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Impact of the Covid-19 Pandemic on the Financial Health of Nepalese Development Banks: A Comparative Analysis

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Abstract

Purpose: *This research aims to evaluate the impact of the COVID-19 pandemic on the financial health of Nepalese development banks by comparing their financial ratios before and after the pandemic outbreak. It seeks to identify areas of strength and weakness enabling stakeholders to make informed decisions regarding the sector's stability and prospects.*

Methods: *Descriptive research design with a longitudinal comparative approach has been adopted. Financial ratios are calculated for six selected development banks for the period of 2017-2023. Mean ratios are computed for pre-COVID and post-COVID periods, and percentage changes are analysed using paired sample t-tests.*

Results: *The analysis reveals significant differences financial ratios during the periods of pre and post-COVID including shifts in asset allocation, increased non-performing loans, reduced capital adequacy, improved market valuations, and decreased profitability ratios.*

Conclusion: *The study demonstrates the pandemic's wide-ranging impact on Nepal's development banking sector, highlighting the need for effective risk management, capital planning, and strategic changes to maintain financial stability and to facilitate effective recovery.*

Keywords: Bank performance metrics, COVID-19, development bank, financial analysis, ratio analysis

I. Introduction

Development banks play a crucial role in driving economic growth by attracting funds and strategically channellings them into vital sectors, including agriculture, infrastructure, and

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small-to-medium enterprises. Research by (Zaenal, 2021) indicates that under effective management, businesses thrive with strong profitability, controlled risks, and expanded distribution networks. Before the COVID-19 pandemic, Nepal's development banking sector was on an upward trajectory, experiencing substantial growth driven by open policies, increased earnings, and rural-to-urban migration (Adhikari, 2020; Raut, 2020).

However, the prosperity of the country was shattered by the advent of a pandemic in 2020 (Giri, 2021). Economic shocks, rising rates of non-performing loans (Nepal Rastra Bank, 2022a) and an increase in risk aversion affected significantly the development banks which necessitated change and resilience measures (Oli, 2021). The current challenges that the pandemic has exposed include economic recessions, contracting profit margins and markets, high risk of credit default to consumers, and a shift in customer loyalty patterns; all these have negatively influenced performance (Musa, 2022; Koirala& Acharya, 2020; Pokhrel, 2023).

Although some earlier studies examined various aspects of development bank performance in Nepal (Paudel, 2019; Budhathoki, 2020; Gwachha, 2019), there is hardly any meaningful comparative analysis of the contemporary period post-COVID-19. Apart from that, there is always the need to understand and gauge the severity of COVID-19 pandemic that chocked the overall banking sector, especially the development banks which are the pillars for infrastructural development (i.e. agriculture sector, hydropower projects, industrial sector etc.) in the least development country like Nepal. In addition, it is also imperative to comparatively examine the different financial performance indicators to insureand determine the financial health of development banks. Therefore, this research tries to fill this gap by comparing the financial performance ratios of development banks before, during and after the pandemic using ratio and trend analysis methods and provides the suggestions for the development of the necessary strategies required to tackle the likely shortcoming for the long-term sustainability.

Finally, the research question; Are there any significant differences in the financial performance indicators of the development banks before and after the COVID-19 pandemic?was posed to address the research gap for the exploration.

II. Reviews

The development banking sector has changed quite significantly over the years in Nepal. Initially, establishment of Nepal Industrial and Development Corporation (NIDC) paved way for this current scenario (Nepal Rastra Bank, 2023). The main aim of setting up Development banks (DBs) was to promote financial inclusion and foster balanced growth across every province and sector in the country (Nepal Rastra Bank, 2017). There were 88 development banks at the peak in 2012, which was reduced to 17 as of 2022 with the pathway opened for merger and acquisition along with compliance to meet increased paid-up requirements, with eight being national-level and nine of regional-based operations (Nepal Rastra Bank, 2022b, 2023).

