

Determinants of Non-Performing Loans: Perception of Nepali Bankers¹

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Abstract

The paper discusses the perception of Nepalese bankers regarding the determinants of non-performing loan in Nepalese commercial banks. The paper is based on primary information collected from 140 bankers working in large ten commercial banks of Nepal. The bankers of Nepalese commercial bank perceive that energy crisis; lack of timely budgetary expenditure by the government and instable political environment increases the non-performing loan. Similarly bankers also perceive that borrowers honesty in disclosing the information, better monitoring and evaluation of the loan, have significant negative impact on non-performing loan. However, the banker's perception shows that the macroeconomic variables like unemployment rate, inflation rate, exchange rate and interest rate are not much important variables to influence non-performing loan of the commercial banks of Nepal. The bankers also perceive that the increase in GDP growth rate decrease the non-performing loan of commercial banks in Nepal.

Key Words: Non-performing loan; energy crisis; banks; macroeconomics; exchange rate.

CONTEXT

The non-performing loans (NPL) of financial institutions are considered as a significant issue in the context of Nepal for last few decades. The immediate consequence of large amount of NPLs in the banking system is bank failure. Many researches on the cause of bank failures find that asset quality is a statistically significant predictor of insolvency and that failing banking institutions always have high level of non-performing loans prior to failure (Barr & Siems, 1994).

There is no standard form to define non-performing loans globally. Variation may exist in terms of the classification system, the scope, and contents as per country. Nepal Rastra Bank (the Central Bank of Nepal), as a regulatory financial institution of the country, has classified the loan basically into the pass loan, sub-standard loan, doubtful loan and loss or bad loan. Pass loan is that type of loan whose interest or

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principal payments are less than three months in arrears. Sub-standard loans whose interest or principal payments are longer than three months in arrears of lending conditions are eased. Doubtful is liquidation of outstanding debts appearing uncertain and the accounts suggest that there will be a loss, the exact amount of which cannot be determined. Loss loans are regarded as not collectable, usually loans to firms which applied for legal resolution and protection under bankruptcy laws. Pass loans are under the category of performing loans whereas sub-standard loan, doubtful loan and loss loan are under the non-performing loans (NRB, 2012a).

Considering these facts it is necessary to control non-performing loans for the economic growth in the country, otherwise the resources can be jammed in unprofitable projects and sectors which not only damages the financial stability but also the economic growth. In order to control the non-performing loans it is necessary to understand the root causes of these non-performing loans in the particular financial sector (Rajaraman & Visishtha, 2002). It is important to understand the phenomena and nature of non-performing loans; it has many implications, as fewer loan losses is indicator of comparatively more firm financial system, on the other hand high level of non-performing loans is an indicator of unsecure financial system and a worrying signal for bank management and regulatory authorities. If we look into the causes of great recession 2007-2009 which damaged not only economy of USA but also economies of many countries of the world find that non-performing loans were one of the main causes of great recession (Richard, 2011).

Exploring the determinants of ex-post credit risk is an issue of substantial importance for regulatory authorities concerned with financial stability and for banks' management. The ex-post credit risk takes the form of non-performing loans (NPLs). In most of the past studies, except Salas and Saurina (2002), that investigate the determinants of NPLs either macroeconomic or bank-specific determinants (but not both) are used as explanatory variables (Louzis et al., 2012). Rinaldi et al. (2006) analyze household NPLs for a panel of European countries and provide empirical evidence that disposable income, unemployment and monetary conditions have a strong impact on NPLs. Segoviano et al. (2006) focus on the macroeconomic variables to understand the determinants of non-performing loan.

There is another group of the literature which emphasizes the effect of bank specific characteristics on non-performing loan. Berger and DeYoung (1997) draw attention to the links between bank-specific characteristics and focus on efficiency indicators and problem loans. Specifically, this study formulate possible mechanisms, namely 'bad luck', 'bad management', 'skimping' and 'moral hazard', relating efficiency and capital adequacy. They test the derived hypotheses for a sample of US commercial

banks spanning the period from 1985 to 1994 and conclude that, generally, decreases in measured cost efficiency lead to increased future problem loans. All these papers focus solely on bank specific variables.

There are few studies which focus both macroeconomic and banks specific variables. The paper of Louzis et al. (2012) uses dynamic panel data methods to examine the determinants of non-performing loans (NPLs) in the Greek banking sector, separately for each loan category consumer loans, business loans and mortgages. The results show that, for all loan categories, NPLs in the Greek banking system can be explained mainly by macroeconomic variables (GDP, unemployment, interest rates, public debt) and management quality.

