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# IMPACT OF BANK SPECIFIC FACTORS ON PROFITABILITY OF NEPALESE COMMERCIAL BANKS

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## ABSTRACT

This paper aims to investigate the impact of bank specific factors on profitability of Nepalese commercial banks. Total assets, total deposit, total loan and advance and total equity are taken as independent variables and return on assets is taken as dependent variable. The study is based on pooled least square method. The seven years' panel data from 2012 to 2018 is taken for the study. Taking 112 observations from sixteen commercial banks, the regression result, F-test and t-test are used for analysis. The study found that the total assets and total loan and advance have positive significant impact on profitability of Nepalese commercial banks. The study also revealed that the total equity has not significant impact and deposit has negative significant impact on profitability of commercial banks in Nepal. The study has important implications for the policy makers of Nepalese commercial banks to utilize their assets, loans, deposits properly and equity for sound profitability.

**Keywords:** bank-specific factors - profitability - panel data - commercial banks - Nepal

## INTRODUCTION

Banks are the most important financial intermediaries for providing different financial services. It plays a vital role in the operation of resources. A profitable banking sector is better to maintain the stability of the financial system (Athanasoglou, Brissimis & Delis 2008). Mobilizing saving and resources, banking system promotes the business establishment and operation through financing loan. The banking system helps in the trade of goods and services in national and international level. The soundness of banking system is a vital component of the infrastructure for economic development of the country. The banks gather savings from depositors and other sources and provide liquidity and payment services for the customers. For the better performance in the banking system, the profitable and sound banking sector is considered as key factor of success (Athanasoglou, Brissimis & Staikouras 2006).

Return on asset which is considered as proxy of profitability reflects the ability of management in the utilization of the financial resources for generating profit by commercial banks. (Ben naceur 2003, Alkassim 2005). Sufian (2010) concluded that the profitability of banks in Thailand during 1999 to 2005 is positively affected by size and capitalization whereas negatively affected by the overhead expenses and risk of credit. Ben naceur and Goaid (2008) depicted that capital adequacy ratio has positive impact on profitability and adverse by size of banks in Tunisia from 1980 to 2000. Singh and Chaudhary (2009) concluded that the advances, deposits and assets did not impact on public sector's banks' profitability and they also revealed that there is a positive impact on profitability of foreign as well as private Indian banks during 2001 to 2007. Ben naceur (2003) noticed that profitability is associated with bank's high amount of capital and large overheads while loan appeared with positive and size of bank have negative effect on returns of Tunisian banking industry for the period 1980-2000.

Athanasoglou *et al.* (2006) depicted that internal factors of banks have significant effect on profitability in the south eastern European region for the period 1988-2002. They also revealed that the ratio of equity to assets is important component for explaining the profitability of banks. Amor, Tascon and Fanjul (2006) concluded that the higher leverage ratio is the key determinants for sound profitability on the commercial banking sector of the Organization for Economic Co-operation and Development countries. The return on asset is highly depended on the credit risk in larger bank size (Flamini, McDonald & Schumacher 2009). In the study of private and foreign banks of Pakistan banks for the period 1991-2000, Burki and Niazi (2006) revealed that size of bank, loan and advance to deposit ratio and interest income to earning asset ratio has positive significant relationship with the performance of banking sector. Sufian and Habibullah (2009) examined that there is significant effect of internal factors on the profitability of Chinese commercial banks during 2000-2005.

Rahaman and Akhter (2015) found that deposit size and asset size of bank have significant adverse effect on the profitability while equity is found to have positive significant impact in Islamic Banks in Bangladesh. Similarly, Mahmud, Mallik, Imtiaz and Tabassum (2016) also studied the profitability of Bangladeshi commercial banks and found that size, operating expense, gearing ratio and capital have significant affect the profitability while liquidity, non-performing loan ratio have not in Bangladeshi bank.

