Bank Profitability in Bangladesh: A Comparative Study of a Nationalized Commercial Bank with That of a Private Commercial Bank
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Abstract
The main aim of the study is to evaluate and compare the performance of public and private banks in Bangladesh. Performance measured in terms of bank’s profitability always remains the focal point of all the banking activities. Data collected from publically and privately owned and managed banks in Bangladesh revealed that profitability of both banks was not satisfactory though private sector bank was more profitable than public sector bank during the period of this study.

Keywords: bank, commercial bank, NCB, PCB, comparative study, profitability etc.

1. Introduction
A well planned and efficient banking system is a necessary concomitant of economic and social infrastructure in any economy Ghosh (2017). Banking occupies a crucial place in undertaking the development efforts and acts as a catalyst to economic growth (Goddard, Molyneux, & Wilson, 2004). Banks have an extra-ordinary role to play in enhancing the nation’s savings and channeling them into high investment priorities (Soteriou & Zenios, 1999). After the liberation of Bangladesh in 1971, the banking sector faced a great set back in the war ravaged Bangladesh. A few business organizations developed control on whole credit program to adjust their needs and as a result the total economy was mortgaged to 20/22 families, who controlled 66 percent of total industrial assets, 70 percent of insurance funds, and 80 percent of bank assets (Camilleri, 2005; Dietrich & Wanzenried, 2009).

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In the financial sector, a vacuum was created by the departure of their own entrepreneurs, leading to take over of banks by the Government. Bank profitability always remains at the focal point of all the banking activities. The success of a bank mostly depends upon the profitability of that bank. With the change in size and nature of banking in the country, bank profitability has attained greater significance (Bourke, 1989; Davydenko, 2010). Today, bank profitability in Bangladesh is facing double challenges: one to uphold their accounting profitability and other to ensure social profitability through serving the people in new ways and means with greater efficiency and effectiveness (Abdullah, Parvez, & Ayreen, 2014; Chopra, 1987; Jiang, Tang, Law, & Sze, 2003). Under these circumstances, Nationalized Commercial Banks (NCBs) and Private Commercial Bank (PCBs) are playing a major role in giving direction to the economic progress of Bangladesh maintaining their separate banking activities from their own positions (Ani, Ugwunta, Ezeudu, & Ugwuanyi, 2012; Demirgüc-Kunt & Huizinga, 1999; Naceur & Goaied, 2008).

Bangladesh, actually, started her own banking journey with the Nationalization Order passed on March 26, 1972. At the very beginning of our independence, the then Government of Bangladesh (GOB) nationalized all the commercial banks to ensure better services and facilities to all areas of the country for the balanced development of the nation as a whole (Saha, 1996). The NCBs are fully Government owned banks. They have been playing very important roles in the economy of the country since the beginning of our independence. PCBs are private owned banks. The management style is maintained as per the demand of the day and the situation prevailing in the real life situations. Hence, PCBs are also playing a mentionable role in achieving the economic growth of Bangladesh side by side with the NCBs since their inception in 1983 (Bhatt & Gosh, 1995; Zheng, Rahman, Begum, & Ashraf, 2017). All the people in general have right to know how well their money is utilized through banking services. The activities, strategies, techniques, policies, decisions, plans etc. taken either by the NCBs or by the PCBs are needed to be informed to the concerned people in general through the reporting systems (Bhattacharjee & Saha, 1989; Staikouras & Wood, 2004). But no comprehensive comparative study has been done on the bank profitability of the NCBs and the PCBs in Bangladesh. Many of the researchers studied bank profitability on particular type of banks, but not a comparative study (Jahangir, Shill, & Haque, 2007; Molyneux & Thornton, 1992). Very few researches have
been conducted in this regard. This study attempts to fill up some of the gaps. It is, therefore, high time to concentrate efforts on analyzing the bank profitability of NCBs and PCBs so that confidence of the people in the banks remains unimpaired. Keeping this in mind, this study has been conducted. The principal objective of the study is to evaluate the bank profitability of a NCB with that of a PCB in Bangladesh. The present condition of NCBs and PCBs in Bangladesh has been reviewed with due consideration. The analysis of selected ratios of the NCB and the PCB are made available at the study period. The comparative profitability positions of the NCB and the PCB are also shown during the study period.

2. Literature Review

Review of literature is an inseparable part of conducting a research. This is required to find out the knowledge gap in the proposed field of study. In this field of study, very limited research works were conducted earlier. No in-depth study was undertaken on the subject by any person. But some relevant studies were accomplished. Some of those relevant studies have been reviewed below to find out the knowledge gaps:

Moniruzzaman and Rahman (1991) in their study assessed the performance of profitability of denationalized banks after denationalization in comparison with their pre-denationalization profitability performance. They found that the profitability performance of the banks had shown decreasing trend after denationalization and their profits had been showing a wide fluctuating position after denationalization period compared to the pre-denationalization period. Sujit (1996) and Sharma and Gounder (2012) analyzed the profitability and ancillary business trends of commercial banks of Bangladesh in the pre-reform period as well as in the post reform period. The analysis revealed that all the banks belonging to the NCB and the PCB group experienced a declining trend of profitability performance after the reform period, though the magnitude of decline varied among them. The paper hypothesized that in view of the uncertainty of interest earnings on loans, the development of ancillary activities would hold the key to the improvement of profitability of banks in future. Presently, the banks involvement in ancillary business is significantly low. Considering the prospects of ancillary services in the coming years, the study suggested that the banks should expand the base of ancillary services both in terms of character and volume with a view to fulfilling the twin objectives of
improving profitability as well as offering the demand based service mix to the customers.

Malek (2005) tried to explain and compare the performance of the NCBs, PCBs and FCBs in the context of deposit collection, foreign business and overall financial result during 1999 to 2002. The study showed that overall deposit trend was increasing in all three groups but the trend of deposit collection in case of local private commercial banks was sharper compared to other two banks. Foreign banks did not perform well in collecting deposit during 1999 to 2002. The study also showed that the performance of the NCBs was low in all respects compared to the performance of the local PCBs and the FCBs in Bangladesh despite of the fact that the NCBs were holding 50% of the total banking assets. This study gave simple picture keeping the room for further study in different areas of bank profitability.

