



## Performance appraisal of selected first-generation private commercial banks in Bangladesh



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### ABSTRACT

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#### Keywords

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The motive of this study is to appraise the performance of selected first-generation private commercial banks in Bangladesh. Both quantitative and qualitative analyses were used. The performance of the banks was tested through several variables, such as Deposits, Investments, Loan-to-Deposit ratio, Imports, Exports, Return on Assets (ROA), Return on Equity (ROE), Net income, Earnings per Share (EPS), etc. These variables were then examined using statistical measures, such as growth percentage, trend equations, the square of the correlation coefficient, and a correlation matrix. Sixty trend equations and R-squared were tested for twelve different banks' activities. From the study, it has been found that banks are facing some challenges due to ongoing economic crisis and liquidity crisis. However, all the banks are trying to recover from the economic crisis, and some banks are doing very well, while some banks are facing hardships to cope with the situation. The findings of the trend analysis and correlation matrix of the study are expected to direct the first-generation commercial banks of Bangladesh to improve their performance. We are quite optimistic that if the selected banks tried to overcome the identified problems, then their performance will improve, and they may give rise to accelerated development of Bangladesh's economy.

**Contribution/ Originality:** This research paper is the result of our independent and original work. The combination of the selected five first generation private commercial banks of this study is unique. No other research paper compared the results among these five banks of Bangladesh.

## 1. INTRODUCTION

The banking operation has become an important system to run economic activities in every country. A country's economic health is closely linked to the stability of its banking system. The major role of a commercial bank is to take deposits from surplus spending units or savers and to provide loans to deficit spending units or people and organizations to fund their consumptions and business activities. The banking sector fuels the engine of development of a country. Banks provide financial support during business startups, provide loans to organizations and individuals to increase production, control the supply of money in circulation, support modern businesses, keep people's money secured, affect spending and saving activities, provide capital for revolution and infrastructure, and also help foreign dealings (Uddin & Bristy, 2014). The bank has so many roles to play in the economic prosperity of a country. Therefore, any disruptions in the banking sector can have a severe influence on a country's economic growth.

### 1.1. Banking Scenario in Bangladesh

In Bangladesh there are primarily two types of banks, these are “Scheduled Banks” and “Non-Scheduled Banks”. There are 5 non-scheduled banks in Bangladesh. Based on the time of formation, all the commercial banks are divided into four generations. The banks, licensed in the year 1971 – 1990 are known as first-generation banks, those licensed in 1991 – 2000 are second-generation banks, and those licensed in 2001 – 2012 are third-generation banks, licensed in 2013 – onwards are known as fourth-generation banks.

The competition in the banking industry is increasing in Bangladesh; as a result, banks are trying to provide their customers with better services to ensure utmost customer satisfaction. As digitalization is increasing, now many banks are using digital platforms to deliver their service, which enhances customer satisfaction, and makes customers’ lives easier.

**Table 1.** Scenario of number of scheduled banks in Bangladesh as on June 30, 2021.

Bank types	Number of banks
State-owned commercial banks (SCBs)	6
Specialized banks (SBs)	3
Private commercial banks (PCBs)	43
Foreign commercial banks (FCBs)	9
Total	61

Source: Bangladesh Bank Annual Report 2020-2021.

Table 1 presents the number of various scheduled banks in Bangladesh in recent date. There are 61 scheduled banks in Bangladesh, which are fully controlled and supervised by the Central Bank of Bangladesh under the Bangladesh Bank Order, 1972, and the Bank Company Act, 1991.

### 1.2. Private Commercial Banks in Bangladesh

Individuals or private entities majorly own private commercial banks. There are 43 PCBs in Bangladesh, which are divided into two groups: Conventional private commercial banks and Islami Shariah-based private commercial banks. There are 33 Conventional PCBs; they conduct banking in interest-based operations. On the other hand, there are 10 Islami Shariah-based PCBs, and they conduct banking operations according to the Islamic Shariah-based principle, by following the Profit-loss sharing (PLS) method. Commercial banks provide basic banking services to the nation of a country, and it consists of all categorized people of a country such as the general public, small-large sized businesses, celebrities, etc.

## 2. REVIEW OF LITERATURE

In a study, Aktar (2021) stated that banks are becoming more important to a country’s financial industry; their presence keeps the wheels of global finance moving. Moreover, a country’s stability and economic growth are influenced by the status of a country’s financial sector. The customers’ behaviors are changing, they are now more informed, demanding, analytical, and aware of their rights, and their standard of living has improved. As a result, the rising volume of financial transactions necessitates the use of modern services. In our study also, we found that the growth of deposits and loans has increased over the past five years, indicating the increasing dependency of customers on banks.

Akhter (2018) attempted to conduct a study and found out that the banking sector in Bangladesh is facing several different challenges, such as improvement in technology, increased competition, and market movement for these fundamental movements. That is why bank efficiency is a significant matter to maintain competitiveness in the financial market. The increased competition in the financial market has put banks under pressure to improve their earnings and control costs. Huda and Chowdhury (2017) mentioned that as a developing country E-banking opened up tremendous opportunity to the financial sector and economic development of Bangladesh. However, from

our analysis, we have also noticed the competition between the five banks. All five banks are continuously trying to improve their IT division to improve banks' efficiency to sustain in this competitive era of the banking industry.

Uddin and Bristy (2014) conclude that the banking industry plays a vital role in most of the transactions occurring throughout the world. Moreover, financial performance evaluation assists both banks and their stakeholders to evaluate the results of the bank's policies and operations in monetary terms. However, the contribution of banks is inevitable for the economic sustainability of the country. The whole economy of Bangladesh can be paralyzed by any disturbance in its banking sector. As a result, it is essential to keep track of the performance and contribution of the banks every once in a while. The study of this paper also gives a similar result, that any disruption in the banking sector can affect the country's economy.

Akber and Dey (2020) examined the financial performance between five selected Islamic banks and five selected private commercial banks in Bangladesh. According to their study, based on the trend analysis, the private commercial banks perform better in terms of management quality and asset quality, however, the capital adequacy and liquidity position of the Islamic banks were better.

Haque (2013) conducted a study on the measurement of the financial performance of five selected private commercial banks from different generations, for the period 2006-2011. The author conducted the financial performance based on profitability, liquidity, credit risk, and efficiency. The result of the research has shown that there is no definite relationship between the generation of banks and their performance. Hence, the performance of banks is more reliant on the management's ability in developing strategic plans and efficient implementation of its strategic plans. We also agree that the generation of banks and their performance are not related to each other. From our analysis, we can say that banks' performance is more dependent on their efficiency and innovations.

Chowdhury and Ahmed (2009) investigated the development of five selected private commercial banks in Bangladesh, for the period 2002-2006. They tested seven trend equations for analyzing different activities of the banks. Among the equations, the trend value of branches, employees, deposits, and net income showed positive results for all the selected banks. The  $r^2$  of the number of branches, amount of deposits, and net income, is more than 0.5, which indicated that the likelihood of having a bright future for private commercial banks in Bangladesh is very high. Similarly, in our study also, we have seen that the  $r^2$  of Deposits is more than 0.65, indicating a bright future for private commercial banks in Bangladesh.

Islam, Islam, and Ahmed (2013) researched the performance analysis of seven private commercial banks in Bangladesh for the period 2007-2011. The result of their research is that the amount of deposits and the amount of loans and advances can determine the performance of banks significantly. Moreover, their research also revealed that the number of employees, number of branches, and Earning per Share (EPS) positively influence the banks' performance. Our study shows similar results, a high loan-to-deposit ratio indicates the deteriorating performance of a bank. As a result, the amount of deposits and loans can have a serious impact on the performance of a bank.

### 2.1. Objectives of the Study

The study shows the performance of the selected first-generation private commercial banks in Bangladesh and their impact on the economy of Bangladesh. The specific aims of the study are as follows:

- To evaluate the performance of selected first-generation Private Commercial Banks of Bangladesh.
- To suggest some actions for the development and growth of selected first-generation Banks in Bangladesh.

