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Impact of Liquidity on Profitability of Commercial Banks in Nepal

Bijaya Prakash Shrestha

Abstract: *This paper has the aim to assess the impact of liquidity on profitability of commercial banks in Nepal. To address the objective, the article has sampled 8 commercial banks established in and before 1995 for the period between 2003/04 and 2010/11. Since liquidity management can increase the banks' profitability, the study has examined their liquidity management as well as profitability positions, using various financial tools. The article reports a largely smooth trend of average profitability of commercial banks, although the trend of liquidity ratios of the banks is fluctuating. The study concluded that the banks' 'NRB to deposit ratio' and 'Cash-vault to deposit ratio' have a positive, significant impact on profitability in Nepal. It also has reported no significant impact of 'Liquid fund to deposit ratio,' 'Cash and bank balance to deposit ratio,' and 'Liquid fund to current liability ratio' on profitability.*

I. INTRODUCTION

Liquidity management is of crucial importance in financial management decision. The optimal of liquidity management is could be achieve by company that manage the trade-off between profitability and liquidity management (Bhunia & Khan, 2011).

Liquidity risk threatens the solvency position of financial institutions. It also negatively affects the health of the institutions. There are two types of liquidity risks (i.e., first type and second type) arise in the financial institutions although they can raise the funds by running down their cash assets, borrowing additional funds in the money markets and selling off other assets (Shrestha, 2012)

In case of commercial banks, first type of liquidity risk arises when depositors of commercial banks seek to withdraw their money. They become insolvent if the assets are not enough to meet the liability withdrawals. Similarly, the second type of liquidity risk arises when money supply cannot meet the demand of unexpected loans due to the lack of the funds (Baral, 2005). On the other hand, maintaining the high liquidity position to

Mr. Shrestha is Associate Professor at Tribhuvan University, Saraswoti Multiple Campus.
Email: shrestha_bp@live.com

minimize such risks also adversely affects the banks' profitability. Return on highly liquid assets will be almost zero. Therefore, banks should strike the trade off between liquidity position and profitability to keep their health sound.

Commercial banks' liquidity exposure can be measured by analyzing the sources and uses of liquidity. In this approach, total net liquidity is worked out by deducting the total of uses of liquidity from the total of sources of liquidity. Different liquidity exposure ratios such as borrowed funds to total assets, core deposit to total assets, loans to deposits, and commitments to lend to total assets are used to measure the liquidity position of a commercial bank (Saunders & Cornett, 2004).

Nepal Rastra Bank (NRB) has used three financial ratios to measure the liquidity position of commercial banks; viz., NRB balance to total deposit ratio (NRBTDR), Cash vault to total deposit (VTDR), Total liquid fund to total deposit ratio (LFTDR) (NRB, Mid-July 2011).

Profitability is a measure of firm's efficiency (Khan & Jain, 1998). It is also a control measure of the earning power of a firm as well as operating efficiency. Weston and Copland (1998) described profitability as net result of a large number of policies and decisions. Ratios are used to measure profitability and give final answers to how effectively the firm is being managed in terms of its financial performance. Therefore, management, creditors and owners are also interested in the profitability ratio of the firm (Pandey, 1995).

Short-term profitability refers to a firm's ability to make an operating profit for which financial ratios on a yearly basis are used (Bierman & Smidt, 1980). This study also did not emphasise the liquidity management.

Shrestha (2012) found an association between liquidity and profitability of commercial banks in Nepal, with data up to 2003/04- 2009/10 of 8 private commercial banks taken into consideration.

Earlier, Elumilade et al. (2006) described investment decision as one of the most significant decision-areas that affect the future profitability either because it might increase revenues or because it can cause an increase in efficiency and reduction in costs. But, the study did not cover the effects of liquidity on profitability.

Pradhan (2007) evaluated the financial ratios, financial distress and stakeholder losses in corporate restructuring and attempted to explain the behaviour of financial ratios in financially distressed firms. Regmi (2005) analysed the profitability of Nepalese commercial banks by analysing the relationships between EPS, DPS and MPS of the banks. The study, however, did not deal with the profitability forecasting through liquidity ratios.

