



The Effect Of Firm Size And Operating Leverage On Stock Returns: Evidence From Pakistan Stock Exchange

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Abstract: This study provides evidence in support of the size effect, which posits that smaller companies generate greater profits in both rapidly developing markets and volatile markets. Furthermore, the results of the current study indicate that the application of operating leverage does not exert any discernible influence on stock returns. The empirical evidence derived from data obtained from non-financial companies listed on the KSE-100 Index leads us to the conclusion that the Pakistani market exhibits adherence to the CAPM, Fama, and French Models. The aforementioned proof was unearthed subsequent to our thorough examination of the market. To provide greater precision, the metrics utilized for assessing the magnitude of a company encompass the debt-to-equity ratio (DOL) and the aggregate assets held by the entity. In order to achieve the objective of assessing the influence of firm size and operating leverage on stock returns, a fixed effect regression model is employed. This action is undertaken with the intention of achieving the intended result. The analysis yielded findings indicating a negative correlation between firm size and share returns. There is no observed association between the application of operating leverage and the resultant returns generated by firms in the Pakistani market.

Keywords: Stock return, Firm Size, and Operating Leverage

1.Introduction

This research discusses the effect of the Firm's size and operating leverage on the stock return. In the current scenario, stock returns are the most concerning factor for an investor. Due to the high Inflation in the world, investors want to generate huge profits by taking small risks. Risk is another aspect that investors look for while making any investments. This research will explain both the aspects investors are concerned about. Three main variables discussed in this research are, i.e., Firm size, operating leverage, and stock returns. Firm size and operating leverage are independent variables, and Stock return is the dependent variable. A stock return is an increase in the stock's price (capital gain yield) and the dividend received by an investor. Return is the percentage increase in investment (Haynes, 2021). The return on investment equals capital gain and dividend yield minus

initial investment (Dhand, 2022).

Operating leverage (percentage of the fixed cost to the total cost.) gives the idea of how efficiently a particular company uses fixed costs to make profits. But as an outsider, it isn't easy to get information about the company's fixed cost and variable cost; as a result, the researchers use the Degree of operating leverage as a measure for operating leverage. DOL indicates a variation in profits due to a variation in sales (Alaghi, 2011). Therefore, DOL gives us an idea of the riskiness of a company. DOL shows how much operating expenses the company uses to generate certain sales. "In normal times, high operating expenses can boost profit progress, but in recession, it can crush profits. Even a rough idea of a firm's DOL can give you a lot about a company's forecasts" (Alaghi, 2011). High DOL is riskier in any recession. In a recession, a company must cover high operating expenses with low sales. The size of a firm can be measured using different methods, i.e., total assets, total sales, and market capitalization. This research paper uses total assets as a degree of firm size. The reason for using Total assets as a degree of firm size is that Pakistan has an emerging market due to high fluctuation in stock prices, which fluctuates the market capitalization. "Economists are worried about the finest size of a corporate unit that is a firm in which the average cost of manufacture per unit is the lowermost." (Kenton, 2022).

According to modern economic norms, the expansion of production is indirectly proportional to the expenses per unit. Therefore, all firms want to expand production to spread their fixed cost over their large output. But there is a limit to which the expansion in the market helps a firm. The further increase in firm size will increase the cost of production. Therefore, the Firm's size has been an important indicator of stock return. According to (Benz, 1981), small firms outperform large firms from 1964 to 1980. But from 1985 to 2000, the effect of firm size on returns disappeared (hou & Van Dijk, 2019). According to the CAPM model, a trade-off between risk and return states that "higher the risk, higher will be the return." So small-capitalization companies have high fluctuations in their stock prices, which means high risk, while large-capitalization companies have stable stock prices, which means low risk. Therefore, the return for a small firm will be increased and low for large firms. This research paper will provide information regarding the influence of a firm's size and operating leverage on stock returns. In their writing, (Leledakis et al., 2004) try to find the answer to "Does Firm Size Predicts Stock Returns?" After analyzing the data, they concluded that the size effect weakened when the researchers looked at returns from the whole company's point of view. This research paper aims to find the effect of firm size and operating leverage on stock returns. The evidence is extracted from non-financial companies registered on the KSE-100 Index. It has been detected in the literature review that the consequence of firm size on stock return is not constant. So, the findings of this research will provide insights for the investors about whether the small firms outperform the large firms or not to maximize their understanding of current market sentiments. Moreover, the investors and the owners would be able to understand the association between operating leverage and stock returns.