It is important that the effectiveness and sustainability of development banks be evaluated through financial performance. Profitability is a simple perception of financial performance which evaluates how a company effectively utilizes its resources, how it generates sustainable gains (White, 2011) manages risks prudently and creates value for shareholders (Kyere, 2021). It requires a blend of quantitative and qualitative elements (Damayanti, 2022) such as operational efficiency, strategic finance management, and skilful handling of economic uncertainties (Nivedha, 2020). Therefore, looking at the specific case of Nepal's development banks, to ensure stability and economic progress, a thorough analysis on the subject of the banks' financial performance is mandatory (Mishra, 2021).

Financial ratio analysis emerges as a potent tool for evaluating financial performance. As defined by Penman (2013) financial ratio analysis can be termed as the process utilized to analyse the financial statements of a company to determine its financial performance while rendering informed decisions about its long-term future. These ratios offer insights into an enterprise's profitability, efficiency, liquidity, and solvency (Gitman, 2015).

Furthermore, financial ratios are essential for assessing the financial performance of Nepal's development banks for a variety of reasons. They provide significant insights into the profitability, risk management, efficiency, and decision-making processes of the banks (Verma, 2021). In addition, they facilitate the identification of areas for improvement by enabling comparisons with peer group measurements and industry standards. Besides, among stakeholders like investors, regulators, and depositors, financial ratios are useful communication tools that promote openness and trust (Gitman, 2015)

Numerous studies highlighted financial ratios' role in assessing bank performance (Bhattarai, 2021; Erdoğan, 2023;Shrestha, 2017; Moussa, 2022) found profitability and liquidity ratios significant effect on financial performance in Nepal and Tunisia. Besides and Jarrow (2013) emphasized leverage ratios' importance in navigating risks. In addition, Khati, (2020) and Das, (2022) studied liquidity's implications on Nepalese banks' profitability and liability management. Further, Rawal (2021) and Pathak (2020) noted turnover ratios' value in evaluating corporate health.

These studies explore comprehensive ratio analyses' necessity for insights into financial performance and demonstrate that effective use of ratio analysis can significantly enhance the performance and sustainability of development banks.

III. Methodology

Research Design

This study employed a descriptive research design with a longitudinal comparative approach to analyse the financial performance of development banks in Nepal across six years, from 2017 to 2023, covering the pre-post COVID era. It is necessary to conduct this study in order to determine and compare financial performance indicators across different categories of development banks by using financial ratio analysis and paired sample t-tests. This detailed examination aimed at recognizing leading banks on the basis of their strong financial ratios thereby providing an insight into the relative financial performance of development banks in Nepal for the designated time period.

Population and Sample

Out of the seventeen development banks operating in Nepal (both in national and regional level) as of May 2023, only six of the eight nationally operated development banks were selected based on the level of their wider scopealong with the accessibility of the data, specifically, annual and other published reports. In doing so, the authors were also took caution on likely skipping the essential representation of the samples that provide the comprehensive insight into the banking sector dynamics.

Sources of Data and its Collection

This study relied on the secondary data sources i.e. available data from published financial reports and regulatory filings by Nepal Rastra Bank (NRB) reports, and official bank websites were used. In addition, profitability metrics, liquidity ratios, efficiency ratios and solvency indicators were obtained from the financial statements. Some of the strategic initiatives, market positioning and performance were also explored through annual reports. These regulatory filings provide accurate data and make sure that the information are complete in all aspects as required by the law. Further, these financial databases along with leading publications provided a variety of industry benchmarks as well as trends using NRB data. However, for the study precision and accuracy the data were cross-referenced as and when required.

Table 1

List of Sample Development Banks

Serial No.	Name of the Bank	Paid-up Capital (NPR)
1	MuktiNathBikas Bank (MBBL)	7.05 billion
2	Shangri La Development Bank (SADBL)	3.01 billion
3	JyotiBikas Bank (JBBL)	4.26 billion
4	LumbiniBikas Bank (LBBL)	3.38 billion
5	GarimaBikas Bank (GBBL)	2.67 billion
6	Shine Resunga Development Bank (SRDB)	4.28 billion

Data Analysis

The evaluation of financial performance of each development bank in the sample, crucial financial ratios were calculated, and a comparative analysis was conducted. The data analysis involved the following methods:

Step 01: Each ratio for a particular year of all banks from 2017 to 2023 were computed using given formula

Step 02: The mean values of each financial ratio of the banks were calculated for the pre-COVID period (2017-18 to 2019-20) and the post-COVID period (2019-20 to 2022-23).

