

CHAPTER-I

INTRODUCTION

1.1 Background of Study

Interest rate is charged or paid for the use of money is called interest rate. An interest rate is often expressed as an annual percentage of the principal. It is calculated by dividing the amount of interest by the amount of principal. Generally, market interest rate is calculated based on the supply of credit in the market and the demand for the credit. In high demand of credit, those lenders can charge higher interest rates without losing to competitors. If decrease in demand, the lenders must offers lower interest rates in order to entice borrowers. Bank profitability is an important indicator of bank performance, it represents the rate of return a bank has been able to generate from using the resources at its command in order to produce and sell services. Like all businesses, bank profit by earning more money then what they pay in expenses. The major portion of a bank's earnings comes from the interest on lending and charge on service.

In today's market of liberalization, the worldwide financial markets have led to enhance the volatility in the global economy. The financial system is based on the inter connection of financial markets, financial institutions, government, businesses, and household. Historically, banks play the role of intermediation in the financial sector, originating, distributing, servicing, and transforming funds, and meeting the vital needs of lenders and borrowers. The bank collects fund from several sources and invest the collected fund from different investment alternatives. To collect fund bank pays interest for depositor and collects interest from the borrower. Generally, the rate of interest for collection of fund and lending of fund is based on the market interest rate. The increased volatility of the market interest rate is caused by the changed in unexpected interest rate and major contribution in financial market. To measure the effect of changes in bank's profitability, it is mandatory to evaluate and asses the overall fluctuations of interest rate on the economy and to depict the implications of interest rate on cash flow.

Commercial bank is a classic example of financial intermediary at work; meeting the ultimate needs of both borrowers and lenders. Early banks lent mainly to two classes of borrowers: merchants and government (Kohn, 2004). Lending to merchants usually took the form of discounting commercial bills. Governments on the other hand were always in need of credits. They borrow from early merchants in exchange of trading rights. The menu of banks' assets has grown steadily over the years. The list of borrowers has expanded from merchants and governments to include landowners, other banks, industrial firms, and consumers. Banks have faced demand for credits from these new classes of borrowers. Satisfying their demands has led to higher yields but typically increased risk and reduced liquidity, especially mortgage lending, because of its long term maturity.

Interest rate is determined by the demand and supply of the fund invested in the sector in which borrowers try to pull fund and savers or investors try to push fund at their appropriate equilibrium point. In financial language liquidity, maturity, default risk, and uncertainty adjusted in interest rate. Interest also paid to the debenture holders at a fixed proportion for fix maturity period. Interest is the major factor to determine profit in any commercial banks. Specially every commercial bank receive interest income from their borrowers and pay interest expenses to the deposit holders.

Bank as Financial intermediary plays an important role and their efficiency can also influence the economic growth. As banks provide financial services to its customers who are different from other firms and as a reward banks charge interest .Conversely most funds are provided by depositors and they also receive interest. The difference among the banks earnings on its assets and payments to depositors is called interest margin. During the last decade there has been an increasing trend. The borrower or depositor or both would be affected by an increase in the spread. The shortage of alternative opportunities of financial intermediation intensifies the bad impact of spread. For example, based on monetary policy if the Nepal Rastra Bank changes interest rate then the changes in the interest rate will influence the cost of capital and as a result the investment decision and level of consumption will be affected. When the interest rates to depositors decrease and due to that if spread increases then it will discourage the savings and on the other hand, if interest rate to depositor increases then it will badly affect the investment. That's why there are important implications of

these changes in the interest rate on the economy. In the banking system the impact of interest rate changes on the profitability has been a significant issue. As compared to other institutions banks are more sensitive to the changes in the interest rate. In participating, the investment crisis and saving the experience of bank to interest rate risk has been argued the significant issue.

Commercial banks' profit ability indicates banks' ability to earn Net Interest Margin (NIM), Return on Assets (ROA), Return on Equity (ROE), and interest spread of the banks. Net interest margin can be acquired by deducting all interest expenses and all non interest expenses from the sum of all interest income and non-interest incomes. Similarly, return on assets is measured on the basis of net income divided by total assets of the banks. In other ways return on equity shows how much the net profit was earned on total common equity by the banks. The interest rate is the main determinants of profitability of commercial bank in Nepal. The banks charge lending interest rate and deposit interest rate as directed by Nepal Rastra Bank. Lending interest can be short term or long term. Deposit interest rate also can be classified as saving account interest rate, and fixed deposit account interest rate. All those interest rate affect to the profitability of the banks where higher interest rate leads high profit and low interest rate leads low profit.

1.2 Statement of the Problems

To achieve the goal of the owners' wealth maximization, banks should manage their assets, liabilities and capital efficiently. In doing this, the bank should be conscious of the gap or spread between the interest income earned on their assets and the interest expenses paid on their liabilities, which is called net interest income (NII). Market interest rate risk among other risks (credit, liquidity, insolvency, market etc.) is a major concern for financial institutions. It can cause harm, if not failure, to financial institutions, by interacting with others risks.

For instance, as interest rate rise, credit risk increases (corporations and consumers will likely default in repayment), which can lead to liquidity risk (as banks may depend on loan repayment for liquidity management purpose), this leads to solvency risk, thereby affecting the profit and equity or capital positions of financial services

firms. This study is aimed at assessing the effect of market interest rate sensitivity on the profitability (the net interest margin) and net worth of commercial bank in Nepal.

The study aimed to answering the following basic question:

- 1) What is the trend of market interest rate in Nepal?
- 2) What is the trend of profitability in sample commercial bank?
- 3) What is the impact of market interest rates fluctuations on profitability of sample commercial bank?

1.3 Purposes of the Study

The main objective of this study is to examine the interest rate and its impact on profitability of commercial bank in Nepal. The specific objectives are as following:

- 1) To identify the trend of market interest rate in Nepal.
- 2) To identify the trend of profitability in Nepalese commercial bank.
- 3) To examine the relationship between interest rate and profitability of Nepalese commercial bank.

1.4 Significance of the study

The main objective of the study will find the effects of the markets interest rate on bank profitability of Nepalese commercial banks. The potential shareholders would always want to invest in a company whose objective is to maximize their wealth and therefore they will need adequate information before making investment decision while changing the market interest rate and possible profitability of the bank. This study also helps for making management strategies to face the risk of interest rate change and can made an appropriate liquidity position for the banks. The study will provide information related to volatility of interest rate, its effect on profitability of bank, what kind of determinants can affect the interest rate and how they effect. Just as any other study, it will be made use of by the following bodies also:

1. The study will be helpful to government and central banks how their monetary policies will be formulated and manipulated in order to manage commercial bank operation and their bank profitability.
2. Secondly, the study will be helpful to bank very rewarding since they will know the repercussions the interest rate fluctuations will have on their profit. They will thus develop strategies to hedge themselves against the unfortunate effect of the fluctuating rates.
3. Lastly, the study will be helpful to general public that operates deposit with the commercial banks will find this study of paramount importance. They will form these findings be aware of the effects of interest rates differentials. On their deposits, it will thus serve as a decision making tool for them.

1.5 Limitations of the Study

The researcher encounter various limitations that are likely to hinder access to information sought for the study. The main limitation of this study is its inability to include more commercial bank in the country. These studies only focus on 10 Nepalese Commercial Bank. To analyze the impact of market interest rate fluctuations on commercial banks' the researcher has not covers the whole time period from the beginning of commercial banks in Nepal to present. This study only covers the period of 2007/08 to 2016/17. The study counters the problem of study by taking only 10 Nepalese commercial bank. The study consider only quantitative analysis and used secondary sources of data collection.

1.6 Organization of the Study

This study is designed to the following five chapters.

Chapter I Introduction

Chapter I introduce the major issues, objectives, significance and limitation of the study.

Chapter II Literature Review

This chapter is brief review of literature related to this study. It includes a discussion on the conceptual framework and review of the major studies. It gives an overview of the related literature done in the past related to this study.

Chapter III Methodology

Chapter III, Research Methodology, describes the different methodologies employed in this study. Sources of data are mentioned and described in this chapter.

Chapter IV Results

In this part SPSS will be used to analysis an interpretation of the data, with the financial and statistical analysis related to interest rate and profitability. The results and findings of the study will also included in this chapter.

Chapter V Conclusion

This chapter includes the summary, conclusion and the recommendations of the study. The findings are included in this chapter along with the suggestion and their recommendations. The References and Appendices have been given at the end of the study.

CHAPTER-II

LITERATURE REVIEW

This chapter presents the related literature on interest rate and profitability of commercial banks. It covers the analysis done on what scholars have written about this relationship between independent and dependent variables from selected journals, text book, newspapers and the internet.

2.1 Theoretical Review

Interest rates measure the price paid by a borrower or debtor to a lender or creditors for the use of resources during some time intervals (Fabozzi and Modigliani, 2003). Goedhuys (1982), defined interest rate as the general level in financial assets and claims of all types whether call or debenture, company shares or government bonds, bank overdraft or bill of exchange. Generally, there are two types of interest rate: a) Nominal Interest Rate and b) Real Interest Rate. Nominal interest rate on loan relates the amount of interest on the loan to the amount of money lent, while real interest rate is that which incorporates the effect of inflation. It is measured in terms of purchasing power.

The market interest rate is the interest rate offered most commonly on deposits in banks, other interest bearing accounts as well as loan; it is determined by the supply and demand for credit, competitions in the loanable market, and other economic factors, such as inflation rate, expectation of investors, monetary policy of the central bank etc. The question of practical importance is whether the rate may be expected to move above or below today's level, how far it may go and how long the movement may take.

Fisher's Theory of Interest

Fisher (1930), While any exact and practical definition of a pure rate of interest is impossible, we may say roughly that the pure rate is the rate on loans which are practically devoid of chance. In particular, there are two chances which should thus be eliminated. One tends to raise the rate, namely, the chance of default. The other tends

to lower it, namely, the chance to use the security as a substitute for ready cash. In short, we thus rule out, on the one hand, all risky loans, and on the other, all bank deposit subject to withdrawal on demand, even if accorded some interest. Fisher confined the concept of the rate of interest to the rate in a safe loan, or other contract implying specific sum payable at one date or set of dates in considerations of repayment at another date or set of dates. The essential in this concept are (1) define and assured payments, (2) definite and assured repayments, and (3) define dates. The concept includes the concept of the rate realized on a safe security such as a bond purchase in the market.

Lonable Fund Theory of Interest

The lonable funds doctrine extends the classical theory, which determined the interest rate solely by saving and investment, in that it adds bank credit. The total amount of credit available in an economy can exceed private saving because the bank system is in a position to credit out of thin air. Hence, the equilibrium (or market) interest rate is not only influenced by the propensities to save and invest but also by the creation or destruction of fiat money and credit. If the bank system enhances credit, it will at least temporarily diminish the market interest rate below the natural rate. Wicksell had defined the natural rate as that interest rate which is compatible with a stable price level. Credit creation and credit destruction induce changes in the price level and in the level of economic activity (wicksell, 1926).

Linder (2013) presented a critique of lonable funds theory by using simple accounting relationship. It is shown that many economists identify saving and the credit supply by interpreting the macroeconomic saving-investment identify as a budget constraint. According to that interpretation, more saving through lower consumption (and government spending) leads to a higher supply of credit, lower interest rates and thus more funds to be invested by firms for investment. The paper shows that proponents of this theory commit accounting fallacies or need very restrictive assumption for their theory to hold. In the first step, the concept of "saving" and "credit" will be clearly distinguished using simple accounting. It will be shown that credit is not limited by anybody's saving and that no one has to abstain from consumption in order for a credit to be provided. Also, it will be shown that financial saving (an increase in net financial

assets) through a reduction in expenses reduce other economic units' ability to spend and save.

Liquidity Preference Theory of Interest

In *The General Theory*, Keynes emphasized that decisions to spend or not to spend must not be confused with the separate and subsequent in a sense decision to either hold wealth in the form of money or some other asset. Not denying that the rate of interest affects decisions to invest and consume, his point was that the classics got it wrong in allocating the determination of the rate of interest at the level of spending/saving decision. The proper place of the theory of interest was at the level of portfolio decisions, Keynes argued. To him it seemed a purely logical step to require that at any time interest rates must be such that the general public desire to hold money (liquidity per excellence) rather than other financial instruments ceases at the margin given the amount of liquidity the banking system decides to provide: the rate of interest at any time, being the reward for parting with liquidity, is a measure of the unwillingness of those who possess money to part with their liquid control over it. It is the price which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash (JMK 7:167).

Keynes's liquidity preference theory as it evolved from the *Treatise on Money* to *The General Theory* and after, with a view of assessing the theory's ongoing relevance and applicability to issues of both monetary theory's ongoing relevance and applicability to issues of both monetary theory and policy. His point was it is money, which is the necessary prerequisite for economic activity in monetary production economies. Accordingly, turning neoclassical wisdom on its head, it is the terms of finance as determined within the financial system that "rule the roost" to which the real economy must adapt itself. The key practical matter is how deliberate monetary control can be applied to attain acceptable real performance.

Classical Theory of Interest

'Interest, being the price paid for the use of capital in any market, tends towards an equilibrium level such that the aggregate demand for capital in that market, at that rate of interest, is equal to the aggregate stock forthcoming at that rate'. It is fairly clear, however, that this tradition has regarded the rate of interest as the factor which brings

the demand for investment and the willingness to save into equilibrium with one another. Investment represents the demand for investable resources and saving represents the supply, whilst the rate of interest is the 'price' of investable resources at which the two are equated.

The theory of the interest rate is a key element of the Keynes system. According to Keynes the rate of interest determines the level of employment. It affects the money supply and, thus, the investment processes in the economy. In a system in which the rate of interest is shaped by a central monetary institution, it appears as a powerful tool to influence the allocation of resource, including production. How did Keynes define the interest rate? Is the theory of interest rate a good cognitive tool? Is the state's interference in the economy by means of the monetary interest rate (i. e. The discount rate) theoretically substantiated? Addressing this seems to be of prime importance for the investigation of the reasons behind today's financial and economic crises (Appelt, 2016).

2.2 Review of Empirical Studies

The previous studies support to the study on interest rate and its impact on profitability of commercial bank in Nepal. The review shows the relationship between interest rate factors and profitability factor, cause of interest rate increase, low interest rate and the effect of the study on the whole performance of organizations. The previous studies are summarized as below.

Staikouras & Wood (1999) examined determinants that affect the bank profitability. This study used descriptive statistics of different EU countries' banks' and data was collected for 4 years. Researcher tested the linear function to find out the relation between dependent and independent variable. These factors include elements internal to each financial institutions and several important external forces shaping earnings performance. The type of explanation would determine possible policy implications and ought to be taken seriously. The reviews the literature on bank performance studies and classifies the bank profitability determinants. The second part of the paper quantifies how internal determinants (" within effects" changes) and external factors ("dynamic reallocation" effects) contribute to the performance of the EU banking

industry as a whole in 1994-1998. The estimation results suggest that the profitability of European banks was influenced not only by factors related to their management decision but also to changes in the external macroeconomic environment. The result were in contrast to studies that have examined the structure-performance relationship for European banking and find a positive effect of the concentration and /or market share variable on bank profitability.