The success of commercial banks depends on profitability. Loan is the major component of earning assets of commercial banks. However, the profitability will be more if the bank have less non-performing loan. On the other hand if the non-performing loan is high the banks may not be able reap profit instead they may be in loss because the bank need to put reserves for the amount of non-performing loans (Farhan et al., 2012). The three letters NPA strike terror in banking sector and business circle today. The dreaded NPA rule says simply this: when interest or other due to a bank remains unpaid for more than 90 days, the entire bank loan automatically turns a non performing asset (Barth et al., 2004).

In Nepal, commercial banks have a mushrooming growth in the last two decades. The number of commercial bank have risen to 32 at present with 1425 branches and it occupies a share of about 77 percent of the total asset/liabilities of banks and financial institutions in Nepal (NRB, 2012b). Nepal is also facing banking crisis and some of the bank and financial institutions have already failed during last few years and are in the process of liquidation (Sapkota, 2011). Studies show that the failure of banks in Nepal was also the result of the high non-performing assets due to and the result of lending without differentiating markets, products and borrowers' credit worthiness and excessive loan exposure to real estate (Sapkota, 2011).

The amount of non-performing loan is one of the indicators of its performance. Less the NPL, better the financial health of the economy. If the non -performing loan is more, there will be poor financial health and crisis may result in the economy. In the past before 2001, Nepal bank limited and RBBL nearly collapsed .The main reason behind it was the non-performing loan in a larger chunk of over fifty percent. Because of which NRB with the support of IMF and World Bank adopted a reform program (Ahikary et al., 2007).

However, there is not any study regarding the factors affecting non-performing loan in Nepal. Finding the factors affecting NPL covering both micro (banks specific) and macroeconomic variables may help to reduce the NPL and improve the profitability of each commercial banks and may also help for improvement of the economy as a whole. By analyzing the effect of different bank specific and macroeconomic variables the study will help to develop general policy guidelines for the banks in Nepal. It may add the literature on the factors affecting NPL in Nepalese commercial banks. Thus the present study is one of its kinds in identifying the reason for NPL and may help for the policy formation to reduce NPL in Nepalese banking industry

It is observed that the bank credit depends upon the activity. As economy grows bank credit accelerates while the slow growth of the economic activity or the decline in economic activity results decline in bank credit. Hence it is widely accepted that bank credit exhibits pro-cyclicality (Dash & Kabra, 2010). The pro-cyclical trend of the bank credit can be explained with the help of many factors. The supplier of the credit (bankers) may feel high credit risk during the slowdown of the economy and may provide less score. While during expansionary situation the banks may evaluate credit with high score and may find less risky and there will be higher expansion of credit.

Macroeconomic theory tells us that in expansionary situation create optimistic environment and recession or declining phase may generate pessimistic environment in the business (Mankiw, 2011). Hence business people will demand more credit for their investment activities during the expansionary phase of the economy while they may be reluctant to invest and reduce the demand of credit during contractionary phase of the economy (Dash & Kabra, 2010).

Financial institutions are very important in the economic growth of the economy as they help to make easy credit flow and enhance economic activity with increasing investment in productive sectors of the economy (Richard, 2011). Sound financial sector is more important for the economic growth of any country (Rajaraman & Visishtha, 2002). Better performance of these financial institutions play a significant role for the economic prosperity of any country and poor performance of these institutions result the slowdown of economic growth and affects badly to the region of the world. Since "the NPA of banks is an important criterion to assess the financial health of banking sector" (Ahmed, 2010), identification of the potential problem and close monitoring is paramount importance for the better performance of this sector. Banking crisis exists in the country if the non-performing assets (NPAs) touch 10 percent of GDP. The loss of income from NPAs not only brings down the level of income of the banks but also hinders them from quoting better lending rates (Khan & Bishnoi, 2001).

Studies also found that an increase in the riskiness of loan assets is rooted in the bank's lending policy adductive to relatively unselectively and inadequate assessment of sectoral prospects (Sergio, 1996). Banking business is exposed to various risks such as credit risk, liquidity risk, interest risk, market risk, operational risk and management risk. However, credit risk stands out as the most detrimental to them all (Iyer, 1999). The risk of erosion in asset value due to simple default or non-payment of interest and principal of dues by the borrowers is credit or default risk (Sharma, 1996). The extent of non-performing assets is comparatively higher in public sector banks in India than that of private and foreign banks (Ahmed, 2008).

Rapid credit growth, which was associated with lower credit standards contributed to higher loan losses in certain states in the USA (Keeton, 1999). Studies in Argentinean banking system found that non-performing loans (NPLs) are affected by both bank specific factors and macroeconomic factors (Bercoff et al., 2002). Studies found that the real growth in GDP, rapid credit expansion, bank size, capital ratio, market power were found as explanatory variables for non-performing loans in Spanish commercial and saving banks (Salas & Saurina, 2002). Similarly Jimerrez and Saurina (2006), by examining the Spanish banking sector, provide evidence that non-performing loans are determined by GDP growth rate, real interest rate and lenient credit terms. The study further shows that lenient credit terms result the herd behavior and agency problem that may entice bank managers to lend excessively during boom periods. It has also been viewed that bank's lending policy could have crucial influence on non-performing loans (Reddy, 2004).