Previous studies were related to profitability as well as profit planning and control for manufacturing companies but the number of studies in the commercial banking is smaller. Moreover, those studies did not examine the effect of liquidity on profitability of the Nepali banking sector. The current study is an attempt towards fulfilling this lacking to some extent.

II. STATEMENT OF THE PROBLEM

Banks should have ready access to immediately expendable funds at reasonable cost precisely at the time those funds are needed. Lack of adequate liquidity is often one of the first signs that a bank is in serious financial trouble (Rose, 1999). Banks should have adequate liquidity to minimize both asset side liquidity risk and liability side liquidity risk of a commercial bank. Both the liquidity deficit and more liquidity surplus indicate the problem in the financial health of a commercial bank. More liquidity surplus hurts the profitability of the commercial bank as it reduces the return on assets. Similarly, liquid deficit also costs much to the commercial banks in term of the higher purchasing price of liquidity and affects the reputation of the banks. Therefore, the commercial banks should strike the trade-off between the profitability and liquidity risk.

The commercial banks are a major player in Nepalese banking sector and financial services industry. Government-owned banks, Nepal Bank Ltd and Rastriya Banijya Bank, are in operation for several decades, foreign joint venture and private banks also started operating since 1984 after the establishment of Nepal Arab Bank Ltd., currently NABIL Bank (Sthapit, 2009). However, previous studies regarding their profitability and liquidity positions are the area in which researchers, scholars, policy-makers and managers would be interested.

Deposit utilization rate of the commercial banks in Nepal is not stable. The growing competition among financial institutions and recent increase in transaction of security and capital markets as well as the taxation laid on higher deposits in banks is adversely affecting the bank's profitability.

The commercial banks in Nepal have not succeeded much in mobilising their capital in productive sectors. A proper effective, efficient and economic media for collecting resources has not been designed to collect the funds in Nepal. So, the banks are attracting the depositors through mass-media with different plans to attract depositors to the maximum possible extent.

Inefficiency and weaknesses relating to the analysis of financial statements affect the banks' financial performance. For instance, these banks' cash and bank balance and NRB balance have a fluctuating and declining trend while various deposits have been increasing; it reflects inefficiency in liquidity management of the banks. The following research questions have been set:

- What is the profitability position of commercial banks in Nepal?
- What is the liquidity position of commercial banks in Nepal?
- Does liquidity affect the profitability of commercial banks in Nepal?

III. OBJECTIVES OF THE STUDY

The study has the main objective of assessing the profitability of commercial banks on the basis of total assets. The specific objectives to achieve the main objective are:

- To measure the profitability position of commercial banks in Nepal

- To assess the liquidity position of commercial banks in Nepal
- To analyse the impact of liquidity on profitability of commercial banks in Nepal

IV. RESEARCH METHODOLOGY

The study has used a descriptive and analytical research design. It is based on secondary data taken from financial statements, annual reports, unpublished official records of concerned banks and web-sites of Nepal Rastra Bank as well as Nepal Stock Exchange.

Considering the 24 commercial banks listed at Nepal Stock Exchange (NEPSE) as its total population, this study sampled the eight private commercial banks established in and before 1995. Hence, the sample banks are NABIL Bank Ltd. (NABIL), Nepal Investment Bank Ltd. (NIB), Standard Chartered Bank Nepal Ltd. (SCBN), Himalayan Bank Ltd. (HB), Nepal SBI Bank Ltd. (NSBI), Everest Bank Ltd. (EB), Bank of Kathmandu Ltd. (BOK), and Nepal Bangladesh Bank Ltd. (NBB).

The study covered the period of eight fiscal years from 2003/04 to 2010/11 to study the liquidity and profitability position of commercial banks.

Statistical tools: The study has used arithmetic mean, standard deviation and simple regression analysis on the data of past eight years.