Hassoune (2002) identified the profitability of Islamic commercial banks profitability in different stage of interest rate cycle. Researcher used the theoretical model and regression analysis in this study to find out the following results. Islamic bank is effectively in a position, thanks to profit sharing, to make its profitability less volatile over the cycle. In addition, empirical evidence tends to show that Islamic banks are certainly more profitable than their conventional peers enjoying the same balance sheet structure. The main reason for such a difference is that Islamic banks benefit from a market imperfection, i.e. the availability of large amounts of non-remunerated deposits in their books, which considerably decrease the cost of funding. Finally, Islamic banking, in spite of its advantage on the grounds of profitability, is not a panacea for bankers in the Islamic world, because they are constrained by several recurrent weaknesses in terms of liquidity, concentration risks and operational efficiency. Islamic banking could be a further guarantee, however still marginal, against systemic risks in certain emerging financial markets.

Sattar (2014) studied on the impact of interest rates changes on the profitability of commercial banks being operated in Pakistan by examined the financial statements of four major banks during 2008 to 2012. In this study, interest rate is an independent variable and bank profitability is a dependent variable. To examined the impact of interest rate changes on the profitability of commercial banks in Pakistan, pearson correlation method is used in this studies. As a result it is found that there is strong and positive correlation between interest rate and commercial banks' profitability. Lastly, this study recommended that to manage high interest spread , state bank of Pakistan should play its significant role.

Pandit & Maskey (2010) examined the interest rate passes through of the policy interest rate to the market interest rate in Nepal. The span of the empirical exercise

covers the phase of interest rate liberalization commencing from the first quarter of 1989/1990 to the final quarter of 2008/09. To examine the interest rate pass-through from the policy interest rate to the market interest rate, the author implied a dynamic multiplier method, which involves estimating a simple dynamic model in which the relevant retail rate is regressed on lagged values of itself and a policy market rate. The study found that there is a significant long-run elasticity coefficient of the policy rate (taken to be the bank rate), to the different market rates (e.g. 1 yr fixed deposit, lending rate and saving rate). While the elasticity coefficient between the policy rate and lending rate is found to be significant, it is negative. Overall, the situation indicates that at that time, the bank rate in Nepal was ineffective in influencing the market rates and suggests that there are other factors at play. The paper recommended the introduction of a more effective indicator of monetary stance, greater awareness of external factors when making monetary policy, and enhancing and guiding the development of the domestic financial sector for equitable financial development and growth.

Tarus, et al. (2012) investigated the determinants of net interest margin of commercial banks in Kenya using secondary data. Researchers pooled fixed effects regression to a panel of 44 Kenyan banks that covers the period 2000-2009. The estimation results show that operating expenses and credit risk have a positive and significant effect on net interest margin of the commercial banks in Kenya. They also found that higher inflation, wider net interest margin, while growth and market concentration have a negative effect on net interest margin. The study therefore recommends at the bank level, to register lower interest margins in Kenya banking industry commercial banks need to improve operational efficiency by reducing operating expenses using appropriate cost reduction strategies and by enforcement of standards in credit risk management (CRM) as a means to prevent banks from taking excessive risks.

Daley & DaCosta (2012) investigated the effect of market interest rate risk on bank profitability in Jamaica. Researchers used a modification of Flannery's (1981 & 1983) model with similar assumptions for the period 2000-2008 in Jamaica for the National Commercial Bank of Nova Scotia (BNS) Jamaica Ltd. The results indicated that market interest rates, in particular, Treasury bill rates have a small effect on bank profitability, across the two major banks in Jamaica. Also, interest rate risk (volatility)

have a very small ,but negative impact on bank profitability. As a result, a number of economists and policy makers are interested in the impact of market rate fluctuations on bank profitability. Then they evaluate the trade-off between interest rate stability and other policies become more likely. With this kind of evaluation, police makers will be able to place appropriate weights on interest rate policies, in relation to other.

Kanwal & Nadeem (2013) investigated the impact of macroeconomic variables on profitability of listed commercial banks in Pakistan for years 2001/11. There are numerous internal and external factors which influence the profitability of public limited commercial banks in Pakistan, but this study employed only three external factors; inflation rate, GDP and interest rate and investigated the impact on earnings of financial institutions. In this study, Pooled Ordinary Least Square (POLS) method is used to examined the effect the three major external factors; inflation rate, real gross domestic product (GDP), and real interest on profitability indicators; return on assets (ROA), return on equity (ROE), and equity multiplier (EM) ratios in 3 separate models. The empirical finding indicate a strong positive relationship of real interest rate with ROA, ROE, and EM. Secondly, real GDP is found to have an insignificant positive effect on ROA, but an insignificant negative impact on ROE and EM. Inflation rate on the other hand, has a negative link with all three profitability measures. Overall, the selected macroeconomic factors are found to have a negligible impact on earnings of commercial banks. At last, the study was verified that in general, the selected macroeconomic factor do not contribute noticeably to the profits of sampled banks. So the researcher suggested that in order to maximize the risk adjusted returns banks have to focus more on other external factors or device policies to improve the internal factors.

Naceur (2013) investigated the impact of bank's characteristics, financial structure and macroeconomic indicators on bank's net interest margins and profitability in the Tunisian banking industry for the period 1980-2000. The study used the linear equation relating the performance measures to a variety of factors of 10 Tunisian banks that covers the period of 20 years and 200 observed of financial indicators. . First, individual bank characteristics explain a substantial part of the within-country variation in bank interest margins and net profitability. High net interest margin and profitability tend to be associated with banks that hold a relatively high amount of

capital, and with large overheads. Other important internal determinants of bank's interest margins bank loans which have a positive and significant impact. The size has mostly negative and significant coefficients on the net interest margin. This latter result may simply reflect scale inefficiencies. Second, he found that the macro-economic indicators such inflation and growth rates have no impact on bank's interest margins and profitability. Third, turning to financial structure and its impact on bank's interest margin and profitability, he found that concentration is less beneficial to the Tunisian commercial banks than competition. Stock market development has a positive effect on bank profitability. This reflects the complementarities between bank and stock market growth. We have found that the disintermediation of the Tunisian financial system is favourable to the banking sector profitability.

Afroze (2013) identified interest rate spread (IRS) of the commercial banks and its impact on profitability in Bangladesh perspective, based on the empirical data for the period of 1974-2011 drawn from various publications of Bangladesh bank and other sources. For this exploratory research, the researcher used descriptive statistics to explain the trend of variables, correlation analysis, unit root test and finally applied Granger Causality Test to identify the causality relationship among the variables. The empirical finding of this study found statistically significant correlation between IRS and deposit rate but no correlation with the lending rate. The data series for IRS, deposit rate, and lending rate contained a unit root and were integrated of order one. However, the Granger Causality Test failed to indicate any bilateral causal relationship between IRS and deposit rate, IRS and lending rate, and also to deposit rate and lending rate. The study also found that IRS prevailing in the Bangladeshi banking sector was high compared to that in its neighbouring countries.

Oke, et al. (2013) assessed the impact of real interest rate on savings mobilization in Nigeria. The Vector-Auto Regression (VAR) was employed, using the time series data from 1980 to 2008. The study revealed that real interest rate has negatively impacted on the level of savings mobilization in Nigeria. The need for government in Nigeria to bridge the existing gap between the lending and savings rates and increase per capita income level of the populace, to stimulate savings for investment and economic growth were revealed by the study. Therefore, efforts should be geared towards reducing domestic inflation rate to arrest its negative impact on real rates in Nigeria

Acaravci & Calim (2013) examined the profitability of banking sector is the most important instrument of financial system for the future of the economy. Researchers applied Johansen and Juselius cointegration test approach of the bank specific and macroeconomic factors that affect the profitability of commercial banks in Turkish banking sector. In study, the data were collected from the three biggest state-owned, privately-owned and foreign banks. The sample period spans from 1998 to 2011. In the study, return of asset, return of equity and net interest margin were used as proxy for profitability of banks. The bank specific determinants, which were thought to have effect on profitability were total credit/total assets, total deposit/total assets, total liquid assets/total assets, total credit/total assets, total deposit/total assets, total liquid assets/total assets, total wage and commission income/total assets, total wages and commission expenses/total assets, the logarithm of total assets and total equity/total assets. The macroeconomic determinants of study were real gross domestic product, inflation rate, real exchange rate and real interest rate. Empirical finding suggest that the bank specific determinants have been more effect than macroeconomic factors on profitability of the banks. The real gross domestic product and real exchange rate have been effective on the profitability. In addition, the 2001 economic crisis has a negative effect on all Turkish Banking sector.

Leoward, et al. (2013) examined that the effects of interest rates spread, to the performance of commercial bank in Kenya. This study applied descriptive research design and used regression analysis of interest rate spread against banks' performance. The major factors that influenced the extent of interest rates spread and eventually banks ' performance of central Bank's regulations and macroeconomic variables (inflation, exchange rates, credit risk and competition). The study concludes that credit risk have an impact on interest rates spread and in the long run the commercial bank's performance in the banking industry. This was supported by findings from other authors such as miller and Noulas (1997). The study further concludes that bank regulations had an influence on interest rates spread in the banking industry in Kenya as cited by most of the respondents. Additionally, the study found that macro-economic variables have an effect on interest rates spread and possibly commercial banks performance. The findings of this research are not only being an academic contribution but also useful to the policymakers in taking further measures to ensure

efficient and competitive banking sector of Bangladesh. It may be suggested to ensure efficient and competitive banking sector of Bangladesh. It may be suggested that the police makers /regulators should look into the key determinants influencing the IRS and guide the commercial banks to reduce the same through appropriate measures.

Khan & Satter (2014) examined the impact of interest rate changes on the profitability of four commercial bank in Pakistan. The core objective of the project was to analyze the impact of interest rates changes on the profitability of commercial banks being operated in Pakistan by examining the financial statement of four major banks during 2008 to 2012. For the purpose of research, researchers used both quantitative and qualitative approach. Pearson Correlation Method was used to identify the relationship between interest rate and profitability. Like the efficiency of banking sector was considered most important for economic growth, monetary policy implementation and macro-economic stability. From the past few years, interest spread of banking sector of Pakistan is raising. As a result variation in the interest rate depress the saving and investment and on the other hand it is increases the efficiency of banks lending. In the paper interest rate was an independent variable and bank profitability was a dependent variable. To examine the impact of interest rate changes on the profitability of commercial banks in Pakistan, pearson correlation method was used in this study. As a result it was found that there is strong and positive correlation between interest rate and commercial banks profitability. It means if the value of interest rate is increase/decreases then as result value of banks "profitability will also increases/decreases.

Genay (2014) examined by necessary, the model was parsimonious and does not include many factors that can potentially affect banks' profits or the effects of interest rate changes on various business segments. More-granular analyses that take all those factors into account, such as those carried out by bank management and regulators, are likely to produce more-precise estimates of the interest rate sensitivity of bank profits. These caveats aside, our analysis suggests that while low short-term interest rates and a flat yield curve can compress bank earnings, if history is a guide to the future and low rates result in better economic outcomes, i.e., a lower unemployment rate, higher house prices, and faster GDP growth- their net effect on bank profits might be positive.

Sammuel, et al. (2014) examined how interest rates affect the profitability of deposit money banks in Nigeria. The study was based on country aggregate level annual data that covered a period of thirteen years 1999 to 2012 and made use of multivariate regression analysis under an econometric framework. The Augmented Dickey and Fuller unit root test results indicate that the series are either I(0), I(1) or I(2) stationary. The estimated results shows that Maximum lending rate, Real Interest rate and saving deposit rate have negative and significant effect on the profitability of Nigerian deposit money banks as measured by return on assets at the 5 percent level of significance. Also, the study found that real interest at the 8 percent level of significance has negative and significant relationship with Return on Equity of money Banks in Nigeria. The implication of the findings of this study suggested that the profitability of the banking sector is a function of changing interest rates. The study therefore recommends that government should adopt monetary policies that will help Nigerian deposit money banks to improve on their profitability and there is need to review and strengthen bank lending rate policies through effective and efficient regulation and supervisory framework. Banks can improve their profitability through charging moderate lending rates as against maximum rates as their circumstances may allow. Furthermore, the managers of money deposit banks are expected to create the conditions for an efficient banking system devoid of information asymmetry to adapt to changing macroeconomic variables of interest rates and inflation. Banks' management must efficiently manage their portfolios in order to protect the long run interest of profit-making.

Malik & Khan Brother (2014) analyzed the effect of interest rate in the market and its effects on the profitability. The study sample was divided into group i.e. public sector bank and private sector banks. In this study, different financial tools for know about financial position of the banks and the regression analysis for relationship between dependent and independent variable was used. The regression result for public sector shows that the interest rate has significant effects on the profitability (ROA) in the public sector banks of Pakistan (Alternate accepted). The value of R² shows that in case of public sector banks the interest rate effect the profitability (ROA) about 25 percent. In the case of return on equity (ROE) in public sector, the interest rate has significant effect on profitability (Alternative Accepted). But in the case of ROE the

interest rate only affect 14 percent the profitability. In private sector banks the interest rate has significant effect on their return on assets (ROA). But here the R2 value is very big than as in public sectors banks. The R2 value for ROE of private banks the interest rate affects significantly the profitability about 19 percent. It was concluded that in both different proxy of profitability in both public and private sector, the interest rate affect the private sector the most.

Mora & Onuuonga (2014) analyzed profitability of Kenya's top six commercial banks. They investigated the impact of the internal determination of profitability of Kenya's top six commercial banks over the period 2008-2013, they used generalized least squares method to estimate the impact of bank assets, capital, loans deposits and assets quality on banks profitability. They used return on assets (ROA) as a measure of profitability. The findings revealed that bank size, capital strength, ownership operations expenses, diversification do significantly influence profitability of the top six commercial banks. The result suggests that the Kenyan Government should set policies that encourage commercial banks to raise their assets and capital base as this will enhance the performance of the sector. Another implication of the study was that commercial banks need to invest in technologies and management skills which minimize costs of operations as this will impact positively on their growth and survival.

Duraj & Moci (2015) examined that the testing for the robustness of banks performance over time and space should shed light on policy debates, and on the assessment of banks performance. A linear function of a multiple regression equation, on a pooled cross section time series sample, is utilized in the desperation of the thesis to test the effects of firm and market specific variables on bank profitability. The type of explanation for the level of profitability would determine possible policy implications and ought to be taken seriously. Since very little empirical work has been undertaken investigating the competitive behaviour of Albanian banking system, an empirical investigation like the one conducted above may yield insights that could be of interest to academics, bankers, and policy makers. The estimated results suggested that the profitability of Albanian banks is influenced not only by factors related to their management decisions, internal factors, but also to changes in external macroeconomic environment.

Maxwell et al. (2015) examined the relation between empirical investigation of the impact of deposit rates on fund mobilization by deposit money banks in Nigeria. The objective was to investigate the nature of the relationship between deposit rates (disaggregated into various categories of deposit rates charged by DMBs in Nigeria) and deposit mobilization in Nigeria within the period 1981 and 2012 using annual data collected from the Statistical Bulletin published by the CBN. Using the OLS multiple regression, unit root tests, co-integration, error correction mechanism (ECM) and Granger causality tests, the empirical results report no significant relationship between all categories of deposit rates and total deposit liabilities of DMBs in Nigeria. The same result were also obtained with respect to the impact of deposit rates on time, saving and foreign currency deposits. In addition, the paper found no granger causality relationship between deposit rates and deposit liabilities. It is therefore recommended that a policy of interest rate liberalization alone may not be enough to induce higher levels of fund mobilization. The government should pursue programmes aimed at boosting investment and growing the economy to increase income that would release further saving for sustainable growth.

