CAPITAL ADEQUACY AND ITS IMPACT ON THE PROFITABILITY OF COMMERCIAL BANKS IN NEPAL

A Thesis

Submitted

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CERTIFICATE OF AUTHORSHIP

I certified that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirement for a degree except as fully acknowledged within the text.

I also certified that thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that, all information sources and literature used are indicated in the reference section of the thesis.

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RECOMMENDATION LETTER

It is certified that this thesis entitled **Capital Adequacy and its Impact on the Profitability of Commercial Banks in Nepal** submitted by **Ritesh Kumar Thakur** is an original piece of research work carried out by the candidate under my supervision. Literary presentation is satisfactory and the thesis is in a form suitable for publication. Work evinces the capacity of the candidate for critical examination and independent judgment. Candidate has put in at least 60 days after registering the proposal. The thesis is forwarded for examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled 'Capital Adequacy and its impact on the profitability of commercial banks in Nepal' presented by Ritesh Kumar Thakur, a candidate for the degree of **Masters of Business Studies** (MBS) and conducted the Viva-Voce examination of the candidate. We hereby certify the thesis is worthy of acceptance.

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ABBREVIATIONS

AAR	:	Advances to Assets ratio
ANOVA	:	Analysis Of Variance
AVG	:	Average
BCBS	:	Basel committee on banking supervision
CAR	:	Capital Adequacy Ratio
CET1	:	Common equity Tier 1
CV	:	Coefficient of variation
D-ER	:	Debt- Equity ratio
EBL	:	Everest Bank Limited
F/Y	:	Fiscal year
G-STIR	:	Government securities to Total Investment Ratio
HBL	:	Himalayan Bank Limited
IMF	:	International Monetary Fund
MAX	:	Maximum
MIN	:	Minimum
MTC	:	Minimum Total Capital
N	:	Number of Observation
NBB	:	Nepal Bangladesh Bank
NCC	:	Nepal credit And Commerce
NII	:	Net Interest Margin
NPLR	:	Non-Performing Loan Ratio
NRB	:	Nepal Rastra Bank
NSBI	:	Nepal State Bank of India
P	:	Significance Level
PCPS	:	Perpetual Cumulative Preference Shares
r	:	Correlation coefficient
r^2	:	Determinants
ROA	:	Return on Assets
ROE	:	Return on Equity
ROAA	:	Return on Average Assets
RWA	:	Risk Weighted Assets

SAA	:	Simplified Standardized Approach
SPSS	:	Statistical Package for Social Science
SD	:	Standard Deviation
UK	:	United Kingdom

ABSTRACTS

The primary functions of commercial banks are raise and utilization of funds. Commercial banks collect a large amount of deposit from general public. The bank should hold an adequate capital secure the interest of depositors.The aim of this study is to quantify the impact and simultaneously, the results is corroborating with the hypothesis that there is no significant impact of capital adequacy variables on the profitability of commercial banks in Nepal. Out of prevailing 28 commercial banks, secondary data of ten commercial banks from 2007 to 2016 were considered to analyze the factors that affect profitability.

The descriptive statistics shows that, Nepalese commercial banks are earning satisfactory profit with average variation of return. The average CAR higher than regulatory requirement of 10%. It the evidence of the compliance of NRB directives and Basel III requirement. The AAR shows that aggressiveness of bank in lending funds which ultimately results in better profitability. The G-STIR ratio shows that the commercial bank are investing in risk free assets, they are risk averter.NPLR shows low return and high risk in Non-performing loan.

The correlation coefficient shows the positive and negative impact of the dependent and independent variables. The correlation coefficient between CAR, D-ER and NPLR which shows that there is negative correlation with ROA. It means higher capital leads to lower ROA, ROE and Spread. The correlation coefficient between CAR, D-ER and NPLR is negative related with spread. It shows that higher the CAR, D-ER, NPLR the lower will be the profit of the commercial banks in Nepal. The correlation coefficient between G-STIR and AAR is positive.

The regression analysis shows relationship with independent and dependent variables both. There is significantly negative relationship between ROA, ROE and Spread with CAR, D-ER, AAR and NPLR. Regression analysis shows positively insignificant relationship between government securities to total investment at significant level 0.005 with ROA, ROE and Spread.

KEYWORDS: Capital Adequacy, Return on Assets, Spread, Return on Equity.

CHAPTER 1
INTRODUCTION

1.1 Background of the study

Capital adequacy is the amount of capital a bank or other financial institution has to hold as required by its financial regulator. In order to create a sound and healthy financial system, wise and efficient regulation is important. The financial sector is primarily the means for transferring and transforming the saving of an economy into its investment. Financial institutions are those institutions that hold financial assets such as loan and advances, investment etc. and that obtain the fund for these investments by issuing liabilities such as shares, collecting deposit etc. Risks are involved when the financial system channels resources from savers to investors. Therefore, the well-functioning financial sector tries to make the most productive use of savings and monitor closely to ensure that the productivity is ascertained.

In Nepal, the pace of financial liberalization started in the mid-1980s, when the government allowed the entry of commercial bank and joint venture with foreign banks. Liberalization has pushed banks into new areas of competition. The banks are presently facing various types of financial and non-financial risks in every kind of activities. If such risks are handled properly, they results to a greater opportunities for banker. Thus, risk management has become integral part of strategic planning process of bankers (Raghavan, 2004).

The central bank is responsible for establishing regulatory and supervisory framework for the smooth operation of banking and financial institution in every country. In our country, Nepal Rastraya Bank plays the role of central bank. NRB lays down various rules and regulation for bank and the bank need to follow them. Generally, to bring uniformity and to amend the rules and regulation, NRB issues directives to the commercial banks from time to time and amend them on the basis of need. The commercial bank has to modify their functions accordingly. The NRB directive no1 includes the capital adequacy norms for the commercial banks representing the requirements of maintaining capital fund to the prescribed ratios. The directives are

said to be based on the internationally accepted norms of Basel Committee. The Basle committee on banking supervision is a committee of banking supervisory authorities which was established by the central bank Governors of the Group of Ten countries in 1997. The Basle committee on banking supervision in 1988 has developed an internationally accepted standard for capital adequacy based on what is known as the "risk assets" approach. The committee consists of senior representatives of bank supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, Netherlands, Sweden Switzerland, the United Kingdom and the United States. Widely accepted, though national authorities are free to impose higher standards on their banks and often do so. As originally designed, this approach was only concerned with credit risk, but at the beginning of 1996 the Basle Committee published proposal to bring market risks into the calculation of capital requirements (NRB, 2001).

Athanasoglous (2006) Capital is essential and critical to the perpetual continuity of bank as a going concern. A minimum amount of capital is required to ensure safety and soundness of the bank. It is also required to build trust and confidence of the customers. A bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses thus achieving increased profitability.(NRB,2006) A capital is required by a bank as a cushion to absorb losses, which should be done by shareholder and to finance the infrastructure of the business.

Chishty (2011) Capital adequacy is important for a bank to maintain depositor's confidence and presenting bank from going bankrupt. Capital is seen as a strong support to protect depositors and promote the stability and efficiency of financial system around the world. Capital adequacy reflects the overall financial conditions of the bank and also the ability of the management to meet the need for additional capital. It also indicates whether the bank has enough capital to absorb unexpected loss. It also acts as indicators of bank leverage. (NRB, 2007) Capital adequacy measure the financial strength of the financial institution. It tells how much capital it has relative (as the percentage of) the money it has lent out i.e. its assets.

Chishty (2011)Capital adequacy ratio (CAR) is a measure of bank's capital. It is expressed as a percentage of bank's risk weighted credit exposures and also known as capital- to-risk-weighted assets ratio (CRAR). It is used to protect depositors and promote the stability and efficiency of financial systems around the world. There are two types of capital: tier one, which can absorb losses without a bank being required to end trading, and tire two, which can absorb losses in the event of a winding-up and so provides a lesser degree of protection to depositors. Capital adequacy ratio is a ratio which protects the banks against excess leverage, insolvency and keeps them out of difficulty. It is defined as the ratio of banks capital in relation to its current liabilities and risk weighted assets (RWA). RWA is a measure of amount of banks assets for risk. It is the ratio which determines banks capacity to meet the time liabilities and other risks such as credit risk, market risk, operational risk etc.

A study by Hassan (2001) examined the performance of Islamic banks worldwide during 1994-2001 variety of internal and external banking features were used to predict profitability. The results indicated high capital lead to high profitability. Abrue (2002) found that well capitalized bank face lower expected bankruptcy costs and thus lower funding costs and these results into better productivity. Stroh (2002) shows the potential benefits from the diversification of activities and increasing reliance on non-interest income. The result shows that non-interest income, particularly trading revenue is related with high risk and lower-risk-adjusted profits. The results also showed few obvious diversification benefits from on-going shift towards non-interest income.

The concept of capital adequacy refers to the requirement that bank holds adequate capital to protect them against insolvency. Therefore, capital must be sufficient to protect bank's deposit and counter parties from the risks.

1.2 Statement of the problem and Research Questions

With the prevailing economic recession in the country, there has been lower investment in the agriculture, manufacturing, industrial and financial sectors. Despite

the better performance of commercial bank, there are still problem, which need to be resolved.

Every business form can take advantage through appropriate capital mix because long run profitability depends on its capital structure besides other factors. The depositors deposit their money in a bank for security of their money. Banking and financial statistics (2015) shows that the amount deposited in various banks of the country is Rs. 1787959 million in Mid-July of 2015. But the question arises, if the bank go bankrupted, what will happen to the depositors of such money? Thus an adequate capital fund is required to safeguard the money of depositors.NRB issued a new set of directives to commercial banks consisting of twenty three parts. Out of twenty three directives, the directives no.1 has been issued for norms on capital adequacy to be followed by commercial banks. The capital adequacy ratio is based on the total risk weighted assets. According to NRB directives; commercial banks should maintain their core capital at 4.5% as on fiscal year 2018/19 and capital fund at 8.5% of the total risk weighted assets as of FY 2018/19, Capital adequacy framework (2015).

Due to the lack of capital adequacy structure, Nepalese banks are under the international standards. It will obviously increase competition for the survival which might leads to keen rivalry among them to occupy the larger market share. Such situation may endanger the deposits of general public and brings economic instability in the country. In order to safe guard the public deposit and ensure economic stability in the country. NRB issues directive from time to time to commercial banks. The directives are related to various performances of the banks and the bank need to follow the directives. There are sixteen directives related to the bank supervision and regulations. Every part of financial sector is facing one or more problems which ultimately affect the development and enhancement of deposit mobilization sectors in Nepalese banking sector. Due to differences in economic, political and financial situations, legal and other restrictions, government policies, risky business, management ownership and control and other environmental variables, provisions of capital adequacy may be different in different years. The main questions are addressed as follows:

1. What is the capital adequacy position of selected commercial banks?
2. What is the impact of capital adequacy indicators (Debt-equity, loan and advances, non-performing loans, government securities and capital adequacy ratio) on commercial banks profitability?
3. Does the commercial bank have adequate capital fund to safeguard the money of depositor's?
4. What is the risk taking capacity of the selected commercial banks?

For smooth operation of the financial institution, NRB has been playing a vital role since its establishment. The NRB directives are foremost guidelines for any financial institutions to operate in an effective manner. Also implementing these directives becomes must for all financial institutions.

1.3 Purpose of the study

The main objective of the study is to analyze, examine and interpret the capital adequacy adopted by selected commercial banks. NRB has under taken various activities for the banking and financing development since its establishment. It has issued various directives for regulation, supervision and monitoring. The special attention is given to the capital adequacy and its impact on the profitability under this study. The study also compares the profitability performance measured in terms of Return on Assets (ROA), Return on Equity (ROE) and spread ratio of selected commercial banks. The specific objectives of this study are given below:

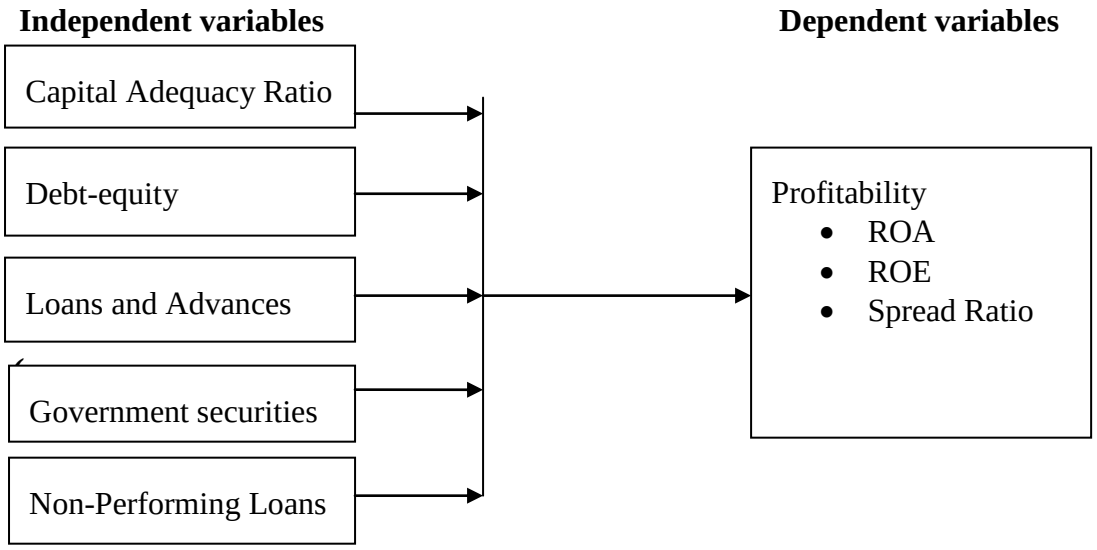
1. To assess the capital adequacy position of selected commercial banks.
2. To investigate the impact of capital adequacy indicators (Debt-Equity, loans and advances, non-performing loans, capital adequacy ratio and government securities) on the profitability of commercial banks.
3. To analyze whether the adequate capital fund safeguard the money of its depositors.
4. To evaluate the risk taking capacity of the sample commercial banks.

1.4 Conceptual Framework

Based on the review of the key paper by Chishty (2011) " The impact of capital adequacy requirement on profitability of private banks in India" and by Ochiea (2013) "Capital Adequacy management and performance in the Nigerian Commercial Bank (1986-2006), the following conceptual frame work shows the relationship between dependent and independent variable. Five research hypotheses are developed to investigate the relationship among the variables that are included in framework. The hypothesis tests, if there is significantly positive relationship between variables. The conceptual framework is shown in the figure below:

Fig 1.1

Conceptual framework



Source: Chishty (2011), Ochiea (2013)

1.5 Hypothesis

This study attempts to find out the relationship between the capital adequacy and its impact on the profitability of commercial banks in Nepal. The following hypotheses are formulated:

H1: There is significant positive relation between Capital Adequacy Ratio and profitability of bank

H2: There is significant negative impact between debt-equity ratio and banks profitability

H3: There is significant relation between loans and advances and profitability of banks

H4: There significant relation between government securities and profitability of banks

H5: There is an insignificant negative relation between non-performing loans and banks profitability

1.6 Significance of the study

Banks are the essential support to the financial sector, which facilitate the proper utilization of financial resources of the country. The banking sector is increasingly growing and has witnessed a huge flow of investment. Sundararajan (2002) argues that the financial system, the bank in particular, is exposed to a variety of risks that are growing more complex nowadays. In order to cope with the complexity and the mix of risk exposure to banking system properly, responsibly, beneficially and sustainably, it is of great importance to evaluate the overall performance of banking supervision framework. One of such measure of supervisory information is the capital adequacy framework as per NRB. The findings of this research provides a valuable contribution to the development and enhancement of deposit mobilization sectors in Nepalese banking sector through various means as follows:

1. This research is useful for decision makers and policy planners both at banking and other financial sectors.
2. This study is useful for future researches and references purpose.
3. This study offers overall background of Nepalese financial sector and NRB regulation on commercial banks for commercial banks to mitigate risk.
4. It analyzes how the banks are complying with various policies and legislations regulating the financial sector.
5. Customers aided by this study to know best who should keep their money for them in terms of banks offering best customer series satisfaction.
6. It helps the management of various banks to know where they fall behind and where they are doing better.

Actually, the banks should have adequate capital fund though there are plenty of investment opportunities. Currently, raising capital is a tough task. The increasing nonperforming assets, being the main headache of commercial banks, meeting the capital adequacy is very tough, however it is not impossible. It has been observed that any study has not been undertaken regarding the capital adequacy norms for commercial bank. Raising capital is a tough task at present. The increasing nonperforming assets, is the main problem of commercial banks due to which meeting the capital adequacy is very tough, although it is not impossible.

