Journal of Finance and Economics, 2021, Vol. 9, No. 5, 201-208
Available online at http://pubs.sciepub.com/jfe/9/5/5
Published by Science and Education Publishing
DOI:10.12691/jfe-9-5-5

Do MCAP and P/E Ratios Have an Impact on the EPS of High and Low Beta (β) Firms? An Analysis of Covariance on Select Companies!

Elango Rengasamy*

Finance & Banking, GBS Dubai, Block 5, Dubai Knowledge Park – UAE
*Corresponding author: erengasamy@gbs.ac.ae

Received September 17, 2021; Revised October 22, 2021; Accepted November 01, 2021

Abstract Earnings Per Share (EPS), among other measures, is considered as a reliable tool of risk analysis, financial performance, growth, and success of companies. The current study attempts to examine if high and low-beta firms have yielded returns that commensurate with the risk, meaning, 'the higher the risk, the higher the returns and the lower the risk, the lower the returns', in terms of share price returns and other yardsticks. ANCOVA test was applied on the high-beta (14) and low-beta (36) sample companies. The results threw a few interesting insights. In conformity with the existing literature, high-beta firms yielded higher returns and low-beta firms, lower returns. While MCAP (Covariate) had a statistically significant influence on the dependent variable EPS, P/E ratio (Covariate) did not exhibit any significant influence on the EPS.

Keywords: *beta, ANCOVA, share price returns, market capitalization, price-earnings ratio, earnings per share*

Cite This Article: Elango Rengasamy, "Do MCAP and P/E Ratios Have an Impact on the EPS of High and Low Beta (β) Firms? An Analysis of Covariance on Select Companies!." *Journal of Finance and Economics*, vol. 9, no. 5 (2021): 201-208. doi: 10.12691/jfe-9-5-5.

1. Introduction

Investors adopt several strategies and measures to choose a company or a scrip for investment purposes such as fundamental analysis, technical analysis, MCAP, projected profit growth etc., among several other yardsticks. In this venture, analyzing the share price returns of high and low beta firms has always been one of the widely researched areas in finance and capital market research. In their endeavor to examine the risk-return relationship and the reward that the investors gain commensurate with the risk they undertake while making investment decisions, they look for a proven trend to pick the right stock. Among various other ratios, Earnings Per Share (EPS) is considered to be a reliable tool to analyze the reward which an investor would receive if the entire profit earned by a firm is distributed among the shareholders. Further, it is a trusted tool to know if a company is profitable on a per share basis, particularly, to comprehend how a company rewards its common equity shareholders. A higher EPS ratio indicates that the company is more profitable, and the shareholders would get higher returns on their investments based on the dividend policy of companies. Further, since higher profit is a healthy indicator of a company's financial performance, it sends the right signals to the investors resulting in an upward increase in the share prices in the markets. Empirical research work in finance literature has many papers to corroborate that investors consider EPS, among others, as a reliable tool to make investment decisions.

1.1. EPS – The Reliable Tool to Pick the Right Stocks!

In their empirical study on analyzing the relationship between share price behavior and a set of variables including Earnings Per Share (EPS), it has been found that the relationship between these two variables is 29.28%. Hunjra *et al*, [1]. Natasha *et al* [2] examined as to which category of EPS (basic EPS, diluted EPS or headline EPS) associated best with the share price of the top 40 Johannesburg Stock Exchanges (JSE) listed companies. They have noticed that basic EPS would be the most useful tool for investors to pick the right stocks. So, they recommend that investors should consider this tool as well while choosing stocks for investment purposes.

1.2. The Role of MCAP and P/E Ratio

The basic premise of finance states that 'the higher the risk; the higher the return'. So, investors, based on their risk-appetite choose their stocks according to the risk inherently present in stock. Beta, (β) is a measure of volatility or systemic risk and is computed with the market movements. It also guides an investor to know how much risk a particular security would add to a portfolio. In the normal course, a beta of 1 is an indication that the scrip

moves along with the market. However, a scrip with a beta lesser than 1 is considered to be a low-risk investment and is considered to be a safer investment for a risk-averse investor. If this phenomenon is either proved or disproved holding EPS as one of the key guiding phenomena for investments, it would probably add greater value to the investors. Further, it is of interest to examine if, two related measures, PE (Price-Earnings Ratio) and the MCAP (Market Capitalization) have any significant influence on the EPS of the firm when analyzed from a risk-perspective, i.e., high-risk ($\beta>1$) and low-risk firms ($\beta<1$).