The current study is conducted having two objectives

1. To investigate the influence of firm size on stock return.
2. To investigate the influence of operating leverage on stock return

2.Literature Review

Prior research suggests an affiliation between operating leverage and Firm size with stock return (Kenton, 2022). This research study derives the relationship for the non-financial firms registered on the KSE-100 Index. In the first phase, the researcher has discussed the return. The most concerning thing for the investor is the return they are getting on their investment. The research aim to see different factors that affect the stock return, like the sentiment in the market changes with time. Inflation is increasing at a very high rate, so investors are also looking for more returns to cover the Inflation. All these factors suggest the need to study stock returns to answer those questions regularly about how investors can get the highest return on their investment. We need to look at returns from a different perspective to find the answer, as the return is the gain or loss on investment and can be seen as a change in dollar value over a while. Return can be in interest, capital gain, and dividends received. Stock investment has

two sources of return: dividend received and stock price appreciation (Dhand, 2022).

$$\text{Stock return} = (P_t - P_{t-1}) + D$$

The above formula can also be written as;

$$\text{Stock return} = \text{capital gain} + \text{dividend yield}$$

The stock return can be considered in different ways, and this research measures stock returns as the appreciation in the price of a stock through a specific holding period. The holding period may be one day or one year. Therefore, holding period return is the return earned from a stock holding for some time.

$$\text{HPR} = (P_t - P_{t-1} + D_t) / (P_{t-1})$$

If we examine this formula of HPR, we can get the idea that it also includes dividends received over some time. Stock returns can be measured with the help of many different formulas. Other methods of measuring returns are arithmetic mean and geometric mean. However, these measuring techniques are primarily used for portfolio return. Many factors affect the stock return. This study will discuss the effect of firm size and operating leverage on stock return. Firm size is the primary variable that affects the stock return. Firm size must be measured for a company based on total assets, equity, profit, market capitalization, etc. This research paper will use Total assets as a measuring tool for firm size. Information we collected from past data shows a negative association between firm size and stock return. From 1944 to 1980, the small firms beat the large firms. (Benz, 1981). In the period from 1944 to 1980, small firms performed better than large and medium firms. At the same time, the returns provided by the medium and large firms are approximately equal. Most small firms do not have sufficient funds to survive in an unfamiliar situation. While large firms always have enough funds to get through a tough time. So, this increases the risk for small firms following a trade-off between risk and return. It also follows the CAPM model. The CAPM model describes the relationship between risk and return. It gives the relation between systematic risk and expected return.

$$\text{CAPM} = R_f + \text{beta} (R_m - R_f)$$

The investor expects the return for the risk and the time value of money. The risk-free rate rewards for the time value of money; other factors' risk premium shows the return for taking a risk. The capital asset pricing model compares an investment's risk and time value with the returns. After 1980 impact of the company size on stock returns disappeared (hou & Van Dijk, 2019). Literature review shows the effect of firm size on stock return changes over time; therefore, it is crucial to study this variable regularly.

Another variable that will be discussed in this research is operating leverage. Operating leverage is the amount of fixed cost used to generate profits. The literature shows that two things mainly affect profitability, i.e., sales and fixed costs. If sales increase, it will also increase the variable cost, affecting the gross profit. On the other hand, fixed costs affect operating profit. The high use of fixed cost will lead to the low use of variable cost, so the increase in sales will increase the variable cost by less as the sales are generated mainly by fixed cost. High use of fixed costs will lead to high profitability, but this happens in normal circumstances only (The company is generating regular sales). The company uses high amounts of fixed costs will give them the ability to generate large-intensity change in EBIT with a very minimal change in sales. If a company faces any abnormal situation, this fixed cost will become the reason for its diminishing. Sales will drop drastically in a recession like COVID-19, but the company must cover the fixed cost. This increases the risk of a company having a high amount of fixed costs. Operating leverage is a cost accounting concept that gives us the level to which the company can increase operating income by changing revenue (Hayes, 2022). As an outsider, it is not possible to get the data of variable cost and fixed cost data. Therefore, we use the DOL as an assessment tool for operating leverage. The Degree of operating leverage is a better proxy for operating leverage than the COL (Feijoo, 2020). The Degree of operating leverage is the risk assessment tool. It can be measured as,

$$\text{DOL} = (\% \text{ change in sales}) / (\% \text{ change in EBIT})$$

This formula shows us the intensity by which the change in sales will bring change in EBIT. Along with a change in profitability, it also changes the risk associated with the company. In a normal situation, it positively affects the

firm profitability. However, if a company faces any unforeseen circumstances, the high operating leverage would affect the company's performance badly. According to (Gahlon, 1981), for both single-product companies and multi-national companies, the effect of a company's operating leverage can be measured by the DOL. The Degree of operating leverage gives us the systematic risk associated with a particular company. Thus, it is the most concerning ratio for financial managers.

