



An Empirical Investigation of the Association between P/E Ratio and Financial Performance of Non-conventional Banks in Bangladesh

Nusrat Jahan¹, Md. Jahid Hasan Akash², Tehzeeb Sanam Ashiq³

¹ Assistant Professor, Department of Business Administration, Uttara University, Dhaka, Bangladesh, Email: jn.nusrat@gmail.com

² Undergraduate Student, Department of Business Administration, Uttara University, Dhaka, Bangladesh, Email: akash.livenet@gmail.com

³ Undergraduate Student, Department of Business Administration, Uttara University, Dhaka, Bangladesh, Email: ashiq0138@gmail.com

ABSTRACT

Economy of Bangladesh has been experiencing dominance of banking industry. This paper intends to unravel the association between the financial performance determinants and Price-Earnings (P/E) ratio which is the indicator of stock performance. Liquidity Ratio, Leverage Ratio, ROE, Net Investment Income Margin, and Non-performing Investments to Total Investments Ratio are considered to be determinants of financial performance in this study. This study considers panel data of a time span of 11 years covering from 2011 to 2021 of 08 Non-Conventional banks of Bangladesh. For this study, econometric model and several hypotheses have been estimated with Pooled Ordinary Least Squares (Pooled OLS), Fixed-effect, and Random-effect. To scrutinize the validity of the selected models, various diagnostic tests have been conducted. The empirical result reveals, ROE and NPI have significant impact on the P/E ratio. Negative association between NIM and P/E ratio has been observed by this study.

Key Words: P/E ratio, Financial performance indicators, Pooled OLS, Fixed-effect, Random-Effect.

1. INTRODUCTION

Being vital in investment strategies, P/E ratio reflects the market's prediction of future growth and is connected with firm risk. The price-earnings ratio (P/E), is the most often used in relative valuation. It is commonly utilized in both developed and emerging markets, and is essential to potential investors and market analysts since it indicates what a company's market value should be in connection to earnings per shares. Investors and market analysts at banks or intermediate organizations frequently use it to compare the prospective profitability of different companies or industries. Companies with a low P/E ratio outperform stocks with a high P/E ratio in terms of investing performance. Higher P/E ratios are frequently considered to indicate better growth and enhanced revenue potential, or at least that investors are anticipating better growth, as they are willing to pay a better multiple of current profits per share to buy the company's shares.

Early in the 1980s, the macroeconomic direction of the South Asian countries has undergone a significant transition, which was accompanied by financial sector deregulation and liberalization. Following the emergence of numerous privately held banks and financial services, the capital markets experienced significant growth. In 80s decade, the financial institutions were allowed for privatization in Bangladesh. Since then the country has been experiencing the opening of numerous banks and other financial institutions. Since that time, Bangladesh's capital market has been dominated by banking sector and other financial institutions.

Contribution of the banking system in an economy is imperative. Banks allocate funds from savers to borrowers in a well-organized manner. The banking sector portrays a crucial role in keeping the financial system stable. This paper aims at unravelling how the performance determinants (of Non-Conventional banks in Bangladesh) influence the P/E ratio. Liquidity Ratio, Leverage Ratio, ROE, Net Investment Income Margin, and Non-performing Investments to Total Investments Ratio are considered as indicators of financial performance and the P/E ratio has been selected as the response variable to determine the market demand of share price considering its past or future prospects.

2. REVIEW OF LITERATURE

The modern economy is enormously shaped by banking system. As the competition in banking sector is getting intense, commercial banks are concentrating more on maximizing shareholder returns. Sensing the tone, liaison between commercial banks' performance and share return has become one of the prime concerns among economists, academicians and market analysts. Hence, myriad range of researches has attempted to pinpoint the performance determinants and exemplify how they affect stock return indicators like P/E ratio and EPS.

[Nicholson \(1960\)](#) exemplified that low P/E companies, on average, produce higher returns than high P/E companies; this is known as the value premium. Similar observation was experienced by [Basu's \(1977\)](#). He found an inverse relationship between return and P/E ratio. The investigator stated that a higher financial return can be offered by stocks having low P/E ratios in comparison to stocks with high P/E ratios.