An effective risk management is central to good banking and the tradeoff between risk and return is one of the prime concerns of any investment decision whether long term or short term and effective credit risk management allows a bank to reduce risks and potential NPAs. Once a bank understands their risks and their costs, they will be determining their most profitable business, thus price products according the risk. Therefore, the bank must have an explicit credit risk strategy and support by organizational changes, risk management technique and fresh credit process and systems (Karim et al., 2010).

In this context the present paper aims to examine the major determinants of non-performing loan in public and private sector bank in Nepal. It attempts to identify the perception of bankers regarding the impact of bank specific variables and macroeconomic variables on non-performing loan in Nepalese Commercial Banks.

The share of non-performing loans in total bank loans is an important indicator of banking and financial institutions' health. The high share of NPAs in the Nepalese

banking sector in aggregate has been of concern in the past. The present study may contribute to the NPLs literature in Nepalese banking industry. This study may add literature regarding the factors affecting the non-performing loan of commercial banks in Nepal. This study focuses on the Nepalese commercial banking system and the commercial banks. In Nepal banking industry is facing the problem of non-performing loan. Profits of most of the banks shrunk during the past and some even posted losses as they had to allocate bigger amount on loan loss provisioning as borrowers, especially those exposed to the real estate sector, failed to repay debts on time. Therefore this study may serve as a benchmark for further study in this area. This study concentrates on the perception of bankers regarding both the bank specific and macroeconomic variables to affect non-performing loan of the commercial banks of Nepal.

CONCEPTUAL FRAMEWORK

Non-performing loan is such loans whose repayment schedule is past due for more than 90 days (Rose et al., 2010). In other words, non-performing loan is a loan that is in default or close to being in default. Many loans become non-performing after being in default for 90 days, but this can depend on the contract terms.

“A loan is non-performing when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full” (International Monetary Fund, 2005, p.8).

On the basis of the repayment schedule, loan is categorized into the following:

- i. Pass loan: Loan due till 3 months
- ii. Sub-standard loan :Loan due from 3 to 6 months
- iii. Doubtful loan: Loan due from 6 months to 1 year.
- iv. Loss Loan: Loan due even after 1 year.

Pass loan is categorized as performing loan whereas all other like sub-standard, doubtful and loss loan are categorized as non-performing loan.

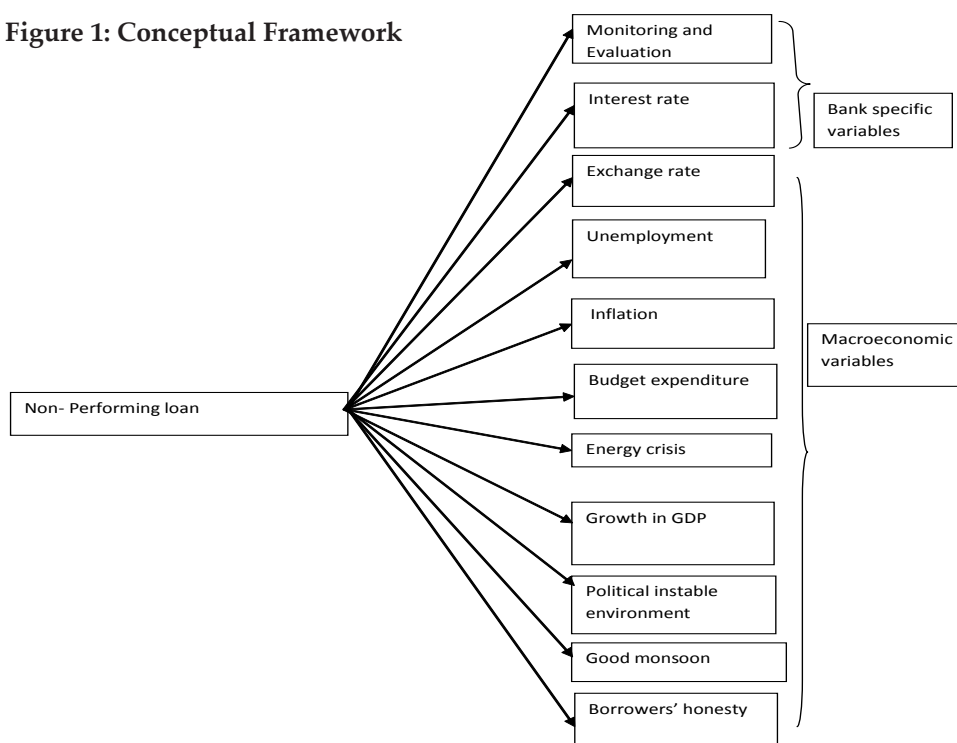
The simple model for the analysis of collected data is taken where the expected relationship between various independent variables and dependent variable i.e. nonperforming loan is shown. It is expected that higher the interest rate higher will be the cost of fund and hence higher will be the NPL. The past studies show that more energy crisis will result poor business environment and high cost of business and more

will be the non-performing loan. In addition, higher the unemployment the income will decrease which may result inability to repay loans and the non-performing loan will be high.