- Before Mean Ratio = Σ Ratio (before) /n
- After Mean Ratio = Σ Ratio (after) /n
- % change in mean ratio = (After Mean Ratio - Before Mean Ratio)/Before Mean Ratio

Step 03: The percentage change in the mean ratio values of each ratio was computed by comparing the pre-post COVID-19 pandemic periods, allowing for an assessment of the increase or decrease in the mean ratio values. Comparing before and after data to observe percentage change can be appropriate when interested in relative rather than absolute differences (Abu-Bader, 2021).

Step 04: A Paired-sample t-test was used to perform on the percentage change values of each ratio, using a 5% level of significance. It assesses the significant relative changes in mean percentage that differs significantly from zero (Ross and Willson, 2017), thus indicating whether or not there is a meaningful changes in the financial ratios of development banks.

Table 2

List of Ratios with their Formula Used for the Analysis

Type	Ratio	Formula
Activity	A1	Loan & advances /Total deposits
	A2	Loan & advances/ Total assets
	A3	Total investment/ Total deposits
	A4	Total NPL/ Total loan & advances
Leverage	L1	Total debts/Total equity
	L2	Capital Fund/Total risk-weighted assets
Market	M1	Market value per share/ Book value per share
	M2	Market value per share/ EPS
Profitability	P1	Net profit/Total deposits
	P2	Net profit /Total assets
	P3	Net profit/ Net worth
	P4	Total interest earned /Total assets
	P5	Total interest paid/Total assets
	P6	Total operating expenses/Total assets
Solvency	S1	Current ratio
	S2	Cash and bank /Total deposits
	S3	Cash and bank/ Current assets
	S4	Investment in govt securities/ Current assets
	S5	Cash and bank / Current liabilities

Reliability and Validity

Comprehensive data verification from differences sources ensured accuracy and reliability. In addition, the study's framework and financial ratios were based on established theories (Graham, 1973) that accurately reflected bank performance. Further, data cross-referencing was done to ensure the valid data. Furthermore, external criteria validated findings used in this study also assumed to be enhancing the robustness of the comparative analysis.

IV. Results and Discussion

Results

The comparative analysis of the financial performance of Nepalese Development Banks using ratio analysis provides valuable insights into the impact of the COVID-19 pandemic on the development banking sector. By examining the various ratios before and after the pandemic, we can identify significant changes to understand the industry.

Table 3

Comparative Analysis of different Ratios of Development Banks

Ratio	Before*	After**	Mean Diff. %	Shapiro-Wilk Sig.	T-test Sig. (two tail)
A1	0.8916	0.8278	-7.1	0.428	0.006
A2	0.7053	0.6964	-1.2	0.698	0.246
A3	0.0777	0.1606	109.4	0.405	0.000
A4	0.0094	0.0152	93.6	0.446	0.043
L1	0.7616	0.8471	32.0	0.210	0.280
L2	0.1556	0.1292	-16.5	0.065	0.008
M1	1.5857	2.7322	84.0	0.780	0.008
M2	12.7133	24.4266	101.0	0.151	0.015
P1	0.0264	0.0171	-35.6	0.063	0.000
P2	0.0207	0.0143	-31.2	0.152	0.000
P3	0.1829	0.1679	-7.0	0.103	0.320
P4	0.0961	0.0945	-1.6	0.264	0.384
P5	0.0600	0.0647	7.9	0.064	0.034
P6	0.0192	0.0160	-16.0	0.630	0.018
S1	1.1285	1.1029	-2.3	0.111	0.006
S2	0.2067	0.0958	-53.4	0.650	0.000
S3	0.1643	0.0812	-50.4	0.396	0.000
S4	0.0570	0.1334	135.1	0.990	0.000
S5	0.1859	0.0896	-51.7	0.480	0.000

Note. * Before = Mean ratio of pre-COVID period (2017-18 to 2019-20) ** After = Mean ratio of the post-COVID period (2019-20 to 2022-23).