Yigermal (2017) examined the determinants of private commercial bank profitability in case of selected Ethiopian private banks. Over the period of 2005 to 2014, by employing both descriptive and random effect panel econometrics models, the study used both return on assets (ROA) and return on equity (ROE) as the measurement for banks profitability. Private Banks profit after tax gets increasing year after year and their ROA is found to be three percent on average. The deposit share of private commercial banks reached above 30 percent in 2014, while it was only 10 percent in 2000. The panel econometrics result show that, the variable bank size and GDP growth rate has a positive and significant impact on private commercial banks ROA and ROE. while, interest rate spread has a negative and significant impact. The variable loan to deposit ratio has negative and significant impact on bank ROA while, it has no effect on their ROE. Inflation also an important variable in explaining ROA at 10 percent significant level but it has no effect on ROE. The other important variable in explaining ROE is loan concentration index it has positive and significant on bank ROE. But, it does no significantly explain ROA. The study recommended that the significant and positive impact of bank size can be taken as a good signal for

commercial banks to merge and to have scale advantage. The significant impact of macro-economic variables in explaining banks profit is an indicator to designed policies that promote sustainable output growth and controlling inflation to have stable banking sector.

Galesi, et al. (2017) identified the concept, determinants, and implications of natural interest rate for monetary policy. Researchers done their research based on the estimation of dynamic stochastic general equilibrium (DSGE) models. An alternative methodology seeks to estimate natural interest rate in the context of semi-structural models, i.e. econometric models whose equations are inspired on the structural equation of new-keynesian models but which adopt a more flexible. Researchers found that the natural interest rate had declined over the past few decades, thereby recently it has dropped to historically low – or even negative — rates in some of the main advanced economics. This decline seems to have been due to a combination of supply- and demand- side factors, which have been amplified by the effects of the Great Recession. A context of low natural interest rates poses significant challenges for monetary policy, given that it is difficult for central banks to reduce nominal interest rates below a certain threshold, thus making it necessary to introduce unconventional monetary policy measures. Importantly, although monetary policy can mitigate the effects of low natural interest rates, it cannot, in principal, alter this rate directly. A combination of structural measures to boost productivity growth and of fiscal measures to stimulate global aggregate demand and support long-term economic growth is necessary to reserve the drop in the natural rate.

Naceur & Goaid (2017) investigated the impact of banks' characteristics, financial structure and macroeconomic indicators on banks' net interest margins and profitability in the Tunisian banking industry for the 1980-2000 period. The study found that (i), individual bank characteristics explain a substantial part of the within country variation in bank interest margins and net profitability. High net interest margin and profitability tend to be associated with banks that hold a relative high amount of capital, and with large overheads. (ii), the paper finds that the inflation has a positive impact on banks' net interest margin while economic growth has no incidence. (iii), turning to financial structure and its impact on banks interest margin and profitability, they found that concentration is less beneficial to the Tunisian

commercial banks than competition. Stock market development has a positive effect on bank profitability. This reflects the complementarities between bank and stock market growth. They found that the disintermediation of the Tunisian financial system is favourable to the banking sector profitability.

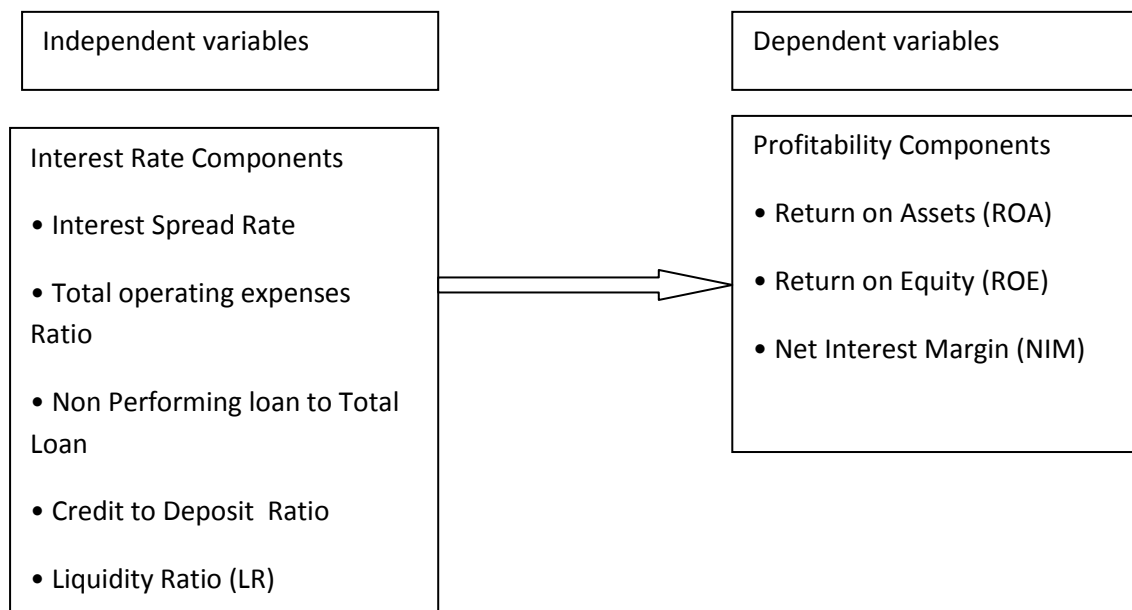
2.3 Research Gap

Many researches have been conducted in interest rate risk, deposit mobilization and lending management, term structure of interest rate, financial performance of commercial bank in Nepal. Various journal and articles had also been published in interest rate and profitability but the researches were not enough to address the impact of interest rate on profitability of commercial bank in Nepal. Previous researches had been conducted in foreign country and mainly conducted in development countries by taking huge size of research variables and large size of commercial banks. But Nepalese commercial banks cover only small size of study which is helpful to the stakeholders of Nepal. Whereas study focus on the impact of interest rate of Nepalese commercial banks and that also effect on Nepalese economy. In reference of not an special research in this topic "interest rate and its impact on profitability of commercial bank in Nepal ", this study attempted to fulfil the gap between previous researches and present study.

2.4 Theoretical Framework

This part comprises the relationship between dependent variable and independent variables systematically in tabulation form so that it is clear how the factor that affect directly or indirectly to the dependent factors, how many independent factors involved and how many dependent factors involved for the valid and reliable result of the study was explained. The main factor that affect to the profitability is interest rate. Along with interest rate, the other factor concerned with interest rate have influence on the profitability of the commercial banks in Nepal.

Figure 2.1 Schematic diagram of the theoretical framework



Interest Rate Spread

Saunders (2000), interest rate spread is the interest rate charged by banks on loan to private sector customers minus the interest rate paid by commercial banks or similar banks for demand, time or saving deposit. Interest spread is the different between lending interest rate and deposit interest rate lending interest rate always high in comparison of deposit rate. Banks charge high rate to the borrowers whereas pay interest at low rate to the deposit holders so the net different is the income to the banks. Spread rate is the difference between lending interest rate and deposit interest rate. The banks earn income equal to this rate (Leonard, et all, 2013). It impacts to the profitability of the commercial of the commercial banks. This can be measured by following formula.

Interest Spread= (Interest income/Interest earning assets)- (Interest expenses/interest paying liability).

Total Operating Expenses Ratio (TOER)

It includes staff expenses and office expenses while conducting daily activities in commercial banks. It was measured as total operating expenses divided by total assets. This ratio affect to the commercial bank profitability. Sabgmi & nazir (2010), its within management responsibility to carry out efficient operation and achieve

financial viability if the institution commitment and willingness to control costs, set positive interest rate and select appropriate personnel. Banks with high level of operation efficiency are able to carry out financial intermediation efficiently and hence lower costs of operation which result in lowering lending rates.

Non Performing Loan Ratio (NPL)

The NPL was defined as the loan not recovered that have paid time pass 90 days and above or substandard loan, doubtful loan and bad debt all are sum of NPL (NRB directives, 2016). NPL ratio can was measured as total NPL divided by total loan followed. This effects to the profitability of commercial banks in Nepal.

Credit to Deposit Ratio (CD)

The credit — deposit ratio is an indicator of progress of any financial institution like commercial banks. It indicates the level of credit development of banks in relation to deposits mobilized by them. A high credit-deposit ratio indicates that larger portion of deposits is used to earn maximum interests (Kumar, 2013). Loan- deposit ratio is a useful instrument to determine bank liquidity, and by extension, it influences the profitability of the banks. The bank profit is based on the interest charged against the deposits; it means the profit is generated through the positive difference between interest of loans and interest on deposits supported a study by Joni Tamkin Borhan & Towepek (2006). It isthemainn determinant of interest rate and it can be measured as loan divided by deposit.

Liquidity Ratio (LR)

Du Toit (1997) stated that the interest rate charged on lone borrowed depends on the availability of lone able funds, the size of the facility required and the length of the period the deposits are going to remain in bank. Dang (2011) adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect liquidity positions of the bank according to the above author are customer deposit. However, other scholars use different ration to measure liquidity, for instance Illhomovich, (2009) used cash to deposit ratios to measure liquidity levels in Malaysia. If large amount are required for a short time interest rate may be much lower that if the amount is relatively big for long periods. On the other hand if the

borrower wants large amount of cash within a very short period of time the interest rate charged is very high.

Return on Assets (ROA)

ROA is another major ration that indicates the profitability of commercial banks. It's the ratio income to total assets. Khrawish (2011), asserts that it measures the ability of the bank management to generate income by utilizing company assets at their disposal ; It shows how efficiently the resources of the company are used to generate income. It further indicates the efficiency of management of a company in generation income from all the resources of the institution. Wen (2010) states that the higher the ROA shows that the company is more efficient in using its resources.

Return on asset ration = $(\text{net income} / \text{total asset} * 100)$

Return on equity (ROE)

Return on equity ratio refers to how much profit a company earned to the total amount the share holders equity invested or found on balance sheet. ROE is what the share holders look in return for their investments. Khrawish (2011) noted that the return on equity is ration is ratio of net income after tax divided by total equity capital. It represents the rate of return earned on the funds invested in the banks by its share holders. ROE reflects how effectively a bank management is using shareholders funds thus it can be deduced from the above statement that the better the ROE the more effective the management in utilizing its shareholders capital.

Return on equity= $(\text{net income} / \text{equity capital} * 100)$

Net interest margin (NIM)

Gul et al, (2011) states that NIM is the measure of the difference between the interest income generated by bank and the amount of interest paid out to their lenders for example deposits relative to the amount interest earning assets. It's usually expressed as percentage of what the financial institution earns on loans in a specific period of time and other assets minus the interest paid on borrowed funds divided by the average amount of the assets on which it earned in that time period. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the interest

margin the higher the bank profit and the more the stable bank are. This is one of the key measures of profitability.

Net interest margin= (earned interest income-paid interest income/ average loans or asset)*100

CHAPTER-III

RESEARCH METHODOLOGY

This chapter deals with methodology used in the empirical investigation of the interest rate and its impact on profitability of sample commercial banks in Nepal. It includes the research design to be used to analyse and interpret the result of the study, population size and sample size of data, nature and sources of data, data collection and processing procedure and data analysis tools and techniques.

3.1 Research Design

Descriptive research design has been used in this research. It involved both quantitative techniques of research to get data and this is described depending on the published numerical data of sample commercial bank's annual reports.

3.2 Population and Sample

This study covers the period of 2007/08 to 2016/17 AD. The commercial banks are the population of this study which have been operating in Nepal. In this study used convenience sampling method is used to select the sample banks. The sample size for this study is taken as 10 commercial banks in which government owned and private commercial banks are included. For the selection of sampling The sample size covers 35.71 percent of the population.

Table 3.1 Sample Size of Commercial Banks

S.N.	Name of the banks	Studies period (in years)	Size
1	Rastriya Banijya Bank Ltd.	2007/08 to 2016/17	10
2	Agricultural development Bank Ltd.	2007/08 to 2016/17	10
3	Nepal Bank Ltd.	2007/08 to 2016/17	10
4	Nabil Bank Ltd.	2007/08 to 2016/17	10
5	Nepal Investment Bank Ltd.	2007/08 to 2016/17	10
6	Standard Chartered Bank Ltd.	2007/08 to 2016/17	10
7	Himalayan Bank Ltd.	2007/08 to 2016/17	10
8	Kumari Bank Ltd.	2007/08 to 2016/17	10
9	Everest Bank Ltd.	2007/08 to 2016/17	10
10	Machhapuchhre Bank Ltd.	2007/08 to 2016/17	10

3.3 Nature and Sources of Data

In this study, secondary sources of data to facilitate the useful information for this study. Secondary data means the data that has been collected by scholars and documented in articles, book and other publications. Secondary data is very useful for research with its significant advantages: time saving rapid accessibility. The published data provided from audited annual reports, website of related banks and bank supervision report published by Nepal Rastra Bank. The required data such as interest rate, interest income, interest expenses, net interest margin, total asset, total equity etc. drawn from the annual report of the sample banks.

3.4 Data Collection and Processing Procedures

In this study, raw data concerned to interest rate and profitability were drawn from the audited annual report, publishes financial statement of the sample banks and various news papers, journals or articles. Drawn data were classified and presented in systematic way as need to input in SPSS software. Finally, the data were entered into SPSS software to get the potential result of the study.

3.5 Data Analysis Tools and Techniques

Data analysis are based on the purpose of the study and are done using statistical package for social sciences (SPSS) 'version 23' on collected data to draw meaningful interpretation and conclusion. The data have been collected from the banks' annual reports and published magazines concerned with sample banks' financial statements analyzed by using descriptive and inferential statistics. Mean, maximum, minimum standard deviation, Pearson co-relation analysis or regression model were used to find out the relationship between interest rate, other determinant factors and commercial bank profitability. Correlation coefficient represents the association between the variables. The values of correlation coefficient range from -1 to +1. The sign of correlation coefficient indicates the direction of the relationship either positive or negative. The value of correlation coefficient indicates the strength and weakness of relationship between dependent variable and independent variable either strong or weak. The regression model shows empirical relationship or impact of multi independent variables on dependent variables i.e. impact of interest rates on profitability of commercial banks in Nepal. The Empirical model for linear regression analysis:

The estimation of regression equation to analyze the effect of independent variables on dependent variable was developed. This model is taken from the study done by Malik and Khan brothers, study on interest rate and its impact on bank profitability in 2014.

$$Y_{it} = \alpha + \beta_{it} X_{it} + \epsilon_{it}$$

Where,

Y_{it} = Profitability of 'i' sample banks at time period 't'.

α = Intercept term

β_{it} = Represents the coefficient of independent variables

X_{it} = Independent variable of bank 'i' at time period at time 't'.

ϵ_{it} = Error term

So, the estimated linear regression model of interest rate factors and profitability is as following;

$$ROA_{it} = \alpha + \beta_1(SR_{it}) + \beta_2(TOER_{it}) + \beta_3(NPL_{it}) + \beta_4(CD_{it}) + \beta_5(CRR_{it}) + \varepsilon_{it} \dots \dots \dots (1)$$

$$NIM_{it} = \alpha + \beta_1(SR_{it}) + \beta_2(TOER_{it}) + \beta_3(NPL_{it}) + \beta_4(CD_{it}) + \beta_5(CRR_{it}) + \varepsilon_{it} \dots \dots \dots (2)$$

$$ROE_{it} = \alpha + \beta_1(SR_{it}) + \beta_2(TOER_{it}) + \beta_3(NPL_{it}) + \beta_4(CD_{it}) + \beta_5(CRR_{it}) + \varepsilon_{it} \dots \dots \dots (3)$$

Where,

α = Constant Term

β = Coefficient of Variable.