The study conducted by Medeiros (2006) titled "The Effect of the Degree of Operating Leverage on Company's Yield" highlights the significance of examining the influence of various accounting parameters on stock return, which is a topic of great interest among scholars globally. Medeiros (2006) posits that the degree of operating leverage serves as a risk assessment tool, hence justifying the relevance of examining its influence on stock returns. Consequently, the data was organized in the form of panel data. The researcher conducted an analysis using two statistical models, namely the fixed effect regression model and the random effect model. The purpose of this analysis was to examine the hypothesis that the level of operating leverage has an impact on the systematic risk of stocks. The data was obtained from the Brazilian stock market for the period spanning from 2001 to 2004. The findings derived from the data analysis indicate a statistically significant positive relationship between the degree of leverage (DOL) and stock returns.

The study conducted by Sari et al. (2009) investigates the impact of three variables, namely debt to equity ratio, degree of operating leverage, and leverage stock beta, on stock returns. The three components encompass the risk factors linked to the corporation, including business, market, and company hazards. Debt to equity ratio is employed as a metric to gauge financial leverage, the degree of operating leverage is utilized to assess business risk, and stock beta is employed to evaluate market risk. According to the study conducted by Sari et al. (2009), the primary factors of utmost concern for an investor are risk and return. Investors consistently strive to achieve a substantial return on their investments while minimizing the associated risk. Risk is categorized into two distinct types: company-specific risk and market-related risk. This provides investors with a greater level of precision in terms of guidance and enables them to make informed selections. The researchers utilized the dataset comprising of enterprises listed on the Jakarta Stock Exchange during the period spanning from 2003 to 2008. The researchers focus their investigation specifically on food and beverage industries. The research yields a finding indicating a partial positive association between the Degree of Operating Leverage and stock return. A 5% level of significance is employed. The variables of financial leverage, degree of operating leverage (DOL), and stock beta have a statistically significant impact on stock returns at a significance level of 5%.

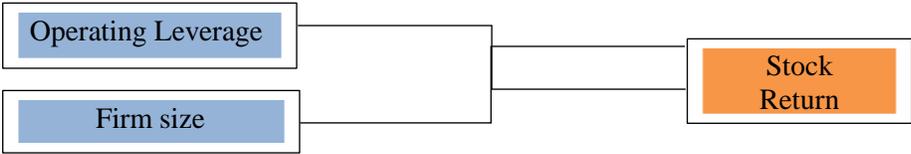
According to the study conducted by Pawar et al. (2019), the research findings indicate a relationship between the Degree of Operating Leverage and the value premium observed in Lodging Firms. The primary objective of their investigation was to identify the strategic application of the Degree of Operating Leverage. This article also emphasized the trade-off between the Degree of Operating Leverage (DOL) and the Degree of Financial Leverage (DFL). The Firm employs the use of DOL (Degree of Operating Leverage) as a proxy for its operating risk. DOL quantifies the firm's sensitivity of EBIT (Earnings Before Interest and Taxes) to fluctuations in sales, thereby assisting management in making informed decisions regarding the firm's tactical capital structure. The researchers selected the lodging sector as the target group for their data collection due to its seasonal nature.

The utilization of the Degree of Operating Leverage becomes increasingly crucial in situations where management is required to address elevated operating expenses during periods of low activity. In the realm of accommodation, a greater concentration of capital sometimes leads to increased levels of operating and financial leverage. The research posits a null hypothesis, suggesting that there exists a correlation between the Degree of Operating Leverage and the value premium observed in Lodging firms. The findings derived from the data analysis revealed a negative correlation between the Degree of Operating Leverage (DOL) and the value premium. The term "value premium" refers to the gains generated by stocks. This discovery will assist managers in the Lodging sector in developing a strategic approach to the utilization of operating expenses, with the potential for leveraging the Degree of Operating Leverage (DOL) as a means to optimize value.

