

UNDERSTANDING PAID-UP CAPITAL REQUIREMENTS FOR COMMERCIAL BANKS IN DEVELOPING ECONOMIES: A CASE STUDY OF NEPALESE BANKS

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Abstract:

Commercial banks play a pivotal role in advancing economic growth in developing countries, particularly in regions where a significant portion of the population earns low wages and relies on traditional agriculture. These banks, due to their scale, serve as crucial sources of capital for infrastructure development and the establishment of new businesses. Term loans, often utilized to channel funds from banks to enterprises, raise concerns regarding asset management and loan collection in developing countries. This study focuses on the context of Nepal, where commercial banking commenced in 1937 with the establishment of Nepal Bank Ltd. The 1990s saw the substantial entry of the private sector into the market. Nepal Rastra Bank (NRB) functions as the central bank responsible for monetary policy regulation. The commercial banking sector in Nepal comprised 28 banks as of 2018, broadly categorized into public sector banks, joint venture banks, and domestic private banks. Public sector banks have historically held the largest loan shares, but their performance lags significantly behind joint-venture and domestic private banks, which exhibit comparable performance levels.

The research explores the dynamics of commercial banking in Nepal, shedding light on the performance disparities between different categories of banks, with implications for enhancing the role of these institutions in promoting economic development.

Keywords: Commercial banks, economic growth, Nepal, asset management, loan collection.

1. Introduction

Commercial banks play a very important role as financial intermediaries in promoting economic growth in developing countries. This is because the majority of the population in these areas lives on low wages, and is engaged in traditional agriculture.

Because of their size, commercial banks provide critical capital needed to develop and maintain infrastructure as well as to create new businesses (Beck, Demirgüç-Kunt, & Levine, 2010). Term loans are often the instrument used to channel money from the banks to businesses and asset management or loan collection is an ongoing issue with commercial banks in developing countries (Dziobek & Pazarbasioglu, 1997; Gizaw, Kebede, & Selvaraj, 2015). In the case of Nepal, commercial banking began in 1937 with the formation of Nepal Bank Ltd. (Baral, 2005), with the private sector entering the market on a large scale in the 1990-s. The Nepal Rastra Bank (NRB) serves as the national or central bank that regulates monetary policy. There were 28 commercial banks as of 2018 (Gnawali, 2018), which may be broadly divided into public sector banks, joint venture banks and domestic private banks. While the public sector banks have historically enjoyed the largest share of loans, they have also historically significantly underperformed compared to joint-venture and domestic private banks, both of which were found to be similar in performance (Jha & Hui, 2012).

Many developing countries, including Nepal, have attempted systemic bank restructuring over the last few decades (Pazarbaşıoğlu, 1998). Restructuring may include new regulations designed to improve the profitability and solvency of banks, and regulations designed to increase the intermediating role of the banks in the economy. With the imposition of successive standards from the Basel Committee on Banking Supervision (BCBS), popularly known as Basel I (1988), Basel II 2004 and Basel III (2010), the Nepalese commercial banks have seen increasing levels of monitoring and supervision, largely strengthening their stability (Upreti, 2013). An earlier examination of Nepalese banks using the CAMEL (capital adequacy, asset quality, management quality, earning and liquidity) framework found that joint venture banks had a fair capital base and higher liquidity than needed, resulting in lower profitability (Baral, 2005). The paid-up capital requirement (common stock) for commercial banks was Rs. 2 billion. However, from 2015, the paid-up capital requirement was increased to Rs. 8 billion, thereby increasing the lending capacity, and the credit exposure as well. The primary contribution of this work is to analyze if the factors that have driven the operating profitability of commercial banks in Nepal have changed as a result of the increased paid-up capital requirement. In order to accomplish this, we performed a panel data regression analysis on multiple commercial banks in Nepal over two separate time periods: 2007-2014 and 2015-2017.

The rest of this paper is organized as follows. Section 2 describes the background and the hypotheses tested. Section 3 describes the data collection and presents the analysis. Section 4 discusses our findings from a theoretical and practical standpoint. We conclude with limitations and suggestions for future studies in section 5.

1. Background and Hypotheses Development

Until the mid-1970-s, bank safety worldwide was largely the domain of national regulators without regard to interdependence among banks (Rost, 2010). The failures of the Herstatt Bank in Germany and the Franklin National Bank in New York caused effects across national boundaries, leading to the formation of the Basel Committee on Banking Supervision (Basel). The committee consisted of central bankers from the G10 countries and Switzerland. The main thrust was to delineate supervisory authority between national and transnational bodies. Basel 1 was a framework released in 1988 to primarily address the capital adequacy requirement for banks. The main driver here was the Latin American debt crisis that occurred in the early 1980-s. A minimum ratio of capital to risk-weighted assets of 8% was established starting from 1992 (Jokipii & Milne, 2008).