The present study focuses on examining whether the EPS of high beta ($\beta>1$) and low-beta ($\beta<1$) companies significantly differ and the same is tested using selected top global companies included in the sampling framework. Also, the study attempts to examine if two important associated or related measures, MCAP and PE Ratio have a significant influence on the Earnings Per Share. Analysis of Covariance (ANCOVA), which uses the features of both multiple regression and analysis of variance, is a useful measure to examine the influence of a set of independent variables on a dependent variable (y). With the inclusion of one or two covariates, one can improve the measurement precision using Analysis of Covariance, popularly, known as ANCOVA.

1.3. Statement of the Research Problem

The risk-return relationship has always been a central focus of finance research. The basics of finance literature state that when an investor takes a higher risk, the returns will also be correspondingly higher. 'The higher the risk; the higher the returns' is the dictum being widely used in investment strategies although this practice should be exercised with utmost care and caution as excessive risk might result in complete loss of investment. In this regard, capital market research has plenty of research works to prove this phenomenon. Further, research on high and low-beta stocks has always grabbed the attention of researchers as high-beta ($\beta>1$) stocks have, by and large, yielded higher returns when compared with low-beta ($\beta<1$) stocks barring a few examples. One of the interesting phenomena which every investor would like to examine before picking up stock is to check if the EPS of a company is high which indirectly indicates that the earnings of the company are higher, on a per-share basis. Although this technique has some flaws, particularly, when the number of common equity shares is higher, investors and analysts trust this as a reliable tool for investment analysis. Capital market research is filled with a lot of empirical research works to confirm if the high and low beta stock has yielded returns commensurate with the risk undertaken by the researchers. Investors and analysts apply different tools, techniques, and strategies to pick up a good stock to make profit. The present research work intends to examine if high and low-beta stocks have yielded high and low returns, respectively in terms of Earnings Per Share (EPS). To give further succor to the research, the researcher attempted to examine if two important associated measures such as P/E Ratio and MCAP have got an influence on the EPS either directly and indirectly. This is of genuine academic interest to check if either of these two variables has any influence on the EPS either individually or collectively, the investors and analysts would be further emboldened to hone up their skillsets while choosing the right stocks for investment purposes. Also, this phenomenon would serve greater guidance to the investing public to go for profitable companies based on their risk-appetite i.e., risk-averse, risk-seeking, and risk-neutral investors.

1.4. Research Questions and Hypotheses

To address the research problem discussed in the previous paragraph, the researcher has formulated the following research questions as they would give clear direction and further insights into the core issue analyzed. The research questions are as follows;

1. Do the Earnings Per Share (EPS) between high and low-beta firms differ?
2. Do Market Capitalization (MCAP) and Price-Earnings Ratio (P/E Ratio) influence the EPS?

1.5. Aims and Objectives of the Study

Following the research questions formulated, the current study aims to examine if EPS could serve as a reliable tool, particularly, the EPS of high and low-beta firms reward according to the undertaken by the individual investors according to their risk appetite. Although numerous tools are available for investment decisions, ratio analysis has always served as a reliable tool to choose stocks. So, the current research is yet another confirmatory research to examine the risk-return relationship based on beta coefficient (β), a measure of 'systematic risk' in relation to the market movements. Based on the above research questions, the present research has the following objectives:

1. To examine if the Earnings Per Share (EPS) between high and low-beta firms exhibit any significant difference;
2. To analyze the influence of Market Capitalization (MCAP) on the Earnings Per Share (EPS) of high and low beta firms.
3. To analyze the influence of Price-Earnings Ratio (P/E Ratio) on the Earnings Per Share (EPS) of high and low beta firms.