The Shapiro-Wilk test, which is used to test normality in data (Shaik & Gulhane, 2023) results indicate normal distribution for all ratios, with p-values greater than 0.05, confirming the data's normality assumption for the comparative analysis.

The t-test results (Table 3) suggest significant differences in percentage in various financial ratios of Nepalese Development Banks before and after the observed period. Among the ratios showing significant changes ($p < 0.05$), several exhibits increases and decreases. Increased ratios include Activity ratios A3, indicating changes in investment strategies due to decreased in loan and advances and A4, reflecting the accumulation of non-performing loan .Similarly, Market ratios M1 and M2 were also increasedhighlighting thelikely significant changes in the liquidity position of the market .Likewise, Profitability ratios P5 was also found to be increased due to increase in long-term deposits in banks. In contrary, P6 was found to be decreased due to the closer of numerous branches of development banks and also due to the likely encouragement of merger and acquisitions policies by NRB during the period.In similar vein, P1 and P2 also displayed a highly significant decrease, which might be the cause ofincrement in Non-Performing Loan (NPL) and decreased in loan and advances.

Likewise, Leverage ratio L2 was also found to be decreased, signifying potential changes in capital adequacy. During that period, the NRB increased risk weight and change in the capital fund requirement directives.Ultimately, Solvency ratios S1 was significantly decreased due to increase in total deposit.In addition, similardecreased in S2, S3 and S5 could be linked to theincreased in investment of banks in government securities. However, S4 wasincreased due to the decreased in A1 thus, indicating the alterations in liquidity positions and risk exposures. These fluctuations highlight dynamic shifts in financial performance among Nepalese development banks during the observed period.

No significant differences were observed in Activity A2, Leverage L1, and Profitability P3 and P4 ratios.

Discussion

Shift in Asset Allocation: The substantial increase in the ratio of Total investment to Total deposits (109.4%) and the decrease in the ratio of Loans & advances to Total deposits (-7.1%) post-COVID suggest a shift in asset allocation by Nepalese Development Banks. This change can be attributed to the economic uncertainty caused by the pandemic, which led to reduced demand for loans and increased risk aversion among banks (Bhandari, 2022). Similar context was reported by Reserve Bank of India, whereIndian banks also experienced a decline in loan growth, leading to increased investments in safe assets, indicating a regional trend in South Asia towards risk aversion and liquidity preservation (Reserve Bank of India, 2021). Additionally, NRB implemented various monetary policy measures, such as increasing both the Cash Reserve Ratio (CRR) and the Statutory Liquidity Ratio (SLR), to encourage investment in government securities. These policy actions align with the liquidity preference theory, which posits that in times of economic uncertainty, both banks and investors prefer to hold liquid and safe assets (Keynes, 1936).

Deteriorating Asset Quality: The significant increase in the ratio of Total NPL to Total loan and advances (93.6%) post-COVID is a worrying sign of deteriorating asset quality. This is explained by the financial accelerator theory, which posits that economic shocks can be amplified by worsening financial conditions, leading to a vicious cycle of increasing defaults and declining asset quality (Bernanke et al., 1999). The pandemic-induced economic downturn led to reduced income and cash flows for businesses and individuals, making it difficult for them to repay loans (Sah & Pokharel, 2023). Similar trends have been observed globally. For instance, in India, the Gross NPL ratio of commercial banks increased significantly during the pandemic, reflecting heightened credit risk and asset quality deterioration (Reserve Bank of India, 2021). In Bangladesh, the NPL ratio also experienced a notable increase during the pandemic. Research indicates that the economic slowdown and government-imposed loan moratoriums contributed to this rise, paralleling the situation in Nepal (Bangladesh Bank, 2021) .Moreover, the NRB's directive to provide loan moratoriums and restructuring facilities to affected borrowers may have temporarily masked the true extent of the NPL problem (Nepal Rastra Bank, 2020).Besides, the negative relationship between capital adequacy and NPLs indicates that bank with lower capital adequacy ratio are more likely to experience higher NPLs, where, Netra (2023) claimed that, insufficient capital can limit a bank's ability to absorb losses, leading to an increase in non-performing loans.