Basel 2 was a three pillar framework that expanded on the rules in Basel 1 regarding capital adequacy, and additionally recommended supervisory review of institutions' capital adequacy and internal assessments. A third pillar was also proposed to promote market disclosure, in order to promote sound banking practices (Herring, 2002). Basel 3 was begun to be developed in 2007 upon the imminent collapse of Lehman Brothers. It includes liquidity requirements and safeguards, such as a counter-cyclical capital buffer and a minimum liquidity to cover a 30-day period of stress. While Basel 1 and 2 steered away from defining operational risk, Basel 3 seeks to address this to some degree by enforcing liquidity standards and curtailing non-performing assets (Bace, 2016).

While the Basel standards have increased the stability of the banking system, the stringent requirements that accompany them have impeded the ability of commercial banks to lend in developing economies. Basel 2 and 3 have also improved the internal and external operations of commercial banks. However, critics of Basel 3 point to the reduced availability of credit and curtailment of economic activity if they are to be implemented (Allen, Chan, Milne, & Thomas, 2012).

Are non-performing loans an issue in developing economies, post Basel 2 and 3? In a recent dissertation (Havemann, 2019) points out how capital adequacy requirements instituted pre-2008 prevented bank failures during the 2008 crisis. African Bank was an institution that made loans almost exclusively to low-income earners on an unsecured basis. Funding came primarily from bond holders as opposed to retail deposits. African Bank placed into curatorship in 2014, but central bank intervention led to limited loss spillovers and increased losses to the creditors who provided the bail-in.

Banks in Botswana were studied in (Mathame, 2018) who found that the capital adequacy ratio (CAR) was lower based on credit risk and non-performing loans, primarily since the banks were heavily dependent on the mining sector. In another survey of 109 European banks in (Bongini, Cucinelli, Di Battista, & Nieri, 2018) from 2006-2016, the loss of profitability was found to be influenced by the deterioration of the loan portfolios of the banks. Banks that adopted a more conservative lending policy went back to profitability more quickly. The lack of an appropriate credit culture in some developing countries also leads to increased non-performing loans (Bonga, Chirenje, & Mugayi, 2019). In a study of banks in Albania (Duraj, 2015), non-performing loans were found to decrease bank profitability. A similar situation was found in a study of banks in Ethiopia (Gizaw et al., 2015).

However, NPLs have not always been found to affect bank performance negatively. As per (Andesfa & Masdupi, 2019) some researchers found that non-performing loans did not affect return on assets (ROA). A study of Jordanian banks in (Alshatti, 2015) found a positive influence of NPL on ROA. A similar finding was reported in (Zou & Li, 2014), where a positive effect was found between NPL ratio and ROA as well as return on equity (ROE). Possible explanations for this may include that depositors do not take into consideration the credit risk exposure of the bank when deciding to make their deposits (Agwu, 2018). This explanation becomes more plausible if the Basel safeguards are in place in the banking system of the country, leading to a macro perception of stability. Macroeconomic factors like the money supply and deposit to lending ratios can also drive increased deposits into banks. This increases the bank's ability to make more loans, and hence improves profitability, even if the percentage of nonperforming loans is higher than for smaller banks.

In the case of Nepal, credit risk (defined as the ratio of non-performing loans to total loans) was found to be negatively affected by the capital adequacy ratio in (Poudel, 2013). In a more recent study of Nepalese commercial bank ROA performance from 2010-2015, a strong negative relationship between non-performing loans and ROA was found, along with a positive influence of costs per loan assets (Bhattarai, 2017). Bank size was also found to be positively correlated to bank performance, measured by ROA. Based on the review of prior work shown above, we conclude that Basel 2 and 3 requirements have imposed some stability in the banking systems of developing economies. However, non-performing loans or credit risk are still relevant drivers affecting banks' financial performance.

In 2015, the NRB (Nepal Rastriya Bank) mandated banks and financial institutions to raise the minimum paid-up capital, or common stock, from Rs. two billion to Rs. eight billion, a four-fold increase, to be implemented over a two year period (Sharma, 2015). A similar move was instituted by the bank of Ghana, in 2017 (Young, 2017). The goal behind these moves was to increase the minimum size of institutions to improve the overall stability in the banking systems. While such moves have an immediate positive stock market effect, the effect of the increased capitalization requirements on bank behavior is not clear. For example, as banks make more loans, will their nonperforming loans have an increased effect on profitability? In this work, we investigate the performance of a sample of Nepalese commercial banks pre and post mandate, to see how behavior has changed.

Factors in the Study:

Operating Profit:

The dependent variable we look at is the operating profitability of the bank. This is reported in rupees every year and is the earnings before interest and tax. A common formula for calculating operating profit is:

Operating Profit = Operating Revenue – Cost of Goods and Services – Operating Expenses – Depreciation & Amortization

Non Performing Loans:

NPL is a ratio defined as:

$$\text{NPL} = (\text{Non-Performing Loans} / \text{Total Loans}) * 100$$

Liquidity:

This is defined as a ratio:

Current Assets / Current Liabilities

Deposits to assets:

This ratio is defined as:

$$(\text{Total Deposits} / \text{Total Assets}) * 100$$

Credit exposure:

This variable looks at the overall amount of loans made by the bank, in Rupees.

