

The effect of firm specific factors on stock returns: A case of Pakistani listed firms

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Abstract:

The aim of this paper is to find the impact of risk, return on investment, growth and size on stock returns. The data have been collected from financial statements of 46 companies listed on KSE, covering 18 different sectors, for a period of 5 years i.e. 2008-2012. To test the hypotheses empirically, descriptive statistics and multiple linear regression techniques are used. Results show 39.6% correlation between predictor and predicted variables whereas 15.7% variation in predicted variable is explained by four predictor variables namely risk, ROI, growth and size. Three of the predictor variables, namely risk, ROI and growth, are statistically significant while size has a statistically insignificant impact on stock returns. The findings of this study are consistent with previous studies on the same topic, conducted in other markets. This study will be helpful for individual as well as institutional investors to estimate the expected returns of stocks based on the above mentioned variables before investing, thus enabling them to make better investment decisions.

Keywords: *Stock returns, risk, return on investment, growth, size.*

Introduction

Returns have positive link with systematic market risk. A dilemma of how to prefer a company and devise a strategy to maximize the stock returns, it needs concentration and discussion among business financial literature. Categorization of factors that affect the return is key concern for academic research. This particular subject has been discussed by various studies in finance (Dimitrov & Jain 2008; Korteweg 2010).

Over the last decade CAPM model has lost ground since empirical evidences suggest that beta does not effectively clarify cross sectional differences in normal returns. As a substitute, average stock returns have been affected by several new variables. For example, variable firm's size introduced by Banz (1981), profitability by Haugen and Baker (1996), growth in assets by Cooper, Gulen, & Schill, (2008), and historic returns introduced by Bondt & Thaler (1985), and Jegadeesh & Titman (1993).

The ups and downs in prices of stocks are the significant sign for the investors to take a decision about investing or not, in a particular stocks. Theories developed by different researcher like Wilcox (1984), Rappaport (1986) and Downs (1991) recommend that changing in price of shares are linked with changes in essential factors which related with share valuation like payout ratio, dividend yield, capital structure of firm, earnings, size of the firm and its growth.

The major purpose of this study is to find out the variables which affect the returns of companies in KSE. It will provide a conceptual backdrop necessary to guide financial managers in planning and decision making so as to increase the wealth of shareholders. The objective of this research is to examine the relationship of company related variables

with stock returns. It will provide a conceptual framework for effective planning and decision making so as to achieve higher stock returns. The results of this study will help investors, both individual as well as institutional, to keep in mind the key factors which affect stock returns while investing in different stocks. The findings of this study will help them to make better investment decisions. Moreover, it will add a new dimension to the existing body of knowledge about Pakistani stock exchange.

Literature Review

Drew & Veeraraghavan (2003) evaluate the relationship between Book-To-Market (BTM) equity, firm size and average stock return in Asian markets during 1990s. According to them multi factor model tells the description of return with the relationship between BTM equity, firm size and average stock. Drew, Naughton & Veeraraghavan (2003) in their study in China, find that the investors may opt the combination of low BTM equity to generate high risk adjusted return. They find no evidence of seasonal effects that explain results of multi factor model. Moreover, they conclude that only market factor is not enough to explain the stock return in China.

Knez & Ready (1997) use a robust method to separate the significant observations to investigate the reasons for considering BTM and size as useful to explain the variation in stock returns. They find risk premium of firm size, which is measured by Fama & French (1992), totally disappears when the extreme observations upto 1%, trimmed every month. They document that further research on their results can give better understanding about economical size and return.

Corhay & Tourani-Rad (1993) explore significant effect of size in Dutch firms. They document that the significance of size is reduced when return time period increases whereas; Doeswijk (1997) explores insignificant size effect on same stock market. Herrere & Lockwood (1994) find small effect of firms and market effect beta in Mexican companies. Daniel & Titman (1997) show that market beta has no explanatory power for stock returns even after controlling the size and BTM ratio. Lakonishok & Shapiro (1984) conduct study to examine the relationship between beta, firm size with stock returns. The outcome shows that size of firm significantly effect stock returns and beta shows insignificant relationship with stock returns.

Lau, Lee & McInish (2002) conduct their study in Malaysia and Singapore to examine the relationship between stock return and beta. They find positive correlation with positive excess returns of market and negative correlations with stock returns and beta with negative excess returns of market. Pandey (2001) investigated stock markets of Malaysia and document that market capitalization effects in stock return estimation whereas, the BTM ratio is disappeared in fix firm. A study conducted by Wang & Di Iorio (2007) evaluates share market of Chinese over the era from 1994 to 2002. They also find support for the risk factor, BTM ratio and size variable, whereas the power of beta to effect returns is unsupported.

