Effect of Risk Management on the Profitability of Nepalese Commercial Banks

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Abstract

The study examines the effect of risk management on the profitability of Nepalese commercial. Return on assets and return on equity are selected as the dependent variables. The selected independent variables are interest spread rate, loan loss provision, non-performing loan, capital adequacy ratio, bank size and loan to deposit ratio. The study is based on secondary data of 12 commercial banks with 120 observations for the period from 2013/14 to 2022/23. The data were collected from Banking and Financial Statistics published by Nepal Rastra Bank, reports published by the Ministry of Finance and the annual report of respective banks. The correlation coefficients and regression models are estimated to test the significance and importance of liquidity risk, credit risk, and market risk on the profitability of Nepalese commercial banks.

The study showed that interest spread rate has positive impact on return on assets and return on equity. It shows that increase in interest spread rate leads to increase in return on assets and return on equity. Similarly, loan loss provision has a negative impact on return on assets and return on equity. It implies that increase in loan loss provision leads to decrease in return on assets and return on equity. Moreover, non-performing loan has a negative impact on return on assets and return on equity. It shows that increase in non-performing loan leads to decrease in return on assets and return on equity. Similarly, capital adequacy ratio has a positive impact on return on assets and negative impact on return on equity. It means increase in capital adequacy ratio leads to increase in return on assets and decrease in return on equity. Likewise, bank size has a positive impact on return on assets and return on equity. It means that increase in bank size leads to increase in return on assets and return on equity. Furthermore, loan to deposit have a negative impact on return on assets and return on equity. It means that increase in loan to deposit leads to decrease in return on assets and return on equity.

Keywords: interest spread rate, loan loss provision, non- performing loan, capital adequacy ratio, loan to deposit, return on assets, return on equity

1. Introduction

The soundness of banking institutions is an essential consideration for financial system stability. The efficient and effective performance of the banking industry over time guarantees the financial stability of any nation. Despite the operating costs of holding a large portfolio of loans, bank profitability should increase with a higher ratio of loans to assets as long as interest rates on loans are liberalized and the bank applies markup pricing. Among the different types of risk which are faced by banks, credit risk seems to have more impact on a bank's profitability because a bank's revenue is generated from loans from which interest is derived (Laryea *et al.,* 2016). Banks have faced difficulties over the years for a multitude of reasons. The major cause of serious banking problems continues to be directly related to the relaxed credit standards for borrowers and counterparties, poor portfolio risk management. Risk is an unexpected variation in the future occurrence that could affect in growth process of an organization. The banking industry inherently involves significant risk and uncertainty, which can affect profitability. Recently, banks have faced increased risk exposure as their operations have expanded beyond traditional deposit collection and loan issuance. They now operate in a challenging

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and highly vulnerable environment, heightening the pressure on their profits. Banks have reacted vividly and imaginatively to these new challenges as they move into new areas. Risk management is a significant issue especially in the period of world economic imbalance that has affected the international financial institutions. Risk management involves assessment of and control of risk and screening of the possibility of unforeseen event that may likely affect the performance of the business. Furthermore, due to the immense role played by financial institutions over the years, the study of risk management is important in the current activities of the banking sector. The role banking sector plays in any economy facilitates the provision of finance for development of business in the economy (Njogo, 2012). Risk, in the banking context, is a potentially foreseeable and unpredictable event that hurts bank income and capital. These risks are unavoidable but manageable and controllable (Akbar *et al*., 2022).