Training ratio:

This ratio is defined as:

Training = Overall Rupee Amount Spent on Training / Total Number of Staff]

Based on these variables, the following hypotheses were tested:

H1: Training ratio affects the Bank's operating profit

H2: Deposits to Assets affect the Bank's operating profit

H3: Credit Exposure affects the Bank's operating profit

H4: NPL affects the Bank's Operating profit

H5: Liquidity affects the Bank's Operating profit

We tested these hypotheses using two separate sets of data: a sample of Nepalese commercial banks between (2007-2014 and another sample of the same banks between 2015-2017

2. Data Collection and Analysis

Publicly available financial statements from 2007 – 2017 for six well known joint-venture commercial banks in Nepal were used for this study. The data we used are shown in Appendix 1. The names of the banks have been masked for anonymity. Panel data regression analysis using the PLM package in the R system was used since data is across banks and across time for each bank (Croissant et al., 2017).

Table 1 shows the summary statistics for each factor used in our study. The relative standard deviation, or the coefficient of variation is (standard deviation / mean) * 100, and gives a dimension free illustration of variation in the data (Everitt, 1998). We see that NPL had the most variation while deposits to total assets had the least. This is not surprising since NPL reflects the managerial policies of the bank regarding lending criteria, while banks are tightly regulated on the latter metric.

Table 1. Descriptive Statistics for Factors

	Minimum	Maximum	Mean	Std. Deviation	Coefficient of Variation %

Training ratio	748	16187	6942	4176.20	60.16
Operating Profit	78701459.0	5464678241.0	1778578035.25	1127167487.71	63.38
Credit Exposure	3839128465.0	144429063000.0	46535702441.50	27833065588.74	59.81
NPL	.004	4.220	1.10	.978	88.58
Liquidity	3.0200	30.96	13.56	7.42	54.95
Deposits to total assets	67.89	90.27	85.64	3.87	4.51

The model we used is shown below.

$$Y_{it} = \beta_0 + \beta_1(L)_{it} + \beta_2(NPL)_{it} + \beta_3(CR)_{it} + \beta_4(D)_{it} + \beta_5(TR)_{it} + \mu_{it}, \quad \text{where}$$

Y – Operating Profit

NPL – Non-Performing Loan

CR – Credit exposure

D - Deposits

L – Liquidity

TR – Training Ratio

β_0 - Constant parameter/Intercept β_{1-5} – Coefficient of independent variables

μ - Error term i – Cross Sectional t – Time Period

Table 2 shows the correlation between the factors.

	Training Expense	Credit Exposure	NPL	Liquidity	Deposits to total assets
Training Expense	1				
Credit Exposure	0.212	1			
NPL	0.08	.160	1		
Liquidity	-0.368	-.228	-.505	1	
Deposits to total assets	0.261	.177	.349	-.049	1

Table 2 Correlation Matrix of Independent variables

The correlations are low to moderate amongst the factors, with NPL-Liquidity and Liquidity-deposits to total assets being the highest in magnitude. Given these correlations, multicollinearity amongst factors appears to be low in our sample. Since the levels of correlation are below 0.7, the variance inflation values were not calculated for any variable in our analysis.

3.1 Panel Data Regression Results

Time Period 2007-2014

R-Squared: 0.74889

Adj. R-Squared: 0.66789

Table 3 Analysis of Model in 2007-2014

Adjusted R Square is 0.66789 i.e. 66.79% variation of dependent variable is explained by the independent variables.

Table 4 Coefficients in 2007-2014

Coefficients:				
	Estimate	Std. Error	t-value	Pr(> t)
X1Liquidity	4.3957e+06	1.2598e+07	0.3489	0.7295
X1Credit Exposure	4.8079e-02	6.0250e-03	7.9800	5.209e-09 ***
X1NPL	-1.1494e+07	8.1309e+07	-0.1414	0.8885
X1Deposits to total assets	-2.7655e+07	2.2440e+07	-1.2324	0.2271
X1Training Ratio	4.2442e+04	2.6857e+04	1.5803	0.1242

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1				

From the coefficients, credit exposure is the only independent variable, which is statistically significant. Other independent variables such as liquidity, NPL, Deposits and training ratio are not statistically significant.

Time Period 2015-2017

Table 5 Analysis of Model in 2015-2017

R-Squared: 0.97321

Adj. R-Squared: 0.92855

Adjusted R Square is 0.92855 i.e. 92.86% variation of dependent variable is explained by the independent variables.

Table 6 Coefficients in 2015-2017

Coefficients:				
	Estimate	Std. Error	t-value	Pr(> t)
X1Liquidity	1.6863e+07	1.3835e+07	1.2189	0.2686350
X1Credit Exposure	4.2017e-02	6.5266e-03	6.4378	0.0006645 ***
X1NPL	-5.5478e+08	1.3854e+08	-4.0044	0.0070833 **
X1Deposits to total assets	-1.8167e+07	4.4342e+07	-0.4097	0.6962552
X1Training Ratio	-3.7071e+04	2.0331e+04	-1.8234	0.1180686

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1				

From the coefficients, credit exposure and NPL are the only independent variable, which are statistically significant. Other independent variables such as liquidity, Deposits and training ratio are not statistically significant. Tables 7 and 8 summarize which hypotheses were supported in the two data sets. Note that a null being rejected implies support for the hypothesis.

