

# Determinants of Stock Performance: An Evidence from Dhaka Stock Exchange (DSE)

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## ABSTRACT

*The determinants of stock performance are important factors in selecting which sectors to invest in. The objective of this study is to analyze the factors determining the stock performance of some companies listed on DSE and determine the influence of Firm size, EPS, Earnings Per Share, Leverage, and Liquidity on the Return of the stock. It is carried out among the randomly selected stocks from five sectors (banking, financial, pharmaceuticals, engineering, and textile) of the Dhaka Stock Exchange. We analyzed to what extent return was affected by firm size, beta, EPS, leverage, and liquidity. The least number of significant variables were found in 2017 for all the sectors. EPS, LNF Size, and LEV were found to be the most significant variables. The banking sector has the most significant variables. The impact of the independent variables is found to be mixed in the same sector. Such as: in the banking sector, BET had an insignificant negative impact in 2018, a significant negative impact in 2016, and an insignificant positive impact in 2017. In year-wise analysis, we found BET had a negative impact in 2016 and 2018 and a positive impact in 2017, and the impact is significant for all sectors. LNF Size had a negative impact in 2016 and 2017 and a positive impact in 2018 but the impact was significant only in 2018. EPS had a negative impact on the return performance of DSE in 2016 & 17 and a positive impact in 2018. But the impact is statistically significant only for 2017. LEV had a positive impact on the return performance of DSE in 2016 and a negative impact in 2017 and 2018. But the impact was statistically significant only for 2018. LIQD had a negative impact on the return performance of DSE in 2016 and 2017 and positive impact in 2018. But the impact was statistically significant only for 2016.*

## KEY WORDS

Stock return, Liquidity, Leverage, EPS, Return, Performance, DSE

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## 1. Introduction

Evidence from Chia, R. and Lim, S. (2015) shows that the stock market reflects a country's economic

condition. It is a good financing alternative for business persons. Also, it helps to maximize an individual investor's wealth. But our investors

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are not educated enough and they do not study at all before they invest. They invest their money without understanding the market mechanism and often face losses. Bangladesh experienced two stock market collapses in 1996 and 2010. So, investors should be aware of return performance and its determinants. They should first find out their target sectors to invest in. Hasnawati, S (2020) found that the size of firms has a positive correlation with return, although the correlation level is relatively weak. Duy, N. and Phuoc, N. (2016) studied 160 companies in the service sector during the period from 2009 to 2014 in Vietnamese financial market. They found a significantly negative relationship between firm size and stock return. The relationship between stock return and leverage varies across industries. Lenka, S. and Sharma, R. (2017) found a negative relationship between leverage and return for all sectors except Mining and quarrying sector in Czech Republic stock exchange. Violita, C. (2019) showed that stock liquidity had a positive and significant effect on stock returns. Where Narayan, P. et al (2011) found a mixed relationship between return and liquidity in the Shanghai stock exchange and Shenzhen stock exchange for the period from 1997 to 2003. There is greater evidence of liquidity having a negative effect on stock return in Shanghai than in

Shenzhen. Batten, A. and Vo, V. (2014) found a positive relationship between liquidity and stock return in the Vietnam stock market whereas a negative relationship is typically found in developed markets. Shaekh, A. et al (2023) found no evidence of a statistically significant impact of liquidity on profitability in the Bangladeshi pharmaceuticals sector. Ball and Brown (1968) and Brown, L. (1987) found that accounting profits generally do not explain more than 11% of the changes in stock return. A lot of studies have been conducted to find out the relationship between risk and return. Some found positive relationships and some found negative relationships. Hasan, M. (2011) proved that the fundamental theory of Finance does not always work for underdeveloped stock exchanges. Leon, A. (2007) et.al found a negative and significant relationship between risk and return in the Lusaka stock exchange but no significant relationship in Nairobi stock exchange. Phuong, L. (2022) found mixed relationship between risk and return in Vietnamese firms using mixed data sampling.