Inflation may increase the profit as the producer may employ cheaper inputs and may sell at higher prices hence it may have negative impact in non-performing loan. On the other hand inflation may increase the cost of business and may have positive impact. Higher the GDP growth rate higher will be the business prosperity and hence there will be easy repayment and less non-performing loan. Normally higher exchange rate may result higher imports and less exports and low performance of the national business which result in higher non-performing loan. Budget in time may have enough liquidity and economic activities and hence it results less NPL. Better monitoring and evaluation of the loan may help to reduce non-performing loan.

Depending upon the existing theoretical and empirical evidences on the determinants of non-performing loans of the sampled banks of Nepal the conceptual framework of this study is portrayed in Figure 1.

Figure 1: Conceptual Framework



Source: Farhan et al. (2012) and modified in Nepalese Context

RESEARCH METHODS AND PROCEDURES

Data Collection

The study is conducted with primary data collected with the help of structured questionnaires with the bankers. The data have been used to assess the opinion of bankers related to the factors influencing the non-performing loan in Nepalese commercial bank and to analyze their perceptions with respect to factors affecting non-performing loan.

There are altogether 32 commercial banks in Nepal. Out of these 32 commercial banks 10 older commercial banks are selected for the purpose of primary information collection. The main purpose of primary information collection is to understand the perception of bankers in Nepal regarding the economic determinants of non-performing loan. While selecting the samples the focus is on all those bankers who are involved in the risk analysis, lending decision, handling NPLs portfolio etc.

Instrumentation

Five point likert scales is used as a tool to assess the responses and to measure the impact of economic and banks specific factors on the non-performing loan. The scale is:

1= strongly disagree, 2= disagree, 3 =neutral, 4= agree, 5 = strongly agree.

Sample Size and Sampling Frame

Multistage sampling is used to find the data from primary survey. In the first stage 10 older commercial banks are selected from the entire population of Nepalese commercial banking sector. The banks established prior to the 1995 are selected for the purpose of the study. The data is collected from central, regional/corporate and branch offices. For the present purpose only the regional/corporate office located in Kathmandu is selected, since Kathmandu covers more than 50 % of the total lending activities of the commercial banks of Nepal. Similarly 5 branches from each sample bank with highest transaction are selected for the purpose of the study. People involved in credit risk assessment, evaluation and approval are selected for filling the questionnaire. Similarly the banker involved in collection and monitoring of the loan is interviewed. The sampling structure and sample size is presented in Table 1.

Table 1 : Sampling Frame of the Study

Population and Sample	Focused Units
Total Population	32 Commercial Banks
Sample Banks	Top 10 commercial banks established before 1995
Regional /Corporate Office	1 from each bank located in Kathmandu
Branch offices	5 from each commercial bank
Number of individuals	Central Office: (i) Chief of Loan dept, (ii) Head of loan collection dept. Regional/Corporate Office: (i) Chief of loan department ,(ii) Chief of collection Department Branch Office: (i) Branch Manager,(ii) Loan officer
Total sample size	Central office =20 Regional/corporate office =20 Branch office 5×2×10 = 100 Total =140

Thus the primary information regarding the perception of the bankers on the determinants of non-performing loan is collected from 140 bankers working in the top 10 commercial banks of Nepal.

Validity and Reliability

Reliability is the extent of variable error in a measurement. It exists when repeated measures of the same stable characteristic show limited variation. Validity is the amount of systemic error in a measurement. There are different types of internal consistency reliability tests (Cooper & Schindler, 2006).The most popular one is the Cronbach's alpha (Cronbach, 1951). This tool evaluates how well a set of variables measure a single concept (Cooper & Schindler, 2006). Cronbach alpha is not a statistical test,it is a coefficient of reliability or consistency. Cronbach's alpha can be written as a function of number of test items and an average inter-correlation among the items. Equation for the standardized Cronbach's alpha is:

$$\alpha = \frac{N \cdot \bar{c}}{v + (N - 1) \cdot \bar{c}}$$

Where α = Cronbach's alpha, N = Number of items, \bar{C} = Average inter-item covariance among the items, \bar{V} = the average variance

Terblance and Boshoff (2008) noted that in order for a scale to be acceptable and usable, Cronbach's alpha should be greater than or equal to 0.70.

