Bank Systematic Risk Analysis Pre and Post Covid-19 Pandemic Period of Some Selected Privatized Commercial Banks in Bangladesh

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Abstract
Problem: The privatized commercial banking sector in Bangladesh faced several challenges related to bank systematic risk during the COVID-19 epidemic. These issues included asset integrity, compliance with regulations, and changes in the macroeconomic environment. The accurate identification and assessment of crucial elements influencing systematic risk were hampered by the lack of efficient risk assessment procedures. The epidemic increased systematic risk in financial institutions, causing financial hazards, credit, and economic downturns. Unpredictability and lockdown measures disrupted banking operations and reduced risk assessment effectiveness. Unexpected economic shocks caused the bank to face unprecedented volatility and a high level of uncertainty, which disrupted conventional risk models. As a result, traditional risk models were upset, with repercussions for banks, evaluations of credit quality, and risk management in the markets. **Approach:** This research utilized a fixed effect regression model to analyze the statistical significance of variables in predicting systematic risk exposure in banks. The one-way fixed effect model was chosen due to its suitability, unique effects, and accurate gauging correlations among variables. The study examines the relationship between bank-specific accounting measures and market risk in the Bangladeshi banking sectors. Data from the Bangladeshi Securities and Exchange Commission's database was collected from 2013 to 2021, focusing on privately owned banks. The dependent variables were sourced from financial statements and stock Beta data from platforms like investing.com, tradingeconomics.com, and finance.yahoo.com. Data entry was done in Microsoft Excel. For analysis, entered data were exported to STATA software version 15×64. Descriptive statistics that were suitable were employed. Pearson's correlation and a one-way fixed effect regression model were utilized. **Findings:**The findings suggest that in the pre-COVID period, bank stock beta positively correlates with Total assets (6.25e-05) and statistical significance (0.001) Thisprovides evidence that a higher assets volume will likely result in a higher likelihood of systematic risk for banks. Loan loss ratio (6.67), Asset quality (0.02), and earnings per share (0,003) none of them are statistically significant. In the aftermath of the pandemic, Total assets (2.09E-05) and significance (p=0.072) consider a loan-to-asset ratio for bank diversification, finding larger loan portfolios will lower non-interest-generating diversification. Loan asset ratio

(13.54) and significance (p=0.069), Liquidity ratio (0.77), loan loss ratio (1.28), and earnings per share (0.177162). EPS for both periods is a positive coefficient which indicates that higher levels of productivity can reduce the bank's systematic risk. ROA (0.242965)is positively associated with systematic risk. **Conclusion:** This study highlights the complex relationship between bank-specific accounting measures and systematic risk in Bangladesh's privatized commercial banking sector. Liquidity ratio, Loan-to-asset ratio, and earning per share impact risk before and after the pandemic. Higher assets increase systematic risk likelihood, while diversification through loan portfolios counteracts this effect. Traditional risk models struggle to capture volatility, emphasizing the need for flexible risk management techniques.
Keywords: stock Beta, systematic risk, one-way fixed effect model, Bangladeshi banking industry, privatized commercial bank,financial indicators, total asset, loan-to-asset ratio, COVID-19.

Introduction

This Paper examined the fundamental risk factors affecting the Bangladeshi banking industry's privatized commercial banks. This work refers to equity Beta as the measurement of systematic risk, the most widely used indicator of systematic risk. The equity beta, also called "stock beta" or "market risk" is a metric used to determine how sensitive a stock's returns are to the entire financial market.

One of the most intriguing topics in banking studies is systematic risk, which has been extensively studied in financial literature. According to the study by Hundal et al., (2019), the traditional Capital Asset Pricing Model (CAPM), the needed rate of return for each stock and its beta should be positively correlated. Since the cost of equity capital is equal to the stock necessary rate of return from a Bank's perspective, the elements that affect a firm's systematic risk also indirectly impact the firm's financing costs and market value. The significance of beta is clear from the perspective of the investors. Investors can use systematic risk assessment to identify risk-return linkage in portfolio investment strategies and to examine the type of risk connected to various investment possibilities. The factors that a company's systematic risk have been extensively researched, which is not unexpected given the significance of CAPM and beta in financial analysis. By examining the key accounting factors that influence systematic risk in the banking industry, our current study seeks to increase the evidence derived from the body of literature. The findings that we have drawn apply to the Bangladeshi setting. In further detail, our projections are based on accounting and market panel data for Bangladeshi commercial banks that were privatized and openly traded on the Dhaka Stock Exchange (DSE) from 2013 to 2021.

