Chapter I

INTRODUCTION

1.1 Background

Nepal is one of a least developed countries, as well as a landlocked country (among 40 countries). It is a low income (among 53 countries) country, too. Nepal started liberalization in the economy in the early 1990s; with the obvious implications for the development of financial institutions in the country as the pre-1990 economic scenario was primarily under the state dominance. The banking and nonbanking Institutions then were virtually under the public sector, except two commercial banks, Nepal Arab bank Limited)now Nabil Bank) and Nepal Grindlays Bank Limited (Now Standard chartered Bank Nepal Limited), both established in late 1980s.

The size of the economy increased gradually over the years in the 1990s, and doubled in 18 years, that is between 1990 and 2008. Nevertheless, the low level of the economy implies a low level of financial transactions, and thus a limited financial sophistication and the consequent limited financial development. The production activity was greater than the national income in the early 1990s as the ratio of GDP to GNI was greater than unity during 1990-2000, implying an increased foreign investment, especially from India. During 2001-2007, this ratio was less than unity, indicating the falling foreign collaboration in the national production activity. Such a fall could have been the effect of the insurgency taking place since the late 1996.

With the increase in the national economic activities, need of financial institutions to perform the various financial activities were felt. Financial Institutions are those organizations with or without profit motive, established under the act of the host country to perform various financial transactions under the rules and regulations of regulatory body (i.e. Central Bank). The apex of national financial institutions, centre bank, regarding the creation of a friendly environment for a sound development of financial institutions, has hardly been effective because it has ever remained weak in monitoring and supervision. The mushrooming of financial firms – commercial banks, development

banks, and finance companies– is cosmetic rather than of any substance; and their population raises the concern for efficiency and innovation.

The performance of the three dominant commercial banks –the Nepal Bank, the Rastriya Banijya Bank, and the Agriculture Development Bank – has improved in recent years. Other private commercial banks are operating so far. There is no liquidity problem to them. Their operating costs are moderate. However, investing in non-government sectors has been the challenge because of the political uncertainty. The commercial banks are concentrated in urban areas, and the political environment, especially the insurgency, has narrowed down their reach to rural areas. Also, the excess government intervention, especially in the Nepal Bank, has disturbed their smooth functioning.

In the Nonbanking sector, major challenge lies in maintaining financial stability. The effort should be oriented toward developing financial infrastructure, avoiding deceiving competitive policies, strengthening regulation of the NRB supervision, and widening the access of the financial services. At present, most of the nonblank financial institutions are concentrating their services in the Kathmandu Valley. Despite of the government policy to give permission to open nonblank financial institutions at Kathmandu Valley only after opening one branch outside the Valley, the growth of Nonblank financial institutions during the last two decades has not witnessed any remarkable progress in terms of their numbers in rural areas. The overall performance of the nonbanking institutions could be judged by considering the sources and the uses of funds. In Nepal, large scale of development lending is required to support the development of agricultural and industrial sector. The entire nonblanks are aimed to improve socioeconomic status of the rural poor residing in most of the inaccessible areas. The deposit of the nonbanking financial institutions grew significantly over the years even though the country needs to do a lot of homework to set up a strong foundation for making a healthy financial system.

More than a decade has passed since the Basel Committee on Banking Supervision (the Committee) introduced its 1988 Capital Accord (the Accord). The business of banking, risk management practices, supervisory approaches, and financial markets each have undergone significant transformation since then. In June 1999 the Committee released a proposal to replace the 1988 Accord with a more risk-sensitive framework, on which

more than 200 comments were received. Reflecting those comments and the results of ongoing dialogue with the industry and supervisors worldwide, the Committee is now presenting a more concrete proposal, seeking comments from interested parties by 31 May 2001.The Committee has expected the final version of the new Accord to be published around the end of 2001 and to be implemented in 2004.

The major impetus for the 1988 Basel Capital Accord was the concern of the Governors of the G10 central banks that the capital of the world's major banks had become dangerously low after persistent erosion through competition. Capital is necessary for banks as a cushion against losses and it provides an incentive for the owners of the business to manage it in a prudent manner. The 1988 Accord requires internationally active banks in the G10 countries to hold capital equal to at least 8% of a basket of assets measured in different ways according to their riskiness. The definition of capital is set (broadly) in two tiers, Tier 1 being shareholders' equity and retained earnings and Tier 2 being additional internal and external resources available to the bank. The bank has to hold at least half of its measured capital in Tier 1 form. A portfolio approach is taken to the measure of risk, with assets classified into four buckets (0%, 20%, 50% and 100%) according to the debtor category. This means that some assets (essentially bank holdings of government assets such as Treasury Bills and bonds) have no capital requirement, while claims on banks have a 20% weight, which translates into a capital charge of 1.6% of the value of the claim. However, virtually all claims on the non-bank private sector receive the standard 8% capital requirement. There is also a scale of charges for off-balance sheet exposures through guarantees, commitments, forward claims, etc. This is the only complex section of the 1988 Accord and requires a two-step approach whereby banks convert their off-balance-sheet positions into a credit equivalent amount through a scale of conversion factors, which then are weighted according to the counterparty's risk weighting. The 1988 Accord has been supplemented a number of times, with most changes dealing with the treatment of off-balance-sheet activities. A significant amendment was enacted in 1996, when the Committee introduced a measure whereby trading positions in bonds, equities, foreign exchange and commodities were removed from the credit risk framework and given explicit capital charges related to the bank's open position in each instrument.

The two principal purposes of the Accord were to ensure an adequate level of capital in the international banking system and to create a “more level playing field” in competitive terms so that

banks could no longer build business volume without adequate capital backing. These two objectives have been achieved. The merits of the Accord were widely recognized and during the 1990s the Accord became an accepted world standard, with well over 100 countries applying the Basel framework to their banking system. However, there also have been some less positive features. The regulatory capital requirement has been in conflict with increasingly sophisticated internal measures of economic capital. The simple bucket 12 approach with a flat 8% charge for claims on the private sector has given banks an incentive to move high quality assets off the balance sheet, thus reducing the average quality of bank loan portfolios. In addition, the 1988 Accord did not sufficiently recognize credit risk mitigation techniques, such as collateral and guarantees. These are the principal reasons why the Basel Committee decided to propose a more risk-sensitive framework in June 1999.

The initial consultative proposal had a strong conceptual content and was deliberately rather vague on some details in order to solicit comment at a relatively early stage of the Basel Committee’s thinking. It contained three fundamental innovations, each designed to introduce greater risk sensitivity into the Accord. One was to supplement the current quantitative standard with two additional “Pillars” dealing with supervisory review and market discipline. These were intended to reduce the stress on the quantitative Pillar 1 by providing a more balanced approach to the capital assessment process. The second innovation was that banks with advanced risk management capabilities would be permitted to use their own internal systems for evaluating credit risk, known as “internal ratings”, instead of standardized risk weights for each class of asset. The third principal innovation was to allow banks to use the grading provided by approved external credit assessment institutions (in most cases private rating agencies) to classify their sovereign claims into five risk buckets and their claims on corporate and banks into three risk

buckets. In addition, there were a number of other proposals to refine the risk weightings and introduce a capital charge for other risks. The basic definition of capital stayed the same. The comments on the June 1999 paper were numerous and can be said to reflect the important impact the 1988 Accord has had. Nearly all commentators welcomed the intention to refine the Accord and supported the three Pillar approach, but there were many comments on the details of the proposal. Intensive work has taken place in the eighteen months since June 1999. Much of this has leveraged off work undertaken in parallel with industry representatives, whose cooperation has been greatly appreciated by the Basel Committee and its Secretariat.

Op on various research and study a comprehensive International Convergence of Capital Measurement and Capital Standards was developed in 2006 providing broad vision and wisely accepted standards for capital measurement of financial institutions. In developing the revised Framework, the Committee has sought to arrive at significantly more risk-sensitive capital requirements that are conceptually sound and at the same time pay due regard to particular features of the present supervisory and accounting systems in individual member countries. It believes that this objective has been achieved. The Committee is also retaining key elements of the 1988 capital adequacy framework, including the general requirement for banks to hold total capital equivalent to at least 8% of their risk-weighted assets; the basic structure of the 1996 Market Risk Amendment regarding the treatment of market risk; and the definition of eligible capital.

In July 2005, the Committee published additional guidance in the document The Application of Basel II to Trading Activities and the Treatment of Double Default Effects. That guidance was developed jointly with the International Organization of Securities Commissions (IOSCO) and demonstrates the capacity of the revised Framework to evolve with time. It refined the treatments of counterparty credit risk, double default effects, short term maturity adjustment and failed transactions, and improved the trading book regime.

1.2 Introduction

This report is based on the international capital standards for financial institutions prescribed by Basel Committee report. Financial institutions are broadly divided into banking

institutions and not-bank institutions performing differentiated functions. So far as the concern of the financial activities with the capital adequacy of the financial institutions, various international accords and rules were

enacted, however, its impact in the economy of the underdeveloped country like Nepal is still unsatisfactory. Large amount of money that is needed at the time of establishment of financial institution is the capital for such institutions. There are broadly two sets of reasons often given for capital regulation in financial institutions broadly and banks in particular. One is the protection of consumers from exploitation by opaque and better-informed financial institutions; for banking the objective would be depositor protection. The second is systemic risk. Banks are often thought to be a source of systemic risk because of their central role in the payments system and in the allocation of financial resources, combined with the fragility of their financial structure. Banks are highly leveraged with relatively short-term liabilities, typically in the form of deposits, and relatively illiquid assets, usually loans to firms or households. In that sense banks are said to be “special” and hence subject to special regulatory oversight.

This study attempts to examine the overall effects of the capital adequacy of the financial institutions for effective operations. It provides an overview of the regulations enacted for the guidance of the activities of financial institutions by discussing the current international capital regulations for the financial institutions and its implementation in the context of Nepal.

The Basel Committee on Banking Supervision is a committee of banking supervisory authorities that was established by the central bank governors of the Group of Ten countries in 1975. It consists of senior representatives of bank supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States. It usually meets at the Bank for International Settlements in Basel, where its permanent Secretariat is located. Basel II is the only internationally accepted capital regulations for the financial institutions through out the world which provides the platform for the rules and regulations prepared by the central bank of any country to govern the financial activities of the financial institutions of same country. The Basel committee works over recent years to secure international convergence on revisions to supervisory regulations governing the capital adequacy of internationally active banks. The Basel Committee on Banking Supervision is a committee of

banking supervisory authorities that was established by the central bank governors of the Group of Ten countries in 1975. It consists of senior representatives of bank supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States. It usually meets at the Bank for International Settlements in Basel, where its permanent Secretariat is located. The publication of the Committee's first round of proposals for revising the capital adequacy framework in June 1999, an extensive consultative process was set in train in all member countries and the proposals were also circulated to supervisory authorities worldwide. The Committee subsequently released additional proposals for consultation in January 2001 and April 2003 and furthermore conducted three quantitative impact studies related to its proposals. As a result of these efforts, many valuable improvements have been made to the original proposals. It sets out the details of the agreed Framework for measuring capital adequacy and the minimum standard to be achieved which the national supervisory authorities represented on the Committee will propose for adoption in their respective countries. This Framework and the standard it contains have been endorsed by the Central Bank Governors and Heads of Banking Supervision of the Group of Ten countries. Capital adequacy framework provided by the Basel committee, in spite of being a internally accepted capital standards for the banking institutions, lacking effective implementation in the least developed country like Nepal. Success of any financial institution is to be assessed with the proper arrangement and use of the capital it use. With the simple amendment in the international standard for capital, Central Bank, if it feels to do so, can alter the regulation towards the financial institutions of the host country. Moreover, Central Bank imposes various regulations to the financial institutions in favor of the betterment of national economy.

This Framework will be applied on a consolidated basis to internationally active banks. This is the best means to preserve the integrity of capital in banks with subsidiaries by eliminating double gearing. The Framework will also apply to all internationally active banks at every tier within a banking group. Banking groups are groups that engage predominantly in banking activities and, in some countries, a banking group may be registered as a bank. Further, as one of the principal objectives of supervision is the protection of depositors, it is essential to ensure that capital recognised in capital

adequacy measures is readily available for those depositors. Accordingly, supervisors should test that individual banks are adequately capitalised on a stand-alone basis.

1.3 Statement of the Problem

Complex financial system can be attained only by the combination of effective bank-level management, market discipline, and supervision. The Basel Accord has focused on the total amount of bank capital, which is vital in reducing the risk of bank insolvency and the potential cost of a bank's failure for depositors. Although the new framework's focus is primarily on internationally active banks, its underlying principles are intended to be suitable for application to banks of varying levels of complexity and sophistication. For the success of the financial institutions, adequate capital with the reasonable cost according to the risk exposure is essential which can assure the safety of the funds of the depositors and smooth operation of the organization.

In Nepal various financial organizations lack the investment and analysis of the capital adequacy of the firm to ensure the efficient utilization of the capital. Among the various reasons of the unsuccessful financial institutions of Nepal, Inefficient utilization of the capital is one of the major issues to cause such unsuccessfulness. So, disclosure of efficient capital measurement tool in Nepalese perspective which can lead the common thought of the exports of the financial sector is the demand of the Nepalese economy which is just practicing the republic system with liberalized and global thought. Moreover, Basel-II capital standard is under the implementation phase in Nepalese banking economy effective from 2065 B.S. however, it is to be observed that whether they are being able to maintain risk weighted capital ratio as prescribed by NRB based on Basel-II. So, this study also focuses on exploring the current phenomenon of Nepalese commercial banks in terms of Basel-II implementation.

Among so many factors affecting the efficient operation of the financial institutions, capital adequacy analysis and response to the various risks associated with the varying nature of capital are also regarded as the important factors to be considered. Considering the same facts, the research paper is expected to answer the following questions regarding the issue of Capital Regulation in Nepalese financial institutions.

- What are the major issues of capital regulation in Nepal?
- What are the risks associated with the capital adequacy of the financial institutions?
- What are the NRB regulations related to capital standard of the financial institutions of Nepal?
- What may be the role of government as well as higher lever executives of the financial institutions to ensure the safe regulatory framework?

1.4 Objective of the Study

The basic objective of the study is to explore the overall framework of the capital regulations that are presently followed by International as well as National financial institutions basically commercial banks. Moreover, this study focuses on disclosure of unanimous facts and difficulties of Nepalese financial institutions and banks to follow international capital standard. Including the above mentioned objectives, the study would also consider the following specific objectives;

- To disclose the NRB regulations and directives related to capital standard of the Nepalese commercial banks.
- To explore the relevancy of Basel accord in Nepalese perspective.
- To analyze the risks associated with the capital adequacy of the selected commercial banks.
- To identify the difficulties in Maintaining the minimum capital standard of commercial bank in the context of Nepal.

1.5 Research Methodology

As per the objective of the purposed research, it is an exploratory as well as descriptive type of research, and thus, Main focus will be given to explore the various regulatory activities of Nepal followed by statistical analysis of capital maintained by selected commercial banks.

The commercial banks of Nepal are regarded as the population of the research and few financial institutions including commercial banks of the Kathmandu will be taken as sample followed by random sampling procedure to select the sample size.

So far as concern with the methods and techniques to collect and analyze the data, for the accuracy of the data, focus will be given for primary data collection techniques. Since the study requires crud information about the Assets and liabilities of institution, personal visit of respondent (banks) to collect latest information will be focused. Available information on internet will also be used as the primary data. However, if ever it becomes possible to collect the relevant and recent data from the secondary source, they are also considered as the important source of secondary data. Diagrammatical representation, tabulation, and various statistical techniques prescribed by NRB to calculate the various risks associated with the capital will be used to calculate the minimum capital standard of selected commercial banks.

1.6 Significance of the Study

For the effective and smooth operation of the financial system of the country, every financial institution needed to be regulated by the authorized body of the country backed by various suggestions prescribed by international regulatory bodies. Among the various regulation, capital regulation to them seems very important in terms of managing the liquidity as well as to minimize the various risks associated with the investment of the financial institutions. These risks are commonly known as credit risk, market risk and operational risk. Capital should be managed in accordance with the security and provision required for all types of risks mentioned above so that protection to the depositors and appropriate return on investment can be ensured.

Identification and exploration of factors associated with the capital standards will obviously help to spread out the seed of idea about the management of the capital in financial institutions. Very few researches have been made on the area because of low awareness towards capital standards, which has not been able to fulfill the need of current Nepalese financial system where NRB has already prescribed to maintain the capital standard in parlor basis. It seems very difficult to be clear about the capital regulation of financial institutions as being new and contemporary issue. These all factors are the rays which reflect the significance of the purposed study.

1.7 Limitation of the Study

No one research could be perfect in its study. It is the continuous process of upgrading the knowledge with present scenario. Beside the above mentioned procedures and strengths the study will be limited due to following reasons.

1) **Data collection techniques:** However the research topic needs primary data, some secondary data from relevant sources will also be used in research analysis but, attempts will be made to collect the most recent one.
2) **Weight of the Study:** the study is short and complex too, however, it will be lemmatized as the small weight which doesn't well motivate the researchers to complete the research report in a full-forced manner.
3) **Area of the research:** Since there are so many financial institutions with differentiation in capital, mission, geography, objective etc., only few Commercial banks of a particular sector will be taken as sample which may increase the sampling error and thus subject to limitation.

1.8 Chapter Plan

Chapter – I: Introduction

It introduces overall statement of study related to the international capital structure standards for financial institutions prescribed by Basel Committee report alongwith brief profile of BOK, NABIL and SBL.

Chapter – II: Review of Literature

This section reviews the available literature, related Books, journals, articles and previous unpublished master degree dissertations related to the international capital structure standards for financial institutions prescribed by Basel Committee report.

Chapter – III: Research Methodology

This section refers to the various sequential steps to be adopted by the researcher in studying a problem with certain objectives in view including research design, population and sample, data collection procedures, sources of data, data analysis techniques etc.

Chapter – IV: Presentation and Analysis of Data

This section discusses the attempt that has been made to show the various dimensions of capital adequacy framework of selected commercial Banks individually and also shows the various risk associated with assets of commercial Banks, their composition, required capital for each types of risks etc.

Chapter – V: Summary, Conclusions and Recommendations

This section describes the overall summary of the research work, the conclusions and the recommendations.

Chapter-II

REVIEW OF LITRATURE

Financial institutions ability to fulfill its Mission and objectives largely depends up on the capital structure of these institution firm. Large amount of money that is needed at the time of establishment of these institution, as the starting capital, is normally assumed as the capital. In fact, sound banking and other financial institutions improve resource allocation and thus stimulate economic growth. Also, prudent regulatory mechanisms promote healthy financial development.