Specification of the Empirical Model

The model shows the severity of non-performing loan and perception of bankers on the reasons for such non performing loan. In this model the again the dependent variable is the severity of non-performing loan and the independent variables are Interest rate, Energy crisis, Unemployment rate, inflation rate, growth rate of GDP, Monitoring and evaluation, Exchange rate, Good monsoon, Borrowers' honesty, Budgetary expenditure, Political instability and ownership.

The model is adapted from Farhan et al. (2012) for the purpose of the present analysis and it is specified as under:

Non-Performing Loan = f(Interest rate, Energy crisis, Unemployment rate, inflation rate, growth rate of GDP, Monitoring and evaluation, Exchange rate, Good monsoon, Borrowers' honesty, Budgetary expenditure, Political instability). In mathematical form, the model is as given by equation (1).

$$\begin{aligned} \text{NPL} = & \alpha_0 + \alpha_1 \text{IR} + \alpha_2 \text{ER} + \alpha_3 \text{UE} + \alpha_4 \text{INF} + \alpha_5 \text{EC} + \alpha_6 \text{GDP} + \alpha_7 \text{ME} \\ & + \alpha_8 \text{GM} + \alpha_9 \text{BE} + \alpha_{10} \text{BH} + \alpha_{11} \text{PE} + \varepsilon_i \end{aligned} \quad (1)$$

with the usual statistical property of the error term, that is, $\varepsilon_i \sim N(0, \sigma^2)$

The detail of definition of variables, expected sign and possible reasons are summarized in Table 2.

Table 2: Definition of Variables, Expected Sign and Reasons for Inclusion

Factor Context	Variable Name	Expected Sign	Reasons/Perception of Bankers
Dependent Variable: Non-Performing Loan	NPL		
Explanatory Variables			
Interest rate	IR	+ve	Bankers perceive that higher the interest rate higher will be the cost of fund and hence higher will be the NPL
Energy crisis	EC	+ve	Bankers perceive that more energy crisis poor business environment and high cost of business and high will be the NPL
Unemployment rate	UE	+ve	Bankers perceive that higher the unemployment rate lower will be income and inability to repay loans and results high NPL
Inflation rate	INF	ambiguous	Bankers perceive that inflation may have -ve impact to the business as the profit may increase with inflation. On the other hand inflation may increase the cost of business and may have +ve impact on NPL.
GDP growth rate	GDP	-ve	Bankers perceive that higher GDP growth rate will result higher business prosperity and hence easy repayment and less NPL
Exchange Rate	ER	+ve	Bankers perceive that normally higher exchange rate may result higher imports and less exports and low performance of the national business and higher NPL.
Budget expenditure	BE	-ve	Bankers perceive that low budget expenditure increases the NPL.
Borrowers' honesty	BH	-ve	Bankers perceive that less honest the borrowers higher will be NPL.
Good monsoon	GM	-ve	Bankers perceive that low monsoon rainfall increases the NPL.
Monitoring and evaluation	ME	+ve	Bankers perceive that less monitoring and evaluation reduces the NPL
Political Instable Environment	PE	+ve	Bankers perceive that higher the political instability, frequent changes in the laws and procedure in economic activities may result higher non-performing loan.

Source: Author's summarization

RESULTS AND DISCUSSION

The results are based on primary data collected from 140 bankers of ten top commercial banks of Nepal.

Inferential Analysis and Discussion

In this part of the research the findings of the primary information regarding the perception of the bankers on the impact of macroeconomic and bank specific variables on non-performing loan are presented.

Likert Scale of the Variables

In this section the number of likert scale, mean, median, mode and standard deviation regarding the views of bankers on the factors affecting the non-performing loan for all the variables used in the analysis are presented. The five likert scales were used to understand the views of the bankers. The lowest scale 1 was for the strongly disagree, 2 for disagree, 3 for neutral, 4 for agree and 5 for strongly agree. Results are summarized in Table 3.

Table 3 : Bankers' Perceptions on the Effect of Macroeconomic and Bank-Specific Variables on NPL

S. N.	Statement	Scales					Mean	Median	Mode	St. Dev	Total
		1	2	3	4	5					
1	Non-performing loan is severe in the bank	0	1	44	71	24	3.9	4	4.3	0.66	140
2	Higher the interest rate higher will be the NPL	0	17	79	43	1	3	3	3	0.6	140
3	Higher the exchange rate higher will be the NPL	1	54	65	16	4	2.8	3	3	0.77	140
4	Higher the unemployment rate higher will be the NPL	0	19	35	73	13	3.6	4	4	0.84	140
5	Higher the inflation rate higher will be the NPL	0	31	38	57	14	3.4	4	4	0.94	140
6	More energy crisis higher will be the NPL	0	0	27	92	21	3.7	4	4	0.52	140
7	Decrease in GDP growth rate results high NPL	0	2	33	100	5	3.8	4	4	0.53	140
8	Better monitoring and evaluation results low NPL	0	0	2	124	14	4.1	4.2	4.2	0.26	140
9	Better monsoon rain fall result low NPL	0	31	67	38	4	3.1	3	3	0.77	140
10	Timely budgetary expenditure result low NPL	0	3	63	73	1	3.6	3.7	3.3	0.49	140
11	More honest the borrower lower will be the NPL	0	0	11	92	37	4.4	4.5	4.5	0.48	140
12	Political instability increases NPL	0	3	24	71	42	4.1	4	4	0.74	140

