

Impact of credit, liquidity and market risks on the profitability of Nepalese commercial banks

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Abstract

This study examines the impact of credit, liquidity, and market risks on the profitability of Nepalese commercial banks. Return on assets and return on equity are the selected dependent variables representing profitability. The selected independent variables are non-performing loan, loan loss provision rate, loan to deposit ratio, liquidity ratio, net interest margin, and market risk. The study is based on secondary data of 12 commercial banks with 120 observations for the study period from 2014/15 to 2023/24. The data were collected from Bank Supervision Report published by Nepal Rastra Bank (NRB) and annual reports of the selected commercial banks. The correlation coefficients and regression models are estimated to test the significance and importance of impact of credit, liquidity, and market risks on the profitability of Nepalese commercial banks.

The study revealed that non-performing loan has a negative effect on return on assets and return on equity. It indicates that increase in non-performing loan leads to decrease in return on assets and return on equity. Similarly, loan loss provision rate has a negative effect on return on assets and return on equity. It indicates that increase in loan loss provision rate leads to decrease in return on assets and return on equity. Likewise, liquidity ratio has a negative effect on return on assets and return on equity. It indicates that increase in liquidity ratio leads to decrease in return on assets and return on equity. In addition, net interest margin has a positive effect on return on assets and return on equity. It indicates that increase in net interest margin leads to increase in return on assets and return on equity. Furthermore, market risk has a positive effect on return on assets and return on equity. It indicates that increase in market risk leads to increase in return on assets and return on equity.

Keywords: non-performing loan, loan loss provision rate, loan to deposit ratio, liquidity ratio, net interest margin, market risk, return on assets, return on equity

1. Introduction

The sustainable development of a nation's economy is closely intertwined with the robustness and efficiency of its banking sector. Commercial banks, acting as key financial intermediaries, are critical for mobilizing savings and directing capital toward productive economic sectors, which in turn stimulates growth and facilitates investment (Bernard Azolibe, 2022). This core function of transforming deposits into productive loans enables banks to influence aggregate demand and economic cycles, making them pivotal in implementing monetary policy and fostering stable economic progress (Arias, 201). The profitability generated from these activities, primarily from the interest income spread, is a cornerstone of banking stability. A profitable banking sector not only funds ongoing operations but also builds the internal capital necessary for strategic investment, risk absorption, and meeting regulatory requirements. A stable and profitable banking system boosts investor confidence, supports countercyclical lending, and is essential for both microeconomic activity and macroeconomic stability (Saadaoui and Hamza, 2024).

Credit risk is a crucial factor in bank profitability, especially in developing financial systems where loan portfolios are the primary source of income. Financial institutions face losses when borrowers fail to meet their debt obligations, a phenomenon that can lead to financial instability and inefficiencies (Mei et al., 2019). The most common indicators used to quantify credit risk are the non-performing loan ratio and the loan loss provision rate, which are widely used in empirical analyses to assess asset quality and provisioning adequacy (Jreisat, 2020). A high NPL ratio, which measures the proportion of total loans in

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or near default, serves as a leading indicator of a bank's asset quality and borrower creditworthiness. An increase in this ratio signals deteriorating creditworthiness, ineffective credit screening, or adverse macroeconomic conditions (Sang Tang My, 2022). This directly erodes profitability by increasing non-earning assets and reducing the bank's primary source of income. To mitigate this, banks are required to set aside a portion of their earnings as provisions for expected loan losses, measured by the loan loss provision rate. While a higher loan loss provision rate reflects proactive risk buffering and prudent management, it simultaneously reduces a bank's current income and compresses profitability in the short term (Berrios, 2013). The implications of unmanaged credit risk extend beyond the balance sheet; it can constrain a bank's lending capacity, hinder liquidity circulation, reduce investor confidence, and ultimately elevate the probability of insolvency (Boahene et al., 2012). Siddique et al. (2022) assessed the effect of credit risk management and bank-specific factors on South Asian commercial banks' financial performance (FP). The results indicated that non-performing loan, cost-efficiency ratio and liquidity ratio have significantly negatively related to financial performance (return on asset and return on equity), while capital adequacy ratio and average lending rate have significantly positively related to the financial performance of the Asian commercial banks. Eltweri et al. (2024) examined the relationship between liquidity and bank profitability in the post-Basel III era. Based on market presence and influence, 10 publicly traded UK commercial banks were selected for 2015–2021. The findings showed that the relationship between liquidity risk indicators and bank profitability is contingent upon the interaction of several dimensions that range from the internal aspects of the banks themselves to general macroeconomic factors. The study indicate that banks have to balance regulatory compliance and efficiency in their operations. While high levels of capital bring strength in times of bad economic conditions, they also limit investing the same amount in other profitable operations.