1.7 Limitations of the study

Beside the above mentioned procedure and strengths, there are some limitations, which cannot be ignored. The study has limited resources and it is difficult to researcher to find out new aspects. Reliability of statistical tools used and lack of research experience are the major limitation and some other limitations enlisted as follows:

1. This study concentrates only on micro indicators, which are related with the capital adequacy of Nepalese commercial banks. It ignores Macro indicators like GDP, Inflation etc.
2. The study is fully based on secondary data as the commercial bank does not provide full internal information.
3. Only six Nepalese commercial banks are considered for the study.
4. For analyzing and presenting the data only some important financial and statistical tools has been used accordingly as per necessity.
5. The profitability of commercial bank are influenced by several factors, however this study mainly focuses only on the capital adequacy.

1.8 Organization of Study

This report of the study entitled “Capital adequacy and its impact on profitability of commercial Banks in Nepal” has been organized into five chapters. They are Introduction, Literature Review, Methodology, Results and conclusions.

Chapter 1: Introduction

This chapter includes background of the study, statement of problems and research questions, purpose of the study, significance of the study, limitation of study and organization of the study.

Chapter 2: Literature Review

Literature review includes reviews of relevant and pertinent research conduct till date by other researches and makes an attempt to relate this research with them. It presents summary and finding of previous researches carried out by other researches. Furthermore, it presents the research gap in the field of study.

Chapter 3: Methodology

Methodology explains in detail the method and procedures applied in conducting research: sampling, data collection, data analysis, tools and techniques used.

Chapter 4: Results

Results consist of systematic presentation and analysis of financial statement employing financial and statistical tools. It also includes the major findings.

Chapter 5: Conclusions

This chapter includes the summary, conclusions, implications and recommendations of the study. It also provides recommendations to the stakeholder of the research subject. Reference and appendix have also been incorporated at the end of the study.

CHAPTER 2
LITERATURE REVIEW

In this chapter, the review of various articles, research studies, journals and books has been made to have a clear understanding about the impact of capital adequacy on profitability on the Nepalese commercial bank and its relevance in different part of the world. This chapter will help to recall the theories and previous studies made by various researches in different part of the world. Literature review is basically a stock taking work of available literature. The purpose of literature review is thus to find out what principle are established and what research studies have been conducted in the field of study and what remains to be done.

This chapter has three topics they are:

1. Conceptual review
2. Review of previous work
    - Review of articles in the journal
    - Review of previous dissertation
3. Research gap

2.1 Conceptual Review

Concept of capital and Capital Adequacy

"Capital is adequate either when it reduces the chances of future insolvency of an institution to some predetermine level of alternately when the premium paid by the banks to an insurer is 'fair', that is, when it fully covers the risks borne by the insurer. Such risks, in turn, depend upon the risk in the portfolio selected by the bank, on its capital and on term of the insurance with respect to when insolvency will be determined and when loss will be paid." (Maisel, 1982)

Rosenbergas (1982) has defined capital in relation with banking as a long-term debt plus owner's equity. The efficient functioning of markets requires participants to have confidence in each other's stability and ability to transact business. Patheja (1994) has

defined banks capital as common stock plus surplus undivided profits plus reserves for contingencies and other capital reserves.

According to Nzotta (2004), to a very large extent, the strength of a bank depends on the capital funds available to it. A bank's capital can be defined as the equity value of a bank equated to the present value of its future net earnings. Generally, banks capital represents the owners' net worth in a bank and it includes the pay in capital and all additions to the capital resources of the bank. Bank capital also ensures the safety of a bank, it helps the bank to avoid the risk of insolvency, and also to support the credit risk a bank is called upon to assume in a normal business leading. Here, the larger the capital resources, the more loans and advances the bank could grant both on the aggregate and for single individuals. A bank's capital resources help the supervisory authorities in assessing the adequacy of its capital in relation to its loans and investments. Therefore, capital adequacy represents the amount of capital resources needed by banks for its operations, consistent with the amount of risks and risk assets it is assuming. Capital adequacy is the level of capital necessary for a bank as determined by the regulatory and supervisory authorities to assume the banks financial health and soundness. Capital adequacy, the measure of the solvency of a bank, tells whether a bank has enough capital to support the risks in its balance sheet. Adequate capitalization is an important variable in business, and is more so in the business of using other peoples' money such as banking.

Adequate capital is required to the efficient operating and functioning of the firm in the modern competitive environment, is always the matter of controversial debate. In one hand holding excess capital keeps the firm in low profit position, on the other hand inadequate capital limits the firm to meet the public demand of loan and low earning capacity. Capital adequacy aims at setting minimum level of capital as a function of risks. Thus capital should be risk base, (NRB Directives, 2004)

Capital adequacy is one of the bank specific factors that influence the level of bank profitability. Capital is the amount of own fund available to support the bank's business and act as a buffer in case of adverse situation (Athanasoglou 2005). Banks capital creates liquidity for the bank due to the fact that deposits are most fragile and

prone to bank runs. Moreover, greater bank capital reduces the chance of distress (Diamond, 2000).Capital Adequacy reflects the overall financial condition of the banks and also the ability of the management to meet the need for additional capital. It also indicates whether the bank has enough capital to absorb unexpected losses. Capital Adequacy ratios act as indicators of banks' leverage (Chishty, 2011). Capital Adequacy Ratio (CAR) shows the banks' ability to maintain sufficient capital. The main activity of the bank is to collect funds and channel them back in the form of loans. If a bank has enough capital or meet the requirements, it can operate to create profit. In addition, the bank can provide large loans and it has enough assets as collateral for third party funds deposited in the bank so that it will increase public trust. The higher the CAR better the performance of a bank. This is supported by Saeed (2014).Capital Adequacy is important for a bank to maintain depositors' confidence and preventing the bank from going bankrupt. Capital is seen as a cushion to protect depositors and promote the stability and efficiency of financial system around the world, Khalid (2015).

Description of variables

(i) Capital to Risk Weighted Assets Ratio (CRAR): In Nepal, as per the capital adequacy framework 2015, all the commercial banks were required to maintain a CRAR of 8.5%, otherwise the bank will be treated as undercapitalized. Higher the CRAR, lower the need to external funding and therefore higher profitability. It is also seen that well capitalized banks face lower costs of going bankrupt and then cost of funding is reduced. Berger (1995) and Dermerguc-Kunt and Huizingua (1999) find a positive relationship between Bank Performance and Capitalization.

(ii) Debt-Equity Ratio: This ratio indicates the degree of leverage of a bank. It indicates how much of the bank business is financed through debt and how much is financed through equity. It is arrived by dividing total borrowing and shareholders net worth which includes equity capital and Reserves & Surplus. It indicates how much times are debt to equity. Higher ratio indicates less protection for the creditors and depositors of the bank, Chishty (2011)

(iii) Loans and Advances to Assets Ratio: This ratio shows the aggressiveness of bank in lending funds which ultimately results in better profitability. This ratio is arrived at by dividing Advances by Assets. It indicates how much proportion or alternative percentage of Total Assets is utilized in the form of Advances. Higher ratio means that there are more advances as proportion of total assets. Advancing being the core function of banks so higher ratio of Advances/ Assets is preferred to lower one, Chishty (2011)

iv) Government Securities to Total investments: The percentage of investment in government securities a very important indicator which shows the risk taking ability of a bank. It indicates a bank's strategy as being High Profit - High Risk or Low Profit-Low Risk. It also gives view as the availability of alternative investment opportunities. Government securities are generally considered as the safest debt instruments, which as a result carry the lowest return. Since Government securities are risk free, the higher the government Securities to Total Investments ratio, the lower the risk involved in bank's investments, Chishty (2011).

iv) Non-Performing loan: The bank's asset is another bank specific variable that affects the profitability of a bank. The bank asset includes among others current assets, credit portfolio, fixed assets, and other investments (Athmanasoglous 2005). The quality of loan portfolio determines the profitability of banks. The loan portfolio quality has a direct bearing on bank profitability. The highest risk facing a bank is the losses derived from delinquent loans (Dang, 2011). The non-performing loan ratios are the best proxies for asset quality. This ratio portrays the bank's ability to keep the risk of loan repayment by the debtor. After credits are given, banks should monitor the use of the credits as well as the debtors' ability and compliance to meet their obligations cause if there is a failure of the debtor to pay, it will decrease bank's profitability. Frederick (2014) proved that the NPL has a significant negative effect on profitability. But Duraj & Moci (2015) proved that the NPL has no significant effect on profitability. While Buchory (2015) proved that the NPL has a significant positive effect on performance.

Profitability Indicators

The quality of earnings is very important criterion which determines the ability of a bank to earn consistently. It basically determines the profitability of the banks. It also explains the sustainability and growth in earnings in the future.

i) Return on Assets (ROA): The performance of banks is measured through Return on Assets (ROA). It reflects the ability of the bank to generate profit from the bank's assets (Naceur, 2006). ROA emerges as the key ratio for the evaluation of bank profitability (IMF, 2002).ROA is defined as the net profit divided by total assets. ROA measures the ability of the management to convert the assets of the bank into net earnings. (Sarkar, 1998).The ROA reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profits earned per birr of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance-sheet activities. This is probably the most important single ratio in comparing the efficiency and operating performance of banks as it indicates the returns generated from the assets that bank owns (Tan et al. 2012). It measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Khrawish, 2011). Wen (2010), state that a higher ROA shows that the company is more efficient in using its resources.

ii) Return on Equity (ROE): The ROE is said to measure the rate of return on the bank's shareholders equity and it is calculated by dividing banks net income after tax by total equity capital which includes common and preferred stock, surplus, undivided profits, and capital reserve (Molyneux & Thornton, 1992). According to Dietrich (2009), banks with a lower leverage ratio (higher equity) report a higher ROA, but a lower ROE. However, the ROE disregards the higher risk that is associated with a higher leverage.

The measures of profitability gives an indication of what the banks earns on the shareholder's investment (Rasiah, 2010). According to Anthony Karkrah and Amwyaw (2010) many researcher have presented ROA as an appropriate measure of bank profitability. Among them are Rivard and Thomas (1997), who argued that bank profitability is best measured by ROA in the sense that, ROA cannot be distorted by high equity multiplier. However, Hassan and Bashir (2003) also claims that ROA tend to be lower for financial intermediaries, most banks heavily utilized financial leverage to increase their ROE to competitive levels.

This measured the net profits before tax divided by capital and reserves. It measures the earning power of shareholders investments. Shareholders and investors will be pay attention to this measure and will want to maximize it for their benefit. Return on equity is the return to shareholders on their equity. This means that, return on equity reflects the capability of a bank in utilizing its equity to generate profits (Tan 2012). Even if ROE is commonly used in different studies, it is not the best measure of profitability (Ghazouani 2013).ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better the company is in terms of profit generation. It is further explained by Khrawish (2011) that ROE is the ratio of Net Income after Taxes divided by Total Equity Capital. It represents the rate of return earned on the funds invested in the bank by its stockholders. 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 the shareholders capital.

(i) Spread to Total Assets: It creates a wedge between returns to savers and investors and reflects the cost of bank intermediation services and the efficiency of the banking sector. The difference between the total income and the total expenses of a bank gives taxable income. However, considering the intermediation function, it is the Net Interest Income (NII = Interest earned – Interest expended) that is more crucial for banks. For the long term sustenance of the bank, this should be positive. This ratio

shows the ability of a bank to keep the interest on deposits low and interest on advances high. A higher spread indicates the better earnings, given the total assets, (Chishty, 2011).

2.1.1 Review of Capital Adequacy Framework 2015

Prior to 1988, there was no uniform international regulatory standard for setting bank capital requirements. In 1988, the Basel Committee on Banking Supervision (BCBS) developed the Capital Accord, which is known as Basel I, to align the capital adequacy requirements applicable especially to banks in G-10 countries. Basel I introduced two key concepts. First, it defined what banks could hold as capital, as well as designating capital as Tier 1 or Tier 2 according to its loss-absorbing or creditor-protecting characteristics. The second key concept introduced in Basel I was that capital should be held by banks in relation to the risks that they face. The major risks faced by banks relate to the assets held on balance sheet. Thus, Basel I calculated banks‟ minimum capital requirements as a percentage of assets, which are adjusted in accordance with their riskiness and assigning risk weights to assets. Higher weights are assigned to riskier assets such as corporate loans, and lower weights are assigned to less risky assets, such as exposures to government.

The BCBS released the "International Convergence of Capital Measurements and Capital Standards: Revised Framework", popularly known as Basel II, on June 26, 2004. This framework was updated in November 2005 and a comprehensive version of the framework was issued in June 2006. Basel II builds significantly on Basel I by increasing the sensitivity of capital to key bank risks. In addition, Basel II recognizes that banks can face a multitude of risks, ranging from the traditional risks associated with financial intermediation to the day-to-day risks of operating a business as well as the risks associated with the ups and downs of the local and international economies. As a result, the framework more explicitly associates capital requirements with the particular categories of major risks that banks face.

The Basel II capital framework also recognizes that large, usually internationally active banks have already put in place sophisticated approaches to risk measurement

and management based on statistical inference rather than judgment alone. Thus, the framework allows banks, under certain conditions, to use their own „internal" models and techniques to measure the key risks that they face, the probability of loss, and the capital required to meet those losses. In developing the new framework, the Basel Committee incorporated many elements that help to promote a sound and efficient financial system over and above the setting of minimum capital requirements. Keeping this in mind, the Basel II framework incorporates three complementary „pillars" that draw on the range of approaches to help ensure that banks are adequately capitalized in commensurate with their risk profile.

Again, the Basel Committee on Banking Supervision (BCBS) released a comprehensive reform package entitled "Basel III: A global regulatory framework for more resilient banks and banking systems" (known as Basel III capital regulations) in December 2010. Basel III reforms are the response of the Basel Committee on Banking Supervision (BCBS) to improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source, thus reducing the risk of spill over from the financial sector to the real economy. Basel III reforms strengthen the bank-level i.e. micro prudential regulation, with the intention to raise the resilience of individual banking institutions in periods of stress. Besides, the reforms have a macro prudential focus also, addressing system wide risks, which can build up across the banking sector, as well as the procyclical amplification of these risks over time. These new global regulatory and supervisory standards mainly seek to raise the quality and level of capital (Pillar 1) to ensure that banks are better able to absorb losses on both a going concern and a gone concern basis, increase the risk coverage of the capital framework, introduce leverage ratio to serve as a backstop to the risk-based capital measure, raise the standards for the supervisory review process (Pillar 2) and public disclosures (Pillar 3) etc. The macro prudential aspects of Basel III are largely enshrined in the capital buffers. Both the buffers i.e. the capital conservation buffer and the countercyclical buffer are intended to protect the banking sector from periods of excess credit growth.

The Basel Committees on Banking Supervision's (BCBS) recommendations on capital accord are important guiding frameworks for the regulatory capital requirement to the

banking industry all over the world and Nepal is no exception. Realizing the significance of capital for ensuring the safety and soundness of the banks and the banking system, at large, Nepal Rastra Bank (NRB) has developed and enforced capital adequacy requirement based on international practices with an appropriate level of customization based on domestic state of market developments.

Eligible Capital and Their Components

Qualifying capital in the context of financial institutions normally banks consists of Tier 1 (core) capital and Tier 2 (supplementary) capital elements, net of required deduction in capital. Thus, for the purpose of calculation of regulatory capital, banks are required to classify their capital into two parts (Basel report-2005). In order to calculate minimum capital requirement of bank, all capital component should be segregated into these two parts as follows:

- **Core Capital (Tier-1)**

The key element of capital on which the main emphasis should be placed on tier 1 capital, which consists of equity capital and disclosed reserves. It includes fully paid ordinary shares/common stock and non-cumulative perpetual preferred stock (but excluding cumulative preferred stock). This emphasis on equity capital and disclosed reserves reflects the importance to secure progressive enhancement in the quality, as well as the level, of the total capital resources maintained by major banks. Notwithstanding this emphasis, there are a number of other important and legitimate constituents of a bank's capital base, which is included within the system of measurement. Individual supervisory authorities are free at their discretion to apply a policy of deduction on a case-by-case basis.

For supervisory purposes, it has been defined in two tiers in a way which have the effect of requiring at least 50% of a bank's capital base to consist of a core element comprised of equity capital and published reserves. The other element of capital (supplementary capital) is admitted to an amount equal to that of the core capital.