- **Financial tools**: The study has used the following financial tools to measure the liquidity position of commercial banks as directed by NRB (Mid-July, 2011).
- **NRB balance to total deposit ratio (NRBTDR)** indicates ratio of the amount deposited in Nepal Rastra Bank and total deposits collected by the commercial banks. Higher ratio means that there is a high liquidity position in the banks. The formula is set as follows:

$$\text{NRBTDR} = \frac{\text{NRB Balance}}{\text{Total Deposits}}$$

- **Cash vault to total deposit ratio (VTDR)** is the ratio of cash balance on total deposit collection by the commercial banks. Higher ratio indicates there is a sufficient cash balance to pay creditors of the banks. The formula for the ratio is as follows:

$$\text{VTDR} = \frac{\text{Cash Vault}}{\text{Total Deposits}}$$

- **Total liquid fund to total deposit ratio (LFTDR)** shows that the ratio between total liquid fund (i.e., cash balance plus outside bank balance and money at call) and total deposits collection by the commercial banks. Higher ratio indicates more sound liquidity position of the banks. The formula is as follows:

$$\text{LFTDR} = \frac{\text{Total Liquid Fund}}{\text{Total Deposits}}$$

- **Cash and bank balance to total deposits ratio (CBTDR)** which shows the ratio of cash and bank balance on total deposits per given in balance sheets of the commercial banks. Higher ratio shows the higher liquidity position of the banks that gives more useful for new investment opportunity.

$$CBTDR = \frac{\text{Cash and Bank Balance}}{\text{Total Deposits}}$$

- **Total liquid fund to current liabilities ratio (LFTCLR)** indicates that the ratio total liquid fund on current liabilities (i.e., Deposits, Bills payables plus creditors) as per given in balance sheets of the commercial banks. Higher ratio shows the higher liquidity position of the banks that is beneficial for new investment opportunity.

$$LFTCLR = \frac{\text{Total Liquidy Fund}}{\text{Current Liabilities}}$$

Though different indicators can be used to measure the profitability of banks, return on assets (ROA) is used in this study as per given in annual reports of the sampled banks.

Following research hypotheses have been set for the analysis of the study.

Hypothesis 1: There is a significant impact of NRB balance to total deposits ratio (NRBTDR) on return on assets (ROA)

Hypothesis 2: There is a significant impact of cash vault to total deposits ratio (VTDR) on return on assets (ROA)

Hypothesis 3: There is a significant impact of liquid fund to total deposits ratio (LFTDR) on return on assets (ROA).

Hypothesis 4: There is a significant impact of cash and bank balance to total deposits ratio (CBTDR) on return on assets (ROA).

Hypothesis 5: There is a significant impact of liquidity fund to current liabilities ratio (LFTCLR) on return on assets (ROA)

V. LIMITATIONS OF THE STUDY

- Since only eight banks established in and before 1995 were selected as a sample, it has excluded more than a dozen of newer banks limiting its study area.
- Historical data of only 8 years (i.e., from 2003/04 to 2010/11) have been collected and analyzed.
- Only limited statistical and financial tools, including simple average, profitability ratio (i.e., ROA) and other five liquidity ratios as well as simple regression models were used for data analysis. Not using more scientific and sophisticated tools may limit the validity of the study-findings.

VI. ANALYSIS OF DATA

Profitability (i.e., ROA) and liquidity positions have been analysed using statistical as well as financial tools with past eight years data of sampled banks.

Profitability of Sample Banks (ROA)

The study has examined the profitability position of eight commercial banks by analysing return on total assets (ROA) of each bank.

Table 1 shows that the average ROA and standard deviation of sample banks are 2.17 percent and 0.88 percent respectively. The average ROA of the eight banks is the lowest in 2003/04 (i.e., 1.35 percent) but highest in 2008/09 (i.e., 3.97 percent). The average ROA has shown an increasing trend but it has fallen in 2009/10 and 2010/11 (i.e., 2.74 percent and 2.12 percent respectively).