1.6. Hypothesis of the Study

Based on the objectives of the study, Analysis of Covariance (ANCOVA) has been applied to test the following three null and alternative hypothesis which are formulated as follows:

H_{01}: The Group Mean Earnings Per Share (EPS) between high and low-beta firms do not significantly differ.

$H_{a1:}$ The Group Mean Earnings Per Share (EPS) between high and low-beta firms do significantly differ.

H_{02}: The Group Mean EPS of high and low-beta firms are not equal after controlling for the covariate Market Capitalization (MCAP).

H_{a2}: The Group Mean EPS of high and low-beta firms are equal after controlling for the covariate Market Capitalization (MCAP).

H_{03}: The Group Mean EPS of high and low-beta firms are not equal after controlling for the covariate Price-Earnings Ratio (P/E Ratio).

H_{a3}: The Group Mean EPS of high and low-beta firms are equal after controlling for the covariate Price-Earnings Ratio (P/E Ratio).

This study attempts to seek answers to the above research questions/objectives and the related hypothesis formulated to serve as yet another reliable guidance for the researchers, analysts, investors and different players in the capital market. Regarding hypothesis testing, both the individual and combined influence of two covariates, MCAP and P/E Ratio on EPS have been tested applying ANCOVA technique after duly checking the assumptions regarding normality of variances.

2. Literature Review

2.1. Beta – A Measure of Risk-return Relationship

In the finance literature, we find many studies on risk-return analysis and share price returns. However, works on examining the influence of accounting variables on high and low-beta firms are scanty. Key contributions on the risk-return relationship, particularly, on the share price returns have been reviewed in this section. The previous research contributions on share price returns and ANCOVA have been reviewed, as well. Besides, notable research contributions, comments, and criticisms on the literature have also been summarized at the end of this section.

In their research paper titled, 'Betting Against Beta', [3] the researchers developed a model with leverage constraints and margin measurements that might vary across investors and time horizons. They noticed that portfolios of high-beta assets have recorded lower alphas and Sharpe ratios than portfolios of low-beta assets. Further, they have noticed that more constrained investors hold riskier assets. Meanwhile, in their research work on speculative betas [4], the researchers noticed that high beta assets tend to speculative over-pricing. It is interesting to note that when investors disagree about the stock market's future earnings and prospects, high-beta assets appear to be more sensitive to disagreement, experience greater divergence of opinions about pay-offs, and are found to be over-priced on account short-sales constraints. Joost et al [5] developed a new econometric methodology to estimate abnormal performance and risk exposure of non-traded assets from cash flows. They have applied the 'internal rate of return approach' on a sample of 958 private equity funds. The results indicated that as far as venture capital funds are concerned they noticed a high market beta but underperformance before and after the fees. Further, no evidence of outperformance has been noticed for buyout funds with a relatively low market beta. In their interesting work on markets, Christopher [6] assembled a monthly dataset of US security prices for the period ranging from the years 1801 to 1926 by including both in and out of sample companies. With these data, they tested price-return momentum which was discovered in the post-1927 data of companies. They noticed that the 1927 momentum profits remained positive and statistically significant. They have also observed that a dynamically hedged momentum strategy outperformed the unhedged strategy. Another interesting research work by Xiaowei K [7] surveyed a broad range of alternatively weighted indices that have gained significant traction among the investment community. Their findings indicate that a better starting point for investors is to examine the investment objective and risk-drivers to maximize their returns.

In their research paper titled, 'The role of beta and size in the cross-section of European stock returns', Steven [8], examined the ability of beta and size to explain the causes of cross-sectional variations in average returns from the sample companies chosen from twelve European countries. Their findings revealed that average stock returns are positively related to beta and negatively related to firm size. Another interesting finding is that high-beta stocks have outperformed low-beta stocks only in January but not in other months. This is quite interesting, indeed. Contrary to the research evidence available from the US markets, it has been noticed that beta is not cross-sectionally related to the size of the firms. Wouter [9] attempted to improve on the Modern Portfolio Theory (MPT) as developed by Markowitz [10]. They experimented with the proposed model in two steps. They combined the MPT with generalized momentum to arrive at a tactical MPT. Following this, in the second step, they use the Single Index Model to arrive at an analytical solution for a long-only maximum Sharpe allocation, called Modern Asset Allocation. In the third step, they used shrinkage estimators in their formula for asset returns, volatilities, and correlations to arrive at a practical allocation. Besides, they arrived at Equal Weight (EW), Mean Variance (MV), Maximum Diversification (MD) and Asset Allocation (MAA). They called these models, 'smart beta', models. Their new model beat nearly all the 'smart beta' models, according to the researchers.