### 2.2. Scope & Methodology of the Study

The study has been done to evaluate the performance of selected first-generation banks in Bangladesh. Currently, 43 private commercial banks are present in Bangladesh; among them, 8 are first-generation private commercial banks. Out of the 8 banks, five of them are selected to conduct the study. They are Arab Bangladesh Bank Limited (ABBL), International Finance Investment & Commerce Bank Limited. (IFICBL), City Bank Limited

(CBL), United Commercial Bank Limited (UCBL), and National Bank Limited (NBL). The data incorporated in this report are mainly secondary. The relevant data and information were collected from Bangladesh Bank’s publications, the relevant banks' Annual Reports, Stock Exchanges, Bangladesh Securities and Exchange Commission (BSEC), and relevant articles. Five years data (2017-2021) from the selected banks were examined in this paper. For assessing the performance of the selected banks in Bangladesh, data has been scrutinized using various statistical estimates like growth percentage, trend equation, square of the correlation coefficient, correlation matrix, etc.

The present paper is arranged in the following manner: section one includes the introduction and literature review; section two presents the objectives and methodology; section three appraises the performance of the selected banks; section four details the results and findings of Trend Equations, R square, and Correlation matrix; section five provides the Policy suggestions, and finally, section six provides the concluding remarks.

Chowdhury, Kabir, and Chowdhury (2022) mentioned that the method of Least Square is a straight-line Trend Method of Time Series Analysis, which is widely used in practice. The equation  $Y_c = a + bX$ , represents the straight-line trend. In the equation,  $Y_c$  indicates the trend values to differentiate them from the actual  $Y$  values, 'a' is the Y-intercept, 'b' is the slope, which indicates the amount of change in the  $Y$  variable that is correlated with a one-unit change in  $X$  variable, and the 'X' variable represents time. The square of the correlation coefficient ( $r^2$ ) is called the multiple determinations or squared multiple correlation coefficients. "r" represents the coefficient of correlation. The values of  $r$  lie between 0 and 1. The higher the  $r^2$ , the better the "goodness of fit" of the regression model to the sample observation, because higher  $r^2$  results in a greater percentage of the variation of  $Y$  explained by the regression model. On the other hand,  $r^2$  closer to zero indicates a worst fit.

A simple correlation coefficient among all the variables is shown by the correlation matrix. The correlation matrix is calculated for all five first-generation banks of Bangladesh. The following twelve independent variables are chosen to calculate the correlation matrix for the banks.

- TDEP = Total deposits
- TINV = Total investments
- LDR = Loan-to-deposit ratio
- EXP = Exports
- ROA = Return on assets
- NINC = Net income
- TLAA = Total loans & advances
- NPLS = Non-performing loans
- NII = Net interest income
- IMP = Imports
- ROE = Return on equity
- EPS = Earnings per share

Table 2. An overview of the selected first-generation banks of Bangladesh.

Corporate information of the banks as of January 31, 2022					
Particulars	ABBL	IFICBL	CBL	UCBL	NBL
Date of incorporation	December 31, 1981	1976	1983	1983	March 15, 1983
Dhaka stock exchange (DSE) listed	December 28, 1983	1986	February 3, 1986	November 30, 1986	December 20, 1984
Chittagong stock exchange (CSE) listed	October 21, 1995	1997	December 27, 1995	November 15, 1995	November 6, 1995
Authorized capital (Bangladesh Taka (BDT) in millions)	15,000	40,000	15,000	15,000	50,000
Paid-up capital (BDT in millions)	8,609.14	17,859.10	12,006.10	14,062.40	32,197.40
Market category	B	A	A	A	B
Deposit (BDT in millions)	298,373	333,142	282,064	389,901	473,104
Investment (BDT in millions)	65,215	55,612	54,920	81,388	83,805
No. of branches	105	160	132	215	219
No. of employees	2,280	4,350	4,539	5,060	4,764

Source: Assembled from Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

Table 2 presents a brief overview of the selected first generation private commercial banks of Bangladesh. The table includes some significant dates of the banks, like the date of inception, DSE listed date, and CSE listed date. It also includes the market category of the banks, number of branches of the banks, number of employees of the banks, etc. The table shows that IFIC bank is the oldest bank among the five banks. Moreover, NBL has the highest number of branches but UCBL has the highest number of employees.

### 3. PERFORMANCE EVALUATION OF THE SELECTED FIRST-GENERATION BANKS OF BANGLADESH

This section appraises the performance of the five first-generation banks of Bangladesh. We have tried to appraise the performance by using different variables such as trends of deposits, loans & advances, non-performing loans, investment/deposit ratio, exports, imports, return on assets, return on equity, net income, and EPS through five years statistics:2017-2021. For evaluating the performance several statistical tools were measured e.g., growth percentage, straight line trend equations, square of correlation coefficient, r square, and correlation matrix.

Table 3. Deposits of the banks.

S. no.	Banks name	Deposits (BDT in million)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	35,954	235,445	279,458	290,719	298,373	-
	Growth (%)	-	554.8%	18.7%	4.0%	2.6%	145.1%
2	IFICBL	200,206	226,364	258,368	296,369	333,142	-
	Growth (%)	-	13.1%	14.1%	14.7%	12.4%	13.6%
3	CBL	183,493	205,170	246,704	254,781	282,064	-
	Growth (%)	-	11.8%	20.2%	3.3%	10.7%	11.5%
4	UCBL	278,195	297,173	330,632	353,982	389,901	-
	Growth (%)	-	6.8%	11.3%	7.1%	10.1%	8.8%
5	NBL	272,771	315,206	366,299	430,748	473,104	-
	Growth (%)	-	15.6%	16.2%	17.6%	9.8%	14.8%

Source: Assembled from Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

#### 3.1. Growth of Deposit of Selected First-Generation Banks

Table 3 shows the growth of deposits in the banks. The table shows that ABBL's deposit has the highest average growth rate. However, NBL has the highest amount of deposits among the five banks, during the 2018 – 2020 period. It indicates that the bank has improved financial sustainability because deposits are cost-efficient. On the other hand, having large deposits can expose the bank to failure risk, because these financial claims from the public are often volatile. As a result, NBL needs to stand ready or it must have enough liquidity to meet deposit withdrawals; otherwise, the bank may collapse under the weight of depositors' claims. In 2017, UCBL had the highest deposit amount, after that it has the second-highest deposit amount during the period 2018-2021. Moreover, all five banks have positive growth rates in their deposits, during these periods. During the 2018 – 2021 period, CBL had the lowest deposit amount, but in 2017, ABBL had the lowest deposit amount. If banks do not have enough deposits, then they may need to borrow from non-deposit sources, which can be risky because the interest rate is highly volatile, which may suddenly increase the borrowing cost.

#### 3.2. Growth of Total Loans & Advances of the Banks

Table 4 reflects the growth rate of loans and advances of the banks of Bangladesh. The table shows that NBL's average growth rate of loans and advances is the highest. Moreover, NBL's loans and advances amount is also the highest among the five banks during the 2018 – 2021 periods. The table shows that all the banks' loans and advances have increased from the previous year, which indicates that all the banks had positive growth rates, during the 2017-2021 periods. However, ABBL has the lowest growth rate in its loans and advances from 2017 to 2021,

but the amount of loans and advances of ABBL is not the lowest. The table indicates that the amount of loans and advances of IFIC Bank is the lowest among the five banks, during the 2017 – 2020 periods. In 2021, CBL had the lowest loans and advances amount. Throughout the five years, UCBL is second highest among the five banks in their loans and advances amount, except in 2017, when it had the highest amount of loans and advances.