Note: In the response scale, 1 = strongly disagree, 2= disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Source: Based on information contained in questionnaire of the field study, 2013.

The scale is presented in average number of the related statements. There were three questions regarding severity of non-performing loan, two questions for the impact of interest rates, only one question for the impact of unemployment, GDP growth rate and the impact of inflation rate.

Similarly there were two questions regarding the impact of energy crisis, six questions regarding the impact of monitoring and evaluation, three questions on the impact of timely budgetary expenditure and two questions on the impact of borrower's honesty. Regarding the impact of good monsoon and political environment there were only one question. Average of the scale is taken for the analysis in case of more than one question.

Table 3 shows that the mean of the value of the statement regarding the impact of interest rate on non-performing loan is only 3. This shows that in average the banker's view is neutral regarding the impact of interest rate on NPL. The median and mode value is 3.

The bankers are also neutral regarding the impact of exchange rate. The mean value is 2.8 and the median and mode is only 3. However, majority of the bankers agree that high unemployment results high non-performing loan of the commercial banks. The mean value on the statement regarding the impact of unemployment is above 3 and the mode and median is 4.

Similarly the majority of bankers agree that high inflation results higher non-performing loan. The mean value of the likert scale on the impact of inflation is 3.4 and median and mode is 4.

The mean value of the statement regarding energy crisis is 3.7 and median and mode is 4. This shows that majority of the bankers perceive that more energy crisis results more non-performing loan of the commercial banks. Similarly majority of bankers agree or strongly agree that decrease in GDP growth rate results more non-performing loan.

The mean value of the likert scale regarding the GDP growth rate is 3.8 and the median and mode value is 4. Most of the bankers agree that the better monitoring and evaluation of loan documents lowers the non-performing loan. The mean value regarding the monitoring and evaluation is 4.1 and the median and mode is 4.

Bankers are neutral regarding the impact of better monsoon on non-performing loan. The mean, median and mode value is 3 regarding the impact of better monsoon rain fall on non-performing loan. Nearly 50 % of the bankers are neutral regarding the impact of timely budgetary expenditure. The value of mean, median and mode is 3.6, 3.7 and 3.3 respectively. Most of the bankers perceive that political instability increases the non-performing loan of the commercial banks. The mean value is 4.1 whereas the median and mode value is 4.

Table 4 shows the share of likert scale to total score in the percentage. It shows that nearly 68 percent bankers agreed or strongly agreed that the non-performing loan is the severe problem of the commercial banks in Nepal. This indicates that the problem of non-performing loan is perceived by the bankers as one of the important problem of the commercial banking sector in Nepal.

Table 4: Summary of the Perception of Bankers

S. N	Statement	Scale and Its Percent										Total
		1	%	2	%	3	%	4	%	5	%	
1	Non-performing loan is sever in the bank	0	0	1	0.7	44	31.4	71	50.7	24	17.1	140
2	Higher the interest rate higher will be the NPL	0	0	17	12.1	79	56.4	43	30.7	1	0.7	140
3	Higher the exchange rate higher will be the NPL	1	0.7	54	38.5	65	46.4	16	11.4	4	2.9	140
4	Higher the unemployment rate higher will be the NPL	0	0	19	13.6	35	25.0	73	52.1	13	9.3	140
5	Higher the inflation rate higher will be the NPL	0	0	31	22.1	38	27.1	57	40.7	14	10.0	140
6	More energy crisis higher will be the NPL	0	0	0	0.00	27	19.3	92	65.7	21	15.0	140
7	Decrease in GDP growth rate results high NPL	0	0	2	1.4	33	23.6	100	71.4	5	3.6	140
8	Better monitoring and evaluation results low NPL	0	0	0	0.0	2	1.4	124	88.6	14	10.0	140
9	Better monsoon rain fall result low NPL	0	0	31	22.1	67	47.9	38	27.1	4	2.9	140
10	Timely budgetary expenditure result low NPL	0	0	3	2.1	63	45.0	73	52.1	1	0.7	140
11	More honest the borrower lower will be the NPL	0	0	0	0.0	11	7.9	92	65.7	37	26.4	140
12	Political instability increases NPL	0	0	3	2.1	24	17.1	71	50.7	42	30.0	140

Source: Researcher's calculation based on the information received from field study, 2013

However only 32 % of the bankers agree or strongly agree that higher interest rate results the higher non-performing loan. Nearly 56 % of the bankers are in neutral view regarding the statement that high interest rate results high non-performing loan.

