfolio (0.053 or 5.3%) which signify the highest variance, which is explained by the market premium, size premium and Value premium in the Ri. The adjusted R-squared must be less than the R-squared, which means that, that the lesser the variances, the greater will be the reliability of an estimated coefficients. By taking Significance level as 0.05, the analysis results indicate that in the β2 (SMB) all the portfolios are significant except S/H and S/L. β3 (HML) shows B/M portfolio is as insignificant and the rest all portfolios are significant. The β3 (Market premium) portfolios are all insignificant.

Regression Results of Three-factor Model for Non KSE-100

Table 4. Non KSE-100

Three factor regression on portfolio sorted for Market premium, size premium and Value premium						
		Rm-Rf	SMB	HTML		
	α	β1	β2	β3	R-squared	Adj. R-squared
B/H	-3.212	-0.732	-0.831*	1.159*	0.807	0.799
B/M	1.691	1.923	-2.432*	-1.255*	0.807	0.799
B/L	1.412	1.356	-0.008	0.370*	0.466	0.489
S/H	-0.573	0.713	-0.320	-0.220	-0.014	0.029
S/M	2.549	2.452	0.553*	0.731*	0.469	0.491
S/L	-1.227	-0.090	-0.519*	-0.250	0.037	0.077

*N.B: the * indicates the significance on the basis of 0.05 (significance level of 5%)*

Table 4 indicates three factor regression on portfolio sorted for Market premium, size premium and Value premium for the randomly selected 20 companies in Non- KSE-100. This study undertakes six portfolios like (B/H, B/M, B/L, S/H, S/M and S/L), for the analysis of Fama & French three factors Model (Rm-Rf, SMB and HML). The intercept and Beta show the relationship towards the dependent variable (Ri).

The intercept coefficient (-3.212) of B/H portfolio shows the negative relationship towards Ri (excess return). The negative sign indicates a per-unit change in the Ri (excess return). The β1 coefficient (-0.831) of B/H portfolio shows the negative relationship towards Ri (excess return). The negative sign indicates a per-unit change in the Ri (excess return) due to Rm-Rf (Market premium) in the B/H portfolio. The β2 coefficient (-0.831) of B/H portfolio shows the negative relationship towards Ri (excess return). The negative sign indicates a per-unit change in the Ri (excess return) due to difference between the Small and Big firms. The β3 coefficient (1.159) of B/H portfolio shows the positive relationship towards Ri (excess return). The positive sign indicates a per-unit change in the Ri (excess return) due to difference between the High and Low firms. R-squared: that determines the proportion of variations in the dependent variable (Ri), which is explained by the independent variables. The R-squared of B/H and B/M portfolios are each (0.80 or 80%) which signify the highest variation which is explained by the market premium, size premium and Value premium in the Ri. The R-squared of S/H portfolio (-0.014 or 1.4%) which signify the lowest variation which is explained by the market premium, size premium and Value premium in the Ri. Adjusted R-square determines the proportion of variance or dispersion in the dependent variable, which is explained by the independent variables.

The Adjusted R-squared of B/H and B/M portfolios are each (0.799 or 79.9%) which signify the highest variance, which is explained by the market premium, size premium and Value premium in the Ri. The Adjusted R-squared of S/L portfolio (0.029 or 2.9 %) which signify the highest variance, which is explained by the market premium, size premium and Value premium in the Ri. The adjusted R-squared must be less than the R-squared, which means that, that the lesser the variances, the greater will be the reliability of an estimated coefficients. By taking Significance level as 0.05, the analysis results indicate that in the β2 (SMB) all the portfolios are significant except S/H and B/L. β3 (HML) shows S/H and S/L portfolios are as insignificant and the rest all portfolios are significant. The β3 (Market premium) portfolios are all insignificant.