Table 7 Analysis of Hypothesis for 2007-14

HYPOTHESIS	VARIABLES	NULL	REJECTED?
H1	Liquidity		
H2	Credit Exposure	Rejected	
H3	NPL		
H4	Deposits		
H5	Training		

Table 8 Analysis of Hypothesis for 2015-17

HYPOTHESIS	VARIABLES	NULL	REJECTED?
H1	Liquidity		
H2	Credit Exposure	Rejected	
H3	NPL	Rejected	
H4	Deposits		
H5	Training		

3. Discussion

Earlier work has shown that non-performing loans impact banks' financial performance in developing economies. For example, the return on assets of Nigerian banks was found to be affected by the default ratio (NPL / total loans) in (Kurawa & Garba, 2014). The return on assets and return on equity of Turkish banks was found to be affected by non-performing loans in (Kadioglu, Telceken, & Ocal, 2017). However, the impact of non-performing loans on the financial performance of Nepalese banks is uncertain. Two unpublished masters theses cited in (Gnawali, 2018) indicate that non-performing assets negatively impact commercial banks' financial performance in Nepal. In contrast, another study found no evidence of non-performing loans impacting financial performance (Subedi & Neupane, 2013). Our study, using panel data analysis, agreed with the latter finding, and found that non-performing loans did not impact the operating profit of the commercial banks in our sample during the 2007-2014 pre-mandate period.

This is in contrast to studies done on banks in other countries described above. One explanation for this finding may be found in the reputation for reliability that is part of the national character of Nepal. Nepalese workers, for example, have a well-deserved reputation for reliability and honesty, and are in demand around the world (Lokshin, Bontch.Osmolovski, & Glinskaya, 2010; Yamanaka, 2000). Nepalese men also serve in military and security functions globally (Gould, 2000; Vines, 1999). Another reason for the finding in the 2007-2014 period may be the Debt Recovery Act passed in 2002 that required all Nepal banks to address the large percentage of non-performing loans in their portfolios (Shrestha, 2004).

A Third possible explanation is that depositors do not consider the credit risk exposure of the bank when making deposits (Agwu, 2018), especially if they have underlying faith in the regulatory framework of the banking system. For the 2007-2014 pre-mandate period, we found that credit exposure, indicating the overall loans made by the bank, did positively affect the operating profit. The paid-up capital (or common stock equity) lower limit till 2014 was Rs. 2 billion. During this period, banks that gave out more

loans showed greater profitability, as per our findings. This follows directly from greater income derived from more loans, especially since non-performing loans were brought under control after 2002.

From 2015 onwards, the paid-up capital requirement minimum was mandated to increase from Rs 2 billion to Rs. 8 billion for Nepalese banks (Acharya, 2017; Sharma, 2015). Our analysis of the 2015-2017 post-mandate time period shows that while credit exposure continued to affect operating profit positively, *non-performing loans now had a significant negative effect*. This indicates that credit risk had now become an issue. One possible explanation for this finding comes from the fact that in order to comply with the paid-up capital requirements, several banks had to merge. The increased paid-up capital also increased the amount of loans that banks could provide to borrowers. As confirmation, the credit exposure of every bank in our sample increased significantly starting from 2015 onwards (see data in Appendix 1). However, apart from size increases, mergers typically lead to rapid change in the collective competence and tacit knowledge of the new organization (Kreiner & Lee, 2000) and provide a “diminished resource base for organizational learning” (Lei & Hitt, 1995). Thus, a merger may lead to a loss of knowledge of local lending practices, and the credit profile of the local business community. Localized lending practices have been shown to give greater risk-adjusted yield, for example in (Carter, McNulty, & Verbrugge, 2004). The effect of distance between the bank and the borrowers was greater in lesser developed economies (Alessandrini, Croci, & Zazzaro, 2009). Hence, a mandate to significantly increase the size of banks in a system may lead to deteriorated lending practices, at least in the short term, to the point where the financial performance of the banks can be significantly affected, as in our sample.

The theoretical contribution of this work is an analysis of the effect of increasing minimum capital requirements rapidly and significantly on commercial banks in a developing economy. We find that the expected consolidation of banks and increase in number of loans leads to greater credit risk assumed by the banks, even if nonperforming assets were not a factor earlier, as was the case in our sample. On the methodological side, we use panel data analysis to account for correlation within each bank across time.

From a practical perspective, our work offers many guidelines. First, increases in capital adequacy requirements as a result of Basel 2 and 3 must be implemented gradually, so that lending strategies by bank management have time to adapt to the larger volume of loans. The situation in Nepal is likely to improve since prior to the significant paid-up capital increase, non-performing assets were not an issue in determining profitability. However, in other economies where non-performing assets are already negatively affecting financial performance, policies regarding an increase in paid-up capital and bank consolidation should offer an even more gradual time line than would have been appropriate for Nepal. Resources should also be provided to ensure that localized knowledge specific to lending practices is not lost in the bank consolidation that follows. In the case of Nepal, it is important for banks to review and tighten lending practices and for regulators to increase monitoring, going forward. Any asset bubbles created as a result of the increased lending also need to be closely monitored.