Nearly 39 % of the bankers disagree that the higher exchange rate results high non-performing loan. Similarly 46 % of the bankers express neutral view regarding the

impact of exchange rate and only 14 % of the bankers agreed or strongly agreed that the higher exchange rate results higher non-performing loan.

Regarding the impact of unemployment, more than 60 % of the bankers agreed or strongly agreed that higher unemployment results higher non-performing loan. However, only 50 % of the bankers agreed or strongly agreed that higher inflation rate results higher non-performing loan.

Nearly 80 % of the bankers agreed or strongly agreed that more energy crisis causes more non-performing loan of the commercial banks of Nepal. Similarly 75 % of the bankers agree or strongly agree that decrease in gross domestic product results high non-performing loan of the commercial banks.

The statement that the timely budget expenditure of Government results low non-performing loan is agreed by 53 % of the respondents whereas remaining others disagreed on the statement. Similarly, more than 90 % of the respondents agreed or strongly agreed on the statement that more honest the borrower results lower non-performing loan. While more than 80 % of the bankers agreed or strongly agreed that political instability increased the non-performing loan of the commercial banks. This shows that there is an acceptance at a greater level that borrowers must be honest and political environment must be stable for a reduction on the non-performing loan.

Validity and Reliability of the Survey Data

The valid and non-valid cases out of the total sample is summarized in Table 5

Table 5: Case Processing Summary Regarding Validity Test

Cases	Number of Observations	%
Valid	140	100.0
Excluded ^(a)	0	.0
Total	140	100.0

^a Listwise deletion based on all variables in the procedure.

Source: Researcher's estimation with SPSS software

The information contained in Table 5 reveals the validity of the data used for the analysis of primary data. As we know, validity is 100 percent and the number of variables used is 140. This shows that the further analysis of data can be preceded. The reliability test statistic is given in Table 6.

Table 6: Reliability Statistics

Cronbach's Alpha	Number of Items
.902	12

Source: Researcher's estimate with SPSS software

The value of Cronbach's alpha is 0.902, which lie between 0.90 and 0.99. According to the theory of reliability, it is an excellent data in terms of reliability. This shows that the data collected from the respondent bankers are valid.

Regression Results on the Perception of Bankers

The regression was run with the likert scale regarding the perception of bankers on macroeconomic and bank specific factors affecting non-performing loan. The average of the likert scale for the related statements was used for the purpose of regression. The result of the multiple regression as specified in equation (1) mentioned in previously is given in Table 7 in which the dependent variable is severity of non-performing loan (NPL).

Table 7: Regression Coefficient and Significance of the Variables

Explanatory Variables	Coefficient	Significance
Constant	-1.637	.000
IR	.059	.145
ER	-.030	.513
UE	.047	.356
INF	-.011	.711
EC	.151***	.004
GDP	.145**	.013
ME	.482***	.000
GM	.120**	.038
BE	.198***	.002
BH	.182***	.001
PE	.124**	.022
R square =	0.870	
Adj. R square=	0.859	
F- statistics=	77.803	

Note: *** significance at 1% level, **significance at 5% level.

Source: Regression output of SPSS software obtained by using the field survey data.

Table 7 shows the findings of regression analysis on the perception of bankers regarding the impact of macroeconomic and bank specific variables on non-performing loan. The table shows that the dependent variable is the perception regarding the severity of non-performing loan. The independent variables are interest rate (IR), unemployment (UE), exchange rate (ER), inflation rate (IR), energy crisis (EC), growth rate of GDP (GDP), political environment (PE), monsoon rain (GM), monitoring and evaluation (ME), borrower's honesty (BH) and budget expenditure (BE).

The basis of the data for regression is calculated through the average of 5 likert scales questions related to each variables' through questionnaire distributed uniformly to 140 bankers as respondents of 10 selected banks. The questions were in the form of statement. The findings show that there is no significant effect of interest rate, exchange rate, unemployment, and inflation rate. This means that the bankers feel that the unemployment rate, interest rate of lending, exchange rate have no significant effect on the non-performing loan of the commercial banks of Nepal. However, energy crises, growth rate of GDP, monitoring and evaluation, monsoon rain, political environment, timely budget expenditure have significant impact on non-performing loan.

In other words, if there is high energy crisis in the country NPL will increase. Similarly, low growth rate of GDP, less monitoring and evaluation, bad monsoon rain, frequent strike and political instability increases the NPL. Similarly, lack of borrower's honesty, untimely budget also increases the NPL.