Sufiyan & Habibullah (2009) examined the performance of 37 Bangladesh commercial banks in which they found that loan intensity, credit risk and cost have positive and significant impacts on bank performance, while non-interest income exhibits negative relationship with bank profitability. The impact of size is not uniform across the various measures employed. It has a negative impact on return on average equity, while the opposite is true for return on average assets and net interest margins. Thus the variables mentioned above have no significant impact on bank profitability, except for inflation, which has a negative relationship with Bangladeshi bank profitability.

Sufian (2012) assessed the performance of 77 Bangladeshi, Sri Lankan, and Pakistani commercial banks. He found that liquidity, non-interest income, credit risk, and capitalization had positive and significant impacts on bank performance, while cost is negatively related to bank profitability. From the view point of macroeconomic indicators, he said that economic growth had positive and significant impact, while inflation had no significant impact on bank profitability. During the period under study, he indicated that private investment was positively related to bank profitability, while private consumption expenditure exhibited negative impact. However, the impact was not uniform across the countries studied.

Samad (2015) empirically examined the impact of bank specific characteristics and macroeconomic variables in determining the banks’ profitability of Bangladesh banking industry. A total of 42 Bangladesh commercial banks’ financial reports were analyzed. Bank specific
characteristics such as bank financial risk, bank operational efficiency, and bank sizes as well as macroeconomic variables such as economic growth were examined to estimate their impact on bank profits. Bank specific factors such as loan-deposit ratio, loan-loss provision to total assets, equity capital to total assets, and operating expenses to total assets were significant factors. Bank sizes and macroeconomic variable showed no impact on profit.

3. Hypotheses of the Study
In this study, followings are the major hypotheses:
1. There is a positive correlation among the selected variables i.e. total equity, deposits, loans, investment, assets, income, expenses, manpower and branches of the NCB & the PCB during the study period.
2. There are significant variations among the selected variables like total equity, deposits, loans, investment, assets, income, expenses, manpower and branches of the NCB & the PCB during the study period.
3. Net Profit depends on the selected variables such as, total equity, deposits, loans, investment, assets, income, expenses, manpower and branches of the NCB & the PCB during the study period.

4. Methodology of the Study
4.1 Types of Data and their Sources
Two types of data are collected from two different sources, namely the primary and the secondary sources. The primary sources include unpublished official documents, questionnaires, interviews and discussions with the bank executives. For the opinion survey, the structured questionnaires were sent to more than three hundreds officials of the NCB and the PCB. Among them, two hundred and fifty were responded positively. Open discussions and interviews were made available with the senior executives of both the NCB and the PCB to the reasonable extent. The secondary sources contain published official statistics, documents, laws, ordinances, books, reports, articles, periodicals of different domestic and international banks. All the aforesaid data are incorporated in the study in accordance with their suitability and needs with due care, attention and acknowledgements. Annual reports of the concerned banks, different reports and statistics of Bangladesh Bank and articles of well-recognized journals of professional banking institutions and public universities are extensively used in this study as data sources.
4.2 Period of the Study

Bangladesh has been experiencing banking under Government ownership since its independence in 1971, but there was no domestic private commercial bank from the very beginning of independence till 1982 (Seiford & Zhu, 1999). The private commercial banks started their journey from 1983 in the post independent era. Now, the NCBs and the PCBs have already passed three decades i.e., 1983 and onwards of co-existence. Subsequently, the banking sector of Bangladesh switched over from the Government owned commercial banking to simultaneously Government and private owned banking in 1983 to ensure a competitive environment in the banking sector with a view to providing better services to the people (Tatje & Lovell, 1999). For this purpose, some more regulatory measures were implemented from 1990 and onwards. The then Government, on the basis of expert reports, launched Financial Sector Reform Project (FSRP) in 1990 to overhaul the financial system to make it more disciplined and efficient (Hassan & Bashir, 2003; Maudos, Pastor, Perez, & Quesada, 2002). The financial sector reform program had been completed in 1996 and one Banking Reform Committee (BRC) had been formed in the same year i.e., 1996 (Hassan & Bashir, 2003; Olweny & Shipho, 2011). Hence, the study covers the period of a decade (12 years) on the basis of availability of data from the completion of FSRP and onwards.

4.3 Selection of Banks

For the proposed study, being a comparative one in nature, two banks each from the public sector, namely Sonali Bank Limited and the private sector, namely National Bank Limited have been selected considering their maturity in their respective sector in independent Bangladesh, which are shown as the Nationalized Commercial Bank (NCB) and the Private Commercial Banks (PCB) respectively throughout the study.

4.4 Techniques of Data Analysis

Different tools and techniques required to analyze and interpret the collected data are used in this study carefully. Major statistical formulae and profitability measuring techniques etc. have been followed to test the hypothesis. Computer software and programs have also been used to analyze them.
4.5 Statistical Tools of Data Analysis

Major statistical tools are mainly employed to draw the inferences from the data collected and financial variables used in the study and also to study the interrelationships between the items of the financial statements and their impact on financial performance. The statistical tools, techniques and formulae used in the study are explained below:

**Mean:** Mean is the widely used measure of central tendency for representing the entire data by one value (Kothari, 2004). It is computed in the following formula:

\[ \bar{X} = \frac{\sum X}{N} \]

Where,
- \( \bar{X} \) = Arithmetic mean
- \( X \) = The value of observation
- \( N \) = Number of observations

**Standard Deviation:** Standard Deviation (SD) is the widely used measure for the study of dispersion. The formulas of standard deviation are given below:

\[ \delta = \sqrt{\frac{\sum (X - A)^2}{n} - \left( \frac{\sum X - A}{n} \right)^2} \]

Where,
- \( \delta \) = Standard Deviation
- \( A \) = Mid-value of class interval
- \( X \) = The individual value
- \( n \) = Number of observations

For frequency distribution with equal size class interval, the formula is as follows:

\[ \delta = \sqrt{\frac{\sum f (X - A)^2}{n} - \left( \frac{\sum f (X - A)}{n} \right)^2} \]

Where,
- \( A \) = Assumed mean
- \( f \) = Class frequency
- \( X \) = Mid-value
- \( n \) = Total number of frequency
Co-efficient of Variation: Co-efficient of Variation (CV) is a relative measure of dispersion. It is very useful in comparing distributions where the units may be different. Following formula is applied for CV:

\[ CV = \frac{\delta}{X} \times 100 \]

Where,
- CV = Co-efficient of Variation
- \( \delta \) = Standard Deviation
- \( X \) = Mean value

Standard Error of Estimate: The standard error of estimate measures the variability of the observed values around the regression line. The equation of standard error is given below:

\[ S_e = \sqrt{\frac{(Y - \hat{Y})^2}{n - 2}} \]

Where,
- \( S_e \) = Standard error of estimate
- \( Y \) = The values of dependent variables
- \( \hat{Y} \) = The values from the estimating equation that correspondent to each \( Y \) values, and
- \( n \) = Number of data points used to fit the regression line.