Alshatti (2016) found that the capital adequacy, capital and leverage positively effect and the assets quality negatively effects on the banks' profitability in Jordan. Menicucci and Paolucci (2016) exposed that bank size and capital adequacy ratio has a constructive whereas higher asset quality has an adverse relation to profitability in the European banking industry. Kawshala and Panditharathna (2017) revealed that bank size, capital ratio and deposit ratio has significant impact on profitability of Sri Lankan banks but vice versa with liquidity. Serwadda (2018) found that the size of banks had a significant positive impact and liquidity ratio, cost of overhead and non-performing assets have a significant negative effect on profitability of Hungarian banks. He also concluded that the profitability was not affected by the capital adequacy and net interest margin in Hungarian bank. Ivan, Nazaria and Jovena (2018) found that bank size has a significant positive relation and non-performing loan and cost have a significant negative relationship with performance of Malaysian commercial banks. The capital ratio which is determined dividing total equity by total assets have found a favorable relationship with profitability (Hassan & Bashir 2004, Bourke 1989). Al-Harbi (2019) found that deposits have lower profitability whereas banks size have no impact on profitability of conventional banking sector of the Organization of Islamic Cooperation countries over the period 1989-2008. Zerihun (2021) depicted that capital ratio is positively related with profitability but bank size negatively related with profitability of Ethopian commercial banks during 2013-2018.

Bhattarai (2016) revealed the performance of Nepalese commercial bank is positively affected by expenses per loan asset and size of bank whereas non-performing loan ratio, capital adequacy ratio and cash reserve ratio has negative effect on performance Nepalese commercial banks. Neupane (2020) found that the profitability of Nepalese commercial banks is insignificantly affected by size of bank, deposit amount, capital base, loan and advances, number of branches and activities relating to off-balance sheet as the internal factors.

The commercial banks, development banks, finance companies and microfinance institutions are serving in the Nepalese banking sector. The commercial banks are key dominant in the banking system of Nepal. In 1937 A.D., Nepal Bank Limited was established as first bank of Nepal and the banking services formally started. After the economic liberalization in 1990s, the government permitted for the establishment of commercial banks to domestic and foreign investors (Sthapit 2009). There are 154 financial institutions including 27 commercial banks at present in Nepal (Nepal Rastra Bank 2020). The size of commercial bank has been increasing in Nepalese financial system. Total assets and services of commercial banks have been increasing every year. This requires evaluation properly to conclude whether it is satisfactory or not. The research questions of this study involve: what is the status of bank specific financial ratios and their impact on the profitability of Nepalese commercial banks? Therefore, the aim of the study is to investigate the impact of bank-specific factors like assets, equity, loan and advances, deposits on the profitability of commercial banks in Nepal.

## METHODS

### Research design

Return on assets (ROA) as the proxy of profitability is taken as dependent variable to ascertain the factors affecting the profitability of Nepalese commercial banks and total assets, loan and advance, total equity, and total deposit are taken as independent variables. A multiple regression model is used. The study is based on pooled least square method. The regression results, F-test, t-test are used in the study.

### Sample and data

The twenty-seven Nepalese commercial banks (Nepal Rastra Bank 2020) are considered as population for the study. Using purposive sampling technique, sixteen commercial banks (Nepal Bank Limited, Rastriya Banijya Bank Limited, Agriculture Development Bank Limited, Nabil Bank Limited, Standard Chartered Bank Nepal Limited, Himalayan Bank Limited, Nepal SBI Bank Limited, Nepal Bangaladesh Bank Limited, Everest Bank Limited, Nepal Investment Bank Limited, Nepal Credit and Commerce Bank Limited, Machhapuchhre Bank Limited, Kumari Bank Limited, Laxmi Bank Limited, Siddhartha Bank Limited, Global IME Bank Limited) are selected as sample on the availability of 7 years panel data. This study includes 112 observations from Mid-July 2012 A.D. to Mid-July

2018 A.D. The financial statistics of NRB and audited annual reports of sampled banks are the main source of data and other necessary information.

**Model specification**

The model for multiple regression equation represented by ROA is:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + u_{it}$$

Where;

$Y_{it}$= Profitability represents for Nepalese commercial bank *i* at time *t*

$X1_{it}$= TA represents natural logarithm of Total Asset for commercial bank *i* at time *t*

$X2_{it}$=TE/TA represents ratio of Total Equity to Total Asset for commercial bank *i* at time *t*

$X3_{it}$= TL/TA represents ratio of Total Loans to Total Asset for commercial bank *i* at time *t*

$X4_{it}$ = TD/TA represents ratio of Total Deposit to Total Asset for commercial bank *i* at time *t*

$u_{it}$= Error term.

**Hypotheses formulation**

The study has the following hypotheses:

Hypothesis 1 (H1): Total assets have positive significant on profitability of Nepalese commercial banks.

Hypothesis 2 (H2): Total equity has positive significant impact on profitability of Nepalese commercial banks.

Hypothesis 3 (H3): Total loan and advance have positive significant impact on profitability of Nepalese commercial banks.