Prior research of Alaghi (2011) in his paper "Operating Leverage and Systematic Risk," he uses operating leverage as a risk assessment tool for a stock. To identify this, he establishes linear stock returns and market returns. He uses market return as an independent variable and shares return as a dependent variable. He performs this research on the registered firms in the Tehran stock exchange. In addition, he uses DOL as a measure of the operating leverage effect. The degree of operating leverage is the expected change in EBIT to a change in sales. The reason for using DOL instead of operating leverage is that, as an outsider, the company does not give access to their managerial accounting statements, which leaves us to the use of Degree of operating leverage. The result he gets from analyzing the data is that operating leverage does not affect systematic risk. This result indicates there is no effect of operating leverage on stock returns.

In their work titled "The Impact of Firm Size and Leverage on Stock Returns," Khan et al. (2012) employed market capitalization and debt-to-equity ratio as indicators to measure firm size and leverage, respectively. The data analysis involves the utilization of a multivariate regression model. The data is gathered from the firms listed on the Karachi Stock Exchange. The sample was chosen from a total of 16 sectors, each consisting of 200 enterprises. The data was obtained throughout the time frame spanning from 2001 to 2007. This research article utilized confidence levels of 95% and 91%. The researchers allocated the data into three distinct portfolios in their scholarly publication. The allocation of data across various portfolios is determined by market capitalization. The findings across all three portfolios indicate that tiny enterprises exhibit a lack of consistent performance across the observed time in the Pakistan stock exchange. The empirical findings from the analysis of the three portfolios indicate that large firms exhibit higher returns compared to small businesses. The risk level associated with large enterprises is significantly lower in comparison to that of small firms. The study conducted by Khan et al. (2012) examines the volatility of small enterprises' stock prices across three different portfolios. The authors delve into the factors contributing to the inconsistency observed in small firms, which include poor economic conditions, high inflation rates, elevated interest rates, and adverse effects stemming from exchange rate fluctuations. Based on the aforementioned review, a conceptual model has been constructed.

2.1 Conceptual Framework



Independent Variables

Dependent Variable

There is a negative relation between company size and stock return. Following the CAPM and Fama and French Model, the firm size effect was detected from 1940 to 1980 when the small firms gave more returns than the large firms (Benz, 1981). But this effect disappeared after 1985 when small firms did not give more returns than large firms. Operating leverage has a negative relation with stock return. Operating leverage is the percentage of fixed assets a company uses to handle its operations. The measure used for Operating leverage is the Degree of operating leverage. A Company's profitability increases when the company efficiently uses its fixed assets. This directly affects stock returns.

3. Research Methodology

The researcher has collected secondary data. The Major Source of data collection for this research study is the website of the Pakistan Stock Exchange. The list of companies on the Pakistan Stock Exchange is comprised of 447 companies, which are registered on eleven different indexes. The primary Index incorporates KSE-100, the 100 best companies listed on PSX. KSE100 Index is over 70% of the total market capitalization. Therefore, the researcher only used the companies listed on the KSE-100 Index.

The population of this research paper was non-financial firms registered on the KSE-100 Index. The researcher follows the above criteria to select the sample from the population. The number of companies that follow the criteria is 52. The KSE-100 Index shows the set trend for the Pakistani market, so the researcher uses the KSE-100 index as a population. KSE-100 includes the top-performing companies from all sectors, 36 companies, and 64 other companies, including the top-performing companies across the Pakistani market.

Non-probability sampling technique is used to select the sample for this research Paper, specifically purposive or judgmental sampling. Purposive sampling is a secondary data source in which the researcher decides what will be selected in a sample. Researchers use this technique to select the best possible data from the population. The particular criteria for the selection of data for this research are as follows:

1. The company needs to be listed, and trading needs to be continued for Ten years.
2. A company with abnormal data will not be selected in the sample.
3. The company that performs Mergers and acquisitions in the period will not be part of the data.
4. The company executes a stock split.
5. The company does not do any stock repurchases.

3.1 Measurement of Variables

This research study includes two independent variables, i.e., Firm size and Operating leverage, and one dependent variable, Stock returns. There are also three control variables, i.e., Earning per Share, Price to earnings ratio, and Net Income. The measurement used for independent variables is total assets and DOL, respectively. Stock returns are calculated by adding share price appreciation and dividends received. EPS is calculated by dividing the net income by number of shares outstanding.

