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# Comparison and Analysis of Profitability of Top Three Nationalized Commercial Banks in Bangladesh

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*Keywords:* *bank, profitability, performance, ANOVA.*

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# Comparison and Analysis of Profitability of Top Three Nationalized Commercial Banks in Bangladesh

Saeed Sazzad Jeris

*Abstract-* Banks are playing a vital role in the economic & financial development of Bangladesh. Profitability indicates the overall performance of the banks. In this study, it has been tried to compare the top three nationalized commercial banks by some financial parameters, and it relies on secondary sources of data. In this paper, I used statistical tool ANOVA for comparison. The result indicates the statistical difference among these banks and their performance is not stable.

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## I. Introduction

Financial sector plays a crucial role in the economic & financial development of a country. An efficient financial system is required to ensure the formation of capital. A sound financial infrastructure is rare in many developing countries like Bangladesh. As financial markets are usually underdeveloped, the importance of banks is more pronounced in developing countries, and banks are considered a principal source of finance for the majority of firms (Arun and Turner, 2004). Banks are unlikely to gain a sustainable competitive advantage unless they can extend its product quality beyond the core service with additional and potential service features and value. In this regard, profitability and solvency are any bank's significant concern(Chang et al., 1997).

The Nationalized Commercial Banks (NCBs) of Bangladesh is one of key the tool for achieving socio-economic objectives, and the commercial banking system dominates Bangladesh's financial sector. The banking system of Bangladesh is composed of eight state-owned commercial banks, ten specialized banks, forty-one private commercial banks, one land development bank, and nine foreign commercial banks.

## II. Objectives

1. To study the profitability ratios of top three nationalized commercial banks, viz. Sonali bank, Janata bank, and Agrani bank.
2. To compare the profitability ratios of top three nationalized commercial banks, viz. Sonali bank, Janata bank, and Agrani bank by return on net worth, net interest margin, the cost to income ratio and return on asset.

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## III. Hypothesis

$H_0^1$ = There is an insignificant difference among Sonali bank, Janata bank, and Agrani bank by on net worth.

$H_0^2$ = There is an insignificant difference among Sonali bank, Janata bank, and Agrani bank by cost to income ratio.

$H_0^3$ = There is an insignificant difference among Sonali bank, Janata bank, and Agrani bank by return on assets.

$H_0^4$ = There is an insignificant difference among Sonali bank, Janata bank, and Agrani bank on the Profitability and solvency are any bank's important concernbasis of net interest margin.

## IV. Reference Period

This study has covered the period from 2013 to 2017.

## V. Methodology

Secondary data and information required for the analysis has been collected from the annual report of Sonali Bank, Janata Bank, Agrani bank and different books, journals, magazines, websites.

## VI. Statistical Tools

In this study, various tools are used (i.e.) Mean, Standard deviation, Coefficient of variation and ANOVA.

## VII. Literature Review

Eichheld and Sassar (1990) have said that the relationship between customer retention and company revenues should build in such a way as a small improvement in customer retention can have a massive effect on company revenues. Amandeep (1991) concluded that the profitability of banks is ascertained mainly by two factors: spread and burden. She recommended in her study that the bank should give more attention to the management of freight, establishment expenses, non-fund income, and deposit composition. Reynolds et al. (2000) used some dependent variables which were regressed to structural variables to evaluate the performance of the bank and financial structure. N S Toor (1994) in his article, said that the profitability in banks seemed to be a crucial



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parameter for measuring their performance and their social role got the advantage over the profits and profitability.

Narang et al. (2011) got evidence that some banks achieved remarkable performance owing to the index of interest earned to total asset ratio.

Qin and Pastory (2012) measured the profitability of commercial banks in Tanzania from 2000 to 2009. They tested the hypothesis with ANOVA and regression analysis by return on average asset, net interest income to average bearing assets and non-interest expenses to average assets. The study indicates that there was no significant difference in profitability among commercial banks. Swamy (2015) examined the factors of bank asset quality and profitability using panel data techniques and robust data for the period between 1997 and 2009. The study experimented that public sector banks were not found as better risk procedures and technology while private sector banks were superior in this regard. According to Vanar and Dhole (2006), banks should try to maximize their income and should also introduce rules and regulations to minimize expenses because it impacts on the profitability of the bank. Mohd. and Rasidah (2011) measured the impact of bank-specific factors such as liquidity, credit, capital, operating expenses and the size of commercial banks in Malaysia and China. These factors are measured by return on average assets (ROAA) and return on average equity (ROAE), and the result explained that without the credit and capital ratios, other factors are affected differently on the performance of banks in both Malaysia and China.