4.6 Testing of Hypotheses

A research hypothesis is a predictive statement, capable of being tested by scientific methods, that relates an independent variable to some dependent variables (Kothari, 2004). The null hypothesis is generally symbolized as \( H_0 \) and the alternative hypothesis as \( H_a \). Suppose one wants to test the hypothesis that the population mean (\( \mu \)) is equal to the hypothesized mean (\( \mu_{H_0} \)) = 100. Then one would say that the null hypothesis is that the population mean is equal to the hypothesized mean 100 and symbolically we can express as:

\[ H_0: \mu = \mu_{H_0} = 100 \]

In this study, hypotheses are tested taking the significance level at 5 percent. **Correlation Analysis:** The correlation co-efficient of the selected independent variables with the bank profitability has been worked out in order to identify the most important variables or the variables which have higher association with the independent variable. The formula used to calculate the correlation coefficient of any two variables is:
\[ R = \frac{\text{Cov}(x,y)}{N \delta_x \delta_y} \]

Where,
- \( R \) = Correlation coefficient
- \( \text{Cov}(x,y) \) = Co-variance of \( x \), \( y \)
- \( \delta_x \) = Standard deviation of \( x \), and
- \( \delta_y \) = Number of pairs of observations

**Regression Analysis:** As the profitability of banks is the result of several variables, the impact of selected variables on bank profitability have been studied collectively.

**Multiple Regression Analysis:** The linear multiple regression model involving the dependent variable \( Y \) and independent variables \( (X_1, X_2, \ldots, X_n) \) can be written as:

\[ Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_p X_{pi} + e_i \]

Where, \( \alpha \) denotes the intercept, \( \beta_1, \ldots, \beta_p \) are the partial regression coefficients, \( i = 1, 2, \ldots, n \) observations and \( e_i \) is the residual term associated with ‘i’th observation. Thus, multiple regression model gives the expected value of \( Y \) conditional upon the fixed values of \( X_2, X_3, \ldots, X_p \) plus the error component.

**Analysis of Variance (ANOVA):** The essence of ANOVA is that the total amount of variation in a set of data is broken down into two types, that amount which can be attributed to chance and that amount which can be attributed to specified cause. Here, the researcher has to make two estimates of population variance viz., one based on between samples variance and the other based on within samples variance (Kothari, 2004). Then, the said two estimates of population variance are compared with \( F \)-test, where one can work out:

\[ F = \frac{\text{MSS} \text{ of ESS}}{\text{MSS} \text{ of RSS}} \]

Where,
- \( \text{MSS} = \text{Mean Sum of Squares} \) which is obtained by dividing \( \text{Sum of Squares (SS)} \) by degrees of freedom (df).
- \( \text{ESS} = \text{Explained Sum of Squares} \)
- \( \text{RSS} = \text{Residual Sum of Squares} \), and
- \( \text{ESS} + \text{RSS} = \text{TSS} \text{ (Total Sum of Squares)} \)
**T-test:** T-test is used to test the hypothesis that means scores on some interval-scaled variables will be significantly different for two independent samples or groups (Zikmund, 2000).

\[ t = \frac{\bar{X} - \mu}{S_e} \]

Where,
- \( \bar{X} = \) Population mean
- \( \mu = \) Sample mean, and
- \( S_e = \) Standard error of the mean

### 4.7 Techniques of Data Analysis
#### 4.7.1 Measures of Profitability

**Ratio analysis:** For measuring the profitability of banks, analysis of relevant ratios is one of the reliable and commonly used tools of analysis. In this study, following ratios of profitability are found out by the researcher:

1. Net Profit to Total Deposits
2. Net Profit to Total Advances
3. Net Profit to Total Investment
4. Net Profit to Total Assets, and
5. Net Profit to Total Equity.

### 5. Analysis and Interpretations
#### 5.1 Profitability of the NCB & the PCB in Bangladesh during the Period of Study

**Table 1**

*Information of Net Profit to Total Deposits of NCBs & PCBs during the Period of Study*

| Year | NCB (In %) | PCB (In %) | Avg. (In %) | Year | NCB (In %) | PCB (In %) | Avg. (In %) |
|------|------------|------------|-------------|------|------------|------------|-------------|
| 1<sup>st</sup> | 0.20 | 1.46 | 0.83 | 7<sup>th</sup> | 0.47 | 3.31 | 1.89 |
| 2<sup>nd</sup> | 0.10 | 1.62 | 0.86 | 8<sup>th</sup> | 0.29 | 3.40 | 1.85 |
| 3<sup>rd</sup> | 0.07 | 2.31 | 1.19 | 9<sup>th</sup> | 0.06 | 2.49 | 1.28 |
| 4<sup>th</sup> | 0.08 | 1.00 | 0.54 | 10<sup>th</sup> | 0.61 | 2.61 | 1.61 |
| 5<sup>th</sup> | 0.47 | 3.91 | 2.19 | 11<sup>th</sup> | 0.59 | 2.56 | 1.58 |
| 6<sup>th</sup> | 0.32 | 4.08 | 2.20 | 12<sup>th</sup> | 0.99 | 2.65 | 1.82 |

Average (Avg.)

| 0.35 | 2.62 | 1.49 |

Standard Deviation (SD)

| 0.28 | 0.95 | .62 |
Table 1: This table shows the comparative position of profitability ratio like Net Profit to Total Deposits of NCB & PCB including AVG., GA, SD, CV, AGR, AAGR, Maximum & Minimum level at the study period.