Karpoff (1987) documents that the number of trades and price volatility are positively related to stock returns. Schwert (1989) evaluates the relationship between expected monthly volatility and volume growth rate and finds positive relationship with expected monthly volatility and volume growth rate. Grundy & McNichols (1989), Holthausen & Verrecchia (1990) and Kim & Verrecchia

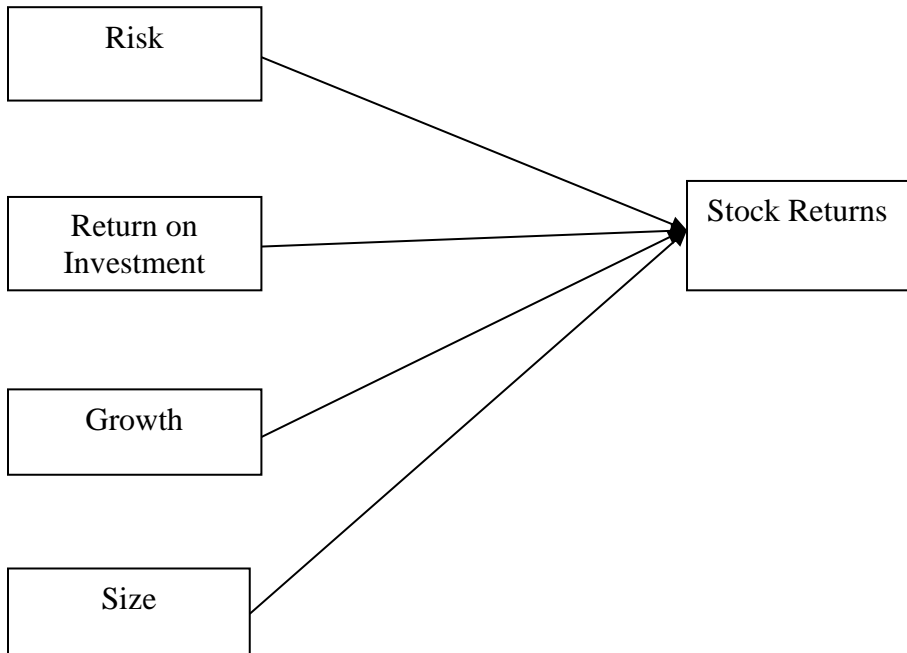
(1991) investigate the relationship between trade size and price volatility and document that the trade size is positively related with price volatility. Jones Kaul & Lipson (1994) conduct a study to examine the relationship of two variables like trade size and daily quantity of trade with daily volatility in price from Stock Exchange of NASDAQ. Chan, Hamao & Lakonishok (1991) study to investigate the gap in stock returns in Japanese financial markets. The outcome shows significant relationship of cash flow, size, BTM and earnings with stock returns, all four variables significantly effect to stock returns.

Basu (1977) finds that stocks which have high EPR make significantly high returns than those stocks which have low EPR. Banz (1981) documents that firms with low market capitalization have significantly higher returns than those which have large market capitalization. Rosenberg, Reid & Lanstein (1985) evaluate that stocks which have high BTM ratio have significantly higher returns than those stocks which have low BTM ratio. Bhandari (1988) confirms that returns of companies are higher which have high debt to equity ratio than those companies which have low debt to equity ratio.

Based on the above literature the following theoretical model and hypotheses are suggested for this study. The methodology, discussed next, provides the procedure to empirically test the hypotheses of the study. Discussion of the results and conclusion is provided at the end.

Theoretical Frameworks and Model

Predictor variables
Predicted variable



Hypotheses

Based on the above literature, number of testable hypotheses can be formed. The current study is supposed to test the following main hypotheses:

.H₁: There is a significant relationship between risk and stock return.

H₂: There is a significant relationship between return on investment and stock return.

H₃: There is a significant relationship between growth of a firm and its stock return.

H₄: There is a significant relationship between size of a firm and its stock return.

Methodology

This particular research is based on panel data extracted from the financial statements of 46 companies trading in Islamabad, Lahore and Karachi stock exchanges for 5 years, 2008-2012. Multiple linear regression technique is used to analyze the relationship of ROI, risk, growth and size with stock returns.

Model

Stock Return = $\alpha + \beta_1$ Risk + β_2 Return on Investment + β_3 Growth + β_4 Size + e

Multicollinearity

VIF and tolerance tests are used to check the Multi-collinearity and mutual independence of the predictor variables with each other. Non-existence of Multi-collinearity in predictor variables is observed when tolerance is larger than 0.1 and VIF is less than 10. Table B shows that the value of tolerance of each variable is greater than 0.1 whereas VIF is less than 10. This means that there is no statistically significant multi-collinearity between any of the predictor variables.