## VIII. Measures of Profitability

The study has tried to compare three top nationalized banks by some financial parameters.

*a) Return on net worth*

*Return on equity (ROE)* is a measure of profitability that estimates what profit a company generates with each dollar of shareholders' equity. The formula for ROE is:

ROE = Net Income/Shareholders' Equity

*b) The cost to income ratio*

The cost to income ratio is used to determine the operating costs of a company about its operating income.

The formula for the cost to income ratio:

Cost to income ratio= operating expenses/ operating income

*c) Return on asset*

Return on assets ratio or ROA measures how effectively and efficiently a company organizes its assets to produce gain during a period. The formula for return on asset:

Return on asset = net income/total assets

*d) Net interest margin*

Net interest margin is a profitability ratio that calculates how much money an investment bank is making on its investing operations. The formula for net interest margin:

Net interest margin = (interest income-interest expense)/Average earning assets

## IX. Analysis and Findings

*a) Return on net worth*

*Table 1:* Return on net worth (%)

| Year/Banks | Sonali Bank | Janata Bank | Agrani Bank |
|---|---|---|---|
| 2012-13 | 9.89 | 30.09 | 25.39 |
| 2013-14 | 11.05 | 9.66 | 5.02 |
| 2014-15 | 0.99 | 9.7 | 1.46 |
| 2015-16 | 2.18 | 5.22 | (19.06) |
| 2016-17 | 10.63 | 5.23 | 16.59 |
| Mean | 6.95 | 11.98 | 5.88 |
| Standard Deviation | 4.93 | 10.37 | 16.84 |
| Co-efficient of Variation | 0.71 | 0.87 | 2.87 |

*Source: Annual reports of the sample banks*



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In table 1, mean, standard deviation and coefficient of variation of return of net worth of selected banks have been calculated. Janata Bank has the highest mean value, and Agrani Bank has the lowest number. Standard Deviation of profit after tax to equity shareholder fund of Agrani Bank is 16.84 with the highest coefficient of variation of 2.87 percent. Sonali Bank has a low standard deviation (4.93), and it has a low coefficient of variation i.e., 0.71 percent among top three nationalized commercial banks.

*b) The Cost to income ratio*

*Table 2:* Cost to income ratio(%)

| Year/Banks | Sonali Bank | Janata Bank | Agrani Bank |
|---|---|---|---|
| 2012-13 | 94.47 | 77.98 | 74.15 |
| 2013-14 | 86.8 | 81.06 | 74.25 |
| 2014-15 | 87.54 | 80.75 | 79.52 |
| 2015-16 | 94.01 | 81.53 | 86.6 |
| 2016-17 | 83.92 | 78.33 | 80.51 |
| Mean | 89.35 | 79.93 | 79 |
| Standard Deviation | 4.67 | 1.65 | 5.16 |
| Co-efficient of Variation | 0.05 | 0.02 | 0.07 |

*Source: Annual reports of the sample banks*

Table 2 shows the calculation of mean, standard deviation and coefficient of variation of cost to income of selected banks. Sonali Bank has the highest mean value, and Agrani Bank has the lowest value. Standard Deviation of Agrani Bank is 5.16 with the highest coefficient of variation of 0.07 percent, and Janata Bank has 1.65 low standard deviation and low coefficient of variation 0.02 percent.

*c) Return on asset*

*Table 3:* Return on Asset(%)

| Year/Banks | Sonali Bank | Janata Bank | Agrani Bank |
|---|---|---|---|
| 2012-13 | 0.45 | 1.42 | 2.04 |
| 2013-14 | 0.68 | 0.61 | 0.4 |
| 2014-15 | 0.06 | 0.7 | 0.12 |
| 2015-16 | 0.14 | 0.33 | (1.12) |
| 2016-17 | 0.58 | 0.33 | 1 |
| Mean | 0.38 | 0.68 | 0.49 |
| Standard Deviation | 0.27 | 0.45 | 1.16 |
| Co-efficient of Variation | 0.71 | 0.66 | 2.38 |

*Source: Annual reports of the sample banks*

Table 3 shows the bank-wise mean, standard deviation, and coefficient of variation of return of assets of selected banks. Janata Bank has the highest mean value while Sonali Bank has the lowest figure. Standard Deviation of Agrani Bank is 1.16 with the highest coefficient of variation of 2.38 percent, and Janata Bank has the lowest coefficient of variation.