Liquidity, which is a bank's ability to meet its short-term financial obligations as they become due, is a key determinant of both operational continuity and financial performance (Omri, 2022). Maximizing the use of funds in high-yield, illiquid loans can boost short-term profitability, but it increases exposure to liquidity risk. Conversely, holding excessive low-yield liquid assets enhances safety and public confidence but dilutes potential returns by creating an opportunity cost (Onyekwelu et al., 2018). Bank management faces a challenging equilibrium in this situation. An overly aggressive lending strategy might boost short-term returns but can lead to severe solvency issues if sudden liquidity demands arise from depositor withdrawals or a credit market freeze (Roman and Sargu, 2015). An excessively conservative approach, on the other hand, comes at a significant opportunity cost, potentially signaling inefficient management. Fadun and Silwimba (2023) examined the impacts of credit risk management on the financial performance of commercial banks, using five (5) first-tier banks in Nigeria. The long-run co-integration results revealed that non-performing loans negatively and significantly affects return on assets in Nigeria, and expected credit loss impairment provisions positively and substantially affects return on assets in Nigeria. The findings suggest that credit risk management has insignificant positive impacts on the financial performance of commercial banks in Nigeria.

Market risk is the potential for financial loss due to unfavorable movements in market variables like interest rates and foreign exchange rates (Tzouvanas, 2024). Market risk is a systemic concern that affects the entire banking sector. A key metric for measuring this risk, especially interest rate risk, is the net interest margin (NIM), which represents the spread between a bank's interest income and its interest expenses. A declining NIM, often caused by rising funding costs, increased competition, or tighter monetary policy, directly erodes a

bank's core profitability (Batrancea and Bechis, 2022). This risk is amplified by asset-liability mismatches, which occur when the timing and sensitivity of repricing differ between a bank's assets and liabilities. In emerging economies, market risk is further complicated by foreign exchange movements and inflation, where currency depreciation can inflate the cost of foreign-denominated liabilities and high inflation can erode the real value of asset returns (Liu, 2025). Consequently, the effective management of market risk through advanced tools like stress testing and dynamic hedging is a strategic necessity for ensuring sustainable profitability and institutional resilience. Akther et al. (2023) evaluated how bank-specific factors and macroeconomic determinants affect the profitability of commercial banks in Bangladesh. This study demonstrates that bank-specific factors and macroeconomic determinants are crucial catalysts in ensuring financial institutions' continuity and stable performance. The study showed that all bank-specific factors except capital adequacy and deposit affect return on assets statistically significantly. The study also showed that among the macroeconomic determinants, inflation rate has a significant and positive effect on return on assets, while exchange rate significantly negatively impacts bank profitability.

In the context of Nepal, Devkota et al. (2025) assessed the determinants of profitability in the context of Nepalese commercial banks. The study is based on secondary data of 10 commercial banks with 100 observations for the period from 2013/14 to 2022/23. The major conclusion of this study is that firm size and capital adequacy ratio have a positive impact on return on assets and return on equity. However, total debt to total equity and non-performing loans have a negative impact on return on assets and return on equity. The study showed that higher levels of debt and non-performing loans can reduce profitability, while an increase in total assets lead to better asset utilization or improved profitability. The study also concluded that there is an essential role of capital adequacy in enhancing financial performance, particularly in boosting return on assets and return on equity. Poudyal et al. (2025) examined the effect of liquidity risk, credit risk, and market risk on the profitability of Nepalese commercial banks. The study showed that interest spread rate, capital adequacy ratio and net interest margin have positive effect on return on assets and return on equity of Nepalese commercial banks. Similarly, loan loss provision, non-performing loan, leverage and loan to deposit ratio have negative effect on return on assets and return on equity of Nepalese commercial banks. The study concluded that key financial metrics, such as the interest spread rate, capital adequacy ratio, and net interest margin, positively influence the return on assets (ROA) and return on equity (ROE), thereby contributing to the overall financial health and stability of Nepalese commercial banks. Neupane (2020) investigated the key determinants of profitability of Nepalese commercial banks. The study concluded that the profitability of Nepalese commercial banks measured by return on assets is significantly influenced by the external factors. Among external factors, industry specific factors have high degree of impact on return on assets. Further, the profitability measured by net interest margin (NIM) is significantly influenced only by capital adequacy, absolute number of branches and annual inflation rate.

