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*Received: 13 December 2012 Accepted: 1 January 2013 Published: 15 January 2013*

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## Abstract

here is a view that investor who want to make investment in stock exchange should make a decision maximize their wealth. For this purpose the investor not only want to know which factor will impact the return but also want to understand the relative weight of various factors level, and which sub factor will impact more for giving factors. So they analyze all relevant factors while making decision that affect the return from investment in future. Variation in stock market return was determined by various theories. It was started with Sharp (1964), Linter (1965), Black (1972) who present Capital Asset Pricing Model (CAPM) which shows how to be related between the average return of stock and market risk factor. Other researcher did not agree because there is other factor more than one factor. Many anomalies have been identified in CAPM. Base (1977) finds high earning to price (E/P) ratio companies having higher return than low earning to price ratio. Bans (1981) told small stock outperform than large stock. Stuntman (1980) argued that company with high book to market value outperforms companies with low book to market value.

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*Index terms—*

## 1 Introduction

here is a view that investor who want to make investment in stock exchange should make a decision maximize their wealth. For this purpose the investor not only want to know which factor will impact the return but also want to understand the relative weight of various factors level, and which sub factor will impact more for giving factors. So they analyze all relevant factors while making decision that affect the return from investment in future.

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After that Ross (1976) proposed the Arbitrage pricing theory (APT) that developed the model of many factor for assessing the return of stock. APT does not specify the name and number of factors. Arbitrage pricing theory does not deal with the issue of portfolio efficiency. It is more efficient than CAPM. But it depends on economic condition and positive business So APT is not very famous as it should be.

Fama and French (1992) propose a three factor model that suggest as an alternative explanation for the stock market return. They combined these factors market risk premium size and book to market ratio to explain the return of stock. Market risk premium is the difference between the risk free rate and the expected return on the market portfolio, Size premium is that the return of small company stock to be higher than the large stock company, They use SMB (small minus big) to address size risk and HML (high minus low) for value Risk. Value premium is the greater risk adjusted return of value stock over growth stock. The high book to market Ratio

45 stocks are termed as value stock while low book to market stock are growth stock. Fama and French : The Islamic  
46 University of Bahawalpur's. E-mail : beenishameer14@gmail.com studied for correct and efficiency of model in  
47 many times. Fama and French did an empirical test in 1996 and they found out that two classes of stocks were  
48 giving more return or performance better than market as a whole. This includes stock with high book to market  
49 ratio and small market capitalization. Fama and French commented that since these stocks yield higher return.  
50 So this phenomenon is explained by the existence of value premium and size premium in addition to market risk  
51 premium as used in traditional capital asset pricing model (CAPM).

## 52 2 II.

### 53 3 Research Questions

54 ? Does CAPM accurately predict the risk/ return trade off in KSE. ? Do Fama and French accurately predict  
55 the risk/ return trade off in KSE.

### 56 4 a) Objectives

57 ? To provide insight about application of CAPM in Pakistan equity market.

58 ? To explain the role of size for predicting the equity market returns. ? To explore the relation of value  
59 premium in explaining stock market return.

## 60 5 III.

### 61 6 Significance

62 Pakistan has been classified as an emerging market and its equity market is of special interest for several reasons.  
63 Its geopolitical situation suggests that it has a great potential for economic activities if it achieves political  
64 stability and utilize its resources efficiently. Therefore future investor interested to know the risk and return  
65 because as there will be high risk then there will be high return. Therefore such study is needed to explain  
66 investor behavior either company worker are foreign investor. This study identify the factor that effect the equity  
67 return in Pakistan the relationship between equity return and factor value premium, size premium both to equity  
68 market has been investigated. As it is obvious that greater information always preferred over less, so this study is  
69 intended to analyze the stock return prediction process by using Capital asset pricing model (CAPM) and Fama  
70 & French three factor model. The study will contribute to help investor to make better investment decisions. As  
71 this study will make clear whether the market premium is enough to explain the stock market dynamics or other  
72 factor predict the stock market return.

73 IV.

### 74 7 Methodology

75 This study is an explanatory in nature as Fama and French Three Factor Model is an extension of single factor  
76 model CAPM and tries to relate individual security return with the market return. Besides the traditional beta  
77 it takes into account two additional factors that are value premium and size premium. Secondary data has been  
78 collected from KSE-100 index and was used as benchmark and data of 100 firms has been used. Therefore in this  
79 study sample period was from 1st January 2001 to 31st December 2008.

80 V.

### 81 8 Model Specification

82 Fama and French three factor model is an extension of single factor CAPM. Besides this it includes two additional  
83 factors that are size and value premium.  $R_{it} = R_{ft} + \beta_{it}(R_{mt} - R_{ft}) + \beta_{it}(SMB) + \beta_{it}(HML) + e_{it}$

### 84 9 HML) +e

85 Where  $R_{it}$  represents expected return on stock  $i$ , and  $R_m - R_f$  shows market premium, SMB represents size  
86 premium and HML represents value premium. The coefficient is the risk sensitivities for the market risk followed  
87 by size and value. The market risk coefficient is similar to Sharpe's CAPM but different in the sense that in the  
88 three factor model explanatory function will be shared by two other risk factors namely SMB and HML.