This paper tries to find out the return relationship with firm size, Beta, EPS, Leverage and liquidity in the Banking sector, Financial sector, Engineering sector, Pharmaceutical sector and Textile sector, and also the year-wise return relationship of DSE with firm size, Beta, EPS, leverage and liquidity. It is expected that the findings of the

paper will be helpful for investors and also for the companies to take the right decision. The objectives of the study are: (i) to investigate the sector-wise return relationship of DSE with firm size, Beta, EPS, Leverage, and liquidity, ii) to assess the year-wise return relationship of DSE with firm size, Beta, EPS, Leverage and liquidity and iii) to enable investors to analyze the relationship between risk and return at DSE.

**2. Methodology of the study**

**2.1 Study Design:** The study employed a quantitative method to explore the study’s research objectives. We utilized a random sampling procedure for the study to select the sector-wise company. We collected the sampling data through secondary sources from Dhaka Stock Exchange Library and used the quantitative method for the study and run the OLS regression to get the result. To conduct the study, we selected 5 core sectors of DSE and a significant number of companies from each sector as indicated in Table\_1.

**Table 1: Sample Selection Process**

Sl	Name of the sectors	No of sample companies	Total listed companies	% taken as sample	No. of year	Firm year Observation
1	Bank	20	30	66.67%	3	60
2	Financial	14	23	60.87%	3	42
3	Engineering	23	39	58.97%	3	69
4	Pharmaceuticals	20	32	62.50%	3	60
5	Textile	29	56	51.79%	3	87
<b>Total</b>						<b>318</b>

Source: Annual Reports (2016-2018)

A secondary data source has been used to collect and evaluate the data and the calculation. For instance: RET (return) has been calculated by using

the closing and opening market price of the stock. The market price of the stock has been gathered from the websites of “Investing.com” and the **Dhaka Stock Exchange**. F Size (firm size), BET (beta), EPS (earning per share), LEV (leverage,) and LIQD (liquidity) have been collected from the respective **annual reports** of the companies. Beta has been calculated by using the percentage change in DSEX return (market return) and stock return of the companies for the same period. Then we took the covariance of stock return and market return and divided it by the covariance of the market return. Monthly returns for the calculation have been used.

**2.2 Selection of the Variables**

Dependent variable:	
RET	<b>RET (return of the stock):</b> Return of the stock is calculated by deducting the opening price from the closing price and then dividing it by the opening price. This return indicates the % earned by an investor for holding a stock for a year. $RET = \frac{\text{closing price} - \text{opening price}}{\text{opening price}} * 100.$
Independent variables:	
LNF Size	<b>LNF Size (firm size):</b> In this study, LNF Size has been calculated by taking the natural log of total assets. $LNF\ Size = \ln(\text{total asset}).$
BET	<b>BET (beta):</b> Beta is a systematic risk that measures how responsive or volatile a stock return is along with market movements. $BET = \frac{\text{cov}(r_{tm})}{\text{var}(m)}$
EPS	<b>EPS (earnings per share):</b> EPS measures the performance of a company. It refers to the earnings of a company against its weighted average number of common shares outstanding. $EPS = \frac{\text{net income}}{\text{weighted average no. of common share outstanding}}$
LEV	<b>LEV (leverage):</b> Leverage means the level of debt incurred by a business. It can be calculated by dividing the total debt by total equity or total asset or total capital. I have used $LEV = \frac{\text{total debt}}{\text{total equity}}$
LIQD	<b>LIQD (liquidity):</b> Liquidity refers to such assets which can be used to meet immediate & short-term obligations. It is calculated by dividing current assets by current liabilities. $LIQD = \frac{\text{current assets}}{\text{current liabilities}}$

(Source: Author’s Compilation Table,2023)