**Table 4.** Total loans & advances.

S. no.	Banks name	Loans & advances (BDT in million)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	229,647	241,070	256,512	274,830	290,460	-
	Growth (%)	-	5.0%	6.4%	7.1%	5.7%	6.1%
2	IFICBL	179,264	206,930	228,589	260,650	305,061	-
	Growth (%)	-	15.4%	10.5%	14.0%	17.0%	14.2%
3	CBL	196,596	231,391	246,944	268,202	286,380	-
	Growth (%)	-	17.7%	6.7%	8.6%	6.8%	10%
4	UCBL	261,003	294,672	322,728	351,684	402,482	-
	Growth (%)	-	12.9%	9.5%	9.0%	14.4%	11.5%
5	NBL	248,467	314,507	360,770	408,511	445,288	-
	Growth (%)	-	26.6%	14.7%	13.2%	9.0%	15.9%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

**Table 5.** Investments of the banks.

S. no.	Banks name	Investments (BDT in million)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	45,749	43,594	61,579	63,761	65,215	-
	Growth (%)	-	-4.7%	41.3%	3.5%	2.3%	10.6%
2	IFICBL	27,858	31,304	45,500	52,722	55,612	-
	Growth (%)	-	12.4%	45.3%	15.9%	5.5%	19.8%
3	CBL	25,508	27,882	39,452	46,251	54,920	-
	Growth (%)	-	9.3%	41.5%	17.2%	18.7%	21.7%
4	UCBL	42,912	50,831	57,801	65,323	81,388	-
	Growth (%)	-	18.5%	13.7%	13.0%	24.6%	17.4%
5	NBL	60,338	57,870	62,878	73,737	83,805	-
	Growth (%)	-	-4.1%	8.7%	17.3%	13.7%	8.9%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

### 3.3. Growth of Investments of the Banks

Table 5 shows the investments of the five banks. The table shows that CBL has the highest average growth rate in their investments, whereas NBL has the lowest average growth rate. However, although NBL's average growth rate is the lowest, it has the highest amount of investments during the 2017 to 2021 period, having positive growth over the years, with slight negative growth in 2018. From the table, it can be also seen that UCBL's investments are rapidly growing and in 2021, it has become almost similar to NBL's. It can be predicted from the table that soon, UCBL's investment amount will surpass NBL's investment. On the other hand, CBL has the lowest investment amount among the five banks, during the 2017 to 2021 period, but its growth rate is highest, and it is rapidly growing over the years. However, all five banks have positive growth rate in their investment during the 2018 to 2021 period. In 2018, ABBL and NBL had negative growth, but the other three banks had positive growth.

### 3.4. Non-Performing Loans (NPL) of the Banks

Table 6 shows the NPLs of the selected banks. The table shows that ABBL has the highest average growth rate, although after 2018 it had a negative growth rate during the 2018 to 2021 period. The amount of NPL is highest in ABBL from 2018 to 2020. In 2017 and 2021, NBL had the highest amount of non-performing loans among the five banks. However, CBL has the lowest average growth rate of non-performing loans; it indicates that

CBL can manage its credit efficiently. Over the past five years, all the banks have shown fluctuation in the non-performing loan amounts, it has increased in some years and decreased in some years.

Table 6. NPL of the banks.

S. no.	Banks name	Non-performing loans (BDT in million)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	16,410	79,730	46,890	46,150	41,110	-
	Growth (%)	-	385.9%	-41.2%	-1.6%	-10.9%	83%
2	IFICBL	11,478	12,740	12,265	10,346	18,588	-
	Growth (%)	-	11.0%	-3.7%	-15.6%	79.7%	17.8%
3	CBL	10,678	12,326	14,244	10,850	13,906	-
	Growth (%)	-	15.4%	15.6%	-23.8%	28.2%	8.8%
4	UCBL	19,268.09	20,021.63	11,711.23	8,983.56	17,737.29	-
	Growth (%)	-	3.9%	-41.5%	-23.3%	97.4%	9.1%
5	NBL	26,448	29,882	39,637	38,328	92,617	-
	Growth (%)	-	13.0%	32.6%	-3.3%	141.6%	46%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

### 3.5. Loan-to-Deposit Ratio (LRD)

Table 7 shows the LDR of the five banks. From the table, it can be seen that UCBL has the highest average growth rate in its loan-to-deposit ratio, whereas CBL has the lowest and negative average growth rate. Moreover, all five banks have fluctuating growth rates in its loan to deposit ratio. The table shows that NBL has the highest loan-to-deposit ratio during the 2017-2020 period. From 2018 to 2021, NBL had more than a 90% loan-to-deposit ratio, which indicates that the bank invested most of the deposits. It means that the bank may face a liquidity shortage due to overinvestment. The table also shows that CBL has the lowest loan-to-deposit ratio among the five banks, during the 2019-2021 period. However, all five banks have fluctuating rates of loan-to-deposit ratio, having more than 70% loan-to-deposit ratio during the 2017 – 2021 period.

Table 7. Loan to deposit ratio of the banks.

S. no.	Banks name	Loan to deposit ratio (%)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	86.24%	91.09%	84.28%	85.26%	86.27%	-
	Growth (%)		5.6%	-7.5%	1.2%	1.2%	0.1%
2	IFICBL	85.04%	86.83%	84.08%	82.40%	85.06%	-
	Growth (%)		2.1%	-3.2%	-2.0%	3.2%	0.0%
3	CBL	84.90%	82.50%	79.10%	74.70%	81.30%	-
	Growth (%)		-2.8%	-4.1%	-5.6%	8.8%	-0.9%
4	UCBL	80.34%	79.64%	83.79%	81.18%	83.73%	-
	Growth (%)		-0.9%	5.2%	-3.1%	3.1%	1.1%
5	NBL	89.03%	97.49%	95.27%	92.96%	90.46%	-
	Growth (%)		9.5%	-2.3%	-2.4%	-2.7%	0.5%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

### 3.6. Growth of Net Interest Income of the Banks

Table 8 shows the net interest income of the banks. It can be interpreted from the table that ABBL has the highest average growth rate in its net interest income. Although ABBL has the highest average growth rate, its net interest income has fluctuated throughout the five years, due to very high growth in 2019, its average growth rate is high. The table shows that UCBL has the highest net interest income among the five banks, during the 2017 to 2021 period. Moreover, from the table, it can be seen that NBL has the lowest and negative average growth rate in its net interest income. After 2019, NBL has seen a decrease in its net interest income, having a negative growth rate. It indicates that NBL's profitability from interest income is decreasing. In 2020, all five selected banks have seen a decrease in their net interest income. However, all five banks have recovered their position from 2020 and

increased their net interest income in 2021, except NBL. Only NBL has a negative growth rate in 2021 also, it has not recovered its position yet from 2020's pandemic, when a collapse in the business and economic sector occurred. In 2021, IFICBL had the highest growth in net interest income.

Table 8. Net interest income.

S. no.	Banks name	Net interest income (BDT in million)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	2,670	1,910	7,869	4,157	4,562	-
	Growth (%)	-	-28.5%	311.9%	-47.2%	9.8%	61.5%
2	IFICBL	5,492	4,560	6,398	2,864	6,658	-
	Growth (%)	-	-17.0%	40.3%	-55.2%	132.4%	25.1%
3	CBL	7,495	9,201	10,832	8,363	12,048	-
	Growth (%)	-	22.8%	17.7%	-22.8%	44.1%	15.4%
4	UCBL	8,947	9,242	10,798	9,511	13,396	-
	Growth (%)	-	3.3%	16.8%	-11.9%	40.9%	12.3%
5	NBL	6,439	8,504	10,456	8,221	1,394	-
	Growth (%)	-	32.1%	22.9%	-21.4%	-83.0%	-12.3%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

Table 9. Exports of the banks.

S. no.	Banks name	Exports (BDT in million)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	75,109	73,450	55,110	46,800	55,593	-
	Growth (%)	-	-2.2%	-25.0%	-15.1%	18.8%	-5.9%
2	IFICBL	88,677	98,257	94,645	74,061	87,674	-
	Growth (%)	-	10.8%	-3.7%	-21.7%	18.4%	0.9%
3	CBL	98,593	117,520	130,241	119,987	186,029	-
	Growth (%)	-	19.2%	10.8%	-7.9%	55.0%	19.3%
4	UCBL	199,188	232,314.41	252,920.30	212,485.48	292,673.70	-
	Growth (%)	-	16.6%	8.9%	-16.0%	37.7%	11.8%
5	NBL	42,877.60	50,282.23	54,544.76	45,154.36	53,938.36	-
	Growth (%)	-	17.3%	8.5%	-17.2%	19.5%	7%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

### 3.7. Growth of Exports

Table 9 shows the export amount of the five banks. The table shows that UCBL has the highest amount of exports from 2017 to 2021, whereas, NBL has the lowest amount of exports during this period. From the table, it can be seen that in 2020, all five banks had negative growth in export amount, where IFICBL was affected most, because it has the highest negative growth rate in 2020. However, in 2021, all five banks had gained positive growth in their export amount. The table shows that CBL has the highest average growth rate, whereas ABBL has a negative and lowest average growth rate. Moreover, during the 2017- 2021 period, CBL had the second-highest amount, IFICBL has the third-highest export amount, ABBL is in the fourth position and NBL has the lowest export amount. In the last five years, the five banks have shown the same trend in export amount. However, all of the five banks' export amounts fluctuated over the five years.