As potential factors influencing the systematic risk of banks, the following nine financial indicators are investigated: (1) The book value of total assets, (2) the leverage ratio, (3) the loan-to-asset ratio, (4) the liquidity ratio, (5) the loan loss ratio, (6) earnings per share, (7) asset quality, (8) return on asset, and (9) return on equity. We investigated the fixed-effect regression model to determine the optimal mix of bank and time-specific effects to assess their statistical relevance in predicting banks' systematic risk exposure. The one-way fixed effects model was chosen exclusively because it best matched our data. Intriguingly, our results show that the amount of systematic risk that Bangladeshi Privatized commercial banks are exposed to is closely correlated with the size of their overall assets. Surprisingly, afterward the pandemic, we saw a significant link between the bank's systematic risk and the loan-to-asset ratio. These findings offer up new study directions and give new information on the dynamics of risk in the banking industry.

Our research breakthrough provides valuable insights for investors and managers to make informed decisions that affect the safety and stability of the banks they oversee, also shedding light on what drives the risk of banks. In addition, this research holds great significance for financial authorities, revealing the intriguing connections between their regulatory decisions and the risk landscapes of banks. The conclusion will explore the policy implications of our results.

Embark on a journey through our research paper! The first half of this paper examines the literature that has already been published. Sections 2 and 3 then present the data and the fascinating approach for empirical research. In section 4, we reveal how accounting indicators affect the systematic risk faced by Bangladeshi privatized commercial banks. Section 5 concludes everything by providing a succinct overview of our main conclusions.

Data and Methodology

Definitions for Data and Variables

As previously mentioned, the current study investigates bank-specific accounting measures that correlate with the stocks' market risk (i.e., equity beta) in the Bangladeshi banking sectors. We gathered annual accounting and market data for Bangladeshi commercial banks that were listed on the Bangladeshi Securities and Exchange Commission from 2013 to 2021 from the capital database for the purpose. Only privatized banking institutions, ranging in size from modest commercial banks, were considered. By the research topic, our database was split into two sections, one for the pre-Covid period (2013 to 2018) and the other for the post-Covid (2019 to 2021).

The Financial statements of reputed banks were gathered from 2013 to 2021 and used to collect data for all types of dependent variables. Stock Beta (SB) components, such as the index returns of DSEX and the respected banks' stock returns, were gathered from the mentioned database in Table 1.

Table1: Data sources of Stock Beta (SB)

Data Components	Website
Stock Return of Banks & Index return of DSEX	investing.com/ equities
	trading economics.com/ Bangladesh
	yahoo finance.com/ quote

Due to a lack of information (i.e., years and variables), some banks have been excluded. To include this in the study, we also set a minimum limit of at least Nine years of available data. Our final sample comprises nine-year observations from 19 banks. Our final sample composite is displayed in Table 2.

Table 2: Sample Composition of Banks

Bank Name	Pre-Covid Duration						Post Covid Duration			Years
	2013	2014	2015	2016	2017	2018	2019	2020	2021	
AB Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Al-Arafah Islami Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Bank Asia Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
BRAC Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Dhaka Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Dutch Bangla Bank	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Eastern Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
IFIC Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Jamuna Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Mercantile bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Mutual Trust Bank	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
NCC Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
One Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9

Prime Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Standard Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
The City Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
The Premier Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Trust Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
United Commercial Bank Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	9

We selected a variety of accounting predictors as potential factors that could influence some systematic risk in privatized commercial banks based on theory and prior banking literature evidence. The selected explanatory variables and their measurements are shown in Table 3 for our regression analysis.

Table3: Explanation of the testable variables

Variables	Symbols	Measurement
Dependent Variables		
Stock Beta	SB	Covariance (stock return, index return) / variance (index return)
Independent Variables		
Total Asset	TA	Book value of total assets (in crore of BDT)
Leverage Ratio	LR	Book value of debt / Book value of equity
Loan to Asset Ratio	LAR	Gross loans / Total assets
Liquidity Ratio	LIQ	Total Cash / Total Assets
Loan Loss Ratio	LLR	Provision for Loan Losses / Gross Loans
Earnings Per Share	EPS	Net Income / No. of shares outstanding
Asset Quality	AQ	Non-Performing Loan / Total Loan
Return on Asset	ROA	Net Income / Total Assets
Return on Equity	ROE	Net Income / Total Equity