### 3. Data Analysis Tools:

The data type of this study is cross-sectional. Here the independent variables are LNF Size, BET, EPS, LEV & LIQD, and the dependent variable is RET. The econometric technique is applied to find out the impact of independent variables on dependent variables. The ordinary least square technique has been applied to estimate the regression equation. Also, some diagnostic tests like the multicollinearity test, heteroscedasticity test, and model specification test have been conducted to satisfy Gauss Markov assumptions. To run the regression and conduct the diagnostic tests, the study has applied **EViews 10** and **Stata 12** software. At first, OLS regression has been run for all the sectors year by year and separately for the years 2016, 2017 and 2018 combining all the sectors' data. Then a sector and year-wise comparative analysis has been shown about the independent variables' impact on return.

**3.1 The Model:** To find out the determinants of the listed stock performance of DSE, we considered the natural log of firm size, beta, EPS, leverage and liquidity as independent variables. So the lin-log model becomes as follows:

$$RET_i = \alpha_i + \beta_1 LNFSize_i + \beta_2 BET_i + \beta_3 EPS_i + \beta_4 LEV_i + \beta_5 LIQD_i + \epsilon_i$$

Where, RET = return of the stock on investment, LNFSize = Natural log of firm size, BET = beta, EPS = earnings

per share, LEV = leverage, LIQD = liquidity,  $\alpha$  = intercept of the model,  $\beta$  = coefficient of the model,  $\epsilon$  = random error term

### 3.2 Sector-Wise Comparative Analysis

#### Sector-wise comparative analysis table for 2016

From Annex Table 02, we see that in the year 2016, LNFSize found a negative impact on return in all the sectors. But the impact is statistically significant only in the Financial, Engineering and Textile sectors but not in the Banking and Pharmaceutical sectors. BET found a negative impact on return in Bank, Financial and Textile sectors and positive impact in the Pharmaceuticals and Engineering sectors. But the impact is statistically significant only in the Banking, Financial and Textile sectors but not significant in the Engineering and Pharmaceuticals sectors. EPS found a positive impact on returns for all sectors except the Textile sector. But the impact is statistically significant only in the Engineering sector but not significant in the Banking, Financial, Textile and Pharmaceuticals sectors. LEV found a positive impact on return in the Banking and Textile sectors and a negative impact in the Financial, Engineering and Pharmaceutical sectors. But the impact is statistically significant only in the Banking and Textile sectors but not in the Financial, Engineering and Pharmaceuticals sector. LIQD found a negative impact on returns for all

sectors. But the impact is statistically significant only in the Engineering sector. CONST has a positive impact on return in all sectors if all the independent variables remain constant. But the impact is statistically significant only in Financial, Engineering and Textile sectors. In 2016, the model best fitted the financial sector.

#### **Sector wise comparative analysis table for 2017**

We see from Annex Table 03 that in the year 2017, LNF Size found a negative impact on return in the Banking, Pharmaceuticals and Textile sectors and positive impact in the Financial and Engineering sectors. But the impact is statistically significant for none of the sectors. BET has a positive impact on returns for all sectors. But the impact is statistically significant only in the pharmaceutical sector. EPS found a negative impact on returns for all sectors other than the Banking sector. But the impact is statistically significant in the Banking and Pharmaceutical sector. LEV found a positive impact on return in the Financial and Engineering sectors and a negative impact in the Banking, Pharmaceuticals and Textile sectors. But the impact is statistically significant only in the Banking and Pharmaceutical sectors. LIQD has a negative impact on returns for all sectors other than the Banking sector. But the impact is statistically significant for none of the sectors. CONST has a positive impact on

return for all sectors other than the financial sector if all the independent variables remain constant. But the impact is statistically significant for the banking sector. In 2017, the model best fitted the Banking sector.