The one and only international capital regulatory body which provides the overall framework for the capital requirement of the financial institutions is Basel Committee consisting of senior representatives of bank supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, Netherlands, Spain, Sweden, Switzerland, United Kingdom, and the United States. In 1988, Basel committee decided to develop capital measurement system commonly referred to as the Basel Capital Accord. This system provided with the implementation of a credit risk measurement framework with the minimum capital standard of 8% by the end of 1992, which is also known as 'Basel-I' since 1988. This framework has been progressively introduced not only to the member countries, but virtually in all other countries.

Basel-II is also the capital adequacy related standard framed by Basel committee. After the successful implementation of first accord in 100 countries, Basel committee in banking supervision reached on agreement upon various issues for the promotion of best and uniform banking practice as well as setting standards and guidelines for supervisory functions (Basel Committee on Banking Supervision July 1998). For the industry group and supervisory authorities, who are not the member of the committee, the revised framework was issued on 26 June 2004. Later it was again revised on November 2005. Basel-II was introduced with the aim to replace the Basel-I accord with the more risk sensitive capital framework. It has recommended the major revision in the international capital standard of the banking institutions.

Basel-II has been designed to provide options for banks and banking systems world-wide. Basel II attempts to provide the overall capital framework for three types of the risk

associated with the banking practices. For Credit, Operational and Market risk; there are different approaches of risk sensitivity to allow banks and supervisors to select the approaches of their choice which they thing most appropriate for stage of their banking practice and financial market infrastructure.

It was designed to capture the risk through its three pillars; **Minimum capital requirement, Supervisory review process and marked discipline**. For the purpose of developing capital-risk framework, Basel-II divides the total capital into two parts; Tier-I capital and Tier-II capital. Capital that is fully paid up and having no fixed servicing and dividend costs attached to it and freely available to absorb losses is qualified as Tier-I capital. This capital also needs to have very high degree of permanency and also subject to special deductions on it. Likewise, Tier-II capital consist of general loan loss provision, revaluation reserve, exchange equalization reserve, investment adjustment reserves, other reserves, redeemable preference shares and subordinated term debts. It has some limitations and restrictions too. So summation of tier-I and tier-II capital equals the total capital of the financial institutions specially banks.

According to Basel-II accord, Tier-I capital should not be less than 6% of the total risk weighted exposure and total capital (Tier I + Tier II) should not be less than 10% of the total risk weighted exposure, where risk weighted exposure is the maximum amount of risk attached with the portfolio of assets. In other words total risk exposure is the sum of credit risk, market risk and operational risk. However the Basel Accord has prescribed the international standards for the capital regulation of financial institutions, Nepalese financial institutions seem to be less caring about the international standards.

In the context of Nepal, due to very low articles and publications published in this matter, NRB directives for the banking supervision (july-2008) and Basel-II report are assumed to be more valuable literature which illustrate and prescribes important rules to be followed by commercial banks of Nepal in terms of their capital adequacy. It has suggested various methods to calculate risk exposure and risk weighted assets as well as minimum capital requirements for the institution based on their risk exposure.

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 to their riskiness and assigning risk weights to assets. Later Basel committee again amended some of the features of framework and introduced some new techniques which are popularly known as Basel II which was issued on June-26 2004, later it 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. This 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 wanted to incorporate many elements that help promote a sound and efficient financial system over and above the setting of minimum capital requirements.

The Basel Committees on Banking Supervision's (BCBS) recommendations on capital accord are important guiding framework for the regulatory capital requirement to the banking industry all over the world and Nepal is no exception. Nepal Rastra Bank (NRB) has developed and enforced capital adequacy requirement based on international practices with appropriate level of customization based on domestic state of market developments(NRB, Capital Adequacy Framework 2008). The existing regulatory capital is largely based on the Basel committee's 1988 recommendations. With a view of adopting the international best practices, NRB has already expressed its intention to adopt the Basel II framework, albeit in a simplified form. In line with the international development and thorough discussion with the stakeholders, evaluation and assessment of impact studies at various phases, this framework has been drafted. This framework provides the guidelines for the implementation of Basel II framework in Nepal. Reminiscent of the International convergence of capital measurements and capital standards, this framework also builds around three mutually reinforcing pillars, viz. minimum capital requirements, supervisory review process and disclosure requirements.

According to the capital adequacy framework 2007 (updated on July 2008) the board of directors of the each bank shall be responsible for establishing and maintaining, at all times, an adequate level of capital. The capital standards herein are the minimum that is acceptable

for banks that are fundamentally sound, well managed, and which have no material financial or operational weaknesses. Thus, the banks are generally expected to operate above the limits prescribed by this framework.

This framework shall be applicable to all "A" Class financial institutions licensed to conduct banking business in Nepal under the Bank and Financial Institution Act, 2063 on a stand alone basis as well as on consolidated basis(NRB Directives for Accord Implementation, July 2008), where the bank is member of a consolidated banking group. For the purpose of capital adequacy, the consolidated bank means a group of all financial entities, parent or holding company of which a bank is a subsidiary. If any majority owned subsidiaries institutions are not consolidated for capital purposes, all equity and other regulatory capital investments in those entities attributable to the group will be deducted and the assets and liabilities, as well as third party capital investments in the subsidiary will be removed from the bank's balance sheet for capital adequacy purposes.

The major innovation of the proposed Basel II is the introduction of distinct options for the calculation of three types risk. For credit, operational and market risk, there are different approaches of increasing risk sensitivity to allow banks and supervisors to select the approach of approaches that they believe are most appropriate to the stage of development of banks operations and of the financial market infrastructure.

2.1 Eligible Capital and Their Components:

Qualifying capital in the context of financial institutions normally banks consist 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-2004). For the purpose of calculating minimum capital requirements of the banks, first of all, all capital components should be segregated into these two parts before calculating various risks associated with the capital components which affect the calculation of capital.

2.1.1 Core Capital (Tier-1)

The key element of capital on which the main emphasis should be placed is the Tier 1 (core) capital, which comprises of equity capital and disclosed reserves. This key element of capital is the basis on which most market judgments of capital adequacy are made; and it has a crucial bearing on profit margins and a bank's ability to compete.

The BCBS has therefore concluded that capital, for supervisory purposes, should be defined in two tiers in a way, which will 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 from post-tax retained earnings. In order to rank as Tier 1, capital must be fully paid up, have no fixed servicing or dividend costs attached to it and be freely available to absorb losses ahead of general creditors. Capital also needs to have a very high degree of permanence if it is to be treated as Tier 1.

2.1.1.1 Elements of Tier-1 Capital

a) Paid up Equity Capital.

b) Irredeemable non-cumulative preference shares which are fully paid-up and with the capacity to absorb unexpected losses. These instruments should not contain any clauses whatsoever, which permit redemption by the holder or issuer upon fulfillment of certain condition. Banks should obtain prior approval of NRB for this kind of instruments to qualify as a component of core capital.

c) Eligible Capital Funds

d) Share Premium

e) Proposed Bonus Equity Share

f) Statutory General Reserve.

g) Retained Earnings available for distribution to shareholders.

h) Un-audited current year cumulative profit, after all provisions including staff bonus and taxes. Where such provisions are not made, this amount shall not qualify as Tier 1 capital.

i) Capital Redemption Reserves created in lieu of redeemable instruments.

j) Capital Adjustment reserves created in respect of increasing the capital base of the bank.

k) Dividend Equalization Reserves.

l) Any other type of reserves notified by NRB from time to time for inclusion in Tier 1 capital

2.1.1.2 Eligible deductions from Core Capital (Tier-1)

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 claims that have been deducted from core capital shall be exempt from risk weights for the measurement of credit risk.

a) Book value of goodwill.

b) Miscellaneous expenditure to the extent not written off. e.g. VRS expense, preliminary expense, share issue expense, deferred revenue expenditure, etc. However, software expenditure or software development expenditure, research and development expenditure, patents, copyrights, trademarks and lease hold developments booked as deferred revenue expenditure are subject to 100% risk weight and may not be deducted from Tier 1 capital.

c) Investment in equity of financial institutions licensed by Nepal Rastra Bank.

d) All Investments in equity of institutions with financial interest.

e) Investments in equity of institutions in excess of the prescribed limits.

f) Investments arising out of underwriting commitments that have not been disposed within a year from the date of commitment.

g) Reciprocal crossholdings of bank capital artificially designed to inflate the capital position of the bank.

h) Any other items as stipulated by Nepal Rastra Bank, from time to time.

2.1.2 Supplementary Capital (Tier-2)

The Supplementary (Tier 2) Capital includes reserves which, though unpublished, 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 adjustments of eligible deductions from same (shown in 2.1.1.2) 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.

2.1.2.1 Elements of Tier-2 Capital

a) Cumulative and/or redeemable preference shares with maturity of five years and above.

b) Subordinated term debt fully paid up with a maturity of more than 5 years; unsecured and subordinated to the claim of other creditors, free of restrictive clauses and not redeemable before maturity. Since, subordinated term debt is not normally available to participate in the losses; the amount eligible for inclusion in the capital adequacy calculations is limited to 50% of core capital. Moreover, to reflect the diminishing value of these instruments as a continuing source of strength, a cumulative discount (amortization) factor of 20% per annum shall be applied for capital adequacy computations, during the last 5 years to maturity. The banks should obtain written approval of NRB for including any subordinated debt instruments (like Debenture/Bonds) in supplementary (Tier-2) capital.

c) Hybrid capital instruments. Those instruments which combine certain characteristics of debt and certain characteristics of equity. Each such instrument has a particular feature, which can be considered to affect its quality as capital. Where these instruments have close similarities to equity, in particular when they are able to support losses on an ongoing basis without triggering liquidation, they may be included in Tier 2 capital with approval from Nepal Rastra Bank.

d) General loan loss provision limited to a maximum of 1.25% of total Risk Weighted Exposures. General loan loss provision refers to the provisions created in respect of Pass Loans only and it does not include provisions of rescheduled/restructured and classified loans. The additional loan loss provisions created in respect of Personal Guarantee loans and loans in excess of Single Obligor Limits are specific provisions and hence cannot be included under this category. Such provisions however can be deducted from the gross exposures while calculating risk weighted exposures for credit risk. However, provisions created in excess of the regulatory requirements or provisions which is not attributable to identifiable losses in any specific loans shall be allowed to be included in the General Loan Loss Provision and shall be eligible for Tier II capital subject to a maximum of 1.25% of total risk weighted exposures.

e) Exchange equalization reserves created by banks as a cushion for unexpected losses arising out of adverse movements in foreign currencies.

f) Investment adjustment reserves created as a cushion for adverse price movements in bank's investments falling under "Available for Sale" category.

g) Revaluation reserves often serve as a cushion against unexpected losses but may not be fully available to absorb unexpected losses due to the subsequent deterioration in market values and tax consequences of revaluation. Therefore, 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.

h) Any other type of reserves notified by NRB from time to time for inclusion in 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.

2.2 Capital Funds

The capital fund is the summation of Tier 1 and Tier 2 capital. The sum total of the different components of the tier 2 capitals will be limited to the sum total of the various components of the Tier 1 capital net of deductions as specified in 2.4. 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 (Report of Accord Implementation Group NRB, 2008 : 8).

2.3 Minimum Capital Requirements

Unless a higher minimum ratio has been set by Nepal Rastra Bank for an individual bank through a review process, every bank shall maintain at all times, the capital requirement set out below:

a) A Tier 1 (core) capital of not less than 6 per cent of total risk weighted exposure;

b) A total capital fund of not less than 10 per cent of its total risk weighted exposure.

The Capital Adequacy Ratio (CAR) is calculated by dividing eligible regulatory capital by total risk weighted exposure. The total risk weighted exposure shall comprise of risk weights calculated in respect of bank's credit, operational and market risks. The there are various methodologies available to calculate the Risk weighted assets valuation. Available

methodologies to calculate Risk Weighted Exposure (RWE) for each of these risk categories are tabulated below.

S.N.	Credit Risk	Operational Risk	Market Risk
1	Standardized approach	Basic Indicator Approach	Standardized Approach
2	Foundation IRB Approach	Standardized Approach	Internal Model Approach
3	Advanced IRB Approach	Advanced Measurement Approach(AMA)	

2.4 Credit Risk

Risk that a borrower will not pay a loan as called for in the original loan agreement, and may eventually Default on the obligation. Credit risk is one of the primary risks in bank lending, in addition to Interest Rate Risk (Banking dictionary)

Most lenders employ their own models (Credit Scorecards) to rank potential and existing customers according to risk, and then apply appropriate strategies. With products such as unsecured personal loans or mortgages, lenders charge a higher price for higher risk customers and vice versa. With revolving products such as credit cards and overdrafts, risk is controlled through careful setting of credit limits. Some products also require security, most commonly in the form of property (Bluhm, et al.)

Consumers may face credit risk in a direct form as depositors at banks or as investors/lenders. They may also face credit risk when entering into standard commercial transactions by providing a deposit to their counterparty, e.g. for a large purchase or a real estate rental. Employees of any firm also depend on the firm's ability to pay wages, and are exposed to the credit risk of their employer.

Credit risk is the major risk that banks are exposed to during the normal course of lending and credit underwriting. Within Basel II, there are two approaches for credit risk measurement: the standardized approach and the internal ratings based (IRB) approach. Due to various inherent constraints of the Nepalese banking system and lack of international standard rating agencies, the standardized approach in its simplified form, Simplified Standardized Approach (SSA), has been prescribed in the initial phase (Report to commercial banks by NRB-2008).

2.4.1 Simplified Standardized Approach (SSA):

In comparison to Basel I, SSA aligns regulatory capital requirements more closely with the key elements of banking risk by introducing a wider differentiation of risk weights and a wider recognition of credit risk mitigation techniques. The advantage of implementing this approach is twofold. This approach allows transitional advantage for countries like us by avoiding excessive complexities associated with the advanced approaches of Basel II while at the same time it will produce capital ratios more in line with the actual economic risks that banks are facing, compared to the present Accord(Capital Adequacy Framework NRB 2007).

Under this approach commercial banks are required to assign a risk weight to their balance sheet and off-balance sheet exposures. These risk weights are based on a fixed weight that is broadly aligned with the likelihood of a counterparty default. As a general rule, the claims that have already been deducted from the core capital shall be exempt from risk weights for the measurement of credit risk.

Claims on foreign government, their central banks as well as foreign corporates shall be generally risk-weighed on the basis of the consensus country risk scores of 3export credit agencies (ECA)(http:\\www.oecd.org). Wherever there are claims relating to unrated countries, they shall generally be risk weighed at 100 percent. However, these claims shall be subject to supervisory review and higher risk weight shall be assigned where the review process deems appropriate.

All kinds of claims including loans & advances as well as investments shall be risk weighed net of specific provisions. Generally provision related to any receivable or investment is not defined as general or specific. In such situation, the total provision against any claim/exposure (other than the loans and advances) shall be considered as specific provision. However, provisions eligible for the supplementary capital shall not be allowed for netting while calculating risk weighted exposures.

In case of loans, advances and bills purchased the provisions created in lieu of Pass loans only are classified as General loan loss provision. All other provisions are components of specific loan loss provision. Hence, general loan loss provision doesn't comprise provisions created in respect of rescheduled/restructured and non performing loans. It also doesn't include additional provisions created for personal guarantee loans or lending in excess of Single Obligor Limits. However, provisions created in excess of the regulatory requirements and not attributable to identifiable losses in any specific loans shall be allowed to be included in the General Loan Loss Provision.

In order to be consistent with the Basel-II framework, the credit risk for the regulatory capital purpose shall be computed by segregating the exposure in the following 11 categories.

a) Claims on government & central bank

b) Claims on other official entities

c) Claims on banks

d) Claims on corporate & securities firms

e) Claims on regulatory retail portfolio

f) Claims secured by residential properties

g) Claims secured by commercial real state

h) Past due claims

i) High risk claims

j) Other assets

k) Off balance sheet items

2.4.1.1 Risk Measurement and Risk Weight Under SSA

a) Claims on Government and Central Bank.

- All claims on government of Nepal and Nepal Rastra Bank shall e risk weighted at 0%.
- Claims on foreign government and their central banks shall be risk-weighted on the basis of the consensus country risk scores as follows:

ECA risk scores	0-1	2	3	4-6	7
Risk Weights	0%	20%	50%	100%	15%

b) Claims on other official entities:

- Claims on the Bank for International Settlements, the International Monetary Fund, the European Central Bank and the European Community will receive a 0% risk weight.
- Following Multilateral Development Banks (MDBs) will be eligible for a 0% risk weight.
- World Bank Group, comprised of the international Bank for Reconstruction and Development (IBRD) and the international Finance Corporation (IFC),

- Asian Development Bank (ADB),
- African Development Bank (FDB),
- European Bank for Reconstruction and Development (EBRD),
- Inter-American Development Bank (IADB),
- European Investment Bank (EIB),
- European Investment Fund (EIF),
- Nordic Investment Bank (NIB),
- Caribbean Development Bank (CDB),
- Islamic Development Bank (IDB), and
- Council of Europe Development Bank (CEDB)
- The standard risk weight or claims on other Multinational Development Banks will be 100%.
- Claims on public sector entity (PSEs) will be risk-weighted as per the ECA country risk scores.

ECA risk scores	0-1	2	3-6	7
Risk Weights	20%	50%	100%	150%

c) Claims On Banks:

- All claims, irrespective of currency, excluding investment in equity shares and other instruments eligible for capital funds, on domestic banks/financial institutions that fulfill Capital Adequacy Requirements will be risk weighed at 20% while for the rest, it will be 100%.

  Banks should make use of the publicly available information of the immediately preceding quarter of the respective banks to gauge their status on capital adequacy.
- Claims (Lending against securities (such as equities and bonds) whether listed or not, are specifically excluded from this category. Likewise personal loans and credit card receivables are excluded from this category) on a foreign bank excluding investment in equity shares and other instruments eligible for capital funds shall be risk weighed as per the ECA Country risk score subject to the floor of 20%. The primary basis for applying the ECA Country Risk score shall be the country of incorporation of the bank. Where the bank is a branch office, the ECA score of the country where the corporate office is located shall be used while in

the case of a subsidiary the basis shall be the country where the subsidiary is incorporated.

ECA risk scores	0-1	2	3 to 6	7
Risk Weights	20%	50%	100%	150%

However, the claims on foreign banks incorporated in the SAARC region and which operate with a buffer of 1% above their respective regulatory minimum capital requirements may be risk weighed at 20%. The banks shall be responsible to submit the latest capital adequacy position of such banks and demonstrate that they fulfill the eligibility requirements. Such capital adequacy position submitted by the banks should not be prior to more than one financial year. Moreover, such claims shall be subject to a supervisory review and supervisors may require the bank to risk weigh the claims on ECA country risk scores where the review process deems necessary.

d) Claims on corporate and security Firm:

- The risk weight for claims on domestic corporates, including claims on insurance companies and securities firm will be 100%. The domestic corporates includes all firms and companies incorporated in Nepal as per prevailing Acts and regulations.
- The claims on foreign corporate shall be risk weighed as per the ECA Country risk score subject to the floor of 20% as follows:

ECA risk scores	0-1	2	3	4to6	7
Risk Weights	20%	50%	100%	100%	150%

e) Claims On regulatory retail portfolio:

- Claims that qualify all criteria listed below may be considered as regulatory retail portfolio and risk weighed at 75%, except for past due loans. Such claims however, have to be in strict compliance with the Product paper developed by the bank and approved by their respective board of directors. Banks should submit a copy of these papers to NRB for notification.