The above discussion shows that empirical evidences vary greatly across the studies on the effect of credit, liquidity and market risks on the bank profitability. 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 the study is to examine the impact of credit, liquidity and market risks on the profitability of Nepalese commercial banks. Specifically, it examines the

relationship of non-performing loan, loan loss provision rate, loan to deposit ratio, liquidity ratio, net interest margin and market risk with the profitability 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 section draws the conclusion.

2. Methodological aspects

The study is based on the secondary data which were collected from 12 Nepalese commercial banks for the study period from 2014/15 to 2023/24, leading to a total of 120 observations. The data were collected from Bank Supervision Report published by Nepal Rastra Bank (NRB) and annual reports of the selected commercial 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 commercial banks	Study period	Observations
1	Global IME Bank Limited	2014/15-2023/24	10
2	NIC Asia Bank Limited	2014/15-2023/24	10
3	Kumari Bank Limited	2014/15-2023/24	10
4	Prabhu Bank Limited	2014/15-2023/24	10
5	Himalayan Bank Limited	2014/15-2023/24	10
6	Nepal Bank Limited	2014/15-2023/24	10
7	Agricultural Development Bank Limited	2014/15-2023/24	10
8	Siddhartha Bank Limited	2014/15-2023/24	10
9	Everest Bank Limited	2014/15-2023/24	10
10	NMB Bank Limited	2014/15-2023/24	10
11	Sanima Bank Limited	2014/15-2023/24	10
12	Rastriya Banjiya Bank Limited	2014/15-2023/24	10
Total number of observations			120

Thus, the study is based on the 120 observations.

The model

The model used in this study assumes that profitability depends upon non-performing loan, loan loss provision rate, loan to deposit ratio, liquidity ratio, net interest margin, and market risk. The dependent variables selected for the study are return on assets and return on equity. Therefore, the models take the following forms:

$$ROA_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 LLPR_{it} + \beta_3 LDR_{it} + \beta_4 LR_{it} + \beta_5 NIM_{it} + \beta_6 MR_{it} + \varepsilon$$

$$ROE_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 LLPR_{it} + \beta_3 LDR_{it} + \beta_4 LR_{it} + \beta_5 NIM_{it} + \beta_6 MR_{it} + \varepsilon$$

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.

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

NIM = Net interest margin as measured by the ratio of net interest income to bank's interest earning assets, in percentage.

LR = Liquidity ratio as measured by the ratio of liquid assets to current liabilities or total deposits, in percentage.

MR = Market risk as measured by the ratio of risk-weighted exposure for market risk to total risk exposure, in percentage.

LLPR = Loan loss provision as measured by the ratio of loan loss provision to total loans, in percentage.

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

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

Non-performing loan

The non-performing loan (NPL) ratio is a critical indicator used to assess the credit risk exposure and asset quality of commercial banks (Do et al., 2020). A higher NPL ratio signals deteriorating asset quality and ineffective credit risk management, which can severely and negatively influence profitability (Khan et al., 2020). The consequences of high NPLs extend beyond immediate financial losses; they tie up capital that could be used for new lending, increase administrative costs associated with recovery efforts, and can damage a bank's reputation. Akter and Roy (2017) assessed the impacts of non-performing loan on profitability of the banking sector of Dhaka Stock Exchange. The study found a negative relationship of non-performing loan with the profitability. Singh et al. (2021) revealed a negative effect of non-performing loan on profitability in the context of Nepalese commercial banks. Based on it, the study develops the following hypothesis:

H₁: There is a negative relationship of non-performing loan with the bank profitability.