The negative correlation between dividend yield and P/E ratio was discovered by [Marco Taliento \(2013\)](#). In Y. R. Bhattarai's (2014) study, it was discovered that dividend yield had a substantial inverse relationship with share price and was one of the most important factors affecting share price in Nepalese commercial banks. In his research, [B. Jitmaneroj \(2017\)](#) took into account dividend yield, which has a favorable correlation with price-to-earnings ratio.

The results of Dr. O. B. [Emudainohwo's \(2017\)](#) investigation into the effects of dividend growth rate on P/E ratio are insufficient to explain changes in P/E ratio for non-financial firms listed on the NSE over the time period under consideration. The data appear to show that dividend growth rate is inversely connected to P/E ratio, even though they are insufficient to explain changes in P/E ratio.

In the study conducted by [Kothari \(2001\)](#), where he tried to find out the association between financial earnings and stock prices, P/E ratio was found to be one of the ratios that concurrently consider financial data like earnings and investor sentiment in the form of market price. He suggested, holding low-P/E portfolio can result into sub-optimal return ([Dreman, 1994](#)). On the other hand, [Ahmed \(2003\)](#) found no significant connection between stock return and PE Ratio.

[Yüksel, Canöz, and Adali \(2017\)](#) endeavoured finding the determinants of P/E Ratio. Ten Turkish banks were considered to be the sample (time frame: 2002-2017). They concluded that if profitability (denoted by ROA) is positively associated with P/E ratio if it is higher than 5.92%, but the association becomes inverse if the value exceeds 21.12%. NPL was found to have negative association on P/E ratio. The relationship between profitability measures in Philippine insurance companies from 2008 to 2012 was explored in the study of [Nino Datu \(2016\)](#). Although ROA was used as a proxy for profitability, the study found that financial leverage had a big impact on the organizations' profitability.

A U-shaped Association between P/E ratio and return on equity (ROE) were found by [Wu, W. T. A \(2014\)](#) exemplifying firms with high P/E ratios had lower ROE. [Ohlson and Gao \(2006\)](#) also made a theoretical prediction that relationship between P/E ratio and ROE is U-shaped. The direct influence of ROE on P/E ratios is demonstrated by [H. Wenjing \(2017\)](#), who draws the conclusion that ROE is inversely connected to P/E ratio.

[Fairfield \(1994\)](#) exemplified that the Price to Book ratio (P/B) is a function of the expected level of future profitability while P/E is a function of expected variations in future profitability. According to her model, P/B should positively associate with future return on book value and P/E should positively associate with profits growth. This prediction is supported by evidence, which also shows that various P/E-P/B ratios are linked to various future profitability patterns.

[Lalon and Mahmud \(2021\)](#) exemplified that among the performance indicators of private commercial banks of Bangladesh, Net Profit Margin ratio, Net Interest Margin (NIM) ratio, Asset Utilization Ratio, and Non-Performing Loan (NPL) have statistically significant dynamic impact on the P/E ratio.

[Deni Sunaryo & ETTY Puji Lestari \(2022\)](#) suggested that EPS cannot mediate the effect of Net Profit Margin, Current Ratio and Debt to Equity Ratio on Price Earnings Ratio. Another study suggested that price earnings ratio is affected by current ratio ([Sari, 2021](#)) which is inversely proportional to the research done by [Rabbani \(2018\)](#) which signifies that the current ratio has no influence on the price earnings ratio.

Companies might experience doubtful advantage due to use of leverage. It may increase stockholders' earning potential, but excessive use may trigger the risk of insolvency (see e.g. [AlMajali \(2012\)](#); [Adams and Buckle \(2000\)](#); [Elango, Ma and Pope \(2008\)](#)). On the contrary, Leverage and price earnings ratio were found to be adversely connected by [Afza and Tahir \(2012\)](#). The estimated results show that leverage has a negative impact on the P/E ratio, which is supported by H. [Ramcharran \(2002\)](#) and [C. P. Jones \(2000\)](#).

[Damodaran \(2006\)](#) signified that other things held equal, PE ratios will be higher for higher growth companies than for lower growth companies. Higher risk companies will, on average, have lower PE ratios than lower risk companies, and, on average, companies with lesser reinvestment needs will have higher PE ratios than companies with higher reinvestment rates. He also points out that other factors are challenging to hold constant because high growth companies typically have risk and high reinvestment rates.