2.2. Quality of Accounting Information

Renata et al [11] attempted to evaluate the informational environment on the relevance of accounting information in companies traded in stock markets, particularly, the emerging markets. With a sample of publicly traded companies from 20 countries, the researchers have collected the relevant macroeconomic information with an analytical period ranging from 2004 to 2013. Data standardization was performed to ensure that the 'outliers' and other related inappropriate variables were removed. They noticed that financial variables displayed consistency with the existing findings with the literature. Further, they state that in an opaque accounting information environment in the country, the profits earned by the company would not be able to capture the variability of share price returns.

2.3. Other Research Contributions

Yet another interesting research work by Taufeeque, Kashif [12] assessed the linkage between community and financial inclusion in India. The primary objective of the study was to examine if caste and religion, the two

independent variables had any impact on the number of bank accounts opened. They kept the 'education' as the 'controlled variable'. Collecting data from 200 households located in Madhubani district of Bihar, they applied ANCOVA (Analysis of Covariance) test on the variables. The results indicated that statistically there was a significant impact of caste and religion on the number of bank accounts possessed by the households. The researchers recommend that the government should take necessary precautionary measures to include every strata of society into the banking system. Another research work by Javier [13] examined the risk-return relationship specifically focusing on the three samples of models with data of over 25 years from thirty countries including 1600 companies in the sampling framework. They found weak results that guided them not to recommend a given family to estimate the required return on equity. In their empirical study, Ahmed *et al*, examined the impact of dividend policy, earnings per share, return on equity and profit after tax on share price behavior in Pakistan. Five manufacturing-based sectors such as sugar, chemical, food, personal care and energy were included in the sampling framework. About sixty-three companies listed in Karachi Stock Exchange were included in the sampling framework for the period from 2006-2011. Ordinary least square regression model was applied on panel data. It is quite interesting to note that dividend yield and dividend payout ratio have exhibited a significant impact on the share prices. While profit after tax and earnings per share have shown a significant positive impact on the share price behavior while return on equity registered no statistically significant impact on the share prices during the study period. This, of course, would reflect some interesting insights on the share price behavior.

2.4. Comments, Criticisms, and Conclusions

The review of literature has thrown a few interesting insights into the use of accounting variables in-stock selection and investment strategies. It is of interest to note that beta (β) has always served as a reliable tool in choosing stocks. It has been observed that although high-beta stocks have yielded higher returns the trend was not consistent over longer time-horizons. Yet another research work on cross-sectional variations in returns revealed that although high-beta stocks have yielded higher returns, it could be noticed only for January but not for other months. A few research works have cautioned that in an opaque accounting information environment, the profit earned by the company may not be able to capture the variability of share price returns.

Researchers have found strong evidence to prove that Profit After Tax (PAT) and Earnings Per Share (EPS) have shown a positive impact on the share price behavior.

In a nutshell, several research works have focused on the role of beta and accounting information including ratios and the risk-return relationship. However, no specific research works have been conducted focusing on high and low beta firms and EPS based returns. The present study could be considered 'unique' in nature as three key variables and their influence on returns have been examined.

3. Data and Methodology

3.1. Sampling and Data Standardization

To achieve the research objectives outlined and test the hypothesis of the study, a specific model in the form of an equation relevant to the study was developed. The model is presented in the following paragraphs. The data for the current study has been collected from secondary sources. Firstly, the researcher has collected 'The 100 largest companies in the world by market value for the year 2019' (in billion U.S. dollars) from the following website: https://www.statista.com/statistics/263264/top-companies-in-the-world-by-market-value/.