A stock's sensitivity to systematic risk is frequently measured using the dependent variable as beta. Systematic risk describes elements that affect all stocks on the market as a whole. For instance, Biase & D 'Apolito, (2012) used Beta as a measure of systematic risk to analyze stock return data. Beta can be captured by the sensitivity of a security's return concerning the overall market return. The estimated equation 1 of Beta of this study is given below:

$$\beta = \frac{Covariance\ (R_p, R_m)}{Variance\ (R_m)} \qquad (1)$$

Where β coefficient in the Capital Asset Pricing Model (CAPM).$R_p$and R_m demonstrate Portfolio Return and Market return. $COV(R_p, R_m)$ signifies the covariance between portfolio return (R_p) and market return (R_m). $VAR(R_m)$ variance of the market return, which determines the volatility or dispersion of the market returns.

The Book value of a bank's total assets, which we use as a stand-in for bank size, is the first accounting predictor. The theoretical size-risk relationship is not entirely clear, despite the study of Laeven et al., (2016) found that bank size is a significant predictor of systematic risk. The study of Claeys & Vennet, (2004) expressed that financial institutions are frequently more exposed to specific risk profiles, such as credit and operational risk, exchange rate risk, and systematic risk, and the size of the bank may have a favorable effect on a bank's risk assessment. Financial leverage which acts as Leverage ratio (LR) in our study follows conventional theory and serves as our second predictor of systematic risk. This study anticipates that equity beta and leverage will have a favorable relationship. As a result, the fact that leverage increases (decreases),

earning volatility and probability also rise (falls), making equity more (less) risky. That means vastly leveraged banks should display greater systematic risk (Biase & D 'Apolito, 2012). Our model's third explanatory factor is Loan to Assets (LAR), which measures the proportion of gross loans to total assets. LAR is taken into account as an adoptive for a bank's level of diversification in endeavors other than conventional intermediation. According to the study ofDemsetz& Strahan (1997), diversification in non-bank activities has no impact on the systematic risk exposure of banks. On the contrary, the work of Claeys & Vennet, (2004) demonstrates that, in contrast to what might be predicted, the impact of diversification on banks' beta is primarily positive. Our research work also checks the liquidity ratio (LIQ), which is the proportion of cash and cash equal to total assets and it can be used as a predictor of systematic risk. Logically, a bank's risk is reduced by increasing its liquidity. The overall quality of the loan portfolio, as measured by the loan loss ratio (LLR), which is measured by the ratio of provisions for loan losses to total loans, is another factor that affects the bank equity beta. This study looked into the possibility that banks' high levels of profitability act as a structural buffer against declining financial market conditions. The indicator called earnings per share (EPS) is used to evaluate profitability in this scenario. Asset quality (AQ) taken into account as an independent variable, asset quality plays a significant role in determining the degree of systematic risk. Lowe default risk and potential losses are implied by higher asset quality, which reduces exposure to systematic risk and volatility. An important financial metric that measures a company's profitability of its total assets is the return on assets (ROA) (de Mendonça & Silva, 2018). It can be evaluated as a company's efficiency and effectiveness in using its assets to generate profits by using it as a useful independent variable. Return on Equity (ROE), According to research work can be used as an independent variable to evaluate systematic risk. Higher ROE typically tends to be associated with lower systematic risk. The study by Vu et al., (2020)underscores the significance of ROE in managing systematic risk. As previously discussed, our study takes into account two data sets based on the pre-and post-Covid situation which are segregated by year. The explanatory variables for the pre-and post-Covid periods are summarized statistically in Table 4.

Table4: Descriptive statistics explanatory variables

Variable	Pre-Covid period					Post-Covid period				
	Obs.	Mean	Std. Dev.	Min	Max	Obs.	Mean	Std. Dev.	Min	Max
SB	114	1.07	1.06	-2.47	4.35	57	0.7	0.8	-2.1	3.0
TA	114	21575.82	6739.84	8896.00	40275.00	57	48837.3	72986.4	21972.0	441026.0
LR	114	0.55	0.52	0.02	2.36	57	0.8	0.8	0.1	3.4
LAR	114	0.68	0.06	0.43	0.77	57	0.7	0.1	0.1	0.8
LIQ	114	0.08	0.04	0.02	0.27	57	0.1	0.0	0.0	0.2
LLR	114	0.02	0.01	0.00	0.05	57	0.03	0.1	0.0	0.5
EPS	114	2.99	2.63	0.02	21.00	57	2.8	1.9	0.2	10.0
AQ	114	5.11	3.11	0.50	33.07	57	5.1	3.2	2.1	18.3
ROA	114	2.14	12.47	0.01	134.00	57	0.9	0.6	0.1	3.6
ROE	114	12.08	4.40	0.08	23.14	57	10.9	3.7	2.3	19.9