*d) Net interest margin*

Table 4 shows the calculation of mean, standard deviation and coefficient of variation of cost to income of selected banks. As is presented in the table, Agrani Bank has the highest mean value, and Janata Bank has the lowest value. Also, the standard deviation of Janata bank is 0.57 with the highest coefficient of variation of 21.98 while Agrani Bank has the modest standard deviation and coefficient of variation.



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*Table 4:* Net interest margin(%)

| Year/Banks | Sonali Bank | Janata Bank | Agrani Bank |
|---|---|---|---|
| 2012-13 | 0.95 | 0.47 | 3.43 |
| 2013-14 | 1.66 | (0.47) | 3.9 |
| 2014-15 | 1.93 | (0.64) | 3.34 |
| 2015-16 | 1.94 | 0.1 | 3.24 |
| 2016-17 | 2.3 | 0.67 | 3.59 |
| Mean | 1.76 | 0.03 | 3.5 |
| Standard Deviation | 0.50 | 0.57 | 0.26 |
| Co-efficient of Variation | 0.29 | 21.98 | 0.07 |

*Source: Annual reports of the sample banks*

*Table 5:* Summary of descriptive statistics of financial parameters

| Financial Parameters | Highest Rate of Return | Consistency |
|---|---|---|
| Return on Net Worth | Janata Bank | Sonali Bank |
| Cost to Income Ratio | Sonali Bank | Janata Bank |
| Return on Asset | Janata Bank | Sonali Bank |
| Net Interest Margin | Agrani Bank | Agrani Bank |

The above table illustrates that there are lots of variation in profitability of these nationalized commercial banks. In one parameter, their performance is good, but in other variables, their performance is not consistent. However, in terms of return on net worth and return on assets Janata Bank has found to be a better performer than Sonali Bank and Agrani Bank.

*Table 6:* Comparative Analysis of Sonali bank, Janata bank and Agrani bank on the basis of financial parameters

| | | | Return on net worth | | |
|---|---|---|---|---|---|
| Source of Variation | Sum of Squares | Df | Mean Square | F | p-value |
| Between Groups | 106.12 | 2 | 53.05 | 0.38 | 0.69 |
| Within Groups | 1664.71 | 12 | 138.73 | | |
| Total | 1770.83 | 14 | | | |
| | | | Cost to income ratio | | |
| Source of Variation | Sum of Squares | Df | Mean Square | F | p-value |
| Between Groups | 327.5158 | 2 | 163.76 | 9.61 | 0.003 |
| Within Groups | 204.4606 | 12 | 17.04 | | |
| Total | 531.9764 | 14 | | | |
| | | | Return on asset | | |
| Source of Variation | Sum of Squares | Df | Mean Square | F | p-value |
| Between Groups | 0.22492 | 2 | 0.11 | 0.21 | 0.82 |
| Within Groups | 6.49244 | 12 | 0.54 | | |
| Total | 6.71736 | 14 | | | |
| | | | Net interest margin | | |
| Source of Variation | Sum of Squares | Df | Mean Square | F | p-value |
| Between Groups | 30.17185333 | 2 | 15.09 | 69.84 | 2.45 |
| Within Groups | 2.59204 | 12 | 0.22 | | |
| Total | 32.76389333 | 14 | | | |

In Table 6, there is a significant difference at 5 percent level of significance (p-value 0.003) among three banks Sonali Bank, Janata Bank and Agrani Bank by cost to income ratio. Therefore null hypothesis $H_0^2$ is rejected.



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The p-value of $H_0^1$,$H_0^3$,$H_0^4$ are 0.69, 0.82, 2.45 respectively, hence$H_0^1$,$H_0^3$ and $H_0^4$ are not rejected. There is an insignificant difference among Sonali Bank, Janata Bank, and Agrani Bank by the return on net worth, return on asset and net interest margin.

*e) The summary of analysis*

| Hypothesis | Decision |
|---|---|
| $H_0^1$ | Don't Reject |
| $H_0^2$ | Reject |
| $H_0^3$ | Don't Reject |
| $H_0^4$ | Don't Reject |

## X. Conclusion

Profitability is an essential criterion to measure the performance of banks. In recent times, nationalized commercial banks are dominant in the banking sector in Bangladesh. However, the banks need to perform better and at the same time maintain the profitability in some perspective to meet the goals. The ratio of return on net worth and return on asset has fluctuated over the years among the banks, and it creates an unstable situation in overall performance. The findings revealed statistically much difference between the top three nationalized commercial banks and also it is suggested for the entire bank to take proper steps to improve the stability of the bank.

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