4. Conclusion

In this work we analyzed the results of a significant increase in paid-up capital or common stock equity requirements on the operating profit of a sample of commercial banks in Nepal. The data we used offered a unique opportunity to analyze this effect. Prior policies such as the Debt Recovery Act (2002) had reduced credit risk to lower levels. The only driver of profit in the 2007-2014 period that we found was the total amount of loans (credit exposure) issued by the bank.

A Very significant four-fold increase in paid-up capital led to widespread consolidation among banks and a significant increase in the number of loans being issued. A rapid increase in the number of loans

issued led to a significant negative impact by non-performing loans on operating profit after the policy was implemented. Our recommendations include a cautionary approach to implementing similar banking requirements in other economies, coupled with adequate training to ensure that specialized local lending knowledge is not lost, and the newly formed larger banks do not become more distant from their borrowers.

Our work has some limitations. First, we relied on publicly available data and measures in our model. Variables measuring actual lending practices were not available for this study. Second, we used a sample of 6 banks over 10 years. A larger sample may have yielded more significant results, though statisticians warn of overly large sample sizes where small effects are found to be statistically significant (Aguinis & Harden, 2009).

For future research, we recommend that as Basel 3 is implemented, the performance of banks be studied using the increased information that will be available under Basel 3, especially with regard to liquidity requirements and management practices. A follow up study on the financial performance of Nepalese commercial banks over the next few years is also recommended, to measure if lending practices have stabilized and investigate if non-performing assets are still a significant factor.

References

- Acharya, P. R. (2017, August 22). NRB issues circular on paid-up capital rules. *The Himalayan Times*.
- Aguinis, H., & Harden, E. E. (2009). *Sample size rules of thumb*: Routledge: New York.
- Agwu, E. (2018). Credit risk management: Implications on bank performance and lending growth. *Available at SSRN 3122501*.
- Alessandrini, P., Croci, M., & Zazzaro, A. (2009). The geography of banking power: the role of functional distance. In *The Banks and the Italian Economy* (pp. 93-123): Springer.
- Allen, B., Chan, K. K., Milne, A., & Thomas, S. (2012). Basel III: Is the cure worse than the disease? *International Review of Financial Analysis*, 25, 159-166.
- Alshatti, A. S. (2015). The effect of credit risk management on financial performance of the Jordanian commercial banks. *Investment Management and Financial Innovations*, 12(1), 338-345.
- Andesfa, D., & Masdupi, E. (2019). *Effect of Financial Ratio on Profitability of Commercial Banks: A Systematic Literature Review*. Paper presented at the 2nd Padang International Conference on Education, Economics, Business and Accounting (PICEEBA-2 2018).
- Bace, E. (2016). Bank profitability: Liquidity, capital and asset quality. *Journal of Risk Management in Financial Institutions*, 9(4), 327-331.
- Baral, K. J. (2005). Health check-up of commercial banks in the framework of CAMEL: A case study of joint venture banks in Nepal. *Journal of Nepalese Business Studies*, 2(1), 41-55.

- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2010). Financial institutions and markets across countries and over time: The updated financial development and structure database. *The World Bank Economic Review*, 24(1), 77-92.
- Bhattarai, Y. R. (2017). Effect of Non-Performing Loan on the Profitability of Commercial Banks in Nepal. *Prestige International Journal of Management and Research*, 10(2), 1-9.
- Bonga, W. G., Chirenje, G., & Mugayi, P. (2019). Analysis of Credit Culture in the Zimbabwean Banking Sector. *Journal of Economics and Finance (DRJ-JEF)*, 4(2), 45-55.
- Bongini, P., Cucinelli, D., Di Battista, M. L., & Nieri, L. (2018). Profitability shocks and recovery in time of crisis evidence from European banks. *Finance Research Letters*.
- Carter, D. A., McNulty, J. E., & Verbrugge, J. A. (2004). Do small banks have an advantage in lending? An examination of risk-adjusted yields on business loans at large and small banks. *Journal of Financial Services Research*, 25(2-3), 233-252.
- Croissant, Y., Millo, G., Tappe, K., Toomet, O., Kleiber, C., Zeileis, A., ... Croissant, M. Y. (2017). Package „plm“. *Choice*, 139(1), 227-240.
- Duraj, B. (2015). *Factors Influencing the Bank Profitability - Empirical Evidence from Albania* (Vol. 5).
- Dziobek, C., & Pazarbasioglu, C. (1997). Lessons from systemic bank restructuring: a survey of 24 countries.
- Everitt, B. (1998). The Cambridge dictionary of statistics. In: Cambridge, UK: Cambridge University Press.
- Gizaw, M., Kebede, M., & Selvaraj, S. (2015). The impact of credit risk on profitability performance of commercial banks in Ethiopia. *African Journal of Business Management*, 9(2), 59-66.
- Gnawali, A. (2018). Non-Performing Asset and its Effects on Profitability of Nepalese Commercial Banks. *International Journal of Research in Business Studies and Management*, 5(9), 39-47.
- Gould, T. (2000). *Imperial warriors: Britain and the Gurkhas*: Granta Books.
- Havemann, R. C. (2019). Lessons from South African bank failures 2002 to 2014.
- Herring, R. J. (2002). The Basel 2 approach to bank operational risk: Regulation on the wrong track. *The Journal of Risk Finance*, 4(1), 42-45.
- Jha, S., & Hui, X. (2012). A comparison of financial performance of commercial banks: A case study of Nepal. *African Journal of Business Management*, 6(25), 7601-7611.
- Jokipii, T., & Milne, A. (2008). The cyclical behaviour of European bank capital buffers. *Journal of banking & finance*, 32(8), 1440-1451.

