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DETERMINANTS OF SHAREHOLDERS' PROFITABILITY IN NEPALESE COMMERCIAL BANKS

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ABSTRACT

This paper aims to examine impact of bank-specific factors on shareholders' profitability in Nepalese banks for the period 2009/10 to 2018/19. In this paper, various univariate and multivariate regression models have been used to examine the impact of various explanatory variables on shareholders' profitability. Return on equity has been used as dependent variable to measure the profitability and bank loans, deposits, capital ratio, credit risk and assets size have been used as explanatory variables. Results of this paper indicate bank loan, deposits and equity capital have positive relationship with shareholders' profitability. Moreover, findings of the study report inverse effect of credit risk and assets size on shareholders' profitability. Based on the results, this study concludes that equity capital and credit risk of banks have significant impact on shareholders' profitability of commercial banks in Nepal. Policy makers can apply findings of this study to formulate and implement effective bank policies to use more equity capital and control credit risk of banks for maximization of shareholders' profitability.

Keywords: Asset size, Bank profitability, Capital ratio, Credit risk, Returns on equity.

INTRODUCTION

Economic growth in globalized age depends on expansion of financial markets and institutions. Increasing phenomenon of globalization focuses on concept of efficiency for both financial and non-financial institutions. Banks are important part of them. Banking service modalities are rapidly changed in new millennium in comparison to bank services used in past years (Hussain & Bhatti, 2010). Financial institutions take part in the role of

financial intermediation by collecting and mobilizing various financial resources to the business which are essential for economic development of a nation.

Financial system of Nepal is dominated by commercial banks and they are providing various facilities to Nepalese people and business sectors. Bank profitability definitely contributes to economic development of nation by utilizing various resources and providing employment opportunities. Relatively stable profitability of bank is prerequisite for its expansion and growth. Profitability of banks is measured by return on equity, return on assets, return on capital employed, net interest margin etc. This paper considers only return on equity to measure shareholders' profitability in banks. Literature shows that capital, loan-loss provisions, bank size and operating expense etc. are the drivers of bank profitability. Profits are also determined by concentration level of market and results demonstrate that profits of firms operating in highly concentrated industries are higher than those operating in industries with lower concentration (Mason, 1939; Bain, 1951).

Shareholders' profitability in banks is usually assorted into internal and external factors. Internal factors are bank-specific variables which can be controlled by bank management and external factors are macroeconomic variables that are beyond the control of bank management. So, bank profitability is function of internal and external determinants (Berger, 1995; Guru et al., 1999; Athanasoglou et al., 2008). Sufian (2011) explained bank profitability in a single country. Demircuc-Kunt and Huizinga (1999), Goddard et al. (2004), Athanasoglou et al. (2006) analyzed bank profitability in groups of countries.

Asset size of banks is directly related with capital adequacy of banks. Large banks are able to raise less expensive capital and are able to make more profits (Short, 1979). Bourke (1989) linked bank size to capital ratio and found positive relationship between them. Akhavein et al. (1997) revealed a positive relationship between size and bank profitability. But, Berger et al. (1987) suggested small cost saving can be achieved by increasing size of banks and very large banks could face scale inefficiencies. Well capitalized banks face lower cost of going bankruptcy, which reduces their cost of funding and they have lower funds for financing which results in higher profitability (Demircuc-Kunt & Huizinga, 1999; Nacuer, 2003; Kosmidou et al., 2005). Goddard et al. (2004) supported prior findings of positive relationship of equity level on banks' profitability.

Duca and Mc Laughlin (1990) argued variations of profitability are mostly attributable with changes of credit risk of banks, since increased exposure of credit risk is associated with reduction in profitability. Miller and Noulas (1997) observed a negative relationship between credit risk and profitability. Bourke (1989) revealed a positive relation between liquidity and bank profitability. Guru et al. (1999) found inverse relationship between liquidity and profitability.