### 3.8. Imports of the Banks

Table 10 portrays the import business of the five banks. It can be interpreted from the table that ABBL has the lowest and negative average growth rate in its import earnings. On the other hand, CBL has the highest average growth rate in its import amount. However, UCBL has the highest amount of imports among the five banks, during the 2017 to 2021 period. The import amount of UCBL has been constantly increasing having a slight decrease in 2019. All the banks have fluctuating rates of import amount, except National Bank, only NBL has constant positive growth in its import amount. Moreover, IFICBL has the lowest average growth rate.



Table 10. Imports of the banks.

S. no.	Banks name	Imports (BDT in million)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	104,916	89,630	47,370	32,650	48,623	-
	Growth (%)	-	-14.6%	-47.1%	-31.1%	48.9%	-11%
2	IFICBL	97,908	101,642	86,203	77,078	110,718	-
	Growth (%)	-	3.8%	-15.2%	-10.6%	43.6%	5.4%
3	CBL	164,588	172,937	197,590	180,817	326,480	-
	Growth (%)	-	5.1%	14.3%	-8.5%	80.6%	22.8%
4	UCBL	217,858	248,969.80	246,212.60	259,241.13	403,177.50	-
	Growth (%)	-	14.3%	-1.1%	5.3%	55.5%	18.5%
5	NBL	88,477.30	90,579.63	99,501.40	103,577.86	115,579.07	-
	Growth (%)	-	2.4%	9.8%	4.1%	11.6%	7%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

### 3.9. Return on Assets (ROA)

Table 11 shows the ROA of the banks. The table shows that ABBL has the highest average growth rate in its ROA, whereas, NBL has the lowest average growth rate of ROA. Among the five banks, only ABBL has a constant positive growth rate during the 2017 to 2021 period, other banks have fluctuating rates. NBL has a constant negative growth rate in its ROA during the 2017 – 2021 period. It indicates that NBL's management's efficiency in using its assets to generate profit is decreasing over the years. From 2017 to 2019, NBL had the highest ROA, but due to its management's inefficiency, its ROA has undergone a rapid decline and has become the lowest in 2021. On the other hand, after lots of fluctuations during the five years, City Bank's ROA has become highest during the 2020 – 2021 period. However, ABBL has the lowest ROA among the five banks, during the 2017-2021 period. ABBL is trying hard to increase its ROA, and to some extent, it has succeeded in improving its ROA over the years, because it is the only bank, among the five banks, which has a positive growth rate in ROA.

Table 11. ROA of the banks.

S. no.	Banks name	Return on assets (ROA) (%)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	0.01%	0.01%	0.05%	0.10%	0.16%	-
	Growth (%)	-	0%	400%	100%	60%	140%
2	IFICBL	0.92%	0.59%	0.81%	0.17%	0.52%	-
	Growth (%)	-	-35.9%	37.3%	-79.0%	205.9%	32.1%
3	CBL	1.38%	0.68%	0.73%	1.09%	1.19%	-
	Growth (%)	-	-50.7%	7.4%	49.3%	9.2%	3.8%
4	UCBL	0.70%	0.62%	0.65%	0.61%	0.60%	-
	Growth (%)	-	-11.4%	4.8%	-6.2%	-1.6%	-3.6%
5	NBL	1.43%	1.08%	0.96%	0.70%	0.04%	-
	Growth (%)	-	-24.5%	-11.1%	-27.1%	-94.3%	-39.2%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

### 3.10. ROE of the Banks

Table 12 shows the ROE of the banks. The table demonstrates that ABBL has the highest average growth rate in its ROE, whereas NBL has the lowest and negative growth rate. All five banks have a fluctuating rate of ROE over the five years. The table shows that NBL's ROE decreased over the five years and became lowest in 2021. CBL has a fluctuating rate of ROE, it had the highest ROE in 2017, then it decreased in 2018, and after that, it increased and became highest again in the 2020 – 2021 period. IFICBL and UCBL have a very fluctuating rate of ROE, in some years, they are increasing and, in some years, they are decreasing.

Table 12. ROE of the banks.

S. no.	Banks name	Return on equity (ROE) (%)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	0.13%	0.08%	0.74%	1.65%	2.63%	-
	Growth (%)	-	-38.5%	825.0%	123.0%	59.4%	242.2%
2	IFICBL	12.40%	7.40%	10.50%	2.30%	7.55%	-
	Growth (%)	-	-40.3%	41.9%	-78.1%	228.3%	37.9%
3	CBL	15.90%	8.20%	9.90%	14.80%	15.80%	-
	Growth (%)	-	-48.4%	20.7%	49.5%	6.8%	7.1%
4	UCBL	9.31%	8.40%	8.84%	8.42%	8.76%	-
	Growth (%)	-	-9.8%	5.2%	-4.8%	4.0%	-1.3%
5	NBL	12.27%	9.63%	8.87%	6.90%	0.38%	-
	Growth (%)	-	-21.5%	-7.9%	-22.2%	-94.5%	-36.5%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

Table 13. Net income of the banks.

S. no.	Banks name	Net income (BDT)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	30	18	168	391	641	-
	Growth (%)	-	-38.1%	815.4%	133.3%	63.9%	243.6%
2	IFICBL	2,068	1,570	2,444	562	1,975	-
	Growth (%)	-	-24.1%	55.6%	-77.0%	251.3%	51.5%
3	CBL	3,628	2,018	2,472	4,012	4,743	-
	Growth (%)	-	-44.4%	22.5%	62.3%	18.2%	14.7%
4	UCBL	2,434	2,369	2,772	2,857	3,177	-
	Growth (%)	-	-2.7%	17.0%	3.1%	11.2%	7.2%
5	NBL	4,696	4,100	4,164	3,486	195	-
	Growth (%)	-	-12.7%	1.6%	-16.3%	-94.4%	-30.5%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

### 3.11. Growth of Net Income

Table 13 shows the net income of the banks. The table portrays that ABBL has the highest average growth rate in its net income, whereas National Bank has the lowest and negative average growth rate in its net income. In 2018, all five banks had undergone a decrease in net income. All five banks have a fluctuating rate of net income during the 2017 to 2021 period. The table shows that during the 2017 – 2019 period, NBL had the highest net income, but due to its decreasing growth rate, CBL had the highest net income in 2020 and 2021. In 2021, NBL has the lowest net income. CBL had undergone a rapid decrease in its net income in 2018, but after that, it has improved its performance, so, it has been increasing its net profit having the highest amount during 2020–2021. On the other hand, although ABBL has the highest average growth rate, the bank's amount of net income is very low compared to the other four banks, during the 2017 to 2021 period.

### 3.12. Earnings per Share (EPS)

Table 14 shows the EPS of the banks. The table shows that ABBL's EPS has the highest positive average growth rate, whereas, NBL has the lowest and negative average growth rate. All five banks have fluctuating patterns of EPS from 2017 to 2021, except NBL. NBL has a constantly decreasing growth rate of EPS during the 2017 to 2021 period, indicating that the bank's profitability is deteriorating over the years. The tables hows that CBL has the highest EPS among the five banks, during the 2017 to 2021 period. UCBL has the second-highest EPS over the five years. On the other hand, despite having the highest average growth rate ABBL has the lowest EPS during the 2017 – 2021 period. However, the performance and profitability of ABBL have improved over the years.

Table 14. EPS of the banks.

S. no.	Banks name	EPS (BDT)					Average growth (%)
		2017	2018	2019	2020	2021	
1	ABBL	0.04	0.02	0.2	0.47	0.77	-
	Growth (%)	-	-50%	900%	135%	63.8%	262.2%
2	IFICBL	1.54	1.07	1.51	0.33	1.16	-
	Growth (%)	-	-30.5%	41.1%	-78.1%	251.5%	46%
3	CBL	4.1	2.1	2.4	3.9	4.4	-
	Growth (%)	-	-48.8%	14.3%	62.5%	12.8%	10.2%
4	UCBL	2.31	2.04	2.28	2.23	2.49	-
	Growth (%)	-	-11.7%	11.8%	-2.2%	11.7%	2.4%
5	NBL	1.77	1.4	1.36	1.08	0.06	-
	Growth (%)	-	-20.9%	-2.9%	-20.6%	-94.4%	-34.7%

Source: Different Annual Reports (2017 – 2021) of ABBL, IFICBL, CBL, UCBL, and NBL.