As indicated by the mean equity beta of pre and post covid situation for banks being 1.07 and 0.7 respectively. Bank stocks are less volatile than the market index in post-Covid situations. Approximately 21,575 and 48,837 crore BDT accordingly are the mean values of the total assets for two time periods. Loans make up 68% and 70% of total assets for two periods, and the debt-to-equity portion, which indicates the leverage ratio (LR), has a mean value of about 0.55 and 0.80. The outcomes support the notion that Bangladeshi privatized commercial banks typically concentrate on more conventional intermediation methods. For both periods, the

average cash balance, as demonstrated by the (LIQ) liquidity ratio, is 8% and 1% of total assets, respectively. However, the average loan loss provision on gross loans is 2% and 3% depending on the dataset. The mean value of banks' EPS was approximately 2.99 BDT before Covid and 2.8 BDT after the Covid-19 epidemic. The ratio of non-performing loans to total loans, which measures the bank's asset quality, is 5.11 and 5.10, respectively for the pre-and post-Covid periods. In conclusion, the average ratio of EBIT to total assets is 2.14 and 0.9. Furthermore, for the two distinct periods, the mean value of EBIT to total equity is 12.08 and 10.9. correspondingly

Tables 5.1 and 5.2 show the result of the uncovered potential relation between the explanatory variables, which are correlated with each other either positively or vice versa.The values of correlation have existed between -1 to +1. Respectively, our research work creates two tables for the pairwise correlation based on the dataset.

Table5.1: Correlation matrix (pre-Covid)

	SB	TA	LR	LAR	LIQ	LLR	EPS	AQ	ROA	ROE
SB	1									
TA	0.36	1								
LR	0.0672	0.1077	1							
LAR	0.3064	0.2666	0.1761	1						
LIQ	0.0598	-0.1684	-0.1009	-0.0082	1					
LLR	0.2408	0.4077	-0.0361	-0.057	0.1001	1				
EPS	-0.0429	0.2235	0.2156	-0.0497	0.1379	0.0743	1			
AQ	0.1895	0.1534	-0.0964	0.0125	-0.1278	0.3031	-0.1796	1		
ROA	-0.0335	-0.0854	0.0331	-0.0487	0.0421	-0.1041	0.0329	0.0008	1	
ROE	-0.1469	-0.0433	0.1954	0.0369	0.1674	-0.2531	0.4777	-0.3697	0.1039	1

Table5.2: Correlation matrix (post-Covid)

	SB	TA	LR	LAR	LIQ	LLR	EPS	AQ	ROA	ROE
SB	1									
TA	-0.0369	1								
LR	-0.1369	-0.1703	1							
LAR	0.0806	-0.9082	0.1091	1						
LIQ	-0.0201	-0.3415	-0.091	0.3655	1					
LLR	-0.0315	-0.0756	-0.1135	0.0317	-0.0092	1				
EPS	-0.1853	-0.0395	0.3658	-0.0694	-0.0023	-0.0297	1			
AQ	0.2268	-0.0604	-0.0806	0.1072	0.0743	0.053	-0.4118	1		
ROA	0.0761	-0.0826	0.1864	0.055	0.0295	0.1915	0.1529	0.5443	1	
ROE	-0.1681	-0.0887	0.4207	-0.0175	-0.076	0.0061	0.7825	-0.3117	0.3447	1

The results of Tables 5.1 and 5.2 show that, in the pre-Covid scenario (table 5.1), stock beta is positively correlated with TA, LR, LAR, LIQ, LLR, and AQ and negatively correlated with EPS, ROA, and ROE. In contrast, the post-Covid (table 5.2) shows that LAR, AQ, and ROA have a positive correlation with stock beta and TA, LR, LAR, LIQ, LLR, EPS, and ROE fail to maintain a positive correlation with dependent variables. The first signs of potential multicollinearity problems can be found in the correlation matrix, where correlation values between two explanatory variables close to ±1 signify multicollinearity between the given pair of predictors. There is no multicollinearity as shown in Tables 5.1 and 5.2. Both tables give the higher correlation values of 0.36 in table 5.1 (correlation of SB and TA) and 0.5443 in table 5.2 (correlation of AQ and ROA).