Criteria:

- *Orientation criteria*: - exposure is to an individual person or persons or to a small business. Bank should obtain written declaration from the borrower to

the effect that their indebtedness is within the threshold across all banks and financial institutions.

- *Product criteria* :- The exposure takes the form of any of the following:
  - Revolving credits and lines of credit, (including overdraft, hypothecation etc.)
  - Term loans and leases (e.g. hire purchase, auto loans and leases, student and educational loans),
  - Small business facilities and commitments and,
  - Deprived sector loans up to a threshold of Rs.10 million (Ten Million only)

- *Granularity criteria*: - NRB must be satisfied that the regulatory retail portfolio is sufficiently diversified to a degree that reduces the risks in the portfolio, warranting the 75% risk weight. No aggregate exposure (not taking any credit risk mitigation into account) to one counterpart can exceed 0.5 % of the overall regulatory retail portfolio.
- *Low value individual criteria* :- The total aggregated exposure to one counterpart cannot exceed an absolute threshold of up to Rs.10 million (Nepalese Rupees Ten Million only)
- Banks which have claims that fulfill all criterion except for granularity may risk weigh those claims at 100%

f) Claims Secured by residential property:

- Lending to individuals meant for acquiring or developing residential property which are fully secured by mortgages on residential property, that is or will be occupied by the borrower or that is rented, will be risk-weighed at 60%. However, banks should ensure the existence of adequate margin of security over the amount of loan based on strict valuation rules.

  Banks have to develop product paper and get it approved from the board of directors to regulate this kind of lending. Banks should submit a copy of these papers to NRB for notification. The claims in order to be eligible for this category have to be in strict compliance with this product paper.
- Where the loan is not fully secured by residential properties, such claims have to risk weighed at 150%

- When claims secured by residential properties are or have been past due at any point of time during the last two years, they shall be risk-weighed at 100%, net of specific provisions.

g) Claims secured by commercial real estate:

- Claims secured by mortgages on commercial real estate, except past due, shall be risk-weighed at 100%. Commercial real estate hereby refers to mortgage of Office buildings, retail space, multi-purpose commercial premises, multi-family residential buildings, multi-tenanted commercial premises, industrial or warehouse space, hotels, land acquisition, development and construction etc.

h) Past due claims:

- Any loan, except for claim secured by residential property, which is or has been past due at any point of time during the last two years, will be risk-weighed at 150% net of specific provision.

i) High Risk Claims:

- 150% risk weight shall be applied for venture capital and private equity investments.
- Exposures on Personal loan in excess of the threshold of regulatory retail portfolio and lending against securities (bonds and shares) shall attract a risk weight of 150%. Similarly, exposures on credit card shall also warrant a risk weight of 150%.
- Investments in the equity and other capital instruments of institutions, which are not listed in the stock exchange and have not been deducted from Tier 1 capital, shall be risk weighed at 150% net of provisions.
- Investments in the equity and other capital instruments of institutions, which are listed in the stock exchange and have not been deducted from Tier 1 capital, shall be risk weighed at 100% net of provisions.
- The claims which are not fully secured or are only backed up by personal guarantee shall attract 150% risk weight.
- Where loan cannot be segregated/or identified as regulatory retail portfolio or qualifying residential mortgage loan or under other categories, it shall be risk weighed at 150%.

j) Other assets:

- With regard to other assets, following provisions have been made;
- Interest receivable/claim on government securities will be risk-weighed at 0%.

- Investments in equity or regulatory capital instruments issued by securities firms will be risk-weighed at 100%.
- Cash in transit and other cash items in the process of collection will be risk-weighed at 20%. For this purpose, cash items shall include Cheque, Draft, and Travellers Cheques.
- Fictitious assets that have not been deducted from Tier 1 capital shall be risk weighed at 100%.
- All other assets will be risk weighted at 100% net of specific provision.

k) Off Balance Sheet items:

- Off-balance sheet items under the simplified standardized approach will be converted into equivalent risk weight exposure using risk weight as follows:

Off Balance sheet Exposure	**Risk Weight**
Any commitments those are unconditionally cancelable at any time by the bank without prior notice, or that effectively provide for automatic cancellation due to deterioration in a borrower's creditworthiness	0%
Forward exchange contracts.	10%
Short Term Trade-related contingencies: Contingent liabilities arising from trade-related obligations, which are secured against an underlying shipment of goods for both issuing and confirming bank and are short term in nature. 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 securities and foreign exchange transactions between bank to bank and between bank and customer	20%
Long Term Trade-related contingencies: Contingent liabilities arising from trade-related obligations, which are secured against an underlying shipment of goods for both issuing and confirming bank and are long term in nature. This includes documentary letters of credit,	50%

shipping guarantees issued and any other trade-related contingencies with an original maturity of over six months.	
Performance-related contingencies: Contingent liabilities, which involve an irrevocable obligation to pay a third party in the event that counterparty fails to fulfill or perform a contractual non-monetary obligation, such as delivery of goods by a specified date etc. This includes issue of performance bonds, bid bonds, warranties, indemnities, underwriting commitments and standby letters of credit in relation to a non-monetary obligation of counterparty under a particular transaction.	50%
Long term irrevocable Credit Commitments: Any un-drawn portion of committed credit lines sanctioned for a period of more than 1 year. This shall include all unutilized limits in respect of revolving working capital loans except for trade finance exposures	50%
Short term irrevocable Credit Commitments: Any un-drawn portion of committed credit lines sanctioned for a period of up to 1 year. This shall include all unutilized limits in respect of revolving working capital loans except for trade finance exposures	20%
Repurchase agreements, securities lending, securities borrowing, reverse repurchase agreements and equivalent transactions: This includes sale and repurchase agreements and asset sales with recourse, where the credit risk remains with the purchasing bank.	100%
Direct credit substitutes: Any irrevocable off-balance sheet obligations which carry the same credit risk as a direct extension of credit, such as an undertaking to make a payment to a third party in the event that a counterparty fails to meet a financial obligation or an undertaking to a counterparty to acquire a potential claim on another party in the event of default by that party, constitutes a direct credit substitute. This includes potential credit exposures arising from the issue of financial guarantees and credit derivatives, confirmation of letters	100%

of credit (acceptances and endorsements), issue of standby letters of credit serving as financial guarantees for loans, securities and any other financial liabilities, and bills endorsed under bill endorsement lines (but which are not accepted by, or have the prior endorsement of, another bank).	
Unpaid portion of partly paid shares and securities	100%
Other Contingent Liabilities	100%

2.4.2 Credit Risk Mitigation:

Banks may use a number of techniques to mitigate the risks to which they are exposed. The prime objective of this provision is to encourage the banks to manage credit risk in a prudent and effective manner. As such, credit risks exposures may be collateralized in whole or in part with cash or securities, or a loan exposure may be guaranteed by a third party. Where these various techniques meet the minimum conditions mentioned below, banks which take eligible financial collateral are allowed to reduce their credit exposure to counterparty when calculating their capital requirements to take account of the risk mitigating effect of the collateral. However, credit risk mitigation is allowed only on an account by account basis, even within regulatory retail portfolio.

As a general rule, no secured claim should receive a higher capital requirement than an otherwise identical claim on which there is no collateral. Similarly, the effects of the CRM shall not be double counted and capital requirement will be applied to banks on either side of the collateralized transaction: for example, both repos and reverse repos will be subject to capital requirements.

Those portions of claims collateralized by the market value of recognized collateral receive the risk weight applicable to the collateral instrument. The remainder of the claim should be assigned the risk weight appropriate to the counter party.

Where the same security has been pledged for both the funded and non funded facilities, banks should clearly demarcate the value of security held for funded and non funded facility. In cases where the bank has obtained same security for various forms of facilities; banks

are eligible to claim the CRM benefit across all such exposures up to the eligible value of CRM.

2.4.2.1 Minimum Condition for Eligibility:

To obtain capital relief towards credit risk mitigation there are certain basic condition that needs to be fulfilled Supervisors will monitor the extent to which banks satisfy these conditions, both at the outset of a collateralized transaction and on a on-going basis. Following conditions are prescribed by NRB in the context of Nepal.

1. ***Legal certainty:-*** Collateral is effective only if the legal mechanism by which collateral is given is robust and ensures that the lender has clear rights over the collateral to liquidate or retain it in the event of default. Thus, banks must take all necessary steps to fulfill local contractual requirements in respect of the enforceability of security interest. The collateral arrangements must be properly documented, with a clear and robust procedure for the timely liquidation of collateral. A bank's procedures should ensure that any legal conditions required for declaring the default of the customer and liquidating the collateral are observed. Where the collateral is held by a custodian, the bank must seek to ensure that the custodian ensures adequate segregation of the collateral instruments and the custodian's own assets. Besides that, banks must obtain legal opinions confirming the enforceability of the collateral arrangements in all relevant jurisdictions.
2. ***Low correlation with exposure***:- In order for collateral to provide protection, the credit quality of the obligor and the value of the collateral must not have a material positive correlation. For example, securities issued by the collateral provider - or by any related group entity - would provide little protection and so would be ineligible.
3. ***Maturity Mismatch***:- The maturity of the underlying exposure and the maturity of the hedge should both be defined conservatively. The effective maturity of the underlying should be gauged as the longest possible remaining time before the obligor is scheduled to fulfill its obligation. The collateral must be pledged for at least the life of the exposure. In case of mismatches in the maturity of the underlying exposure and the collateral, it shall not be eligible for CRM benefits.
4. ***Currency Mismatch***:- Ideally the currency of the underlying exposure and the collateral should be the same. Where the credit exposure is denominated in a currency that differs from that in which the underlying exposure is denominated, there is

a currency mismatch. Where mismatches occur, it shall be subject to supervisory haircut of 10%.

5. ***Risk Management***:- While CRM reduces credit risk, it simultaneously may increase other risks to which a bank is exposed, such as legal, operational, liquidity and market risks. Therefore, it is imperative that banks employ robust procedures and processes to control these risks, including strategy; consideration of the underlying credit; valuation; policies and procedures; systems; control of roll-off risks; and management of concentration risk arising from the bank's use of CRM techniques and its effect with the bank's overall credit profile. In case where these requirements are not fulfilled, NRB may not recognize the benefit of CRM techniques.

6. ***Qualifying criteria for guarantee***:- A guarantee (counter guarantee) to be eligible must represent a direct claim on the protection provider and must be explicitly referenced to specific exposures or a pool of exposures, so that the extent of the cover is clearly defined and irrefutable. Other than non-payment by a protection purchaser of money due in respect of the credit protection contract it must be irrevocable in that there must be no clause in the contract that would increase the effective cost of cover as a result of deteriorating credit quality in the hedged exposure. It must also be unconditional in that there should be no clause in the protection contract outside the control of the bank that could prevent the protection provider from being obliged to pay out in a timely manner in the event that the original counter party fails to make the payments due.

   On the qualifying default or non-payment of the counter party, the bank may in a timely manner pursue the guarantor for any monies outstanding under the documentation governing the transaction. The guarantor may make one lump sum payment of all monies under such documentation to the bank, or the guarantor may assume the future payment obligations of the counterparty covered by the guarantee. The bank must have the right to receive any such payments from the guarantor without first having to take legal actions in order to pursue the counter party payment.

2.4.2.2 Eligible Collaterals:

- Cash deposit (as well as certificates of deposit or fixed deposits or other deposits) with the bank. The banks may only claim these as CRM only if it has specific authority to recover the amount from this source in case of default.

- Fixed Deposit Receipts/Certificates of deposits/other deposits of other Banks and Financial Institutions, who fulfill the capital adequacy requirements, subject to a 20% supervisory haircut.
- Gold
- Securities issued by the Government of Nepal and Nepal Rastra Bank.
- Guarantee of the Government of Nepal
- Financial guarantee/counter guarantee of domestic banks and FIs who meet the minimum capital adequacy requirements subject to a haircut of 20%.
- Securities/Financial guarantee/Counter guarantee issued by sovereigns.
- Securities/Financial guarantee/Counter guarantee issued by MDBs.
- Securities/Financial guarantee/Counter guarantee issued by banks with ECA rating 2 or better. The supervisory haircut shall be 20% and 50% for the banks with ECA rating of 0-1 and 2 respectively.

2.4.2.3 Methodology for Using CRM:

Step 1: Identify the accounts eligible for capital relief under credit risk mitigation.

Step 2: Assess the value of the exposure and the eligible collateral. The value of the eligible collateral is the lower of the face value of the instrument or the outstanding amount of exposure.

Step 3: Adjust the value of the eligible collateral in respect of the supervisory haircut in terms of currency mismatch and other eligibility requirements.

Step 4: Compare the adjusted value of the collateral with the outstanding exposure.

Step 5: The value of the eligible CRM is the lower of the adjusted value of the collateral and the outstanding exposure.

Step 6: Plot the eligible CRM in the appropriate category of credit risk.

2.5 Operational Risk:

According to § 644 of *International Convergence of Capital Measurement and Capital Standards*, known as Basel II, **operational risk** is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.

Although the risks apply to any organization in business it is of particular relevance to the banking regime where regulators are responsible for establishing safeguards to protect against systemic failure of the banking system and the economy. The Basel II definition includes legal risk, but excludes strategic risk: i.e. the risk of a loss arising from a poor strategic business decision. This definition also excludes reputational risk (damage to an organization through loss of its reputation or standing) although it is understood that a significant but non-catastrophic operational loss could still affect its reputation possibly leading to a further collapse of its business and organizational failure.

Operational risk was initially defined in the negative as any form of risk that is not market or credit risk. This negative definition is rather vague as it does not tell us much about the exact types of operational risks faced by banks today, nor does it provide banks with a proper basis for measuring risk and calculating capital requirements.

A better definition is provided by the Basel Committee, who define operational risk as:

"The risk of loss resulting from inadequate or failed internal processes, people and systems or from external events."

This definition includes legal risk, but excludes strategic and reputational risk. However, the Basel Committee recognizes that operational risk is a term that has a variety of meanings and therefore, for internal purposes, banks are permitted to adopt their own definitions of operational risk, provided the minimum elements in the Committee's definition are included.

Although the definition has gained some acceptability in the banking industry, there are also some analysts who believe it to be flawed, describing it as opaque, open-ended and leaving many unanswered questions regarding the exact type of events that can be attributed to operational losses.

In particular, the somewhat abrupt manner in which legal risk is incorporated into the definition and then left undeveloped has been the subject of criticism, as has the decision to exclude certain risks (reputational and strategic).

Basel II and various Supervisory bodies of the countries have prescribed various soundness standards for Operational Risk Management for Banks and similar Financial Institutions. To complement these standards, Basel II has given guidance to 3 broad methods of Capital calculation for Operational Risk

- Basic Indicator Approach - based on annual revenue of the Financial Institution

- Standardized Approach - based on annual revenue of each of the broad business lines of the Financial Institution
- Advanced Measurement Approaches - based on the internally developed risk measurement framework of the bank adhering to the standards prescribed (methods include IMA, LDA, Scenario-based, Scorecard etc.)

NRB accord implementation group defines Operational risk as the risk of loss resulting from inadequate internal processes, people, and systems, or from external events. Operational risk itself is not a new concept, and well run banks have been addressing it in their internal controls and corporate governance structures. However, applying an explicit regulatory capital charge against operational risk is a relatively new and evolving idea. Basel II requires banks to hold capital against the risk of unexpected loss that could arise from the failure of operational systems.

The most important types of operational risk involve breakdowns in internal controls and corporate governance. Such breakdowns can lead to financial losses through error, fraud, or failure to perform in a timely manner or cause the interests of the bank to be compromised in some other way, for example, by its dealers, lending officers or other staff exceeding their authority or conducting business in an unethical or risky manner. Other aspects of operational risk include major failure of information technology systems or events such as major fires or other disasters.

Out of various methods available for the computation of operational risk, NRB accord implementation group has suggested the Basic Indicator Approach (BIA) for the computation of operational risk exposure which is described as under.

2.5.1 Basic Indicator Approach

Under the basic indicator approach, banks must hold capital for operational risk equal to the average over the previous three years of a fixed percentage (denoted alpha) of positive annual gross income.

The capital charge for operational risk may be expressed as follows:

$$K_{BIA} \quad X \quad \frac{fGI_{1....n} \mid \sim A}{N}$$

Where:

K_{BIA} = Capital charged under the basic indicator approach

GI = Annual gross income, where positive, over the previous three years.

N = Number of the previous three years for which gross income is positive

$\Im$ = 15 Percent

NRB shall review the capital requirement produced by this approach for general credibility, especially in relation to a bank's peers and in the event that credibility is lacking, appropriate supervisory action under Review Process shall be considered.

Figures for the year, in which annual gross income is negative or zero, should be excluded from both the numerator and denominator while calculating the average. In case where the gross income for all of the last three years is negative, 5% of total credit and investments net of specific provisions shall be considered as the capital charge for operational risk. For this purpose investments shall comprise of money at call, placements, investment in government securities and other investments irrespective of currency.

Similarly, in case of new banks who have not completed a year of operation and hence whose average gross income cannot be measured reliably, they shall also be required to compute their capital charge for operational risk vide the same approach as prescribed for banks with negative gross income. These banks may use the gross income approach from second year onwards. But, based on the reasonableness of the so computed capital charge for Operation Risk, during the first three years of operation, review process may require additional proportion of capital charge if deemed necessary.

2.5.1.1 Components of Gross Income:

Gross income is defined as "net Interest Income" plus "non interest income"(NAS). It is intended that this measure should: (i) be gross of any provisions (e.g. for unpaid interest); (ii) be gross of operating expenses, including fees paid to outsourcing service providers; ; (iii) exclude realized profits/losses from the sale of securities in the banking book; and (iv) exclude extraordinary or irregular items as well as income derived from insurance(Basel Committee 2004).

According to the NRB directory of Basel implementation group, Gross Income measure should:

- be gross of any provisions (e.g. for unpaid interest) and write-offs made during the year;
- be gross of operating expenses, exclude reversal during the year in respect of provisions and write-offs made during the previous year(s);
- exclude income/gain recognized from the disposal of items of movable and immovable property;
- exclude realized profits/losses from the sale of securities in the "held to maturity" category;
- exclude other extraordinary or irregular items of income and expenditure

Thus, Gross Income, for the purpose of calculation of Capital Requirement, is the summation of following items.