Table 1: ROA of Sampled Banks

(Figures in percent)

Banks	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Mean	S.D.
NABIL	2.73	3.06	3.23	2.72	2.32	2.55	2.37	2.31	2.66	0.34
NIB	1.13	1.42	1.61	1.79	1.77	1.68	2.19	2.02	1.70	0.33
SCBN	2.27	2.46	2.56	2.42	2.46	2.56	2.70	2.55	2.50	0.13
HB	1.06	1.11	1.55	1.47	1.76	1.91	1.19	1.91	1.50	0.35
NSBI	0.72	0.55	0.90	1.83	1.44	1.05	1.03	1.01	1.07	0.40
NBB	0.02	0.00	0.00	0.00	6.35	18.04	8.15	2.61	4.40	6.37
EB	1.50	1.40	1.49	1.38	1.65	1.73	2.09	2.10	1.67	0.29
BOK	1.34	1.42	1.65	1.80	2.04	2.25	2.18	2.44	1.89	0.40
Average	1.35	1.43	1.62	1.68	2.47	3.97	2.74	2.12	2.17	0.88

Source: Annual Reports

The standard deviation of NBB is 6.37 which higher than others. This means that ROA of the NBB is very highly fluctuating. It is closer to zero continuously from 2003/04 to 2006/07 but the highest (i.e., 18.04 percent) is in 2008/09. This might have caused the highest mean value of ROA in the year 2008/09. But the standard deviation of SCBN is 0.13 percent which the lowest. This indicates that the trend of ROA of SCBN is not more fluctuating. So, it is largely smooth.

Liquidity of the Commercial Banks

The liquidity ratios are calculated from total deposits, total liquid fund (i.e., total of cash balance, bank balance and money at call), cash vault (i.e., cash balance), NRB balance (i.e., deposited amount in Nepal Rastra Bank), total assets (i.e., total property as per balance sheets), cash and bank balance (i.e., total cash balance and bank balance along with NRB balance) and current liabilities (i.e., Deposits, Bills payables-plus creditors) of the sampled commercial banks using the formula as given in the methodology.

NRB Balance to Total Deposit Ratio (NRBTDR)

As indicated in Table 2, the average NRBTDR of sample banks is 6.30 percent. The highest NRBTDR of the sample banks in 2008/09 is 9.16 percent but the lowest is 4.82 percent in 2005/06 with standard deviation of 1.41 percent. The trend is changeable.

Table 2: NRBTDR of Sampled Banks

(Figures in percent)

Banks	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Mean	S.D.
NABIL	6.33	4.16	0.55	1.36	3.49	7.09	1.18	2.96	3.39	2.40
NIB	4.56	5.47	8.06	5.64	5.28	9.45	6.46	8.00	6.62	1.70
SCBN	7.25	3.58	3.25	6.55	4.26	5.16	2.33	4.31	4.59	1.66
HB	7.13	5.69	4.13	4.24	3.02	6.71	6.93	3.40	5.16	1.66
NSBI	8.49	3.65	2.41	7.30	7.53	4.48	7.83	5.49	5.90	2.22
NBB	6.28	6.17	8.53	6.48	9.24	18.71	14.16	13.61	10.40	4.61
EB	5.48	7.67	8.26	9.67	4.51	14.37	15.23	11.44	9.58	3.90
BOK	5.78	4.67	3.35	7.15	3.83	7.32	3.38	3.05	4.82	1.73
Average	6.41	5.13	4.82	6.05	5.14	9.16	7.19	6.53	6.30	1.41

Source: Annual Reports

The mean NRBTDR of NBB is 10.40 percent which is highest of all banks where the bank's NRBTDRs reached 18.71 percent in 2008/09 and 14.16 percent in 2009/10; and the standard deviation is also large at 4.61 percent. This might have caused the highest mean value of NRBTDR in the year 2008/09.

Cash Vault to Total Deposit Ratio (VTDR)

The Table 3 depicts that the average VTDR of sample banks is 2.27 percent. The average VTDR of the sample banks is the highest in 2007/08 (i.e., 2.86 percent) but the lowest in 2004/05 (i.e., 1.71 percent) with standard deviation of 0.41 percent. The trend is not very fluctuating. So, average VTDRs have no more variation; hence they show a smooth trend.