The one-way fixed effect regression model

The Regression method used in this study is known as the one-way fixed effect model. When there are individual-specific effects to take into account, the fixed effect model is selected as the regression model. It accurately approximates the relationship between variables by capturing the distinctive qualities of each individual. The error term ($\varepsilon_{i,t}$) in the fixed effects approach is broken into two parts: a unit-specific error λ_i, which does not change over time, and idiosyncratic error ($\mu_{i.t}$) which is observation specific(Biase & D 'Apolito, 2012).

$$SB_{i,t} = (\alpha + \lambda_i) + x'_{i,t-1}b + \mu_{i,t} \qquad (2)$$

Where, the constant term is composed of a constant (α) and an individual's effects that vary between banks λ_i. Since all regression coefficients (Slopes) are the same. We can allow every bank to have a unique intercept term. The following equation 3 represents our study's final model,

$$SB_{it} = (\alpha + \lambda_i) + b_1 TA_{i,t-1} + b_2 LR_{i,t-1} + b_3 LAR_{i,t-1} + b_4 LIQ_{i,t-1} + b_5 LLR_{i,t-1} + b_6 EPS_{i,t-1} + b_7 AQ_{i,t-1} + b_8 ROA_{i,t-1} + b_9 ROE_{i,t-1} + \mu_{i,t} \qquad (3)$$

In equation 3, $SB_{i,t}$ is described as, at time t, this represents the dependent variable for the ith entity. α is the intercept term, which represents the constant effect that all entities and t periods experience λ_i denotes the ith entity's fixed effects. It captures the inimitable unobserved heterogeneity characteristics of each entity. $b_1, b_2 \ldots \ldots b_9$ coefficient that corresponds to the explanatory variables. $TA_{i,t-1}$ is the indication of the lagged value of the independent variable TA for the entity at the time $t-1$. Other independent variables i.e., same as the TA in this regression model. $\mu_{i,t}$ is the error term, which represents the unaccounted influences on the dependent variables such as random fluctuations and unobserved factors. All things considered that this model enables an analysis effect of time-varying fixed effects (λ_i) and lagged value of various explanatory variables on the dependent variables ($SB_{i,t}$).

Result and Discussion

Table 6 presents the result of our selected regression model where we showed the Coefficient, standard error, and significance values for explaining the effect of the regression Model.

Table- 6: Determinates of bank's stock beta: One-way fixed effect regression

	Pre covid			Post covid		
Variable	Coefficient	Std. Error	P-value	Coefficient	Std. Error	P-value
TA	6.25e-05	1.88e-05	0.001***	2.09E-05	1.12E-05	0.072*
LR	-0.065232	0.308313	0.833	-0.540115	0.328024	0.11
LAR	-0.651914	1.790941	0.717	13.54339	7.170246	0.069*
LIQ	-4.190279	6.007021	0.487	0.775634	9.29281	0.934
LLR	6.677984	10.80537	0.538	1.28116	2.051465	0.537
EPS	0.003142	0.055049	0.955	0.177162	0.296832	0.555
AQ	0.028871	0.027778	0.302	-0.094922	0.12548	0.455
ROA	-0.00307	0.006695	0.648	0.242965	0.50445	0.634
ROE	-0.018899	0.029191	0.519	-0.059273	0.083816	0.485
Constant	0.491268	1.360715	0.719	-8.65396	5.116823	0.102
R^2 *Overall*			0.0992			0.0041
R^2 *between*			0.0231			0.0006
R^2 *within*			0.2475			0.1615
$Prob. > F$			0.0025			0.7697
Bank effect			Yes			Yes
Year effect			No			No