#### 4. RESULTS AND FINDINGS OF BANKS' ACTIVITIES, TREND EQUATIONS (TES), R SQUARE, AND CORRELATION MATRIX OF THE BANKS

Results and findings of banks' activities, trend equations, R square, and correlation matrix of the banks are analyzed in this section.

- Table 3 indicates all five banks have a positive growth rate in their deposits during 2018 – 2021. However, CBL and ABBL had the lowest deposit amount. Hence, these banks should try to increase their deposits.
- Table 4 identifies all the selected banks' loans and advances that have increased from the previous year, which indicates that all the banks had positive growth rates, during 2017-2021. It is also noticed that the amount of loans and advances of IFIC Bank is the lowest among the five banks during the period. IFIC bank may try to increase the disbursement of loans and advances to enhance their banking service.
- Table 5 indicates all five banks have a positive growth rate in their investment for most of the year. In 2018, ABBL and NBL had negative growth, but the other three banks had positive growth.
- It is noticed from Table 6 that the amount of non-performing loans is highest in ABBL from 2018 to 2020. In 2017 and 2021, NBL had the highest amount of non-performing loans among the five banks. Over the past five years, all the banks have shown fluctuation in the non-performing loan amounts. Hence, all the selected banks need to improve their recovery rate to minimize the non-performing loans.
- Table 7 shows NBL had more than 90% loan-to-deposit ratio, which indicates the bank disbursed loans exceeding the 87% ratio set by the regulator, which implies the bank may face liquidity shortage due to over-investment. It is suggested that NBL should take necessary measures to minimize the loan deposit ratio within the accepted level.
- It is reflected in Table 11 that among the five banks, only ABBL has a constant positive growth rate from 2017 to 2021 regarding ROA and all other banks have fluctuating rates. NBL has the lowest average growth rate of ROA. Hence, the banks should try to increase the ROA.
- It can be observed from Table 12 that ABBL has the highest average growth rate in its ROE, whereas NBL has the lowest and negative growth rate. All five banks have a fluctuating rate of ROE over the five years. It is suggested that selected banks should try to improve their stable growth of ROE.
- It can be observed from Table 13 that all five banks have a fluctuating rate of net income from 2017 to 2021. It can also be observed from Table 13 that ABBL has the highest average growth rate in its net income, whereas NBL has the lowest and negative average growth rate in its net income. Hence, NBL and other banks should take the necessary measures to improve their net income by improving their better banking operations.

**Table 15.** Trend equation (TE) and  $r^2$  of deposits of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$53956 + 58011X$	0.694
IFICBL	$162126 + 33588X$	0.995
CBL	$160416 + 24675X$	0.969
UCBL	$245911 + 28022X$	0.991
NBL	$216763 + 51621X$	0.995

#### 4.1. Trend Equations (TEs) and $R^2$ of First Generation Private Commercial Banks

Table 15 briefly portrays the TE and  $r^2$  of deposits of the banks. The table shows that the equation of all the selected banks is positive and the goodness of fit of all the equations is more than 0.60, which is high. However, except ABBL, all the other banks' goodness of fit is greater than 0.95, which indicates that their goodness of fit is very high. The data in the table indicates a stable growth of deposits of the banks.'

**Table 16.** TE and  $r^2$  of loans & advances of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$211888 + 15538X$	0.994
IFICBL	$144504 + 30531X$	0.982
CBL	$180989 + 21638X$	0.980
UCBL	$224523 + 33997X$	0.986
NBL	$209215 + 48764X$	0.989

Table 16 shows the TE and  $r^2$  of Loans & Advances of the banks. The table shows that all the equations are positive and the goodness of fit of all the equations is very high, as it is more than 0.95.

**Table 17.** TE and  $r^2$  of investments of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$38250 + 5909.8X$	0.802
IFICBL	$19522 + 7692.5X$	0.947
CBL	$15645 + 7719.3X$	0.974
UCBL	$32218 + 9144.4X$	0.966
NBL	$48886 + 6280X$	0.839

Table 17 shows the overview of the TE and  $r^2$  of Investments of the banks. The table shows that the equation of all the selected banks is positive and  $r^2$  all the equations are more than 0.80, which means that the goodness of fit is very high. However, all the banks' goodness of fit is greater than 0.90, except ABBL, which has a value of 0.80. This indicates that the banks are managing their investments very well.

**Table 18.** TE and  $r^2$  of non-performing loans (NPL) of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$41312 + 1582 X$	0.012
IFICBL	$9535.6 + 1182.6X$	0.340
CBL	$10907 + 498X$	0.225
UCBL	$19774 - 1410X$	0.206
NBL	$3147.2 + 14078X$	0.681

Table 18 portrays the TE and  $r^2$  of Non-performing loans of the banks. The table shows that the equation of all the banks, except UCBL, is positive. UCBL has a negative trend equation. Moreover, the goodness of fit of all the equations is very poor i.e., less than 0.40, except NBL, which has a value of more than 0.60. However, it is observed that the non-performing loans of NBL have increased highly in recent years, and it is the highest among the five banks.

**Table 19.** TE and  $r^2$  of loan-to-deposit ratio of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$0.884 - 0.006X$	0.121
IFICBL	$0.86 - 0.004X$	0.184
CBL	$0.85 - 0.015X$	0.378
UCBL	$0.792 + 0.008X$	0.466
NBL	$0.935 - 0.001X$	0.006

Table 19 briefly portrays TE and  $r^2$  of the Loan-to-Deposit ratio of the banks. The table demonstrates that the trend equation of UCBL is positive, whereas all the other banks' trend equation is negative. The  $r^2$  of the banks is less than 0.50, which indicates that the goodness of fit of the selected banks is very poor.

**Table 20.** TE and  $r^2$  of net interest income of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$2424.4 + 603.08X$	0.172
IFICBL	$5003.5 + 63.642X$	0.004
CBL	$7107.5 + 826.76X$	0.502
UCBL	$7628.6 + 916.76X$	0.628
NBL	$10115 - 1037.3X$	0.227

Table 20 presents the summary of the TE and  $r^2$  of the Net Interest Income of the banks. According to the table, the TE's of the selected banks are positive, except for NBL, whose trend equation is negative. The goodness of fit of all the banks is very poor i.e. Less than 0.30, except CBL and UCBL.

**Table 21.** TE and  $r^2$  of exports of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$80917 - 6568.2X$	0.697
IFICBL	$96523 - 2620.2X$	0.201
CBL	$77272 + 17734X$	0.718
UCBL	$187774 + 16714X$	0.517
NBL	$44261 + 1699.4X$	0.266

Table 21 demonstrates the summary of the TE and  $r^2$  of Exports of the banks. It is observed from the table that all the equations are positive, except the equations of ABBL and IFICBL. Moreover, the goodness of fit is high for all five banks, which is more than 0.50, except for IFICBL and NBL.

Table 22 portrays the summary of the TE and  $r^2$  of imports of the banks. The table shows that all the equations are positive, except the equation of ABBL. The goodness of fit of all the equations is very high, which is more than 0.60, except IFICBL, whose  $r^2$  is closer to 0.

**Table 22.** TE and  $r^2$  of imports of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$115508 - 16957X$	0.752
IFICBL	$94393 + 105.6X$	0.0002
CBL	$108983 + 33166X$	0.611
UCBL	$160819 + 38091X$	0.676
NBL	$79383 + 6720.2X$	0.948

**Table 23.** TE and  $r^2$  of ROA of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$- 0.001 + 0.000X$	0.921
IFICBL	$0.010 - 0.001X$	0.441
CBL	$0.010 + 0.000X$	0.000
UCBL	$0.007 - 0.002X$	0.676
NBL	$0.018 - 0.003X$	0.925

Table 23 shows the TE and  $r^2$  of return on assets (ROA) of the banks. It can be seen from the table that all five banks' trend equation is negative, except CBL and ABBL. Moreover, the goodness of fit of all the banks is very high, which is more than 0.6, except for IFICBL and CBL.