Average position of the PCB i.e., 2.62% is better than that NCB i.e., 0.35%. In average, the SD position of NCBs was very little percentage by indicating the poor fluctuation during the study period. In comparison of NCB, PCB was in better position. In average, the CV position of PCBs was found also high, which indicates the huge fluctuation during the study period. The position of AGR was highly satisfactory during the study period, where NCB i.e., 392.33 was in better position than PCB i.e., 81.00. But the position of AAGR of PCBs was found positive. The maximum level of the NCB was found 0.99% & minimum level was 0.06%, which indicates the poor range during the period under study, while the maximum level of the PCB was found 4.08% & minimum level was 1.00%, which indicates the poor range during the period under study. Actually, the PCBs had the sound performance in AGR, while the NCBs were poor in the same during the study period. So, it is clear that the PCBs had the favorable position than the position of the NCBs regarding the same ratio during the period under study.

Table 2

| Year | NCB (In %) | PCB (In %) | Avg. | Year | NCB (In %) | PCB (In %) | Avg. |
|------|------------|------------|------|------|------------|------------|------|
| 1st  | 0.33       | 1.45       | 0.89 | 7th  | 0.65       | 4.01       | 2.33 |
| 2nd  | 0.15       | 1.62       | 0.89 | 8th  | 0.43       | 4.25       | 2.34 |
| 3rd  | 0.11       | 2.33       | 1.22 | 9th  | 0.09       | 3.22       | 1.66 |
| 4th  | 0.10       | 1.12       | 0.61 | 10th | 0.69       | 3.38       | 2.04 |
| 5th  | 0.71       | 4.98       | 2.85 | 11th | 0.71       | 3.27       | 1.99 |
| 6th  | 0.47       | 5.03       | 2.75 | 12th | 1.01       | 3.22       | 2.12 |
Table 2: This table shows the comparative position of profitability ratio like Net Profit to Total Advances of NCB & PCB having statistical tools like AVG, GA, SD, CV, AGR, AAGR, Maximum & Minimum level during the period under study. The NCB i.e., 0.45 % was in the lower average position than PCB i.e., 3.16%, while average position was 1.81%. In average, the SD position of the NCB was poor, by indicating the few percentage of fluctuation during the study period. In average, the CV position of PCBs was found also very high, which indicates the maximum fluctuation during the study period. Actually, the NCB had the favorable AGR i.e., 209.03% while the PCB had the AGR i.e., 121.75% which was very poor percentage for the same. In the position of AAGR, NCB had the maximum AAGR i.e., 98.06% but PCB had the worst position for AAGR i.e., 43.32%, while the average position of the same was 70.69% during the study period. In case of the NCB, the maximum level of the same was found 1.01% & minimum level was 0.09% while in the case of PCB, the maximum level of the same was found 5.03% & minimum level was 1.12%, which indicates the poor range during the period under study. So, it is clear that the PCBs had the favorable position than the position of the NCBs regarding the same indicator during the period under study.

Table 3
Information of Net Profit to Total Investment of NCB & PCB during the Period of Study

| Year | NCB  | PCB  | Avg. | Year | NCB  | PCB  | Avg. |
|------|------|------|------|------|------|------|------|
|      | (In %) | (In %) |  |      | (In %) | (In %) |  |
| 1st  | 1.09 | 12.51 | 6.80 | 7th  | 2.21 | 22.67 | 12.44 |
| 2nd  | 0.48 | 14.13 | 7.31 | 8th  | 1.45 | 23.37 | 12.41 |
| 3rd  | 0.33 | 19.14 | 9.74 | 9th  | 0.27 | 16.81 | 8.54  |
| 4th  | 0.38 | 8.59  | 4.49 | 10th | 3.63 | 17.58 | 10.61 |
Table 3: This table shows the comparative position of profitability ratio like Net Profit to Total Investment of the NCB & the PCB by showing the selected statistical parameters like AVG., GA, SD, CV, AGR, AAGR, Maximum & Minimum level during the period of study. The average position of the PCB i.e., 20.10% is better than NCB i.e., 1.97%. In average, the SD position was found also very poor, which indicates the little fluctuation during the study period. The CV position of both NCB and PCB were 87.69% and 40.44% while the average of them was 64.07%. In both the cases AGR & AAGR were satisfactory. The maximum level of the NCB was found 5.83% & minimum level was 0.27%, which indicates the poor range during the period under study. The maximum level of the PCB was found 35.18% and the minimum level was 8.59% during the study period. Indeed, the position of the NCBs was not as satisfactory as the PCBs in this regard during the study period.

Table 4

Information of Net Profit to Total assets of NCB & PCB during the Period of Study

| Year | NCB (In %) | PCB (In %) | Avg. (In %) | Year | NCB (In %) | PCB (In %) | Avg. (In %) |
|------|------------|------------|-------------|------|------------|------------|-------------|
| 1st  | 0.15       | 0.93       | 0.54        | 7th  | 0.37       | 1.90       | 1.14        |
| 2nd  | 0.07       | 0.98       | 0.53        | 8th  | 0.25       | 1.97       | 1.11        |
| 3rd  | 0.06       | 1.19       | 0.63        | 9th  | 0.05       | 1.53       | 0.79        |
| 4th  | 0.06       | 0.56       | 0.31        | 10th | 0.48       | 1.61       | 1.05        |
| 5th  | 0.40       | 1.96       | 1.18        | 11th | 0.50       | 1.56       | 1.03        |
| 6th  | 0.27       | 2.09       | 1.18        | 12th | 0.70       | 1.49       | 1.10        |
| Average (Avg.) | 0.28 | 1.48 | 0.88        |
Table 4: This table shows the comparative position of profitability ratio Net Profit to Total Assets of the NCBs & the PCBs including AVG., GA, SD, CV, AGR, AAGR, Maximum & Minimum level during the study period. The average position of NCB i.e., 0.28% is lower than PCB i.e., 1.48%. In average, the SD position of the NCB i.e., 0.21% and the PCB i.e., 0.48% were very poor which indicate the poor percentage of fluctuation during the study period. In context of AGR & AAGR, the NCB was in better position than PCB. The PCB in context of maximum and levels is in good position than that of the NCB. Actually, the PCB is in favorable position than that of the NCBs regarding this indicator during the period under study.