Table 3: VTDR of Sampled Banks

(Figures in percent)

Banks	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Mean	S.D.
NABIL	2.04	1.00	1.23	1.16	1.60	1.81	1.37	1.50	1.46	0.34
NIB	2.69	2.63	2.97	3.12	4.25	3.93	3.05	3.43	3.26	0.58
SCBN	0.89	1.01	1.21	1.54	1.39	1.29	1.45	1.61	1.30	0.25
HB	1.20	1.16	1.15	0.59	0.87	1.37	1.37	1.54	1.16	0.30
NSBI	2.23	1.66	2.49	2.51	2.29	2.36	2.34	2.38	2.28	0.27
NBB	2.75	2.48	2.72	4.14	5.62	4.60	4.20	4.63	3.89	1.12
EB	1.60	1.91	1.88	2.80	3.43	2.83	2.96	2.55	2.49	0.64
BOK	1.80	1.81	1.76	1.77	3.39	3.12	2.24	2.58	2.31	0.66
Average	1.90	1.71	1.93	2.20	2.86	2.66	2.37	2.53	2.27	0.41

Source: Annual Reports

The standard deviation of NBB is 1.12 which is higher than others. This means that the bank's trend of VTDR of is more fluctuating than others. The lowest standard deviation (i.e., 0.30 percent) in HB indicates that the trend of VTDR of HB is low fluctuating and is largely smooth.

Total Liquid Fund to Total Deposit Ratio (LFTDR)

The Table 4 shows that the mean value and standard deviation of LFTDR are 14.34 percent and 1.56 percent respectively. The average LFTDR of the commercial bank is the highest in 2003/04 (i.e., 16.64 percent) but the lowest in 2007/08 (i.e., 12.56 percent). The trend is not smooth.

Table 4: LFTDR of Sampled Banks

(Figures in percent)

Banks	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Mean	S.D.
NABIL	16.78	16.21	12.22	8.41	14.49	10.51	9.74	9.85	12.28	3.19
NIB	10.38	9.40	14.75	9.62	10.90	16.96	15.09	16.54	12.95	3.19
SCBN	20.04	17.43	14.11	16.22	14.28	18.92	10.23	19.10	16.29	3.29
HB	37.84	32.92	10.12	10.90	7.87	12.68	11.50	9.30	16.64	11.73
NSBI	10.72	5.32	8.24	15.33	12.04	6.84	10.17	11.50	10.02	3.17
NBB	11.68	12.31	13.56	12.63	18.03	29.73	20.38	21.50	17.48	6.26
EB	10.78	16.08	11.73	17.44	13.34	18.50	21.17	14.89	15.49	3.52
BOK	14.85	15.97	18.66	12.63	9.56	13.39	13.41	10.27	13.59	2.96
Average	16.64	15.71	12.92	12.90	12.56	15.94	13.96	14.12	14.34	1.56

Source: Annual Reports

The standard deviation of HB is 11.73 percent which is higher than others. This means that the trend of LFTDR of the bank is highly fluctuating. The standard deviation of NSBI is 3.17 percent which is the lowest. This indicates that the trend of LFTDR of NSBI is not very fluctuating.

Cash and Bank Balance to Total Deposit Ratio (CBTDR)

The Table 5 shows that the mean value and standard deviation of CBTDR are 11.50 percent and 1.69 percent respectively. The average CBTDR of the sample banks is the highest in 2008/09 (i.e., 13.79 percent) but the lowest in 2005/06 (i.e., 8.44 percent). The trend is not more fluctuating.

Table 5: CBTDR of Sampled Banks

(Figures in percent)

Banks	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Mean	S.D.
NABIL	6.88	3.84	3.26	6.00	8.37	9.03	3.01	4.90	5.66	2.30
NIB	10.38	9.40	12.44	9.97	10.90	16.96	13.61	16.24	12.49	2.88
SCBN	9.56	5.74	5.54	9.07	6.89	8.75	5.48	7.83	7.36	1.67
HB	37.84	32.89	10.05	10.86	7.84	12.63	11.40	9.26	16.60	11.75
NSBI	10.72	5.32	4.90	9.81	9.83	6.84	10.17	11.50	8.63	2.56
NBB	11.04	11.18	12.66	12.29	18.03	25.73	20.38	21.50	16.60	5.58
EB	10.78	15.70	11.70	17.37	13.27	18.37	21.04	14.84	15.38	3.47
BOK	10.27	8.28	6.99	10.53	9.10	11.99	8.82	7.99	9.25	1.61
Average	13.43	11.54	8.44	10.74	10.53	13.79	11.74	11.76	11.50	1.69