- Kadioglu, E., Telceken, N., & Ocal, N. (2017). Effect of the asset quality on the bank profitability. *International Journal of Economics and Finance*, 9(7), 60-68.
- Kreiner, K., & Lee, K. (2000). Competence and community: post-acquisition learning processes in high-tech companies. *International Journal of Technology Management*, 20(5-8), 657-669.
- Kurawa, J. M., & Garba, S. (2014). An evaluation of the effect of credit risk management (CRM) on the profitability of Nigerian banks. *Journal of Modern Accounting and Auditing*, 10(1), 104.
- Lei, D., & Hitt, M. A. (1995). Strategic restructuring and outsourcing: The effect of mergers and acquisitions and LBOs on building firm skills and capabilities. *Journal of management*, 21(5), 835-859.
- Lokshin, M., Bontch-Osmolovski, M., & Glinskaya, E. (2010). Work-related migration and poverty reduction in Nepal. *Review of Development Economics*, 14(2), 323-332.
- Mathame, T. (2018). *Supervisory Risk Assessment in a Basel Environment: The Stress Testing of Banks in Botswana*. University of Cape Town,
- Pazarbaşıoğlu, C. (1998). *Lessons from systemic bank restructuring* (Vol. 14): International Monetary Fund.
- Poudel, R. P. S. (2013). *Macroeconomic Determinants of credit risk in nepalese banking industry*. Paper presented at the Proceedings of 21st International Business Research Conference.
- Rost, B. (2010). Basel committee on banking supervision. In *Handbook of Transnational Economic Governance Regimes* (pp. 319-328): Brill Nijhoff.
- Sharma, R. D. (2015, July 24th 2015). NRB raises bank capital requirement to Rs 8 billion. *The Himalayan Times*. Retrieved from <https://thehimalayantimes.com/business/nrb-raises-bank-capital-requirement-to-rs-8billion/>
- Shrestha, G. K. (2004). Financial Sector Reforms in Nepal. *NRB Economic Review*, 16, 75-90.
- Subedi, S., & Neupane, B. (2013). Determinants of banks' liquidity and their impact on financial performance in Nepalese Commercial Banks.
- Upreti, C. P. (2013). Basel III implementation: challenges and opportunities in Nepal. *Basel III Implementation: Challenges and Opportunities*, 237-275.
- Vines, A. (1999). Gurkhas and the private security business in Africa. *Peace, profit or plunder*, 123-140.
- Yamanaka, K. (2000). Nepalese labour migration to Japan: from global warriors to global workers. *Ethnic and racial studies*, 23(1), 62-93.
- Young, E. a. (2017). *Bank of Ghana Increases the Minimum Capital for Banks*. Retrieved from

https://www.ey.com/Publication/vwLUAssets/Bank_of_Ghana_increases_the_minimum_capital_for_bank_171Gbl_Bank%20of%20Ghana%20increases%20the%20minimum%20capital%20for%20banks.pdf

Zou, Y., & Li, F. (2014). The Impact of Credit Risk Management on Profitability of Commercial Banks: A Study of Europe. In.