- Total operating income as disclosed in Profit and Loss account prepared as per NRB directive no.4. The total operating income comprises of:
  - Net interest Income
  - Commission and Discount Income
  - Other Operating Income
  - Exchange Fluctuation Income
- Addition/Deduction in the Interest Suspense during the period.

Banks shall use the annual audited financials of the last three years for the computation of gross income under this approach. Hence, the capital requirement for operational risk for a whole financial year shall remain constant. Until the accounts are finalized for the financial year, banks shall use the provisional figures for the period, which should be validated by the internal auditor of the bank.

2.5.1.2 Computation of Operational Risk Weight:

Operational risk-weighted assets are determined by multiplying the operational risk capital charge by 10 (i.e., the reciprocal of the minimum capital ratio of 10%) and adding together with the risk weighted exposures for credit risk.

2.6 Market Risk:

Market risk is defined as the risk of losses in on-balance sheet and off-balance sheet positions arising from adverse movements in market prices. The major constituents of market risks are:

- The risks pertaining to interest rate related instruments;
- Foreign exchange risk (including gold positions) throughout the bank; and
- The risks pertaining to investment in equities and commodities.

Hirtle (2003) finds that reported market risk capital is useful for predicting changes in market risk exposure over time for individual banks. Basel-II reports that the capital charges for interest rate related instruments and equities and the capital charges for foreign exchange risk and for commodities risk are the main components of the Market Risk exposure.

For the time being, the Committee does not believe that it is necessary to allow any exemptions from the capital requirements for market risk, except for those for foreign exchange risk because this Framework applies only to internationally active banks, and then essentially on a consolidated basis; all of these banks are likely to be involved in trading to some extent (Basel Committee Report, 2004: 683).

In the same way as for credit risk, the capital requirements for market risk are to apply on a worldwide consolidated basis. Where appropriate, national authorities may permit banking and financial entities in a group which is running a global consolidated book and whose capital is being assessed on a global basis to report short and long positions in exactly the same instrument (e.g. currencies, commodities, equities or bonds), on a net basis, no matter where they are booked. Moreover, the offsetting rules as set out in this section may also be applied on a consolidated basis.

According to NRB directives, measurement of market risk should be done after segregating the market risk into three different headings which are described bellow.

2.6.1 Segregation of Market Portfolio

a) Held For Trading

An investment that is made for the purpose of generating a profit from short term fluctuations in price should be classified under this category. An asset should be classified as held for trading even if it is a part of a portfolio of similar assets for

which there is a pattern of trading for the purpose of generating a profit from short term fluctuations in price. These investments should be marked to market on a daily basis and differences reflected in the profit and loss account.

b) Held to Maturity:

The investments made with positive intent and ability of the bank to hold till maturity should be classified as held to maturity investments. The bank does not have the positive intent to hold an investment to maturity, if any of the following conditions are met:

- Bank has the intent and the ability to hold the asset for only an undefined period; or
- Bank stands ready to sell the asset (other than if a situation arises that is non-recurring and could not have been reasonably anticipated) in response to changes in market interest rates or risks, liquidity needs, changes in the availability of and the yield on alternative investments, changes in financing sources and terms, or changes in foreign currency risk.

The held to maturity investments should be valued at amortized cost i.e. the cost price less any impairments (if applicable). The impairments should be included in the profit and loss accounts for the period.

c) Available for Sale:

All other investments that are neither "held for trading" nor "held to maturity" should be classified under this category. These investments should be marked to market on a regular basis and the difference to be adjusted through reserves. Banks are required to maintain Investment Adjustment Reserve (eligible as Tier 2 capital) to the extent of 2% of available for sale portfolio.

2.6.2 Net Open Position Approach:

Out of the various components of market risk, foreign exchange risk is the predominant risk in our country. The effects of other forms of market risk are minimal. Thus, a net open position approach has been devised to measure the capital requirement for market risk. As evidenced by its name, this approach only addresses the risk of loss arising out of adverse

movements in exchange rates. This approach will be consolidated over time to incorporate other forms of market risks as they start to gain prominence.

The designated Net Open Position approach requires banks to allocate a fixed proportion of capital in terms of its net open position. The banks should allocate 5 percentages of their net open positions as capital charge for market risk.

This section sets out a minimum capital standard to cover the risk of holding or taking positions in foreign currencies, including gold (Basel–II Report Pg. No. 179). Two processes are needed to calculate the capital requirement for foreign exchange risk. The first is to measure the exposure in a single currency position. The second is to measure the risks inherent in a bank's mix of long and short positions in different currencies.

Net open position is the difference between the assets and the liability in a currency. In other words, it is the uncovered volume of asset or liability which is exposed to the changes in the exchange rates of currencies. For capital adequacy requirements the net open position includes both net spot positions as well as net forward positions.

1) *Measuring the exposure in single currency:* In this step Net Open Position of all currencies are calculated individually denominated in the same currecy. Banks net open position in each policy is first calculated by summing up the following items.

- The net spot position (i.e. all asset items less all liability items, including accrued interest, denominated in the currency in question);
- Guarantees (and similar instruments) that are certain to be called and are likely to be irrecoverable;
- Net future income/expenses not yet accrued but already fully hedged (at the discretion of the reporting bank);
- Depending on particular accounting conventions in different countries, any other item representing a profit or loss in foreign currencies;

While calculating Net open position Interest accrued (i.e. earned but not yet received) should be included as a position. Accrued expenses should also be included. Unearned but expected future interest and anticipated expenses may be excluded unless the amounts are certain and banks have taken the opportunity to hedge them. Furthermore, Forward

currency and gold positions will normally be valued at current spot market exchange rates.

2) *Convert the net open position in each currency to NPR a per prevalent exchange rates.* Here calculated net open position of all the market risk components are converted in to the national currency (i.e.Rs.) using prevailing currency exchange rates with all foreign investment.
3) *Aggregate the converted net open positions of all currencies:* after converting the net open position of all the foreign investment and other market risk exposure, these figures are added together without considering the life of instruments (i.e. long term or short term).
4) *This aggregated amount is treated as the "Net Open Position" of the Bank.*

2.6.3 Computation of Risk weight:

Risk-weighted assets in respect of market risk are determined by multiplying the capital charges by 10 (i.e., the reciprocal of the minimum capital ratio of 10%) and adding together with the risk weighted exposures for credit risk.

2.7 Review Process:

This section discusses the key principles of supervisory review, risk management guidance and supervisory transparency and accountability produced by the Committee with respect to banking risks, including guidance relating to, among other things, the treatment of interest rate risk in the banking book, credit risk (stress testing, definition of default, residual risk, and credit concentration risk), operational risk, enhanced cross-border communication and cooperation, and securitization (Basel-II committee report: 204).

The supervisory review process of the Framework is intended not only to ensure that banks have adequate capital to support all the risks in their business, but also to encourage banks to develop and use better risk management techniques in monitoring and managing their risks. The supervisory review process recognizes the responsibility of bank management in developing an internal capital assessment process and setting capital targets that are commensurate with the bank's risk profile and control environment. In the Framework, bank management continues to bear responsibility for ensuring that the bank has adequate capital to support its risks beyond the core minimum requirements. Supervisors are expected to

evaluate how well banks are assessing their capital needs relative to their risks and to intervene, where appropriate. This interaction is intended to foster an active dialogue between banks and supervisors such that when deficiencies are identified, prompt and decisive action can be taken to reduce risk or restore capital. Accordingly, supervisors may wish to adopt an approach to focus more intensely on those banks with risk profiles or operational experience that warrants such attention.

Nepal Rastra Bank recognizes the significance of the relationship between the amount of capital held by the bank against its risks and the strength and effectiveness of the bank's risk management and internal control processes. However, increased capital should not be viewed as the only option for addressing increased risks confronting the bank. Other means for addressing risk, such as strengthening risk management, applying internal limits, strengthening the level of provisions and reserves, and improving internal controls, must also be considered. Furthermore, capital should not be regarded as a substitute for addressing fundamentally inadequate control or risk management processes.

There are three main areas that is particularly suited to treatment under this process: risks considered under minimum capital requirements which are not fully captured it (e.g. credit concentration risk); those factors not taken into account by the minimum capital requirements (e.g. business and strategic risk); and factors external to the bank (e.g. business cycle effects).

In order to achieve the objectives of the supervisory review process, this process has been broadly divided into three parts (NRB, Capital Framework Implementation Group for Nepalese Commercial Banks):

a. Internal Capital Adequacy Assessment Process (ICAAP)

b. Supervisory Review

c. Supervisory Response

2.7.1 Internal Capital Adequacy Assessment Process

The internal capital adequacy assessment process (ICAAP) is a comprehensive process which requires board and senior management oversight, monitoring, reporting and internal control

reviews at regular intervals to ensure the alignment of regulatory capital requirement with the true risk profile of the bank and thus ensure long-term safety and soundness of the bank. The key components of an effective ICAAP are discussed below.

a) Board and senior management oversight

Bank management is responsible for understanding the nature and level of risk being taken by the bank and how this risk relates to adequate capital levels. It is also responsible for ensuring that the formality and sophistication of the risk management processes is commensurate with the complexity of its operations. A sound risk management process, thus, is the foundation for an effective assessment of the adequacy of a bank's capital position.

The board of directors of the bank are responsible for setting the bank's tolerance for risks. The board should also ensure that management establishes a mechanism for assessing various risks; develops a system to relate these risks to the bank's capital level and sets up a method for monitoring compliance with internal policies. It is equally important that the board instills strong internal controls and thereby an effective control environment through adoption of written policies and procedures and ensures that the policies and procedures are effectively communicated throughout the bank.

The analysis of a bank's current and future capital requirements in relation to its strategic objectives is a vital element of the strategic planning process. The strategic plan should clearly outline the bank's capital needs, anticipated capital expenditures, desirable capital level, and external capital sources. Senior management and the board should view capital planning as a crucial element in being able to achieve its desired strategic objectives.

b) Sound capital assessment

Another crucial component of an effective ICAAP is the assessment of capital. In order to be able to make a sound capital assessment the bank should, at minimum, have the following:

• Policies and procedures designed to ensure that the bank identifies, measures, and reports all material risks;

• A process that relates capital to the level of risk;

• A process that states capital adequacy goals with respect to risk, taking account of the bank's strategic focus and business plan; and

• A process of internal control, reviews and audit to ensure the integrity of the overall management process.

c) Comprehensive assessment of risks

All material risks faced by the bank should be addressed in the capital assessment process. Nepal Rastra Bank recognizes that not all risks can be measured precisely. However, bank should develop a process to estimate risks with reasonable certainties. In order to make a comprehensive assessment of risks, the process should, at minimum, address the following forms of risk.

- **Credit risk:** Banks should have methodologies that enable them to assess the credit risk involved in exposures to individual borrowers or counterparties as well as at the portfolio level. The credit review assessment of capital adequacy, at a minimum, should cover risk rating systems, portfolio analysis/aggregation, large exposures and risk concentrations.
- **Credit concentration risk:** Risk concentrations are arguably the single most important cause of major problems in banks. A risk concentration is any single exposure or group of exposures with the potential to produce losses large enough (relative to a bank's capital, total assets, or overall risk level) to threaten a bank's health or ability to maintain its core operations.
- **Operational risk**: The failure to properly manage operational risk can result in a misstatement of an institution's risk/return profile and expose the institution to significant losses. Gross income, used in the Basic Indicator Approach is only a proxy for the scale of operational risk exposure of a bank and can in some cases underestimate the need for capital. Thus, Banks should develop a framework for managing operational risk and evaluate the adequacy of capital as prescribed by this framework. The framework should cover the bank's appetite and tolerance for operational risk, as specified through the policies for managing this risk, including the extent and manner in which operational risk is transferred outside the bank. It should also include

policies outlining the bank's approach to identifying, assessing, monitoring and controlling/mitigating the risk.

- **Market risk:** The prescribed approach for the computation of capital charge for market risk is very simple and thus may not be directly aligned with the magnitude of risk. Likewise, the approach only incorporates risks arising out of adverse movements in exchange rates while ignoring other forms of risks like interest rate risk and equity risks. Thus, banks should develop a framework that addresses these various forms of risk and at the same time perform stress tests to evaluate the adequacy of capital.
- **Liquidity risk**: Liquidity is crucial to the ongoing viability of any financial institution. The capital positions can have a telling effect on institution's ability to obtain liquidity, especially in a crisis. Each bank must have adequate systems for measuring, monitoring and controlling liquidity risk. Banks should evaluate the adequacy of capital given their own liquidity profile and the liquidity of the markets in which they operate. Banks are also encouraged to make use of stress testing to determine their liquidity needs and the adequacy of capital.
- **Other risks:** Although the 'other' risks, such as reputational and strategic risk, are not easily measurable, banks are expected to take these into consideration as well while deciding on the level of capital.

d) Monitoring and reporting

The bank should establish an adequate system for monitoring and reporting risk exposures and assessing how the bank's changing risk profile affects the need for capital. The bank's senior management or board of directors should, on a regular basis, receive reports on the bank's risk profile and capital needs. These reports should allow senior management to:

• Evaluate the level and trend of material risks and their effect on capital levels;

• Evaluate the sensitivity and reasonableness of key assumptions used in the capital assessment measurement system;

• Determine that the bank holds sufficient capital against the various risks and is in compliance with established capital adequacy goals; and

• Assess its future capital requirements based on the bank's reported risk profile and make necessary adjustments to the bank's strategic plan accordingly.

e) Internal control review

The bank's internal control structure is essential to a sound capital assessment process. Effective control of the capital assessment process includes an independent review and, where appropriate, the involvement of internal or external audits. The bank's board of directors has a responsibility to ensure that management establishes a system for assessing the various risks, develops a system to relate risk to the bank's capital level, and establishes a method for monitoring compliance with internal policies. The board should regularly verify whether its system of internal controls is adequate to ensure well-ordered and prudent conduct of business. The bank should conduct periodic reviews of its risk management process to ensure its integrity, accuracy, and reasonableness. Key areas that should be reviewed include:

• Appropriateness of the bank's capital assessment process given the nature, scope and complexity of its activities;

• Identification of large exposures and risk concentrations;

• Accuracy and completeness of data inputs into the bank's assessment process;

• Reasonableness and validity of scenarios used in the assessment process; and

• Stress testing and analysis of assumptions and inputs.

2.7.2 Supervisory Review

Nepal Rastra Bank shall regularly review the process by which a bank assesses its capital adequacy, risk positions, resulting capital levels, and quality of capital held by a bank. Supervisors shall also evaluate the degree to which a bank has in place a sound internal process to assess capital adequacy. The emphasis of the review should be on the quality of the bank's risk management and controls and should not result in supervisors functioning as bank management. The periodic review can involve any or a combination of:

• On-site examinations or inspections;

- Off-site review;
- Discussions with bank management;
- Review of work done by external auditors (provided it is adequately focused on the necessary capital issues); and
- Periodic reporting.

Some of the key areas which will be reviewed during the supervisory review process are discussed hereunder

Review of adequacy of risk assessment:

NRB shall assess the degree to which internal targets and processes incorporate the full range of material risks faced by the bank. Supervisors shall also review the adequacy of risk measures used in assessing internal capital adequacy and the extent to which these risk measures are also used operationally in setting limits, evaluating business line performance, and evaluating and controlling risks more generally. Supervisors shall consider the results of sensitivity analyses and stress tests conducted by the institution and how these results relate to capital plans.

a) Assessment of capital adequacy

NRB shall review the bank's processes to determine that:

- Target levels of capital chosen are comprehensive and relevant to the current operating environment;
- These levels are properly monitored and reviewed by senior management; and
- The composition of capital is appropriate for the nature and scale of the bank's business.

NRB shall also consider the extent to which the bank has provided for unexpected events in setting its capital levels. This analysis should cover a wide range of external conditions and scenarios, and the sophistication of techniques and stress tests used should be commensurate with the bank's activities.

b) Assessment of the control environment:

NRB shall consider the quality of the bank's management information reporting and systems, the manner in which business risks and activities are aggregated, and management's record in responding to emerging or changing risks. In all instances, the capital level at an individual bank should be determined according to the bank's risk profile and adequacy of its risk management process and internal controls. External factors such as business cycle effects and the macroeconomic environment should also be considered.

c) Supervisory review of compliance with minimum standards

In order to obtain relief as per this framework banks are required to observe number of requirements, including risk management standards and disclosures. In particular, banks will be required to disclose features of their internal methodologies used in calculating minimum capital requirements. As part of the supervisory review process, supervisors must ensure that these conditions are being met on an ongoing basis. Likewise, the supervisors must ensure that qualifying criteria as specified in the framework are continuously being met as these criteria are developed as benchmarks that are aligned with bank management expectations for effective risk management and capital allocation.

d) Significance of risk transfer

Securitization or credit sale agreements with recourse may be carried out for purposes other than credit risk transfer (e.g. funding). Where this is the case, there might still be a limited transfer of credit risk. However, for an originating bank to achieve reductions in capital requirements, the risk transfer arising from a securitization or credit sale has to be deemed significant by the NRB. If the risk transfer is considered to be insufficient or non existent, NRB can require the application of a higher capital requirement or, alternatively, may deny a bank from obtaining any capital relief from the securitization or transfer agreements. Therefore, the capital relief that can be achieved will correspond to the amount of credit risk that is effectively transferred.

e) Credit Risk Mitigates

In case when the eligibility requirements are not fulfilled, NRB will not consider Credit Risk Mitigates in allocating capital. Similarly, CRM may give rise to residual risks, which may render the overall risk reduction less effective. Where, these risks are not adequately controlled by the bank, NRB may impose additional capital charges or take other appropriate supervisory actions.

f) Operational risk and Market Risk

The framework prescribes simple approaches for allocating capital for operational and market risk which may not be directly aligned with the volume and complexity of risk. Thus, the sup`ervisor shall consider whether the capital requirements generated by the prescribed approaches gives a consistent picture of he individual bank's risk exposure in comparison with the peer group and the banking industry at large. Where NRB is convinced such is not the case, appropriate supervisory response is warranted.

g) Market Discipline

The framework requires banks to disclose various key information about their business on a periodic basis. It is imperative that the banks discharge their obligations under the disclosure requirements in order to be eligible to claim benefits of CRM. In line with the utmost significance of this requirement, the supervisor shall review the adequacy of the disclosures. As a part of this process itself, he supervisor shall regularly review the website of the banks and review the contents of the site. Wherever the review process identifies any shortcomings or non-compliances, appropriate supervisory response shall be initiated.

2.7.3 Supervisory Response

According to the directives of Nepal Rastra Bank for Basel implementation in Nepal- banks should operate above the minimum regulatory capital ratios. Wherever, NRB is not convinced about the risk management practices and the control environment, it has the authority to require banks to hold capital in excess of the minimum.

a) Supervisory adjustments in risk weighted assets and capital

Having carried out the review process as described above, supervisors should take appropriate action if they are not satisfied with the results of the bank's own risk assessment and capital allocation. In such a scenario, NRB shall be empowered to undertake any or combination of the following adjustments in the banks risk weighted assets and regulatory capital computations.