SR_{it} = Interest Spread Rate of bank 'i' at time period at time 't'.

$TOER_{it}$ = Total Operating Expenses Ratio of bank 'i' at time period at time 't'.

NPL_{it} = Non Performing Loan Ratio of bank 'i' at time period at time 't'.

CD_{it} = Credit to Deposit Ratio of bank 'i' at time period at time 't'.

CRR_{it} = Cash Reserve Ratio or Liquidity Ratio of bank 'i' at time period at time 't'.

ε_{it} = Error Term

CHAPTER-IV

RESULTS

This chapter includes data presentation of interest rates, data presentation of study variables (key indicators) of selected commercial banks, the descriptive statistics (calculation of maximum, minimum mean, and standard deviation), correlation analysis and regression analysis of the study variables.

4.1 Structure and Pattern of Weighted Average Interest Rates of Nepalese Commercial Banks

This section deals with the weighted average interest rates of Nepalese commercial banks that includes lending interest rates, deposit interest rates, base rates and spread rates respectively. Table 4.1 shows the interest rates adopted by Nepalese commercial banks.

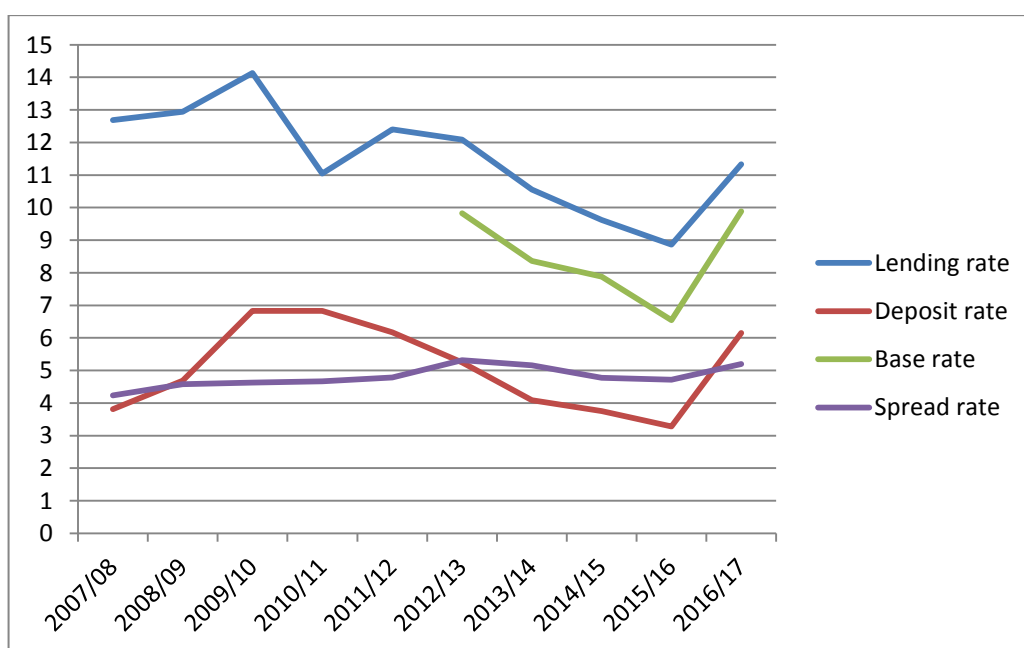
Table 4.1 Weighted average interest rates of commercial banks in Nepal for period of 2007/08 to 2016/17 (in percentage)

Years	Lending rate	Deposit rate	Base rate	Spread rate
2007/08	12.69	3.81		4.24
2008/09	12.94	4.69		4.58
2009/10	14.13	6.83		4.63
2010/11	11.05	6.83		4.67
2011/12	12.4	6.17		4.79
2012/13	12.09	5.25	9.83	5.32
2013/14	10.55	4.09	8.36	5.16
2014/15	9.62	3.75	7.88	4.78
2015/16	8.86	3.28	6.54	4.72
2016/17	11.33	6.15	9.89	5.2

Source: Economic bulletin from the F/Y 2007/08 to 2016/17

The table 4.1 reveals the weighted average interest rates and spread rates in different fiscal year for commercial banks that the lending interest rate is increased from 12.69 % in 2007/08 to 14.13 % in 2009/10, it decreased from 2009/10 to 2010/11, and then it increased again from 2010/11 to 2011/12. After all the fiscal year 2011/12 it continuously decreased up to 2015/16. At last, it increased from 8.86 % in 2015/16 to 11.33 % in 2016/17. The deposit interest rate was 3.81 % in 2007/08 that increased to 6.83 % in 2010/11 and it decreased continuously then to 3.28 % in 2015/16 which implies that the commercial banks have also been deducting deposit interest rates to maintain spread rate in balance. At last, the deposit rate is increased from 3.28 % to 6.15 % in 2016/17. The commercial banks have been providing base rate from the fiscal year 2012/13. Since, the base rate was 9.83 % in 2012/13, 8.36 % in 2013/14, 7.88 % in 2014/15, 6.54 % in 2015/16 and 9.89 % in 2016/17. The base rate implies the minimum rate of interest in which the commercial banks should provide loan to borrowers. The base rate is determined on the basis of return on assets plus opportunity cost of cash reserve ratio and statutory liquidity ratio (NRB directives, 2016). The average spread rate 5.32 % in 2012/13 which indicates highest spread rate of commercial banks among fiscal years.

Fig. 4.1 Pattern of average interest rates of Nepalese commercial banks



4.2 Structure and Pattern of Key Indicators of Selected Commercial Banks

This section deals with the structure of factors affecting profitability of commercial banks in Nepal. The structure has been shown year wise along with mean.

The structure of dependent variables, i.e. return on assets, return on equity and net interest margin and independent variables, i.e. interest spread rate, total operating expenses ratios, non performing loan ratios, credit to deposit ratios and liquidity ratios are shown. The trend in dependent and independent variables used in secondary analysis in the study for Nepalese commercial banks for the period of 2007/08 to 2016/17 are presented in the table and graph.

4.2.1 Structure and pattern of spread rate

The spread rate is defined as the difference between lending rate and deposit rate. It is calculated by subtracting weighted average deposit rate from weighted average lending rate. The spread rate has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.2.

Table 4.2: Structure and pattern of spread rate of selected commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	4.55	4.92	5.57	6.19	5.65	4.23	4.41	4.14	4.53	4.27	4.845
ADBL	5.88	4.52	5.87	6.09	6.35	4.36	7.17	6.24	6.97	7.15	6.060
NBL	4.51	4.82	6.45	6.14	8.25	7.05	7.32	5.64	5.18	4.96	6.032
NABIL	4.15	3.94	4.16	4.4	4.37	4.95	5.48	5.03	3.97	3.74	4.419
NIBL	3.99	4	3.94	4.36	4.06	4.5	5.5	4.8	4.6	4.7	4.445
SCBL	3.95	4.01	3.98	3.44	3.28	3.92	4.12	7.09	5.27	4.64	4.370
HBL	3.57	3.66	3.66	4.21	3.96	4.25	4.25	4.25	4.69	4.8	4.130
KBL	4.67	4.3	4.17	3.28	3.29	4.27	4.62	3.71	3.17	3.59	3.970
EBL	3.9	4.3	4.4	4.78	4.6	5.32	5.68	5.69	4.76	4.76	4.819
MBL	3.38	3.96	3.6	3.4	2.27	5.01	4.63	4.97	4.65	4.59	4.046
Mean	4.26	4.24	4.58	4.63	4.67	4.79	5.32	5.16	4.78	4.72	

Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

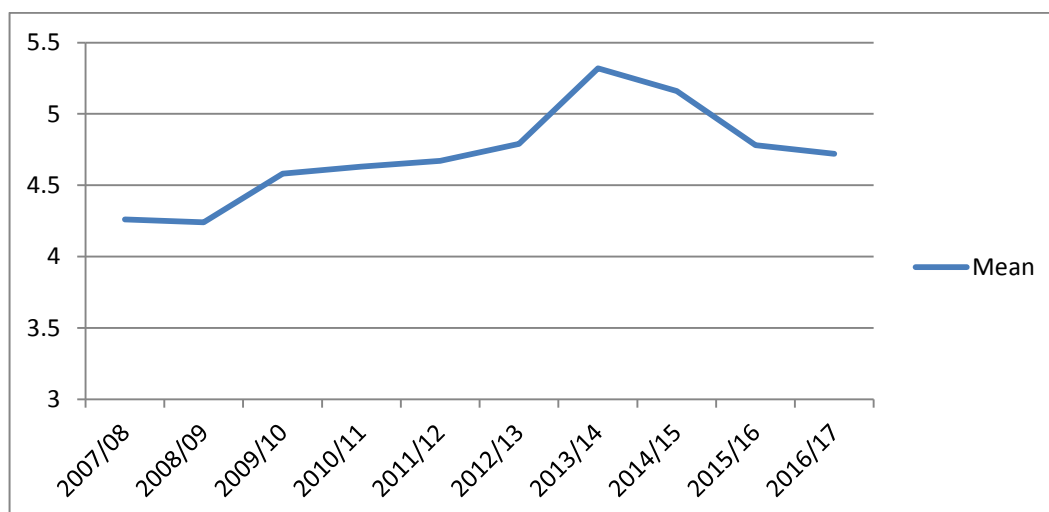
Table 4.2 explains values of spread rate of 10 commercial banks for the period of 2007/08 to 2016/17. Spread rate is computed as average lending interest rate minus average deposit rates. The mean value measures the average spread rate of individual sample commercial banks for particular year.

The structure and pattern of spread rate for sample commercial banks revealed that average spread rate is highest for ADBL (6.06 %), followed by NBL (6.032 %), RBBL (4.845 %), EBL (4.819 %), NIBL (4.445 %), NABIL (4.419 %), SCBL (4.37 %), HBL (4.13 %), MBL (4.046 %), and KBL (3.97 %). The average spread rate computed across the year has increased over the period of time. It increased from 4.26 % in 2007/08 to 4.72 % in 2016/17.

Table 4.2 indicates that the spread rate varies within the individual banks also. The average spread rate decreased from 4.55 % in 2007/08 to 4.27 % in 2016/17 for RBBL, from 4.15 percent in 2007/08 to 3.74 % in 2016/17 for NABIL and from 4.67 % in 2007/08 to 3.59 % in 2016/17, for KBL.

The average spread rate increased from 5.88 percent in 2007/08 to 7.15 percent in 2016/17 for ADBL, from 4.15 % in 2007/08 to 4.96 % in 2016/17 for NBL, from 3.99 % in 2007/08 to 4.7 % in 2016/17 for NIBL, from 3.95 % in 2007/08 to 4.64 % in 2016/17 for SCBL, from 3.57 % in 2007/08 to 4.8 % in 2016/17 for HBL, from 3.9 % in 2007/08 to 4.76 % in 2016/17 for EBL, and from 3.38 % in 2007/08 to 4.59 % in 2016/17 for MBL.

Fig. 4.2: Pattern of average spread rate of selected commercial banks



In figure 4.2 trend line of commercial banks shows increment in SR from the year 2007/08 to year 2013/14. Similarly, for next years 2013/14 to year 2016/17 it has decreased.

4.2.2 Structure and pattern of total operating expenses ratio

Total operating expenses ratio defined as the ratio of total operating expenses and total assets. It is calculated by dividing total expenses by total assets. The total operating expenses ratio has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.3.

Table 4.3 Structure and pattern of total operating expenses ratio of selected commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	4.03	3.83	3.98	5.34	5.16	5.43	5.32	4.17	4.49	1.98	4.373
ADBL	8.4	8.65	11.83	8.43	7.94	9.14	7.49	9.1	6.74	6.39	8.411
NBL	5.67	5.66	5.74	9.32	6.84	7.67	6.59	6.79	5.47	4.38	6.412
NABIL	3.97	3.86	4.34	5.54	6.91	6.73	4.84	3.56	3.53	6.64	4.592
NIBL	1.38	1.27	1.09	1.23	1.34	1.23	1.22	1.13	1.01	0.95	1.185
SCBL	2.94	2.75	2.68	2.94	3.82	4.18	3.1	2.67	2.42	2.28	2.981
HBL	7.58	7.7	8.33	11	14.42	13.77	11.03	9.5	7.95	6.59	9.787
KBL	4.83	4.9	6.03	1.69	1.86	1.62	1.54	1.49	1.44	1.37	2.677
EBL	3.64	3.75	4.04	5.22	6.84	6.62	4.79	4.71	3.39	2.75	4.575
MBL	5.16	4.83	4.88	7.35	10.12	1.95	1.98	1.64	1.56	4.27	4.374
Mean	4.76	4.72	5.29	5.81	6.53	5.84	4.79	4.48	3.8	3.36	

Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

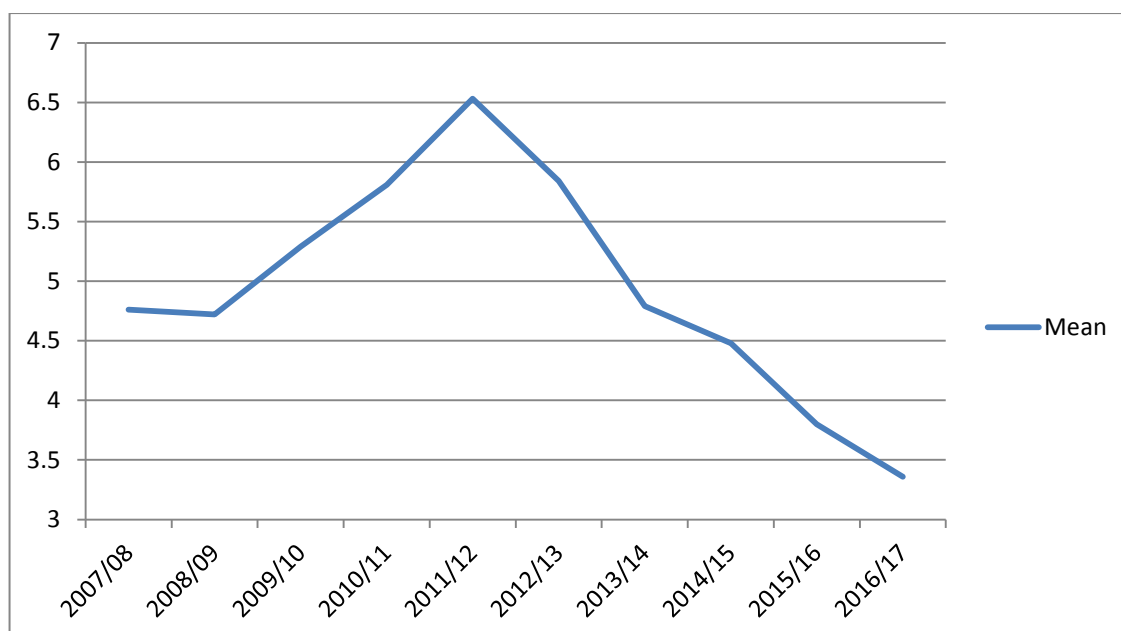
Table 4.3 explains values of total operating expenses ratio of 10 commercial banks for the period of 2007/08 to 2016/17. Total operating expenses ratio is computed as total operating expenses divided by total assets. The mean value measures average operating expenses ratio of individual sample commercial banks for particular year.