Once the list of companies has been collected, the researcher visited finance.yahoo.com and made sure that for each sample company chosen, the following data were gathered. The variables chosen are MCAP, EPS, P/E Ratio and the Beta of each company. He removed a few companies from the list of samples if they did not satisfy the above conditions. For instance, companies such as Samsung Electronics, Nike, Ping An Insurance Group, Boeing, United Health Group, L O' Real Group, British Petroleum either had limited variables or did not have the complete set of the above variables stipulated by the researcher. Subsequently, they were removed from the analytical framework. Further, Berkshire Hathway, had a very high EPS ($6142.19) and was considered to be an 'outlier' and subsequently removed from the analytical framework. Since the researcher had limited the number of companies to 50, the top 50 companies that satisfied the above criteria have been included in the analytical framework. The list of sample companies could be found in the appendix.

3.2. Analysis of Covariance

Analysis of Covariance is a general linear model that uses features of two important analytical tools such as Analysis of Variance (Anova) and Multiple Regression (MR). ANCOVA examines the influence of an independent variable on a dependent variable while removing the influence or effect of a covariate factor or factors. In a nutshell, ANCOVA tests if there is a significant difference between groups after controlling for variance explained by a covariate (CV) or covariates. A CV is considered as a possible predictive or explanatory variable of the dependent variable.

The Model:

$$y_{ij} = \mu + \alpha_i + \beta\left(x_{ij} - \bar{x}_{oo}\right) + \varepsilon_{ij}$$

Where,

μ is the general mean effect

α_i is the (fixed) additional effect due to the treatment

i = (1, 2, ……..p)

ε_{ij} is the random error effect (j = 1,2,…. n_{ij})

β is the coefficient of regression of y on x.

x_{ij} is the value of covariate variable corresponding to the response variable y_{ij}

4. Results and Discussion

In this section of the research paper, the analytical results and discussion of the results have been presented and discussed.

4.1. Discussion of Results

The current study has been conducted to examine if EPS could serve as a reliable tool and the EPS of high and low beta firms differ correspondingly matching with the risk undertaken by the individual investors.

Table 1 Descriptive Statistics has confirmed that high-beta (14 sample companies) offer higher returns (High beta firms mean EPS = 10.08) with a standard deviation of 12.50 whereas low beta firms (36 samples companies) have yielded low returns. Mean EPS = 4.56 with a standard deviation of 5.81. These findings are clearly in consistency with the finance literature. Understandably, the standard deviation, a measure of risk also confirms that the returns of high-beta firms are more volatile when compared with the low-beta firms.

Table 1. Descriptive Statistics

Dependent Variable: Earnings Per Share			
Category	Mean	Std. Deviation	N
High Beta	10.08	12.50	14
Low Beta	4.56	5.81	36
Total	6.11	8.47	50

Table 2 titled 'Levene's Test of Equality of Error Variances' does show that the variations are equal across returns. Table 3 analyzes the Test of Between Subject Effects according to the risk category keeping the EPS as the Dependent Variable without including any covariate in the analytical framework. It is clearly evident that high-beta and low beta firms significantly differ in their returns (Risk Category F = 48 Sig 0.037 < 0.05 at 5% level of significance, Partial Eta Squared $\eta p^2 = 0.087$) according to the level of risk. Partial Eta Squared value indicates the effect size and should be compared with Cohen's guidelines. The guidelines are as follows: (0.2 – Small Effect, 0.5 – Moderate Effect, 0.8 – Large Effect) (Cohen's 1992). Here, we have 0.087 as the Partial Eta Squared value. So, the effect is small. With the result, the Null Hypothesis, H_{01}: The Group Mean Earnings Per Share (EPS) between high and low-beta firms do not significantly differ is rejected at 5% level of significance. This means that statistically there is a significant difference between high-beta and low-beta firms with regard to mean EPS. This finding is clearly in conformity with the existing literature available on the topic.

Table 2. Levene's Test of Equality of Error Variances[a,b]

		Levene's Stat	df1	df2	Sig.
EPS	Based on Mean	5.044	1	48	.029
	Based on Median	3.092	1	48	.085
	Based on Median and with adj. df	3.092	1	30.96	.089
	Based on trimmed mean	3.630	1	48	.063

a. Dependent variable: EPS b. Design: Intercept + Beta Category.