**Table 24.** TE and  $r^2$  of ROE of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$- 0.009 + 0.007X$	0.911
IFICBL	$0.125 - 0.015X$	0.373
CBL	$0.11 + 0.006X$	0.0790
UCBL	$0.091 - 0.001X$	0.211
NBL	$0.156 - 0.027X$	0.877

Table 24 shows the TE and  $r^2$  of return on equity (ROE) of the banks. It is reflected in the table that all equations are negative except ABBL and CBL. The goodness of fit of all the banks is very poor, which is less than 0.50, except ABBL and NBL, they have very high goodness of fit i.e., more than 0.85.

**Table 25.** TE and  $r^2$  of net income of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$- 229.3 + 159.67X$	0.903
IFICBL	$2081.7 - 119.29X$	0.069
CBL	$2107.6 + 422.35X$	0.3570
UCBL	$2129.4 + 197.48X$	0.895
NBL	$6213.2 - 961.62X$	0.711

Table 25 shows the summary of the TE and  $r^2$  of the Net Income of the banks. It is noticed from the table that all the equations are positive, except IFICBL and NBL. All five banks' goodness of fit is very high because it is more than 0.70, except IFICBL and CBL.

**Table 26.** TE and  $r^2$  of EPS of selected banks.

Bank	$Y_c = a + bX$	$r^2$
ABBL	$- 0.273 + 0.191X$	0.899
IFICBL	$1.572 - 0.15X$	0.235
CBL	$2.66 + 0.24X$	0.1300
UCBL	$2.105 + 0.055X$	0.289
NBL	$2.256 - 0.374X$	0.831

Table 26 portrays the TE and  $r^2$  of EPS of the banks. It is seen from the table that all trend equations are positive, except IFICBL and NBL. Moreover, the goodness of fit of the selected banks is very poor i.e. less than 0.30, except for ABBL and NBL.

#### 4.2. Correlation Matrix of the Banks

In this section, the correlation matrix is calculated for all five first-generation banks of Bangladesh.

Table 27 demonstrates the findings of the correlation matrix of AB Bank Limited (ABBL). These are:

1. ABBL bank's total deposit has a significant correlation with TLAA and TINV, NPLS, NII, ROA, ROE, NINC, & EPS, and an inverse correlation with LRD, EXP & IMP.
2. ABBL bank's total loans & advances have a strong correlation with TDEP, TINV, ROA, ROE, NINC, & EPS, an insignificant correlation with NPLS, NII, and a negative correlation with LRD, EXP, & IMP.
3. ABBL bank's total investment has a high correlation with TDEP, TLAA, NII, ROA, ROE, NINC, & EPS and an anti-correlation with NPLS, LDR, EXP, & IMP.
4. ABBL bank's non-performing loan has a high correlation with TDEP & LDR, a low correlation with TLAA & EXP, and a negative correlation with TINV, NII, IMP, ROA, ROE, NINC, & EPS.
5. ABBL bank's loan-to-deposit ratio has a high correlation with NPLS, EXP, & IMP, and a negative correlation with TDEP, TLAA, TINV, NII, ROA, ROE, NINC, & EPS.
6. ABBL bank's Net interest income has a commendable correlation with TINV, an insignificant correlation with TDEP, TLAA, ROA, ROE, NINC, & EPS, and an inverse correlation with NPLS, LRD, EXP, & IMP.
7. ABBL bank's exports have a positive correlation with LRD, & IMP, a low correlation with NPLS, and a negative correlation with TDEP, TLAA, TINV, NII, ROA, ROE, NINC, & EPS.
8. ABBL bank's imports have a significant correlation with LDR, EXP, and a negative correlation with TDEP, TLAA, TINV, NPLS, NII, ROA, ROE, NINC, & EPS.
9. ABBL bank's ROA has a notable correlation with TDEP, TLAA, TINV, ROE, NINC, & EPS, a low correlation with NII, and a negative correlation with NPLS, LDR, EXP, & IMP.
10. ABBL bank's ROE has a high correlation with TDEP, TLAA, TINV, ROA, NINC, & EPS, a low correlation with NII, and a negative correlation with NPLS, LDR, EXP, & IMP.
11. ABBL bank's net income has a notable correlation with TDEP, TLAA, TINV, ROA, ROE, & EPS, an insignificant correlation with NII, and a negative correlation with NPLS, LDR, EXP, & IMP.
12. ABBL bank's EPS has a remarkable correlation with TDEP, TLAA, TINV, ROA, ROE, & NINC, an insignificant correlation with NII, and an inverse correlation with NPLS, LDR, EXP, & IMP.

Table 28 shows the correlation matrix of IFIC Bank Limited (IFICBL). The correlation matrix of IFICBL describes the following:

1. IFICBL bank's total deposits have a high correlation with TLAA, TINV, & NPLS, a low correlation with NII & IMP, and anti-correlation with LDR, EXP, ROA, ROE, NINC, & EPS.
2. IFICBL bank's total loans & advances have a remarkable correlation with TDEP, TINV, & NPLS, a negligible correlation with NII & IMP, and a negative correlation with LDR, EXP, ROA, ROE, NINC, & EPS.
3. IFICBL bank's total investments have a commendable correlation with TDEP, & TLAA, a low correlation with NPLS & NII, and an inverse correlation with LDR, EXP, IMP, ROA, ROE, NINC, & EPS.
4. IFIC bank's non-performing loans have a high correlation with TDEP, TLAA, NII, & IMP, and a low correlation with TINV, LDR, EXP, ROA, ROE, NINC, & EPS.
5. IFICBL bank's loan-to-deposit ratio has a notable correlation with EXP, IMP, & EPS, a low correlation with NPLS, NII, ROA, ROE, & NINC, and a negative correlation with TDEP, TLAA, & TINV.
6. IFICBL bank's net interest income has a high correlation with NPLS, EXP, IMP, ROA, ROE, NINC, & EPS, and a low correlation with TDEP, TLAA, TINV, & LDR.
7. IFIC bank's exports have a significant correlation with LDR, NII, IMP, ROA, ROE, NINC, & EPS, an insignificant correlation with NPLS, and an inverse correlation with TDEP, TLAA, & TINV.
8. IFICBL bank's imports have a high correlation with NPLS, LDR, NII, and EXP, a low correlation with TDEP, TLAA, ROA, ROE, NINC, & EPS, and a negative correlation with TINV.

9. IFICBL bank's ROA has remarkable correlation with NII & EXP, a low correlation with NPLS, LDR, IMP, ROE, NINC, & EPS, and a negative correlation with TDEP, TLAA, & TINV.
10. IFICBL bank's ROE has a significant correlation with NII, EXP, ROA, NINC, & EPS, a low correlation with NPLS, LDR, & IMP, and a negative correlation with TDEP, TLAA, & TINV.
11. IFICBL bank's net income has a high correlation with NII, EXP, ROA, ROE, & EPS, a low correlation with NPLS, LDR, IMP, and anti-correlation with TDEP, TLAA, & TDEP.
12. IFICBL bank's EPS has a commendable correlation with LDR, NII, EXP, ROA, ROE, & NINC, an insignificant correlation with NPLS & IMP, and an indirect correlation with TDEP, TLAA, & TINV.