- Shortfall in provisions made by the bank against adversely classified assets shall be deducted from the Tier 1 capital.
- The loans and facilities extended to Directors, Employees (other than loans given under Employee rules), Shareholders holding more than 1% percent shares and related parties as well as loans, advances and facilities restricted by the prevailing rules and regulations shall be deducted from Tier 1 capital.
- In case the bank has provided loans and facilities in excess of its Single Obligor Limits, 10% of all such excess exposures shall be added to the risk weighted exposure for credit risk.
- Where the bank has been involved in the sale of credit with recourse facility, 1% of the contract (sale) value shall be added to the risk weight for credit risk.
- Where the banks do not have satisfactory Assets Liability Management policies and practices to effectively manage the market risks, an additional risk weight of 1% of Net Interest Income shall be added to the risk weight for market risk.
- Where the bank's liquid asset (inclusive of investment in government securities) to total deposit ratio is less than 20%, a risk weight of 0.5% of total deposit is added.

b) Corrective Actions for Non-Compliances

The failure on part of the banks to meet the provisions of this framework shall be considered as a violation of the NRB directives and shall attract stipulated actions. The nature of the enforcement action largely depends on degree of the capital adequacy of the bank. The trigger points and the prescribed action in case of non-compliance shall be as per the provisions of Prompt Corrective Action Byelaw 2064 propounded by Nepal Rastra Bank.

2.8 Review of Related Articles and Journals.

NRB has taken action against some commercial banks under its supervisory function as per the provision of NRB act 2058 on the basis of their financial statement and reports for fiscal year2006/07. As some bank couldn't maintain required minimum level of capital, distribution of any kind of dividend or bonus share restricted for those banks which couldn't fulfill their minimum capital requirements (NRB Annual report, 2006/07:7).

Under the new directives of NRB, Commercial banks must maintain paid up capital equivalent to Rs.2 billion and Rs.25 million at the national and regional levels respectively. This provision stipulates on compulsory requirement of joint investment on foreign commercial bank or financial institutions and Nepali company etc. for the operation of such commercial bank.

2.9 Review of Previous Research Works

Pandit (2010) has conducted a research entitled "Directives of NRB in maintaining capital adequacy Ratio & its impact, a case study of NIC Bank"

His Major Objectives:

- The effect of the Supplementary Capital in The Capital Fund
- The level of capital Adequacy Ratio prescribed by NRB
- The adequacy of the capital to Deposit ratio

His Major Findings:

- Capital Fund has grown consistently during 2059/60 to 2063/64 due to the substantial increment in the supplementary capital, and issuance of Unsecured subordinated Term Debt.
- Bank is quite successful in maintaining capital adequacy as prescribed by NRB
- Capital to deposit ratio is adequate and satisfactory. The credit deposit ratio of the Bank is very low and needs to be improved
- Although the capital adequacy requirement has been met, the Bank is unable to fulfill other capital and deposit ratios which are important to safeguard the depositors.

His Major Recommendations:

- The capital fund of the Bank is highly depending upon share capital. It has been recommended to follow the optimal capital structure which maximizes the market

value of the company. Should be able to some sort of debt financing depending upon its viability.

- The Bank should try to maintain appropriate capita-to deposit and credit deposit ratios .
- While providing loans and advances, Bank should keep in account that the fund they are going to lend is the fund to the depositors and as such needs to focus on the quality of the investment they made.

Khadka (2010) has conducted a research entitled "NRB Unified Directives on Capital adequacy Norms & its Impact, a case study of SCBL, NABIL, HBL, NIBL, and ADBL"

Her Major Objectives:

- The level of maintenance of the Capital Adequacy guidelines of NRB by the Sampled Banks.
- The effect of the Supplementary Capital in The Capita Fund
- The level of capital Adequacy Ratio prescribed by NRB
- The adequacy of the capital to Deposit ratio

Her Major Findings:

- SCBNL, NIBL, NBL, HBL, and ADBL are upto the mark of Capital Adequacy guidelines of NRB.
- Banks are following directives but in cases of supplementary capital there has been a shortfall, which can be compensated by the excess amount of Core capital in supplementary capital.
- There is a significant impact of NRB directives of Capital adequacy on the various aspects of the commercial Banks and it also helps in maintaining the stability of Commercial Banks in the Financial Market and to uplift the Banking sector in Nepal to International standard
- The new Directives of Capital Adequacy issued by NRB made good impact more than bad impact on the various aspects of the Banks.
- The provisions has been changed and the increased provisioning amount has decreased the profitability of the Commercial Banks.

Her Major Recommendations

- Among the sampled banks, they have to increase the supplementary capital to meet standard of supplementary capital ratio of 6% directed by NRB

- All the banks have to make its internal audit and Inspection Department stronger so that the Directives are properly implemented keeping into mind that the violation of rules of directives have chances to pay penalties which may lead to unfavorable consequences.

Udas (2009) has conducted a research entitled "Capital Adequacy and its Significance to Commercial Banks (A study of SCBNL, NABIL, NIBL, EBL, HBL, NICB, LBL, and KBL"

Her Major Objectives:

- To find the level of Capital adequacy Ratio as prescribed by NRB
- The impact of supplementary capital on total Capital
- The effect of Directives Regarding Capital adeqyacy in profitability of the Banks.

Her Major Findings

- SCBNL, NABIL, EBL and NICBL are upto the Mark of Capital Adequacy guidelines of NRB while in case of NIBL, HBL, LBL and KBL shows the deficit in capital adequacy ratio.

- Banks are following directives but in case of supplementary capital there has been a shortfall., which can be compensated by the excess amount of core capital in supplementary capital.

- The directives of NRB has adverse effect in profitability of the Banks but this decreasing profit will affect the Banks only for short term.

Her Major Recommendations

- Those Banks whose Supplementary Capital is not adequate should increase their supplementary capital to 4% as prescribed by NRB

- All these Banks have to make its internal Audit and Inspection Department bstronger sothat the directives are properly implemented keeping into mind that nthe violation of rules of Directives have chances to pay penalties which may lead to unfavourable consequances.

- NRB needs to be practical while issuing directives to the banks, NRB should not make the rules taking into mind only the international standard but to combat these problems the directives must be issued after doing proper research and consultation with different Banking experts. They become irrevalent if these are not implemented.

2.10 Research Gap

While reviewing the previous research works, it has been observed that none of the researcher has tried to find the impact of the international Capital Standards for financial institutions prescribed by Basel Committee report.

This study attempts to examine the overall effects of the capital adequacy of the financial institutions for effective operations. It provides an overview of the regulations enacted for the guidance of the activities of financial institutions by discussing the current international capital regulations for the financial institutions and its implementation in the context of Nepal.

Chapter III

RESEARCH METHODOLOGY

Research methodology refers to the various sequential steps to be adopted by the researcher in studying a problem with certain objectives in view. This chapter deals with the following aspects of methodology:

3.1 Research Design:

Design is the overall plan of any proposed activity. The design of the research projects guides how to conduct the study. The research design implies procedures, techniques and tasks which guide to evaluate the objective of the study and propounds ways for research viability. It is the overall plan of a proposed study to specify the appropriate research methods and procedures for obtaining specific findings validity, objectivity, and accuracy and economically as possible. The research design followed in this study is exploratory and analytical research design which intends to explore the present condition of capital adequacy of selected commercial banks of Nepal in terms of directives and prescription laid down by Nepal Rastra Bank. It is based on analytical case study of commercial banks of Nepal**.**

3.2 Population and Sample:

Among the existing and operating financial institutions of Nepal, commercial bank industry is taken as the population of the study however studying all the cases of the commercial banks is not possible under the weight of the study. Moreover some of the newly reformed commercial banks has no capital adequacy framework regulations for last five years , so, on the basis of stratified random sampling method, only three commercial banks are taken as sample which represents more 10% of the commercial bank operating from 5 years earlier. This study is focused on the capital adequacy framework prescribed by BASEL-II and amendments made by NRB. However commercial banking industry is scattered through out the nation, they all are imposed with equal capital regulations so, sample banks has been chosen using stratified random sampling method irrespective of sampling error.

3.3 Nature and Sources of Data

To fulfill the objectives of the study, only secondary data are used. The data used in this study is basically secondary in nature because data required by the study are only the financial statements of the banks so, statements published by authorized publisher and statements and reports published by Nepal Rastra Bank are the main sources of data. Main source of literature review are the Basel Committee Report on Banking Supervision and Directives issued by Nepal Rastra Bank to regulate the capital adequacy framework of Nepalese financial institutions. Secondary data are taken mainly from NRB's publication, annual reports, economic survey etc. Beside this, the required data are collected from internet websites, relevant books and publication of World Banks publications and Central Bureau of Statistics as well.

3.4 Means of Presentation and Demonstration the Data

Collected data are presented in the tabular form prescribed by Nepal Rastra Bank Accord-Implementation group. Outcomes of the research are also presented in the diagrammatical way as well as comparative bar diagrams. Various formats of diagrams and lines are drawn as per the requirements of the study so that outcome could be easily understood by all.

3.5 Tools for Analysis

To analyze the collected data, various statistical tools are used as per requirements. Normally tools required by the study to calculate various risk weights are prescribed by Basel-II which is used in this study too. Average, percentages, trend analysis, time series etc. statistical tools are also used according to the need of the presentation of data. An equation of basic indicator approach is used to compute capital charged under operational risk.

Chapter IV

PRESENTATION AND ANALYSIS OF DATA

In this chapter, an attempt has been made to show the various dimension of capital adequacy framework of selected commercial banks individually. The chapter devotes to show the various risks associated with assets of commercial banks, their composition, required capital for each types of risks, and comparison of capital adequacy with one other. An attempt also has been made to outline the basic problems of maintaining capital adequacy as prescribed by NRB directives. In order to highlight the formulated objectives, related data have been collected from different sources and demonstrated by the use of different tools and techniques.

Table: 4.1

Standard Capital Rations to be maintained

Capital	**Ratio with total risk weighted Exposure**
Tier-1 (Core capital)	Not less than 6 %
Tier-1 & Tier-2 Capital (Total eligible capital funds)	Not less than 10%

4.1 Capital Standard of Nabil Bank Limited

Nabil Bank Limited (NBL) regards Basel II as an instrument that helps banks constantly improve its risk management system. Accordingly, it has revised its structure with the provision of Chief Risk Officer looking after all risks that a bank run in an integrated manner. Head of Credit Risk, Operational Risk, Market Risk and Corporate Governance and Compliance report to Chief Risk Officer. Risk measurement units are manned as per requirement. These units review policies, product papers, systems, procedures, limits etc. on a regular basis to ensure the risks are effectively managed. They work in close coordination with Bank's audit department which report directly to Board's Audit Committee.

4.1.1 On Balance Sheet and Off Balance Sheet Exposure of NABIL

Nabil Bank ltd. has significantly increased its risk weighted exposures on both on balance sheet and off balance sheet exposures. Its condition of balance sheet risk weighted exposure and off balance sheet risk weighted exposures are presented as under.

Table : 4.2
On Balance Sheet and Off Balance Sheet Exposure of NABIL

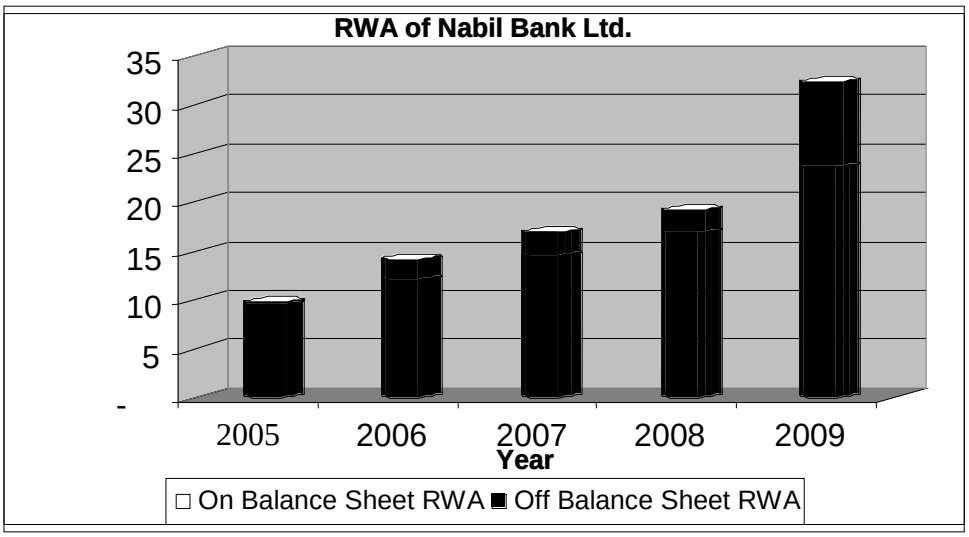
in Rs. '000'

Year	2005	2006	2007	2008	2009
On Balance Sheet RWA	9,567,609	12,131,540	14,532,045	16,946,257	23,724,198
Off Balance Sheet RWA	234,400	2,061,531	2,444,322	2,220,508	8,605,745
Tota RWA	**9,802,009**	**14,193,071**	**16,976,367**	**19,166,765**	**32,329,943**

Source: Annual Reports of NABIL

Figure : 4.1
Risk Weighted Exposure of Nabil Bank Ltd.

(Amount in million)



The above Table Shows amount of on balance sheet and off balance sheet exposure of Nabil Bank limited. With the increase in capital bank has increased its total risk weighted exposure by about 330% in recent five years which is the indicator of increasing transactions of the bank. In on balance sheet components high risk assets held by the bank in significant amount comes from the investment in equities of corporations, claims on corporations, regulatory retail portfolios, claims not fully secured by residential properties and past due claims. In the other hand, off balance sheet exposure of the bank is composed of about fifteen components among which large portion comes from the items like, bills collection, forward foreign

exchange contract, commitments with original maturities above six months, preference bond and acceptances. Its RWA is increasing in approximate annual compound rate of 27% over last years exposures. In recent five years it has significantly increased both on balance sheet and off balance sheet exposure. Its off balance sheet RWA has been increasing with the average annual compound rate of 105% which is the indicator of increasing transactions on LC, acceptances and other off balance sheet exposures. Likewise, on balance sheet exposures are also significantly increased with the average annual growth rate of 20% in last five years.

Above explanation of on balance sheet exposure and off balance sheet exposures can also be clarified from the above diagrammatical presentation (Figure 4.1).

4.1.2 Risk Weighted Exposure for Credit Risk, Operational Risk and Market Risk.

As to Credit Risk management, the Bank has drawn a clear demarcation between business generation and risk management unit. Without approval of risk management unit, no loan is sanctioned. Credit Policy of the Bank guides all the lending officials from credit screening to settlement. In order to lessen concentration risk, the Bank monitors lending portfolio periodically and takes appropriate decision with regard to the exposure in a borrower and in a sector. Similarly, Investment Policy of the Bank guides the concerned officials for management of credit risks in investment portfolio. The Bank takes deposits, government securities, and guarantees etc. as measures to mitigate credit risk. Eligible CRM as at mid July 2009 was Rs.1.23 billion.

With regard to market risk and liquidity risk management, the Bank has a very active ALCO which meets periodically to discuss and manage these risks as per the ALM policy/Investment Policy/Forex Policy approved by the Board. Similarly, there is a front office and back office concept to ensure compliance of policies/limits on a transaction level.

As the credit risk is the main component of risk composition of every bank affecting the its overall operation, following table represents the existing condition of credit risk exposure of NABIL.

Table : 4.3

Credit Risk Weighted Exposure of NABIL on 2009

S.N.	Categorises	Risk Weighted Exposure
1	Claims on Government & Central Bank	-
2	Claims on Other Financial Entities	-
3	Claims on Banks	5,840,259,663
4	Claims on Domestic Corporates and Securities Firms	14,686,947,619
5	Claims on Regulatory Retail Portfolio	1,851,966,250
6	Claims Secured by Residential Properties	2,255,846,521
7	Claims secured by Commercial real estate	-
8	Past due claims	59,541,785
9	High Risk claims	150,695,400
10	Other Assets	1,105,692,654
11	Off Balance Items	4,305,702,461
TOTAL		**30,256,652,353**

Source: Annual Reports of NABIL

For effective management of operational risk, the Bank has Standard Instruction Manual for all areas of work which incorporate international practices and Bank's own experience. In operations, the Bank has put in place maker and checker concept with proper MIS to \capture deviations if any.

According to the table no.3, NABIL holds large amount of claims against the domestic corporations and securities firms in the form of loan and advances including investment on them. Claims on government and central bank as well with other financial entities are subject of no risk categories, so their risk weighted exposure is equal to nil.

Among three risk categories of the total risk weighted exposure, credit risk is the most extensive risk of the commercial banks against which large amount of capital is required to be maintained in order to gain the sense of security against the probable future loss by the stakeholders concerned directly or indirectly through the credit extensive of the bank.

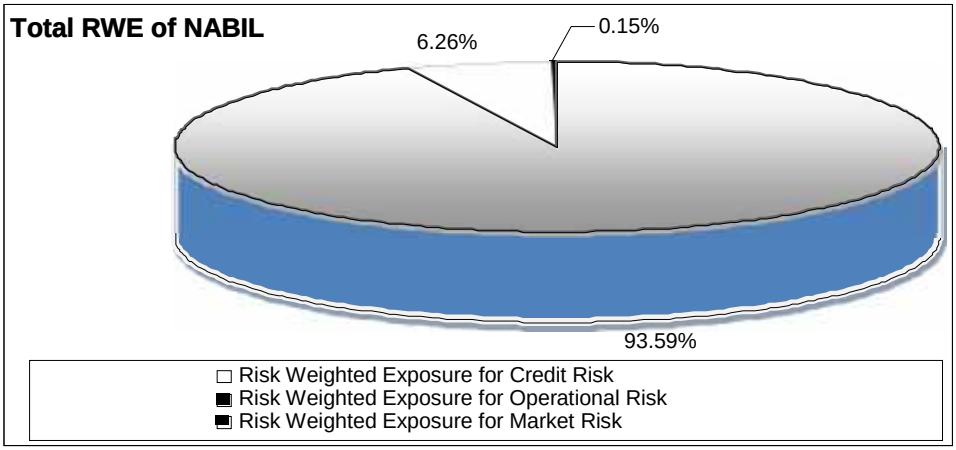
Risk weighted exposure of other two risk and total risk weighted exposure is presented in the following table.

Table : 4.4

Total Risk Weighted Exposure of NABIL in 2009

Particulars		Amount
Risk Weighted Exposure for Credit Risk		30,256,652,353
Risk Weighted Exposure for Operational Risk		2,023,471,261
Risk Weighted Exposure for Market Risk		49,819,954
Total Risk Weighted Exposures		**32,329,943,568**

Figure : 4.2
Total RWE of NABIL in 2009



NABIL's total risk weighted assets composed all three categories of risk. Credit risk exposure constitute large portion in total RWA which equal to 93.59% of total risk exposure. Other two risk; operational and market risk constitute 6.26% and 0.15% of total RWA respectively. A pie chart of the total RWA of NABIL has been shown in the above figure 4.2.