Table 5
Information of Net Profit to Total Equity of NCB & PCB during the Period of Study

| Year | NCB (In %) | PCB (In %) | Avg. | Year | NCB (In %) | PCB (In %) | Avg. |
|------|------------|------------|------|------|------------|------------|------|
| 1st  | 4.94       | 28.03      | 16.49| 7th  | 18.01      | 53.43      | 35.72|
| 2nd  | 2.57       | 26.92      | 14.75| 8th  | 11.53      | 55.56      | 33.55|
| 3rd  | 1.96       | 30.03      | 16.00| 9th  | 2.58       | 39.47      | 21.03|
| 4th  | 2.38       | 14.40      | 8.39 | 10th | 26.18      | 41.13      | 33.66|
| 5th  | 17.51      | 59.37      | 38.44| 11th | 28.08      | 40.34      | 34.21|
| 6th  | 12.44      | 64.64      | 38.54| 12th | 42.26      | 46.02      | 44.14|
| Avg. | 14.20      | 41.61      | 27.91|      |            |            |      |
| SD   | 12.81      | 15.02      | 13.92|      |            |            |      |
| CV   | 90.18      | 36.09      | 63.14|      |            |            |      |
| AGR  | 754.61     | 64.16      | 409.39|     |            |            |      |
| AAGR | 132.74     | 62.60      | 97.67|     |            |            |      |
| Max. Lev. | 42.26 | 64.64 | 53.45| Min. Lev. | 1.96 | 14.40 | 8.18 |
Source. Annual Report of Selected Banks & Resume during the Period of Study

Table 5: This table shows the comparative position of profitability ratio like Net Profit to Total Equity of NCBs & PCBs having AVG., GA, SD, CV, AGR, AAGR, Maximum & Minimum level at the time of study. In average, the SD & CV positions of the NCB indicate the high fluctuation during the study period. On the other hand, the SD & CV positions of the PCB were found also poor, which indicates the little fluctuation during the study period. In the positions of AGR & AAGR, the NCB was in better position than that of the PCB during the study period. The maximum level of the NCB was found 42.26% & minimum level was 1.96%, which indicates the poor range during the period under study. At the same time, the maximum level of the PCB was found 64.64% & minimum level was 14.40%. Regarding this ratio, the NCB had the favorable position than the position of the PCB during the period under study.

5.2 Testing of Hypotheses

To test the hypotheses, the calculation of Multiple Correlations, Multiple regressions and ANOVA of the selected NCB and the PCB in Bangladesh during the period of study is shown below:
Table 6

Multiple Correlations

|   | Y   | X1  | X2  | X3  | X4  | X5  | X6  | X7  | X8  | X9  | X10 | X11 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Y | 1   |     |     |     |     |     |     |     |     |     |     |     |
| X1| 0.850| 1   |     |     |     |     |     |     |     |     |     |     |
| X2| 0.793| 0.951| 1   |     |     |     |     |     |     |     |     |     |
| X3| 0.908| 0.979| 0.949| 1   |     |     |     |     |     |     |     |     |
| X4| 0.497| 0.781| 0.871| 0.714| 1   |     |     |     |     |     |     |     |
| X5| 0.897| 0.978| 0.969| 0.986| 0.773| 1   |     |     |     |     |     |     |
| X6| 0.006| 0.110| 0.356| 0.102| 0.578| 0.209| 1   |     |     |     |     |     |
| X7| -0.288| -0.145| 0.108| -0.170| 0.407| -0.064| 0.956| 1   |     |     |     |     |
| X8| -0.536| -0.806| -0.856| -0.785| -0.770| -0.798| -0.194| -0.029| 1   |     |     |     |
| X9| -0.573| -0.837| -0.881| -0.788| -0.859| -0.824| -0.341| -0.158| 0.947| 1   |     |     |
| X10| 0.908| 0.980| 0.949| 1.000| 0.715| 0.986| 0.102| -0.169| -0.79| -0.789| 1   |     |
| X11| 0.883| 0.986| 0.971| 0.995| 0.778| 0.991| 0.170| -0.097| -0.81| -0.825| 0.995| 1   |

Source: Exhibit 1

Table 6: This table shows the significant positive correlation in between net profit, total equity, deposits, loans, investment, assets, income, expenditure, manpower, branch, net worth and capital employed of the NCB during the period of study with 5% level of significance. Net profit position of the NCB is directly dependent on x1, x2----x11 which implies the correlation matrix.
Table 7: *Multiple Regressions, Summary Output Regression Statistics*

|                          |                |
|--------------------------|----------------|
| Multiple R               | 0.931          |
| R Square                 | 0.868          |
| Adjusted R Square        | 0.272          |
| Standard Error           | 741.327        |
| Observations             | 12             |

| Variations | df | SS          | MS          | F     | Significance F |
|------------|----|-------------|-------------|-------|----------------|
| Regression | 9  | 7206633.54  | 800737.06   | 1.457 | 0.472          |
| Residual   | 2  | 1099131.684 | 549565.8419 |       |                |
| Total      | 11 | 8305765.224 |             |       |                |
### ANOVA

|     | Coefficients | Standard Error | t-Stat | P-value | Lower 95% | Upper 95% |
|-----|--------------|----------------|--------|---------|-----------|-----------|
| Intercept | 22232.90 | 51306.29 | 0.43 | 0.71 | -198520.38 | 242986.19 |
| X Variable 1 | -18.87 | 21.62 | -0.87 | 0.47 | -111.91 | 74.17 |
| X Variable 2 | -1.67 | 1.68 | -0.99 | 0.43 | -8.92 | 5.57 |
| X Variable 3 | -1.88 | 3.71 | -0.51 | 0.66 | -17.85 | 14.08 |
| X Variable 4 | 2.98 | 5.78 | 0.51 | 0.66 | -21.91 | 27.87 |
| X Variable 5 | 0.62 | 0.84 | 0.74 | 0.54 | -3.00 | 4.24 |
| X Variable 6 | -7.18 | 19.07 | -0.38 | 0.74 | -89.22 | 74.86 |
| X Variable 7 | 23.86 | 38.26 | 0.62 | 0.60 | -140.78 | 188.49 |
| X Variable 8 | 8.59 | 51.21 | 0.17 | 0.88 | -211.76 | 228.94 |
| X Variable 9 | 8.79 | 217.69 | 0.04 | 0.97 | -927.86 | 945.45 |