Theory of economies of scale indicates larger banks have experiences of economies of scale which help to increase profitability of banks. Size of assets of banks affects volume of capital adequacy, thus, relatively large banks have a propensity to acquire less costly capital and results to increase more profitability (Short, 1979). Little cost saving can be achieved by increasing size of banking firm and very large banks could face scale inefficiencies (Berger et al. 1987). Sound liquidity status is essential for success of banks. Shortage of liquidity position makes bank failure. On one hand, holding of more liquid form of assets tends to reduce expected rate of return, and on another hand, insufficient liquidity position of banks fails to meet their depositors' risk. Accepting of higher level of cash and maintaining excess liquidity position reduces profitability of banks. Bourke (1989) found direct association between liquidity and profitability of banks.

Size has close relationship with capital adequacy. Relatively large banks are able to raise relatively less expensive capital which helps to accelerate bank profitability (Short, 1979). Berger et al. (1987) argued small cost saving is possible with increase in size of bank and it indicates large banks could face relatively more scale inefficiency. Assets and capital ratio have positive relationship with bank profitability (Bourke, 1989). Berger (1995) analyzed the relationship between capital asset ratio and return on equity and revealed capital and return on equity are positively related. Guru et al. (1999) concluded size of assets is directly associated with before tax profit in asset-based profitability model of regression whereas size is inversely related between net profits on capital-based profitability. Capital is negatively related whereas loan is positively related with bank profitability. Finally, Guru et al. concluded deposit is positively related with bank profitability but liquidity is inversely related.

Naceur (2003) analyzed effect of bank characteristics, financial structure and macroeconomic variables on bank profitability and suggested higher net interest margin (NIM) and return on assets (ROA) tend to be associated with banks which have relatively large scale of capital as well as more overheads; bank loan has positive impact on NIM;

bank size has negative effect on NIM which reflects scale inefficiencies of banks. Size has weak effect on bank profitability (Goddard et al., 2004). Kasmidou et al. (2005) investigated impact of bank characteristics, macro-economic status and financial market structure on bank profitability (NIM & ROA) and reported that cost to income ratio has negatively related in all cases, liquidity has inversely related to NIM but directly associated with ROA whereas loan loss reserve is positively related with net interest margin. Capital strength is one of the major determinants of bank profitability and banks with well capitalization face less cost of bankruptcy which leads to minimize cost of financing.

In examination of effect of bank-specific, industry-related and macroeconomic determinants on bank profitability, Athanoglou et al. (2006) observed all bank-specific variables (except of liquidity) have significant effect on bank profitability as anticipated way. Effect of concentration is positively related with profitability and support structure conduct performance hypothesis. Inflation of economy has strong effect but real GDP has no effect on bank profitability. Size of assets has direct effect on profitability, capital strength has strong effect on bank profitability, and liquidity has positive effect on ROA and it has adverse effect on NIM (Kosmidou et al., 2006).

In investigation of bank characteristics and overall banking environment effects on profitability of both domestic and foreign banks, Pasiouras and Kosmidou (2007) found profits of both (domestic as well as foreign) banks are determined by bank characteristics, financial market structure related variables, and macro-economic environments. Capital strength and cost efficiency are major determinants of bank profitability in all cases. Equity to assets and costs to income have significant positive impact on profitability and macroeconomic indicators have significant effect on bank profitability in all cases.

Most of bank related factors except size have significant effect on profitability as anticipated way, but size has no significant relationship, capital is a proxy of equity to assets ratio has positive and significant relationship with bank profitability (Athanoglou et al., 2008). Banks with well-capitalization and efficient expenses management have higher return on assets, size has positive impact on bank profitability in most of cases but have significant effect only with inclusion of financial structure and macro-economic variables in various models, economic growth has positive impact on return on assets, while inflation has inverse effect on it (Athanoglou et al., 2008). In addition, money supply has no impact on profits whereas financial industry structure, assets to gross

domestic product, market capitalization to assets and concentration have inverse relationship with return on assets.

Sizes of assets, credit risk, and expenses preferences behavior have inverse relation with profitability whereas capitalization and non-interest income have direct influence on profitability of banks (Sufian & Chong, 2008). Bank size has a positive impact on ROA and NIM, but has inverse effect on return on equity (Sufian & Habibullah, 2009). In examination of factors influencing profitability of commercial banks, Dietrich and Wanzenried (2011) proved bank size and profitability are negatively associated; equity to asset has positive impact on bank profitability.