4. Data Analysis

For data analysis, the result is derived from six (6) listed firms. The descriptive are mentioned in below table 1.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Stockreturns	540	.189	.492	-.745	3.981
LogofTA	540	17.438	1.236	14.274	20.845
DOL	540	1.854	15.796	-101.033	139.986
LogofNI	540	14.152	3.681	0	18.712
EarningPerShare	540	40.167	91.687	-108.7	811.55
PricetoEarningRatiio	540	16.601	54.393	-390	996.5

The study variable under investigation in the present research is stock returns, which serves as the dependent variable. The dataset comprises a total of 540 observations. The average value of stock returns is 0.189, indicating that the majority of stocks exhibit positive returns. Additionally, the standard deviation of 0.492 suggests an average level of volatility. The maximum recorded value for stock returns is 3.981, and the minimum value is -0.745. The table includes another variable, namely the logarithm of total assets, which comprises a total of 540 observations. The mean value is 17.438, with a standard deviation of 1.236, indicating a relatively little departure

from the mean. The Log of total assets exhibits a minimum value of 14.274 and a maximum value of 20.845. This variable provides information regarding the magnitude of a company. The Degree of Operating leverage is an additional independent variable, with a total of 540 data. The calculated mean value of DOL is 15.796, suggesting a substantial degree of variability within the dataset. The highest value observed is 139.98, and the lowest value of -101.033. DOL is the sensitivity of operating leverage to fluctuation in revenue. The Log of net income has 540 observations. The mean value of 14.152 and standard deviation of 3.681 shows the deviation of data from the mean value. The maximum value the observer gets from the dataset is 18.712, and the minimum is zero. EPS is the earnings per share. In the given dataset, EPS has 540 observations. The mean earning per share is 40.167 showing the potential of companies included in a dataset, and the standard deviation of 91.687. The maximum value of EPS in the dataset is 811.55, and the minimum value of -108.7. The price-to-earnings ratio is the last variable discussed in the above table, having 540 observations and a mean value of 16.601. A standard deviation of 54.393 indicated the deviation of data from the mean in both positive and negative directions.

4.1 Correlation Analysis

Correlation analysis is employed to investigate the association between stock returns, which serves as the dependent variable in this study, and many other characteristics such as total assets, earnings per share, operating leverage, log of net income, and price-to-earnings ratio. The primary objective of this study is to investigate the relationship between stock returns and the natural logarithm of total assets, which is utilized as a surrogate measure for business size. The obtained correlation coefficient is -0.141. Empirical data suggests the presence of a moderate negative correlation between stock returns and the size of firms. The findings align with the Capital Asset Pricing Model (CAPM) and the Fama and French models, which support the notion that smaller companies tend to have greater levels of risk in comparison to larger corporations.

However, according to Duy and Phuoc (2016), the influence of size declines rapidly inside a market. It is predominantly observed within an emerging market. Pakistan has a correlation between the magnitude of firms and their influence on stock returns, owing to its classification as an emerging market. The variable DOL is an independent variable that is being investigated as an extra factor in this research. This serves as an initial estimation of the level of operating leverage. The researcher has completed the analysis and discussion regarding the relationship between operating leverage and stock returns. The findings derived from the dataset suggest a tentative negative correlation between operating leverage and stock returns. The results of this study are consistent with the prior investigation conducted by Pawar et al. (2019).

Table 2: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Stock returns	1.000					
(2) LogofTA	-0.141	1.000				
(3) DOL	-0.041	-0.041	1.000			
(4) LogofNI	0.150	0.253	-0.040	1.000		
(5) EarningPerShar~S	0.014	-0.081	-0.001	0.196	1.000	
(6) PricetoEarning~g	0.012	-0.071	0.050	0.096	0.017	1.000

4.2 Fixed Effect Model

The R-squared values, which serve as an indicator of the overall model fit, reveal that the variables employed in the study together explain a moderate proportion of the variation observed in stock returns. It is worth mentioning that the logarithm of Total Assets (LogofTA) demonstrates a statistically significant

negative coefficient, indicating that larger enterprises generally encounter significantly diminished returns. The association between Earnings Per Share (EPS) and stock returns is positive, suggesting that higher EPS values correspond to greater gains. However, the statistical significance of Operating Leverage and the average Price-to-Earnings Ratio is still undetermined, indicating that their influence on stock returns might be restricted.