*Source. Exhibit No. 1*

**Table 7:** This table shows the multiple regression of net profit with other selected variables i.e., total equity, deposits, loans, investment, assets, manpower & branch. From this table, it is predicted that value of Multiple R, R Square & Adjusted R², Standard Error, Observations i.e., 0.931, 0.868, 0.272, 741.327 & 12 indicate the highly depended with each other of the bank during the period of study. When F value is greater than the value of Significance F i.e., 1.457 > 0.472 which implies the significance variation for the same.
### Table 8
Multiple Correlations

|     | Y   | X1  | X2  | X3  | X4  | X5  | X6  | X7  | X8  | X9  | X10 | X11 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Y   | 1   |     |     |     |     |     |     |     |     |     |     |     |
| X1  | 0.760 | 1   |     |     |     |     |     |     |     |     |     |     |
| X2  | 0.774 | 0.953 | 1   |     |     |     |     |     |     |     |     |     |
| X3  | 0.665 | 0.885 | 0.964 | 1   |     |     |     |     |     |     |     |     |
| X4  | 0.695 | 0.925 | 0.967 | 0.925 | 1   |     |     |     |     |     |     |     |
| X5  | 0.861 | 0.939 | 0.952 | 0.911 | 0.857 | 1   |     |     |     |     |     |     |
| X6  | 0.851 | 0.957 | 0.989 | 0.942 | 0.942 | 0.976 | 1   |     |     |     |     |     |
| X7  | 0.748 | 0.961 | 0.996 | 0.973 | 0.963 | 0.951 | 0.985 | 1   |     |     |     |     |
| X8  | 0.848 | 0.887 | 0.947 | 0.918 | 0.943 | 0.905 | 0.962 | 0.938 | 1   |     |     |     |
| X9  | 0.716 | 0.854 | 0.943 | 0.974 | 0.917 | 0.890 | 0.935 | 0.947 | 0.947 | 1   |     |     |
| X10 | 0.680 | 0.903 | 0.972 | 0.999 | 0.934 | 0.922 | 0.953 | 0.981 | 0.924 | 0.972 | 1   |     |
| X11 | 0.691 | 0.918 | 0.982 | 0.994 | 0.959 | 0.918 | 0.961 | 0.989 | 0.939 | 0.971 | 0.997 | 1   |

**Source:** Exhibit 2

Table 8: This table shows the significant positive correlation in between net profit, total equity, deposits, loans, investment, assets, income, expenditure, manpower, branch, net worth and capital employed of the PCB during the period of study with 5% level of significance. Net profit position of the PCB is directly dependent on x1, x2 ---- x11 which implies the correlation matrix.
| Variations | df | SS       | MS       | F      | Significance F |
|------------|----|----------|----------|--------|----------------|
| Regression | 6  | 1040445.40 | 173407.567 | 362.73 | 0.000002       |
| Residual   | 5  | 2390.31   | 478.061  |        |                |
| Total      | 11 | 1042835.71 |          |        |                |
Table 9: This table shows the multiple regression of net profit with other selected variables i.e., total equity, deposits, loans, investment, assets, manpower & branch. From this table, it is predicted that value of Multiple R, R Square & Adjusted R², Standard Error, Observations i.e., 0.999, 0.998, 0.995, 21.865 & 12 indicate the highly depended with each other of the PCB during the period of study. Here, F value is greater than the value of Significance F i.e., 362.73>0.000002, it implies the significance variation for the same.

|                | Coefficients | Standard Error | t-Stat | P-value | Lower 95% | Upper 95% |
|----------------|--------------|----------------|--------|---------|-----------|-----------|
| Intercept      | 1759.19      | 109.03         | 16.14  | 0.00    | 1478.92   | 2039.45   |
| X Variable 1   | -0.91        | 0.10           | -9.37  | 0.00    | -1.16     | -0.66     |
| X Variable 2   | -0.10        | 0.01           | -6.61  | 0.00    | -0.13     | -0.06     |
| X Variable 3   | -0.09        | 0.01           | -11.06 | 0.00    | -0.10     | -0.07     |
| X Variable 4   | 0.26         | 0.07           | 3.67   | 0.01    | 0.08      | 0.44      |
| X Variable 5   | 0.04         | 0.01           | 4.08   | 0.01    | 0.01      | 0.06      |
| X Variable 6   | 0.70         | 0.09           | 8.23   | 0.00    | 0.48      | 0.92      |

Source: Exhibit 2
6. Results and Findings of the Study

At present, a mixed system of banking is operating in Bangladesh. The giant existence of the NCBs is still continued although the average growth rate of number of branches of the PCBs is higher than that of the NCBs. The general people throughout the country have easier access to the NCBs than that of the PCBs. It also reflects the more social banking of the NCBs than that of the PCBs. On the other hand, the PCBs show favorable position in comparison to the NCBs in context of assets quality and average growth rate of deposits. In the same way, the PCBs shows better performance in the areas of customer services, capital adequacy, quality of assets, expenditure income ratios etc. The profitability performance of the NCBs and the PCBs in Bangladesh was not satisfactory although the PCBs had the increasing trend for profitability during the period under study. The trends of profitability of the NCBs in context of net profit to total deposits, advances & investment are downward and net profit to total assets & equity are upward. On the other hand, the profitability of the PCBs in all respects either total income or net profits are at upward trends. Now, it is clear to us that the PCBs are in favorable position in profitability performance than that of the NCBs. In both the cases, bank specific characteristics such as liquidity, credit and other financial risks, operational efficiency, capitalization and macroeconomic variables such as economic growth had positive and significant impacts on bank performance.

In overall consideration, it can be said that the PCBs were in more favorable position in the area of profitability than that of the NCBs during the period under study. The profit performance of the NCBs deteriorated sharply because of the problems in the burden management along with the flaws in cost control measures and impact of policy variables. On the other hand, the NCBs were more favorable in the areas of job security, expansion of branches to rural areas, priority sector services and the reduction of regional disparity than that of the PCBs. In fact, efficient bank management and cost efficiencies were associated with the lower cost of financial intermediation and higher bank profitability.