Loan loss provision rate

The loan loss provision rate is a key financial metric that gauges a bank's preparedness to absorb expected losses from its non-performing assets, acting as a forward-looking measure of credit risk (Harris et al., 2018). It represents the portion of a bank's income that is prudently allocated to cover anticipated losses from borrower defaults and is widely used to assess asset quality and the conservativeness of a bank's provisioning policy (Dal Maso et al., 2024). An elevated LLPR often reflects an increased level of perceived credit risk. While higher provisions are essential for enhancing long-term financial stability, they simultaneously reduce short-term earnings by acting as a direct charge against profits (Bassanini and Reviglio, 2011). Ahmad et al. (2014) assessed the impact of loan loss provision on bank profitability in Pakistan. The results showed that more loan loss provision offers less profitability and instability of the bank. Pelealu and Worang (2018) revealed that there is a negative relationship between loan loss provision and the profitability of the banks listed in Bursa Efek Indonesia (BEI). Based on it, the study develops the following hypothesis:

H₂: There is a negative relationship of loan loss provision rate with the bank profitability.

Loan to deposit ratio

The loan to deposit ratio is a primary liquidity indicator that reflects how a bank uses its stable deposit base for lending and generating income (Sari and Septiano, 2020). While a high LDR can signal an aggressive and potentially profitable lending strategy, it also increases liquidity risk and funding pressure (De Vuyst and Rotsaert, 2019). Conversely, a low LDR suggests excess liquidity and a conservative approach that might miss profitable opportunities. Anggari and Dana (2020) assessed the effect of capital adequacy ratio, third party funds, loan to deposit ratio, bank size on profitability in banking companies on IDX. The study found a positive relationship of loan to deposit ratio and bank size with the bank profitability. Setiawan et al. (2021) revealed that capital adequacy ratio, loan to deposit ratio has a positive and significant influence toward profitability in State Owned Banks. Hakim (2017) assessed the Influence of non-performing loan and loan to deposit ratio on the level of conventional bank health in Indonesia. The study showed that non-performing loan has a negative effect and loan to deposit ratio has a positive effect on the profitability of conventional banks in Indonesia. Based on it, the study develops the following hypothesis:

H₃: There is a positive relationship of loan to deposit ratio with the bank profitability.

Liquidity ratio

The liquidity ratio measures a bank's capacity to meet its short-term liabilities using its most liquid assets, reflecting its ability to withstand unexpected deposit withdrawals and manage day-to-day operations without resorting to emergency borrowing (Al Nimer et al., 2015). While a high liquidity ratio enhances solvency and encourages depositor and regulator confidence, it may also imply an underutilization of funds that could otherwise be invested in higher-return assets like loans, thus creating a fundamental trade-off between safety and profitability (Madushanka and Jathurika, 2018). Larrey et al. (2013) assessed the relationship between liquidity and profitability of listed banks in Ghana. The study found a negative association between liquidity and bank profitability. Similarly, Saleem and Rehman (2011) revealed that excess liquidity has adverse effect on the profitability of the banks. According to Hirindu Kawshala (2017), liquidity ratio has a negative effect on the bank profitability. Based on it, the study develops the following hypothesis:

H₄: There is a negative relationship of liquidity ratio with the bank profitability.

Net interest margin

Net interest margin is a key indicator of a bank's core profitability and operational efficiency, representing the difference between interest income and interest paid on liabilities relative to its interest-earning assets (Ahmad and Matemilola, 2013). It also serves as a primary proxy for a bank's exposure to market risk, as it is highly sensitive to changes in market interest rates (Ben Naceur and Goaied, 2008). Nguyen (2012) examined the relationship between net interest margin and noninterest income using a system estimation approach. The study found a strong, positive, and significant relationship between NIM and bank profitability. Larrey et al. (2013) assessed the relationship between net interest margin and return on assets of listed banks in Ghana. The study showed that a higher NIM directly translates to increase Return on Assets (ROA) and Return on Equity (ROE), suggesting that effective interest income management and spread pricing are primary drivers of stronger financial performance. Durguti et al. (2014) showed that net interest margin is a significant determinants of banks' profitability in the Kosovo Banking System. Based on it, the study develops the following hypothesis:

H₅: There is a positive relationship of net interest margin with the bank profitability.

Market risk

Market risk refers to the potential for losses in a bank's financial position resulting from adverse fluctuations in market variables such as interest rates, foreign exchange rates, equity prices, and commodity prices (Heggstad, 1977). This type of risk is largely external and systemic, meaning it is beyond the direct control of individual banks and can significantly influence a bank's asset valuations, earnings, and overall profitability (Badawi et al., 2017). Fahrul and Rusliati (2016) found a negative relationship, suggesting that banks incapable of effectively managing their exposure to market dynamics through sophisticated trading and hedging strategies can reduce their returns. Duho et al. (2020) reported a negative impact, particularly from unhedged exposure to interest rate and exchange rate volatility, which can erode earnings and increase funding costs. Ekinici (2016) found a negative effect of credit and market risk on bank performance in the context of Turkey. Based on it, the study develops the following hypothesis:

H₆: There is a negative relationship of market risk with the bank profitability.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of selected dependent and independent variables during the period 2014/15 to 2023/24.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 12 Nepalese commercial banks for the study period of 2014/15 to 2023/24. The dependent variables are ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are NPL (Nonperforming loan as measured by the ratio of non-performing loans to total loans, in percentage), LLPR (Loan loss provision ratio as measured by the ratio of total loan loss provision to total loans and advance, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage), LR (Liquidity ratio as measured by the ratio of total liquid assets to total deposit or current liabilities, in percentage), NIM (Net interest margin as measured by the ratio of net interest income to total asset, in percentage) and MR (Market risk as measured by the ratio of risk weighted exposure for market risk to total risk exposure, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	0.00	3.22	1.41	0.60
ROE	0.01	44.22	13.78	6.34
NPL	0.01	8.83	2.15	1.74
LLPR	0.01	8.93	2.63	1.58
LDR	58.46	107.01	83.84	7.91
LR	19.00	45.58	28.59	5.20
NIM	1.82	5.56	3.07	0.69
MR	0.02	4.42	0.60	0.78

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 bivariate Pearson's correlation coefficients of dependent and independent variables of 12 Nepalese commercial banks for the study period from 2014/15 to 2023/24. The dependent variables are ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are NPL (Nonperforming loan as measured by the ratio of non-performing loans to total loans, in percentage), LLPR (Loan loss provision ratio as measured by the ratio of total loan loss provision to total loans and advance, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage), LR (Liquidity ratio as measured by the ratio of total liquid assets to total deposit or current liabilities, in percentage), NIM (Net interest margin as measured by the ratio of net interest income to total asset, in percentage) and MR (Market risk as measured by the ratio of risk weighted exposure for market risk to total risk exposure, in percentage).

Variables	ROA	ROE	NPL	LLPR	LDR	LR	NIM	MR
ROA	1							
ROE	0.611**	1						
NPL	-0.097	-0.265**	1					
LLPR	-0.241**	-0.355**	0.776**	1				
LDR	0.004	-0.246**	-0.392**	-0.191*	1			
LR	-0.08	-0.079	0.290**	0.241**	-0.551**	1		
NIM	0.590**	0.068	.320**	0.159	0.03	-0.077	1	
MR	0.201*	0.101	-0.277**	-0.275**	-0.016	0.046	0.033	1

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

Table 3 reveals that non-performing loan has a negative relationship with return on assets. It indicates that increase in non-performing loan leads to decrease in return on assets. Similarly, loan loss provision rate has a negative relationship with return on assets. It indicates that increase in loan loss provision rate leads to decrease in return on assets. The result also shows that loan to deposit ratio has a positive relationship with return on assets. It indicates that increase in loan to deposit ratio leads to increase in return on assets. Likewise, liquidity ratio has a negative relationship with return on assets. It indicates that increase in liquidity ratio leads to decrease in return on assets. In addition, net interest margin has a positive relationship with return on assets. It indicates that increase in net interest margin leads to increase in return on assets. Furthermore, market risk has a positive relationship with return on assets. It indicates that increase in market risk leads to increase in return on assets.

Similarly, the study reveals that non-performing loan has a negative relationship with return on equity. It indicates that increase in non-performing loan leads to decrease in return on equity. Similarly, loan loss provision rate has a negative relationship with return on equity. It indicates that increase in loan loss provision rate leads to decrease in return on equity. The result also shows that loan to deposit ratio has a negative relationship with return on equity. It indicates that increase in loan to deposit ratio leads to decrease in return on equity. Likewise, liquidity ratio has a negative relationship with return on equity. It indicates that increase in liquidity ratio leads to decrease in return on equity. In addition, net interest margin has a positive relationship with return on equity. It indicates that increase in net interest margin leads to increase in return on equity. Furthermore, market risk has a positive relationship with return on equity. It indicates that increase in market risk 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 non-performing loan, loan loss provision rate, liquidity ratio,

loan to deposit ratio, net interest margin, and market risk on return on assets of Nepalese commercial banks.