Gul et al. (2011) investigated bank-specific and macroeconomic characteristics affecting bank profitability and suggested size has significant positive effect on ROA, ROE and ROCE but inverse effect on NIM, capital has inverse impact on ROA, but capital has inverse effect on ROE, return on capital employed and NIM. Moreover, Gul et al. suggested loan has positive and significant impact on return on assets and net interest margin, negative but no significant impact on return on equity (shareholders' return), but loan has inverse effect on ROCE.

In analysis of factors affecting bank profitability, Ponce (2013) used generalized method of moments (GMM) models and found higher bank loans have more profitability, use of large volume of deposits and more efficiency accelerates profitability, use of more capital leads higher profitability and there is no evidence of economies of scale in banks. Samad (2015) analyzed bank related and macroeconomic variables and their impact on bank profitability based on panel data using OLS regression model and found credit risk, equity capital, operating expenses and loan to deposit are important bank related determinants of bank profitability.

In investigation of bank related factors affecting bank profitability, Kawshala and Panditharathna (2017) applied regression models based on panel data and suggested equity capital, size and deposits are key determinants of bank profitability. Azad and Saona (2018) analyzed effect of bank characteristics and country variables on profitability applying regression models and found capital and ownership structure have effect on bank profitability. Finally, Azad and Saona showed inverse effect of revenue diversification on NIM. Financial as well as regulatory structure decreases non-competitive bank profitability.

Almaqtari et al. (2019) examined determinants of profitability using pooled, fixed and random effect models and revealed number of branches, size, leverage and operational efficiency are determinants of bank profitability. Alfadli and Rjoub (2020) investigated effect of bank related, industry related and macroeconomic variables on bank profitability using panel correction standard error (PCSR) technique of OLS and concluded capital adequacy has positive whereas efficiency, credit risk, concentration and diversification have inverse role on bank profitability.

In an attempt to address bank profitability in context of Nepal, Baral (2005) investigated relationship of bank characteristics with financial health of joint venture banks (JVBs) in Nepal and argued JVBs have well-capitalization, quality of assets is average and satisfactory, employees' earnings, operating expenses and quality of management of JVBs are higher than industry average. Management efficiency is relatively healthy, ROA, ROE and profit margin indicate financial health of JVBs is not weak and ROA is fair. Moreover, Baral concluded JVBs are not facing liquidity deficiency problems.

In the examination of structured-performance relation of banking industry, Pradhan and Gajurel (2010) found structure-conduct performance as well as quit life hypothesis can explain structure performance relation but results weakly support for efficiency structure hypothesis in banks. In addition, Pradhan and Gajurel concluded banks should improve managerial efficiency for better performance to maximize bank profitability to meet competitive strength at industry level.

Banking industry of Nepal has been changing during past four decades. Central bank of Nepal, Nepal Rastra Bank (NRB) has made major changes in policy measures, deregulations, interest rate, monetary control, open market operations, liquidity, statutory provision, flexible licensing policy, foreign system, and prudential legal framework (Gajurel & Pradhan, 2011). In analysis of bank related and macroeconomic determinants of profitability of Nepalese banks, Pradhan (2017) concluded liquidity and ratio of credit to deposit are key factors of bank profitability in Nepal.

Commercial banks have a key role in financial system of Nepal. Twenty-seven commercial banks are rendering bank services to people, various government and non-government organizations in Nepal. Due to changing banking environment and globalization, Nepalese commercial banks have to face various challenges for their success and profitability. Bank-specific factors are major determinants of shareholders'

bank profitability. Prior research on determinants of profitability and relationship between performance and various factors are conducted in developed and developing economies and no depth similar studies have been made in developing country like Nepal. Thus, this study focuses to fill a gap to address research question of what are bank-specific factors affecting shareholders' profitability in Nepalese banks?

The basic objective of this paper is to investigate effect of bank related determinants on shareholders' profitability in Nepalese commercial banks. The contents of this paper have been outlined into four sections. First section deals with introduction of bank profitability and determinants along with review of literature, research question and objective of the study. Second section is for research methodology including research design, nature and sources of data, population and sample, analytical tools, variables and model specification. Moreover, section three covers analysis of results and discussion on the study findings. Finally, section four presents conclusion and implication of the study and makes suggestions for future research.