The constant term, often known as the intercept, represents the anticipated stock yield in the absence of any independent variables. In this investigation, the researcher has determined that the intercept, which signifies the anticipated stock yield when all independent variables are at a value of zero, has been computed as 5.191096. The statistical significance of this number suggests that there is a predicted return even in the absence of other variables. Nevertheless, it is imperative to comprehend that the inverse correlation between the error term and the anticipated values indicates the existence of unexplained variables that affect stock returns, which our Model is unable to incorporate.

Table 3 Fixed Effect Model

	Coefficient	Std. Error	t-value	p-value
LogofTA	-0.3102	0.051108	-6.07	0.000
OperatingLeverage	-0.00196	0.001402	-1.40	0.162
EarningPerShareEPS	0.001142	0.00053	2.16	0.032
PricetoEarningRatioAvg	0.000102	0.000466	0.22	0.827
LogofNI	0.025685	0.006724	3.82	0.000
_cons	5.191096	0.891844	5.82	0.000

4.3 Random Effect

The dataset used in this study comprises 540 observations from 54 distinct groups, denoted by the variable 'Company1'. A random-effects Generalized Least Squares (GLS) regression analysis was conducted to examine the results. The purpose of the regression analysis is to examine the association between the dependent variable, which in this case is stock returns, and the independent variables, namely company size and operating leverage.

Table 4 Random Effect

	Coeff	std.Err	z	p
LogofTA	-0.08001	0.017513	-4.57	0
OperatingLeverage	-0.00123	0.001309	-0.94	0.348
EarningPerShareEPS	-0.00023	0.000232	-0.99	0.323
PricetoEarningRatioAvg	-0.00018	0.000384	-0.48	0.634
LogofNI	0.028056	0.005991	-0.68	0
_cons	1.202012	0.295179	4.07	0

4.4 Hausman Test

The present study employs the fixed effect regression model as a statistical tool for data analysis. Initially, the researcher conducts two tests, namely the Fixed Effect Regression Model and Random Effect Regression Model, in order to analyze the data. In order to choose the most suitable model for the given data, the researcher employed the

Hausman test to ascertain the optimal choice between fixed effects and random effects. The null hypothesis proposed by Hausman posits that there is no correlation between the influence of the individual variable and the Xits. If the p-value is less than 0.05, the null hypothesis is accepted; otherwise, an alternative hypothesis is deemed to be true. In the event that the null hypothesis holds true, it is necessary to employ the Random effect in order to attain optimal outcomes. In the context of a null hypothesis, the fixed effect is considered inefficient due to its reliance on the variation present in the data. The distinction between the Fixed effect and Random effect can be observed through the parameter $q^{\wedge} = B^{\wedge}FE - B^{\wedge}RE$, which converges to zero when the p-value is less than 0.05, and assumes a non-zero value under the alternative hypothesis.

Table 5: Hausman Test

	fe	re	diff	std-err
LogofTA	-0.3102	-0.08001	-0.23019	480134
OperatingL~e	-0.00196	-0.00123	-0.00073	0.000501
EarningPer~S	0.001142	-0.00023	0.001371	0.000477
PricetoEar~g	0.000102	-0.00018	0.000285	0.000266
LogofNI	0.025685	0.028056	-0.00237	0.003053

The overall fit of the model, as indicated by the R-squared values, implies that the variables employed in the study together explain a moderate proportion of the variation observed in stock returns. It is worth mentioning that the logarithm of Total Assets (LogofTA) displays a statistically significant negative coefficient, indicating that larger enterprises tend to observe marginally lower returns. There exists a positive correlation between Earnings Per Share (EPS) and stock returns, suggesting that greater EPS values are linked to higher returns. However, the statistical significance of Operating Leverage and the average Price-to-Earnings Ratio is currently undetermined, indicating that their influence on stock returns could potentially be restricted.

The constant term represents the anticipated stock yield in the absence of any independent variables. In this investigation, the researcher has determined that the intercept, which signifies the anticipated stock yield when all independent variables are at zero, has been computed as 5.191096. This figure demonstrates statistical significance, suggesting that there is still an expected return even in the absence of other variables. Nevertheless, it is imperative to comprehend that the inverse correlation between the error term and the anticipated values indicates the existence of unexplained variables that affect stock returns, which our model is unable to incorporate.