4.1.3 Core Capital of Nabil Bank Ltd.

Nabil Bank limited has maintained following balances on core capital of its capital fund at the end of 2009.

Table : 4.5

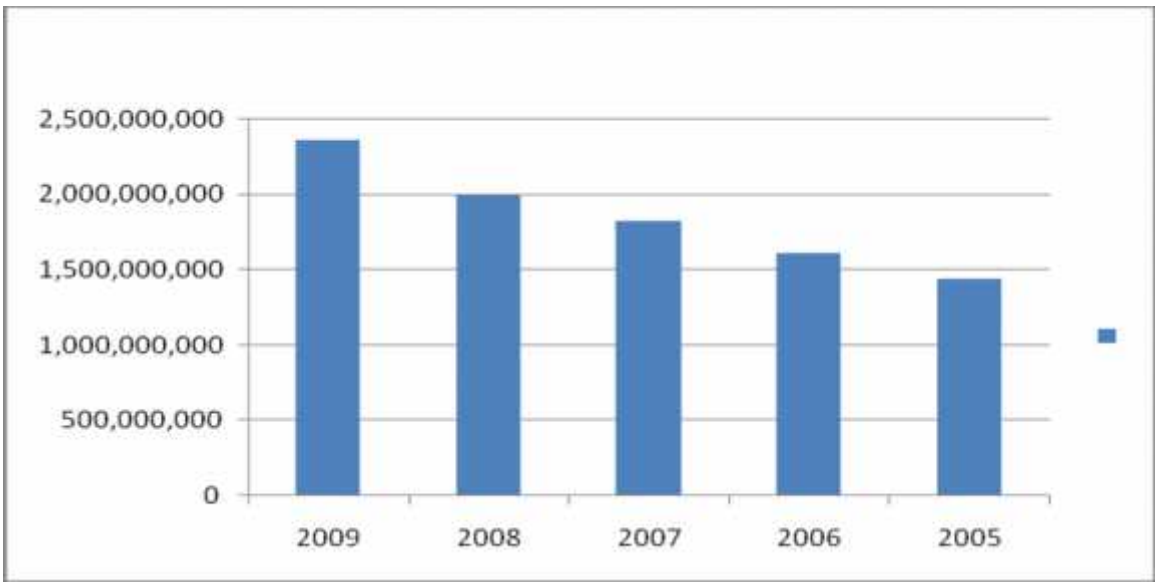
Core Capital of NABIL On July 2009

Core Capital Compontnts	2009	2008	2007	2006	2005
Paid up Equity Share Capital	689,216,000	491,654,400	491,654,400	491,654,400	491,654,400
Proposed Bonus Equity Shares	275,686,400	196,661,760	-	-	-
Irredeemable Non-cumulative preference shares	-	-	-	-	-
Share Premium	74,000	74000	74,000	74,000	74,000
Statutory General Reserves	1,133,500,000	983,500,000	975,000,000	847,000,000	743,200,000
Retained Earnings	162,544,589	113,381,555	33,438,017	29,981,908	29,794,031
Capital Redemption Reserve	-	-	-	-	-
Capital Adjustment Reserve	-	105,000,000	300,300,000	228,300,000	162,800,000
Dividend Equalization Reserves	100,000,000	100,000,000	20,000,000	13,500,000	11,931,872
Other Free Reserve	2,578,000	2,578,000	2,578,000	-	-
Total	**2,363,598,989**	**1,992,849,715**	**1,823,044,417**	**1,610,510,308**	**1,439,454,303**

Source: Annual Reports of NABIL

Figure : 4. 3

Core Capital of NABIL



The Above table shows that, it has provided no value for the Goodwill as well as other fictitious assets which are to be deducted from the core capital. It has not invested the fund over the prescribed limit in share and debentures of the other companies which are also the subjects to be deducted from the core capital.

Nabil bank has added proposed bonus equity share as core capital components from 2008. Statutory general reserve and equity capital are the main components increasing the size of core capital. It core capital has significantly increased in recent five years. Total core capital fund has been increasing with the annual compound growth rate of approximately 10.47%. In the year 2009, however it has totally reduced capital adjustment reserves. Instead, it has issued additional equity capital during 2009 which increased its core capital fund for the year. As compare to the previous year NABIL has become able to increase its core capital in amounts significantly. It has increased its core capital by Rs. 370,749,274 in 2009 which is 15.68% higher than its value on 2008. It has increased Paid up equity share and retained earning significantly, which constitute a large portion of increased core capital to maintain standards maintained by NRB in accordance with the BASEL-II accord. Along with such increments in core capital it has also reduced its capital adjustment reserve entirely.

Composition of Core capital fund of Nabil Bank for the last five year has been illustrated in the figure.

Referring to figure 4.3, it can be disclosed that the core capital fund of NABIL has a trend of increment which is reasonable and steady. On an average, the growth in core capital fund is 10.5% annually. If it continues to increase reserve and surpluses as the components of core capital it can easily attain the new capital regulations that can be expected from the regulatory body or NRB.

4.1.4 Supplementary Capital of Nabil Bank Ltd.

After the evaluation of core capital an attempt has been made here to disclose about the condition of supplementary capital of NABIL in past five years. Supplementary capital of Nabil bank is composed of only seven components in 2009. It has no balance of assets revaluation reserve, hybrid capital instrument like preferred stock and investment adjustment reserve. However it has raising fund from unsecured subordinated term debt as a result its Tier-II capital fund has significantly increased in recent year. Further condition of supplementary capital of NABIL has been presented below.

\

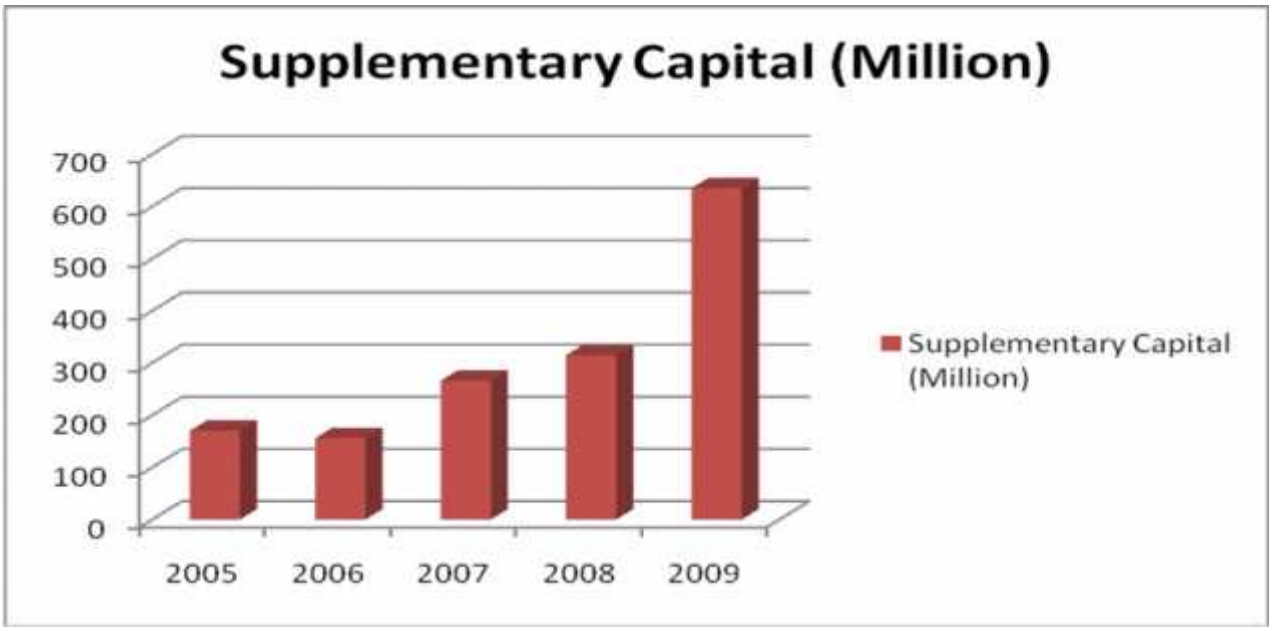
Table : 4.6
Supplementary capital of NABIL Bank in 2009

Supplementary Capital Components	2009	2008	2007	2006	2005
General Loan Loss Provision	291,714,142	175,502,575	130,343,145	108,434,222	127,733,990
Assets revaluation reserve	-	-	-	-	-
Hybrid Capital Instruments	-	-	-	-	-
Unsecured Subordinated term Debt	240,000,000	-	-	-	-
Exchange equalization Fund	64,100,000	55,700,000	44,200,000	37,800,000	33,900,000
Additional Loan Loss Provision	3,026,253	64,082,000	81,861,460	-	-
Investment Adjustment Reserve	-	-	-	-	-
Interest Spread Reserves	-	-	-	2,578,000	2,578,000
Contingent/other Reserve	9,500,000	8,500,000	7,750,000	6,750,000	5,750,000
Provision For Loss on Investment	26,790,780	10,998,105	2,125,000	-	-
Total	**635,131,175**	**314,782,680**	**266,279,605**	**155,562,222**	**169,961,990**

Source: Annual Reports of NABIL till 2009

Figure : 4. 4

Supplementary Capital of Nabil Bank Ltd.



Above table (4.6) explains the composition of tier two capital of Nabil Bank Limited over last five years. It has started introducing additional loan loss provision as tier-II capital since 2006 which constitute significant level of supplementary capital. On the other hand, reserve for interest spread has been stopped since 2005. In total average compounding growth rate for the tier II capital is approximately 30% annually ignoring seasonal variations in particular years. as we can see in above table, NABIL has improved the amount in the year 2009 to follow the NRB directions to meet minimum capital requirement. As compare to Tier-1

capital Supplementary Capital was only 15.80% of core capital in 2008 which is significantly increased in 2009 to 26.87%. And as compare to previous year supplementary capital is increased by Rs.320,348,495 which is about 102% more than 2008. The major components increased in supplementary capital are unsecured term debt which was entirely increased in 2009; general loan loss provision has also been increased significantly despite of reduction in additional loan loss provision and investment loss provision is also increased.

The condition of tier-II capital of Nabil Bank Ltd. can be further explained through the following chart.

Looking after the trend of increment in the supplementary capital of NABIL it can be disclosed that in recent year Nabil has increased its leverage ratios significantly to meet the required capital adequacy framework. Rate of increase in supplementary capital fund in 2008 is cent percent which was only about annual 17 percent in previous years.

As the summary of the above analysis, its position of core capital and supplementary capital on over the last five years along with capital adequacy ratio has been presented under table as follows.

4.1.5 Capital Adequacy of NABIL

Upon analysis It has been disclosed that Nabil Bank Limited has maintained the required capital fund prescribed by the NRB Capital Adequacy Regulation as per july-2009. It also has become able to meet the international standard of capital regulation. Its overall condition of capital fund in terms of risk weighted exposure for past five years has been highlighted in table no. 4.7

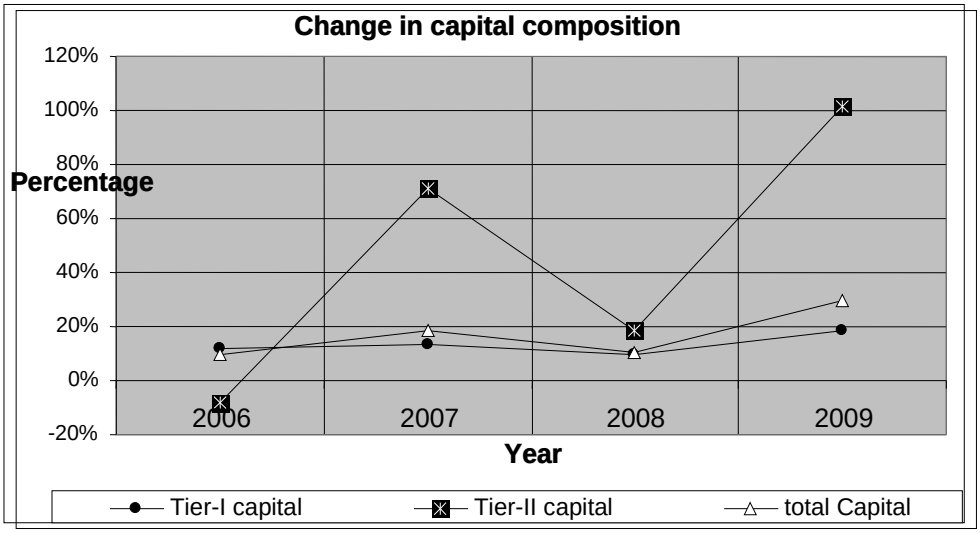
Table : 4.7
Capital Adequacy of NABIL for last five years

Year	Tier-I Capital	Tier-II Capital	Total Capital	Tier-I Ratio %	Capital Ratio%
2005	1,439,454,303	169,961,990	1,609,416,293	14.69	16.42
2006	1,610,510,308	155,562,222	1,766,072,530	11.35	12.44
2007	1,823,044,417	266,279,605	2,089,324,022	10.74	12.31
2008	1,992,849,715	314,782,680	2,307,632,395	10.40	12.04
2009	2,363,598,989	635,131,175	2,998,730,164	7.31	9.28

Source: Annual Reports of NABIL from 2005 to 2009

Figure : 4.5

Percentage Increase in Capital Fund During Study Period.



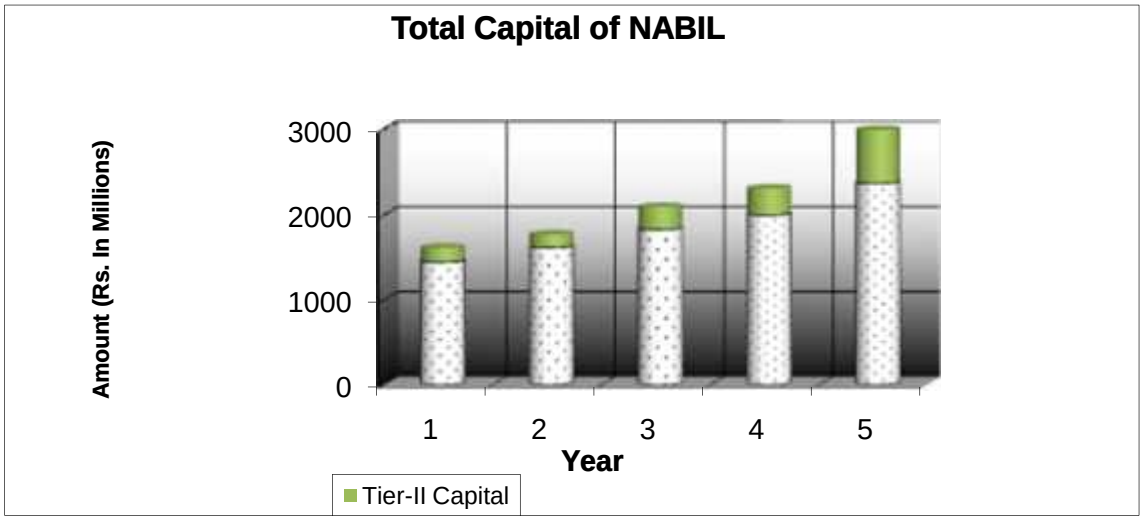
The above Table no. 4.7 explains the capital position of Nabil Bank Ltd. for last five years. Through the analysis of table, it seems clear that capital ratio is highest of above 16 percent containing more than 14% as core capital on 2005. It has increased its capital fund by about 12% in 6 but, supplementary capital is decreased as compared to pervious year. Up to 2008 capital adequacy ratio of the bank is above 12% which is enough to meet the requirement of Basel as well as NRB. Beside the standard maintained by bank it is clear that it has not given significant importance on supplementary capital. More the bank reduces the risk; more will be the capital adequacy ratio. In the sense, it can be concluded that, bank has become successful to minimize its risks to maintain capital as adequate as required by regulations. According to the NRB directives, total capital fund should not be less than the 10% of the total risk weighted exposure but Nabil has only 9.28% of total capital fund in 2009. So it has not been able to maintain the total capital fund as required by the directives despite the adequate level of core capital.

It can be further illustrated with the help of graphical line showing the percentage increase in tier-I and tier-II capital during the study period

Above figure 4.5 explains the proportionate increment in the capital fund from 2006 to 2009. As we can see, total capital has increased by less than 20% over its previous year's value in 2006 to 2007 but in 2009 it has been increased by more than 25% with the large increment in supplementary capital. Supplementary capital shows large variations over the period. It was decreased by about

10% in 2006 as compared to 2005 but it has increased by about 70% during 2007 over 2006 value following by 19% increase in 2008 and more than 100% increase in 2009. Banks shows the consistency in its core capital fund as it has increased by 11%, 13%, 9% and 18% in 2006 to 2009 respectively over previous year.

Figure : 4. 6
Capital Composition of Nabil Bank from 2005 to 2009



Year 1= 2005, 2=2006, 3=2007, 4=2008, 5=2009

The above figure (Figure 4.6) shows that, NABIL has significantly increased the capital fund in 2009 as compared to last year. In 2008 Core capital constituted 86.36% of total capital which is reduced to 78.81% in 2009 by increasing Supplementary capital. Likewise percentage of Tier-2 capital in 2008 to its capital fund is only 13.64% which is increased to 21.18% up to July 2009. According to above table it can be seen that NABIL has become able to maintain at least 6% tier one capital ratio. Core capital to total RWA is maintained to be 7.31% which is above the requirement of NRB directives. But as compared to total capital to total RWA; total capital is not as mentioned by NRB as it requires at least 10% total capital to RWA which comes only to 9.18%. It means it can be concluded that Tier-II capital of NABIL seems to be shorting and thus it can go for necessary step to increase the portion of supplementary capital.

4.2 Capital Standard of Bank of Kathmandu (BOK)

Bank of Kathmandu Limited has become a prominent name in the Nepalese banking sector. It has started its operation with the slogan, “We make your life easier”. Bank of Kathmandu is committed

to delivering quality service to customers and generating good return to shareholders. Bank of Kathmandu (BOK) has today become a landmark in the Nepalese banking sector by being among the few commercial banks which is entirely managed by Nepalese professionals and owned by the general public. BOK started its operation in March 1995 with the objective to stimulate the Nepalese economy and take it to newer heights. BOK also aims to facilitate the nation's economy and to become more competitive globally. To achieve these, BOK has been focusing on its set objectives right from the beginning.

4.2.1 On Balance Sheet and Off Balance Sheet Exposure of BOK

BOK has become able to accumulate total eligible capital fund of 1635.23 million in 2009 which is composed of approximately 20% Tier-2 or supplementary capital and remaining with core capital. Same is about 1290.12 Million in 2008 consisting of 964.56 million of core capital and remaining 325.56 million as supplementary capital.