Appendix 1: Data Used in Study

Table 1. Training Ratio, Operating Profit and Credit Exposure

Year	Banks	Training Expense	Total Staff	Training Ratio	Operating Profit	Credit Exposure
2017	Bank1	17,092,478	1,187	14,400	4,729,782,804	144,429,063,000
2016	Bank1	5,667,870	1,005	5,640	3,699,688,752	111,780,681,000
2015	Bank1	3,543,367	969	3,657	2,545,848,091	89,584,665,000
2014	Bank1	4,633,683	942	4,919	2,891,610,284	71,708,512,000
2013	Bank1	6,400,375	910	7,033	2,145,299,600	60,622,076,000
2012	Bank1	3,953,243	883	4,477	1,357,096,209	55,874,347,000
2011	Bank1	4,380,696	877	4,995	1,783,662,202	52,029,461,000
2010	Bank1	3,162,162	877	3,606	1,928,425,381	50,041,481,000
2009	Bank1	4,162,374	766	5,434	1,310,854,953	42,975,192,000
2008	Bank1	4,330,860	622	6,963	1,013,331,907	36,518,503,000
2017	Bank2	5,194,596	495	10,494	1,985,842,742	50,192,675,000
2016	Bank2	2,295,460	435	5,277	1,701,248,338	41,402,347,000
2015	Bank2	2,457,880	433	5,676	1,827,019,810	41,171,574,000
2014	Bank2	1,553,093	460	3,376	1,978,908,777	39,210,395,000
2013	Bank2	2,801,446	454	6,171	1,862,481,497	34,321,758,000
2012	Bank2	3,800,616	424	8,964	1,694,009,908	26,974,977,000
2011	Bank2	5,695,246	429	13,276	1,707,316,216	23,401,460,000
2010	Bank2	6,554,738	429	15,279	1,612,467,214	20,701,946,000
2009	Bank2	4,800,913	392	12,247	1,506,108,858	18,758,432,000
2008	Bank2	4,714,722	377	12,506	1,248,432,244	17,587,870,443
2017	Bank3	10,360,820	848	12,218	5,464,678,241	105,621,541,000
2016	Bank3	5,444,033	792	6,874	4,344,447,596	91,993,791,000
2015	Bank3	11,428,342	706	16,187	3,235,924,937	78,774,890,000
2014	Bank3	7,326,161	724	10,119	3,549,363,372	66,294,545,000
2013	Bank3	8,737,232	742	11,775	3,464,952,933	57,191,503,224
2012	Bank3	8,934,625	650	13,746	2,640,336,248	50,021,684,138
2011	Bank3	7,467,211	657	11,366	2,081,190,251	44,468,804,901
2010	Bank3	8,822,575	557	15,839	1,709,121,201	39,016,206,023
2009	Bank3	5,681,241	505	11,250	1,570,204,646	32,500,502,288
2008	Bank3	4,796,328	416	11,530	1,122,713,930	30,256,652,353
2017	Bank4	7,153,814	601	11,903	1,998,089,550	58,025,513,277

2016	Bank4	4,395,400	470	9,352	1,478,537,702	45,079,836,617
2015	Bank4	4,060,981	415	9,785	925,693,203	30,651,616,831
2014	Bank4	2,111,199	311	6,788	654,893,931	22,680,658,738
2013	Bank4	678,950	231	2,939	458,938,092	15,989,208,846
2012	Bank4	396,270	232	1,708	189,934,364	10,212,474,617
2011	Bank4	238,503	197	1,211	241,935,219	7,200,551,543
2010	Bank4	111,384	149	748	135,407,713	7,238,558,764
2009	Bank4	299,978	120	2,500	78,701,459	5,845,136,972
2008	Bank4	114,864	61	1,883	78,701,459	3,839,128,465
2017	Bank5	4,471,852	835	5,356	2,449,761,449	91,557,768,233
2016	Bank5	5,441,894	857	6,350	2,297,520,673	79,796,981,782
2015	Bank5	3,538,858	856	4,134	679,560,515	62,815,599,427
2014	Bank5	3,504,526	835	4,197	982,579,118	55,329,593,123
2013	Bank5	5,075,617	830	6,115	1,145,973,993	49,526,322,948
2012	Bank5	3,659,884	793	4,615	1,057,056,360	42,584,895,177
2011	Bank5	3,184,322	647	4,922	1,015,213,473	39,545,254,061
2010	Bank5	3,176,851	577	5,506	579,231,460	36,049,314,954
2009	Bank5	5,538,572	591	9,372	1,029,535,742	32,628,846,005
2008	Bank5	4582364	584	7,847	954,953,506	26,006,889,740
2017	Bank6	5,903,090	748	7,892	3,089,925,916	80,133,906,000
2016	Bank6	2,169,371	739	2,936	2,666,102,674	71,827,799,000
2015	Bank6	1,112,129	696	1,598	2,252,640,623	56,381,528,000
2014	Bank6	735,113	696	1,056	2,338,065,548	50,599,467,000
2013	Bank6	1,488,497	643	2,315	2,302,748,773	44,793,263,000
2012	Bank6	1,938,143	625	3,101	1,538,338,190	37,792,502,000
2011	Bank6	1,198,785	586	2,046	1,418,397,900	31,440,377,000
2010	Bank6	1,824,053	568	3,211	1,272,090,189	27,499,899,000
2009	Bank6	2,280,943	534	4,271	972,950,326	19,509,798,000
2008	Bank6	2,495,154	449	5,557	718,833,853	24,131,922,000

Table 2. Non-Performing Loans (NPL), Liquidity

Year	Banks	Capital	NPL	Total Assets (Size)	Liquidity	CAR	NumYears
2017	Bank1	20,367,203,000.00	0.830	150,818,033,554	10.50	13.02	32
2016	Bank1	18,182,544,000.00	0.680	129,782,705,314	7.20	14.92	32
2015	Bank1	11,754,294,000.00	1.250	104,345,436,413	12.00	11.9	32
2014	Bank1	8,993,849,000.00	1.770	86,173,927,574	19.20	11.27	32
2013	Bank1	7,813,057,000.00	1.910	73,152,154,761	16.00	11.49	32
2012	Bank1	6,963,182,000.00	3.320	65,756,231,954	13.60	11.1	32
2011	Bank1	6,324,627,000.00	0.940	58,356,827,501	7.70	10.91	32
2010	Bank1	5,651,045,000.00	0.620	57,305,413,482	7.80	10.55	32