RESEARCH METHODOLOGY

This study is based on secondary sources of data. Necessary data were obtained from annual reports and financial statements of sample banks published by NRB covering period of ten years (2009/10 to 2018/19). Total 27 'A' class commercial banks licensed by Central Bank of Nepal (NRB) till mid-July 2019 constitute the population for this study. This study includes only 15 commercial banks as sample for which required financial information are available for the study periods.

This paper has employed descript and causality research design. Correlation analysis has been used to show the relationship between bank-specific determinants and profitability. Regression models have been used to investigate effect of various bank related variables on shareholders' profitability of banks in Nepal. Most of studies have used ROA, ROE, NIM and return on capital employed (ROCE) as bank profitability measures. This paper has used return on equity (ROE) as dependent variable to measure shareholders' bank profitability. ROE is percentage of net profit on common equity. Bank related determinants such as loans, deposits, capital ratio, credit risk and size of assets are considered as independent variables.

The regression models used to investigate impact of bank related determinants on shareholders’ profitability of commercial banks in Nepal is presented in Equation 1.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 \ln X_5 + e_t \quad \dots (1)$$

In Equation 1, Y is return on equity used as a proxy of shareholders’ bank profitability, X_1 is the loan ratio, X_2 refers to deposit ratio, X_3 represents capital ratio, X_4 denotes to credit risk, $\ln X_5$ represents natural logarithm of bank assets used as proxy of bank size, β_0 is the constant, β_1, \dots, β_5 are coefficients of explanatory variables respectively, and e_t is the error term.

RESULTS AND DISCUSSION

Relationship among variables

In this section, Pearson’s correlation coefficients are used to measure relationship between banks related determinants and shareholders’ bank profitability. Table 1 presents bivariate correlation coefficients between different pairs of bank-specific variables and return on equity as profitability of banks.

Table 1: Bivariate Pearson’s correlation coefficients of return on equity and explanatory variables

Variables	Y	X ₁	X ₂	X ₃	X ₄	lnX ₅
Y	1.000	0.115*	0.093*	0.519**	-0.371**	-0.215*
X ₁	-	1.000	0.437**	0.528**	-0.391*	-0.382**
X ₂	-	-	1.000	0.397**	0.325*	-0.206*
X ₃	-	-	-	1.000	-0.216	0.515**
X ₄	-	-	-	-	1.000	0.204
lnX ₅	-	-	-	-	-	1.000

Note. Author’s own calculation based on NRB data set from fiscal year 2009/10 to 2018/19. ‘*’ indicates correlation is significant at 5 percent level, ‘**’ indicates correlation is significant at 1 percent level.

Table 1 reports that return on equity (shareholders’ profitability) is positively correlated with loans, deposits and equity capital of banks. Positive relationship of return on equity with equity capital is significant at 1 percent level. Similarly, relationships of return on equity with loans and deposits are positive and significant at 5 percent level. Moreover, estimated correlation results show negative relationship of return on equity with credit risk and assets size of banks. Association between profitability and credit risk is significant at 1 percent level whereas relationship between profitability and asset size of

banks is negative and is significant at 5 percent level. The correlation result indicates equity capital has strong positive and credit risk has strong negative relationship with shareholders' profitability in banks.

Impact on shareholders' profitability

In this paper, univariate and multivariate regression models have been used to examine the impact of different bank-related determinants (explanatory variables such as loans, deposits, equity capital, credit risk and size of assets) on shareholders' profitability. Table 2 summarizes regression results and show effects of bank-specific determinants on shareholders' profitability of commercial banks in Nepal.

Table 2: Impact of bank-specific determinants on shareholders' profitability

Models	β_0	X ₁	X ₂	X ₃	X ₄	lnX ₅	Adj. R ²	F
1	0.136* (1.50)	0.288* (2.031)	-	-	-	-	0.179	32.486**
2	0.269* (2.450)	-	0.357* (2.364)	-	-	-	0.146	25.473**
3	0.568** (3.019)	-	-	2.05** (4.871)	-	-	0.205	38.421**
4	-0.325** (-2.086)	-	-	-	-4.376** (-5.736)	-	0.214	40.567**
5	-0.235** (2.913)	-	-	-	-	-0.238* (2.137)	0.143	24.862**
6	0.613** (4.015)	0.237* (2.217)	0.349* (2.813)	2.05** (4.628)	-3.971** (-4.167)	-0.218* (2.319)	0.381	17.851**

Note. Author's own calculation based on NRB data set from fiscal year 2009/10 to 2018/19. Figures in parentheses are *t*-value. '*' Indicates statistical significance at 5 percent level, and '**' Indicates statistical significance at 1 percent level. Also reported are Adjusted R², and F-statistics.