Results Analysis and Discussion

Descriptive Statistics

Table-A shows the descriptive statistics including mean, minimum, maximum and standard deviation.

Table-A: Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|-----|---------|---------|-------|----------------|
| Stockreturn | 230 | -.84 | 1.57 | .0647 | .43049 |
| risk | 230 | .01 | .89 | .1376 | .13687 |
| ROI | 230 | -.07 | .41 | .1282 | .11129 |
| Growth | 230 | -.91 | 12.40 | .3218 | 1.21510 |
| Size | 230 | -.61 | 3.19 | .2275 | .40832 |
| Valid N (listwise) | 230 | | | | |

Discussions of regression results

Table-B shows the value of model summary, ANOVA and coefficients. The model summary shows the correlation and coefficient of determination of this model. This model has 39.6% correlation with stock return. Coefficient of determination shows that 15.7% variation in stock returns is explained by predictor variables. Adjusted R square shows variance in returns which is 0.142. ANOVA explains model fitness where F value is 10.487 at significance level 0.01.

In this model, risk has a beta coefficient of 0.143 with a t-value of 2.224 which is statistically significant at a p-value of 0.027. ROI has a beta coefficient of 0.332 with a t-value of 5.323 which is significant at a p-value of 0.01. Growth has a beta coefficient of 0.178 with a t-value of 2.830 which is also significant at a p value of 0.01. The variable of size shows a beta coefficient of -0.058 with a t-value of -0.937 which is statistically insignificant at a p-value of 0.350. The first three

variables, risk, ROI and growth, show a statistically significant positive impact on stock returns whereas size has an insignificant negative impact on stock returns. The findings of this study confirm the historical results achieved by other researcher. The theoretical support for the findings is also available. Firms with higher level of risk are expected to provide better returns whereas firms with better ROI and growth are also expected to have better returns. Size, though, is insignificant but its negative beta can be associated with inefficiency of large size firms. Up to a certain optimal level size has a positive effect on returns but very large firms are exposed to inefficiency. This may be the possible reason why this variable has an insignificant negative beta. Overall this study lends support to the notion that firm specific factors do effect stock returns.

Table-B: Regression results

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .396 ^a | .157 | .142 | .39872 |

a. Predictors: (Constant), Size, Growth, ROI , risk

ANOVA^b

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1 | Regression | 6.669 | 4 | 1.667 | 10.487 | .000 ^a |
| | Residual | 35.771 | 225 | .159 | | |
| | Total | 42.439 | 229 | | | |

a. Predictors: (Constant), Size, Growth, ROI, risk

b. Dependent Variable: Stockreturn

Coefficients^a

| Model | | Unstandardized | | Standardized | | Collinearity | | |
|-------|------------|----------------|------------|--------------|--------|--------------|-----------|-------|
| | | Coefficients | | Coefficients | | Statistics | | |
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant) | -.168 | .054 | | -3.123 | .002 | | |
| | risk | .449 | .202 | .143 | 2.224 | .027 | .911 | 1.098 |
| | ROI | 1.284 | .241 | .332 | 5.323 | .000 | .963 | 1.038 |
| | Growth | .063 | .022 | .178 | 2.830 | .005 | .944 | 1.059 |
| | Size | -.061 | .065 | -.058 | -.937 | .350 | .984 | 1.017 |

a. Dependent Variable: Stockreturn

Conclusion:

The study examines the impact of firm related factors on stock returns among the enlisted firms of KSE over the period from January 01, 2008 to December 31, 2012. A total of 46 companies covering 18 different sectors are considered for the analysis of variables, including, risk, return on investment, growth and size.

Empirical results show the importance and significance of all the four factors for stock returns. Variables which have a significant positive effect on stock returns in KSE are risk, ROI and growth whereas, size has a negative effect on stock returns but its beta is statistically insignificant. The findings of this study may be used by investors while making investment decisions so that they can earn better returns on their investment.

Table C: Variables measurement and expected signs

| Variables | Measurement or formula | Expected signs |
|----------------------|---|--------------------|
| Return on investment | Net income / Total assets | Positive |
| Risk | Standard deviation of returns | Positive |
| Growth | Percentage change in sale | Positive |
| Size | Percentage change in total assets | Positive/ Negative |
| Stock return | (Ending stock price – Initial stock price) + Dividend / initial stock price | |

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