Elements of core capital

- Paid up Equity capital
- Irredeemable non-cumulative preference shares (fully paid-up)
- Eligible capital funds
- Share Premium
- Proposed Bonus Equity share
- General Reserve
- Retained Earnings available for distribution to shareholders.
- Un-audited current years cumulative profit
- Capital Redemption reserves
- Capital Adjustment reserve
- Dividend equalization reserve
- Any other type of reserves notified by NRB

Eligible deductions from core capital

For capital adequacy purpose banks can deduct some items from the capital components as being fully risk free and thus subject to no capital requirements. The items are as follows:

- Book value of goodwill
- Miscellaneous expenditure to the extent not written off. E.g. preliminary expenses, share issue expenses, deferred revenue expenditure, etc.
- Investment in equity of institutions in excess of prescribed limits.
- Investments arising out of underwriting commitments that have not been disposed within a year from the date of commitment.
- Reciprocal crossholding of bank capital artificially designed to inflate the capital position of the bank.
- Any other items as stipulated by Nepal Rastra Bank

➢ **Supplementary Capital (Tier-2)**

The Supplementary (Tier 2) Capital includes reserves which have been passed through the profit and loss account and all other capital instruments eligible and

acceptable for capital purposes. Elements of the Tier 2 capital will be reckoned as capital funds up to a maximum of 100 percent of Tier 1 capital arrived at, after making regulatory adjustments/deductions. In case, where the Tier 1 capital of a bank is negative, the Tier 2 capital for regulatory purposes shall be considered as zero and hence the capital fund, in such cases, shall be equal to the core capital.

Elements of Tier-2 Capital

The Tier 2 Capital consists of the sum of the following elements:

- Preference Share Capital Instruments [Perpetual Cumulative Preference Shares (PCPS) / Redeemable Non-Cumulative Preference Shares (RNCPS) / Redeemable Cumulative Preference Shares (RCPS)] issued by the bank with the maturity of 5 years or above;
- Subordinated term debt fully paid up with a maturity of 5 years or above;
- Hybrid capital instruments combine certain characteristics of debt and certain characteristics of equity.
- Stock surplus (share premium) resulting from the issue of instruments included in Tier 2 capital;
- General loan loss provision limited to a maximum of 1.25% of total Credit Risk Weighted Exposures. General loan loss provision refers to provisions or loan- loss reserves held against future, presently unidentified losses are freely available to meet losses which subsequently materialize.
- Exchange equalization reserves created by banks as a cushion for unexpected losses arising out of adverse movements in foreign currencies.
- Investment adjustment reserves created as a cushion for adverse price movements in banks‟ investments falling under “Available for Sale” category.
- Revaluation reserves will be eligible up to 50% for treatment as Tier 2 capital and limited to a maximum of 2% of total Tier 2 capital subject to the condition that the reasonableness of the revalued amount is duly certified by the internal auditor of the bank.
- Any other type of instruments notified by NRB from time to time for inclusion in Tier 2 capital.
- Less: Regulatory adjustments / deductions applied in the calculation of Tier 2 capital

As supplementary capital contains all the quasi capital components which are subject to risk, there is no provision of eligible deductions from such capital. Moreover amount of Tier-2 capital is limited up to the 100% of the sum total of the Tier-1 capital net of deductions.

Capital Funds

The capital fund is the summation of Tier 1 and Tier 2 capital and Tier 1 capital is the total of common equity Tier 1 and additional Tier 1 capital. A bank should compute capital ratios in the following manner:

$$Tier\ 1\ capital\ ratio = \frac{Tier\ 1\ capital}{Total\ Risk\ Weighted\ Assets}$$

$$Capital\ Adequacy\ Ratio\ (CAR) = \frac{Total\ capital\ Fund\ (Tier1+Tier2)}{Total\ risk\ weighted\ Assets}$$

Risk Weighted Assets

The Basel capital standards consider the credit risk on bank's assets. For this purpose, risk weights are assigned to each assets of bank on the basis of risk inherent in each asset. There are several credit risk classifications for banks. NRB has classified assets into different risk classes and assigned weight to each class. The risk weights assigned are: 0%, 20%, 50%, 60%, 75%, 100%, 150% and 200%. Risk weight shows the capital required to support the bank assets. The risk weighted assets by multiplying the book value of assets by the risk weight assigned to the respective assets.AS per the Basel Accord 2009, the items which are not recorded in the balance sheet also explore risk to the bank, and such items are called as off balance sheet items. The total risk weighted assets is the summation of total risk weighted on balance sheet items and total risk weighted off- balance sheet items.

Table 2.1

Risk Weighted off Balance sheet Items

Off Balance Sheet Exposure	Risk Weight
Any commitments those are unconditionally cancelable at any time by the bank without prior notice (for example bills under collection)	0%
Forward exchange contracts.	10%
Short Term Trade-related contingencies. This includes documentary letters of credit, shipping guarantees issued and any other trade-related contingencies with an original maturity up to six months.	20%
Undertaking to provide a commitment on an off-balance sheet items	20%
Unsettled[11] securities and foreign exchange transactions between bank to bank and between bank and customer	20%
Long Term Trade-related contingencies. This includes documentary letters of credit, shipping guarantees issued and any other trade-related contingencies with an original maturity of over six months.	50%
Performance-related contingencies, Contingent liabilities, which involve an obligation to pay a third party in the event that counterparty fails to fulfill. This includes issue of performance bonds, bid bonds, warranties, indemnities, underwriting commitments and standby letters of credit	50%
Long term irrevocable Credit Commitments. (Un-drawn portion of committed credit more than 1 year). This shall include all unutilized limits of working capital loans e.g. overdraft, cash credit, working capital loan etc. except for trade finance exposures.	50%
Short term irrevocable Credit Commitments (un-drawn portion of committed credit upto 1 year). This shall include all unutilized limits e.g. overdraft, cash credit, working capital loan etc. except for trade finance exposures.	20%
Repurchase agreements, securities lending, securities borrowing, reverse repurchase agreements and equivalent transactions.	100%
Direct credit substitutes, Any irrevocable off-balance sheet obligations	100%

which carry the same credit risk as a direct extension of credit. This includes potential credit arising from the issue of financial guarantees and credit derivatives, confirmation of letters of credit, issue of standby letters of credit, and bills endorsed under bill endorsement lines	
Unpaid portion of partly paid shares and securities	100%
Unpaid Guarantee Claim	200%
Other Contingent Liabilities	100%

Source: NRB Directive (2073)

Table 2.2

Risk weighted on Balance sheets Assets

On Balance Sheet Exposure	Risk Weight
Cash Balance	0%
Gold (Tradable)	0%
Balance with Nepal Rastra Bank	0%
Investments in Bonds and Shares	0%
Balance with domestic and financial institutions	20%
Balance with foreign Banks	20%
Money at call	20%
Loans provided against the guarantee of Rated licensed foreign institutions	20%
Investments in Share, Debenture and Bonds	50%
Investment in public (government owned) Enterprise	50%
Other investments	50%
Loan, Advances and Bill purchased Discounted	50%
Fixed Assets	50%
All other assets	50%

Source: NRB Directives (2073)

Minimum Capital Requirement

According to the Capital Adequacy Framework 2015 Commercial bank need to maintain certain percentage of capital adequacy ratio given as below:

- Banks shall maintain a minimum total capital (MTC) of 8.5% of total risk weighted assets (RWAs) i.e. capital to risk weighted assets (CRAR).
- Common Equity Tier 1 (CET1) capital must be at least 4.5% of risk- weighted assets (RWAs) i.e. for credit risk + market risk + operational risk on an ongoing basis.
- Tier 1 capital must be at least 6% of RWAs on an ongoing basis. Thus, within the minimum Tier 1 capital, Additional Tier 1 capital can be admitted maximum at 1.5% of RWAs.
- Total Capital (Tier 1 Capital plus Tier 2 Capital) must be at least 8.5% of RWAs on an ongoing basis. In case the Tier 1 capital is negative, Tier 2 capital shall be considered to be "Nil" for regulatory capital adequacy purposes and hence, in such a situation, the capital fund shall be equal to the Tier 1 capital.

2.2 Review of Previous Works

This is the second phase under this research where the related materials which are published in journals, articles, previous thesis and so on have to be reviewed. The objective of reviewing the literature is to develop certain expertise and knowledge in one's area.

2.2.1 Review of Articles in the Journal

Furlong (I992) and Udell (1994) investigated whether the 8% capital backing for loan to private enterprises required by the 1988 Basel Accord encouraged bank to reallocate their assets from such loans to government. Furlong (1992) and Udell (1994) investigated whether the 8% capital backing for loans to private enterprises required by the 1988 Basle Accord encouraged banks to reallocate their assets from such loans to government securities. With the exception of Berger and Udell (1994), these authors find evidence that the risk-based capital requirement set by the Basle

Accord significantly contributed to the credit crunch. No matter the definition adopted, a bank's capital is widely used to analyze the status of its financial strength (Bobakova, 2003). Positive correlation between returns and capital has been demonstrated by Keeley and Furlong (1990), Berger (1994).

The buffer theory of Calem and Rob (1996) predicts that a bank approaching the regulatory minimum capital ratio may have an incentive to boost capital and reduce risk in order to avoid the regulatory costs triggered by a breach of the capital requirements. How-ever, poorly capitalized banks may also be tempted to take more risk in the hope that higher expected returns will help them to increase their capital. This is one of the ways risks relating to lower capital adequacy affects banking operations.

An article by Lamsal (2001) entitled "NRB directives: Bankers plea for lighter structure" in Business Age on July 2001 conclude that the central bank rocked that commercial banks with seven directives issued in two installments asking banks to start complying with the new structures by mid-July 2001 or face grave consequences. NRB claims that these are based on the internationally accepted banking norms of Basel committee. He has opined that banks are expected to be disparate to meet the regret of capital adequacy norms since the consequences the banks have to face in case of non-compliance are very strict for this purpose they will have to issue additional shares, which is not possible for them in the short-run or they do not prefer to go for additional share issue simply because they will also have to pay the same dividend as the past to the holders of shares so issued. This becomes the more difficult as the business is not going to expand commensurately. The difficult is understandable now when every banker is complaining of the lack of new investment projects.

Kyalo (2002) in establishing the relationship between level of capitalization and efficiency among banks listed in the NSE found that highly capitalized banks are the least efficient and vice versa, which was the opposite of similar research conducted in the developed economies by Hughes et al (1998) that indicated highly capitalized banks are the most efficient with the reverse being true.

Navapan and Tripe (2003) asserted that the proportion that there should be a negative relationship between a bank's ratio of capital to assets and its return on equity may seem to be self-evident as to not need empirical verification. It is therefore important to note that Berger (1995) found evidence for a positive relationship that is, the ratios of capital to assets and returns on equity were positively related. He argued that a higher capital ratio (with reduced risk of bankruptcy) should reduce a bank's cost of funds, both by reducing the price of fund and the quality of funds required, thus improving a bank's net interest income and hence profitability.

An article by Heakal (2003) entitled ‘what are central banks?’ has written that the central bank has been described as “the lender of the last resort.” This means that the central bank is responsible for providing its economy with funds when commercial banks cannot cover a supply shortage. A central bank also acts as the regulatory authority of a country’s monetary policy and is the sole provide and printer of notes and coins in circulation. Time has proven that the central bank can best function in these capacities by remaining independent from government fiscal policy and therefore uninfluenced by political concerns of any regime. The central bank should also be completely divested of any commercial banking interests (Heakal, 2003).

Jiang (2003) attempted to quantify factors affecting the profitability of banks in Hong Kong. The study found that pressure on banks profitability from their more traditional business have intensified, causing them to diversify into non-interest income generating business to remain competitive. The study also found that equity capital ratio was not significantly related to bank profitability.

Bank profitability is typically measured by return on assets (ROA), return on equity (ROE), and/or net interest margins (NIM). For any bank, ROA depends on the bank's policy decisions as well as uncontrollable factors relating to the economy and government regulations. Many regulators believe ROA is the best measure of bank profitability (Hassan and Bashir, 2003). Rivard and Thomas (1997) suggest that bank profitability is best measured by ROA in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of the firm to generate

returns on its portfolio of assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings.

Pandey (2003) in his article called 'NRB's effort to reform commercial banks' published in The Rising on June 10, 2003 is reviewed. Mr. Pandey stressed that "one of the main objectives of a commercial bank is to safeguard the money of depositors. With the economic trends highlights the performance of the economy in the first month of the current fiscal year (mid july1997- mid March 1998). Revenue collection grew by mere 4.3% while the non-budgetary and other receipts registered a decline in absolute terms. Thus, total resources fell by 2.3%. On the expenditure side, an overall increase of8.0% was observed. Development expenditure continued to stagnate whilst regular expenditure surged. Consequently, the fiscal deficit widened to USD 75.5 Million. Around 75% of the fiscal deficit was financed through foreign cash loans with the remainder being financed through the sale of treasury Bills and borrowing from NRB (NRB Press Communication, 1998).

Goddard (2004) investigated profitability of Euro peon banks using cross sectional data during 1990s. The results showed the relationship between the capital-asset ratio and profitability is positive. Another study, Haron (2004) measured the impact of some of the determinants of profitability. The factors such as liquidity, deposit items, asset structure, inflation and money supply had a significant long term impact on profitability.

Kosmidou (2005) investigated the impact of banks characteristics, macroeconomic conditions and financial market structure on banks' net margin and return on average assets (ROAA) in the UK commercial banking industry over the period 1995-2002. The results showed that capital strength was one of main determinants of UK banks performance providing support to the argument that well capitalized banks face lower cost of going bankrupt, which reduces their cost of funding or that they have lower needs for external funding which results in higher profitability.

Ngo (2006) investigated the relationship between bank capital and profitability. The results showed no significant relationship between capital and profitability. It

attempted to find out the effect of Endogenous Capital and Profitability in Banking. He investigated the relationship between bank capital and profitability. According to his study and to the best of his knowledge, no previous paper had analyzed the problem in a two-equation structural model. Contrary to what is often reported with surprising frequency in this field of research, his results showed no statistically significant relationship between capital and profitability. Given non-binding capital requirements his finding was consistent with the view that, while raising capital is costly for banks, it is associated with compensating benefits that offset these additional costs. Consequently, when capital structure is endogenously determined in a profit maximizing equilibrium, no systematic relationship between capital and profit is expected.

Naceur (2006) studied the effects of capital regulations on cost of intermediation and profitability. Capital adequacy ratio positively contributed to banks' profitability. The results supported that capital regulations improved the performance of banking sector in Egypt.

Hutchinson and Cox (2006) investigated the relationship between bank capital and earnings among USA banks. The study scope was categorized into two periods, less regulated period and a more highly regulated period with the intention of determining the correlation between capital and profitability in these two periods. The results of the study showed that for both periods there was a positive relationship between financial leverage and the return on equity while there was an inverse relationship between return on assets and financial leverage

Munene (2006) objective of study was to ascertain whether there exists a relationship between profitability of a firm and sources of financing of these firms quoted at the NSE. He found that there was a weak positive relationship between the two variables with a conclusion that profitability on its own is a minor determinant of capital structure.

Earlier studies on capital adequacy as a determinant of profitability of banks revealed that a high capital adequacy ratio should signify a bank that is operating over-

cautiously and ignoring potentially profitable trading opportunities (Goddard, Molyneux and Wilson 2004), which implies a negative relationship between equity toasset ratio and bank performance. At the same time, banks with higher equity to asset ratio will normally have lower needs of external funding and therefore higher profitability (Pasiouras and Kosmidou, 2007).

According to Christian (2008), capital adequacy measures provide significant information regarding a firm's return, while a few of the individual variables representing asset quality and earnings are informative. Size and growth and loan exposure measure do not appear to have any significant explanatory power when examining returns. The study establishes that the change in total assets is also significant. Thus the present study has included these variables in its model to examine the relationship between capital adequacy, cost income ratio and profitability.

In measuring the profitability of a bank, bank regulators and analysts has used Return on Assets (ROA) and Return on Equity (ROE) to assess industry performance and forecast trends in market structure as inputs in statistical models to predict bank failures and mergers and for a variety of other purposes where a measure of profitability is desired (Gilbert and Wheelock, 2007; Christian, 2008).

Nyaboga (2008) study on the relationship between capital structure and agency cost among listed firms in the NSE excluding banks, found that there is no positive correlation between the two variables with agency cost measured using the efficiency ratio and asset utilization. The findings showed that there is no relationship between the variables.

Flamini, Calvin and Liliana (2009) used a sample of 389 banks in 41 SSA countries to study the determinants of bank profitability. They found out that apart from credit risk, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. Bank returns are affected by macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth does boost credit expansion. Their results also indicated

moderate persistence in profitability. Causation in the Granger sense from returns on assets to capital occurs with a considerable lag, implying that high returns are not immediately retained in the form of equity increases. Thus, their paper gave some support to the policy of imposing higher capital requirements in the region in order to strengthen financial stability. At last, it was the conclusion of their study that, bank profits are high in Sub-Saharan Africa (SSA) compared to other regions.

Vong and Anna (2009) examined the impact of bank characteristics as well as macroeconomic and financial structure variables on the performance of the Macao banking industry. The results showed that the capital strength of a bank is of paramount importance in affecting its profitability. A well-capitalized bank is perceived to be of lower risk and such an advantage will be translated into higher profitability. On the other hand, the asset quality, as measured by the loan-loss provisions, affects the performance of banks adversely. In addition, banks with a large retail deposit-taking network do not achieve a level of profitability higher than those with a smaller network. Finally, with regard to macroeconomic variables, their study revealed that only the rate of inflation exhibits a significant relationship with banks' performance.