The structure and pattern of total operating expenses ratio for sample commercial banks revealed that average total operating expenses ratio is highest for HBL (9.789 %), followed by ADBL (8.441 %), NBL (6.412 %), NABIL (4.592 %), EBL (4.575

%), MBL (4.374 %), RBBL (4.373 %), SCBL (2.981 %), KBL (2.677 %), and NIBL (1.185 %). The average total operating expenses ratio computed across the year has decreased over a period of time. It decreased from 4.76 % in 2007/08 to 3.36 % in 2016/17.

Table 4.3 indicates that the total operating expenses ratio varies within the individual banks also. The average total operating expenses ratio has decreased within the individual banks from 2007/08 to 2016/17. There is no increase in total operating expenses in 2015/16 for particular commercial banks.

Fig. 4.3: Pattern of average total operating expenses ratio of selected commercial banks



In figure 4.3 Y-axis total operating expenses ratio is in percent and X-axis represents time period from 2007/08 to 2016/17 is presented. The figure has been drawn on the basis of mean value of total operating expenses ratio. The trend line of sample commercial banks shows increment in SR from the year 2007/08 to year 2011/12. Similarly, for next years 2011/12 to year 2016/17 it has decreased.

4.2.3 Structure and pattern of non-performing loan

The non performing loan ratio, define as the ratio of non-performing loan and total loan. It is calculated by dividing non-performing loan by total loan. The non-

performing loan ratio has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.4.

Table 4.4: Structure and pattern of non-performing loan of selected commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	28.63	21.43	15.64	9.78	10.92	7.22	5.32	6.38	5.35	3.95	11.467
ADBL	17.96	11.69	9.71	8.36	8.99	8.98	5085	5.46	5.35	4.36	8.671
NBL	13.49	12.38	4.94	4.98	5.57	5.58	5.24	5.12	3.98	3.11	6.457
NABIL	1.12	0.74	0.8	1.47	1.77	2.33	2.13	2.23	1.82	1.14	1.555
NIBL	2.37	1.12	0.58	0.62	4.06	4.5	5.5	1.77	1.25	0.68	2.245
SCBL	1.83	0.92	0.66	0.61	0.62	0.78	0.77	0.48	0.34	0.32	0.733
HBL	3.61	2.36	2.16	3.52	3.96	4.25	4.25	2.6	2.8	0.94	3.045
KBL	0.73	1.32	0.44	0.5	1.12	2.21	2.89	4.03	2.49	1.15	1.688
EBL	0.8	0.68	0.48	0.16	0.34	0.84	0.62	0.97	0.66	0.38	0.593
MBL	1.16	1.04	2.33	2.32	4.46	2.84	2.84	1.78	0.64	0.55	1.996
Mean	7.17	5.37	3.77	3.23	4.2	3.96	3.54	3.08	2.47	1.66	

Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

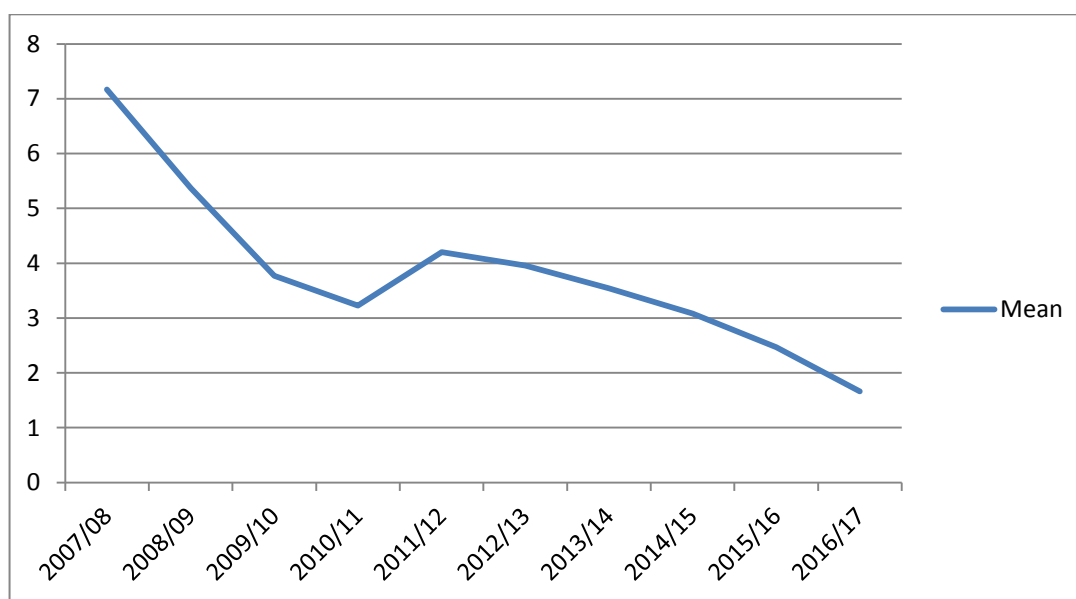
Table 4.4 explains the values of non-performing loan ratio of 10 commercial banks for period of 2007/08 to 2016/17. Non-performing loan ratio is computed as non-performing loan divided by total loan. The mean value measures average non-performing loan ratio of individual sample commercial banks for particular year.

The structure and pattern of non-performing loan ratio for sample commercial banks revealed that average non-performing loan ratio is highest for RBBL (11.467 %), followed by ADBL (8.671 %), NBL (6.457 %), HBL (3.045 %), NIBL (2.245 %), MBL (1.996 %), KBL (1.688 %), NABIL (1.555 %), SCBL (0.733 %), and EBL (0.593 %). The average non-performing loan ratio computed across the year has decreased over a period of time. It decreased from 7.17 % in 2007/08 to 1.66 % in 2016/17. Table 4.4 indicates that the non-performing loan ratio varies within the individual banks also. The average non-performing loan ratio decreased from 28.63 % in 2007/08 to 3.95 % in 2016/17 for RBBL, from 17.96 % in 2007/08 to 4.36 % in 2016/17 for ADBL, from 13.49 % in 2007/08 to 3.11 % in 2016/17 for NBL, from

2.37 % in 2007/08 to 0.68 % in 2016/17 for NIBL, from 1.83 % in 2007/08 to 0.32 % in 2016/17 for SCBL, from 3.61 % in 2007/08 to 0.94 % in 2016/17 for HBL, from 0.8 % in 2007/08 to 0.38 % in 2016/17 for EBL, and from 1.16 % in 2007/08 to 0.55 % in 2016/17 for MBL. The non performing loan ratio increased from 1.12 % in 2007/08 to 1.14 % in 2016/17 for NABIL and from 0.73 % in 2007/08 to 1.15 % in 2016/17 for KBL.

When non-performing loan ratio is compared over the period of time for individual banks, it may be seen that the non-performing loan ratio has decreased in the 8 selected commercial banks and increased in 2 selected commercial banks in recent years.

Fig. 4.4 Pattern of average non-performing loan of selected commercial banks



In the figure 4.4 in non-performing loan ratio in percentage and time period from 2007/08 to 2016/17 is presented. The figure has been drawn on the basis of mean value of non-performing loan ratio. The trend line of sample commercial banks shows decrement from the year 2007/08 to year 2010/11. Similarly for next year 2010/11 to year 2011/12 it has increased and then from 2011/12 to 2013/14 it has decreased and continuously decreased up to 2016/17.

4.2.4 Structure and pattern of credit to deposit ratio

The credit to deposit ratio define as the ratio of total credit and total deposit. It is calculated by dividing total credit by deposit. The total credit to deposit ratio has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.5.

Table 4.5: Structure and pattern of credit to deposit of selectes commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	49	47.26	46.37	51.9	49.87	48.71	53.84	56.73	61.05	58.46	52.319
ADBL	106.24	112.44	108.93	121.9	117.38	104.06	100.81	94.8	93.77	95.46	105.58
NBL	35.26	37.69	43.28	59.52	57.05	52.98	60.1	59.45	68.45	71.05	54.483
NABIL	68.13	68.18	73.87	69.37	78.29	77.91	74.9	75.55	64.43	70.49	72.112
NIBL	72.56	79.91	78.76	81.74	83.54	75.3	76.4	72.4	74.7	80.1	77.551
SCBL	43.48	46.95	38.7	45.98	49.11	55.13	58.63	56.87	48.92	56.88	50.095
HBL	56.57	61.23	71.49	74.39	80.57	75.36	77.39	70.07	72.72	77.57	71.736
KBL	85.84	92	94.17	79.45	87.87	82.33	79.47	82.7	81	79.43	84.426
EBL	77.4	79	73.43	74.61	76.98	73.22	76.57	78.01	66.83	73.52	74.957
MBL	77.25	81	83	80.78	92.35	74.62	79.79	79.56	78.77	84.59	81.171
Mean	67.2	70.57	71.21	73.96	77.3	71.96	73.79	72.61	71.06	74.76	

Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

Table 4.5 explains values of credit to deposit ratio of 10 commercial banks for the period of 2007/08 to 2016/17. Credit to deposit ratio is computed as credit divided by deposit. The mean value measures average credit to deposit ratio of individual sample commercial banks for particular year.

The structure and pattern of credit to deposit ratio for sample commercial banks in Nepal revealed that average credit to deposit ratio is highest for ADBL (105.579 %), followed by KBL (84.426 %), MBL (81.171 %), NIBL (77.551 %), EBL (74.957 %), NABIL (72.112 %), HBL (71.736 %), NBL (54.483 %), RBBL (52.319 %), and SCBL (50.095 %). The average credit to deposit ratio computed across the year has

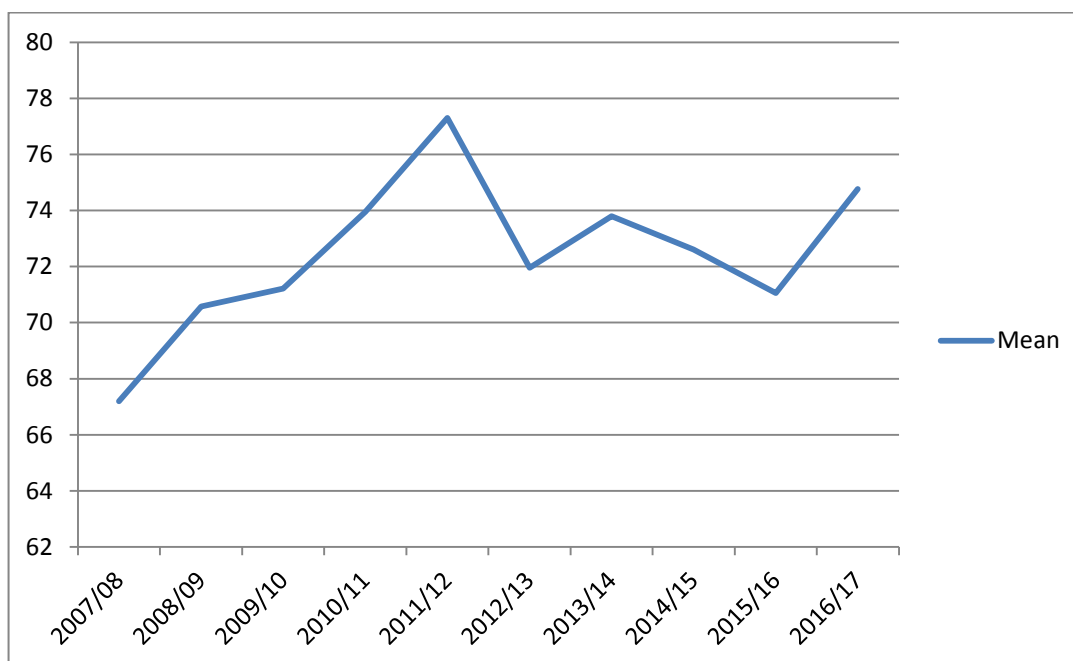
increased over a period of time. It increased from 67.2 % in 2007/08 to 74.76 % in 2016/17.

Table 4.5 indicates that the credit to deposit ratio varies within the individual banks also. The average credit to deposit ratio decreased from 106.24 % in 2007/08 to 95.46 % in 2016/17 for ADBL, from 85.84 % in 2007/08 to 79.43 percent in 2016/17 for KBL, and from 77.4 % in 2007/08 to 73.52 % in 2016/17 for EBL.

The credit to deposit ratio increased from 35.26 % in 2007/08 to 71.05 % in 2016/17 for NBL, from 68.13 % in 2007/08 to 70.49 % in 2016/17 for NABIL, from 72.56 % in 2007/08 to 80.1 % in 2016/17 for NIBL, from 43.78 % in 2007/08 to 56.88 % in 2016/17 for SCBL, from 56.57 % in 2007/08 to 77.57 % in 2016/17 for HBL, and from 77.25 % in 2007/08 to 84.59 % in 2016/17, for MBL.

When credit to deposit ratio is compared over the period of time for individual banks, it may be seen that the credit to deposit ratio has decreased in the 3 selected commercial banks and increased in 7 selected commercial banks in recent years.

Fig. 4.5: Pattern of average credit to deposit ratio of selected commercial banks



In the figure 4.5 in CD is in percentage and time period from 2007/08 to 2016/17 is presented. The figure has been drawn on the basis of mean value of credit to deposit.

The trend line of commercial banks shows an increment in CD from the year 2007/08 to year 2011/12 has increased. Similarly for next year 2011/12 to year 2012/13 it has decreased rapidly and then from year 2012/13 to year 2013/14 it is increased and from year 2013/14 to 2015/16 it has decreased and finally from year 2015/16 to year 2016/17 it has increased again.

4.2.5 Structure and pattern of liquidity ratio

The liquidity ratio is defined as the ratio of sum of cash in hand and cash at bank and total deposit. It is calculated by dividing total cash by total deposit. The liquidity ratio has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.6.