Table 29 shows the correlation matrix of City Bank Limited (CBL). The correlation matrix of CBL describes the following:

1. CBL bank's total deposits have a commendable correlation with TLAA, TINV, NPLS, LDR, NII, EXP, IMP, & NINC, insignificant correlation with ROE & EPS, and anti-correlation with ROA.
2. CBL bank's total loans & advances have a direct correlation with TDEP, TINV, NII, EXP, & IMP, a low correlation with NPLS, ROE, NINC, & EPS, and an inverse correlation with LDR & ROA.
3. CBL bank's total investments have a high correlation with TDEP, TLAA, NII, EXP, IMP, & NINC, a low correlation with NPLS, ROA, ROE, & EPS, and a negative correlation with LDR.
4. CBL bank's non-performing loans have a commendable correlation with TDEP, NII, EXP, & IMP, an insignificant correlation with TLAA & TINV, and inverse correlation with LDR, ROA, ROE, NINC, & EPS.
5. CBL bank's loan-to-deposit ratio has a negligible correlation with IMP & ROA, and a negative correlation with TDEP, TLAA, TINV, NPLS, NII, EXP, ROE, NINC, & EPS.
6. CBL bank's net interest income has a commendable correlation with TDEP, TLAA, TINV, NPLS, EXP, & IMP, a lower correlation with NINC, and a negative correlation with LDR, ROA, ROE, & EPS.
7. CBL bank's exports have a direct correlation with TDEP, TLAA, TINV, NPLS, NII, IMP, & NINC, a low correlation with ROA, ROE, & EPS, and a negative correlation with LDR.
8. CBL bank's imports have a commendable correlation with TDEP, TLAA, TINV, NPLS, NII, EXP, & NINC, and a negligible correlation with LDR, ROA, ROE, & EPS.
9. CBL bank's ROA has a high correlation with ROE, NINC, & EPS, a low correlation with TINV, LDR, EXP, & IMP, and an inverse correlation with TDEP, TLAA, NPLS, & NII.
10. CBL bank's ROE has a commendable correlation with ROA, NINC, & EPS, a low correlation with TDEP, TLAA, TINV, EXP, & IMP, and a negative correlation with NPLS, LDR, & NII.
11. CBL bank's net income has a positive correlation with TDEP, TINV, EXP, IMP, ROA, ROE, & EPS, a low correlation with TLAA, & NII, and anti-correlation correlation with NPLS, & LDR.
12. CBL bank's EPS has a high correlation with ROA, ROE, & NINC, a low correlation with TDEP, TLAA, TINV, EXP, & IMP, and a negative correlation with NPLS, LDR, & NII.



Table 27. Correlation matrix of AB bank limited.

Particulars	Total deposits	Total loans & advances	Total investments	Non-performing loans	Loan-to-deposit ratio	Net interest income	Exports	Imports	ROA	ROE	Net income	EPS
Total deposits	1.000											
Total loans & advances	0.791	1.000										
Total investments	0.718	0.897	1.000									
Non-performing loans	0.568	0.050	-0.164	1.000								
Loan-to-deposit ratio	-0.107	-0.370	-0.716	0.681	1.000							
Net interest income	0.482	0.386	0.704	-0.147	-0.758	1.000						
Exports	-0.765	-0.829	-0.947	0.019	0.652	-0.638	1.000					
Imports	-0.850	-0.852	-0.942	-0.104	0.573	-0.656	0.989	1.000				
ROA	0.645	0.976	0.861	-0.121	-0.401	0.318	-0.745	-0.751	1.000			
ROE	0.631	0.973	0.858	-0.136	-0.405	0.303	-0.744	-0.746	0.9996	1.000		
Net income	0.622	0.969	0.846	-0.136	-0.390	0.287	-0.729	-0.732	0.999	0.9997	1.000	
EPS	0.616	0.968	0.845	-0.143	-0.393	0.285	-0.727	-0.729	0.999	0.9997	0.99997	1.000

Table 28. Correlation matrix of IFIC bank limited.

Particulars	Total deposits	Total loans & advances	Total investments	Non-performing loans	Loan-to-deposit ratio	Net interest income	Exports	Imports	ROA	ROE	Net income	EPS
Total deposits	1.000											
Total loans & advances	0.995	1.000										
Total investments	0.968	0.940	1.000									
Non-performing loans	0.603	0.672	0.431	1.000								
Loan-to-deposit ratio	-0.430	-0.344	-0.612	0.362	1.000							
Net interest income	0.073	0.121	0.022	0.667	0.390	1.000						
Exports	-0.476	-0.417	-0.545	0.222	0.835	0.591	1.000					
Imports	0.042	0.136	-0.182	0.802	0.790	0.624	0.527	1.000				
ROA	-0.657	-0.628	-0.646	0.015	0.488	0.691	0.700	0.356	1.000			
ROE	-0.598	-0.566	-0.597	0.086	0.469	0.733	0.656	0.405	0.994	1.000		
Net income	-0.264	-0.226	-0.270	0.376	0.452	0.933	0.734	0.484	0.887	0.899	1.000	
EPS	-0.479	-0.440	-0.490	0.224	0.514	0.837	0.738	0.474	0.973	0.980	0.966	1.000

Table 30 shows the correlation matrix of UCBL. The correlation matrix of UCBL describes the following:

1. UCBL bank's total deposits have a significant correlation with TLAA, TINV, LDR, NII, EXP, IMP, NINC, & EPS, and an indirect correlation with NPLS, ROA, & ROE.
2. UCBL bank's total loans & advances have a higher correlation with TDEP, TINV, LDR, NII, EXP, IMP, NINC, & EPS, and a negative correlation with NPLS, ROA, & ROE.
3. UCBL bank's total investment has a direct correlation with TDEP, TLAA, LDR, NII, EXP, IMP, NINC, & EPS, and an inverse correlation with NPLS, ROA, & ROE.
4. UCBL bank's non-performing loans have a lower correlation with NII, EXP, IMP, ROA, & ROE, and a negative correlation with TDEP, TLAA, TINV, LDR, NINC, & EPS.
5. UCBL bank's loan-to-deposit ratio has a significant correlation with TDEP, TLAA, TINV, NII, EXP, IMP, NINC, & EPS, insignificant correlation with ROE, and an inverse correlation with NPLS & ROA.
6. UCBL bank's net interest income has a high correlation with TDEP, TLAA, TINV, LDR, EXP, IMP, NINC, & EPS, a low correlation with NPLS, and a negative correlation with ROA & ROE.
7. UCBL bank's exports have a commendable correlation with TDEP, TLAA, TINV, LDR, NII, IMP, NINC & EPS, a low correlation with NPLS, and a negative correlation with ROA & ROE.
8. UCBL bank's imports have a significant correlation with TDEP, TLAA, TINV, LDR, NII, EXP, NINC, & EPS, a low correlation with NPLS, and a negative correlation with ROA & ROE.
9. UCBL bank's ROA has a very high correlation with ROE, a low correlation with NPLS, and an inverse correlation with TDEP, TLAA, TINV, LDR, NII, EXP, IMP, NINC, & EPS.
10. UCBL bank's ROE has a high correlation with ROA, a low correlation with NPLS, LDR, & EPS, and a negative correlation with TDEP, TLAA, TINV, NII, EXP, IMP, & NINC.
11. UCBL bank's net income has a positive correlation with TDEP, TLAA, TINV, LDR, NII, EXP, IMP, & EPS, and a negative correlation with NPLS, ROA, & ROE.
12. UCBL bank's EPS has a significant correlation with TDEP, TLAA, TINV, LDR, NII, EXP, IMP, & NINC, a low correlation with ROE, and a negative correlation with NPLS & ROA.

Table 29. Correlation matrix of city bank limited.

Particulars	Total deposits	Total loans & advances	Total investments	Non-performing loans	Loan-to-deposit ratio	Net interest income	Exports	Imports	ROA	ROE	Net income	EPS
Total deposits	1.000											
Total loans & advances	0.973	1.000										
Total investments	0.981	0.955	1.000									
Non-performing loans	0.580	0.498	0.458	1.000								
Loan-to-deposit ratio	-0.621	-0.645	-0.584	-0.004	1.000							
Net interest income	0.770	0.715	0.694	0.940	-0.093	1.000						
Exports	0.845	0.825	0.845	0.706	-0.119	0.904	1.000					
Imports	0.771	0.736	0.802	0.625	0.006	0.840	0.981	1.000				
ROA	-0.051	-0.112	0.134	-0.491	0.224	-0.292	0.043	0.217	1.000			
ROE	0.218	0.154	0.394	-0.372	-0.013	-0.127	0.224	0.369	0.960	1.000		
Net income	0.529	0.491	0.681	-0.125	-0.170	0.176	0.534	0.636	0.811	0.931	1.000	
EPS	0.287	0.240	0.463	-0.318	-0.014	-0.046	0.324	0.462	0.937	0.992	0.963	1.000

Table 30. Correlation matrix of UCBL.