3. OBJECTIVES OF THE RESEARCH

The primary objective of the research is to divulge the association between P/E ratio and financial performance indicators of Non-Conventional banks in Bangladesh.

In order to incorporate the general aim, the following specific objectives will be accomplished:

- Identify the financial performance indicators influencing P/E ratio of Non-Conventional banks in Bangladesh.
- Determine how P/E ratio is getting impacted by financial performance indicators.

4. METHODOLOGY OF THE RESEARCH

4.1 Data Collection and Method of Analysis

The study is conducted basically using secondary data. Ten Islami Shariah Based Private Commercial Banks are operating in Bangladesh currently. Among them two (Union Bank Ltd. And Global Islami Bank Ltd.) became listed in recent years. So, excluding these two, eight Non-Conventional banks have been considered as sample. Financial data have been collected from annual reports obtained from Bangladesh Bank library and websites of individual banks. Data have been fetched from Balance Sheets and Income Statements of 08 listed Non-Conventional banks of Bangladesh considering a time period of 2011 to 2021.

For analyzing the internal factors, panel data regression is conducted and is tested through STATA software.

4.2 Model Specification

4.2.1 Research Variables

Dependent/Explained Variable: Price Earnings Ratio (P/E Ratio).

Independent/Predictor Variable(s): Liquidity Ratio (LQR), Leverage Ratio (LEV), Net Investment Income Margin (NIM), Return on Equity (ROE), Non-performing Investments to Total Investments Ratio (NPI).

Table-1 contains explanation of explained variables and the regressors.

Table-1: Explanation of dependent and independent variables

Variables	Symbol	Formula	Expected Sign
Price Earnings Ratio(Dependent Variable)	P/E	Market Price of share ÷ EPS	
Liquidity Ratio	LQR	Liquidity Ratio = Liquid Assets ÷ Total Asset	+ / -
Leverage Ratio	LEV	Debt ÷ Equity	+ / -
Return on Equity (ROE) Ratio	ROE	Net Income / Owner's Equity	+
Net Investment Income Margin	NIM	(Investments income from loans and security investments – Profit shared with depositors) ÷ Investment Income Earning Assets	+
Non-performing Investments to Total Investments Ratio	NPI	NPI / Total disbursed investments	-

4.2.2 Research Model

Following regression model is developed to test the association among dependent and independent variables:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Here, Y is P/E Ratio, X denotes the independent variables and ε is error term.

Thus our regression model takes the following form:

$$\text{P/E Ratio} = \beta_0 + \beta_1 \text{LQR} + \beta_2 \text{LEV} + \beta_3 \text{ROE} + \beta_4 \text{NIM} + \beta_5 \text{NPI} + \varepsilon$$

4.2.3 Research Hypothesis

H₀₁: Liquidity ratio has no significant impact on P/E ratio.

H₀₂: Leverage ratio has no significant impact on P/E ratio.

H₀₃: ROE has no significant impact on P/E ratio.

H₀₄: Net Investment Income Margin (NIM) has no significant influence on P/E ratio.

H₀₅: Non-performing Investments to Total Investments Ratio (NPI) has no significant impact on P/E ratio.

5. EMPIRICAL RESULTS AND FINDINGS

Table2: Output of coefficients of models (estimated by Random effect (re), Fixed effect (fe), and Pooled Ordinary least square (OLS))

Dependent Variable: ROE (Return on Equity)		Estimation of Models		
		Random Effect (re)	Fixed Effect (re)	Pooled OLS
Explanatory variables	Liquidity Ratio (LQR)	-0.9813	-1.8174	2.01625
	Leverage Ratio (LEV)	0.03638	0.01458	0.1695
	Return on Equity (ROE)	4.5264*	-5.6048*	33.3494*
	Net Investment Income Margin (NIM)	-33.539	-33.468	-36.173
	Non-performing Investments to Total Investments Ratio (NPI)	-20.825**	-24.405**	-14.584***
	N	88	88	88
R2	0.4601	0.4251	0.5166	
rho (ρ)	0.29505	0.68421		
sigma_u	1.95667	4.45191		
sigma_e	3.02445	3.02445		
chi-square	0.000			