Ikponmwosa (2020) examined the impact of risk management on the profitability of Nigerian banks, using panel data from 14 banks. The results showed that loan loss provision to total assets positively affects profitability, while the loan to deposit ratio has a positive but insignificant impact. Capital adequacy ratio and non-performing loans negatively affect profitability but are not significant. Bank size also has an insignificant relationship with profitability. Nelson (2020) revealed that non-performing loan ratio, capital assets ratio and loan loss provision ratio have a negative impact on ROE. However, capital adequacy ratio has a positive contribution to return on assets and the ratio of client loans and short-term financing on return on equity. Thus, credit risk management has a significant impact on profitability. The study also showed that other selected credit risk management indicators have a significant impact on the bank's profitability, such as the loan provision ratio and the clean capital adequacy ratio. Saputera (2021) examined that the effect of credit risk, operational risk, and liquidity risk on the profitability of rural banks in the city. This study found that credit risk has no significant positive effect on profitability. Similarly, the study also observed operational risk has a significant negative effect on profitability. Liquidity risk has a significant positive effect on profitability. Razermera *et al.* (2024) investigated the impact of credit risk, liquidity risk and market risk in the banking sector in South Africa. Several panel regression models were developed to incorporate credit, liquidity, and market risks. The study showed that the primary determinant of bank profitability was the management of non-performing loans, implying that other financial risks may already be appropriately managed or diversified away in the South African context. Gitonga and Barasa (2021) examined risk management and profitability of commercial banks. The study revealed a positive and significant relationship between bank size and profitability.

Oluwaleye *et al.* (2023) revealed that return on asset is negatively impacted by liquidity risk, capital risk and bank size while it significantly and positively impacted marketing risk but insignificantly and positively related to operational risk and credit risk. The study concluded that there is a slight tendency for liquidity risk and capital risk to reduce the return on asset. Hallunovi and Berdo (2018) assessed the relationship between risk management and profitability of commercial banks in Albania. The study concluded that credit risk has a significant impact on the profitability of commercial banks. The study showed that there is a negative relationship between credit risk and profitability. The study showed that capital adequacy has a positive relationship with two profitability variables measured by return on assets and return on equity. Jallali and Zoghlami (2021) examined the impact of risk management on the banks' profitability. The results showed a significant negative impact of overall risk management on the profitability of Islamic banks. However, the management of

the credit and the operational risk seems to enhance the sample banks' profitability. Bashir *et al.* (2023) investigated the effect of Basel capital regulations on the various proxies of the financial performance of the Pakistani commercial banks. The study indicated that Basel II and Basel III capital regulations have affected the banks' profitability differently. Capital regulations of Basel II have positive significant effect on banks profitability while capital requirements of Basel III have statistically insignificant and not affected the financial performance of Pakistani banks, pointing towards the ineffectiveness of Basel III capital regulations. In addition, the study found that capital regulations did not significantly affect bank profitability during the financial crisis of 2008. Overall, the study of the Generalized Method of Moments (GMM) technique showed that Basel capital regulations enhance the financial performance of the Pakistani banking sector. Islamiyah and Sukaris (2023) found that non-performing loans has negative and significant impact on return on assets. Non-performing loans can weaken a bank's capital adequacy ratio if provisions for these loans deplete the bank's capital reserves. A lower capital adequacy ratio may restrict the bank's ability to lend and grow its business, potentially limiting its profitability in the long run. In addition, Anggari and Dana (2020) identified the effect of capital adequacy ratio, third party funds, loan to deposit ratio, bank size on profitability in banking companies on Indonesia Stock Exchange (BEI) using financial reports published on the Indonesia Stock Exchange website. The study concluded that the capital adequacy ratio, third party fund and bank size have a positive and significant effect on profitability. Meanwhile, loan to deposit ratio has a positive and insignificant effect on the profitability of banking companies listed in the Indonesia Stock Exchange.

In the context of Nepal, Thapa and Bhandari (2023) investigated risk management and its impact on profitability of commercial banks in Nepal. The study revealed that capital adequacy ratio, credit to deposit ratio, non-performing loan ratio and liquid assets ratio have significant negative impact on profitability. The study concluded that capital adequacy ratio, credit to deposit ratio, non-performing loan ratio and liquid assets ratio are major explanatory variables of profitability. Gurung *et al.* (2023) examined the loan loss provision maintained by Nepalese commercial banks. The study also analysed the influence of loan loss provision on the profitability of commercial banks in Nepal. The study found that the increased provision for loan losses adversely affects the profitability of commercial banks in Nepal. Dahal *et al.* (2024) analyzed the influence of loan loss provision on the profitability of commercial banks in Nepal. The study found insignificant negative relation between provisions for loan losses with the Nepalese commercial banks' profitability. Balami and Chalise (2023) examined the impact of capital adequacy on the profitability of commercial banks in Nepal, utilizing secondary data from all commercial banks spanning 2013 to 2022. The study concluded that capital adequacy ratio has a positive impact on bank profitability.