Table 3. Test of Between-Subjects Effects

Tests of Between-Subjects Effects						
Dependent Variable: EPS						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	306.817[a]	1	306.817	4.585	.037	.087
Intercept	2161.303	1	2161.303	32.299	.000	.402
Risk_Categ	306.817	1	306.817	4.585	.037	.087
Error	3211.976	48	66.916			
Total	5383.993	50				
Corrected Total	3518.793	49				

a. R Squared = .087 (Adjusted R Squared = .068).

Table 4. Tests of Between-Subjects Effects

Dependent Variable: EPS Covariate: Market Capitalization (MCAP)						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	724.661[a]	2	362.330	6.095	.004	.206
Intercept	279.555	1	279.555	4.702	.035	.091
MCAP	417.844	1	417.844	7.029	.011	.130
Risk Categ	100.395	1	100.395	1.689	.200	.035
Error	2794.132	47	59.450			
Total	5383.993	50				
Corrected Total	3518.793	49				

a. R Squared = .206 (Adjusted R Squared = .172)
Levene's Equality of Variance = F: 2.136 Sig. 0.150.

In Table 4, the analytical results of 'Tests of Between-Subjects Effects' are presented keeping MCAP as the Covariate or Controlling Factor (DF = 49, F = 7.029, P =0.011 < 0.05, Partial Eta Squared ηp^2 = 0.130). The results show that there are variations in returns pertaining to EPS when MCAP is included in the equation as a Covariate. The P-value of 0.011 < 0.05 at 5% level of significance. Further Partial Eta Squared ηp^2 = 0.130 also confirms that the variation has a size effect but it is small according to Cohen's guidelines. So, with the result, the second H_{02}: The Group Mean EPS of high and low-beta firms are not equal after controlling for the covariate Market Capitalization (MCAP) is, therefore, accepted at 5% level of significance. This further means that MCAP has a significant influence on the EPS of a company and should be considered while making investment decisions.

In Table 5, the results of Test of Between Subject Effects keeping P/E Ratio have been presented. (DF = 49, F = 1.864, Sig = 0.179, Eta squared ηp^2 = 0.038). The analytical results confirm that P/E ratio has no significant influence on the dependent variable EPS. It shows poor influence of Market Price on the Earnings of the company. So H_0 is accepted indicating there is no significant impact of P/E ratio on the Earnings Per share.

To confirm the above findings obtained from Table 4 & Table 5, one more ANCOVA was run keeping both the covariates, MCAP and P/E Ratio in the analysis. The results presented below in Table 6 confirmed the previous results obtained as above i.e., while MCAP (Covariate) has significant influence on the dependent variable, EPS, (DF = 46, F = 4.966, Sig = 0.031, Eta squared ηp^2 = 0.097), yet another Covariate P/E Ratio does not seem to influence the EPS (DF = 46, F = 0.095, Sig = 0.759, Eta squared ηp^2 = 0.002) . These are, of course, interesting outcomes, indeed. In a nutshell, both the individual and combined analysis of covariates to examine their influence on the dependent variable, EPS show and confirm similar results. While MCAP, the market capitalization of a company has a significant influence on the EPS, the Market Price-to-Earnings Ratio of a company does not seem to influence the Earnings Per Share. It is, indeed, a key outcome of the analytical results which the investment analysts and investors need to carefully take into consideration while making investment decisions.

Table 5. Tests of Between-Subjects Effects

Dependent Variable: EPS Covariate: Price-Earnings Ratio (P/E Ratio)						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	429.366[a]	2	214.683	3.266	.047	.122
Intercept	483.032	1	483.032	7.348	.009	.135
PERATIO	122.549	1	122.549	1.864	.179	.038
Risk Categ	215.445	1	215.445	3.278	.077	.065
Error	3089.427	47	65.732			
Total	5383.993	50				
Corrected Total	3518.793	49				

a. R Squared = .122 (Adjusted R Squared = .085)
Levene's Equality of Variance = F: 3.159 Sig. 0.067