Chishty (2011) investigated that non-risk weighted capital adequacy measure is negatively related with the profitability of the bank. Pastory and Mutaju (2013) indicated that the bank with higher capital level have the tendency to increase the loan size and expand portfolio and sometimes increases the change of the customer's failure.

Gul, Irshad and Zaman (2011) shows significant relationship between bank profitability and capital adequacy. The results suggest that all variables have significant relationship with bank profitability, although their impacts and relation is not always uniform for domestic and foreign banks. But, the findings under the primary data analysis show that there is no significant relationship between capital adequacy and profitability in both the domestic and foreign banks in the Nigerian banking sector.

Niresh and Velnampy (2012) studied the direct influence of capital structure on profitability for which banking sector has been selected. A Sample of 10 listed Srilankan banks has been selected and the data gathered from 2002 to 2009. Dependent variables include net profit, return on capital employed, return on equity and net interest margin while the independent variables of the study were ratios of debt to equity and debt to total funds. Descriptive statistics and correlation analysis had been used for analysis of the data and the results of the study depicted that capital structure measures used in the study are negatively correlated with profitability measures, but only debt to equity ratio is positively linked with a ratio of return on equity

Alkadamani (2015) concluded that bank close to the minimum regulatory capital requirements improve their capital adequacy by increasing their capital and decreasing their risk taking.

Qamar, Masood and Khan (2016) conducted to empirically analyze the relation of capital structure with profitability. This study shows that capital structure has a negative impact on the profit as revealed by the Panel data regression analysis.

However, this study will contribute in the investigation for the impact of capital adequacy on the profitability of commercial banks in Nepal.

2.2.2 Review of previous dissertations

Bohara (1992), has conducted a research entitled "Comparative study of the financial performance of NABIL and NIBL". The basic objectives of his study were highlighted the financial performance and role of joint venture banks in the liberalized Nepalese economy. His attempts of analyzing financial performance were concentrated in ratio analysis and he derived the strength and weakness of two major banks by calculating important ratio liquidity ratio and profitability ratio. After calculating the ratio, along with income and expenditure analysis and trend analysis, Mr. Bohara has indicated that capital fund has significant and positive relation with both deposit and loans. That means increase or decrease in capital fund increase or decrease deposits as well as loans. However the degrees of relationship were different.

But relation of capital with profit was positive and insignificant. That indicated less of increase or decrease in profit is due to capital fund or capital fund is least responsible in changing profit. Bank should increase capital fund to increase the capital fund ratio according to increase in deposit.

Karmacharya (2002**)**, in his thesis entitled, 'Study on capital structure of joint-venture commercial banks and NRB directivesissued' has expressed that the financial soundness as well as its strength of the company depends upon the large extend on the composition of the capital structure and asserts. Capital structure of the company presents its resource capacity and ability of its present worthiness. He has found that the all the banks in his study following the requirements of NRB directives regarding capital adequacy. The capital structure of studied banks is highly leveraged. So, he has the year 2053/54 it was highest. 101.40% and has been decreasing in the succeeding year. The average ratio is 35.69. Additionally, the ratio of shareholders' fund in relation to total assets shown that average ratio is 21.22%. It completed that's its ratio are found decreasing throughout the study period.

Dhakal (2006), in his study entitled "A comparative study of Capital Adequacy of Joint Venture Banks in Nepal especially of Nepal Arab Bank Ltd. and Nepal Investment Bank Ltd." concludes that the liquidity position of both the banks is below the normal standard of 2:1. Comparatively this ratio of NIBL is better on an average. Both the banks are found to be efficient in utilizing most of their total assets. Capital structure is highly leveraged, capital adequacy ratio of NIBL is better than that of NABIL and the profitability position of both the banks is not recorded as satisfactory. Based on the findings of analysis, the research suggests finding out the root cause of weak liquidity position to improve the liquidity of both banks. Similarly, both the banks are suggested to or to mobilize resources more efficiently and to extend their banking facilities even in the rural areas.

K.S. (2007) in his thesis paper "Capital Adequacy and its Significance to Commercial Banks." recommended among eight banks only five banks have short fall of supplementary capital ratio of 4% directed by NRB. In case of capital adequacy ratio it is seen that NIBL, HBL, LBL, and KBL has not meet the standard of 12% directed

by NRB. It investigated that the directive of NRB have adverse effect in profitability of banks but this decrease profit will affect the Banks only for short term. So, it is essential for these banks to meet the minimum requirement of NRB. It further concluded that there is no economic development in the country without capital formation and mobilization and without any guidelines to commercial banks.

Timsina (2008), in his study entitled "A study on capital adequacy of commercial banks in Nepal," and following conclusions were drawn on the basis of quantitative and qualitative analysis on the selected commercial banks (Standard Chartered Bank Nepal Limited, Nepal Investment Bank Limited and Rastriya Banijya Bank Limited) Rastriya Banijya Bank Limited has not focused on off balance sheet transactions (2% of total risk weighted assets) in its business to increase profitability in comparison to Standard Chartered Bank Nepal Limited (18.5%) and Nepal Investment Bank Limited (13.5%) of off balance sheet risk weighted assets based on total RWA. Net profit and capital fund of SCBNL and NIBL are in increasing in each year in comparison to last year. But, in case of RBB, capital fund of RBB is continuously decreasing up to FY 2004/05

Khadka (2010) has conducted a research entitled "NRB Unified Directives on Capital Adequacy Norms and its Impact, a case study of SCBL, NABIL, HBL, NIBL, and ADBL".It is found that the sample banks are up to the mark of Capital Adequacy guidelines of NRB. The banks are following directives but in cases of supplementary capital there has been shortfall, which can be compensated the excess amount of core capital in supplementary capital. This study shows significant impact of NRB directives of Capital Adequacy on the various aspects of the commercial Banks in the Financial Markets and to uplift the Banking sector in Nepal to international standards. It shows the increased provisioning amount has decreased the profitability of the commercial banks.

Pandit (2010) has conducted research entitled "Directives of NRB in maintaining Capital Adequacy Ratio and its impact, a case study of NIC Bank" that Capital Fund has grown consistently during 2061/62 TO 2065/66 due to the substantial increment in the supplementary capital, and issuance of Unsecured Subordinated Term Debt. It

shows Capital to Deposit ratio is adequate and satisfactory. Although the capital adequacy requirement has been met, the Bank is unable to fulfill other capital and deposit ratio which are important to safeguard the depositors.

2.3 Research Gap

Many more studies are undertaken in the study area. This study adds more literature in the field so as to make the findings of the present studies more conclusive. This study is basically based on the capital adequacy indicators like debt equity ratio, advance to asset ratio, capital adequacy ratio and non performing loan. It has been experienced that till date either sample has been limited to single or more bank in arbitrary manner, as a sample in order to draw conclusion. Here the effort has been made to draw the nearest conclusion over impact of on the profitability in addition to spread ratio along with ROA and ROE. Mostly the study related to bank profitability are based on various and broad indicators including capital adequacy with asset quality, management, earnings and liquidity but very few studies are done in term of one particular indicator on profitability performance so it is unique in this sense also.

CHAPTER 3
RESEARCH METHODOLOGY

Research methodologies used by researcher is presented in this study. It includes research design, population, sampling methods, sample size, data collection instruments and processing procedures.

3.1 Research Design

This study uses descriptive and analytical research design, in order to examine the impact of capital adequacy on the profitability of commercial bank in case of Nepal from the fiscal year 2007/08 to 2016/17. Descriptive research design helps to describe characteristics of variables and involves in the evaluation of facts and information. The descriptive study defines a subject by constructing a profile of people, group or events through tabulation and the collection of data on the frequencies on studied variables (Cooper & Schindler, 2007). Various analytical tools such as Correlation and regression are used to examine the performance of the banks.

3.2 Population and sample

The population for this study comprises all the commercial banks in Nepal. There are 28 commercial banks operating in Nepal with their branches located in different parts of the country. Out of the population, total six leading commercial banks are selected as sample on the basis of their establishment between the periods from 1990 to 2000. This sample comprises of 21.43% of the total population of commercial banks in Nepal. Convenience sampling method is use in this study. The sample banks that are used for this research are as follows:

- Himalayan Bank Limited (1993 A.D)
- Nepal SBI Bank Limited (1993 A.D)
- Nepal Bangladesh Bank Limited (1993 A.D)
- Everest Bank Limited (1994 A.D)
- Nepal Credit and Commerce Limited (1996 A.D)
- Machhapuchre Bank limited (2000 A.D)

3.3 Source of data

To comply with the objective, the study is based on the secondary data. The required data for this study such as balance sheet, profit and loss statement etc. are collected through annual report of the sample commercial banks and other structured document review.

Mostly the annual reports of the selected sample banks and NRB reports is used as a major source of data. Beside the annual reports of sample banks, information is be supplemented from various publications of Nepal Stock Exchange (NEPSE) and browsing of official web site of sample banks, NRB and NEPSE.

3.4 Data collection & processing procedure

Different tools and techniques were adopted while collecting and processing data for the study. The data needed for conducting this study includes all the secondary sources. The degree of reliability and validity of the data used for the study depends on the degree of accuracy of the data maintained by the sample banks in their respective reports or accounts. However the data can be ensured through crosschecking the source. The data collected using data collection sheet were edited, coded and re-arranged as per the need of the study. Data are analyzed by using Microsoft Excel and SPSS version21 software. The collected data are entered using SPSS version21 software and analysis of descriptive, correlation and regression are done as per the requirement of study.

3.5 Data Analysis Tools and techniques

This study uses statistical methods as well as other tools such as: Financial ratios, Descriptive Statistics, Pearson's Correlation Coefficient and Regression analysis.

Financial ratio like CAR, Debt-Equity ratio, loan and advances to Assets, government securities to total investments is used to establish the relationship among the data and research.Ratio Analysis is the best tool for financial analysis. Ratios can be taken as expression of relationships between two items or group of items and therefore may be calculated in any number and ways so far meaningful co-

relationship is obtainable. In general, the Ratio Analysis is used as a benchmark for evaluating the financial position and performance of a firm.

The following ratios related to the banks are used to analyze the data:

- Capital Adequacy ratio (Capital to Risk Weighted Assets Ratio)

$$CRAR = \frac{Total\ capital\ Fund}{Total\ Risk\ weighted\ Assets}$$

Whereas,

Capital Fund = Tier 1 capital + Tire 2 capital

- Debt- Equity ratio

$$D - ER = \frac{Total\ debt}{Total\ shareholder's\ equity}$$

- Loans and Advance to Assets ratio

$$AAR = \frac{Total\ loans\ and\ advances}{Total\ Asset}$$

- Government Securities to total Investments

$$GSTI = \frac{Investment\ in\ government\ securities}{Total\ Investments}$$

Whereas,

Government securities=NRB Treasury Bills + NRB other Securities

- Non-Performing Loan

$$NPLR = \frac{Non - Performing\ Loan}{Total\ loan}$$

- Return On Assets

$$ROA = \frac{Net\ Profit}{Total\ Assets}$$

- Return On Equity

$$ROE = \frac{Net\ Profit}{Total\ shareholder's\ equity}$$

Shareholders equity=Share capital + Reserve & fund

- Spread Ratio

$$SR = \frac{Spread}{Total\ Assets}$$

Spread = Interest Earned – Interest Expended

The descriptive statistics

The descriptive statistics containing minimum, maximum, mean and standard deviation of the variables from the sampled commercial banks found, presented and analyzed accordingly in this study. The value of mean reports the arithmetical average of variables which are included in this study. An average provides a point which is most representatives of the data. The minimum and maximum values indicate the lower and the highest value of the variable. The standard deviation exhibits the diversity or variability in the data set of each variable. A small standard deviation points towards that the data points are inclined to be extremely close to the mean; while high values of standard deviation points that the data set is broaden out over a large range of values.

Statement of Hypothesis

This study attempts to find out the relationship between the capital adequacy and its impact on the profitability of commercial banks in Nepal. The following hypotheses are formulated:

H1: There is significant positive relation between Capital Adequacy Ratio and profitability of bank

H2: There is significant negative impact between debt-equity ratio and banks profitability

H3: There is significant relation between loans and advances and profitability of banks

H4: There significant relation between government securities and profitability of banks

H5: There is an insignificant negative relation between non-performing loans and banks profitability

The Analytical statistics

Pearson's correlation coefficient is a way to index the degree to which two or more variables are associated with or related to each other. It is the most widely used bi-variant correlation statistics. Correlation coefficient between two variables ranges from +1 (i.e. perfect positive relationship) to -1(i.e. perfect negative relationship).

Multiple Regression coefficient describes how the change in independent variable affects the value of the dependent variable estimate. This model is used as the econometrics model. An analysis where one or more than one independent variable is jointly regressed against the dependent variable is known as multiple regressions. The regression coefficient of each independent variable indicates the marginal relationship between the variables and the value of dependent variable, the effect of all other independent variables in the regression model holding constant. In this study it is used to measure the degree of impact of capital adequacy requirement the on profitability of sample banks.

To access the profitability performance of bank from 2007/08-2016/17 a multiple regression equation given below:

$ROA = a + b_1(CRAR) + b_2(DER) + b_3(AAR) + b_4(GSTI) + b_5(NPLR) + E$

$ROE = a + b_1(CRAR) + b_2(DER) + b_3(AAR) + b_4(GSTI) + b_5(NPLR) + E$

$SR = a + b_1(CRAR) + b_2(DER) + b_3(AAR) + b_4(GSTI) + b_5(NPLR) + E$

$PR = a + b_1(CRAR) + b_2(DER) + b_3(AAR) + b_4(GSTI) + b_5(NPLR) + E$

In this analysis, the researchers have used 5% level of significance to test the Hypothesis.

Whereas,

PR= Average Profitability ratio

S= Spread Rate

CRAR= Capital to risk weighted asset ratios

DER= Debt-Equity ratio

AAR= Advance to assets ratio

GSTI= Government securities to total investment ratio

NPLR= Non performing loan ratio

E = Random Error term

CHAPTER 4
RESULTS

This chapter deals with the presentation, analysis and interpretation of relevant data of HBL, NSBI, NBBL, EBL, NCCL, and MBL, Which were collected from various sources. They are changed into an understandable presentation using financial, descriptive as well as statistical tools mentioned in the previous chapter i.e., Research methodology. This section tries to make a statistical analysis of the quantitative data for the better understanding of the impact of ratios on different factors of capital adequacy ratio. It is categorized into three parts i.e. Data presentation, Data analysis and interpretation. This chapter contributes to highlight the formulated objectives of the research study.

4.1 Descriptive Statistics

The summary of the descriptive statistics for all variables used in the study is presented in the table 4.1. The table indicates the bank's profitability indicators like ROA, ROE & Spread. This table shows the relationship between the independent variables like CAR, D-ER, AAR, G-STI & NPLR and individual dependent variable. It also shows the relationship between the Mean of profitability ratios and independent variables. It helps to analyze the overall situation of selected banks. To provide a clear picture of profitability performance and capital adequacy indicators under the study, the descriptive statistics is used. It clearly shows the average value, Minimum value, Maximum value and standard deviation of the variables of the sample commercial banks for ten year period.

Table: 4.1

Descriptive statistics of variables

Variables	N	MAX	MIN	AVG	SD
Independent Variable					
CAR	60	18.17	5.55	11.6679	3.47288
D-ER	60	17.16	1.552	9.9788	3.7278
AAR	60	73.49	44.43	62.7718	7.2595

G-STIR	60	99.58	0.00	65.5875	28.9704
NPLR	60	31.73	0.10	4.3623	7.9425
Dependent Variable					
ROA	60	18.04	-0.39	2.0348	2.5721
ROE	60	82.74	-6.14	19.3722	12.341
SR	60	8.09	0.55	3.8180	1.3178
Dependent variable					
Mean Profitability ratio	60	36.29	-0.40	8.4085	5.1402

Source: Annual report of sample banks and result are drawn from SPSS-21

Capital Adequacy ratio shows the proportion of owner equity to total risk weighted assets. Central bank use CAR as a protection of the deposits money from credit risk and other failures. With regard to the credit risk measured in Table 4.1, it indicates that the average value of capital adequacy (CAR) is 11.67% with standard deviation of 3.47%. The minimum capital adequacy ratio is 5.55% and the maximum is 18.17%. The average amount of capital adequacy ratio is higher than the minimum capital requirements of basel committee and the NRB directives 2015. It shows that the bank has an ability to bear loss result from loan default and other operational shocks.