5.1 Discussion

Table 2 reveals the relationship among P/E ratio and financial performance indicators, the coefficients measured by fixed effect, random effect, and OLS approach. As per the estimations, only ROE and Non-performing Investments to Total Investments Ratio (NPI) are found to be statistically significant in exemplifying the variation in the dependent variable (at a chosen level of significance) measured by P/E Ratio of listed Non-Conventional banks in Bangladesh. Hence, **we reject hypothesis H_{03} and H_{05} and we fail to reject the hypothesis H_{01} , H_{02} and H_{04} .**

In addition, the value of R^2 is 0.4601, 0.4251 and 0.5166, measured by random effect, fixed effect and OLS method respectively. The result indicates that 46.01%, 42.51% and 51.66% variability in the response variable (P/E Ratio) is exemplified by the model estimated by random effect, fixed effect and OLS method respectively. The rho value measured under random effect and fixed effect method is 0.29505 and 0.68421 respectively, indicating 29.505% and 68.421% variability in P/E ratio is explicated under random effect and fixed effect method respectively.

5.1.1 Output of Multicollinearity Test

Moderate correlation between explanatory variables and other explanatory variables exists in the model (VIF = 1.64).

5.1.2 Output of Output of B/P LM Test for Random Effects

The Breush and Pagan Lagrangian Multiplier (B/P LM) Test for the Random-effect test assumes the H_0 that the variance across estimates is zero, which means there is no significant difference across units or "no panel effect". The results of B/P LM Test for random effects suggest that we fail to reject the null hypothesis and infer that no significant difference across the panels is found, that is Pooled OLS is better than Random-effect model. Reference value: (Prob = 0.6597).

5.1.3 Output of Hausman Test

Hausman Test determines the appropriateness of the Random-effect model or Fixed-effect model. For the diagnosis, it is tested whether the unique errors, denoted by u_i , are correlated with the regressors. The null hypothesis assumes that- they are not correlated. Value of Chi-square is 0.00, which is statistically insignificant at 5% probability level, so we fail to reject the null hypothesis and conclude that Fixed-effect model is better than Random-effect model here.

6. CONCLUSION

One of the imperative indicators of stock market performance is the P/E ratio. Depending on the situation, a high or low P/E ratio can be either a positive or inverse gauge of a firm's position. To comprehend the P/E ratio's signal, investors require a deeper understanding of the specifics of a banking company's health. Policymakers should concentrate on growth-oriented policies as one of the Emerging Equity Markets, as investors' perception regarding such markets is strongly influenced by the assurance that the stock market is a profitable financial hub and a domestic source of capital.

This paper intended to identify the key financial performance factors influencing P/E ratio of Non-Conventional banks in Bangladesh, along with their extent of impact. From the findings, we can conclude that ROE and NPI ratio can be considered to be significant factors affecting the P/E ratio of Non-Conventional banks, according to the coefficients and the level of relevance these variables carry. NIM is found to be negatively associated with P/E ratio, though positive association was expected.

This research could be extended considering both the conventional and non-conventional banks as sample and adding other independent variables or research methodologies.