Table 4.6: Structure and pattern of liquidity ratio of selected commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	14.14	15.3	10.71	7.55	18.64	15.18	19.38	14.48	27.6	13.36	15.634
ADBL	11.29	21.19	26.14	25.71	36.35	32.27	30.43	28.74	23.33	15.64	25.109
NBL	15.82	20.29	23.65	25.67	25.09	22.53	9.6	11.55	17.46	18.76	19.042
NABIL	8.37	9.06	3.02	4.9	8.6	9.32	11.32	14.15	6.77	11.01	8.649
NIBL	10.91	10.32	7.77	7.67	13.6	16	19.2	12	7.2	14.24	11.891
SCBL	5.84	8.18	6.74	6.1	22.4	16.43	21.18	24.03	7.98	13.98	13.286
HBL	9.21	9.56	10.77	9.97	11.12	12.49	14.3	16.17	19.15	9.60	12.292
KBL	1.91	7.13	8.02	5.74	13.52	12.43	13.62	7.48	8.74	14.94	9.353
EBL	4.56	14.26	15.53	9.55	17.22	15.19	16.91	24.27	16.61	22.49	15.659
MBL	8.05	12.33	5.89	5.89	15.34	11.07	9.24	11.02	6.84	16.5	10.217
Mean	9.01	12.76	11.82	10.88	18.19	16.35	16.52	16.45	14.17	15.05	

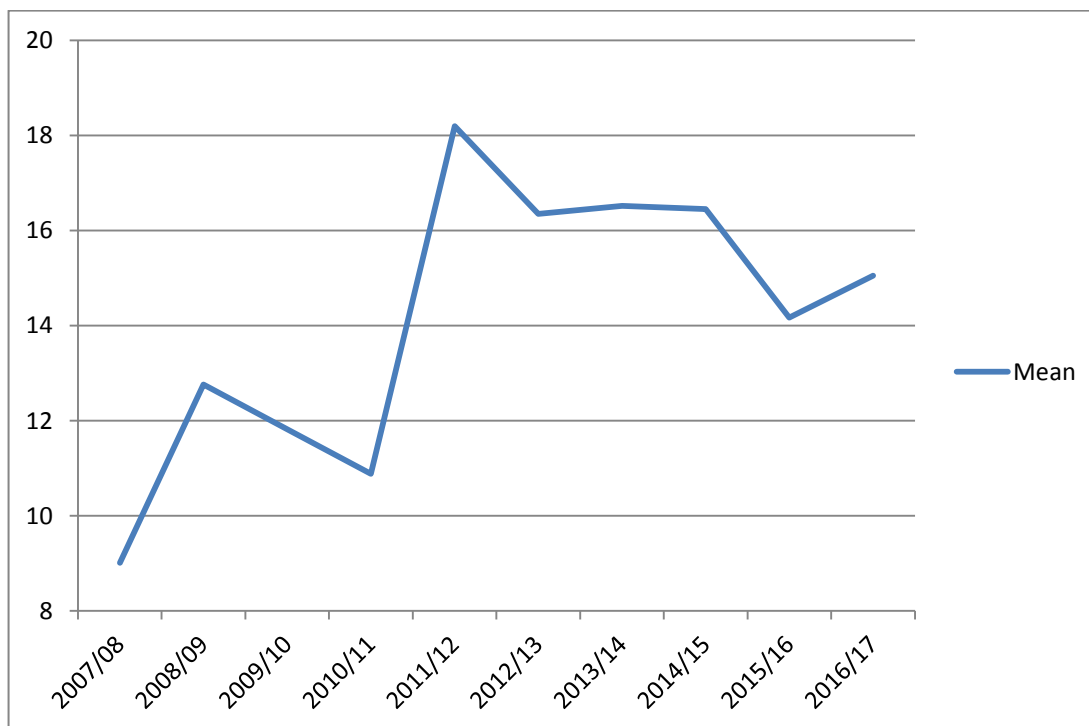
Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

Table 4.6 explains values of liquidity ratio of 10 commercial banks for the period of 2007/08 to 2016/17. Liquidity ratio is computed as cash at bank and cash equivalent assets divided by total deposit. The mean value measures average liquidity ratio of individual sample commercial banks for particular year.

The structure and pattern of liquidity ratio for sample commercial banks revealed that average liquidity ratio is highest for ADBL (25.109 %), followed by NBL (19.042 %), EBL (15.659 %), RBBL (15.634 %), SCBL (13.286 %), HBL (12.292 %), NIBL (11.891 %), MBL (10.217 %), KBL (9.353 %), and NABIL (8.649 %). The average liquidity ratio computed across the year has increased over a period of time. It increased from 9.01 in 2007/08 to 15.05 % in 2016/17.

Table 4.6 indicates that the liquidity ratio varies within the individual banks. The average liquidity ratio are increase all of the banks except RBBL. The liquidity ratio of RBBL is decreased from 14.14% in 2007/08 to 13.36 % in 2016/17. The liquidity ratio increased from 11.29 % in 2006/07 to 15.64 % in 2016/17 for ADBL, from 15.82 % in 2007/08 to 18.76 in 2016/17 for NBL, from 8.37 % in 2007/08 to 11.01 in 2016/17 for NABIL, from 10.91 % in 2007/08 to 14.24 % in 2016/17 for NIBL, from 5.84 % in 2007/08 to 13.98 % in 2016/17 for SCBL, from 9.21 % in 2007/08 to 9.60 in 2016/17 for HBL, from 1.91 in 2007/08 to 14.94 % in 2016/17 for KBL, from 4.56 % in 2007/08 to 22.49 in 2016/17 for EBL, and from 8.05 % in 2007/08 to 16.5 % in 2016/17 for MBL.

Fig. 4.6: Pattern of average liquidity ratio of selected commercial banks



The trend line of commercial bank shows an increment in liquidity ratio from the year 2007/08 to year 2008/09 has increased. Similarly for next year 2008/09 to year 2010/11 it has decreased slightly and then from year 2010/11 to year 2011/12 it is increased rapidly and from year 2011/12 to year 2012/13 it has decreased. The trend line from 2012/13 to 2013/14 it has increased slightly and from 2013/14 to 2015/16 it has decreased. Finally, the trend line increased upward from 2015/16 to 2016/17.

4.2.6 Structure and pattern of net interest margin

The net interest margin is defined as the margin of net interest income and total interest earning assets. It is calculated by dividing net interest margin by total interest earning assets. The net interest margin has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.7.

Table 4.7 explain values of net interest margin of 10 commercial banks for the period of 2007/08 to 2016/17. Net interest margin is computed by dividing net interest income by total interest earning assets. The mean value measures the average net interest margin of individual sample commercial banks for particular year.

Table 4.7: Structure and pattern of net interest margin of selected commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	4.72	5.71	6.52	4.99	3.52	4.18	4.34	4.28	4.42	4.49	4.717
ADBL	6.56	8.2	10.3	9.55	8.2	7.82	6.55	6.88	6.6	6.23	6.689
NBL	4.43	6.12	7.15	6.64	5.14	5.16	4.42	4.88	5.77	5.96	5.567
NABIL	3.9	4.29	4.55	4.52	5.35	5.61	5.07	3.66	3.86	4.11	5.334
NIBL	3.55	3.62	4.29	4.5	4.16	5.36	4.44	3.4	3.42	3.38	4.012
SCBL	4.05	3.96	4.1	4.81	5.73	5.41	5.68	4.71	3.4	3.55	4.54
HBL	3.47	4.2	4.38	4.74	4.24	4.76	3.83	3.79	2.7	3.75	3.986
KBL	3.4	3.65	4	3.77	3.98	4.16	3.33	2.9	3.24	2.29	3.472
EBL	3.91	3.94	4.7	4.56	4.69	5.16	5.31	4.09	3.71	3.6	4.367
MBL	3.85	3.35	3.32	3.32	2.46	4	3.43	3.5	3.74	3.71	3.468
Mean	4.184	4.704	5.331	5.14	4.747	5.162	4.64	4.209	4.086	4.107	

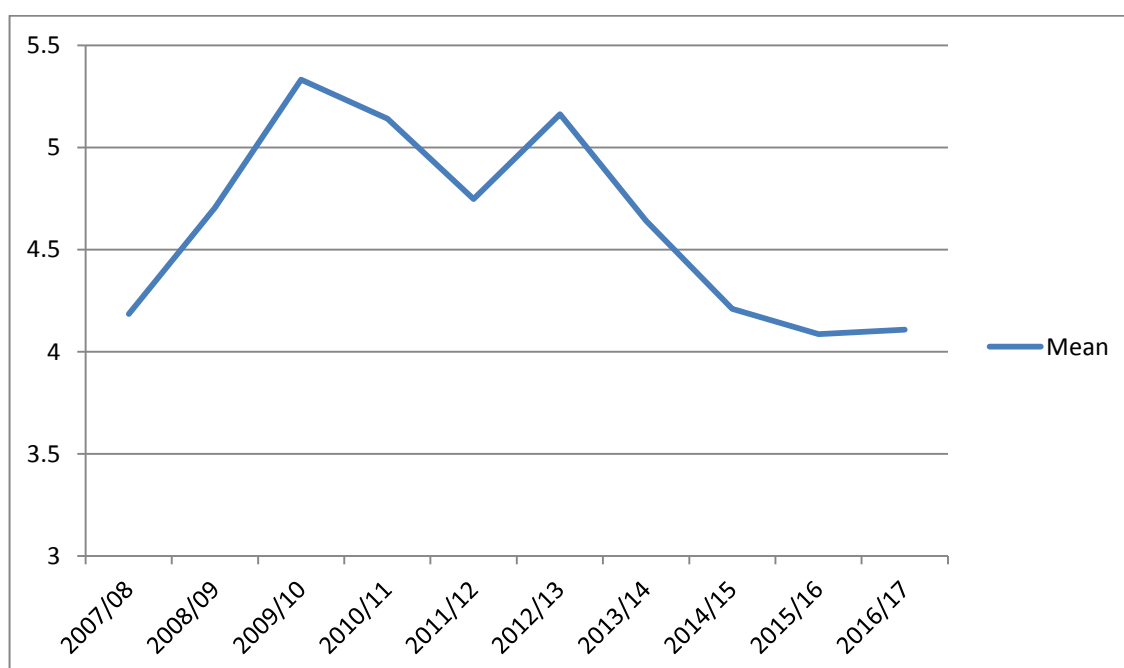
Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

The structure and pattern of net interest margin for sample commercial banks revealed that average net interest margin is highest for ADBL (6.689 %), followed by NBL (5.567 %), NABIL (5.334 %), RBBL (4.717 %), SCBL (4.54 %), EBL (4.367 %) NIBL (4.012 %), HBL (3.986 %), KBL (3.472 %), MBL (3.468 %). The average net interest margin computed across the year has decreased over a period of time. It decreased from 4.184 % in 2007/08 to 4.107 % in 2016/17.

Table 4.7 indicates that the net interest margin varies within the individual banks also. The net interest margin increased from 4.43 % in 2007/08 to 5.96 % in 2016/17 for NBL, from 3.9 % in 2007/08 to 4.11 % in 2016/17 for NABIL, from 3.47 % in 2007/08 to 3.75 % in 2016/17 for HBL. And also the net interest margin decreased from 4.72 % in 2007/08 to 4.49 % in 2016/17 for RBBL, from 6.56 % in 2007/08 to 6.23 % in 2016/17 for ADBL, from 3.55 % in 2007/08 to 3.38 % in 2016/17 for NIBL, from 4.05 % in 2007/08 to 3.55 % in 2016/17 for SCBL, from 3.4 % in 2007/08 to 2.29 % in 2016/17 for KBL, from 3.91 % in 2007/08 to 3.6 % in 2016/17 for EBL, and from 3.85 % in 2007/08 to 3.71 % in 2016/17 for MBL.

When net interest margin is compared over the period of time for individual banks, it may be seen that the net interest margin has decreased in the 7 commercial banks and increased in 3 selected commercial banks in recent years.

Fig. 4.7: Pattern of average net interest margin of selected commercial banks



4.8.7 Structure and pattern of return on assets

The return on assets is defined as the ratio of net profit and total assets. It is calculated by dividing net profit by total assets. The return on assets has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.8.

Table 4.8 explains values of return on assets of 10 commercial banks for the period of 2007/08 to 2016//17. Return on assets is computed by dividing net profit by total assets. The mean value measures the average return on assets of individual sample commercial banks for particular year.

Table 4.8: Structure and pattern of return on assets of selected commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	2.99	2.84	2.39	2.2	2.66	2.26	1.47	3.22	1.6	1.6	2.323
ADBL	1.53	2.04	3.5	3.99	2.9	2.97	1.76	0.93	0.58	2.02	2.222
NBL	1.88	0.57	0.58	0.25	0.3	1.07	0.92	0.55	2.79	2.78	1.169
NABIL	2.32	2.55	2.37	2.43	2.8	3.25	2.65	2.06	3.32	2.57	2.632
NIBL	1.77	1.68	2.19	2.02	1.6	2.6	3.2	1.9	2	2.06	2.012
SCBL	2.46	2.53	2.7	2.55	2.8	2.67	2.51	1.99	1.98	1.84	2.403
HBL	1.76	1.91	1.19	1.91	1.76	1.54	1.3	1.34	1.94	2.03	1.668
KBL	1.16	1.41	1.59	1.23	1.1	1.03	1.1	1.06	1.69	1.00	1.237
EBL	0.02	1.73	2.09	2.1	2.11	3.39	2.25	1.85	1.85	1.72	1.811
MBL	0.68	0.7	0.35	0.03	0.16	0.49	1.12	1.26	1.51	1.9	0.82
Mean	1.657	1.796	1.895	1.871	1.819	2.027	1.738	1.616	1.926	1.952	

Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

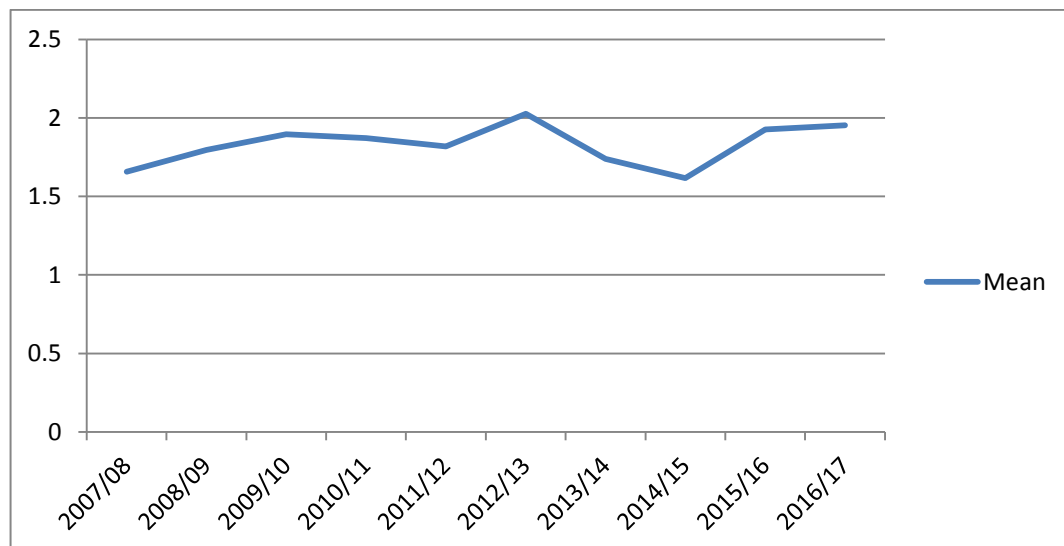
The structure and pattern of return on assets for sample commercial banks revealed that average return on assets is highest for NABIL (2.632 %), followed by SCBL (2.403 %), RBBL (2.323 %), ADBL (2.222 %), NIBL (2.012 %), EBL (1.811 %), HBL (1.668 %), KBL (1.237 %), NBL (1.169 %), and MBL (0.82 %). The average return on assets computed across the year has decreased over a period of time. It increased from 1.657 % in 2007/08 to 1.952 % in 2016/17.