Debt-Equity ratio is a test of long term solvency of the firm. The ratio indicates the relationship between debt and equity. It is related to shareholders fund indicating the degree of protection against long term creditors. The table 4.1 indicated that the average mean of debt equity ratio is 9.98% with standard deviation of 3.73%. The minimum value of debt- equity ratio is 1.552% and the maximum value is 17.16%.

Advances to Assets ratio shows the aggressiveness of bank in lending funds which ultimately results in better profitability. This ratio is arrived at by dividing Advances by Assets. It indicates how much proportion or percentage of Total Assets is utilized in the form of Advances. The table 4.1 show the average value of the Advances to total assets ratio is 62.77% with standard deviation of 7.26%. The minimum value of the ratio is 44.43% and the maximum value is 73.49%.

The percentage of investment in government securities is a very important indicator which shows the risk taking ability of a bank. Government- Securities to total investment ratio indicates a bank's strategy as being High Profit – High Risk or Low profit- low risk. Government securities are generally considered as the most safe debt instrument, which as a result carries the lowest return. The Table 4.1 indicates that the average value of G-Sec to total investment ratio is 65.58% with the standard deviation of 7.26%. The maximum value of the G-STI ratio is 99.58%.

The Non-Performing loan ratio portrays the bank's ability to keep the risk of loan repayment by the debtor. The average non-performing loan ratio in sample commercial banks for the last ten years is 4.36% with the standard deviation of 7.94%. The maximum value is31.73% and the minimum value is 0.10%. The difference between the minimum value and maximum value of NPLR indicates that there is high variability with NPLR.

Return on Assets is an indicator of how efficient a company is using its assets to generate before contractual obligation must be paid. . ROA measures the ability of the management to convert the assets of the bank into net earnings. (Sarkar, 1998).The ROA reflects the ability of a bank's management to generate profits from the bank's assets. The mean value of ROA is 2.04% during the period of last ten years. It indicates, on an average, the total assets of sample banks in Nepal generate 2.04% of return. The standard deviation on ROA is 2.57%. The maximum value of ROA is 18.04% and the minimum value is -0.39%.

ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. The profitability performance measured by ROE showed that the average value of bank performance is 19.37%. It tells that Nepalese commercial banks provide 18.09% return to its shareholders. The standard deviation of the ROE is 12.34%. The minimum and maximum value is -6.14% and 82.74% respectively.

Spread Ratio creates a wedge between returns to savers and investors and reflects the cost of bank intermediation services and the efficiency of the banking sector. The average ratio of the selected commercial banks of last ten years is 3.818% with the standard deviation of 1.32%. The maximum and minimum value of the Spread ratio is 8.09% and 0.55% respectively.

Mean profitability ratio is the average mean of the overall dependent variables. It is obtained from the mean of ROA, ROE & Spread Ratio. The mean profitability ratio of all the dependent variables of six selected banks within the ten year period is 8.40%.with the standard deviation of 5.14%.The maximum and minimum value of Mean profitability ratio is -0.40% and 36.29% respectively.

4.2 Data Presentation

4.2.1 Capital Adequacy Ratio

Capital adequacy ratio is the ratio which determines the capacity of the bank in term of meeting the time liabilities and other risk such as credit risk, market risk, operational risk, and others. It is a measure of how much capital is used to support the bank's risk assets. The capital Adequacy Ratio (CAR) is calculated by dividing eligible regulatory capital by total risk weighted exposure.

Table 4.2

Capital Adequacy Ratio of Selected Banks

Year	HBL	NSBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	12.7	12.7	18.17	11.436	11.09	12.29	**13**	**2.60**	**0.20**
2009	11.02	11.02	5.55	10.554	11.07	11.84	**10.33**	**2.40**	**0.23**
2010	10.72	12.37	12.63	10.771	13.94	11.25	**11.95**	**1.26**	**0.11**
2011	10.68	11.519	10.19	10.426	13.48	10.79	**11.18**	**1.21**	**0.11**
2012	11.02	11.43	11.86	11.017	11.77	15.04	**12.02**	**1.52**	**0.13**
2013	11.55	12.38	11.61	11.594	11.76	12.54	**11.91**	**0.44**	**0.04**
2014	11.23	13.28	11.44	11.146	11.51	10.63	**11.54**	**0.91**	**0.08**
2015	11.14	14.02	11.31	13.328	11.39	12.24	**12.24**	**1.20**	**0.10**
2016	10.84	13.48	10.96	12.664	11.8	12.36	**12.02**	**1.03**	**0.09**
2017	12.15	15.71	15.10	14.69	11.42	16.82	**14.31**	**2.10**	**0.20**
AVG	**11.30**	**12.60**	**12.73**	**11.41**	**9.87**	**12.10**	**11.6**	**2.32**	**0.21**
SD	**0.65**	**0.88**	**4.87**	**0.92**	**6.75**	**1.23**			
CV	**0.06**	**0.07**	**0.38**	**0.08**	**0.68**	**0.10**			

Source: Appendix-1

Capital adequacy is the reflection of the inner strength of the bank. In general, all sample banks maintain the CAR as directed by NRB. Higher capital adequacy indicates the stronger position of the bank. It ensures high safety against bankruptcy, however a very high capital adequacy also indicates that the bank is conservative and has not utilized the full potential of its capital. The table 4.2.3 depicts that the average capital Adequacy ratio of the selected commercial bank is 11.6% with standard deviation and coefficient of correlation 2.324% & 0.21 respectively. As per the capital Adequacy framework 2015, all commercial bank shall maintain 10% of minimum capital Adequacy ratio. Alkadmani (2015) finds that banks profitability is negatively related with CRAR. Ngo (2006) investigated the relationship between bank capital and profitability. It showed no significant relationship between capital and profitability.

4.2.4 Debt- Equity Ratio

It is a test of long term solvency of the firm. The ratio indicates the relationship between debt and equity. It is related to shareholders fund indicating the degree of protection against long term creditors. This ratio indicates the degree of leverage of banks. Gyawali, Subedi, Fago, & Niraula (2010). It indicates how much of bank business is financed through debt and through equity.

Table: 4.3

Debt-Equity ratio of selected commercial banks

Year\Bank	HBL	SBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	10.32	11.15	1.552	13.131	2.898	9.67	**8.12**	**4.73**	**0.58**
2009	11.6	17.05	3.587	15.753	8.637	9.29	**10.99**	**4.96**	**0.45**
2010	11.42	14.53	4.873	13.998	7.381	10.7	**10.48**	**3.76**	**0.36**
2011	10.7	15.01	5.221	13.85	6.588	10	**10.23**	**3.86**	**0.38**
2012	10.74	17.16	5.828	12.361	8.672	8.2	**10.49**	**3.96**	**0.38**
2013	10.54	16.06	5.101	12.617	9.993	9.83	**10.69**	**3.61**	**0.34**
2014	11.1	12.47	6.511	11.909	8.602	11.6	**10.36**	**2.31**	**0.22**
2015	10.9	9.499	7.071	13.392	9.111	11.2	**10.2**	**2.15**	**0.21**
2016	10.25	10.35	6.73	12.376	8.722	10.1	**9.76**	**1.89**	**0.19**
2017	10.57	12.78	5.89	13.789	8.47	10.8	**10.00**	**2.22**	**0.20**
AVG	**10.4**	**13.4**	**4.73**	**13.62**	**7.25**	**10**			
SD	**0.46**	**2.88**	**2.14**	**1.58**	**2.67**	**0.97**			
CV	**0.04**	**0.21**	**0.45**	**0.12**	**0.37**	**0.1**			

Source; Appendix 1

Table 4.2.4 shows the debt- equity ratio of the selected commercial banks. It shows the average Debt- Equity ratio of EBL is greater than all other banks i.e. 13.62% with low level of standard deviation and coefficient of variation. Similarly, NBB has lower level of Debt- Equity ratio with higher level of stand and deviation and coefficient of variation. The average debt-Equity ratio of NSBI is higher i.e. 13.42%, similarly the average debt- equity ratio of NCC is lower than other banks.

4.2.3. Loans and Advances to Assets ratio

This ratio shows the aggressiveness of bank in lending funds which ultimately results in better profitability. This ratio is arrived at by dividing Advances by Assets. It indicates how much proportion or percentage of Total Assets is utilized in the form of Advances. The aggressive lending policy of commercial bank is one of the reasons for the better profitability of the banks, (Chishty, 2011).

Table: 4.4

Loans and Advance to Assets ratio of selected commercial banks

Year\Bank	HBL	SBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	53.9	70.5	58.12	67.5	53.6	70	**62**	**7.9**	**0.13**
2009	63.1	48.9	56.04	64.7	64.8	72	**61**	**7.9**	**0.13**
2010	65.5	45.9	62.32	66.6	62.6	69	**62**	**8.27**	**0.13**
2011	67.5	46.4	60.36	67.2	66.8	73	**63**	**9.42**	**0.15**
2012	64.3	45	51.22	64.3	66.9	64	**59**	**8.95**	**0.15**
2013	65	44.4	58.76	66	62	70	**61**	**8.94**	**0.15**
2014	61.6	57.8	60.38	67.5	68.5	71	**65**	**5.34**	**0.08**
2015	64.6	67.4	64.16	54.9	69.6	70	**65**	**5.6**	**0.09**
2016	67.8	59.8	68.49	59.7	70.4	73	**67**	**5.65**	**0.08**
2017	68.00	61.5	66.98	61.00	70.2	72	**66**	**5.06**	**0.06**
AVG	**62.4**	**55.4**	**60.06**	**64.2**	**64.65**	**69.8**			
SD	**5.68**	**10.5**	**4.64**	**4.04**	**5**	**2.99**			
CV	**0.09**	**0.19**	**0.08**	**0.06**	**0.08**	**0.04**			

Source: Appendix-1

The table 4.1.3 shows the Loans and advances to assets ratio of selected commercial banks. The average loan to total assets ratio of MBL is highest .i.e. 69.8% and NSBI has lowest that is 55.4%. The average loan to total assets ratio of the selected bank is in fluctuating trend which is also shown by the standard deviation.

4.2.4 Government Securities to Total Investments

The percentage of investment in government securities is a very important indicator which shows the risk taking ability of a bank. It indicates a bank's strategy as being High Profit – High Risk or Low profit- low risk. Government securities are generally considered as the most safe debt instrument, which as a result carries the lowest return. Since government securities are risk free, the higher the G-Sec to investment ratio, the lower the risk involved in a bank's investments. This ratio has witnessed an decreasing trend in case of all the sample banks except NCC and MBL over the study periods.

Table 4.5

Govt- Sec to Total Investment Ratio of selected Banks

Year\Bank	HBL	NSBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	53.7	98.27	91.31	97.27	91.31	57.314	**79.58**	**22.16**	**0.28**
2009	69.8	24.89	77.205	86.51	70.59	38.343	**61.22**	**24.08**	**0.39**
2010	52.9	26.45	88.947	86.94	90.42	90.447	**72.68**	**26.94**	**0.37**
2011	73.1	29.48	88.88	92.27	70.24	87.874	**73.63**	**23.34**	**0.32**
2012	91.3	18.64	96.278	77.18	95.24	84.956	**77.27**	**29.59**	**0.38**
2013	76.1	14.15	96.728	75.44	99.47	88.104	**75**	**31.45**	**0.42**
2014	61.4	33.72	83.477	39.12	99.4	85.809	**67.15**	**26.8**	**0.4**
2015	56.1	27.44	24.685	56.85	99.58	58.989	**53.93**	**27.13**	**0.5**
2016	48.8	30.32	37.017	56.94	0	73.606	**49.33**	**17.03**	**0.35**
2017	50.67	32.76	36.09	55.08	97.2	75.09	**50.65**	**18.98**	**0.39**
AVG	**63.8**	**39.16**	**74.15**	**76.29**	**90.01**	**73.98**			
SD	**13.5**	**29.15**	**27.66**	**19.37**	**11.62**	**17.31**			
CV	**0.21**	**0.74**	**0.37**	**0.25**	**0.13**	**0.23**			

Source: Appendix 1

The table 4.2.4shows the government securities to total investment ratio of the selected commercial banks. The ratio of NCC is highest at 90.10% with 11.62% of standard deviation and the ratio of NSBI is lowest .i.e. 39.16% with 29.15% of standard deviation. This ratio is in increasing trend in case of all commercial bank

except in case of NSBI. The overall average ratio of six commercial banks over ten study period is 65.58% with average standard deviation of 28.97%.

4.2.5 Non-Performing Loan Ratio of the selected commercial ratio

The non-performing loan ratios are the best proxies for asset quality. This ratio portrays the bank's ability to keep the risk of loan repayment by the debtor. After credits are given, banks should monitor the use of the credits as well as the debtors' ability and compliance to meet their obligations cause if there is a failure of the debtor to pay, it will decrease bank's profitability.

Table 4.6

Non-Performing Loan Ratio

Year\Bank	HBL	SBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	2.36	3.83	31.73	0.68	16.4	1.04	**9.34**	**12.44**	**1.33**
2009	2.16	2.02	19.8	0.48	2.74	2.33	**4.62**	**7.33**	**1.49**
2010	3.52	1.48	6.47	0.44	2.88	2.32	**2.85**	**2.07**	**0.73**
2011	4.22	1.1	17.99	0.34	3.82	4.17	**5.27**	**6.45**	**1.22**
2012	2.09	0.54	4.29	0.84	2.73	2.84	**2.22**	**1.39**	**0.63**
2013	2.89	0.37	1.33	0.62	2.8	2.84	**1.81**	**1.18**	**0.65**
2014	1.96	0.26	1.35	0.97	2.75	1.78	**1.51**	**0.86**	**0.57**
2015	3.22	0.19	1.33	0.66	1.93	0.64	**1.33**	**1.11**	**0.84**
2016	1.23	1.14	0.71	0.38	0.9	0.55	**0.82**	**0.33**	**0.41**
2017	0.85	0.10	0.76	0.25	0.87	0.38	**0.58**	**0.33**	**0.41**
AVG	**2.73**	**1.55**	**12.48**	**0.62**	**6.84**	**1.97**	**4.332**	**4.95**	**0.92**
SD	**0.92**	**1.52**	**14.19**	**0.21**	**9.69**	**1.15**			
CV	**0.34**	**0.98**	**1.14**	**0.34**	**1.42**	**0.59**			

Source: Appendix 1

The table 4.1.5 shows the Non- Performing loan ratio of the selected commercial banks. The average ratio of EBL is lowest .i.e. 0.62% with standard deviation 0.21%. The ratio of NBB is highest i.e. 12.48% with standard deviation 14.18%. It is seen that there is high fluctuation in the NPL ratio of NBB bank.

4.2.6 Return on Assets ratio

ROA is defined as the net profit divided by total assets. ROA measures the ability of the management to convert the assets of the bank into net earnings. (Sarkar, 1998).The ROA reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profits earned per birr of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance-sheet activities (Tan 2012).It shows how efficiently the resources of the company are used to generate the income.

Table: 4.7

Return on Assets ratio

Year\Bank	HBL	SBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	1.76	1.44	6.35	1.7	5.48	0.68	**2.9**	**2.38**	**0.82**
2009	1.91	1.02	18.04	1.73	3.76	0.7	**4.53**	**6.71**	**1.48**
2010	1.19	1.03	8.15	2.09	3.21	0.35	**2.67**	**2.86**	**1.07**
2011	1.91	1.01	-0.39	2.1	1.61	0.05	**1.05**	**1.02**	**0.98**
2012	1.76	0.83	4.01	2.11	0.9	0.16	**1.63**	**1.36**	**0.84**
2013	1.54	1.19	3.57	2.39	1.37	0.49	**1.76**	**1.08**	**0.61**
2014	1.3	1.51	2.4	2.25	1.46	1.12	**1.67**	**0.53**	**0.31**
2015	1.34	1.8	2.06	1.85	1.14	1.26	**1.58**	**0.38**	**0.24**
2016	1.94	1.7	2.57	1.85	2	1.51	**1.93**	**0.36**	**0.91**
2017	2.03	1.68	2.11	1.72	1.23	1.89	**1.78**	**0.31**	**0.21**
AVG	**1.61**	**1.34**	**5.2**	**1.95**	**1.94**	**0.7**	**2.049**	**1.802**	**0.904**
SD	**0.28**	**0.37**	**5.42**	**0.3**	**1.89**	**0.47**			
CV	**0.17**	**0.27**	**1.04**	**0.15**	**0.97**	**0.68**			

Source: Appendix 1

The 4.1.6 table shows the return on Assets ratio of the selected commercial banks. The average ROA of the NBB is highest at 5.2% with 5.42% standard deviation. The average ROA of the MBL is lowest at 0.70% with 0.47% of standard deviation. The ROA of NBB is in highly fluctuating trend.