Table 6. Tests of Between-Subjects Effects

Dependent Variable: EPS						
Covariates: MCAP and P/E Ratio						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	730.414[a]	3	243.471	4.017	.013	.208
Intercept	187.706	1	187.706	3.097	.085	.063
MCAP	301.048	1	301.048	4.966	.031	.097
PE_Ratio	5.753	1	5.753	.095	.759	.002
Risk_Catg	95.993	1	95.993	1.584	.215	.033
Error	2788.379	46	60.617			
Total	5383.993	50				
Corrected Total	3518.793	49				

a. R Squared = .208 (Adjusted R Squared = .156)
Levene's Equality of Variance = F: 2.150 Sig. 0.153.

5. Conclusions and Recommendations

Risk-return analysis has always been one of the widely researched topics in finance and capital market research. This research work focuses on examining if EPS could serve as a reliable tool to measure the risk-return performance of companies and whether high-beta stocks have yielded higher returns and low-beta stocks lower returns. Based on the analytical results, the major conclusions of the study could be summarized as follows: Firstly, it has been confirmed that EPS could serve as a trusted tool to examine the risk-return relationship. Secondly, high-beta firms have yielded higher returns and low-beta firms, lower returns in terms of EPS. Also, high-beta firms have displayed higher volatility when compared to low-beta stocks. This finding is in synchronization with the existing literature available in finance. Thirdly, it has been observed that while MCAP (Covariate) has a significant influence on the EPS, yet another measure, P/E Ratio (Covariate) has no significant influence on the EPS, both individually and collectively. Fourthly, based on the analytical results, it is recommended that finance and

investment analysts can continue to rely upon EPS as a reliable tool of risk-return analysis and consider MCAP as an important indicator of measuring the corporate financial performance.

References

[1] Hunjra, A. I., Ijaz, M. S, Chani, M. I., Hassan, S. & Mustafa, U. (2014). Impact of Dividend Policy, Earning per Share, Return on Equity, Profit after Tax on Stock Prices. International Journal of Economics and Empirical Research. 2(3), 109-115.

[2] Natasha, R., Rikus, V., Lana H., (2017), "The Effect Of Earnings Per Share Categories On Share Price Behaviour: Some South African Evidence". *The Journal of Applied Business Research*, January/February 2017 Vol.33, No.1, 141-152.

[3] Andrea, F., Lasse H. Pedersen (2011), Betting Against Beta, Swiss Finance Institute Research Paper Series N°12-17.

[4] Harrison, H., & David A., (2016), Speculative Betas, The Journal of Finance, Vol. 71, No. 5 (October 2016), pp. 2095-2144. Published By: Wiley.

[5] Joost, D., Tse-Chun L., & Ludovic, P., (2012), 'A New Method to Estimate Risk and Return of Nontraded Assets from Cash Flows: The Case of Private Equity Funds', The Journal of Financial and Quantitative Analysis, Vol. 47, No. 3 (June 2012), pp. 511-535.

[6] Christopher, C., & Mikhail, S (2016) Two Centuries of Price-Return Momentum, *Financial Analysts Journal*, 72: 5, 32-56.

[7] Xiaowei, K (2012), 'Valuating Alternative Beta Strategies', The Journal of Indexes Europe, Article published in the March/April 2012, www.indexuniverse.eu/joi.

[8] Steven L. H, K. Geert R.K., & Roberto E. W, (1997), 'The Role of Beta and S ize in the Cross-Section of European Stock Returns', *European Financial Management*, April, 1997.

[9] Wouter, J.K (2014). 'Momentum, Markowitz, and Smart Beta: A Tactical, Analytical and Practical Look at Modern Portfolio Theory, *Risk Management e-Journal*.

[10] Markowitz, H.M. (March 1952). "Portfolio Selection". The Journal of Finance. 7 (1): 77-91.

[11] Renata, T.K., Lopes, F., Luiz, P.L., Favero (2019), Financial Indicators, informational environment of emerging markets and stock returns – *RA USP Management Journal!*, (2019) Vol.54, No.3 PP 253-268.