## 89 10 VI.

### 90 11 Literature Review

91 The variation in stock return plays vital role for judgment of investor behavior. Sharpe (1964) argued that the  
92 expected return on a stock based on the systematic risk. CAPM concluded that expected return on an asset above  
93 the risk free rate is proportional to the systematic risk and the market beta alone is sufficient to explain security  
94 returns and that there is a positive expected premium for investing in beta risks. Ross (1976) presented arbitrage  
95 pricing theory (APT) which explains the multifaceted relationship between risk and return. It explained that the

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96 expected return of any security can be molded as a linear function of a variety of macroeconomic factors, where  
97 factor-specific beta coefficients correspond to sensitivity to change in each factor.

98 Fama and French (1992) studies the cross section of expected return and determine the additional factors of  
99 size and book to market equity to identify the stock return other than beta that CAPM was unable to explain.  
100 Data was collected from the year 1963 to 1990. It concluded that size was unrelated when variation in beta occurs  
101 and book to market has stronger effect than size factor on return. Fama and French (1995) explained the factors  
102 that related in explaining the stock return. Average returns on stock are related to firms' characteristics like cash  
103 flow/price, past sales growth, size, long term past returns, earnings/price, book-to-market equity and short term  
104 past returns. These factors are not explained by CAPM. According to Fama and French APT better measures  
105 stock return than CAPM. Fama and French (1996) conducted their study that CAPM wanted, dead or alive.  
106 They conducted this study against the claim that beta (systematic risk) from annual return generate stronger  
107 positive relation between beta and average return than beta from monthly return. Data was collected from 1928  
108 to 1993 from NYSE. The findings rejected that CAPM explained expected return and concluded that failure of  
109 CAPM can only be explained by multifactor APT.

110 Bun doo (2006) applied Fama and French model (1993) on Stock Exchange of Mauritius. The empirical  
111 evidences confirmed that Fama and French model holds for Stock Exchange of Mauritius. This study also found  
112 that Fama and French three factor model is vigorous in consideration of time varying betas and they found that  
113 both size effect and a book-to-market equity are present on the stock exchange of Mauritius. An augmented  
114 Fama and French three-factor model for the SEM shows that the time-variation in beta is priced returns on the  
115 SEM are better described by the Fama and French three-factor model.

116 Fama and French (2000) studied Characteristics, Covariance and Average Returns from the period 1929 to  
117 1997. This result shows that the value premium in average stock returns is robust and the three-factor model is  
118 just a model and thus an incomplete description of expected returns.

119 Was mullah et al. (2011) studied Fama and French three factor models: Empirical evidence from financial  
120 market of Pakistan. Multivariate regression analysis was used made on the basis of size and book to market  
121 value. Monthly data of 20 banks were taken for the period of five years starting from January 2006 to December  
122 2010. Results showed that Fama and French three factor model explained the variations in returns.

123 Hasan and Javed (2011) studied the relationship among size premium, value premium and equity returns in  
124 Pakistani equity market for the period of June 2000 to June 2007 by using Fama and French (1992, 1993)  
125 methodology. This is the first study in Pakistan that explores the relationship among stated variables by  
126 employing a large sample of more than 250 stocks listed at the Karachi Stock Exchange. An analysis of the  
127 results revealed that Size factor is found significantly positively related to portfolio. Davis et al. (2000) for the  
128 period of 1929 to 1997 examined the covariance and average returns. The data was divided in two phases first  
129 from July 1929 to June 1963 and second from July 1963 to June 1997. Three factor model was used and the  
130 positive relation between average return and book-to-market equity is as strong for 1929 to 1963 and this is close  
131 to the premium for July 1963 to June 1997. They found that value premium was higher than size premium. Drew  
132 and Veeraraghavan and Graven (2002) studied the relationship among firm size and book to market equity with  
133 stock returns from the 1991 to 1999. They found that single risk factor is not enough in describing the cross  
134 section of stock returns. They examined the Explanatory power of a single index model with the multifactor  
135 asset-pricing model of Fama and French (1996) for Hong Kong, Korea, Malaysia and the Philippines and they  
136 conclude that Fama and French model better explained the stock return than CAPM.

137 Iqbal and Brooks (2007) studied the effect of CAPM and two step Fama and French procedure on the Karachi  
138 Stock Exchange for the period of September 1992 to April 2006. In this study, they found that beta explained the  
139 cross sectional variation in expected returns, especially with individual stocks, size and beta portfolios.

140 Brayant and Eleswarapu (1997) studied the cross sectional determinants of New-Zeeland share market returns.  
141 The study was done from the period of 1971 to 1993 on security return, beta, firm size and book to market ratio.  
142 They found that betas calculated having little explanation of stock market return and there was positive impact  
143 between book to market ratio and average return.

144 Chordia and Avramou (2006) examined the asset pricing model and anomalies size value premium and  
145 momentum anomalies were used to explain the asset pricing model. The analysis done over the period of  
146 1964-2001. It concluded that size, book to market value and past returns explained by various asset pricing  
147 model.

148 Yassalou and Liew (2000) examined book to market, size and momentum be risk factors they investigated that  
149 the profitability of value premium, size premium and momentum linked to future GDP growth. It concluded  
150 that value premium and size premium contained significant information about future GDP growth.



Figure 1: C

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