4.2.7 Return on Equity Ratio

The ROE is said to measure the rate of return on the bank's shareholders equity and it is calculated by dividing banks net income after tax by total equity capital which includes common and preferred stock, surplus, undivided profits, and capital reserve (Molyneux & Thornton, 1992).ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better the company is in terms of profit generation. ROE reflects how effectively a bank management is using shareholders' funds (Khrawish, 2011).

Table: 4.8

Return on Equity of selected Bank

Year\Bank	HBL	SBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	19.89	17.51	16.21	23.48	23.59	7.31	**18**	**6.04**	**0.34**
2009	24.13	18.47	82.74	28.96	37.8	7.25	**33.23**	**26.33**	**0.79**
2010	14.79	16.05	47.87	30.15	27.83	4.13	**23.47**	**15.25**	**0.65**
2011	22.35	16.19	-6.14	29.91	12.66	0.5	**12.58**	**13.45**	**1.07**
2012	20.7	15.02	27.4	26.11	3.24	1.44	**15.65**	**11.22**	**0.72**
2013	17.81	20.31	21.79	30.47	15.67	5.3	**18.56**	**8.25**	**0.44**
2014	15.77	20.35	18.06	28.4	14.93	14.05	**18.6**	**5.32**	**0.29**
2015	15.98	18.87	16.64	22.84	11.76	15.44	**16.92**	**3.7**	**0.22**
2016	21.94	19.25	19.84	20.32	19.33	16.82	**19.58**	**1.67**	**0.09**
2017	18.61	20.41	11.49	17.38	13.26	15.86	**16.17**	**3.34**	**0.20**
AVG	**19.01**	**18.39**	**27.05**	**26.53**	**17.29**	**7.96**	**19.37**	**9.99**	**0.51**
SD	**3.23**	**2.19**	**23.63**	**3.57**	**10.32**	**5.7**			
CV	**0.59**	**0.17**	**0.12**	**0.87**	**0.13**	**0.6**			

Source: Appendix-1

The table 4.2.8 shows the return on equity ratio of the selected commercial banks over the ten study periods. The average ROE of NBB is highest at 27.05% with 23.63% of standard deviation. The average ROE of NCC is lowest at 7.96% with 5.7% of standard deviation.

4.2.8 Spread ratio

It creates a wedge between returns to savers and investors and reflects the cost of bank intermediation services and the efficiency of the banking sector. The difference between the total income and the total expenses of a bank gives taxable income. However, considering the intermediation function, it is the Net Interest Income (NII = Interest earned – Interest expended) that is more crucial for banks. For the long term sustenance of the bank, this should be positive. This ratio shows the ability of a bank to keep the interest on deposits low and interest on advances high. A higher spread indicates the better earnings, given the total assets, (Chishty 2011).

Table: 4.9

Spread Ratio of selected Bank

Year\Bank	HBL	SBI	NBB	EBL	NCC	MBL	**AVG**	**SD**	**CV**
2008	3.15	3.11	3.95	4.34	4.45	1.04	**3.34**	**1.26**	**0.38**
2009	4.18	2.84	8.09	4.4	4.78	2.33	**4.44**	**2.03**	**0.46**
2010	4.21	2.76	5.56	4.78	3.6	2.32	**3.87**	**1.23**	**0.32**
2011	3.96	2.86	5.34	4.6	3	4.17	**3.99**	**0.95**	**0.24**
2012	4.25	2.7	4.54	5.32	2.79	2.84	**3.74**	**1.11**	**0.3**
2013	5.17	3.38	4.03	5.68	3.89	2.84	**4.17**	**1.07**	**0.26**
2014	4.54	3.45	4.32	5.69	3.42	1.78	**3.87**	**1.32**	**0.34**
2015	4.35	3.85	5.01	4.76	3.48	0.64	**3.68**	**1.59**	**0.43**
2016	4.59	4	5.34	4.76	3.36	0.55	**3.77**	**1.72**	**0.46**
2017	4.60	4.25	5.35	4.85	3.98	0.65	**3.92**	**1.82**	**0.48**
AVG	**4.2**	**3.2**	**5.11**	**4.82**	**3.62**	**1.97**	**3.819**	**1.35**	**0.36**
SD	**0.56**	**0.46**	**1.19**	**0.58**	**0.61**	**1.15**			
CV	**0.13**	**0.14**	**0.23**	**0.12**	**0.17**	**0.59**			

Source: Appendix-1

The table 4.2.8 shows the spread to total assets ratio of the selected commercial banks. The spread ratio of the NBB is highest at 5.11% with the standard deviation of 1.19%. The spread ratio of MBL is lowest at 1.97% with the standard deviation of 1.15%. As per the NRB directives the spread rate difference must be 5% for all banks.

4.3 Correlation Analysis

Correlation analysis is a measure of association that is based on numerical values of the two variables. It is preferred in this study to identify the relationship between variables whether the relationship is significant or not. In other words, it is done between the explanatory variables and profitability variables to explore whether there is positive or negative relationship between these variables.

4.3.1 Correlation Analysis between ROA and Explanatory variables

The table 4.3.1 shows the degree of correlation between the variables that has been used in the study. The degree of relationship here is shown by the use of Pearson's correlation.

From the table 4.3.1 the correlation coefficient between ROA and CAR is -0.38 which shows that there is negative correlation between ROA and CAR. The correlation coefficient between ROA and D-E R is -0.348 which indicates that there is negative relationship between the ROA and D-ER. The correlation coefficient between ROA and Assets to Advances Ratio (AAR) is -0.704, which indicates that there is negative relationship between the two variables. The correlation coefficient between ROA and Government securities to total investment ratio (G-STIR) is 0.050, which indicates that there is positive relationship between the two variables. The correlation coefficient between ROA and Non-Performing loan ratio is 0.0224, which indicates that there is positive relationship between ROA and NPLR.

Table 4.10

Correlation Analysis between ROA and explanatory variables

Variables	Correlation	ROA	Sig(p)
CAR	Pearson's correlation	-0.38	0.774
D-ER	Pearson's correlation	-0.348**	0.006**
AAR	Pearson's correlation	-0.171	0.005
G-STI	Pearson's correlation	0.050	0.704
NPLR	Pearson's correlation	-0.022	0.056

*** Correlation is significant at 0.01 level (2 tailed).*

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

Source: Appendix-2

4.3.2 Correlation Analysis between ROE and Explanatory Variables

From the table 4.3.2 between ROE and CAR, the correlation coefficient of ROE and Debt- Equity ratio (D-ER) is -0.07 and the correlation coefficient between ROE and CAR is -0.36, which shows that there is negative correlation between them. The correlation coefficient between ROE and AAR is -0.185, it shows that there is negative relationship between ROE and AAR. The correlation coefficient between ROE and G-STIR is 0.009, which shows the significant positive relationship between ROE and G-STIR. There is negative relationship between ROE and NPLR, since the correlation coefficient between the variable is -0.094.

Table 4.11

Correlation Analysis between ROE and Explanatory Variables

Variables	Correlation	ROE	Sig(p)
CAR	Pearson's correlation	-0.36	0.785
D-ER	Pearson's correlation	-0.070	0.597
AAR	Pearson's correlation	-0.185	0.157
G-STI	Pearson's correlation	0.009	0.943
NPLR	Pearson's correlation	-0.094	0.473

** Correlation is significant at 0.01 level (2 tailed).

*Correlation is significant at 0.05 level (2 tailed)

Source: Appendix 2

4.3.3 Correlation Analysis between SPREAD and Explanatory variables

From the table 4.3.3, the correlation coefficient between Spread and CAR is -0.095, it shows that there is negative relationship between Spread and CAR. The correlation coefficient between Spread and D-ER is -0.225 it indicates that there is negative relationship between Spread and D-ER. The correlation coefficient between Spread and AAR is -0.146, it shows the negative relationship between Spread and AAR. The correlation coefficient between Spread and G-STIR is 0.045, it shows the positive relationship between Spread and G-STIR. The correlation coefficient between Spread

and NPLR is -0.240, it shows the significant negative relationship between Spread and NPLR

Table 4.12

Correlation Analysis between SPREAD and Explanatory variables

Variables	Correlation	Spread	Sig(p)
CAR	Pearson's correlation	-0.095	0.471
D-ER	Pearson's correlation	-0.226	0.082
AAR	Pearson's correlation	-0.146	0.264
G-STI	Pearson's correlation	0.045	0.735
NPLR	Pearson's correlation	-0.240	0.05

** Correlation is significant at 0.01 level (2 tailed).

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

Source: Appendix-2

4.3.4 Correlation Analysis between Average Profitability ratio and Explanatory variables

From the table 4.3.4, the correlation coefficient between average profitability ratio and CAR is -0.043, it shows the negative relationship between average profitability ratio and CAR. The correlation coefficient between Average profitability ratio and D-ER is -0.133, it shows the negative relationship between the variables. The correlation coefficient between Average profitability and AAR is -0.189, it shows the negative relationship between the variables. The correlation coefficient between Average profitability ratio and G-STIR is 0.020, it indicates the significant positive relationship between the variables. The correlation coefficient between Average profitability ratio and NPLR is -0.133, it shows that there is negative relationship between Average profitability ratio and NPLR.

Table 4.13

The correlation coefficient between Average Profitability Ratio and Explanatory Variables

Variables	Correlation	Average Profitability ratio	Sig(p)
CAR	Pearson's correlation	-0.043	0.743
D-ER	Pearson's correlation	-0.133	0.310
AAR	Pearson's correlation	-0.189	0.148
G-STI	Pearson's correlation	0.020	0.881
NPLR	Pearson's correlation	-0.133	0.310

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

*Correlation is significant at 0.05 level (2 tailed)

Source: Appendix 2

4.4 Regression Analysis

As stated in research design and methodology section, the study used four model to estimate the qualitative effect of Capital Adequacy ratio, Debt-Equity ratio, Advance to Assets ratio, Government Securities to total investment ratio & Non-performing loan ratio on the profitability of Nepalese commercial banks measured by ROA, ROE, Spread and Average profitability ratio. The model 1 shows the relationship between ROA and explanatory variables. The model 2 shows the relationship between ROE and Explanatory variables. The model 3 shows the relationship between Spread and explanatory variables and the model 4 shows the relationship between Average profitability ratio and explanatory relationship.

4.4.1 Regression result: Model 1

Table 4.4.1 presents the regression results of indicators of capital Adequacy and its impact on ROA of Nepalese commercial banks. The calculated F value appears greater than significant value. In other words, the calculated significance value i.e. 0.038 is less than the expected significance value i.e. 0.005. It means that the explanatory variables in the regression model 1 are significant in explaining the impact on the profitability of Nepalese commercial banks. The overall explanatory

power of the regression model is fair with R^2 of 0.191. This indicates that independent variables explain 19.10% of the variation in the dependent variable Return on Assets and remaining 80.90% change in ROA is explained by other variables.

The P value of CAR is 0.962 which is higher than 0.05 and beta is -0.005. It indicates that there is negative but statistically insignificant relationship of CAR with ROA. Empirical studies on the relationship between capital adequacy ratio and financial performance have shown mixed result.

Table 4.14

Regression Analysis between ROA and Explanatory Variables

ROA= 11.628-0.005CAR-0.333D-ER-0.105AAR+0.008G-STIR-0.047+E

Model	Unstandardized coefficients		Standardized Coefficients	T	Sig(p)
	B	Std. Error	Beta		
Constant	11.628	3.984		2.919	0.005
CAR	-0.005	0.099	-0.006	-0.48	0.792
D-ER	-0.333	0.128	-0.483	-0.2599	0.010
AAR	-0.105	0.049	-0.295	-2.139	0.037
G-STIR	0.008	0.013	0.095	0.655	0.500
NPLR	-0.047	0.061	-0.144	-0.769	0.045
	R^2 =0.191 Adj.R^2=0.116 F= 2.556 F(sig)= 0.038[a]				

Source; Appendix 3

The beta coefficient of debt equity ratio is negative. It indicates that there is negative relationship between D-ER and ROA. The P value is 0.012 which is less than 0.05. It indicates that there is negative but statistically significant relationship between Debt – Equity ratio and ROA. It means there is relationship between ROA and D-ER, when D-E ratio increased \decreased, ROA also increased/ decreased but inversely.

The beta coefficient of Advance to Assets ratio is negative. It indicates that there is negative relationship between AAR and ROA. The P value is 0.037 which is less than

0.05. It indicates that there is negative but statistically significant relationship between AAR and ROA. It means there is positive relationship between AAR and ROA.

The beta coefficient of Government securities to total investment is positive. It shows that there is positive relationship between the G-STIR and ROA. The P value is 0.515 which is higher than 0.05. It indicates that there is positive but statistically insignificant relationship between G-STIR and ROA.

However, the beta coefficient of Non–performing loan ratio is negative. It shows the negative relationship between NPLR and ROA. The P value is 0.0445 which is lower than 0.05. It indicates that there is negative and statistically significant relationship between NPLR and ROA. Many regulators believe ROA is the best measure of bank profitability (Hassan and Bashir, 2003).

4.4.2 Regression Result of Model 2

Table 4.4.2 presents the regression results of indicators of capital Adequacy and its impact on ROE of Nepalese commercial banks. The calculated F value appears greater than significant value. In other words, the calculated significance value i.e. 0.723 is greater than the expected significance value i.e. 0.005. It means that the explanatory variables in the regression model 2 are insignificant in explaining the impact on the profitability of Nepalese commercial banks.

The overall explanatory power of the regression model is fair with R^2 of 0.050. This indicates that independent variables explain 5.00% of the variation in the dependent variable i.e. returns on Equity and remaining 95.00% change in ROE is explained by other variables.

On the basis of table 4.4.2, the results indicate that the capital Adequacy ratio (CAR) is negative with beta -0.031. The P value is 0.915 which is greater than 0.005. It indicates that there is negative but statistically insignificant relationship between CAR and ROE.

Table: 4.15

Regression Analysis between ROE and Explanatory Variables

ROE=44.220-0.31CAR-0.28D-ER-0.384AAR+0.036G-STIR-0.021NPLR

Model	Unstandardized coefficients		Standardized Coefficients	T	Sig(p)
	B	Std. Error	Beta		
Constant	44.220	20.717		2.134	0.037
CAR	-0.031	0.514	-0.09	-0.061	0.810
D-ER	-0.281	0.666	-0.085	-0.421	0.675
AAR	-0.384	0.254	-0.226	-1.511	0.017
G-STIR	0.036	0.067	0.084	0.531	0.598
NPLR	-0.021	0.316	0.014	0.067	0.892
	R^2=0.050	Adj. R^2= -0.38	F= 0.570 F(Sig)=0.723[a]		

Source: Appendix-3

The Beta coefficient of Debt- Equity ratio is negative. It shows the negative relationship between D-ER and ROE. The P value i.e. 0.675 is greater than 0.05.It indicates that there is negative and statistically insignificant relationship between D-ER and ROE.

The beta coefficient of advances to assets ratio is -0.384. It shows the negative relationship between AAR and ROE. The P value is 0.037 which is lower than 0.005. It indicates that there is negative and statistically significant relationship between AAR and ROE.

The beta coefficient of Government securities to total investment ratio is 0.036. It shows positive relationship between G-STIR and ROE. The P value is greater than 0.05. It indicates the positive but statistically insignificant relationship between G-STIR and ROE.

The beta coefficient of non-performing loan ratio is 0.021. It shows the positive relationship between NPLR and ROE. The P value is 0.947 which is higher than 0.05. It indicates the positive but statistically insignificant relationship between ROE and NPLR.

4.4.3 Regression Result Model-3

Table 4.4.3 presents the regression results of indicators of capital Adequacy and its impact on Spread of Nepalese commercial banks. The calculated F value appears greater than significant value. In other words, the calculated significance value i.e. 0.316 is greater than the expected significance value i.e. 0.005. It means that the explanatory variables in the regression model 3 are insignificant in explaining the impact on the profitability of Nepalese commercial banks.

The overall explanatory power of the regression model is fair with R^2 of 0.101. This indicates that independent variables explain 10.10% of the variation in the dependent variable i.e. return on Equity and remaining 89.90% change in Spread ratio is explained by other variables.

On the basis of table 4.4.3, the regression result indicates that the Capital Adequacy ratio is -0.21. It shows that there is negative relationship between CAR and Spread ratio. The P value is 0.700 which is greater than 0.05. It indicates that there is negative and statistically insignificant relationship between CAR and Spread ratio.

Table 4.16

Regression analysis between SPREAD and Explanatory Variables

SR=6.508 -0.021CAR-0.061D-ER-0.035AAR+0.004G-STIR-0.007NPLR

Model	Unstandardized coefficients		Standardized Coefficients	T	Sig(p)
	B	Std. Error	Beta		
Constant	6.508	2.152		3.024	0.004
CAR	-0.021	0.053	-0.055	-0.388	0.530
D-ER	-0.061	0.069	-0.173	-0.883	0.348
AAR	-0.035	0.026	-0.193	-1.323	0.200
G-STIR	0.004	0.007	0.095	0.620	0.611
NPLR	-0.007	0.033	0.101	0.509	0.041
R^2= 0.101	Adj. R^2=0.018 F= 1.212 F(Sig)=0.316[a]				

Appendix-3

The beta coefficient of Debt-Equity ratio is -0.061. It shows that there is negative relationship between D-ER and Spread ratio. The P value is 0.381, which is higher than 0.05.