As reported in Table 2, regression coefficients of first, second and third models all are positive which indicate that bank loans, deposits and equity capital have positive effects on return on equity. Values of *t*-statistics in the parenthesis suggest bank loans, deposits and equity capital all have significant impact on shareholders' bank profitability. The results imply that higher level of loans, deposits and equity capital of banks increases shareholders' bank profitability. Effect of equity capital on return on equity is statistically significant at 1 percent and significant of loans and deposits are at 5 percent level. Negative regression coefficients of models four and five reports negative and significant

impact of credit risk and assets size of banks on return on equity. Effect of credit risk on return on equity is significant at 1 percent level and effect of size of assets on ROE is at 5 percent level. Results of univariate models conclude all explanatory variables are determinants of shareholders' bank profitability but equity capital and credit risk of banks are key determinants of bank profitability.

Multivariate regression model 6 in Table 2 summarizes regression results of all explanatory variables under previous specified equation to analyze bank-specific determinants and their impact on ROE of banks. Regression coefficients of multivariate models show loans, deposits and equity capital of banks have significant positive relationship with return on equity. Capital of banks has positive and significant impact on return on equity at 1 percent level. But, loans and deposits of banks have positive and significant effect on ROE only at 5 percent level. Credit risk of banks has negative and statistically significant impact on ROE. Findings of this paper support the findings of previous study of Sufian (2011) but contradict with results of Athanasoglou et al. (2006). Regression coefficient of assets size is negative and significant at 1 percent level. In Nepalese context, bank size shows negative influential effect on return on equity of banks. Findings of this paper supports to the prior studies of Sufian and Habibullah (2009) and Dietrich and Wanzenried (2011) but contradict with other previous studies like Athanasoglou et al. (2006) and Gul et al. (2011).

Table 2 demonstrates values of adjusted *R* squares and *F*-statistics of all models one through six. Adjusted *R* squares show explanatory power of bank-specific determinant to explain shareholders' bank profitability. The predicting power of explanatory variable to explain shareholders profitability in model six is 38.1 percent. *F*-values of each of models one through six are significant at 1 percent level which indicate models employed in this analysis are fitted. Finally, estimated regression results show equity capital and credit risks are key determinants and other determinants also have explanatory power of shareholders' profitability in Nepalese commercial banks.

CONCLUSION AND IMPLICATION

This paper attempted to examine impact of bank-specific determinants on shareholders' profitability using descriptive and causal research design. Estimated results of this paper confirmed bank loans, deposits, capital, credit risk and assets size are major determinants of shareholders' profitability in Nepalese banks. Shareholders' equity capital and credit risk have significant role in generating bank profitability in Nepalese

commercial banks. This paper concludes bank should increase size of bank loans, deposits and equity capital and optimize use of assets size maintaining appropriate level of credit risk to maximize shareholders' profitability in Nepalese commercial banks. Thus, key determinants of bank profitability are equity capital and credit risk of banks in Nepal.

Findings of this paper can be implicated by policy makers, regulatory bodies, and academicians. From policy perspective, more emphasis should be given to use more equity capital, enlarge both deposits and loans, optimum utilization of assets and should formulate and implement appropriate policy to control credit risk for maximization of shareholders' bank profits. This finding would be more useful to academics in the field of teaching-learning process as well as research activities. Results of this paper may be useful to the regulatory body of banks for regulating, monitoring and controlling various activities of banks for maximization of shareholders' bank profitability.

This paper considers only ROE as shareholders' bank profitability. Such study needs to incorporate net interest margin, ROA and ROCE etc. as measures of bank profitability in future. Future researchers can investigate determinants of bank profitability using longer time periods data, and larger sample sizes. This paper has used few bank-specific variables to evaluate profitability of banks. Inclusion of some other factors such as liquidity, loans to deposit, GDP, inflation, exchange rate etc. may provide better insights. Future researcher can make similar study in other financial institutions rather than commercial banks.

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