Table 4.8 indicates that the return on assets varies with in the individual banks also. The average return on assets decreased from 2.99 % in 2007/08 to 1.6 % in 2016/17 for RBBL, from 2.46 % in 2007/08 to 1.84 % in 2016/17 for SCBL, from 1.16 % in 2007/08 to 1 % in 2016/17for KBL. And also, the average return on assets increased from 1.53 % in 2007/08 to 2.02 % in 2016/17 for ADBL, from 1.88 % in 2007/08 to 2.78 % in 2016/17 NBL, from 2.32 % in 2007/08 to 2.57 % in 2016/17 for NABIL, from 1.77 % in 2007/08 to 2.06 % in 2016/17 for NIBL, from 1.76 % in 2007/08 to 2.03 % in 2016/17 for HBL, from 0.02 % in 2007/08 to 1.72 % in 2016/17 for EBL, and from 0.68 % in 2007/08 to 1.9 % in 2016/17 for MBL.

When return on assets is compared over the period of time for individual banks, it may be seen that the return on assets has decreased in the 3 selected commercial banks and increased in 7 selected commercial banks in recent years.

In the figure 4.8 ROA is in percentage and time period from 2007/08 to 2016/17 is presented. The figure has been drawn on the basis of meanvalu of return on assets.

Fig. 4.8 Pattern of average return on assets of selected commercial banks



The trend line of selected commercial banks shows a increment in ROA from the year 2007/08 to year 2009/10, for next year 2009/10 to year 2011/12 it has decreased, after year 2011/12 to year 2012/13 it has increased and from the year 2012/13 to year 2014/15 it has decreased. Finally, the trend line has increased from year 2014/15 to year 2016/17.

4.2.8 Structure and pattern of return on equity

The return on equity is define as the ratio between net profit and shareholders equity. It is calculated by dividing net profit by shareholders equity. The return on equity total has been computed for the selected commercial banks from 2007/08 to 2016/17. The computed values are presented in table 4.9.

Table 4.9: Structure and pattern of return on equity of selected commercial banks for period of 2007/08 to 2016/17 (in percentage)

Banks	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	Mean
RBBL	-11.43	-16.09	-23.34	-21.44	-51.69	102.95	72.61	69.57	30.77	24.17	17.91
ADBL	12.54	1.24	17.41	17.93	12.99	14.68	11.67	22.27	13.65	11.77	13.61
NBL	-5.76	-21.53	-8.88	-9.04	-6.09	-458.13	21.42	12.63	42.94	27.23	-40.52
NABIL	30.63	36.1	29.69	29.44	31.12	33.17	30.36	22.07	24.32	25.63	29.25
NIBL	25.93	23.05	27.61	19.54	13.8	23.1	20.34	15.46	16.65	16.64	20.012
SCBL	32.85	33.58	32.22	30.43	28.36	26.38	26.27	21.69	19.81	11.99	26.358
HBL	25.3	24.13	14.79	22.35	20.7	17.81	15.76	15.98	21.93	18.61	19.692
KBL	12.82	16.09	17.72	11.34	16.61	10.96	11.53	11.8	17.25	8.18	12.957
EBL	23.48	28.99	30.14	19.67	24.62	28.6	27.89	22.1	18.79	17.36	24.164
MBL	7.31	7.25	4.13	0.45	1.44	5.33	14.06	15.43	16.82	15.02	8.72
Mean	15.368	14.181	14.149	12.064	8.686	-19.51	25.191	22.9	22.222	17.66	

Sources: Annual Report and Bank Supervision Reports of NRB for F/y 2007/08 to 2016/17.

Table 4.9 explains values of return on equity of 10 commercial banks for the period of 2007/08 to 2016/17. Return on equity is computed by dividing net profit by shareholder's funds. The mean value measures the average return on equity of individual sample commercial banks for particular year.

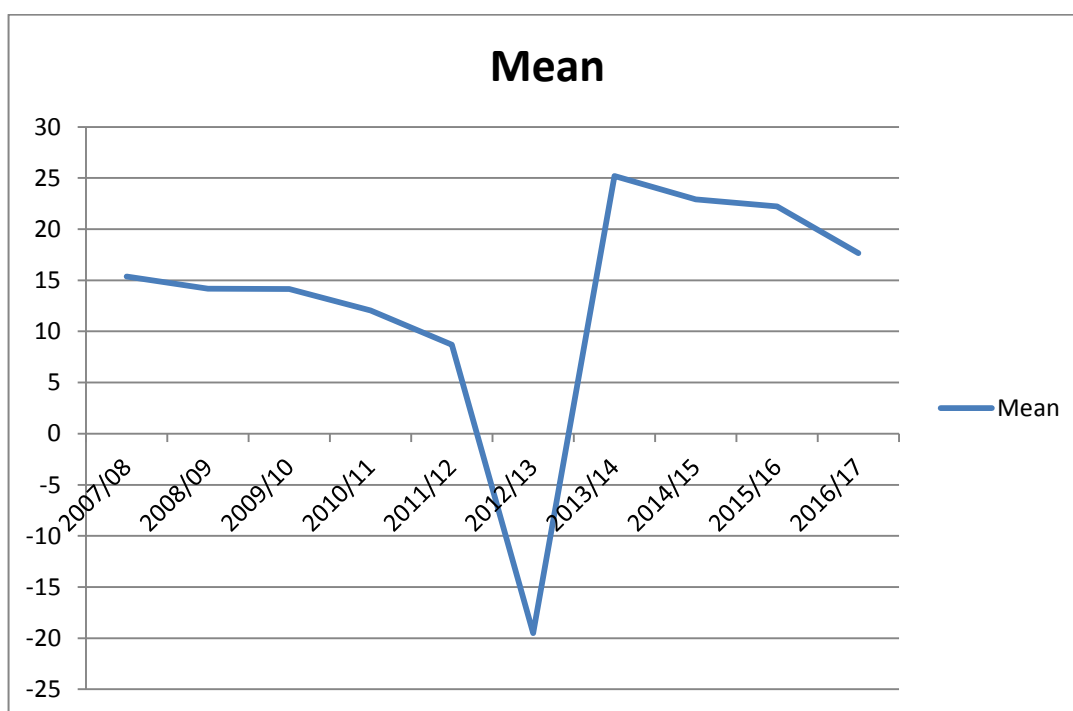
The structure and pattern of return on equity for Nepalese commercial banks revealed that average return on equity is highest for NABIL (29.25 %), followed by SCBL (26.358 %), EBL (24.164 %), NIBL (20.012 %), HBL (19.692 %), RBBL (17.91 %), ADBL (13.61 %), KBL (12.957 %), MBL (8.72 %), and NBL (-40.52 %). The average return on equity computed across the year has increased over a period of time. It increased from 15.368 % in 2007/08 to 17.66 in 2016/17.

The table 4.9 indicates that the return on equity varies within the individual banks also. The average return on equity decreased from 12.54 % in 2007/08 to 11.77 in 2016/17 for ADBL, from 30.63 % in 2007/08 to 25.63 % in 2016/17 for NABIL, from 25.95 % in 2007/08 to 16.64 % in 2016/17 for NIBL, from 32.85 % in 2007/08 to 11.99 in 1016/17 for SCBL, from 25.3 % in 2007/08 to 18.16 % in 2016/17 for HBL, from 12.82 % in 2007/08 to 8.18 % in 2016/17 for KBL, and 23.48 % in 2007/08 to 17.36 in 2016/17 for EBL.

The average return on equity increased from negative 11.43 % in 2007/08 to 24.17 % in 2016/17 for RBBL, from negative 5.76 % in 2007/08 to 27.23 % in 2016/17 for NBL, from 7.31 % in 2007/08 to 15.02 in 2016/17 for MBL.

When return on equity is compared over the period of time for individual banks, it may be seen that the return on equity has decreased in 7 selected commercial banks and increased in 3 selected commercial banks in recent years.

Fig. 4.9: Pattern of average return on equity of selected commercial bank



In the figure 4.9 ROA is in percentage and time period from 2007/08 to 2016/17 is presented. The figure has been drawn on the basis of mean value of return on equity. The trend line of commercial banks shows a decrement in ROE from the year 2007/08

to year 2012/13 has decreased, for next year 2012/13 to year 2013/14 it has increased rapidly and then from year 2013/14 to year 2016/17 it is decreased slightly.

4.3 Descriptive Statistics of the Study Variables

This section shown the summery statistics of all variables of the study. The table 4.10 presents the descriptive statistics of all study variables.

This table 4.10 explains descriptive statistics of all dependent and independent variables. Total number of observations are 100 and table shows the minimum and maximum values for each variables. Along with it presents the average and variation of the presented data as mean value and standard deviation.

Table 4.10: Descriptive statistics of the study variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	100	0.020	3.990	1.6402	0.8464
NIM	100	2.460	10.30	4.631	1.4050
ROE	100	-458.13	102.95	13.291	51.0539
SR	100	2.270	8.250	4.714	1.0562
TOER	100	0.950	14.420	4.937	2.9548
NPL	100	0.160	28.630	3.845	4.676
CD	100	35.260	121.90	72.443	17.4109
LR	100	1.910	36.350	14.119	6.8916

Source: Appendix- I

As presented in the table 4.10 the average value of ROA of sample commercial banks is 1.6402 percent (mean = 1.6402) with standard deviation of 0.8464 percent. The standard deviation of ROA is 0.8464 percent that idolise banks seek 0.8464 percent risk to obtain 1.6402 percent ROA. The mean value of NIM is 4.631 percent with the minimum, maximum and standard deviation of 2.46 percent, 10.3 percent and 1.4050 percent respectively. NIM indicates the commercial banks earn 4.631 percent net interest income by taking 1.405 percent risk. The average ROE was 13.291 percent with 51.0539 percent risk, the minimum and maximum was negative 458.13 percent and 102.95 percent respectively that implies the bank had to bear huge amount of reserve and surplus to cover loss.

Similarly, average interest spread rate (SR) was 4.714 percent with 1.0562 percent risk, that indicates the commercial banks have maintained spread rate (less than 5 percent as directed by NRB). Average total operating expenses ratio (TOER) was 4.937 percent. The average of non-performing loan to total loan ratio (NPL) was 3.845 percent that indicates the commercial banks had not recovered 3.845 percent of total loan. Average credit to deposit (CD) ratio was 72.443 percent that implies the commercial banks flow 72.44 percent of loan and advance out of total deposit collection. The average liquidity (LR) was 14.119 percent in sample commercial banks of Nepal.

4.4 Correlation Analysis of Study Variables

In this part it is discussed and presented the degree of linear relationship among study variables of interest rate spread, related independent factors and profitability by using Pearson correlation analysis. The correlation coefficient of ROA, ROE, and NIM is shown with independent variables of commercial banks.

Table 4.11: Correlation analysis between dependent and independent variables

Variables	ROA	NIM	ROE	SR	TOER	NPL	CD	LR
ROA	1							
NIM	0.372**	1						
ROE	0.181	-0.078	1					
SR	0.027	0.644**	0.319**	1				
TOER	-0.059	0.428**	-0.1	0.206*	1			
NPL	-0.212*	0.445**	-0.185	0.279**	0.260**	1		
CD	-0.038	0.364**	0.08	0.068	0.243*	-0.086	1	
LR	0.084	0.587**	-0.155	0.627**	0.238*	0.250*	0.097	1

Source : Appendix-II

Note:

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed)

The table 4.11 depicts that ROA and NPL have negative correlation (i.e. $r = -0.212$) that implies one unit increase in NPL leads to 0.212 points decrease in ROA of sample commercial banks in Nepal. The NIM and SR have strongly positive correlation i.e. $r = 0.644$ at 1 percent level of significance which implies that as spread rate increases Net Interest Margin also increases and vice versa.

Similarly, TOER, NPL, CD and LR looking positively correlated with NIM. Correlation between CD and NIM is 0.364 which indicates that as the commercial bank generate high amount of deposit to loan and advances net interest margin increases as the high lending generates high interest income.

There is positive correlation between spread rate and ROE i.e. $r = 0.319$ which indicates that increases in interest spread rate leads increase in return on equity.

4.5 Regression Analysis

This section of the study presents the model summary, ANOVA and regression coefficient of the study variables. The results and discussion of the regression models is analyzed to examine the impact of interest spread rates (SR) and its related factors on the profitability (ROA, NIM, ROE) of commercial banks in Nepal. Best fitted multiple linear regression model is estimated. The regression model is most popular and reliable method to estimate and analyse the result for study. It reveals the impact of independent variable on dependent variables of the study. Table 4.12 shows the model summary that depicts the explanation of R square of independent variables on dependent variables.

Table 4.12: Model summary

Model	R	R ²	SEE
1	0.256	0.066	0.84032
2	0.818	0.669	0.86925
3	0.355	0.126	49.13398

Sources: Appendix 3

In the table 4.12, coefficient of determination (R²) explains the extent to which changes in the dependent variable can be explained by the changes in the independent

variables or the percentage of variation in the dependent variable (sample commercial banks profitability NIM, ROE & in Nepal) that is explained by the independent variable (LR, CD, NPL, TOER & SR). The independent variable that was studied, explains 6.6 % to ROA in model 1, 66.9 percent of the commercial banks profitability (NIM) in Nepal as represented by the R^2 in model 2. Similarly, the ROE was explained by independent variables only 12.6 percent. It means that other factor not studied in this research contribute 94.4 % in ROA, 33.1 percent in NIM and 87.4 percent in ROE of the commercial banks profitability in Nepal. Therefore, further research should be conducted to investigate the other factors that affect commercial banks profitability in Nepal.

Table 4.13: ANOVA

model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.67	5	0.934	1.323	0.021
Residual	66.377	94	0.706		
Total	71.046	99			
Regression	143.237	5	28.647	37.91	0.000
Residual	71.025	94	0.756		
Total	214.263	99			
Regression	32708.605	5	6541.721	2.71	0.025
Residual	22708.605	94	2414.148		
Total	259638.547	99			

Source : Appendix-4

Table 4.13 depicts that the models 1 and 2 and 3 significant at level 0.021, 0.000 and 0.025 respectively which are less than 0.05 thus, the models are statistically significant

in predicting how interest rate and concern factors affect the commercial banks profitability in Nepal.

Regression Coefficient

Multiple regression explain the effect of independent variables on dependent variables. The three regression model have been developed as model 1 represents regression line between ROA and independent variables, model 2 represents regression line between NIM and independent variables and model 3 represents regression line of ROE on independent variables. The table 4.14 shows the regression models.

Table 4.14: Regression coefficient of dependent and independent variables

Variables	ROA(Model- 1)	NIM (Model- 2)	ROE (Model- 3)
	Coefficient (Std. Error)	Coefficient (Std. Error)	Coefficient (Std. Error)
Constant	1.941	-1.01	70.695
	(3.716)* *	(-1.876)	(2.314)
SR	0.064	0.535	-16.808
	(0.614) *	(4.936) **	(2.742) **
TOER	-0.038	0.077	-0.866
	(-1.23) *	(2.379) *	(-0.475) *
NPL	-0.044	0.085	-0.972
	(2.253) *	(4.196) **	(-0.848) *
CD	0.001	0.026	0.293
	(0.013)	(4.88) **	(0.986)
LR	0.012	0.044	0.617
	(0.8)	(2.764) **	(0.684)

Source: Appendix-5

Note:

** Indicates the significant level at 0.01.

* Indicates the significant level at 0.05.