5. Conclusion

Existing academic literature demonstrates empirical data about the influence of firm size and operating leverage on stock returns. The population under study in this research paper consists of Non-Financial Firms that are registered on the KSE-100 index. The sample for this study has been selected using a combination of Purposive and Judgmental sampling techniques. The sample comprises 52 companies that are listed on the KSE-100 Index. This study employs many statistical techniques, including descriptive analysis, correlation analysis, fixed effect model, random effect model, and the Hausman test, in order to determine the most appropriate data analysis model. The outcome derived from this test yields a p-value greater than 0.05, indicating that the alternative hypothesis is chosen. Before using the Hausman test, this analysis initially employs a fixed effect regression model. The analysis of the data reveals a negative correlation between the size of a corporation and its stock returns. This finding is in accordance with the Capital Asset Pricing Model (CAPM) and the research conducted by Fama and French in 2008. The first hypothesis has been accepted, indicating a negative correlation between the size of a corporation and its stock returns. Based on the findings of Duy and Phuoc (2019), it can be observed that the adverse impact of business size on stock returns is transient, indicating its limited duration exclusively within an emerging market

context. Hypothesis 2 posits that there exists a negative correlation between operating leverage and stock returns. The researcher's data analysis yielded a finding consistent with the existing literature, indicating that there is no significant impact of operating leverage on stock returns (Pawar et al., 2019). From a strategic perspective, the aforementioned findings will prove advantageous to investors, as they will gain insights into the patterns and developments inside the Pakistani market. This research will provide valuable insights for management and contribute to the existing literature.

5.1 Recommendations

The existing body of literature demonstrates that researchers consistently obtain varying outcomes about the impact of firm size on stock returns when examining the same collection of companies throughout different time periods. Consequently, conducting investigations into firm size remains a valuable pursuit. However, this study aims to examine the influence of operating leverage on stock returns. However, the researchers were unable to gather adequate information that establishes a clear connection between operating leverage and stock returns. The researcher suggests that augmenting the dataset from a span of 10 years to 20 years would yield the intended outcome. Additionally, it is worth considering the possibility that examining the collective influence of financial leverage and operating leverage on stock returns may yield the desired outcome.

References

- Alaghi, K. (2012). Operating leverage and systematic risk. *African Journal of Business Management*, 6(3), 1095.
- Astakhov, A., Havranek, T., & Novak, J. (2019). Firm size and stock returns: A quantitative survey. *Journal of Economic Surveys*, 33(5), 1463-1492.
- Berk, J. (1996). An empirical re-examination of the relationship between firm size and return. *Unpublished manuscript, University of British Columbia...*
- De Medeiros, O. R., Lustosa, P. R. B., & Dantas, J. A. (2006). The impact of the Degree of operating leverage on stock returns: An empirical study in the Brazilian market.
- Duy, N. T., & Phuoc, N. P. H. (2016). The relationship between firm sizes and stock returns of the service sector in Ho Chi Minh City Stock Exchange. *Rev. Eur. Stud.*, 8, 210
- Fama, E. F., & French, K. R. (2008). Dissecting anomalies. *The Journal of Finance*, 63(4), 1653-1678.
- Gahlon, J.M. Operating leverage as a determinant of systematic risk—*Journal of Business Research*, vol. 9, p.297-308, 1981.
- Hou, K., & Van Dijk, M. A. (2019). Resurrecting the size effect: Firm size, profitability shocks, and expected stock returns. *The Review of Financial Studies*, 32(7), 2850-2889.
- <https://www.investopedia.com/contributors/99535/> (Caroline 2021).
- <https://www.investopedia.com/terms/o/operatingleverage.asp>
- <https://www.sciencedirect.com/science/article/abs/pii/0304405X81900180?via%3Dihub#!> (Benz 1981)
- Khan, F., Ali, S., & Hassan, A. (2012). Size, leverage, and stock returns: Evidence from Pakistan. *International Journal of Academic Research*, 4(1).
- Leledakis, G. N., Davidson, I., & Smith, J. (2004). Does Firm size predict stock returns? Evidence from the London Stock Exchange. *Evidence from the London Stock Exchange*.
- Pawar, A., Gholap, R., & Sheel, A. (2019). Strategic Effect of Degree of Operating Leverage on Value Premium of Lodging Firms. *Journal of Hospitality Financial Management*, 27(1), 3.
- Sari, L. A., & Hutagaol, Y. R. (2009). Debt to equity ratio, Degree of operating leverage stock beta, and stock returns of food and beverages companies on the Indonesian stock exchange. *Journal of Applied Finance & Accounting*, 2(1), 1-12.