#### **Sector-wise comparative analysis table for 2018**

From Annex Table 04, we see that in the year 2018, LNFsize found a negative impact on return for all sectors other than the Textile sector. But the impact was statistically significant only in the Banking and Pharmaceutical sectors. BET found a positive impact on returns for all sectors other than the Banking sector. But the impact was statistically significant only in the Engineering sector. EPS had a positive impact on returns for all sectors. But the impact was statistically significant only in the Banking, Financial and Textile sectors but not significant for the Pharmaceutical and Engineering sectors. LEV found a negative impact on return in the Banking and Engineering sectors and a positive impact in the Financial, Pharmaceuticals and Textile sectors. But the impact was statistically significant only in the Textile sector. LIQD found a negative impact on returns for all sectors other than the pharmaceutical sector. But the impact was statistically significant for none of the sectors. CONST had a positive impact on return in the Banking, Financial, Pharmaceutical sectors and negative impact in the

Engineering and Textile sectors if all the independent variables remained constant. But the impact is statistically significant only in the Banking sector. In the year 2018, the model best fitted in the textile sector.

### **3.3 Year-Wise Comparative Analysis**

#### **Annex Table 05: Year-wise comparative analysis table of determinants of DSE stock return**

We see from Annex Table 05, that LNFsize has found a negative impact on the return performance of DSE in 2016 and 2017 and a positive impact in 2018 but the impact was statistically significant only for 2018. BET found a negative impact on the return performance of DSE in 2016 and 2018 and a positive impact in 2017. And the impact is statistically significant for all the years. EPS found a negative impact on the return performance of DSE in 2016 and 17 and a positive impact in 2018. But the impact is statistically significant only for 2017. LEV found a positive impact on the return performance of DSE in 2016 and a negative impact in 2017 and 2018. But the impact was statistically significant only for 2018. LIQD found a negative impact on the return performance of DSE in 2016 and 2017 and a positive impact in 2018. But the impact is statistically significant only for 2016. CONST is statistically significant for all the years and the model best fitted in 2018.

#### **4. Conclusion and Recommendations:**

The study found that all the variables were not equally significant in each

sector and they also differed over the years. For example, in 2016, BET had a significant negative impact in the Financial sector but an insignificant positive impact in the Pharmaceutical sector. Again Textile sector had an insignificant negative impact in 2016 and 2017 but a significant positive impact in 2018. So, the investors should not invest blindly rather they should do trend analysis. In some years, we found none of the variables significant for some sectors. For example, Pharmaceuticals 16, Financial 17, Engineering 17, textile 17 and Financial 18. The return of these sectors may be influenced by something else. Investors should be careful about the factors when they invest in the stock market.

In this study, we are considering only the quantitative factors including Firm size, Earnings Per Share, Leverage and Liquidity. But in the real-world scenarios, we find various internal and external factors that affect the company stock performance. For future study, researchers can include qualitative factors such as company goodwill, market sentiment, uncertainty circumstances analysts report, changing government policies and laws, international situation and political turbulence as independent variables to find the accurate result.

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#### References:

- Ball, R. and Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research*, 6(2), p.159.
- Batten, J. and Vo, X. (2014). Liquidity and Return Relationships in an Emerging Market. *Emerging Markets Finance and Trade*, 50(1), pp.5-21.
- Boachie, M., Mensah, I., Frimpong, A., & Ruzima, M. (2016). Interest Rate, Liquidity and Stock Market Performance in Ghana. *International Journal of Accounting and Economics Studies*, 4(1), 46-51.
- Brahmasrene, T., & Jiranyakul, K. (2007). Cointegration and Causality between Stock Index and Macroeconomics Variables in an Emerging Market. *Academy of Accounting and Financial Studies Journal*, 11, 17-30.
- Bulmash, S., & Trivoli, G. (1991). Time-lagged Interactions between Stock Prices and Selected Economic Variables. *The Journal of Portfolio Management*, 17(4), 61-67.
- Chen, N.-F., Roll, R., & Ross, S. A. (1986). Economic Forces and the Stock Market. *The Journal of Business*, 59(3), 383-403. <http://www.jstor.org/stable/2352710>
- Chia, R., & Lim, S. (2015). Malaysian Stock Price and Macroeconomic Variables: Autoregressive Distributed Lag (ARDL) *Bounds Test. Kajian Malaysia*, 33, 85-103.
- Duy, N. & Phuoc, N. (2016). The Relationship between Firm Sizes and Stock Returns of Service Sector in Ho Chi Minh City Stock Exchange. *Review of European Studies*, 8, (4), 210-219.
- Fama, E. F. (1981). Stock Returns, Real Activity, Inflation, and Money. *The American Economic Review*, 71(4), 545-565.
- Geske, R., & Roll, R. (1983). The Fiscal and Monetary Linkage between Stock Returns and Inflation. *Journal of Finance*, 38(1), 1-33.
- Hasnawati, S., (2020). Korespondensi Artikel: Size, Return And Public Company's Performance: A Study Small And Large Companies On Idx During 3 Economic-Periods.
- Hasan, M. (2011). Sector-Wise Stock Return Analysis: An Evidence from Dhaka Stock Exchange in Bangladesh. *International Journal of Business and Management*, 6(6).

- Kotha, K. K., & Sahu, B. (2016). Macroeconomic Factors and the Indian Stock Market: Exploring Long and Short Run Relationships. *International Journal of Economics and Financial Issues*, 6(3), 1081-1091.
- León, Á., Nave, J. and Rubio, G. (2007). The relationship between risk and expected return in Europe. *Journal of Banking & Finance*, 31(2), pp.495-512.
- Lenka, S. K., & Sharma, R. (2017). Does Financial Inclusion Spur Economic Growth in India? *The Journal Of Developing Areas*, 51(3), 215–228. <https://www.jstor.org/stable/26416941>
- Narayan, P. and Zheng, X. (2011). The relationship between liquidity and returns on the Chinese stock market. *Journal of Asian Economics*, 22(3), pp.259-266.
- Phuong, L. (2022). Bowman's risk-return relationship: Empirical evidence in a frontier market. *Investment Management and Financial Innovations*, 19(2), 191-200.
- Shaekh A.A., Rabby S.M., Turza A.R., (2023), Impacts of Liquidity on Profitability Case Study of Listed Pharmaceutical Companies of Bangladesh.
- Stryckova, L. (2017). The Relationship Between Company Returns and Leverage Depending on the Business Sector: Empirical Evidence from the Czech Republic. *Journal of Competitiveness*, 9(3), pp.98-110.
- Violita, C. E., & Soeharto, S. (2019). Stock liquidity and stock return. *Jurnal Bisnis dan Manajemen*, 3(2), 111-122.



**Appendix:**

**Annex Table 02: Sector-wise comparative analysis table for 2016**

Sector	CONST		LNFSIZE		BET		EPS		LEV		LIQD		R <sup>2</sup>
	Co.effi	Prob	Coeff	Prob	Coeff	Prob	Coeff	Prob	Coeff	Prob	Coeff	Prob	
Bank	0.076	0.1848	-0.005	0.2508	-0.0601	0.099(**)	0.0046	0.174	0.056	0.018(*)	-0.070	0.2345	44.4%
Finan	0.435	0.037(*)	-0.035	0.09(**)	-0.0236	0.00(*)	0.0096	0.369	-0.05	0.1523	-0.11	0.4811	92.2%
Engin	0.107	0.003(*)	-0.014	0.002(*)	0.0100	0.1457	0.0105	0.01(*)	-0.0023	0.308	-0.011	0.06(**)	61.1%
Phar	0.107	0.5527	-0.014	0.5646	0.00997	0.5244	0.0105	0.763	-0.002	0.8341	-0.011	0.9692	5.9%
Tex	0.106	0.022(*)	-0.013	0.011(*)	-0.0074	0.045(*)	-0.0005	0.165	0.011	0.07(**)	-0.002	0.212	63.3%