Hypothesis 4 (H4): Total deposits have positive significant impact on profitability of Nepalese commercial banks.

**Variables used**

- Total Assets (TA): The total assets which define the size of commercial banks is considered as an independent variable. It is used in the form of natural logarithm for the consistency with other independent variables.

- Total Equity to Total Assets (TE/TA): The capital ratio (TE/TA) which reveals capital adequacy and measured by total equity over total asset of commercial banks in Nepal. It is also taken as independent variable for the study.
- Total Loans to Total Assets (TL/TA): The ratio of total loans to total assets which is also known as asset composition measures the source of income and the liquidity to loan and advance. The total loans to total assets ratio is considered as independent variable in the study.
- Total Deposits to Total Assets (TD/TA): This ratio is determined dividing total deposits by total assets of bank. It is an another independent variable for the study considering deposits are the commercial banks funding.
- Return on Asset (ROA): The return on asset which is calculated dividing net income by total asset is measured as indicator of profitability in Nepalese commercial banks. It is considered as dependent variable in the study.

## RESULTS

### Status of financial ratios

The status of financial ratios of commercial banks is presented in Table 1. The average return on assets of sixteen Nepalese commercial banks over the study period is only 2.16 percent. The total loan and advance and total equity covers more than 58 percent of total assets.

**Table 1:** Financial status of commercial banks

| Variables | Mean | Std. deviation | N |
|---|---|---|---|
| Return on Assets (in %) | 2.161 | 1.55 | 112 |
| Natural Logarithm of total assets (in Rs.) | 10.351 | 0.726 | 112 |
| Total Equity/Total Assets (in %) | 79.409 | 8.595 | 112 |
| Total Loan and Advance/Total Assets (in %) | 58.72 | 12.448 | 112 |
| Total Deposits/Total Assets (in %) | 5.414 | 6.478 | 112 |

### Test of normality of variables

The tolerance levels of total assets, total equity, total loan and total deposit are more than 0.10 (table 2). Similarly, the values of VIF are less than 10. Therefore, the tolerance and VIF value are appropriate presented in table 2. The value of tolerance and VIF shows that there is no presence of multi-collinearity among the variables used in the study. There is no autocorrelation because the value of Durbin Watson statistic is near to 2.

**Table 2:** Normality test

| Variables | Collinearity statistics for ROA | |
|---|---|---|
| | Tolerance | VIF |
| Log of Total Assets | 0.5457 | 1.8324 |
| Total Equity /Total Assets | 0.7288 | 1.3721 |
| Total Loan /Total Assets | 0.5864 | 1.7054 |
| Total Deposits /Total Assets | 0.9627 | 1.0387 |
| Durbin-Watson | 1.9861 | |

**Regression analysis**

Table 3 exhibits the regression result and ANOVA test for the model. The 36.99% (R-squared = 0.3699) of the variation in the return on assets is explained by the bank size, equity, loan and advances and deposits used in the study. It indicates that 63.01% variation in the profitability remains unexplained by the independent variables such as bank size, equity, loan and advances and deposits of the study. The probability of F value is 0.000 (0.000 is less than 0.05) which indicates that the model is fitted to measure impact of banks specific variables on the profitability of Nepalese commercial banks.

**Table 3:** Regression results

| | Coeff. | Std. err. | t | P>t | [95% Conf.] | |
|---|---|---|---|---|---|---|
| Log of Total Assets | 0.87736 | 0.29125 | 3.01 | 0.003 | 0.300003 | 1.454727 |
| Total Equity /Total Assets | 0.02336 | 0.01339 | 1.74 | 0.084 | -0.0031841 | 0.0499137 |
| Total Loan /Total Assets | 0.03773 | 0.00998 | 3.78 | 0.000 | 0.017956 | 0.0575096 |
| Total Deposits /Total Assets | -0.0589 | 0.00922 | -6.38 | 0.000 | -0.0771607 | -0.040587 |
| Constant | 2.08259 | 1.78027 | 1.17 | 0.245 | -1.446579 | 5.611764 |

F(4, 107) =15.7, Prob > F =0.000, R-squared= 0.3699, Adjusted R-squared= 0.3463

The coefficient of total assets, total equity, total loan and advance and total deposit is 0.87736, 0.02336, 0.03773 and -0.0589 respectively (table 3) which indicates bank size is the highest determinant factor for profitability of Nepalese commercial banks.