REFERENCES

1. Adams, M., & Buckle, M. (2000). The Determinants of Operational Performance in the Bermuda Insurance Market. Working Paper, European Business Management School, University of Wales.
2. Afza, T., & Tahir, S. (2012). Determinants of price-earnings ratio: the case of chemical sector of Pakistan. *International Journal of Academic Research in Business and Social Sciences*, 2(8), 331.
3. Ahmed, M. (2003). The performance of common stocks in relation to their P/E ratio. University of Nevada, Reno.
4. Almajali, A. Y., Alamro, S. A., & Al-Soub, Y. Z. (2012). Factors affecting the financial performance of Jordanian insurance companies listed at Amman Stock Exchange. *Journal of Management research*, 4(2), 266.
5. Basu, S. (1977). Investment performance of common stocks in relation to their price-earnings ratios: A test of the efficient market hypothesis. *The journal of Finance*, 32(3), 663-682. <https://doi.org/10.1111/j.1540-6261.1977.tb01979.x>
6. Damodaran, A. (2006). *Damodaran on valuation*. John Wiley & Sons.
7. Datu, N. (2016, March). How do insurer specific indicators and macroeconomic factors affect the profitability of insurance business? A panel data analysis on the Philippine Non-life Insurance market. In *The DLSU Research Congress* (Vol. 4, No. 1, pp. 2449-3309).
8. Dreman, D., 1994. Emotion versus logic. *Fobes*, November, 7, p.351.
9. Elango, B., Ma, Y. L., & Pope, N. (2008). An investigation into the diversification–performance relationship in the US property–liability insurance industry. *Journal of Risk and Insurance*, 75(3), 567-591. <https://doi.org/10.1111/j.1539-6975.2008.00275.x>
10. Emudainohwo, O. B. (2017). Determinants of Price Earnings Ratio: Nigerian Experience (Quantile Regression). *International Journal of Economics, Business and Management Research*, 1(5), 46-76.
11. Fairfield, P. M. (1994). P/E, P/B and the present value of future dividends. *Financial Analysts Journal*, 50(4), 23-31. <https://doi.org/10.2469/faj.v50.n4.23>
12. Jitmaneroj, B. (2017). The impact of dividend policy on price-earnings ratio: The role of conditional and nonlinear relationship. *Review of Accounting and Finance*.
13. Jones, C. P. (2000). *Investments: analysis and management*. John Wiley & Sons.
14. Kothari, S.P. (2001). Capital markets research in accounting. *Journal of accounting and economics*, 31(1-3), pp.105-231. [https://doi.org/10.1016/S0165-4101\(01\)00030-1](https://doi.org/10.1016/S0165-4101(01)00030-1)
15. Lalon, R. M., & Mahmud, T. (2021). Nexus between Price Earnings (P/E) Ratio and Financial Performance of Commercial Banks: Dynamic Panel Evidence from Bangladesh.
16. Nicholson, S. F. (1960). Price-earnings ratios. *Financial Analysts Journal*, 16(4), 43-45. <https://doi.org/10.2469/faj.v16.n4.43>
17. Ohlson, J., & Gao, Z. (2006). Earnings, earnings growth and value. *Foundations and Trends in Accounting*, 1(1), 1-70. <http://dx.doi.org/10.1561/1400000001>
18. Rabbani, A. A., Sukoco, A., Arimbawa, G., & Sin, L. G. (2018, June). Model Framework Of Profitability Of Indonesian Telecommunication Company. In *Journal of International Conference Proceedings (JICP)* (Vol. 1, No. 1). <https://doi.org/10.32535/jicp.v1i1.171>
19. Ramcharran, H. (2002). An empirical analysis of the determinants of the P/E ratio in emerging markets. *Emerging Markets Review*, 3(2), 165-178. [https://doi.org/10.1016/S1566-0141\(02\)00004-3](https://doi.org/10.1016/S1566-0141(02)00004-3)

20. Sari, R. P., Hermuningsih, S., & Cahya, A. D. (2021). Pengaruh Current Ratio, Debt Equity Ratio, Total Asset Turnover Terhadap Price Earning Ratio. *Jurnal Proaksi*, 8(1), 156- 165. <https://doi.org/10.32534/jpk.v8i1.1706>
21. Sunaryo, D & Lestari E P (2022). The Influence of Net Profit Margin, Current Ratio and Debt to Equity Ratio on Company Value With Dividend Policy as an Intervening Variable in Retail Subsector Companies for the 2012-2019 Period. *The Academy Of Management and Business*, 1(1).
22. Taliento, M. (2013). Determinants of price to earnings multiple around the world. Recent findings. *International Review of Business Research Papers*, 9(4, May), 1-21. <http://dx.doi.org/10.29322/IJSRP.8.4.2018.p76XX>
23. Wenjing, H. (2008). Price-earnings ratio and influence factors: Evidence from China. *Universitu of Vaasa, Finland*.
24. Wu, W. T. A. (2014). The P/E ratio and profitability. *Journal of Business & Economics Research (JBER)*, 12(1), 67-76. <https://doi.org/10.19030/jber.v12i1.8380>
25. YÜKSEL, S., CANÖZ, İ., & ADALI, Z. (2017). Determination of the Variables Affecting the Price Earning Ratios of Deposit Banks in Turkey by Mars Method. *Fiscaoeconomia*, 1(3), 40-55. <https://doi.org/10.25295/fsecon.322659>