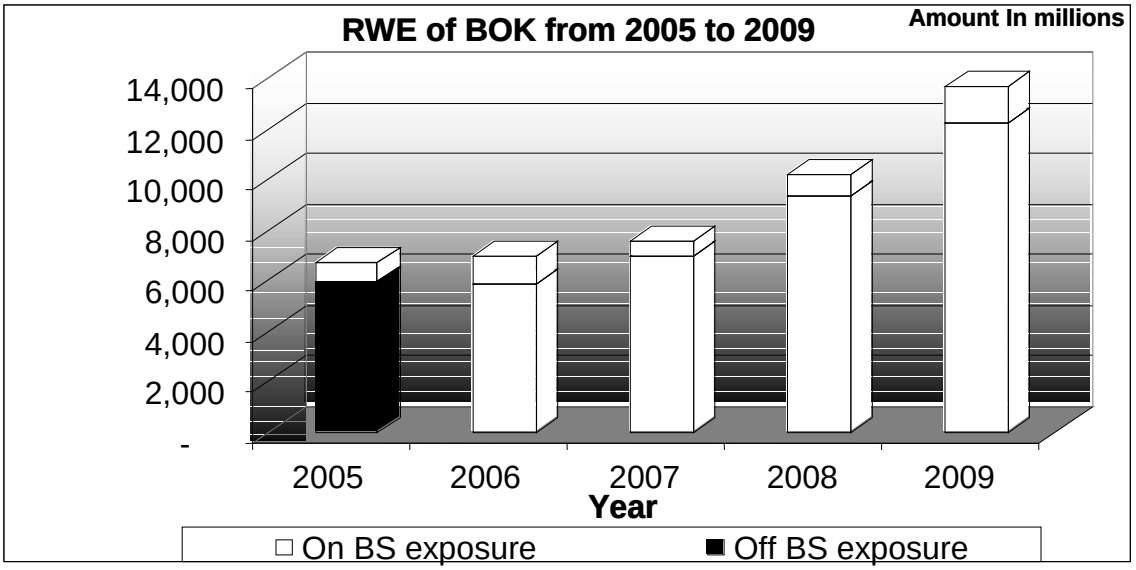
Its core capital components during the study period of 2005 to 2009 has been shown in following table as under.

Table : 4. 8
On Balance Sheet and Off Balance Sheet Exposure of BOK

Year	RWA	On BS exposure	Off BS exposure
2005	6,672,172,847	5,956,487,593	715,685,254
2006	6,936,942,397	5,871,563,470	1,065,378,927
2007	7,583,653,037	6,938,771,524	644,881,513
2008	10,226,193,975	9,324,393,731	901,800,244
2009	13,702,369,666	12,219,960,195	1,482,409,471

Source: Annual Reports of BOK from 2005 to 2009

Figure :4.7
RWE of BOK From 2005 to 2009



Analyzing the above components of the bank's books of account it has been known that, total amount of on balance sheet and off balance sheet exposure of BOK has been in increasing trend. With the increase in capital bank has increased its total risk weighted exposure by about 105% in recent five years which is the indicator of increasing transactions of the bank. On an average the bank has average 89% of total risk weighted exposure from the Balance sheet exposure and remaining 11% from off balance sheet exposure. Its risk weighted exposure has increased in average annual growth rate of 15.48% during the study period. Like wise annual average growth rate in on balance sheet exposure and off balance sheet exposure comes to 15.45% and 15.67% respectively. On an average the bank has its on balance sheet exposure 8 times higher than it's off balance sheet exposure. In on balance sheet components high risk assets held by the bank in significant amount comes from the investment in equities of corporations, claims on corporations, regulatory retail portfolios, claims not fully secured by residential properties and past due claims. In the other hand, off balance sheet exposure of the bank is composed of about fifteen components among which large portion comes from the items like, bills collection, forward foreign exchange contract, commitments with original maturities above six months, preference bond and acceptances. Its RWA is increasing in approximate annual compound rate of 15.5% over last years exposures. In recent five years it has significantly increased both on balance sheet and off balance sheet exposure. Its off balance sheet RWA has been increasing with the average annual compound rate of 15.68% which is the indicator of increasing transactions on LC, acceptances and other

off balance sheet exposures. Likewise, on balance sheet exposures are also significantly increased with the average annual growth rate of 15.45% in last five years.

BOK has significantly increased its total risk weighted exposure in 2008 and 2009. RWA in 2005, 2006 and 2007 seems to be consistent as they remain in the range of 600 to 700 million. It implies that BOK has become able to increase its balance sheet items in recent year. It shows the strength of BOK in its high profitability and assets expansion.

4.2.2 RWE for Credit Risk, Operational Risk and Market Risk of BOK

For the purpose of Credit Risk management, the Bank has drawn a clear demarcation between business generation and risk management unit. Without approval of risk management unit, no loan is sanctioned. Credit Policy of the Bank guides all the lending officials from credit screening to settlement. In order to lessen concentration risk, the Bank monitors lending portfolio periodically and takes appropriate decision with regard to the exposure in a borrower and in a sector. Similarly, Investment Policy of the Bank guides the concerned officials for management of credit risks in investment portfolio. The Bank takes deposits, government securities, and guarantees etc. as measures to mitigate credit risk.
BOK has put significant effort for controlling credit risk of the bank. As to Credit Risk management, the Bank has well coordinated the demarcation between business transaction and risk management unit formed inside the bank with the view to manage risk. Approval of risk management unit has been made compulsory to pass any kind of loan. Credit Policy of the Bank guides all the lending officials from credit screening to settlement. In order to lessen concentration risk, the bank continuously monitors and evaluates the risks of portfolio investment in securities of various firms. The Bank takes deposits, government securities, and guarantees etc. as measures to mitigate credit risk.

As the credit risk is the main component of risk composition of every bank affecting the its overall operation, following table no.9 represents the existing condition of credit risk exposure of BOK.

Table : 4. 9

Credit Risk Exposure of BOK of 2009

	Categories of Credit risk		**Amount (Rs.)**
a.	Claims on Government & Central Bank		-
b.	Claims on other Official entities		-
c.	Claims on banks		347,760,655
d.	Claims on corporate & securities firms		3,369,087,252
e.	Claims on regulatory retail portfolio		1,019,866,884
f.	Claims secured by residential properties		634,060,889
g.	Claims secured by commercial real estate		5,055,821,740
h.	Past due claims		522,777,195
i.	High risk claims		268,502,272
j.	Other Assets		985,321,582
k.	Off Balance Sheet Items		2,115,232,795
Total			**14,318,431,264**

Source: Annual report of Bank of Kathmandu

Figure: 4.8
Risk Weighted Exposure of BOK

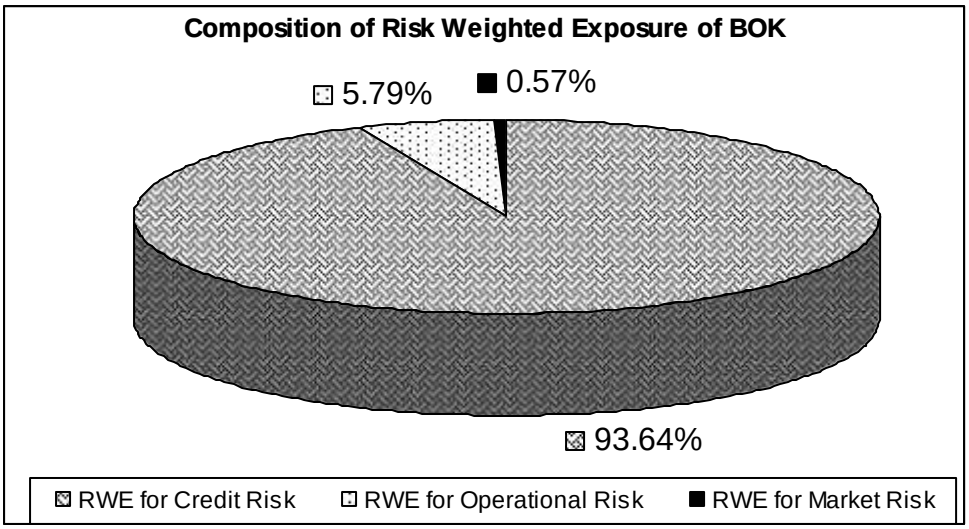


Table 4.9 shows that, BOK has total risk weighted exposure of Credit risk equal to Rs.14318.43 million. Largest portion of credit risk exposure comes from claims secured by

commercial real estates which constitute 35.31% of total risk weighted exposure. Similarly claims on corporate & security firms also constitutes large portion. It carries no claims against government and other official entities.

Out total risk weighted exposure of Rs.13702.37 million, BOK shows risk exposure of Rs.14318.43 Million against credit risk. More over it shows risk exposure of operational risk equal to Rs.884.86 million. Similarly it shows total risk exposure of Rs.87.315 million against market risk. So total risk weighted exposure comes to Rs.15290.608 million which is greater than total Risk weighted assets it calculates and the difference is adjusted as credit risk mitigates.

Similarly the above figure 4.8 shows the composition of total risk weighted exposure of BOK.

The Pie-chart represents the composition of RWE of BOK. More than ninety percent of RWE comes against credit risk and remaining with operational and market risk. Market risk constitutes very low amount in risk weighted exposure.

4.2.3 Core Capital of BOK:

As like other commercial banks, Core Capital of BOK has been classified under eight categories. The composition of core capital fund for the purpose of capital adequacy measurement has been presented in table: 4.10.

Table : 4.10

Core Capital of BOK from 2005 to 2009

Core Capital Components		2009	2008	2007	2006	2005
A	Paid up Equity Share Capital	603,141,300	603,141,300	463,580,900	463,580,900	463,580,900
B	Share Premium	-	-	-	-	-
C	Irredeemable Non-cumulative preference shares	-	-	-	-	-
D	General Reserve Fund	270,081,795	197,782,419	145,305,023	104,816,898	76,910,953
E	Retained Earnings	22,156,186	17,991,266	8,312,349	988,740	6,491,852
F	Capital Redemption Reserve	-	-	-	-	-
G	Capital Adjustment Reserve	347,928,740	10,6672,221	185,432,360	139,074,270	139,074,270
H	Other Free Reserve	164,075	164,075	164,075	164,075	-
Capital Deduction Items:		-	-	22,309,198	-	-
A	Goodwill	-	-	-	-	-
B	Investment more than limit	-	-	-	-	-

C	Fictitious Assets	-	-	(1,114,101)	(859,427)	-
D	Investment in share through guarantee	(12,072,600)	(12,072,600)	(12,072,600)	(13,414,000)	-
Total		**1,310,851,552**	**964,559,308**	**811,917,204**	**694,351,456**	**686,057,975**

Source: Annual reports of Bank of Kathmandu

Bank of Kathmandu has increased its core capital fund to meet the changing requirement of capital adequacy framework. It has significantly increased its core capital fund in span of five year period. It has touched the level of 1310 million in core capital fund in 2009 which is about 95% higher than its value on 2005. Analyzing the ratio of increment the core capital fund has increased by the average annual compound rate of 14%. As compared to previous year (2008), it has increased its eligible Tier-I capital by 36%. Main component of increment is capital adjustment reserve and general reserve fund. It has increased its capital adjustment reserve by 226.17%. it shows that it is the effect of capital regulation to increase capital adjustment reserve tremendously. Likewise it has increased its general reserve fund by 36.56% than of previous year.

4.2.4 Supplementary Capital of BOK

Supplementary capital of BOK has been classified into nine categories, but only five components are filled with the figures because these are the only figures that the bank holds as supplementary capital. The composition of supplementary capital of BOK has been presented in Table No.12;

Table : 4.11
Supplementary Capital of BOK from 2005 to 2009

Components		**On 2009**	**On 2008**	**2007**	**2006**	**2005**
1)	General Loan Loss Provision	124,039,462	93,163,590	70,834,087	56,712,104	53,169,147
2)	Asset Revaluation Reserve	-	-	-	-	-
3)	Hybrid Capital Instruments	-	-	-	-	-
4)	Unsecured Term Debt	168,986,301	200,000,000	200,000,000	-	-
5)	Exchange Equalization Fund	19,149,636	16,642,963	14,629,976	12,112,933	10,881,270
6)	Additional Loan Loss Provision	9,449,810	12,999,812	-	-	-
7)	Investment Adjustment Reserve	-	-	-	-	-
8)	Provision for Loss on Investment	2,758,456	2,758,456	3,416,200	351,750	-
9)	Other Reserves	-	-	-	-	164,075
Total		**3,24,383,665**	**325,564,795**	**288,880,263**	**69,176,787**	**64,214,492**

Source: Annual reports of Bank of Kathmandu

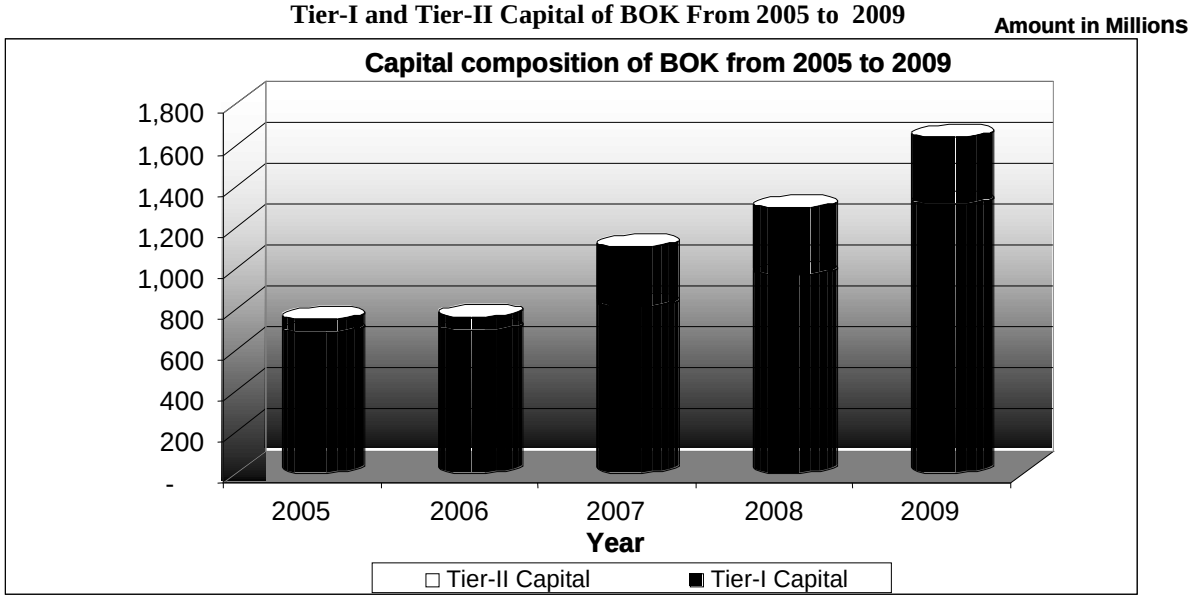
The above table explains the composition of Tier-II capital of BOK. Referring to above table it is not outrageous to state that bank has became able to increase its supplementary capital significantly in past five years to meet the increasing requirement of capital adequacy framework. Its supplementary capital has increased from about 64 million in 2005 to 324 million in 2009 which is approximately 5 times higher. Annual rate of growth in supplementary capital is about 38%. However in recent year its supplementary capital seems consistent that very with very small proportional change. It has started using unsecured term debt as borrowing tool since 2007 which has significantly increased its leverage as well as tier-II capital. It has increased its General loan loss provision by about 33.15% in 2009 and reduced amount of unsecured subordinated term debt by repayment of debt. It has started apportioning some portion of earning as additional loan loss provision since 2008 which is also can be regarded as another cause for increasing supplementary capital. Small changes can be seen in exchange equalization fund and on additional loan loss provision.

4.2.5 Capital Adequacy of BOK

Table : 4.12
Capital Adequacy of BOK From 2005 to 2009

Year	Tier-I Capital	Tier-II Capital	Total Capital	RWA	% of Tier-I with RWA	% of total capital/RWA
2005	686,057,975	64,214,492	750,272,467	6,672,172,847	9.05%	10.20%
2006	694,351,456	69,176,788	763,528,244	6,936,942,397	10.01%	11.01%
2007	811,917,204	288,880,263	1,100,797,467	7,583,653,037	10.71%	14.52%
2008	964,559,308	325,564,795	1,290,124,103	10,226,193,975	9.43%	12.62%
2009	1,310,851,552	324,383,665	1,635,235,217	13,702,369,666	9.57%	11.93%

Figure : 4.9
Tier-I and Tier-II Capital of BOK From 2005 to 2009



Above table explains the condition of BOK about the capital adequacy for last 5 years. In all the subsequent years, BOK seems to be maintaining its capital ratio above the prescribed limit. It has maintained highest of 14.52% capital with 10.71% contributed by Tier-I capital. This seems possible due to comparatively low amount of risk weighted exposure in response to capital components. In all the subsequent year it seems clear that very large portion of capital funds comes from core capital and comparatively very low amount from supplementary capital. In other years also it has maintained satisfactory level of capital to secure the depositors and lenders from various kinds of risk.

So far as concerned with core and supplementary capital of BOK, initially very low amount of supplementary capital has found to be maintained however allowable supplementary capital is up to 100% of tier one capital. In 2005, 88.75% of total capital was from Tier-I capital and remaining only 11.25% we from supplementary capital. Likewise in the year of 2006 and 2007 core capital was 90.94 and 73.76% respectively. In 2007 and 2008 BOK has maintained large portion of supplementary capital which is slightly decreased to 19.84% in 2009.

As per above analysis BOK, in 2009, has maintained only 8.57% as percentage of Tier-I capital with its total Risk Weighted Exposure which is above the standard of 5.5%. So, it has maintained enough capital funds as core capital but if we consider total capital as percentage of total RWA, it is only 10.69% which is slightly below the standard of 11% prescribed by Basel-II. Here it seems clear that BOK has got its total capital ratio short by approximately

3%. So, However short amount is comparatively low, it can be increased either by increasing tier-II capital components or by increasing its core capital components because core capital is already within its adequacy.

4.3 Capital Standard of Siddhartha Bank Limited

In order to manage and eliminate the credit risk, the Bank has a practice of maintaining the best quality assets in its book. The Bank has a comprehensive Credit Policy in place which elaborates the procedures for proper risk management. The Bank has delegated credit approval limits to various officials to approve and sanction various amount of credit request. As a check and balance mechanism, each credit case requires dual approval. Regular monitoring of the credit portfolio ensures that the Bank does not run the risk of concentration of portfolio in a particular business sector or a single borrower. Similarly the Bank also exercises controlled investment policy with adequately equipped resource looking after the investment decisions. As for the monitoring of market and liquidity risk the Bank has an active Assets and Liability Management Committee (ALCO) in place which meets regularly and takes stock of the Bank's assets and liability position. All foreign exchange positions are managed by treasury consisting of front office dealers with specific dealing limits and an independent back office. The back office executes the deals made by the dealers and also monitors the liquidity position of the Bank.