Since, the p-value of total assets (0.003) is less than 5 percent level of significance, the alternative hypothesis 1 (H1) is accepted. Therefore, the total assets have significant positive impact on profitability Nepalese commercial banks. It indicates that the bank size of the commercial banks in Nepal has significant favorable impact on return on assets and there is higher possibility of better profitability due to higher bank size in Nepalese commercial banking sector. The alternative hypothesis 2 (H2) is rejected because the p-value of total equity to total assets (0.084) is more than 0.05. Therefore, total equity to total assets has insignificant effect in the return on assets of the commercial banks which indicates insignificant relationship with profitability and indicates that high capitalization is not experienced for high returns.

Similarly, the p-value of total loans and advance to total assets (0.000) is less than 0.05 which shows that the alternative hypothesis 3 (H3) is accepted at 5 percent level of significance. Therefore, total loans and advance to total assets has significantly positive impact on profitability. It means that the sound and higher profitability of Nepalese commercial banks can be increased with the more loan and advances of commercial banks and indicates that more loan and advance creates more profitability. Likewise, the p-value of total deposit to total assets ($0.000 > 0.05$) and value of beta coefficient (-0.0589) shows that the alternative hypothesis 4 (H4) is rejected. Therefore, it indicates negative and significant relationship with profitability, meaning that high deposit collection is not an important factor for sound profitability of Nepalese commercial banks.

## DISCUSSION

The size of Nepalese commercial banks denoted by total assets has positive significant impact on profitability of Nepalese commercial banks. This result is similar to the previous studies of Sufian (2010), Athanasoglou *et al.* (2006), Flamini, McDonald and Schumacher (2009), Sufian and Habibullah (2009), Mahmud, Mallik, Imtiaz, and Tabassum (2016), Kawshala and Panditharathna (2017), Serwadda (2018), Ivan, Nazaria, and Jovena (2018) and Bhattarai (2016) but inconsistent with the findings of Ben naceur and Goaid (2008), Ben naceur (2003), Rahaman and Akhter (2015), Alshatti (2016), Neupane (2020) and Zerihun (2021). The bank can mobilize their resources based on their size for the achievement of target and goal of commercial banks for sound profitability

The study also depicted that the total equity has not significant impact on the profitability of Nepalese commercial banks which indicates that high capitalization is not experienced for high returns. This result is consistent with the findings of Ben naceur and Goaid (2008), Ben naceur

(2003), Sufian and Habibullah (2009), Kawshala and Panditharathna (2017) but the contrast with the finding of Sufian (2010), Athanasoglou *et al.* (2006), Rahaman and Akhter (2015), Mahmud, Mallik, Imtiaz, and Tabassum (2016), Alshatti (2016), Bhattarai (2016) and Neupane (2020). The high capitalization of commercial banks reduces the divisible dividend because of proper utilization of the financial resources.

The profitability of commercial banks in Nepal is positively and significantly affected by total loans and advance positive which shows that the chances of more profitability is depended on more loan and advance of bank. This result is consistent with the previous studies of Athanasoglou *et al.* (2006), Sufian and Habibullah (2009) and Bhattarai (2016) but it is not consistent with the findings of Neupane (2020). The loan and advances provided to its customer is main factors for income generation i.e. getting interest income from loan of Nepalese commercial banks. Therefore, high amount of loan outstanding is the base for better performance and profitability.

The total deposit has negative and significant relationship with profitability, meaning that high deposit collection is not important factor for sound profitability of Nepalese commercial banks. This is consistent with the previous studies of Athanasoglou et al. (2006), Sufian and Habibullah (2009) and Kawshala and Panditharathna (2017) but is not consistent with the findings of Rahaman and Akhter (2015), Neupane (2020), Al-Harbi (2019) and Zerihun (2021). It seems that the deposit collection and their mobilization affect the profitability of Nepalese commercial banks.

## CONCLUSION

The study aimed to investigate the impact of bank size, deposit, equity and loan on profitability of Nepalese commercial banks. Based on the results, total assets and loan and advance have significant impact in the return on assets in Nepalese commercial banks and in significant impact of total equity but the profitability is adversely affected by total deposits. In conclusion, it is investigated that loan and advances, deposits, total assets and equity are the bank specific variables of return on assets in Nepalese commercial banks. The finding of the study has important implications for the policy makers of Nepalese commercial banks to utilize properly their assets, loans, deposits and equity for sound profitability. Taking non-interest income, expenditure for employee, overhead cost, non-performing loan as other internal factors, the further study can be drawn-out.

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