7. Conclusion

Bangladesh is a developing country of the third world. She has to manage about 16 crore people. Most of them reside in the villages. About a half of the total population is illiterate and lives under the poverty line. In such a situation, she has no alternative but to ensure social justice side by side with
the economic growth. Generally, banks operate for earning profit. But they cannot ignore social objectives. Now a day, it is recognized that banks either in public or in private sector have to bear some public responsibilities in addition to the satisfaction of their private interests. The profitability and social banking have, therefore, become the twin objectives of both the NCBs and the PCBs in the present socio-economic context of Bangladesh. The study shows that the NCBs need to improve managerial efficiency and customer services along with sustaining the present trends of social banking for being profitable in the 21st century. The PCBs need to ensure social banking like expansion of the branches to rural areas, priority sector services, reduction of regional disparity etc. side of side of maintaining the present trends of profitability and customer services in consideration of socio-economic condition of the common people in Bangladesh. Besides the internal factors and socio-economic conditions, other external factors like technological advancement, political stability, rule of law, democracy and globalization etc. must be brought into consideration for the smooth functioning of all banks available in Bangladesh. If the aforesaid findings are accepted in the right direction, not only the bank profitability but also the overall performance of the public and the private sector banks in Bangladesh is expected to improve further.

8. Implications of the Study

The profitability performance of the NCBs and the PCBs in Bangladesh was not satisfactory although the PCBs had the increasing trend for profitability during the period under study. At present, profitability is a prime question of survival of any organization. Hence, the NCBs should immediately arrest the declining trend of profitability. To bring any significant improvement in the income, the banks should diversify themselves into a wide range of financial services. Since the non-interest income forms quite a low proportion of total income, it is required that the banks should focus greater attention on enlarging their ancillary business both in terms of variety and coverage. There are various ancillary business opportunities like merchant banking, consultancy, factoring, portfolio management, and mutual funds etc., which open up the newer areas in which the banks can successfully diversify. To ensure maximum profitability, an adequate and well planned cost accounting system should be established in all areas particularly in the areas of work management, cost management, fund management of the banks, which should calculate the actual costs of the banking services and
the reasonable prices for those services. It should ensure periodical cost-benefit analysis. Considering the prospects of ancillary services in the coming years, the study suggested that the banks should expand the base of ancillary services both in terms of character and volume with a view to fulfilling the twin objectives of improving profitability as well as offering the demand based service mix to the customers. It is necessary to keep in mind that the banking services can be provided at a minimum cost but not at a price below the cost. Moreover, bank management in Bangladesh, irrespective of its nature either the NCBs or the PCBs, needs to address some crucial national and international problems such as, nepotism, corruption, default culture, money laundering etc. because of their increase over the time and the global nature of the problem. It is expected that the findings of this study may be of great use to the management of all banks, bankers, policy makers, planners, researchers, students and those working to formulate future action plans in the development of banking sector in particular and the country in general.

9. Limitations and Future Directions

There are different types of scheduled banks in the public and the private sectors of Bangladesh. But the scope of the study would be limited to nationalized and private commercial banks of Bangladesh only keeping all other scheduled banks outside the study. Moreover, the constraints like time, resources, and manpower restricted the researcher from conducting available primary survey, which might help to analyze some of the social aspects better although limited survey has been done for the primary data. So, like any other study this one also has some limitations.

An in-depth study on any part of banking can provide the impetus towards the healthy growth of banking sector in Bangladesh. The present study is one of such in-depth studies which can help a lot in the balanced development of banking in Bangladesh. But, it is not possible to deal with a large number of issues within the scope of a single study. Many current issues could not, therefore, be dealt with due importance in this study. They are left for the researchers in the days coming. Generally, a research raises multifarious issues and identifies more problems than it proposes to solve. It is expected that the present study would motivate the researchers for further researches in the areas like Bank Productivity of NCBs and PCBs in Bangladesh, Human Resource Management of NCBs and PCBs in
Bank Profitability in Bangladesh

Bangladesh, Technology Management of NCBs & PCBs in Bangladesh, Credit Management of NCBs & PCBs in Bangladesh etc.
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Annexure A

Questionnaire

[N.B. The questionnaire is prepared for conducting the expert opinion survey on different aspects of bank profitability in Bangladesh. The information provided by the respondents will be kept strictly confidential.]

1. Name of the Respondent: __________________
2. Age:______________________
3. Designation: ________________
4. Name of the Bank: ____________
5. Joining year: ________________
6. Education: ________________
7. Training, if any: ______________
8. Experience in Banking: ______________
9. Please put tick on any of the followings as the principal objective of your bank:
   - [ ] Earning profits
     - [ ] Social service
     - [ ] Both of them
     - [ ] Any other (specify):
10. Please comment on the following managerial aspects by putting a tick on the appropriate box of the rating scale, in which 7 for being excellent, 6 for very good, 5 for good, 4 for average, 3 for below average, 2 for poor and 1 for very poor.
   A. Job security
      - [ ] 7 [ ] 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1
   B. Selection process
      - [ ] 7 [ ] 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1
   C. Training facilities
      - [ ] 7 [ ] 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1
   D. Performance appraisal
      - [ ] 7 [ ] 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1
   E. Promotion policy
      - [ ] 7 [ ] 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1
   F. Salary
      - [ ] 7 [ ] 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1
   G. Other motivational incentives
      - [ ] 7 [ ] 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1
   H. Autonomy in work
11. Evaluate the social obligation of your bank with reference to the following aspects on the scale like +3 for being very satisfactory, +2 for satisfactory, 1 for somewhat satisfactory, 0 for being neutral, -1 for somewhat dissatisfactory, -2 for dissatisfactory and -3 for quite dissatisfactory. Please use tick mark on any one of them:

A) Branch expansion to the rural areas.
   □ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

B) Contribution to the reduction of regional disparity.
   □ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

C) Customer or client services.
   □ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

D) Public utility services.
   □ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

E) Responsibilities toward the society.
   □ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

12. What are the reasons of low / high profitability in your bank? Specify the causes.
   (a) ............................................................