[12] Ahmad, T.S., Kashif, I. S., (2018), 'Assessing Linkage between Community and Financial Inclusion in India - *Journal of Commerce and Management Thought!*, (2018) Vol. 9-1, PP 111-119.

[13] Javier, E., Ana, P, (2005), "Risk and Return in Emerging Markets; Family Matters." *Journal of Multinational Financial Management*, July 2005 Vol.15, Issue, 3, 257-272.

Annexure

List of Sample Companies (June 2020)						
Sl. No	**Company**	**MCAP US$**	**Beta**	**Beta Categ**	**PE Ratio**	**EPS**
1	Apple	1532.75	1.17	1	27.78	12.73
2	Microsoft	1488.86	0.93	2	32.71	6.00
3	Amazon.com	1343.14	1.32	1	128.62	20.94
4	Alphabet	928.22	1.07	1	27.43	49.57
5	Facebook	615.634	1.2	1	29.65	7.29
6	Alibaba	595.23	1.56	1	61.68	3.5
7	Tencent Holdgs	599.857	0.97	2	45.9	1.36
8	JPMorgan Chase	282.124	1.18	1	10.41	8.9
9	Johnson & John	363.315	0.70	2	21.51	6.41
10	Visa	415.749	0.93	2	34.07	5.56
11	ExxonMobil	184.531	1.34	1	16.37	2.66
12	ICBC	252.8	0.79	2	4.95	0.961
13	Walmart	335.076	0.31	2	22.5	5.26
14	Bank of America	200.84	1.60	1	9.41	2.46
15	Nestlé	317.766	0.28	2	41.29	2.67
16	Procter & Gamble	285.268	0.4	2	62.09	1.86
17	Royal Dutch Shell	122.095	0.85	2	12.62	2.45
18	Intel	243.455	0.8	2	11.15	5.16
19	Cisco Systems	195.535	0.96	2	18.36	2.52
20	MasterCard	290.422	1.08	1	36.98	7.82
21	Verizon Commun	219.976	0.42	2	12.00	4.43
22	Walt Disney	197.064	1.11	1	36.75	2.97
23	AT&T	207.195	0.68	2	14.77	1.97
24	Chevron	161.419	1.3	1	42.07	2.06
25	Home Depot	259.211	1.06	1	23.93	10.07
26	China Con. Bank	218.851	0.84	2	5.26	1.173
27	Taiwan Semicond	275.067	0.7	2	25.26	2.23
28	Roche Holding	298.242	0.33	2	28.59	1.54
29	Pfizer	177.977	0.69	2	11.45	2.8
30	Wells Fargo	103.894	1.16	1	8.77	2.89
31	Coca-Cola	187.128	0.55	2	18.78	2.32
32	PetroChina	102.805	0.99	2	7.6	4.4
33	China Mobile	140.583	0.64	2	7.83	4.35
34	Agri Bank of China	164.634	0.83	2	4.75	0.659

List of Sample Companies (June 2020)						
Sl. No	**Company**	**MCAP US$**	**Beta**	**Beta Categ**	**PE Ratio**	**EPS**
35	Comcast	176.405	0.98	2	15.34	2.52
36	Merck & Co.	189.787	0.5	2	19.06	3.94
37	Oracle	166.261	0.86	2	17.59	3.08
38	PepsiCo	179.78	0.59	2	24.97	5.16
39	Kweichow Moutai	259.134	0.92	2	42.58	34.29
40	Toyota Motor	173.363	0.83	2	7.71	16.36
41	Novartis	198.49	0.46	2	16.55	5.26
42	HSBC Holdings	94.327	0.51	2	26.1	0.89
43	Citigroup	103.216	1.81	1	6.82	7.26
44	Netflix	195.009	0.96	2	89.74	4.94
45	Unilever	144.011	0.44	2	22.22	2.53
46	Total	101.355	0.67	2	12.76	3.04
47	McDonald's	133.647	0.66	2	23.53	7.64
48	Bank of China	182.639	0.83	2	4.27	0.682
49	BHP Billiton	119.405	1	2	13.08	3.71
50	SAP	161.187	0.95	2	33.05	4.14