There are few studies regarding the regression on the perceptions of the bankers. The study by Farhan et al. (2012) has adopted the independent variables as interest rate, energy crisis, unemployment rate, inflation, GDP growth rate and exchange rate. The findings of the study show that all the independent variables are significant. However, in this study, interest rate, inflation, unemployment and exchange rate are not significant.

R^2 is the ratio of the explained variation compared to the total variation, thus it is interpreted as the fraction of the sample variation in dependent variable that is explained by independent variables. The value of R^2 is 0.87 and the adjusted R square is 0.859 which shows that the 85.9% of the sample variation in the severity of non-performing loan is explained by the independent variables adopted in the regression analysis. The F statistics is a measure of the overall significance of the estimated regression. Here, the value of F-test is 77.803 and is significant at 1% level of significance. Hence the overall model is significant.

DISCUSSION AND CONCLUSION

To understand the bankers' perception regarding the impact of macroeconomic and bank specific variables, a structured questionnaire was developed with five likert scale. The scale were 1 for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree and 5 for strongly agree. The questions were mainly related to the perception regarding the impact of macroeconomic variables like GDP growth rate, unemployment rate, inflation rate and exchange rate on non-performing loan. Similarly there were also questions regarding the impact of bank specific and country specific variables like interest rate, monitoring and evaluation, energy crisis, political environment, timely budgetary expenditure, good monsoon and borrower's honesty on non-performing loan of the commercial banks of Nepal. The primary information was collected from 140 bankers of ten top commercial banks of Nepal.

The findings of the study are analyzed with tables, figures, charts and regression analysis with SPSS and Ms-Excel software. The major findings of the study are:

- i. The bankers of Nepalese commercial bank perceive that energy crisis; lack of timely budgetary expenditure by the government and instable political environment increases the non-performing loan.
- ii. Similarly bankers also perceive that borrowers honesty in disclosing the information, better monitoring and evaluation of the loan, have significant negative impact on non-performing loan.
- iii. However, the banker's perception shows that the macroeconomic variables like unemployment rate, inflation rate, exchange rate and interest rate are not much important variables to influence non-performing loan of the commercial banks of Nepal.
- iv. The bankers also perceive that the increase in GDP growth rate decrease the non-performing loan of commercial banks in Nepal.

The bankers in Nepal perceive that non-performing loan of the commercial banks depend upon the energy crisis, political instability, timely budgetary expenditure, borrower's honesty in disclosing the important information, good monsoon and better monitoring and evaluation of the loan. Similarly they perceive that the GDP growth rate also have impact on non-performing loan of the commercial banks of Nepal.

The findings regarding the perception of bankers show that the increase in energy crisis increases the non-performing loan. One of the reasons of poor business environment in Nepal is the energy crisis. Hence the development of more hydro electricity and reduction in load shedding may help to improve the business environment and reduce

the non-performing loan of commercial banking sector in Nepal. Commercial banks themselves should provide more loan for the generation of hydro electricity. In this issue Nepal Rastra Bank as a regulatory authority may fix a certain percent of lending for the electricity generation. This may increase the electricity generation and help to reduce the energy crisis in the country which may improve business environment and reduce non-performing loan.

The perception of the bankers working in Nepalese commercial banks show that the lack of timely budget and low government expenditure have hampered the business environment and increased the non-performing loan of the commercial banks in Nepal. Since last few years government of Nepal was not able to present full budget and spend the development expenditure as targeted. Because of which the aggregate demand in the economy could not expand and the effective demand remain at the lower level. Hence, timely full budget and efficient expenditure of development budget may help to reduce the non-performing loan of commercial banks of Nepal and overall improvement of the economy.

Many bankers perceive that the loan default is mainly due to the dishonesty of the borrowers regarding the disclosure of information during the borrowing time and mis-utilization of the loan amount after the borrowing. Hence better screening of the loan application before lending is much more important to eliminate such problem. Similarly better monitoring and evaluation after lending is also important for the reduction of borrower's dishonesty and reduce the volume of non-performing loan. Hence commercial banks should emphasize on better screening of the loan application as well as monitoring and evaluation of the borrower's activity after the sanctioning of the loan.

The perception of the bankers also shows that political instability increases the non-performing loan. Strike or closure hampers the business and the loan repayment capacity of the borrowers. Hence all the political party should show the commitment for no strike or closure. This may help for better business environment and reduce non-performing loan of the commercial banks in Nepal.

The study found that if the bank is government owned the chances of having non-performing loan increases. Hence, the government owned banks should improve their screening and monitoring of their lending.

Bankers also perceive that good monsoon may reduce the non-performing loan. Though good monsoon is not within the control, the commercial banks may lend more for agricultural inputs for the better performance of the agricultural sector which may reduce the impact of poor monsoon and may help to reduce the non-performing loan.

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