The beta coefficient of Advance to Assets ratio is -0.035. It shows the negative relationship between AAR and Spread. The P value is 0.191, which is higher than 0.05. It indicates that there is negative and statistically insignificant relationship between AAR and Spread.

The beta coefficient of Government securities to total investment ratio is 0.004. It shows the positive relationship between G-STIR and Spread. The P value is 0.538 which is higher than 0.05. It indicates the positive but statistically insignificant relationship between G-STIR and Spread.

The beta coefficient of Non- performing loan is 0.017. It shows positive relationship between NPLR and Spread. The P value is 0.041, which is lower than 0.05. It indicates that there is positive but statistically significant relationship between NPLR and Spread.

4.4.4 Regression Result of Model 4

The Table 4.4.4 presents the regression result of overall all profitability ratios. The mean profitability ratio is taken as dependent variable and various capital adequacy ratio is taken as independent variable. This regression model shows the impact of various capital adequacy ratios with the combined mean of profitability ratio i.e. (ROA, ROE, Spread ratio).

The calculated F value is 0.814, which appears greater than the significance value i.e. 0.05. In other word the calculated significance value is 0.545, which is greater than the expected significance. It indicates that the explanatory variables in this regression model are insignificant in explaining the impact of capital adequacy on profitability performance. Aruwa and Musa (2014), Kurawa and Garva (2014) found significant relationship between capital adequacy variables and Profitability performance of

banks. However Jha and Hui (2012) have found negative association between Capital Adequacy ratio and ROA.

The overall explanatory power of the regression model is fair with R^2 of 0.070. This indicates that 7% of the variation in profitability can be explained by the variation in the explanatory variables. The remaining 93% is explained by the variation in other variables.

From the table 4.4.4, the beta coefficient Capital Adequacy ratio is -0.019. It shows the negative relationship between CAR and Average profitability ratio. The P value is 0.929, which is higher than the expected significance level. It indicates that there is negative and statistically insignificant relationship between Capital Adequacy ratio and profitability ratio. Empirical studies on the relationship between capital adequacy ratio and firms profitability performance. Alkadmani (2015) finds that banks profitability is negatively related with CRAR. Ngo (2006) investigated the relationship between bank capital and profitability. It showed no significant relationship between capital and profitability.

Table 4.17

Regression analysis between Average Profitability Ratios and Explanatory Variables

PR=20.784-0.019CAR-0.225D-ER-0.175AAR+0.016G-STIR-0.003NPLR+E

Model	Un-standardized coefficients		Standardized Coefficients	T	Sig(p)
	B	Std. Error	Beta		
Constant	20.784	8.5358		2.434	0.018
CAR	-0.019	0.212	-0.13	-0.089	0.929
D-ER	-0.225	0.275	-0.163	-0.819	0.416
AAR	-0.175	0.105	-0.246	-1.666	0.102
G-STIR	0.016	0.028	0.091	0.584	0.05
NPLR	-0.003	0.130	-0.005	-0.023	0.982
R^2 = 0.070	Adj. R^2=-0.16	F = 0.814	F(Sig)= 0.545[a]		

Source: Appendix-3

The coefficient correlation between Debt-Equity Ratio is -0.225. It shows the negative relationship between the D-ER and Average Profitability ratio. The P value is 0.416, which is higher than 0.05. It indicates the negative and statistically insignificant relationship between D-E and Profitability ratio. Jiang (2003) found that equity capital ratio was not significantly related to banks profitability.

The beta coefficient of Advances to Assets ratio is -1.75. It shows the negative relationship between Advances to Assets ratio. The P value is 0.102, which is greater than 0.05. It indicates the negative and statistically insignificant relationship between AAR and Profitability ratio.

The beta coefficient of government securities to total investment is 0.16. It shows the positive relationship between the G-STIR and Profitability ratio. The F value is 0.562, which is higher than 0.05. It indicates that there is positive but statistically insignificant relationship between the variables.

The beta coefficient of non-performing loan ratio -0.03, it shows that there is negative relationship between the NPLR and profitability ratio. The P value is 0.982, which is higher than 0.05. It indicates that there is negative and statistically insignificant relationship between the NPLR and Profitability ratio. Frederick (2014) proved that the NPL has a significant negative effect on profitability. But Duraj & Moci (2015) proved that the NPL has no significant effect on profitability.

Table: 4.18

Summary Table of the level of significance

Independent Variable	Expected Hypothesis	Average Profitability	ROA	ROE	Spread
CAR	Significant	Insignificant	Insignificant	Insignificant	Insignificant
D-ER	Significant	Insignificant	Significant	Insignificant	Insignificant
AAR	Significant	Insignificant	Significant	Significant	Insignificant
G-STIR	Significant	Significant	Insignificant	Insignificant	Insignificant
NPLR	Significant	Significant	Significant	Insignificant	Significant

Source: The result drawn from SPSS-21

4.5 Major Findings

Mainly the data are analyzed on the basis of the result from descriptive statistics, correlation and regression analysis. From the findings of descriptive statistics, the average ROA, ROE & Spread is 2.0348%, 19.3722% & 3.8180%, with standard deviation 2.57%, 12.34% & 1.317% respectively. It shows that there is satisfactory impact on profitability with average variation in return and risk. The average return of mean profitability ratio is 8.41% with standard deviation of 5.14%, it shows negative impact on risk and return of the Nepalese commercial banks. The average capital adequacy ratio is 11.67% with standard deviation of 3.47%. It shows the inverse impact on risk and return. The average D-ER is 9.97% with standard deviation of 3.72%, it shows inverse impact of risk and return. The average of AAR is 62.77% with standard deviation of 7.26%. The average of G-STIR is 65.57% with standard deviation 28.97%. The average of NPLR is 4.36% with standard deviation of 7.94%.. The findings are shown on the ROA than ROE & Spread. Rivard and Thomas (1997) suggest that bank profitability is best measured by ROA in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of the firm to generate returns on its portfolio of assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. ROA is considered as the profitability factor while setting hypothesis in previous chapter.

The major findings from this analysis are presented below:

- The Capital Adequacy indicators of in this study such as Debt- Equity ratio, Advances to Assets ratio and Non-Performing Loan ratio shows significant relationship with the profitability. Government securities to total investment ratio and Capital Adequacy ratio shows insignificant relationship with profitability of the sample banks. It is supported by Alkadmani (2015) it finds that banks profitability is negatively related with CRAR. Ngo (2006) investigated the relationship between bank capital and profitability. It showed no significant relationship between capital adequacy ratio and profitability.
- The average capital adequacy position of the HBL is 11.30% with standard deviation of 0.65%. Similarly the average capital adequacy ratio

of NSBI, NBB, EBL, NCC and MBL is 12.60%, 12.73%, 11.41%, 9.87% and 12.10% with standard deviation of 0.88, 4.87, 0.92, 6.75 and 1.23 respectively. The NBB has 12.73% i.e. highest capital adequacy ratio and NCC bank has lowest capital adequacy ratio i.e. 9.87%.

- It also indicates that there is negative but statistically insignificant relationship of CAR with ROA, ROE and Spread ratio. Based on the finding from regression analysis, CAR indicates that there is negative and statistically insignificant relationship between Capital Adequacy ratio and profitability ratio of the selected Nepalese commercial bank over the ten year periods. It means when the capital adequacy ratio increases the profitability of Nepalese commercial bank decreases. It does not support the hypothesis one (H1). It is supported by Ngo (2006), it investigated the relationship between bank capital and profitability. It showed no significant relationship between capital and profitability.
- It indicates that there is negative but statistically significant relationship between Debt –Equity ratio and ROA. It means when the D-E ratio increases, the ROA decreases and vice versa. It indicates there is negative but statistically insignificant relationship with ROE and Spread ratio. The Debt-Equity ratio indicates the negative and statistically insignificant relationship between D-ER and Profitability ratio. It supports the hypothesis two (H2).
- It indicates that there is negative but statistically significant relationship between AAR and ROA and between AAR and ROE. It means when AAR increases/ decreases, the ROA & ROE increases/ decreases inversely. It indicates that there is negative and statistically insignificant relationship between AAR and Spread & AAR and Profitability. It supports the hypothesis three (H3).
- It indicates that there is positive but statistically insignificant relationship between G-STIR and ROA, between G-STIR and ROE, between G-STIR and ROE. It indicates that there is positive but statistically insignificant relationship between the G-STIR and Profitability ratio. It means that the

profitability of Nepalese Commercial banks is not affected by government securities. It does support hypothesis four (H4).

- It indicates that there is negative but statistically significant relationship between NPLR and ROA. It means as non-performing loan increases the profitability of the selected commercial bank decreases. Thus there is negative relationship between NPLR and Profitability. It indicates the positive but statistically insignificant relationship between ROE and NPLR & between NPLR and Spread. It means there is relationship between NPLR, ROE and Spread. When NPLR ratio increases the ROE and Spread will also increases. It indicates that there is negative and statistically insignificant relationship between the NPLR and Profitability ratio at 0.05 level. It supports the hypothesis five (H5).
- It is observed that the bank has been complying with the requirements of the Capital Adequacy norms of NRB. The bank has been increasing its capital fund to meet the cost of its capital adequacy requirement. The capital adequacy norms are required to safeguard the interest of depositors.
- It is observed that the average debt equity ratio of the sample commercial banks is 9.91% with 3.723% of standard deviation. It means that 9.91times are debt to equity. It means that there is adequate capital fund to the sample commercial banks to safe guard the money of depositors.
- It is observed that the average government securities to total investment ratio is 65.582% with 28.97% of standard deviation. It means banks are investing more than half % of their investment in risk-free securities. They are investing safely and taking medium risk. Nepalese commercial banks are risk averter.

CHAPTER: 5
SUMMARY, CONCLUSION AND IMPLICATION

This chapter includes summary and conclusion for our research study and provides recommendation. This begins with the summary of this research and, and then presents the quality assessment of the study with the conclusion of research. The further research's recommendations will be provided in the end of this chapter.

5.1 Summary

Financial institutions like banks are the replica of modernization of the society and play a vital role in the development of economic growth of the country. Commercial banks furnish necessary capital needed for trade and commerce for mobilizing the dispersed saving of the individuals and institutions. The primary functions of commercial banks are raise and utilization of funds. Commercial banks collect a large amount of deposit from general public capital is one of the most important components for an organization. Actually, no organization can exist without capital. Although the banks are the major source of capital, they also have to raise capital to run business. Especially, the bank capital has significant role to play as the banks have obligations to mass people, its depositors. Thus, the bank should hold an adequate capital secure the interest of depositors.

The main objectives of this were to identify the capital adequacy and its impact on profitability of Nepalese commercial bank. This study had four research questions and specific objectives of establishing how these capital adequacy factors affect the profitability of the commercial banks in Nepal. The first objective of this research study is to access the capital adequacy ratio of the selected commercial banks. Second, is to investigate the impact of capital adequacy indicators (CAR, D-ER, AAR, G-STIR, & NPLR) on the profitability of commercial banks in Nepal. Third, is to analyze the CAR Maintained by commercial bank as per directives of NRB. And lastly to evaluate the risk taking efficiency of the sample commercial banks on the basis of G-STIR ratio.

To achieve the objectives of the research, the research was conducted by collecting data from the six commercial bank annual reports from 2006/2007 to 2015/2016. In order to test the relationship of dependent and independent variables, correlation and regression analysis are done. ROA, ROE and Spread are chosen as the proxies for the profitability ratios and CAR, D-ER, AAR, G-STIR &NPLR are chosen for capital adequacy indicators. After collecting data, Statistics program for data collection (SPSS) is used to test for the research question. Descriptive statistics, correlation analysis and regression analysis is made to analyze the data collected from sample banks annual report and other sources to fulfill the objectives.

The descriptive statistics shows that, Nepalese commercial banks are earning satisfactory profit with average variation of return. The average CAR is 11.67% of the six commercial banks over ten year period, which is higher than regulatory requirement of 10%. It is the evidence of the compliance of NRB directives and Basel III requirement. The Debt-Equity ratio of commercial bank is 9.97%. The AAR of the sample commercial bank is 62.77%, which shows that aggressiveness of bank in lending funds which ultimately results in better profitability. The risk associated with this return ratio is 7.25%, it shows that Nepalese banks are investing is safe securities. The G-STIR ratio is 65.58%, which shows that the commercial banks are investing in risk free assets, they are risk averter. The NPLR ratio is 4.36%, which shows the bank's ability to keep the risk of loan repayment by the debtor. The non- performing loan ratio has high variation in Nepalese banking industry with the risk of 7.94%. It shows low return but high risk in Non-performing loan.

The correlation coefficient shows the positive and negative impact of the dependent and independent variables. The correlation coefficient between CAR, D-ER and NPLR shows that there is negative correlation with ROA. It means higher capital leads to lower ROA. The correlation coefficient between AAR and Government securities to total investment ratio is positively related.

The correlation coefficient of Debt- Equity ratio, CAR and NPLR is negative with ROE, which means that when CAR increases the profitability of the bank decreases. It is so because the capital remains unused which ultimately affect the profitability. But

CAR shows positive relation with risk. The correlation coefficient of government securities to total investment ratio and Assets to advance ratio is positively related with the ROA.

The correlation coefficient between CAR, D-ER and NPLR is negative related with spread. It shows that higher the CAR, D-ER. AAR the lower will be the profit of the commercial banks in Nepal. The correlation coefficient between G-STIR and AAR is positive.

The regression analysis shows relationship with independent and dependent variables both. Under this study three dependent variables are used for profitability indicators i.e. ROA, ROE, Spread. Among three ROA is considered as strong indicator of profitability. It indicates that there is negative but statistically insignificant relationship of CAR with ROA. There is significantly negative relationship between Debt –Equity Ratio and Return on Assets and Advances to assets ratio & return on Assets. It shows positively insignificant relationship between government securities to total investment at significant level 0.005.There is negatively significant relationship between Nonperforming Loan and Return on Assets.

Thus as per the objectives of research study the findings are sufficient to meet the objectives. The average capital Adequacy ratio of the selected commercial bank is 11.6% with standard deviation and coefficient of correlation 2.324% & 0.21 respectively. As per the capital Adequacy framework 2015, all commercial bank shall maintain 10% of minimum capital Adequacy ratio. The sample commercial banks are able to meet the directives of NRB. The average CAR of the ten commercial banks is slightly higher than the set criteria, that means over capitalization also leads to low profitability and low goodwill. Adequate capital is the correct capital. The risk taking capacity of commercial can be shown from the G-STIR. The percentage of investment in government securities is a very important indicator which shows the risk taking ability of a bank. It indicates a bank's strategy as being High Profit – High Risk or Low profit- low risk. Government securities are generally considered as the most safe debt instrument, which as a result carries the lowest return. Since government securities are risk free, the higher the G-Sec to investment ratio, the lower the risk

involved in a bank's investments. On an average all selected commercial bank are investing 69.09% of their total investment to government securities. It means they are having safe investment which will also help to build the customers trust.

5.2 Conclusion

After summarizing the objective of the study, it is the section where conclusion is drawn. With some twenty eight commercial banks operating in Nepal, the market seems over-crowded and the banks are now finding a tough competition among themselves. Since the entry barriers are not so high due to the government liberal policy, this competition is expected to be more intense in the near future, as there is always the possibility of a new player entering this sectors. The commercial banks in Nepal are doing well but they are not giving satisfactory results due to some internal and external factors.

Commercial banks of Nepal are bound by the directives of NRB. The directives No. 1 has set norms on capital adequacy for commercial banks. Every commercial bank has to meet the requirement of capital adequacy as stated by the directives. Capital adequacy is the portion of capital fund in regard of risk-weighted assets that commercial banks hold. Capital adequacy is required to the money of the depositors as the banks are playing with the money they collected from the depositors.

Based on the findings, it can be concluded that Capital adequacy ratio, have insignificant impact on ROA at 0.05 level with negative relationship; which means any increase/decrease on the value of these variables leads to an decrease/increase on profitability performance of Commercial banks (ROA). And Debt-Equity ratio and Advances to Assets ratio has significant impact on ROA at 0.05 level with positive relationship; which means any increase/decrease on the value of variables leads to an increase/decrease on profitability performance of commercial banks. The government securities to total investment have insignificant impact on ROA at 0.05 level with a positive relationship; which means any increase/decrease on the value of these variables leads to an increase/decrease on profitability performance of Commercial banks (ROA). The Non-performing loan has significant impact on ROA at 0.05 level

with a negative relationship; which means any increase/decrease on the value of variables leads to a decrease/increase on the profitability performance of the commercial banks (ROA).