\*= 5% significance level, \*\*= 10% significance level (Source: Statistical Analysis,2023)

**Annex Table 03: Sector wise comparative analysis table for 2017**

Sector	CONST		LNFSIZE		BET		EPS		LEV		LIQD		R <sup>2</sup>
	Coeff	Prob.	Coeff	Prob	Coeff	Prob.	Coeff	prob	coeff	Prob	coeff	prob	
Bank	0.17946	0.088(**)	-0.0135	0.1360	0.00509	0.1781	0.11603	0.002(*)	-0.00108	0.075(**)	0.00476	0.9338	70.8%
Finan	-0.0838	0.43	0.0116	0.3027	0.00436	0.4860	-0.0012	0.6983	0.004533	0.9727	-0.0124	0.8517	40.5%
Engine	0.01838	0.2457	0.00188	0.8765	0.01652	0.8040	-0.0004	0.4611	0.005513	0.7293	-0.0002	0.9959	4.85%
Phar	0.04747	0.4427	-0.0007	0.4370	0.00205	0.002(*)	-0.0019	0.042(*)	-0.00185	0.089(**)	-0.00005	0.8402	67.6%
Tex	0.06158	0.1498	-0.0027	0.5662	0.00016	0.9781	-0.0002	0.9418	-0.00304	0.6573	-0.0014	0.3754	4.36%

\*= 5% significance level, \*\*= 10% significance level (Source: Statistical Analysis,2023)

**Annex Table 04: Sector-wise comparative analysis table for 2018**

Sector	CONST		LNFSIZE		BET		EPS		LEV		LIQD		R <sup>2</sup>
	Coeff	Prob	Coeff	Prob	Coeff	Prob	coeff	prob	coeff	Prob	coeff	prob	
Bank	0.19692	0.107(**)	-0.0164	0.093(**)	-0.005	0.4083	0.00545	0.079(**)	-0.00019	0.7120	-0.7407	0.3043	36.5%
Finan	0.04489	0.4634	-0.0071	0.2529	0.00271	0.3887	0.00492	0.031(*)	0.004313	0.9102	-0.0463	0.3995	48.3%
Engine	0.13379	0.8145	-0.0157	0.2607	0.02004	0.023(*)	0.00036	0.1109	-0.01222	0.4442	-0.0013	0.4907	35.6%
Phar	-0.034	0.1637	-0.0177	0.098(**)	0.07632	0.3059	0.0128	0.5390	0.016303	0.2532	0.01178	0.6579	35.1%
Tex	-0.0243	0.5936	0.00065	0.9897	0.0043	0.5967	0.00177	0.036(*)	0.015236	0.027(*)	-0.0012	0.5815	53.4%

\*= 5% significance level, \*\*= 10% significance level (Source: Statistical Analysis,2023)

**Annex Table 05: Year-wise comparative analysis table of determinants of DSE stock return**

Sector	CONST		LNFSIZE		BET		EPS		LEV		LIQD		R <sup>2</sup>
	Coeff	Prob.	Coeff	Prob.	Coeff	Prob.	coeff	prob	Coeff	Prob	coeff	prob	
2016	0.04	0.059(**)	-0.0003	0.90	-0.0176	0.00(*)	-0.0002	0.61	0.00041	0.70	-0.025	0.067(**)	37.97%
2017	0.0384	0.002(*)	-0.0007	0.63	-0.0039	0.109(**)	-0.0004	0.015(*)	-0.0001	0.82	-0.0011	0.14	12.1%
2018	8.41	0.00(*)	0.0005	0.00(*)	-0.57	0.0075(*)	0.0068	0.68	-0.472	0.0(*)	0.035	0.61	72.7%

\*= 5% significance level, \*\*= 10% significance level (Source: Statistical Analysis,2023)