Particulars	Total deposits	Total loans & advances	Total investments	Non-performing loans	Loan-to-deposit ratio	Net interest income	Exports	Imports	ROA	ROE	Net income	EPS
Total deposits	1.000											
Total loans & advances	0.995	1.000										
Total investments	0.990	0.997	1.000									
Non-performing loans	-0.421	-0.348	-0.292	1.000								
Loan-to-deposit ratio	0.725	0.690	0.690	-0.381	1.000							
Net interest income	0.834	0.848	0.872	0.008	0.833	1.000						
Exports	0.744	0.776	0.793	0.083	0.777	0.950	1.000					
Imports	0.851	0.884	0.913	0.115	0.602	0.933	0.868	1.000				
ROA	-0.774	-0.815	-0.794	0.258	-0.271	-0.520	-0.588	-0.664	1.000			
ROE	-0.374	-0.415	-0.370	0.323	0.119	-0.018	-0.173	-0.174	0.848	1.000		
Net income	0.971	0.950	0.953	-0.422	0.817	0.866	0.729	0.832	-0.600	-0.149	1.000	
EPS	0.615	0.582	0.619	-0.055	0.728	0.767	0.545	0.681	-0.019	0.496	0.773	1.000

Table 31. Correlation matrix of national bank limited.

Particulars	Total deposits	Total loans & advances	Total investments	Non-performing loans	Loan-to-deposit ratio	Net interest income	Exports	Imports	ROA	ROE	Net income	EPS
Total deposits	1.000											
Total loans & advances	0.990	1.000										
Total investments	0.930	0.872	1.000									
Non-performing loans	0.810	0.777	0.887	1.000								
Loan-to-deposit ratio	-0.118	0.021	-0.448	-0.342	1.000							
Net interest income	-0.483	-0.395	-0.738	-0.823	0.653	1.000						
Exports	0.456	0.540	0.275	0.578	0.421	-0.110	1.000					
Imports	0.971	0.947	0.956	0.915	-0.248	-0.615	0.527	1.000				
ROA	-0.953	-0.941	-0.933	-0.934	0.146	0.665	-0.560	-0.974	1.000			
ROE	-0.926	-0.909	-0.932	-0.959	0.192	0.721	-0.557	-0.965	0.996	1.000		
Net income	-0.833	-0.799	-0.911	-0.985	0.317	0.847	-0.501	-0.911	0.955	0.976	1.000	
EPS	-0.901	-0.881	-0.925	-0.969	0.214	0.759	-0.548	-0.949	0.989	0.998	0.988	1.000

Table 31 shows the correlation matrix of National Bank Limited (NBL). The correlation matrix of NBL describes the following:

1. NBL bank's total deposits have a commendable correlation with TLAA, TINV, NPLS, & IMP, a low correlation with EXP, and an inverse correlation with LDR, NII, ROA, ROE, NINC, & EPS.
2. NBL bank's total loans & advances have a direct correlation with TDEP, TINV, NPLS, EXP, & IMP, a low correlation with LDR, and an inverse relationship with NII, ROA, ROE, NINC, & EPS.
3. NBL bank's total investments have a positive relation with TDEP, TLAA, NPLS, & IMP, a low correlation with EXP, and anti-correlation with LDR, NII, ROA, ROE, NINC, & EPS.
4. NBL bank's non-performing loans have a high correlation with TDEP, TLAA, TINV, EXP, & IMP, and a negative correlation with LDR, NII, ROA, ROE, NINC, & EPS.
5. NBL bank's loan-to-deposit ratio has a direct correlation with NII, a low correlation with TLAA, EXP, ROA, ROE, NINC, & EPS, and an inverse correlation with TDEP, TINV, NPLS, & IMP.
6. The bank's net interest income has a commendable correlation with LDR, ROA, ROE, NINC, & EPS, and a negative correlation with TDEP, TLAA, TINV, NPLS, EXP, & IMP.
7. NBL bank's exports have a good correlation with TLAA, NPLS, & IMP, a low correlation with TDEP, TINV, LDR, and an inverse correlation with NII, ROA, ROE, NINC, & EPS.
8. NBL bank's imports have a commendable correlation with TDEP, TLAA, TINV, NPLS, & EXP, and a negative correlation with LDR, NII, ROA, ROE, NINC, & EPS.
9. NBL bank's ROA has a high correlation with NII, ROE, NINC, & EPS, a low correlation with LDR, and a negative correlation with TDEP, TLAA, TINV, NPLS, EXP, & IMP.
10. NBL bank's ROE has a direct correlation with NII, ROA, NINC, & EPS, insignificant correlation with LDR, and an inverse correlation with TDEP, TLAA, TINV, NPLS, EXP, & IMP.
11. NBL bank's net income has a commendable correlation with NII, ROA, ROE, & EPS, an insignificant correlation with LDR, and a negative correlation with TDEP, TLAA, TINV, NPLS, EXP, & IMP.
12. NBL bank's EPS has a high correlation with NII, ROA, ROE, & NINC, a low correlation with LDR, and an anti-correlation with TDEP, TLAA, TINV, NPLS, EXP, & IMP.

## 5. POLICY SUGGESTIONS

### 5.1. Policy Implications

At present, out of all the banks, 65% of banks are private commercial banks in Bangladesh. This study is among the few studies assessing the performance of selected first-generation private commercial banks. This study will facilitate the banks and stakeholders to examine the banks' policies and operations before investing in the selected banks. Selected Banks will also be benefitted from the findings of the study in preparing their performance improvement plans.

### 5.2. Limitations and Suggestions for Future Studies

This study used a few selected variables to analyze the banks' performance for a limited period of five years. However, other variables can be used in the future for analyzing the banks' performance. A comparative study between first-generation commercial banks and state-owned commercial banks may be conducted. Moreover, the banks' performance can also be analyzed and compared in terms of their development and innovation in the IT division in providing more secured and updated products to the customers.

## 6. CONCLUSIONS

Twelve trend equations were tested for different activities of the banks. Among the activities, the trend values of deposits, loans, and investments are positive for all five banks. The square of the correlation coefficient ( $r^2$ ) was

also for all the trend equations. The  $r^2$  of deposits, loans, and investment is more than 0.60. It seems that the prospect of private commercial banks is bright in Bangladesh.

From the study, it has been found that, although during the beginning period (2017), NBL's performance was very good and it had the highest profit among the five banks, in recent years the performance of NBL has deteriorated rapidly. The bank's net interest income, net profit, and EPS have been decreasing in recent years. The bank's revenue dropped because of the Bangladesh Bank's order to not make fresh loans before bringing down the loan-to-deposit ratio (LDR) below the regulatory limit. The bank's loan-to-deposit ratio is more than 90% during the past 5 years. The bank had to attract customers with high cost of deposits, because depositors lacked confidence in the bank, for all the negative headlines about the bank. As a result, NBL's profitability and EPS have decreased in recent years (Habib, 2022).

On the other hand, initially, during 2017 the performance of ABBL was very bad; its net profit was the lowest. Over the five years, ABBL has tried hard to increase its profit and gradually it is succeeding, it has the highest growth rate in profit among the select five banks.

However, CBL's performance fluctuated a lot during the 2017-2021 period, but in the last three years, its net profit, ROA, ROE, and EPS is growing rapidly and became highest in 2020-2021.

It is reflected from the study that from 2017 through 2021, City Bank Ltd. is the best performer, whereas National Bank Ltd. is the worst performer. IFIC Bank Ltd. and UCBL's performance fluctuated and remained similar over the five years. The profitability of IFICBL and UCBL is greater than ABBL and NBL, but less than CBL. From the study, it can be forecasted that AB Bank Ltd. can be the best performer within a few years because its performance is rapidly increasing.

The paper focused on and analyzed the performance appraisal of the five first-generation banks of Bangladesh. The banks are facing some problems, due to the ongoing economic crisis, and liquidity crisis, at first because of the Covid-19 outbreak, then because of the Russia-Ukraine war. However, almost most of the banks were able to recover from the Covid-19 situation in 2020 and increased their profit in 2021. The findings of the trend analysis and correlation matrix of the study are expected to guide the first-generation commercial banks of Bangladesh to improve their performance. We are quite optimistic that if the selected banks tried to overcome the identified problems, then their performance will improve, and they may contribute to the accelerated development of the economy of Bangladesh.

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