The above discussion shows that empirical evidences vary greatly across the studies on the effect of risk management on the profitability of banks. Though there is above-mentioned empirical evidence in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The major objective of this study is to examine the effect of risk management on the profitability of Nepalese commercial banks. Specifically, it examines the effect of loan to deposit ratio, capital adequacy ratio, loan loss provisions, non-performing loans, bank size, and interest spread rate on return on assets and return on equity of Nepalese commercial

banks.

The remainder of this study is organized as follows. Section two describes the sample, data and methodology. Section three presents the empirical results and the final sections draws conclusion.

2. Methodological aspects

The study is based on the secondary data which were gathered from 12 Nepalese commercial banks for the study period from 2013/14 to 2022/23, leading to a total of 120 observations. The study has employed purposive sampling method. The main sources of data include Banking and Financial Statistics published by Nepal Rastra Bank, reports published by Ministry of Finance and the annual report of respective banks. This study is based on descriptive as well as causal comparative research designs. Table 1 shows the list of commercial banks selected for the study along with the study period and number of observations.

Table 1

List of commercial banks selected for the study along with study period and number of observations

S. N.	Name of the banks	Study period	Observations
1	Everest Bank Limited	2013/14-2022/23	10
2	Prime Commercial Bank Limited	2013/14-2022/23	10
3	Citizens Bank International Limited	2013/14-2022/23	10
4	Nepal SBI Bank Limited	2013/14-2022/23	10
5	Agricultural Development Bank Limited	2013/14-2022/23	10
6	NMB Bank Limited	2013/14-2022/23	10
7	NIC Asia Bank Limited	2013/14-2022/23	10
8	Standard Chartered Bank Nepal Limited	2013/14-2022/23	10
9	Siddhartha Bank Limited	2013/14-2022/23	10
10	Sanima Bank Limited	2013/14-2022/23	10
11	Nepal Bank Limited	2013/14-2022/23	10
12	Machhapuchchhre Bank Limited	2013/14-2022/23	10
Total number of observations			**120**

Thus, the study is based on 120 observations.

The model

The model used in the study assume that bank profitability depends upon risk management. The dependent variables selected for the study are return on assets and return on equity. Similarly, the selected independent variables are loan to deposit ratio, capital adequacy ratio, loan loss provisions, non-performing loans, bank size, and interest spread rate. Therefore, the model takes the following form:

$$ROA = \beta_0 + \beta_1 ISR + \beta_2 LLP + \beta_3 NPL + \beta_4 BS + \beta_5 CAR + \beta_6 LDR + e_{it}$$

$$ROE = \beta_0 + \beta_1 ISR + \beta_2 LLP + \beta_3 NPL + \beta_4 BS + \beta_5 CAR + \beta_6 LDR + e_{it}$$

Where,

ROA = Return on assets as measured by the ratio of net income to total assets, in percentage.

ROE = Return on equity as measured by the ratio of net income to total equity, in percentage.

CAR = Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage.

LDR= Loan to deposit ratio as measured by the ratio of total loans by total deposits, in percentage.

LLP = Loan loss provision as measured by ratio of loan loss provision by total loans, in percentage

NPL = Non-performing loan ratio as measured by ratio of non-performing loans to total loans, in percentage.

BS = Bank size as measured as the total assets of the respected banks, Rs. in billions.

ISR = Interest spread rate, in percentage

The following section describes the independent variables used in this study along with the hypothesis formulation.

Loan to deposit ratio

Loan to deposit ratio is a ratio between the bank's total loans and total deposit. Harun (2016) revealed that loan to deposit ratio has a positive and significant effect on ROA. Anggari and Dana (2020) found that loan to deposit ratio has a positive and insignificant effect on bank profitability listed on the Indonesia Stock Exchange. Suroso (2022) determined the effect of the capital adequacy ratio and loan to deposit ratio (LDR) on the profitability of banks listed on the Indonesia Stock Exchange (IDX) for the period 2016 - 2021. The study concluded that capital adequacy ratio and LDR have positive effect on return on assets. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship between loan to total deposit ratio and bank profitability.