Weakening Capital Adequacy: The decline in the ratio of Capital Fund to Total risk-weighted assets (-16.5%) post-COVID indicates a weakening of the banks' capital adequacy position. The increased NPLs and the need for higher provisioning may have eroded the banks' capital buffers (Poudel, 2021).To address this issue, NRB has encouraged banks to increase their capital through various means, such as retaining profits and issuing new shares (Nepal Rastra Bank, 2020). Similarly, the report from Reserve Bank of India also observe a similar phenomenon of a deterioration in capital adequacy ratios due to heightened credit risk and increased provisioning requirements (Reserve Bank of India, 2021). This is consistent with theoretical frameworks such as the Basel III guidelines, which emphasize the importance of maintaining adequate capital buffers to mitigate risks associated with financial shocks (Bank for International Settlements, 2019). Regulatory changes post-COVID, might have imposed additional capital requirements on banks, further impacting their capital adequacy ratios (Gwachha& Karmacharya, 2023).

Improved Market Valuation: The substantial increases in the ratios of Market value per share to Book value per share (84.0%) and Market value per share to EPS (101.0%) post-COVID suggest an improvement in market perception of Nepalese Development Banks. This could be driven by factors such as the banks' efforts to manage risks, the gradual recovery of the economy, and the supportive monetary policy measures implemented by NRB (Adhikari, 2021).

Post-economic crises, similar improvements in market valuations have been observed in other regions, such as the US and Europe, where banks that successfully implemented risk management strategies and benefited from supportive monetary policies showed significant improvements due to increased investor confidence (Berger & Bouwman, 2013). The observed trends in Nepalese Development Banks align with a global trend where effective economic response and proactive policy measures improve market outcomes for financial institutions. Further, Liu (2022) also observed the significant improvement of Chinese banksmarket valuations in post-pandemic, which were attributed to government support, effective risk management, favourable regulatory measures, and economic recovery efforts.Furthermore, the improvement in market valuation could be the reflection of increased investor optimism driven by the NRB's proactive measures (Bhatt, 2024).

Declining Profitability: The significant decreases in the ratios of Net profit to Total deposits (-35.6%) and Net profit to Total assets (-31.2%) post-COVID highlight a decline in the profitability of Nepalese Development Banks. This can be attributed to reduced interest income due to lower lending activities, increased provisioning for NPLs, and higher operating costs (Poudel, 2021). The increase in the ratio of Total interest paid to Total assets (7.9%) further suggests pressure on net interest margins, possibly due to the low-interest rate environment and increased competition for deposits (Nepal Rastra Bank, 2022a). Besides, Gupta, Jain and Kumar (2023) also observed that, the higher operating costs of banks was due to new regulatory requirements such as, increased health and safety measures, digital transformation initiatives etc. Further, research on US banks also revealed a similar increase in operating expenses due to these factors (Federal Reserve, 2021). The situation in Nepal could be comparable, where banks have faced increased operational costs, contributing to the decline in profitability (Gautam & Kafle, 2022)

V. Conclusion and Implication

The comparison of the financial performance of Nepalese Development Banks before and after the COVID-19 outbreak indicates the major differences in numerous financial elements of their operations. The analysis identifies a significant shift in asset allocation towards investments rather than loans and decreasing asset quality as shown by increased non-performing loans, reduced capital adequacy, rising market valuation, and declining profitability.

These findings demonstrate the pandemic's widespread impact on Nepal's development banking sector and the challenges these institutions face in an uncertain economic context. Effective risk management, capital planning, and strategy changes are crucial for maintaining financial stability and facilitating effective recovery.

This report provides the way for further investigation of Nepal's development banking industry, particularly considering the COVID-19 outbreak and its implications. Future studies should evaluate the impact of monetary policy steps implemented by the Nepal Rastra Bank in response to the pandemic, such as lowering the Cash Reserve Ratio and boosting the Statutory Liquidity Ratio. Additionally, looking at alternative financing methods, such as green bonds or impact investing, could help the sector while fostering sustainable and equitable growth. Furthermore, examining how development banks promote financial inclusion and support micro, small, and medium-sized businesses throughout the post-pandemic recovery would provide policymakers and industry stakeholders with useful insights.

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