Comparative Analysis of KSE and Non KSE-100

Table 5. Comparative Analysis of KSE and Non KSE-100

Three factor regression on portfolio sorted for Market premium, size premium and Value premium												
	KSE-100						Non KSE-100					
	A	β1	β2	β3	R2	Adj. R2	α	β1	β2	β3	R2	Adj. R2
B/H	-1.86	0.177	-0.262*	0.978*	0.518	0.497	-3.212	-0.732	-0.831*	1.159*	0.807	0.799
B/M	1.051	0.98	-0.532*	0.09	0.194	0.158	1.691	1.923	-2.432*	-1.255*	0.807	0.799

B/L	0.499	0.899	-0.374*	-0.083*	0.108	0.069	1.412	1.356	-0.008	0.370*	0.466	0.489
S/H	0.112	0.847	-0.034	0.711*	0.337	0.307	-0.573	0.713	-0.32	-0.22	-0.014	0.029
S/M	1.826	1.083	1.788*	0.501*	0.573	0.554	2.549	2.452	0.553*	0.731*	0.469	0.491
S/L	-2.247	0.125	0.078	-0.228*	0.093	0.053	-1.227	-0.09	-0.519*	-0.25	0.037	0.077

*NB: the * indicates the significance on the basis of 0.05 (significance level of 5%)*

Table-4.5 Explains the comparative analysis of overall portfolios that are regressed individually. The main theme of this study is to check the significance of the model and interpret it comparatively. The study indicates that the model is fit for the two factors that are size (SMB) and value (HML) premium that are significant in KSE and non KSE-100. Market premium is significance at all. The above table shows that the model is more significant in KSE-100 than Non KSE-100 firms. The value premium β3 (HML) is highly significant in KSE-100 portfolios as compared to non KSE-100. The size premium β2 (SMB) shows the same level of significance in both the cases. There is more variation in non KSE-100 as compared to KSE-100, and if we count the variance so the non KSE-100 shows more variance than KSE-100. The overall Fama French three factors model is fit for the two factors SMB and HML that are significant rather than the third factor that is Rm-Rf. The results interpret the fitness of the model for SMB and HML and more appropriate for the selected samples in KSE and non KSE-100 rather than the third factor or variable (Rm-Rf). So the model is significant for SMB and HML while insignificant for market premium (Rm-Rf). Hence hypothesis H1(c) and H1 (d) accepted while H1 (b) rejected and H0 (b) accepted.

Conclusion of Findings

This study analyzed the fitness of the Fama French three factors model as market, size and value premium in the randomly selected 20 firms each in KSE and non KSE-100. The conclusion came from results that the model is significant for size and value premium as compared to market premium. The variation as explained by independent variables with dependent variable is more in KSE-100 as compared to non KSE-100 samples. The dispersion of variance found more in non KSE-100 as compared to KSE-100. The result for this model for the selected samples indicated more accuracy or shows more significance for the samples (portfolios) in KSE-100.

Conclusion

Equity risk premiums are one of the central components of every risk and return model in finance and are a key input into estimating costs of equity and capital. The expected return on any risky investment is equal to the sum of the risk-free rate plus premium to remunerate for the risk. The risk premium is a key element of most financial models and its estimation is required for most questions addressed by finance theory such as asset pricing and corporate capital Budgeting. Fama-French three factor model is a model designed by Eugene Fame and Kenneth French to describe stock returns. The three factor model uses three variables. Fama and French started with two observations that two classes of stocks have performed better than the market. These are stock with small caps and stock with high book-to-market ratio. For this FF added two more factors outside market risk. They used high minus low (HML) for value stock and small minus big (SMB) to address size risk. In Pakistan there are three stock exchange Karachi stock Exchange, Islamabad stock exchange, and Lahore stock exchange. KSE is the most liquid and biggest in terms of market capitalization and trading volume. Therefore the selected samples were from KSE registered companies for the fitness of the model. 20 Samples were randomly selected from KSE and non KSE-100 each and compared. Monthly returns for a period comprised of different business cycles were selected from January 2008 up till December 2013 for the duration of six years. KSE 100 Index was selected as a Market Index with six months T-bills yields as a proxy for risk free rate.

The empirical findings suggested the validity of two factors (SMB and HML) out of three for KSE and non KSE-100. The model was not significant for market premium in both cases. There is more variation in non KSE-100 as compared to KSE- 100, and if we count the variance so the non KSE-100 shows more variance than KSE-100.

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