Source: Annual Reports

The standard deviation of HB (i.e., 11.75 percent) is comparatively higher than others. This means that the average CBTDR of HB is highly fluctuating. Similarly, the

standard deviation of BOK is 1.61, which the lowest. This indicates that the trend of CBTDR of BOK is not much fluctuating.

Liquid Fund to Current Liabilities Ratio (LFTCLR)

The Table 6 shows that the mean and standard deviation of LFTCLR are 14.10 percent and 1.52 percent respectively. The average LFTCLR of the commercial banks in 2003/04 is 16.63 which is the highest but the lowest in 2007/08 (i.e., 12.10 percent). The trend is not more erratic.

Table 6: LFTCLR of Sample Banks

(Figures in percent)

Banks	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Mean	S.D.
NABIL	16.78	15.94	12.02	8.21	14.29	10.26	9.60	9.65	12.09	3.21
NIB	10.38	9.32	14.59	9.52	10.78	16.77	14.93	16.30	12.82	3.13
SCBN	20.04	17.27	13.96	16.03	14.12	18.70	10.07	18.83	16.13	3.30
HB	37.84	32.89	10.05	10.86	7.84	12.63	11.40	9.26	16.60	11.75
NSBI	10.72	5.29	8.15	14.85	11.88	6.80	10.06	11.42	9.90	3.06
NBB	11.68	13.10	15.86	13.92	15.07	22.26	18.33	20.42	16.33	3.69
EB	10.78	15.70	11.70	17.37	13.27	18.37	21.04	14.84	15.38	3.47
BOK	14.85	15.96	18.51	12.57	9.51	13.32	13.36	10.23	13.54	2.94
Average	16.63	15.68	13.11	12.91	12.10	14.89	13.60	13.87	14.10	1.52

The standard deviation of LFTCLR of the HB is 11.75 percent which is comparatively higher than others. This means that the trend of the average LFTCLR of HB is highly fluctuating. But the standard deviation of NSBI is lowest at 3.06. This indicates that the trend of LFTCLR of NSBI is not very fluctuating.

Regression Analysis

Taking profitability (i.e., ROA) of sample banks as dependent variable and liquidity ratios (i.e., NRBTDR, VTDR, LFTDR, CBTDR and LFTCLR) as independent variables, all independent variables are regressed with profitability. It is to be noted that the NRB report (mid-July 2011) has mentioned only three ratios (NRBTDR, VTDR and LFTDR); and the current study has also applied two more ratios of CBTDR and LFTCLR.

Regression analysis of NRBTDR on ROA

As per Table 7, probability of $F_{(1,6)}$, is 0.016 (0.016 < 0.05) which is significant at 5% level of significance. R square of this model is 0.644 (i.e., 64.4%), which means that only 64.4 percent of variation in ROA is explained by variation in liquidity.

Table 7: Regression Analysis of NRBTDR on ROA

Model 1:	ROA	=	- 0.982	+ 0.500	NRBTDR	+ U
S.E.:			[0.977]	[0.152]		
p-value:			(0.354)	(0.016)		
R^2: 0.644			Probability of $F_{(1,6)}$: 0.016			

Test of Hypothesis: Since coefficient value and p-value of NRBTDR coefficient are 0.500 and 0.016 (i.e., 0.016 < 0.05) respectively, hypothesis-1 is accepted at 5 percent

level of significance. This means that the NRBTDR has a positive significant impact on ROA of sample banks

Regression Analysis of VTDR on ROA

As per Table 8, probability of $F_{(1,6)}$, is 0.033 (i.e., 0.033 < 0.05), which is significant at 5 percent level of significance. R square of this model is 0.560 (i.e., 56 percent), which means only 56 percent of variation in ROA is explained by variation in liquidity.