Capital adequacy ratio

Capital requirements typically mandate that financial institutions maintain a certain level of capital relative to their risk-weighted assets. Higher capital requirements mean that banks must hold more capital, which limits their ability to extend credit excessively or engage in overly risky activities. This, in turn, reduces the likelihood of insolvency and helps safeguard the overall stability of the financial system (Madugu et al., 2020). Capital levels are indeed a fundamental tool used by regulators to control credit expansion and ensure the stability of financial institutions. By imposing capital requirements, regulators aim to ensure that banks and other financial institutions have enough capital to absorb losses during adverse economic conditions or financial shocks (Olalekan and Adeyinka, 2013). Amissah and Opoku (2023) examined the effect of capital adequacy requirement on profitability of the selected banks listed on Ghana Stock Exchange banks between 2013 and 2018. The study found that capital adequacy ratio has a positive and significant effect on the return on equity. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between capital adequacy ratio and bank profitability.

Non-performing loan

Gitonga and Barasa (2021) examined risk management and profitability of commercial banks. The study revealed a negative and significant relationship between credit risk and profitability. Gnawali (2018) examined the non-performing asset and its effects on profitability of Nepalese commercial banks. The study showed that there is a negative impact of non-performing loan on return on assets in context of Nepalese government banks. Hersugondo *et al.* (2021) examined the role of non-performing asset, capital, adequacy, and insolvency risk on bank performance in Indonesia. The study concluded that non-performing assets, capital adequacy, and insolvency risk have significant negative impact on bank performance. Based on it, this study develops the following hypothesis:

H_3: There is a negative relationship between nonperforming loan and bank profitability.

Loan loss provision

Loan loss provision is an income statement expense set aside to allow for uncollected loans and loan payments. Alhadab and Alsahawneh (2016) examined the impact of loan loss provision on the profitability of bank. The study showed that loan loss provision has a negative impact on the profitability of Jordanian commercial banks. Tahir *et al*. (2014) analyzed the impact of loan loss provision on bank profitability in Pakistan on return on assets (ROA) and return on equity (ROE) as a proxy of profitability. The study revealed that the loss provision has a negative impact on the profitability indicators. Based on it, this study develops the following hypothesis:

H_4: There is a negative relationship between loan loss provision and bank profitability.

Bank size

Ikponmwosa (2020) addressed risk management and Nigerian bank profitability in Nigeria. The result showed that bank size has a significant positive association with ROA and ROE. Vernanda and Widyarti (2016), large companies in general have large total assets and are able to generate large profits as well. The bigger the size, the greater the profitability of the bank. Meidiyustiani (2016) showed that company size has a significant positive effect on profitability. Malik *et al*. (2015) found that bank size has a positive effect on profitability. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between bank size and bank profitability.

Interest spread rate

Interest rate spread is the difference between the interest rate a bank pays and the interest rate. It receives in its income-generating activities. Islamiyah and Sukaris (2023) determined a positive relationship between return on assets and interest rate spreads. The positive effect could be interpreted as an indication of profit-maximizing behavior whereby banks with higher profitability relative to average assets are also inclined to charge higher borrowing rates relative to the deposit rates. Aremu *et al.* (2013) assessed the determinants of bank profitability in Nigeria. The results of the study showed that interest spread is significantly associated with bank profitability in the long run but insignificant in the short run. Owusu-Antwi *et al.* (2017) the study showed that bank spread affect profitability of commercial banks in Ghana positively. Based on it, this study develops the following

hypothesis:

H_6: There is a positive relationship between interest spread rate and bank profitability.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of selected dependent and independent variables during the period 2013/14 to 2022/23.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 12 Nepalese commercial banks for the study period from 2013/14 to 2022/23. The dependent variables are ROA (Return on assets as measured by the ratio of net income to total assets, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), ISR (Interest rate spread as measured by the difference between the interest rate earned on loans and the interest rate paid on deposits, in percentage), LLP (Loan loss provision as measured by the amount set aside to cover potential loan losses, in percentage), LTD (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage), BS (Bank size as measured as the total assets of the respected banks, Rs. in billions) and NPL (Non-performing loan ratio as measured by the ratio of non-performing loan to total loans, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	0.48	3.80	1.66	0.54
ROE	3.79	54.68	15.94	6.74
LDR	48.92	106.51	84.38	9.93
CAR	4.55	23.68	14.07	2.68
LLP	-1.40	2.36	0.25	0.38
NPL	0.06	5.46	1.35	1.21
BS	30.21	364.09	136.02	74.65
ISR	0.00	8.99	3.99	1.44

Source: SPSS output

Correlation analysis

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and the results are presented in Table 3.

Table 3

Pearson's correlation coefficients matrix

This table shows the descriptive statistics of dependent and independent variables of 12 Nepalese commercial banks for the study period from 2013/14 to 2022/23. The dependent variables are ROA (Return on assets as measured by the ratio of net income to total assets, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), ISR (Interest rate spread as measured by the difference between the interest rate earned on loans and the interest rate paid on deposits, in percentage), LLP (Loan loss provision as measured by the amount set aside to cover potential loan losses, in percentage), LTD (Loan to

deposit ratio as measured by the ratio of total loans to total deposits, in percentage), BS (Bank size as measured as the total assets of the respected banks, Rs. in billions) and NPL (Non-performing loan ratio as measured by the ratio of non-performing loan to total loans, in percentage).

Variables	ROA	ROE	LDR	CAR	LLP	NPL	BS	ISR
ROA	1							
ROE	0. 494**	1						
LDR	-0.164	-0.490**	1					
CAR	0.361**	0.339**	0.107	1				
LLP	-0.571**	-0.443**	0.159	-0.042	1			
NPL	-0.048	-0.028	0.045	-0.122	0.141	1		
BS	0.393**	0.457**	.452**	.180*	.355**	0.084	1	
ISR	0.037	0.180*	-0.250**	-0.126	-0.073	0.189*	-00.016	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 3 shows that bank size is positively correlated to return on assets. It shows that increase in bank size leads to increase in return on assets. Similarly, capital adequacy ratio is positively correlated to return on assets. It implies that increase in capital adequacy ratio leads to increase in return on assets. Likewise, there is a negative relationship between non-performing loan and return on assets. It shows that increase in non-performing leads to decrease in return on assets. Similarly, interest spread rate is positively correlated to return on assets. It means increase in interest spread rate leads to increase in return on assets. However, there is a negative relationship between loan loss provision and return on assets. It means that increase in loan loss provision leads to decrease in return on assets. Likewise, there is a negative relationship between loan to deposit and return on assets. It means that increase in loan to deposit leads to decrease in return on assets.

On the other hand, loan to deposit is negatively correlated to return on equity. It shows that increase in loan to deposit leads to decrease in return on equity. Likewise, there is a negative relationship between loan loss provision and return on equity. It shows that increase in loan loss provision leads to decrease in return on equity. However, bank size is positively correlated to return on equity. It means that increase in bank size leads to increase in return on equity. Likewise, there is a positive relationship between capital adequacy ratio and return on equity. It means that increase in capital adequacy ratio leads to increase in return on equity. Similarly, there is a negative relationship between non-performing loan and return on equity. It means that increase in non-performing loan leads to decease in return on equity. Furthermore, there is positive relationship between interest spread rate and return on equity. It means that increase in interest spread rate leads to increase in return on equity.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and results are presented in Table 4 and Table 5. More specifically, Table 4 shows the regression results of loan to deposit ratio, capital adequacy ratio, loan loss provisions, non-performing loans, bank size, and interest spread rate with return on assets of Nepalese commercial banks.