The table 4.14 reveals the significant relationship among all independent variables on ROA, NIM and ROE. The consent term have positive relationship with ROA at 1 present level of significance. Similarly, there is significant impact of spread rate, total operating expenses ratio and non-performing loan ratio on return on assets as the level of P values is less than 5 percent. The spread rate effect positively on ROA where as TOER and NPL have negative impact on ROA. The estimated regression equation is developed that implies to be forecasted the projected value of ROA in future.

$$ROA_{est} = 1.941 + 0.064 (SR) - 0.038(TOER) + 0.04 (NPL) + 0.001(CD) + 0.012(LR)$$

The table 4.14 depicts that there is strongly significant relationship of spread rate, total operating expenses ratio, non performing loan ratio, credit to deposit ratio and liquidity ratio on net interest margin respectively. Among all independent variables SR have high impact on NIM at 1 percent level of significant which implies that one units increase in SR leads to 0.535 units increase in NIM and vice versa. This is supported by previous study (Mungai, 2013). The estimated linear regression equation is developed as:

$$NIM_{est} = -1.01 + 0.535 (SR) + 0.077(TOER) + 0.085 (NPL) + 0.026 (CD) + 0.044(LR)$$

The table 4.14 reveals that the impact of spread rate, total operating expenses ratio, non performing loan ratio, credit to deposit ratio and liquidity ratio on return on equity. There is positive impact shown by constant value, there is negative impact indicated by SR on ROE where beta coefficient is -16.808 for SR, -0.866 for TOER, -0.972 for NPL, 0.293 for CD and 0.617 for LR respectively. Among the independent variables SR, TOER and NPL have negative effect on ROE whereas CD and LR have positive effect on ROE. The regression equation of ROE on independent variables is developed as:

$$ROE_{est} = 70.695 - 16.8048(SR) - 0.866 (TOER) - 0.972 (NPL) + 0.293(CD) + 0.617(LR)$$

4.6 The Relationship between Interest Rate and Average Net Profit

This section deals with the relationship between deposit interest rates (DR), lending interest rate (LR) and average net profit after tax (ANPAT). The table 4.15 shows the relationship between interest rates and net profit as following:

The table 4.15 reveals the strongly negative relationship between lending interest rates and average net profit after tax (ANPAT), i.e. $r = -0.856$ that indicates as the interest rates decreasing in recent years, net profit leads to increase in recent years of Nepalese commercial banks.

Table 4.15: Correlation analysis between interest rates and net profit

Variables	ANPAT	LR	DR
ANPAT	1		
LR	-0.856**	1	
DR	-0.281	0.46	1

Source: SPSS output result

Note:

** Indicates the significant level at 0.01.

It implies that the commercial banks have been generating profit as the lending rates seems decreasing which is due to better performance of commercial banks and effective loan management. In other hand, deposit interest rate have low level negative relationship with net profit which implies that decrease in deposit rate leads to increase in profit as the commercial are reducing deposit rates in recent years.

4.7 Major Findings of the Study

This section deals with major findings from the result that address the purpose of the study interest rate and its impact on profitability of commercial bank in Nepal. It includes finding from mean value presented in table and figure, descriptive statistics, finding from correlation analysis and finding from regression analysis respectively.

1. The weighted average lending interest rates and deposit interest rates of commercial banks in Nepal found decreasing in recent years.
2. The average spread rate of ADBL was found highest among other particular commercial banks which indicates the rate is higher than

directed spread rate of 5 percentage by NRB. Year wise average spread rate was found increased in recent years.

3. Among selected commercial banks in Nepal, it has found highest total operating expenses ratio of HBL and ADBL respectively. Year wise TOER was found decreasing in recent years that implies the commercial banks are efficiently performing in following years as the operating cost seems towards control.
4. The average non-performing loan of RBBL was found highest among other commercial banks that means RBBL have weak performance on recovering of loan. The year wise average NPL ratio was found decreased in recent years 2016/17.
5. The credit to deposit ratio was found highest for ADBL during 10 years. It implies that ADBL have high lending capacity than other banks. The year wise CD ratio was increasing in recent year.
6. The average liquidity ratio also found highest for ADBL. It implies that ADBL have strong liquidity position than other commercial banks. The year wise liquidity ratio also found slightly increased in following years.
7. Net interest margin of ADBL found highest among selected commercial banks, it implies that ADBL is performing well. The year wise NIM was found in decreased trend in recent years.
8. It was found that Nabil Bank Ltd. Have highest return on assets among other selected commercial banks. The year wise ROA was found increased in recent years. It implies that the commercial banks are performing well in terms of ROA.
9. The highest average ROE was found for Nabil Bank Ltd which implies that the NABIL has well performance in terms of ROE. The year wise ROE was found increased in recent years.

Descriptive Statistics

The mean value of ROA, NIM, and ROE was found 1.6402 percent, 4.631 percent and 13.291 percent with standard deviation of 0.8464 percent, 1.4050 percent and 51.0539 percent respectively. It was found that the commercial bank have satisfactory level of profitability in Nepal.

The main factor affecting commercial banks profitability were found spread rate (lending interest rate - deposit interest rate), total operating expenses ratio, non performing loan , credit to deposit ratio and liquidity ratio respectively, the mean value was found 4.714 percent, 4.937 percent, 3.845 percent, 72.443 percent, and 14.119 percent respectively with standard deviation of 1.0562 percent, 2.9548 percent, 4.676 percent, 17.4109 percent and 6.8916 percent respectively.

The interest spread rate was found less than 5 percent that was with in the level directed by Nepal Rastra Bank to the commercial banks to maintain the spread rate not more than 5 percent. So, it was found that commercial banks have maintained the spread rate in control.

The credit to deposit ratio also found less than 80 percent directed by NRB monetary policy and directives 2017 AD.

Correlation Analysis

1. The independent factors (affecting SR, TOER, NPL, CD, LR) on ROA was found low level of relationship.
2. The NIM was found the main tools of profitability of commercial banks in Nepal as the independent factor have significant positively strong relationship with NIM. The correlation os SR, TOER, NPL, CD, LR with NIM was found as 0.644, 0.428, 0.445, 0.364 and 0.587 respectively. Among the five independent variables Spread rate found mostly significant role on NIM because it has higher correlation than others.
3. The correlation between independent factors (SR, TOER, NPL, CD, LR) and Return on Equity (ROE) found very low level of correlation so that independent factor have not significant role to affect on the ROE of commercial banks in Nepal.
4. From the Pearson's correlation analysis it was found that the major tool of commercial bank profitability is net interest margin because most of the earning generated through interest item by lending and paid interest to the deposit holders. The interest spread rate was found as most affecting factors of commercial banks profitability.

5. There was found strongly negative correlation between lending interest rates and average net profit after tax of Nepalese commercial banks which implies that the commercial banks have been growing profit although the lending interest rates goes down in recent years.

Regression Analysis

1. It was found that the variation of ROA was explained only 6.6 percent , the role of independent variables on NIM was found ($R^2 = 66.9$ percent) that means the variation of NIM which was explained by independent factors is 66.9 percent. Similarly, role of independent factor on ROE was found only 12.6 percent. It implies that the impact of independent factors on NIM highly involved.
2. ANOVA table was shown to check the significant fit of regression model that it was found statistically significant model for ROA, NIM, and ROE because their relative P value was found less than 0.05 as presented in ANOVA table.
3. The positive impact of spread rate, operating expenses ratio, non performing loan ratio, credit to deposit ratio and liquidity ratio respectively as their beta coefficient seems 0.535, 0.077, 0.085, 0.026 and 0.016 respectively. In which the impact of spread rate was seen highly on NIM.
4. The positive impact of spread rate was found on ROE negatively as the beta coefficient of spread rate was 15.563 wit p value equals to 0.01. the standard error of constant and spread rate was found 22.555 and 4.672 which implies there was deviation on ROE of commercial banks in Nepal because some commercial bank like Nepal bank ltd was huge negative value of ROE in some sample years.

Discussion

1. It was found that the role of independent variable on variation of ROA was explained only 6.6 percent in model 1. The positive impact of spread rate, credit to deposit ratio and liquidity ratio as their beta coefficient seems 0.064, 0.001, and 0.012 respectively. And also, their

is negative impact of total operating expenses ratio and non-performing loan as their beta coefficient seems negative 0.038 and 0.044 respectively on ROA.

2. The role of independent variables on NIM was found 66.9 ($R^2 = 0.669$) percent that means the variation of NIM which was explained by independent factor is 66.9 percent in model 2. The positive impact of spread rate, total operating expenses ratio, non-performing loan ratio, credit to deposit ratio and liquidity ratio as their beta coefficient seems 0.535, 0.077, 0.085, 0.026, and 0.016 respectively on NIM.
3. Similarly, role of independent factor on ROE was found only 12.6 percent in model 3. It implies that the impact of independent factors on NIM highly involved. The positive impact of credit to deposit ratio and liquidity ratio as their beta coefficient seems 0.293 and 0.617 respectively. But there is negative impact of spread rate, total operating expenses ratio and non-performing loan ratio as their beta coefficient seems negative 16.808, 0.866 and 0.972 respectively on ROE.

CHAPTER-V

CONCLUSION

5.1 Summary

The extra money over borrowed or lending amount was made as interest. As the development of banking growing rapidly interest rate became as the main way of profit of the banks. On the interest rate and profitability many authors and pioneer noble have been develop and investigated essential theory and definitions. The main objective of the study was to examine the interest rates and its impact on profitability of commercial banks in Nepal. For the analysis of variables this study included interest rate factors and profitability factors of commercial banks in Nepal. The theoretical reviews and empirical reviews were addressed to support the study and its purpose, theoretical framework was analyzed. The study uses quantitative research design based on descriptive analysis, secondary data were used and data were collected through convenience sampling to attain the purpose of this study. The data were obtained from annual report and supervision report of sample commercial banks in Nepal. Descriptive statistics, correlation and regression model were used as a major tools of analyzing the data to meet the research purpose. Statistical package for social science (SPSS) software was used to analyze the required result.

The structure of weighted average lending rates, weighted average deposit rates and base rates presented on the table and plotted on the graphs. The structure and pattern of dependent and independent variables were presented in the table in which an average value of each variables was described on the basis of individual selected commercial banks and year wise average mean value was plotted on the graphs. Descriptive statistics of study variables in which minimum, maximum, mean and standard deviation of 100 observations for each study variable was analyzed. In which the mean value of dependent variable ROA is 1.6402 with standard deviation of 0.8464, mean NIM is 4.631 with standard deviation of 1.4050 and mean ROE is 13.291 with standard deviation. Pearson's correlation of independent variables (SR, TOER, NPL, CD, and LR) among profitability (ROA, NIM, ROE) was analyzed. The

ROA is correlated with LR (0.084) positively, NIM is correlated with SR (0.644) and ROE is correlated with SR (0.319) positively which is highest. Regression model were fitted to justify the impact of independent factors on dependent factors. The relation between interest rates and average net profit after tax was analyzed, in which the relation between lending interest rate and average net profit after tax, i.e. -0.856 indicates that the strongly negative relationship. At last, the major findings of the study were extracted.

5.2 Conclusions

While determining the interest rates to be charged by commercial bank to its lenders the bank considers various factors however the interest rates charged is usually beyond capability of repaying by most borrowers and also the fluctuations in interest rates causes much burden lending to eventual defaulting of the loans. The commercial bank maintain spread rate according to the NRB policies.

When SPSS was used to analyze the collected data from the secondary sources like annual report and bank supervision reports, Pearson correlation coefficient showed that there is a strong positive relationship between interest rates and profitability (NIM) of commercial banks n Nepal. This is a sign that when there is an increase in interest rates levels profits increases. But the correlation showed there is low level of relation of spread rate and other factor on ROA and ROE. The lending rates was decreased in recent years but the profit was increasing of commercial banks in Nepal.

5.3 Implications

This study has several implications pointing to interesting avenue for future research. This research is based on modern scenario of the banking and financial institutions that haw the purpose can be met for applying this study. In current competitive financial markets the commercial banks have their own strategy regarding to interest rate policy that how they can earn high profit. This research have many implication in the field of real life for researchers. Every study gives the findings or its usefulness in the concerned field. The study without empirical result and is worthless therefore, likewise other studies this stud have some implications for the concern parties, sectors, that are pointed out as follows:

- 1) The study may be literature and base research for further study in future.
- 2) The Chief Executive Officer (CEOs) of sample commercial banks may use the organized data of study variables and the results to identify the financial performance of the commercial banks.
- 3) The study may be useful for investors and creditors to take investment decisions so that in they consider which sector would be more beneficiary and less risky to provide loans.
- 4) The study may be implacable for customers, deposit holders and households they consider about banking services that which bank gives high interest at low risk, which bank have high profitability, which bank have strong liquidity and credit to deposit portion.
- 5) It is the academic document for the research candidate that may be the basic evidence to get further study and getting job.
- 6) The study depicts the importance of interest rate in commercial banks and its impact on profitability so that the focused may be given on interest rate by every commercial banks because the main sources of income in interest rate therefore the commercial banks manager would be careful while determining lending interest rate, deposit interest rates and spread rates by considering direction given by Nepal Rastra Bank.
- 7) Reference for future researchers to get the idea related to this topic.

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APPENDIX- I

Descriptive Statistics of the Study Variables

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	0.020	3.990	1.6402	0.8464
NIM	2.460	10.30	4.631	1.4050
ROE	-458.13	102.95	13.291	51.0539
SR	2.270	8.250	4.714	1.0562
TOER	0.950	14.420	4.937	2.9548
NPL	0.160	28.630	3.845	4.676
CD	35.260	121.90	72.443	17.4109
LR	1.910	36.350	14.119	6.8916

APPENDIX-II

Correlation Analysis between Dependent and Independent Variables

Variables	ROA	NIM	ROE	SR	TOER	NPL	CD	LR
ROA	1							
NIM	0.372**	1						
ROE	0.181	-0.078	1					
SR	0.027	0.644**	0.319**	1				
TOER	-0.059	0.428**	-0.1	0.206*	1			
NPL	-0.212*	0.445**	-0.185	0.279**	0.260**	1		
CD	-0.038	0.364**	0.08	0.068	0.243*	-0.086	1	
LR	0.084	0.587**	-0.155	0.627**	0.238*	0.250*	0.097	1

APPENDIX- 3

Model Summary

Model	R	R ²	SEE
1	0.256	0.066	0.84032
2	0.818	0.669	0.86925
3	0.355	0.126	49.13398

APPENDIX-4

ANOVA

model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.67	5	0.934	1.323	0.021
Residual	66.377	94	0.706		
Total	71.046	99			
Regression	143.237	5	28.647	37.91	0.000
Residual	71.025	94	0.756		
Total	214.263	99			
Regression	32708.605	5	6541.721	2.71	0.025
Residual	22708.605	94	2414.148		
Total	259638.547	99			

APPENDIX-5

Regression Coefficient of dependent and Independent Variables:

Variables	ROA(Model- 1)	NIM (Model- 2)	ROE (Model- 3)
	Coefficient (Std. Error)	Coefficient (Std. Error)	Coefficient (Std. Error)
Constant	1.941	-1.01	70.695
	(3.716)* *	(-1.876)	(2.314)
SR	0.064	0.535	-16.808
	(0.614) *	(4.936) **	(2.742) **
TOER	-0.038	0.077	-0.866
	(-1.23) *	(2.379) *	(-0.475) *
NPL	-0.044	0.085	-0.972
	(2.253) *	(4.196) **	(-0.848) *
CD	0.001	0.026	0.293
	(0.013)	(4.88) **	(0.986)
LR	0.012	0.044	0.617
	(0.8)	(2.764) **	(0.684)