   Thank you very much for your kind cooperation.
| Year | Net Profit/Loss | Total Equity | Total Deposit & Advances | Loan & Advances | Investment | Total Assets | Total Income | Total Exp. | Total Manpower | Total Br. | Net Worth | Capital Employed |
|------|----------------|--------------|-------------------------|----------------|------------|-------------|--------------|------------|----------------|-----------|-----------|-----------------|
| 1st  | 248.00         | 5015.40      | 12383.50               | 76116.20       | 22836.00   | 164005.00   | 8517.50     | 8269.50   | 20243          | 1313      | 81131.60  | 109367.60      |
| 2nd  | 132.10         | 5138.50      | 136061.70              | 85451.40       | 27699.00   | 180877.00   | 9836.50     | 9704.40   | 26325          | 1313      | 90589.90  | 118288.90      |
| 3rd  | 101.90         | 5211.90      | 155225.00              | 94441.30       | 31330.00   | 167418.00   | 11094.40    | 1092.50   | 26518          | 1311      | 99652.30  | 130982.30      |
| 4th  | 126.20         | 5308.20      | 168187.00              | 123562.90      | 33110.00   | 197095.00   | 12429.60    | 12303.40  | 26055          | 1306      | 128871.10| 161981.10      |
| 5th  | 947.00         | 5408.20      | 200367.00              | 133347.00      | 44253.00   | 238397.00   | 14926.00    | 13979.00  | 20406          | 1293      | 138755.20| 183008.20      |
| 6th  | 673.00         | 5408.20      | 210452.00              | 141916.00      | 34371.00   | 253872.00   | 15942.00    | 15269.00  | 25753          | 1291      | 147324.20| 181895.20      |
| 7th  | 1012.40        | 5622.00      | 216590.00              | 156153.00      | 45720.00   | 270816.00   | 16628.40    | 15616.00  | 25237          | 1221      | 161775.20| 207495.20      |
| 8th  | 659.70         | 5722.20      | 230339.00              | 155197.00      | 45490.00   | 266851.00   | 16144.70    | 15485.00  | 24715          | 1186      | 160919.20| 206409.20      |
| 9th  | 157.40         | 6096.20      | 252234.00              | 168283.00      | 58896.00   | 292182.00   | 15758.40    | 15601.00  | 24450          | 1186      | 174379.20| 233275.20      |
| 10th | 1651.00        | 6306.20      | 270335.00              | 240105.00      | 45446.00   | 342785.00   | 10379.00    | 8728.00   | 23754          | 1183      | 246411.20| 291857.20      |
| 11th | 1833.00        | 6528.20      | 280293.00              | 258987.00      | 47325.00   | 367954.00   | 10978.00    | 9145.00   | 24224          | 1194      | 265515.20| 312840.20      |
| 12th | 2889.11        | 6836.78      | 293023.06              | 268942.25      | 49563.18   | 414786.53   | 12845.29    | 9956.18   | 25141          | 1207      | 293779.03| 343342.21      |

*Source:* Annual Reports of the NCB and Resume during the Period of Study
### Exhibit 2

**Consolidated Information (Taka in Million) of PCB during the period of study**

| Year | Net Profit/Loss | Total Equity | Total Deposit & Adv. | Loan | Investment | Total Assets | Total Income | Total Exp. | Total Manpower | Total Branch | Net Worth | Capital Employed |
|------|-----------------|--------------|---------------------|------|------------|--------------|--------------|------------|----------------|--------------|-----------|-----------------|
| Y    | x1              | x2           | x3                  | x4   | x5         | x6           | x7           | x8         | x9             | x10          | x11       |
| 1st  | 241.21          | 860.48       | 16501.00            | 16589.62 | 1928.90    | 25947.11     | 1225.06      | 983.85     | 1868           | 65           | 17450.10  | 19379.00       |
| 2nd  | 275.07          | 1021.66      | 16994.00            | 17026.85 | 1946.33    | 28042.71     | 1456.02      | 1180.95    | 1892           | 66           | 18048.51  | 19994.84       |
| 3rd  | 400.97          | 1335.06      | 17365.00            | 17232.61 | 2095.02    | 33617.50     | 1808.66      | 1407.69    | 1917           | 66           | 18567.67  | 20662.69       |
| 4th  | 203.59          | 1413.90      | 20259.00            | 18239.52 | 2371.35    | 36545.28     | 1871.54      | 1667.95    | 1868           | 66           | 19653.42  | 22024.77       |
| 5th  | 924.15          | 1556.48      | 23616.00            | 18553.66 | 2626.62    | 47148.08     | 2988.90      | 2064.75    | 1998           | 66           | 20110.14  | 22736.76       |
| 6th  | 1016.64         | 1572.75      | 24897.00            | 20200.64 | 2891.97    | 48732.10     | 3288.00      | 2271.36    | 2073           | 75           | 21773.39  | 24665.36       |
| 7th  | 870.32          | 1628.97      | 26276.00            | 21677.96 | 3839.60    | 45719.10     | 3343.55      | 2473.23    | 2171           | 76           | 23306.93  | 27146.53       |
| 8th  | 945.09          | 1700.90      | 27762.00            | 22257.15 | 4044.02    | 47929.57     | 3622.31      | 2677.22    | 2185           | 76           | 23958.05  | 28002.07       |
| 9th  | 735.15          | 1862.32      | 29466.00            | 22840.44 | 4374.17    | 48024.96     | 3715.21      | 2980.06    | 2133           | 76           | 24702.76  | 29076.93       |
| 10th | 776.00          | 1886.48      | 29690.00            | 22948.00 | 4415.00    | 48246.00     | 3821.00      | 3045.00    | 2139           | 76           | 24834.48  | 29249.48       |
| 11th | 767.00          | 1901.33      | 30348.00            | 23482.00 | 4584.00    | 49254.00     | 3925.00      | 3158.00    | 2150           | 78           | 25383.33  | 29967.33       |
| 12th | 967.00          | 2101.33      | 36548.00            | 29992.00 | 4984.00    | 65054.00     | 5125.00      | 4158.00    | 2289           | 88           | 32093.33  | 37077.33       |

*Source:* Annual Reports of the PCB and Resume during the Period of Study