Table 4

Estimated regression results of loan to deposit ratio, capital adequacy ratio, loan loss provisions, non-performing loans, bank size, and interest spread rate with return on assets

The results are based on panel data of 12 commercial banks with 100 observations for the period 2013/14 to 2022/23 by using linear regression model. The model is ROA = β_0 + β_1 ISR + β_2 LLP + β_3 NPL + β_4 BS + β_5 CAR + β_6 LDR + e_{it} where the dependent variable is ROA (Return on assets as measured by the ratio of net income to total assets, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), ISR (Interest rate spread as measured by the difference between the interest rate earned on loans and the interest rate paid on deposits, in percentage), LLP (Loan loss provision as measured by the amount set aside to cover potential loan losses, in percentage), LTD (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage), BS (Bank size as measured as the total assets of the respected banks, Rs. in billions) and NPL (Non-performing loan ratio as measured by the ratio of non-performing loan to total loans, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		LDR	CAR	LLP	NPL	BS	ISR			
1	2.424 (5.719)**	-0.009 (1.807)						0.019	0.540	3.266
2	0.631 (2.527)		0.073 (4.206)**					0.123	0.511	17.688
3	1.873 (37.803)**			-0.818 (7.563)*				0.321	0.449	47.192
4	1.693 (22.550)**				-0.220 (0.522)			0.006	0.547	0.273
5	11.288 (5.437)**					0.870 (4.637)		0.147	0.504	21.500
6	1.608 (10.875)**						0.014 (0.402)	0.007	0.547	0.162
7	1.519 (3.446)**	-0.011 (2.422)*	0.078 (4.525)*					0.158	0.500	12.141
8	1.396 (3.876)*	-0.006 (1.657)	0.071 (5.074)**	-0.771 (7.728)				0.439	0.408	32.063
9	1.338 (3.683)*	-0.007 (1.699)	0.073 (5.179)**	-0.786 (7.818)	0.035 (1.128)			0.440	0.401	24.422
10	8.273 (4.723)*	-0.000 (0.030)	0.073 (5.179)**	-0.654 (6.546)	0.042 (1.411)	0.694 (4.036)		0.506	0.383	25.395
11	8.307 (4.725)*	-0.001 (0.183)	0.084 (6.164)**	-0.648 (6.421)	0.038 (1.269)	0.708 (4.062)	0.015 (0.555)**	0.503	0.384	21.085

Notes:

i. Figures in parenthesis are t-values.
ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
iii. Return on assets is the dependent variable.

Table 4 shows that the beta coefficients for interest spread rate are positive with return on assets. It indicates that interest spread rate has positive impact on return on assets. This finding is similar to the findings of Islamiyah and Sukaris (2023). Similarly, the beta coefficients for non-performing loan are negative with return on assets. It indicates that non-performing loan has a negative impact on return on assets. This finding is consistent with the findings of Gitonga and Barasa (2021). Likewise, the beta coefficients for capital adequacy ratio are positive with return on assets. It indicates that capital adequacy ratio has a positive impact on return on assets. This finding is similar to the findings of Amissah and Opoku (2023). Similarly, the beta coefficients for bank size are positive with return on assets. It indicates that bank size has a positive impact on return on assets. This finding is

consistent with the findings of Ikponmwosa (2020). However, the beta coefficients for loan loss provision are negative with return on assets. It indicates that loan loss provision has a negative impact on return on assets. This finding is similar to the findings of Suroso (2022).

Table 5 shows the regression results of loan to deposit ratio, capital adequacy ratio, loan loss provisions, non-performing loans, bank size, and interest spread rate with return on equity of Nepalese commercial banks.