Table 4

Estimated regression results of non-performing loan, loan-loss provision ratio, loan to deposit ratio, liquidity ratio, net interest margin and market risk on return on assets

The results are based on panel data of 12 commercial banks with 120 observations for the period of 2014/15-2023/24 by using the linear regression model and the model is $ROA_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 LLPR_{it} + \beta_3 LDR_{it} + \beta_4 LR_{it} + \beta_5 NIM_{it} + \beta_6 MR_{it} + \varepsilon$ where the dependent variable is ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage). The independent variables are NPL (Nonperforming loan as measured by the ratio of non-performing loans to total loans, in percentage), LLPR (Loan loss provision ratio as measured by the ratio of total loan loss provision to total loans and advance, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage), LR (Liquidity ratio as measured by the ratio of total liquid assets to total deposit or current liabilities, in percentage), NIM (Net interest margin as measured by the ratio of net interest income to total asset, in percentage) and MR (Market risk as measured by the ratio of risk weighted exposure for market risk to total risk exposure, in percentage).

Model	Intercept	Regression coefficients of						Ad. R_bar ²	SEE	F-value
		NPL	LLPR	LDR	LR	NIM	MR			
1	1.478 (16.852)**	-0.034 (1.063)						0.001	0.603	1.131
2	1.648 (15.748)**		-0.092 (2.693)**					0.050	0.588	7.254
3	1.381 (2.337)*			0.001 (0.041)				0.008	0.605	0.002
4	1.671 (5.400)**				-0.009 (0.870)			0.002	0.604	0.757
5	-0.187 (0.911)					0.518 (7.932)**		0.342	0.489	62.916
6	1.313 (19.187)**						0.154 (2.223)*	0.032	0.593	4.943
7	1.655 (15.907)**	0.078 (1.594)	-0.158 (2.947)**					0.062	0.584	4.945
8	1.555 (2.367)*	0.081 (1.520)	-0.160 (2.909)**	0.001 (0.155)				0.054	0.586	3.277
9	1.930 (1.973)	0.080 (1.486)	-0.156 (2.794)**	0.001 (0.133)	-0.007 (0.520)			0.048	0.588	2.510
10	0.705 (0.941)	-0.071 (1.631)	-0.085 (1.979)*	0.010 (1.508)	-0.002 (0.161)	0.611 (9.398)**		0.459	0.443	21.197
11	0.664 (0.884)	-0.063 (1.424)	-0.082 (1.923)	0.010 (1.423)	-0.001 (0.064)	0.602 (9.120)**	0.051 (0.915)	0.458	0.444	17.778

Notes:

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

Table 4 shows that the beta coefficients for non-performing loans 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 Akter and Roy (2017). Likewise, the beta coefficients for loan loss provision ratio are negative with return on assets. It indicates that loan loss provision ratio has a negative impact on return on assets. This finding is similar to the findings of Bassanini and Reviglio (2011). Similarly, the beta coefficients for loan to deposit ratio are positive with return on assets. It indicates that loan to deposit ratio has a positive impact on return on assets. This finding is consistent with the findings of De Vuyst and Rotsaert (2019). Likewise, the beta coefficients for liquidity ratio are negative with return on assets. It indicates that liquidity ratio has a negative impact on return on assets. This finding is similar to the findings of Hirindu Kawshala (2017). Likewise, the beta coefficients for net interest margin are positive with return on assets. It indicates that net interest margin

has a positive impact on return on assets. This finding is similar to the findings of Lartey et al. (2013). Furthermore, the beta coefficients for market risk are positive with return on assets. It indicates that market risk has a positive impact on return on assets. This finding is similar to the findings of Ekinici (2016).

Table 5 shows the estimated regression results of non-performing loan, loan loss provision rate, liquidity ratio, loan to deposit ratio, net interest margin, and market risk on return on equity of Nepalese commercial banks.

Table 5

Estimated regression results of non-performing loan, loan loss provision ratio, loan to deposit ratio, liquidity ratio, net interest margin and market risk on return on equity

The results are based on panel data of 12 commercial banks with 120 observations for the period of 2014/15-2023/24 by using the linear regression model and the model is $ROE_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 LLPR_{it} + \beta_3 LDR_{it} + \beta_4 LR_{it} + \beta_5 NIM_{it} + \beta_6 MR_{it} + \varepsilon$ 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 NPL (Nonperforming loan as measured by the ratio of non-performing loans to total loans, in percentage), LLPR (Loan loss provision ratio as measured by the ratio of total loan loss provision to total loans and advance, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage), LR (Liquidity ratio as measured by the ratio of total liquid assets to total deposit or current liabilities, in percentage), NIM (Net interest margin as measured by the ratio of net interest income to total asset, in percentage) and MR (Market risk as measured by the ratio of risk weighted exposure for market risk to total risk exposure, in percentage).