2009	Bank1	5,095,354,000.00	0.580	53,010,803,126	10.30	11.24	32
2008	Bank1	3,891,236,000.00	1.120	38,873,306,084	10.90	11.28	32
2017	Bank2	11,975,101,000.00	0.190	77,408,597,693	19.71	21.08	31
2016	Bank2	7,779,408,000.00	0.320	65,185,732,479	7.98	16.38	31
2015	Bank2	6,111,788,000.00	0.340	64,926,805,120	24.03	13.1	31
2014	Bank2	5,333,516,000.00	0.480	53,324,102,172	21.18	12.27	31
2013	Bank2	4,828,551,000.00	0.770	45,631,100,342	16.43	12.54	31
2012	Bank2	4,295,167,000.00	0.780	41,677,052,360	22.40	13.93	31
2011	Bank2	3,835,592,000.00	0.620	43,810,519,664	6.10	14.22	31
2010	Bank2	3,498,973,000.00	0.610	40,213,319,926	6.74	14.51	31
2009	Bank2	3,190,367,000.00	0.660	40,587,468,009	8.18	14.7	31
2008	Bank2	2,630,900,636.00	0.920	33,335,788,326	5.84	13.15	31
2017	Bank3	14,752,639,000.00	0.790	140,332,060,182	10.02	12.42	36
2016	Bank3	12,203,615,000.00	1.140	127,300,195,373	6.77	11.73	36
2015	Bank3	10,154,456,184.00	1.830	115,985,701,411	14.15	11.57	36
2014	Bank3	8,259,701,304.00	2.230	87,274,545,920	11.32	11.24	36
2013	Bank3	7,364,514,686.00	2.130	73,343,593,148	9.32	11.59	36
2012	Bank3	6,086,741,224.00	2.330	63,250,488,220	8.60	11.01	36
2011	Bank3	5,173,399,192.00	1.770	58,099,619,842	4.90	10.58	36
2010	Bank3	4,390,228,607.00	1.480	52,079,725,697	3.02	10.5	36
2009	Bank3	3,727,082,787.00	0.800	43,867,397,504	9.03	10.7	36
2008	Bank3	2,968,913,131.00	0.740	37,132,759,149	8.37	11.1	36
2017	Bank4	9,870,186,114	0.010	69,995,901,442	26.08	15.57	14
2016	Bank4	6,039,446,132	0.019	55,964,557,699	24.24	12.36	14
2015	Bank4	3,734,498,766	0.070	40,301,197,377	22.32	11.08	14
2014	Bank4	3,069,210,208	0.017	29,376,985,784	26.68	12.54	14
2013	Bank4	2,565,034,704	0.027	21,976,539,752	30.96	14.87	14
2012	Bank4	2,211,515,612	0.479	13,722,466,141	30.24	20.74	14
2011	Bank4	2,173,184,816	0.004	9,363,380,873	26.57	28.41	14
2010	Bank4	932,609,659	0.080	7,238,558,764	28.19	16.51	14
2009	Bank4	909,860,064	0.175	5,845,136,972	11.97	19.02	14
2008	Bank4	456,006,865	1.513	3,839,128,465	17.61	17.73	14
2017	Bank5	12,613,817,027	0.850	107,255,479,966		12.15	25
2016	Bank5	9,815,198,969	1.230	99,863,008,080	6.27	10.84	25
2015	Bank5	8,041,967,083	3.220	82,801,550,614	8.32	11.14	25

2014	Bank5	7,155,579,476	1.960	73,589,845,698	8.72	11.23	25
2013	Bank5	6,414,437,452	2.890	61,113,501,223	6.08	11.55	25
2012	Bank5	5,283,900,074	2.090	54,364,427,882	8.72	11.02	25
2011	Bank5	4,711,243,495	4.220	46,736,203,884	5.75	10.68	25
2010	Bank5	4,218,361,500	3.520	42,717,124,613	6.76	10.72	25
2009	Bank5	3,845,211,300	2.160	39,330,131,823	6.76	11.02	25
2008	Bank5	3,253,515,981	2.360	36175531637	5.13	12.42	25
2017	Bank6	13,063,702,000	0.250	116,510,445,575	16.52	14.69	24
2016	Bank6	10,094,804,000	0.380	113,885,046,402	16.61	12.66	24
2015	Bank6	8,457,023,000	0.660	99,167,293,661	24.27	13.33	24
2014	Bank6	6,422,257,000	0.970	70,445,082,845	16.91	11.31	24
2013	Bank6	5,777,682,000	0.620	65,741,150,457	15.91	11.59	24
2012	Bank6	4,574,753,000	0.840	55,813,129,057	17.22	11.02	24
2011	Bank6	3,605,841,000	0.340	46,236,212,262	9.55	10.43	24
2010	Bank6	3,257,142,000	0.160	41,382,760,711	15.53	10.77	24
2009	Bank6	2,348,390,000	0.480	36,916,848,654	14.26	11.34	24
2008	Bank6	2,703,870,000	0.680	27,149,342,884	4.56	11.44	24