Table 5

Estimated regression results of loan to deposit ratio, capital adequacy ratio, loan loss provisions, non-performing loans, bank size, and interest spread rate with return on equity

The results are based on panel data of 12 commercial banks with 100 observations for the period 2013/14 to 2022/23 by using linear regression model. The model is ROE = β_0 + β_1 ISR + β_2 LLP + β_3 NPL + β_4 BS + β_5 CAR + β_6 LDR + e_{it} where the dependent variable is ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), ISR (Interest rate spread as measured by the difference between the interest rate earned on loans and the interest rate paid on deposits, in percentage), LLP (Loan loss provision as measured by the amount set aside to cover potential loan losses, in percentage), LTD (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage), BS (Bank size as measured as the total assets of the respected banks, Rs. in billions) and NPL (Non-performing loan ratio as measured by the ratio of non-performing loan to total loans, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		LDR	CAR	LLP	NPL	BS	ISR			
1	44.012 (9.514)**	-0.333 (6.109)**						0.234	5.900	37.321
2	27.913 (8.968)		-0.850 (3.914)**					0.107	6.362	15.322
3	17.952 (26.856)**			-7.838 (5.369)*				0.189	6.069	28.821
4	16.156 (17.413)**				-7.838 (5.369)*			0.008	6.767	0.094
5	154.287 (6.221)**					12.500 (5.580)		0.202	6.022	31.134
6	12.575 (6.999)**						0.843 (1.992)	0.024	6.658	3.969
7	52.482 (10.667)**	-0.312 (6.005)**	0.727 (3.793)*					0.312	5.592	27.969
8	51.367 (11.777)**	-0.268 (5.742)**	0.786 (4.618)**	-6.961 (5.758)				0.460	4.952	34.822
9	51.303 (11.594)**	-0.268 (5.717)**	0.784 (4.553)**	-6.978 (5.698)	-0.040 (0.103)			0.456	4.974	25.897
10	84.211 (3.727)**	-0.236 (4.613)**	0.736 (4.227)**	-6.352 (4.928)	-0.069 (0.181)	3.425 (1.523)		0.461	4.948	21.375
11	84.538 (3.725)**	-0.230 (4.299)**	0.729 (4.143)**	-6.292 (4.833)	-0.038 (0.097)	3.425 (1.523)	0.137 (0.406)**	0.457	4.966	17.710

Notes:

i. Figures in parenthesis are t-values.
ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
iii. Return on equity is the dependent variable.

Table 5 shows that the beta coefficients for interest spread rate are positive with return on equity. It indicates that interest spread rate has positive impact on return on equity. This finding is similar to the findings of Owusu-Antwi *et al.* (2017). However, the beta coefficients

for loan loss provision are negative with return on equity. It indicates that loan loss provision has a negative impact on return on equity. This finding is consistent with the findings of Tahir *et al*. (2014). Similarly, the beta coefficients for non-performing loan are negative with return on equity. It indicates that non-performing loan has a negative impact on return on equity. This finding is similar to the findings of Gnawali (2018). Likewise, the beta coefficients for capital adequacy ratio are positive with return on equity. It indicates that capital adequacy ratio has a positive impact on return on equity. This finding is consistent with the findings of Olalekan and Adeyinka (2013). Moreover, the beta coefficients for bank size are positive with return on equity. It indicates that bank size has a positive impact on return on equity. This finding is similar to the findings of Anggari and Dana (2020).

4. Summary and conclusion

A healthy banking system is more resilient to economic shocks and financial distress. It can withstand negative events such as economic downturns, market volatility, or sudden credit defaults without collapsing. This stability is essential for maintaining confidence in the financial system and preventing systemic crises. Sound banking institutions prioritize effective risk management practices. They assess and mitigate risks in their lending activities, investment portfolios, and operations. By maintaining appropriate levels of capital and liquidity, they can absorb losses and navigate challenging economic environments without jeopardizing their solvency.

This study attempts to analyze the effect of risk management on the profitability of Nepalese commercial banks. The study is based on secondary data of 12 Nepalese commercial banks with 120 observations over the period of 2013/14 to 2022/23.

The study showed that interest spread rate, capital adequacy ratio and bank size have positive effect on return on assets and return on equity of Nepalese commercial banks. Similarly, loan loss provision, non-performing loan, and loan to deposit ratio have negative effect on return on assets and return on equity of Nepalese commercial banks. The study concluded that effective management of these variables is crucial for enhancing the profitability and sustainability of Nepalese commercial banks. The study also concluded that loan to deposit ratio and bank size have most influencing factor that determine the return on equity of Nepalese commercial banks.

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