Table 8: Regression Analysis of VTDR on ROA

Model 1:	ROA	=	- 1.517	+ 1.625	VTDR	+ U
S.E.:			[1.352]	[0.588]		
p-value:			(0.305)	(0.033)		
R^2: 0.487			Probability of $F_{(1,6)}$: 0.033			

Test of Hypothesis: Since coefficient value and p-value of VTDR coefficient are 1.625 and 0.033 (i.e., 0.033 < 0.05) respectively, hypothesis 2 is accepted at 5 percent level of significance. This means that the VTDR has a positive significant impact on ROA of sample banks

Regression Analysis of LFTDR on ROA

As per Table 9, probability of $F_{(1,6)}$, is 0.860 (i.e., 0.860 > 0.10) which is not significant at 10% level of significance. So, the model is not fitted.

Table 9: Regression Analysis of LFTDR on ROA

Model 1:	ROA	=	1.568	+ 0.042	LFTDR	+ U
S.E.:			[3.305]	[0.229]		
p-value:			(0.652)	(0.860)		
R^2: 0.006			Probability of $F_{(1,6)}$: 0.860			

Test of Hypothesis: Since coefficient value and p-value of LFTDR coefficient are 0.042 and 0.860 (i.e., 0.860 > 0.10) respectively, hypothesis-3 is not accepted at 10 percent level of significance. This means that the LFTDR has no significant impact on ROA of sample banks.

Regression Analysis of CBTDR on ROA

As per Table 10, probability of $F_{(1,6)}$, is 0.301(i.e., 0.301 > 0.10) which is not significant at 10% level of significance. So, the model is not fitted.

Table 10: Regression Analysis of CBTDR on ROA

Model 1:	ROA	=	-0.342	+ 0.219	CBTDR	+ U
S.E.:			[2.243]	[0.193]		
p-value:			(0.884)	(0.301)		
R^2: 0.176			Probability of $F_{(1,6)}$: 0.301			

Test of Hypothesis: Since coefficient value and p-value of CBTDR coefficient are 0.219 and 0.301 (i.e., 0.301 > 0.10) respectively, hypothesis-4 is not accepted at 10

percent level of significance. This means that the CBTDR has no significant impact on ROA of sample banks.

Regression Analysis of LFTCLR on ROA

As per Table 11, probability of $F_{(1,6)}$, is 0.688 (i.e., 0.688 > 0.10) which is not significant at 10% level of significance. So, the model is not fitted.

Table 11: Regression Analysis of LFTCLR on ROA

Model 1:	ROA	=	3.556	- 0.098	LFTCLR	+ U
S.E.:			[3.294]	[0.232]		
p-value:			(0.322)	(0.688)		
R^2: 0.029			Probability of $F_{(1,6)}$: 0.688			

Test of Hypothesis: Since coefficient value and p-value of LFTCLR coefficient are -0.098 and 0.688 (i.e., 0.688 > 0.10) respectively, hypothesis 5 is not accepted at 10 percent level of significance. This means that the LFTCLR has no significant impact on ROA of sample banks.

V. CONCLUSION

Profitability analysis shows that the overall profitability (i.e. ROA) of the sample banks has normally an increasing trend. The overall trend of liquidity ratios is not largely smooth. Fluctuating trend of the liquidity ratios does not make easy in increase trend of profitability of commercial banks in Nepal.

There is a significant impact of NRBTDR and VTDR on profitability of commercial banks in Nepal. This indicates that increase in these liquidity ratios boosts the bank profitability and vice-versa.

But, there is no significant impact of LFTDR, CBTDR, and LFTCLR on profitability. This reveals that profitability has no relationship with those liquidity ratios.

Further Research

The present study has covered only eight commercial banks in Nepal established in and before 1995, and excluded those set up in subsequent years. It has also studied data of only 8 fiscal years. Therefore, further studies should also cover as many more banks and years as possible to make their findings more valid and should use more scientific tools and analysis.

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