Model	Intercept	Regression coefficients of						Ad. R_bar ²	SEE	F-value
		NPL	LLPR	LDR	LR	NIM	MR			
1	15.858 (17.730)**	-0.967 (2.984)**						0.062	6.144	8.905
2	17.534 (16.534)**		-1.425 (4.124)**					0.119	5.956	17.007
3	30.304 (5.027)**			-0.197 (2.753)**				0.052	6.176	7.581
4	16.540 (5.080)**				-0.097 (0.862)			0.002	6.351	0.743
5	11.859 (4.433)**					0.625 (0.735)		0.004	6.357	0.541
6	13.285 (18.172)**						0.818 (1.104)	0.002	6.339	1.220
7	17.543 (16.457)**	0.096 (0.192)	-1.507 (2.740)**					0.111	5.981	8.452
8	43.592 (6.957)**	-0.747 (1.469)	-1.077 (2.053)*	-0.303 (4.211)**				0.222	5.594	12.351
9	60.457 (6.645)**	-0.812 (1.630)	-0.889 (1.715)	-0.408 (4.983)**	-0.294 (2.508)*			0.256	5.471	11.258
10	56.636 (6.258)**	-1.281 (2.440)*	-0.667 (1.293)	-0.435 (5.380)**	-0.269 (2.331)*	1.905 (2.424)*		0.287	5.359	10.563
11	56.988 (6.270)**	-1.347 (2.514)*	-0.686 (1.324)	-0.440 (5.402)**	-0.261 (2.244)*	1.989 (2.491)*	0.437 (0.650)	0.283	5.372	8.829

Notes:

- Figures in parenthesis are t-values.
- The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
- Operating expenses is the dependent variable.

Table 5 shows that the beta coefficients for non-performing loans are negative with return on equity. It indicates that non-performing loan has a negative impact on return on equity. This finding is consistent with the findings of Singh et al. (2021). Likewise, the beta coefficients for loan loss provision ratio are negative with return on equity. It indicates that loan loss provision ratio has a negative impact on return on equity. This finding is similar to the findings of Pelealu and Worang (2018). Similarly, the beta coefficients for loan to deposit

ratio are negative with return on equity. It indicates that loan to deposit ratio has a negative impact on return on equity. This finding is consistent with the findings of Setiawan et al. (2021). Likewise, the beta coefficients for liquidity ratio are negative with return on equity. It indicates that liquidity ratio has a negative impact on return on equity. This finding is similar to the findings of Saleem and Rehman (2011). Likewise, the beta coefficients for net interest margin are positive with return on equity. It indicates that net interest margin has a positive impact on return on equity. This finding is similar to the findings of Durguti et al. (2014). Furthermore, the beta coefficients for market risk are positive with return on equity. It indicates that market risk has a positive impact on return on equity. This finding is similar to the findings of Duho et al. (2020).

4. Summary and conclusion

The sustainable development of a nation's economy is closely linked to the health of its banking sector. Commercial banks are primary financial intermediaries, mobilizing savings and allocating capital to drive economic growth. The profitability of these banks is a cornerstone of financial stability, as it funds operations, absorbs risks, and ensures regulatory compliance. However, the process of financial intermediation inherently exposes banks to credit, liquidity, and market risks that can threaten their profitability and solvency. Failure to manage these risks can lead to significant losses and instability, making effective risk control paramount for institutional resilience and the overall health of the economy.

This study attempts to analyze the impact of credit, liquidity, and market risks on the profitability of Nepalese commercial banks. The study is based on secondary data from 12 commercial banks, with 120 observations for the study period from 2014/15 to 2023/24.

The major conclusion of the study is that non-performing loan, loan loss provision rate and liquidity ratio have negative effect on return on assets. However, loan to deposit ratio, net interest margin and market risk have positive effect on return on assets. Similarly, the study also shows that non-performing loan, loan to deposit ratio, loan loss provision rate and liquidity ratio have negative effect on return equity assets. However, net interest margin and market risk have positive effect on return on equity. The study concludes that net interest margin is the most influential factor and a primary driver of profitability for Nepalese commercial banks.

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