The only variables that exhibit a positive coefficient and statistical significance at 1% and 10% respectively with systematic risk over both time periods is the book value of a total asset (TA). This provides evidence that a higher assets volume will likely result in a higher likelihood of systematic risk for banks. Loan to equity ratio LR coefficient for pre- and post-Covid are negative and have values of -0.065 and -0.540, correspondingly. None of these coefficients is statistically significant. However, the pre-covid loan to asset ratio (LAR) shows a negative coefficient and is not statistically significant. Alternatively, the post-covid situation of LAR displays a positive coefficient and is statistically significant at a 10% level of significance. The loan to asset ratio is taken into account in the current study as proximate for the bank diversification level: the larger the loan portfolio in relation to total assets the lower the degree of diversification in non-interest generating activities. Our regression model finds the both negative and positive relationship between systematic risk and LAR, which supports and also contrary to the study of (Claeys & Vennet, 2004; Templeton &Severiens, 1992). Similar to LAR, the liquidity ratio's coefficient is negative prior to the pandemic and positive coefficient just after the epidemic, but neither case does it successfully establish a significant connection with beta. Once applied to the post-Covid condition, our model shows that higher levels of liquidity reduce a bank's systematic risk. Our model takes the loan loss ratio (LLR), that is, the proportion of gross loans to loan loss provision as a proxy for the general quality of a lending portfolio when analyzing loan portfolio quality, the lower the loan portfolio quality should be, given a certain level of loans, and the higher the provisions a bank sets aside for bad loans. We would expecting a positive regressor, and table 6 shows positive coefficient in both time periods. Our findings might be explained by bank manager's opportunistic accounting behavior and flexible approaches to provisioning for bank loan losses.In the meantime, numerous studies provide evidence that bank managers utilize the LLR's discretionary component to smooth bank earning (Kanagaretnam Michael et al.,2003; Rivard et al.2003; Taktak et al., 2010). These studies suggest bank manager can reduce the time variation in reported earnings by using flexible loan loss provisions to borrow money from the future and save money for the future as well during current performance periods. The profitability which denotes by EPS for the both periods is positively coefficient which indicates that higher levels of productivity can reduce the bank's systematic risk. Mu'minatus et al., (2021) find that, financial strain is adversely impacted by the company's growth rate, as shown by EPS. An elevated EPS reduces the likelihood of bankruptcy. Asset quality (defined as the ratio of non-performing loan to total loan), has a positive pre-covid correlation and a negative post-covid correlation. According to our analysis, taking into account post-covid periods, banks will face less systematic risk if there are fewer non-performing loan. Applying a network-based approach Bottazzi et al., (2016) investigates the connection between systematic risk and non-performing loans (NPLs), demonstrating how an increase in NPLs at the firm level affects the bank's financial system. The connection between bank asset quality and systematic risk is the study of the (Beltrame et al., 2018), that discovered that AQ and Beta and Beta share a crucial connection, that result is opposite of our findings. Pre-covid and post-covid, respectively, have estimated ROA coefficient that are negative (-0.00307) and Positive (0.2429). Statistical significance is not found for any of the values. Recent data lends support to the idea that banks' systematic risk increases as ROA rises. The outcomes of Lee et al., (2020), supports our research findings of the pre-covid coefficient results, while the post covid situation of our result is supported by Mnzava, (2009). Lastly, Return on Equity coefficient values are both negative. In contrast to the study of Vu et al., (2020), our study's control variable, return on equity (ROE), shows a negative relationship between systematic risk and ROE.

Conclusion

In order to analyze how well a variety of accounting variables might forecast systematic risk within the Bangladeshi privatized commercial banking sector, we contribute to the body of current banking literature by using a one-way fixed effect regression models and an updated data set. This model provides evidence that bank systematic risk, as measured by stock beta, is strongly and favorably related to total assets alone.

However, in the pre-covid duration dataset, there was a positive correlation between LLR, EPS, and AQ. Two factors are positively associated with stock beta TA, and LAR, rather than these two LIQ, LLR, EPS, and ROA maintain positive assessment to systematic risk. Additionally, our regression model discovers a negative relation between beta and LIV, LAR, LIQ, ROA, and ROE in pre-covid period. The following metrics also have a negative correlation with systematic risk during the post-covid period LIV, AQ, and ROE.

According to the results, which focus on how loan loss provisions affect banks' systematic risk, the stock market's perceptions of bank's systematic risk may be partially explained by financial transparency and opportunistic accounting practices. At the same time, benefits of diversification are indirectly confirmed by the positive correlation between systematic risk and the loan to asset ratio in post-covid period. Furthermore, it is notable that the Bangladeshi banking sector has a link between leverage and risk.

This study has several implications for strategic planning at several levels. First, from a systematic risk viewpoint, it is advisable for Bangladeshi privatized commercial bank management to expand income diversity and to maintain high levels of liquidity and profitability. Additionally, it would appear that private banks in Bangladesh have a lot of incentives to improve the voluntary disclosure they provide on loan loss provision, asset quality, and return on equity accounting requirements. In fact, our findings infer that complete accounting transparency can improve how the financial market evaluates a bank's risk profile.

Our findings also suggest that Bangladeshi privatized commercial banks with relatively low performance, liquidity levels, revenue diversification should experience an increase in fundings costs that is, on average, higher given the positive relationship between the total capital and stock beta. However, A more thorough investigation is necessary to verify the veracity of our research work.

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