It is observed that the average debt equity ratio of the sample commercial banks is 9.91% with 3.723% of standard deviation. It means that 9.91times are debt to equity i.e. adequate capital fund safe guard the money of depositors. It is observed that the average government securities to total investment ratio is 65.582% with 28.97% of standard deviation. It means banks are investing more than half % of their investment in risk-free securities. They are investing safely and taking medium risk. Nepalese commercial banks are risk averter. The study shows that profitability is negatively related with CAR. The most significant finding in this study which other similar studies has not pointed out is the fact that there are differential effect of the various measures of capital adequacy on the profitability of the banks. This study finds out that non-risk weighted capital adequacy measure i.e. debt-equity is negatively related with the profitability of a bank. These findings are significant in the sense that the risk adjustment helps to account for the uncertainty associated with bank's capital levels. Thus it can be concluded the relationship of independent variables shows very low impact on the profitability of commercial banks of Nepal. It is due to not considering the macro economic variables like GDP, Inflation etc., under this study. These are the powerful indicators than the micro variables which can highly affect the profitability level of commercial banks externally.

5.3 Implications and Recommendations

Based on the findings from the empirical analysis, the study offers the following implications through which they can work to improve banks management practice and to have effective role in increasing profitability of banks. It also includes recommendations.

- This study focused on capital adequacy, debt- equity, advances to total assets, government securities to total investment and nonperforming loan as the independent variables and ROE, ROA and Spread as the dependent variables for evaluating of banks' profitability. But the same study could be developed

by including more independent and other dependent variables to the regression model and increasing the sample size.

- The current study fully employed secondary data obtained from financial reports of banks or through Nepal Rastra Bank which can have potential bias. Thus, future research is recommended to substantial and/or triangulate secondary by primary data.
- This study can be replicated in other industries to know what the capital adequacy indicators that affect the profitability are. Thus this studies can be done in other sectors of the economy such as manufacturing sector to determine the firm specific factors that influence their profitability performance.
- The study also suggests that another study can be done in the banking industry by covering a longer period of time in order to establish trends to determine what factors may influence the bank profitability performance.
- Limited statistical tools and techniques were used to analyze the data and to test the result; therefore other various statistical tools could be used to get more actual result.
- This research could be used for the creditors and depositors, in order to investigate the situation of the commercial banks and for taking the best alternative.
- Capital Adequacy Ratio is insignificant at 0.005 level of significance with the profitability of banks. It has negative impact on the profitability of banks. This indicates that, holding capital beyond the optimal level would inversely affect the efficiency and profitability of the banks. Thus it is recommended that commercial banks in Nepal should manage their capital in optimal level in order maintain balance between profitability and return.
- The debt-Equity ratio is significant at 0.001 level of significance i.e. highly significant. This ratio indicates how much a bank business is financed through debt and through equity. There is significantly negative relationship between profitability and Debt-Equity ratio. This result shows that higher combination of Debt to equity inversely affect the profitability of banks. Thus, it is

recommended that commercial bank in Nepal should manage optimum level of debt and equity ratio in order to gain creditor's and depositor's trust.

- From the results, the Advances to assets ratio show negatively significant relationship with the profitability of Banks. This ratio indicates the aggressiveness of bank in lending funds. The negative relationship between AAR and Profitability means that lending aggressively without analyzing would inversely affect the profitability. Thus it is recommended that banks in Nepal should provide loan to productive sector and profitable sector, basically secured lending must be there to fulfill future losses.
- From the Finding, Government securities to total investment ratio shows positively insignificant relationship with profitability. It is insignificant at 0.05 level of significant. This ratio indicates the risk taking ability of the bank. The negative relationship between G-STIR and profitability, it mean that investing in government securities will lower the risk involved in bank's investment, which ultimately increases the profitability of banks. Thus it is recommended that the banks in Nepal should invest in government securities in order to mitigate the unexpected losses.
- From the finding, Non-performing loan ratio is significant to the profitability of banks. It has negative impact on banks profitability. It indicates that higher level of loan loss provision charged against profit eventually leads to reduce bank's profitability. Based on the conclusion this study suggests that managers of banks should develop effective policies to reduce the level of nonperforming loans. Such policies would help to control and mitigate credit risks hence increase the bank's profitability.

Thus it can be concluded the relationship of independent variables shows very low impact on the profitability of commercial banks of Nepal. It is due to not considering the macro economic variables like GDP, Inflation etc., under this study. These are the powerful indicators than the micro variables.

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APPENDIX-1

Banks	Year	Capital Fund	RWA	Shareholder's equity	Loans And Advances	Total Assets	Government securities	Total Investment	NPLR	Total loan	Net profit	Spread
HBL	2008	3253515981	25624467393	3196488000	19497520482	36175531637	7166534338	13340176785	477231203	20179613169	635869000	19543744169
	2009	3595597909	32628846005	3119881000	24793155269	39320322069	6079376471	8710690646	551309634	25519519081	752834735	24766684346
	2010	3864586563	36049314954	3439205000	27980628760	42717124613	4465300000	8444910165	1024831962	29123754889	508798193	28614956696
	2011	4711243495	44124521593	3995478000	31566976755	46736203884	6407362541	8769938671	1391747983	32968270298	893115143	32075155155
	2012	5283900074	47934896606	4632010000	34965433862	54364427882	9162223297	10031580497	751164917	35968472801	958638260	35009834541
	2013	6414437452	55520649287	5299708000	39723805566	61152965353	9886760481	12992044772	1186189950	41057397533	943698250	40113699283
	2014	7155579476	63729135353	6083411000	45320359244	73589845698	12182974410	19842060285	911514998	46449329430	959107241	45490222189
	2015	8041967083	72183721696	6958900000	53476229873	82801550614	9593051597	17113389432	1783952501	55428007254	1112285716	54315721538
	2016	9815198969	90507189794	8874529000	67745978944	99863008080	9412274304	19306073338	851375948	69100889341	1935907634	67164981707
	2017	12613817027	103796762776	11705197000	77640977000	108502198000	7965617300	17930480198	661807697	77640976817	2178235000	3765168887
NSBI	2008	1722186798	13975708317	1414644812	12113698428	17187446174	3035553586	3088886918	488410069	12746216214	247770758	515594968
	2009	2012037895	16872717250	1712607195	15131747944	30916681796	3306573660	13286181660	315954765	15612050411	316373495	635745411
	2010	2734446607	22099362574	2450554070	17480548194	38047679465	4313317315	16305632815	265133749	17963641179	391742119	826010718
	2011	3163395582	27460689891	2879293150	21365771129	46088233975	5574842520	18911021014	239299186	21718790731	464564999	1008193428
	2012	3899143363	34099797190	3197458863	26142094172	58059707720	4560709650	24463451958	143848188	26463671464	480105493	998684380
	2013	4888637991	39460549043	3798957417	28788146625	64796152822	3665248736	25906119814	108691856	29193903422	771471129	1623535147
	2014	5892028000	44364256000	4535798670	35279583339	61082972355	5976242154	17722395654	91237036	35714255755	922984007	1745043330
	2015	7063688000	50363030000	5645914521	39979173045	59277290453	2556979750	9319697947	74924252	40471869460	1065436141	2047484035
	2016	8169663000	60561647000	6920462451	46975534686	78515345284	5849950000	19291309392	65981814	47542980562	1331881801	2416111412
	2017	11692078000	74408808000	10397900000	63024800000	99828600000	7641908000	21043220481	64195071	63752132089	1538850228	2922078860
NBB	2008			3679700295	5457808829	9391026594	1221800000	1389901504			596487029	430279490
	2009	803938000	12932486	2608387516	6704943114	11964552621	1715829213	2222431713	1807385867	9130505838	2158104141	927336340
	2010	1908252000	14997900	2133590976	7809544311	12531042840	1879218895	2112751395	1454027004	9119092822	1021380061	690840093
	2011	1956082000	17735559	2251174904	8452738384	14004760093	2113799527	2378268973	1841378535	10237455129	-138157849	691454747
	2012	2538199000	19580494	2953966676	10330076346	20169756644	3724943187	3868950001	469380135	10943161402	809470949	491230325

	2013	2858677000	22951462	3573416034	12810147328	21801801490	3002468283	3104021310	174491938	13137562587	778645431	686224313
	2014	3865079000	31571606	4110238338	18640712035	30873612915	2521099665	3020117579	258000286	19051313859	742342538	852526422
	2015	5153594000	42870595	4892223335	25330818192	39483572200	1173753344	4754939170	342556474	25823846471	813976568	1090235760
	2016	6453649000	55139110	6039333849	31975197053	46684253432	1665518608	4499286240	231444566	32528325232	1198297230	1462360158
	2017	10715863000	70981671000	10438618663	37460093000	56919856000	4343037000	7994967000	286332205	37460092611	1200381901	1524609391
EBB	2008	2406056	21039879	1921237580	18339085562	27149342884	4921604744	5059557544	127310368	18836431762	451218613	916047868
	2009	2703870	25619753	2203625055	23884673616	36916848654	5146045773	5948480273	117985232	24469555526	638732757	1173940639
	2010	3257141	30240428	2759137855	27556356032	41382760711	4354353089	5008307589	125560472	28156399843	831765632	1529661178
	2011	3605840	34583547	3113546056	31057691462	46236212262	7145017521	7743928321	108512928	31661842757	931303628	1795150535
	2012	4574751	41525347	4177302887	35910974673	55813129057	6068876365	7863627165	307492696	36616831527	1090564222	2086663733
	2013	5777682	49834045	4827844672	43393187065	65741150457	6988309619	9263858419	276198772	44197762941	1471117291	2757741704
	2014	6328487	56780162	5457147460	47572024207	70445082845	2544736969	6504185769	470404039	48450304601	1549698560	2918814952
	2015	8457023	63451114	6890377025	54482465225	99167293661	8587725397	15106274197	367164030	55363518834	1574352443	2879435285
	2016	10094804	79711762	8514088125	67955107021	113885000000	10361766140	18198739944	264422150	68911543324	1730207025	3228584628
	2017	13063702000	88929577000	11544600000	78284679000	116510445575	8537963000	11964561347	198904860	78284678567	2006247780	3737355791
NCC	2008	732890407	6608974288	2114032898	4417856995	8241334403	1735593743	1900758425	867316105	5281051240	498755331	297885014
	2009	994519564	8983854055	1098920875	6858193749	10590847394	1159939000	1643102922	197068559	7183680660	415461415	406302611
	2010	1490787489	10691492344	1522708041	7994717913	12761074921	1761005909	1947614409	241322382	8387897974	423773386	462078124
	2011	1668808245	11791998515	1744241233	8835193868	13236041214	1427560740	2032533910	352613637	9229807501	220883111	4619582775
	2012	1901134640	15382929336	1922581891	12443108457	18594693009	2934167671	3080778171	351797868	12900601644	177620536	468867933
	2013	2297805464	19540318034	2264167709	15426488066	24890751047	4072795028	4094446116	448744580	16013835667	354827828	812869810
	2014	2562362682	22270800589	2626879676	17266570313	25223846491	3566967220	3588618308	492273630	17873173181	392111964	783543542
	2015	301911175	26754959470	2961066825	20832232058	29939786547	2829230570	2841245658	413227605	21442486576	348254007	803887308
	2016	296107000		3637321000	24891148000	35361055000	371319000	3466177000	224020332	24891148000	703088000	1189441000
	2017	309563540	29789580387	6665632000	51866770489	68925737686	3986267389	4661756580	192346754	24891148000	884260270	756628788
MBL	2008	1279796	10417064	1163346958	8642323375	12410040092	827351580	1443550561	92916079	8964070292	85016002	388677944
	2009	1811869	15298217	1700198096	12516012116	17490782101	477814030	1246158653	302837300	12984459357	123251098	461437242
	2010	1979555	17600705	1773510895	14289792667	20678790827	1896481708	2096792667	347577740	14972534366	73312799	543809864
	2011	1900504	17616652	1782433898	14408748683	19605874101	1238631768	1409555595	614013949	14731040287	8923003	523018770

	2012	2797454	18599024	2648076726	15602700843	24357253387	1448865486	1705424659	455950744	16078008760	38212959	425356594
	2013	2923876	23317869	2796675926	21164910179	30296203445	2127843500	2415155356	614303178	21652440706	148599200	944036981
	2014	3456483	32528811	3235708172	29053242779	40723957096	2970021929	3461203698	525295941	29541409026	454687791	11159835
	2015	4351914904	35544369822	3990975669	34261302841	48753495062	2642196745	4479142514	222179730	34819452293	616372739	1355922403
	2016	5726052792	46342575782	5340202751	43636186147	59455467829	4424383482	6010913137	241496528	44234231644	898222681	1857320426
	2017	9091177000	54053406000	8211005911	51167860081	68925737686	2971900000	6144382453	195834545	51866770489	1302483429	2326992285

APPENDIX - 2

a. Correlation between ROA, ROE, SR and explanatory variables

		ROA	ROE	SR	CAR	D-ER	AAR	G-STIR	NPLR
ROA	Pearson's correlation Sig (2 tailed) N	1 60							
ROE	Pearson's correlation Sig(2 tailed) N	0.842** 0.000 60	1 60						
SR	Pearson's correlation Sig(2 tailed) N	.541** .000 60	0.615** 0.000 60	1 60					
CAR	Pearson's correlation Sig(2 tailed) N	-.038 .774 60	-.036 0.785 60	-0.095 .471 60	1 60				
D-ER	Pearson's correlation Sig(2 tailed) N	-.348** .006 60	-.070 .597 60	-.226 .082 60	.031 .814 60	1 60			
AAR	Pearson's correlation Sig(2 tailed) N	-.171 .190 60	-.185 .157 60	-.146 .264 60	-.028 .834 60	-.141 .282 60	1 60		
G-STIR	Pearson's correlation Sig(2 tailed) N	.050 .704 60	.009 .943 60	.045 .735 60	-.356 .005 60	-.084 .524 60	.365** .004 60	1 60	
NPLR	Pearson's correlation Sig(2 tailed) N	-.224 .086 60	-.094 .473 60	-.240 .065 60	-.064 0.627 60	-0.701** .000 60	-0.144 0.273 60	-0.139 0.291 60	1 60

b. Correlation between mean profitability and Explanatory variables

		PR	CAR	DER	AAR	G-STIR	NPLR
PR	Pearson's correlation Sig(2 tailed) N	1 60					
CAR	Pearson's correlation Sig(2 tailed) N	-.043 .743 60	1 60				
D-ER	Pearson's correlation Sig(2 tailed) N	-.133 .310 60	.031 .814 60	1 60			
AAR	Pearson's correlation Sig(2 tailed) N	-.189 .148 60	-.028 .834 60	-.141 .282 60	1 60		
G-STIR	Pearson's correlation Sig(2 tailed) N	.020 .881 60	.356** .005 60	-.084 .524 60	.365** .004 60	1 60	
NPLR	Pearson's correlation Sig(2 tailed) N	-.133 .310 60	-.064 .627 60	-.701** .000 60	-.144 .273 60	-.139 .29 60	1 60

APPENDIX: 3

1. Model Summary

Model	R	R^2	Adjusted R^2	Standard Error of Estimate
1s	0.437[a]	.191	.116	2.41768

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Dependent Variables: ROA

ANOVA

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Model		Sum of Squares	df	Mean Square	F	Sig(p)
1	Regression	74.697	5	14.939	2.4176	.038[a]
	Residual	315.640	54	5.845		
	Total	390.337	59			

Dependent Variables: ROA

2. Model Summary

Model	R	R^2	Adjusted R^2	Standard Error of Estimate
1	0.224[a]	.050	-.038	12.57244

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Dependent Variables: ROE

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig(p)
Regression	450.245	5	90.049	0.570	0.723[a]
Residual	8535.579	54	158.066		
Total	8985.824	59			

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Dependent Variables: ROE

3. Model Summary

Model	R	R^2	Adjusted R^2	Standard Error of Estimate
1	0.318[a]	.101	.018	1.30613

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Dependent Variables: Spread Ratio

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig(p)
1	Regression	10.337	5	2.067	1.212	0.316[a]
	Residual	92.122	54	1.706		
	Total	102.459	59			

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Dependent Variables: Spread Ratio

4**. Model Summary**

Model	R	R^2	Adjusted R^2	Standard Error of Estimate
1	0.265[a]	0.70	-0.16	5.18124

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Dependent Variables: Mean profitability ratio

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig(p)
1	Regression	109.267	5	21.853	.814	.545a
	Residual	1449.642	54	26.845		
	Total	1558.909	59			

Independent variables: CAR, D-ER, AAR, G-STIR, NPLR

Dependent Variables: Mean Profitability ratio