As a part of monitoring operational risks, the Bank has devised operational manuals for various banking functions which are reviewed and modified time to time as per the changing business context. It has independent internal audit which reports to the Audit Committee of the Bank. The Audit Committee meets frequently and reviews the business process and financial position of the Bank. The Bank has strong MIS in place to monitor the regular operational activities (www.sbl.com.np).

4.3.1 On Balance Sheet & Off Balance Sheet Exposure of SBL

on balance sheet and off balance sheet exposure of risk for last five years of Siddhartha bank limited has been presented in the form of following tabular presetbnation.\

Table : 4.13
On Balance Sheet & Off Balance Sheet Exposure of SBL

(amount '000')

Classification	**2009**	**2008**	**2007**	**2006**	**2005**
On Balance Sheet RWA	10,319,023	6,647,608	4,151,490	2,739,763	1,806,746
Off Balance Sheet RWA	762,350	650078	313,531	228,681	164,856
Total RWA	**11,081,373**	**7,297,687**	**4,,465,021**	**2,968,444**	**1,971,602**

Source: Annual report of Siddhartha Bank Ltd from 2005 to 2009

Total amount of on balance sheet and off balance sheet exposure of Siddhartha Bank limited has been presented in above table. With the increase in capital bank has increased its total risk weighted exposure by 462% in recent five years which is the indicator of increasing transactions of the bank. In on balance sheet components high risk assets held by the bank in significant amount comes from the investment in equities of corporations, claims on corporations, regulatory retail portfolios, claims not fully secured by residential properties and past due claims. In the other hand, off balance sheet exposure of the bank is composed of about fifteen components among which large portion comes from the items like, bills collection, forward foreign exchange contract, commitments with original maturities above six months, preference bond and acceptances. Its RWA is increasing in approximate annual compound rate of 41.23% over last years exposures.

4.3.2 RWE for Credit Risk, Operational Risk and Market Risk.

Credit risk is the important type of risk concerned with the banking operation. So, to highlight the main components of credit risk of SBL, Composition of the credit risk weighted exposure for the year 2008 has been presented in the table no. 14.

Table : 4.14
Risk Weighted Exposure of SBL for Credit Risk in 2009

	Risk weighted exposure for Credit risk	**Amount ('000')**
1	Claims On Government and Central Bank	-
2	Claims on Other Financial Entities	-
3	Claims on Domestic Banks	1,062
4	Claims on Foreign Banks	2,578
5	Claims on Domestic Corporations	4,643,119
6	Claims on Regulatory Retail Portfolio	1,63,398
7	Claims Secured by Residential Property	328,430
8	Claim Secured by Commercial Real Estate	283,664
9	Investment in equity of not listed institutions	1,848
10	Investment in equity of listed institutions	15,000

11	High risk claims		3,83,270
12	Other Assets		144,960
13	Off balance sheet items		762,349
Total			**10,629,678**

Source: Annual report of Siddhartha Bank Ltd as on July 2009

The above table shows that, as on July- 2009 Siddhartha Bank Ltd has total risk weighted exposure for credit risk equal to Rs.10629 million. Large portion of risk weighted claim is on domestic corporations followed by other high risk claims and claims on regulatory retail portfolios. For the year bank has risk weighted exposure for operational risk of 434.021 million and Risk weighted exposure for market risk of Rs.17.675 million. From this, it seems clear that risk weighted exposure for market risk is very low.

Similarly the condition of risk weighted exposure of Siddhartha Bank Ltd. in 2009 has negligible contributed from the market risk which constitutes only 0.16% of total risk weighted exposure. About 4% of RWE comes from operational risk and remaining with credit risk. From these values it can be concluded that it has mitigated the operational and market risk but stills holds large portion of risk for credit risk against which it should maintain large amount of capital.

Its condition of Core capital for last five years is presented as follows. To maintain capital for increasing risk over the year caused by increasing transactions and business dealings, bank has significantly increased its core capital composition over its five year of study period. It has increased its core capital by about 175.65% in past five years. For the purpose it has issued additional share capital in the year 2007, 2008 and 2009. It has just started to apportion amount for retained earning. In the year 2009 it has totally written off fictitious assets in the year and investment has been made on debt instrument of corporation equal to 15 million (in debenture of Siddhartha Finance Company) in 2009 which has been excluded from core capital as it is supposed to be risky investment.

4.3.3 Core capital of Siddhartha Bank Ltd.

The Bank has only four items as the components of core capital and only fictitious assets as the deduction from core capital fund except the investment in bond of Siddhartha Finance Company in 2009. Paid up capital and general reserves do only the components constitute

large portion in the formation of core capital of the bank. Its composition of Core capital from 2005 to 2009 has been presented in the following table.

Table : 4.15
Core Capital of SBL from 2005 to 2009

(amount 000)

Core Capital		**2009**	**2008**	**2007**	**2006**	**2005**
1	Paid up capital	828,000	600,000	500,000	350,000	350,000
2	Share Premium	-	-	-	-	-
3	Irredeemable Preference Share	-	-	-	-	-
4	General Reserve	74,802	46,168	27,107	14,056	9,158
5	Retained Earning	1,122	-	-	-	-
6	Capital Redemption Reserve	-	-	-	-	-
7	Capital Adjustment Reserve	160,755	146,191	74,872	23,560	18,045
8	Other Free reserves	-	-	-	-	-
Eligible Deductions						
1	Goodwill	-	-	-	-	-
2	Investment more than limit	-	-	-	-	-
3	Fictitious assets	-	5,499	8,735	8,578	8,275
4	Investment in debt of corporations	15,000	-	-	-	-
Total of Core capital		**1,064,679**	**786,860**	**593,244**	**379,038**	**368,928**

Source: Annual report of Siddhartha Bank Ltd from 2005 to 2009

Above table reflects the position of core capital of Siddhartha bank ltd. for last five years. Its core capital has been significantly increased for 2007 to 2009 as a result of increasing requirement of NRB regulations and Basel requirements. As compared to 2006 it has increased core capital by 57% in 2007, where large portion comes from issue of new shares to public. Likewise, in 2008 it has again increased its paid up capital which pushed its core capital level to 786 million which is about 33% greater than the capital of 2007. At last it has significantly increased the level of core capital as required by Basel-II in 2008, which comes to 1064 million and it is again 33% higher than the core capital of the year 2008. Its core capital has been increased with the approximate annual compound growth rate of 24% in the study period of five years.

4.3.4 Supplementary capital of Siddhartha Bank Ltd.

So far as concerned to its supplementary capital, it has about 113 million as Tier-II capital in 2009. Its main component, constituting large proportion in supplementary capital is loan loss provision followed by exchange rate equalization fund but it has maintained provision for loss in investment equal to 15 million in 2009 which is also a component of Tier-II capital.

Composition of Tier-II capital of Siddhartha Bank Ltd from the year 2005 to 2009 has been presented as under.

Table : 4.16
Supplementary capital of SBL from 2005 to 2009

(amount 000)

Supplementary capital		**2009**	**2008**	**2007**	**2006**	**2005**
1	Loan loss provision	94,389	75,610	37,872	25,536	18,741
2	Assets revaluation fund					
3	Hybrid capital components					
4	Term loan without collateral					
5	Exchange rate equalization fund	3,666	1,352	1,163	273	213
6	Additional loan loss provision					
7	Investment adjustment fund					
8	Provision for loss in investment	15,000				
Total		**113,055**	**76,962**	**39,035**	**25,809**	**18,954**

Source: Annual report of Siddhartha Bank Ltd from 2005 to 2009

Above table explains about the composition of supplementary capital of Siddhartha Bank Ltd. since 2005. It has very few components under the supplementary capital fund where more than 90% of capital fund comes from loan loss provision and remaining form exchange rate equalization fund. In 2009 it has added provision for loss in corporate investment as the component of supplementary capital which is 13.26% of total supplementary capital in 2009.

4.3.5 Capital Adequacy of Siddhartha Bank Ltd.

Siddhartha Bank Ltd. has maintained adequate capital for all three kinds of risk in all five years of study period. In every year it has maintained core capital far more than minimum limit of 5.5% prescribed by Basel-II and NRB directives but it has maintained very low amount as supplementary capital in each year which comes to less than 2% on an average.

Its capital adequacy has been presented as follows in table no. 4.17

Table : 4. 17
Capital Adequacy of Siddhartha Bank Ltd.

Amounts in '000'

Year	**Tier-I Capital**	**Tier-II Capital**	**Total Capital**	**RWA**	**Tier-I /RWA**	**Total Capital/RWA**
2005	245,689	18,954	264,643	1,971,602	12.46%	13.42%
2006	379,038	25,809	404,847	2,968,444	12.77%	13.64%
2007	593,244	39,035	632,279	4,465,021	13.29%	14.16%
2008	786,860	76,962	863,822	7,297,687	10.78%	11.84%
2009	1,064,679	113,055	1,177,734	11,081,373	9.61%	10.63%

Source: Annual report of Siddhartha Bank Ltd from 2005 to 2009

Above table shows the detail about the capital adequacy of Siddhartha bank limited. It has maintained Tier-I capital ratio of 9.61% in 2009 which is about 11% lower than it had maintained in 2008 but still it is above the standard of 5.5%. From 2007 bank has changed its capital composition which helped it to reduce its excessive core capital fund by making investment in risky assets as well. Total capital of the bank is also in satisfactory position as it has maintained lowest 10.63% as proportion of total capital in the year 2009. It had highest capital ratio of 14.16% in 2007. With the increase in Risk weighted exposure of the bank it has become able to update the position of capital as well which has helped the bank to maintain capital standards.

4.4 Comparative Analysis of Sampled Banks:

Up on the study of the capital adequacy of the Nabil, BOK and Siddhartha Bank; which represent more than 15 percent of the total commercial banks operating for more than five years, It can be disclosed that Nepalese banks are doing well enough as per the capital adequacy requirements prescribed by Nepal Rastra Bank. They have also become able to meet international standard of capital adequacy according to Basel-II.

Table : 4.18
Comparative Analysis of Capital Adequacy

	Total Risk Weighted Exposure (Rs 000)			Tier-I capital Ratio			Total Capital Ratio		
year	NABIL	BOK	SBL	NABIL	BOK	SBL	NABIL	BOK	SBL
2005	9,802,009,411	6,672,172,847	1,971,602	14.69%	9.05%	12.46%	16.42%	10.20%	13.42%
2006	14,193,071,630	6,936,942,397	2,968,444	11.35%	10.01%	12.77%	12.44%	11.01%	13.64%
2007	16,976,368,426	7,583,653,037	4,465,021	10.74%	10.71%	13.29%	12.31%	14.52%	14.16%
2008	19,166,766,033	10,226,193,975	7,297,687	10.40%	9.43%	10.78%	12.04%	12.62%	11.84%
2009	32,329,943,568	13,702,369,666	11,081,373	7.31%	9.57%	9.61%	9.28%	11.93%	10.63%
	Average			10.90%	9.75%	11.78%	12.50%	12.05%	12.74%

As shown in Table no 18, all of the sampled banks has efficiently maintained the capital standard as mentioned by the central bank regulation. But in recent years due to the increase in banking transactions and risk weighted assets in and out of the balance sheet, the capital ratio has fallen below the standard. With respect to Tier-I capital, all the banks has maintained adequacy as required, but with respect to the total capital adequacy, large scale banks are also not being able to maintain capital as required which is reflected by the total

capital ratio of Nabil Bank on 2009. BOK and Siddhartha Bank has adequately maintained their respective Tier-I as well as Tier-II capital ratios in all the respected years.

As we can see BOK is strong enough in terms of Tier-I capital ratio in earlier period which has decreased its total capital ratio over the period and currently its total capital ratio is about 20.20% which is above the requirements. So far as concerned with the core capital, BOK has lower ratio as compared to other banks. In recent years the performance of the NABIL bank with respect to the capital adequacy has been increased the reason behind this may the use of highly risk weighted assets in its portfolio. However all the capital adequacy measurement of the bank seems to be satisfactory, it is still not adequate in case of Nabil Bank.

Despite the equal regulation on Core and Supplementary capital of Bank, Most of the bank has not made focus on maintaining the capital adequacy through the maintenance of required capital through the supplementary capital. It is found that the Tier-II capital is the neglected part of capital regulation. The banks tend to be interested in maintaining the core capital above the requirements keeping very low level of supplementary capital that still leads them to inadequacy of capital.

4.5 Analysis of the Commercial Banking as a Whole:

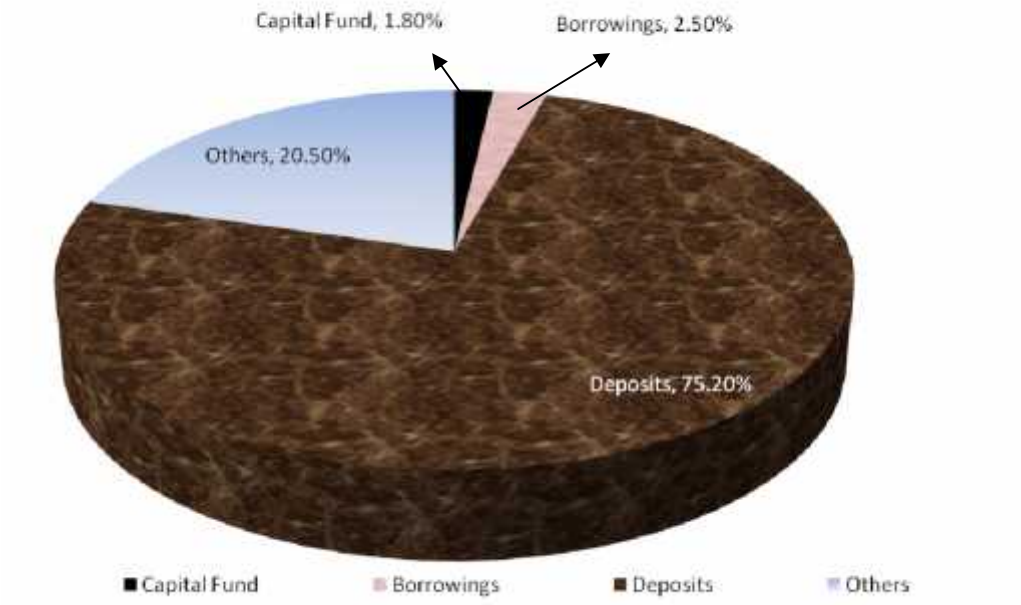
Analyzing the whole commercial banking industry, it can be easily disclosed that the total capitalization in the commercial banking industry is in increasing trend. Total capital fund of the commercial banks has been increased by 273.5% in 2008 which is the remarkable improvement made in maintaining the capital fund. Likewise, deposits, liquid fund, investment as well as loan and advances are increasing year by year except some exceptions (Nepal Rastra Bank, 2008).

The capital fund, one of the components of liabilities, witnessed a strong growth of 273.50 percent and reached to Rs.25,778.0 million in mid July 2008 from Rs.69,01.7 million in the last year. The borrowings and deposit, another component of liabilities, increased by 17.55 percent and 30.10 percent while other liabilities decreased by 0.11 percent compared to last year 2007. Similarly, loans and advances the major component of assets increased by 34.27 percent and reached to Rs. 391,537.7 million in mid July 2008 from Rs.291,605.8 million in mid July 2007. The liquid fund and investment increased by 58.55 percent and 18.11 percent in mid July 2008 compared to the previous year respectively. In the year of 2004 and 2006 commercial banking had negative capital fund decreasing more than 100% of last year's

capital fund, which might be the another reason for NRB to impose new capital regulation on them.

Commercial banks held dominate share on the major balance sheet components of financial system. Of the total deposits Rs.508,905.7 million in mid-July 2009, the commercial banks occupied 83.7 percent.

Figure : 4.10
Composition of Liability of Commercial Banks



Data Source: Banking and financial Statistics-NRB

As per figure: 4.10, very low portion of total liability and equity consists of capital fund of total commercial banking industry. The composition of liabilities of commercial banks shows that, the deposit has occupied the dominant share of 75.18 percent followed by borrowing 2.54 percent and capital fund 1.76 percent in the mid July 2009. The respective shares of deposit, borrowing and capital fund in the previous year were 68.79 percent, 2.60 percent and 8.98 percent. Of the component of assets, loans and advances occupied the highest share of 54.09 percent followed by total investment 19.22 percent and liquid fund 11.80 percent in the same year. The consolidated capital adequacy of commercial banks improved remarkably and turned to positive of 4.04 percent in the mid July 2009 as against the continued negative figures in the preceding years.

Table: 4.19

Soundness Indicators of Commercial Banking System

Indicators	2003	2004	2005	2006	2007	2008
NPL as Percentage of Total Loan	28.8	22.8	18.94	14.22	9.65	6.08
Total Capita Fund as Percentage of RWA	-12.04	-9.07	-6.33	-5.3	-1.71	4.04

Data Source: Banking and financial Statistics-NRB

Table no. 19 has shown the overall condition of the profitability, Non Performing Loan and total capital fund of the over commercial banking system since 2001. If we give a sight towards the past trend of the capital fund it was really very weak and always negative in past years but due to the effective implementation of the revised framework of the capital adequacy framework, in 2008, commercial banking system has been able to maintain positive 4.40% of the total risk weighted exposure.

Referring to the table 4.19, it can be clearly stated that commercial banks are in recent years very sensitive to the management of nonperforming loan. Since 2003, total system has tremendously decreased the non performing loan out of its loan portfolios, and indeed, they are improving in the field of capital fund as well. In the analysis of past 6 years, it has been found that only in the year 2008; the commercial banking system has been able to maintain the positive capital fund. It means, it can be proved that the commercial banks are now considerate about the risk factor of their assets portfolios and they are improving the condition of capital fund by retaining more funds and reserves. However the sampled banks do not show the negative capital fund, total banking industry has shown the negative capital in early periods this happened due the highly accumulated losses of newly formed banks.

4.6 Trend Analysis

Project trend values of total deposit for next five years of BOK

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	66,359.16
2011	5	76,684.56
2012	6	87,009.97
2013	7	97,335.37
2014	8	107,660.78

Project trend values of total deposit for next five years of NABIL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	56,367.48
2011	5	64,599.02
2012	6	72,830.20
2013	7	81,061.38
2014	8	87,292.57

Project trend values of total deposit for next five years of SBL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	34,317.54
2011	5	39,564.72
2012	6	44,811.89
2013	7	50,059.07
2014	8	55,306.25

(Source: Appendix 1)

The above trend values show that the total deposit of BOK, NABIL and SBI is in increasing trend and the total deposit will reach upto 107,660.78, 87,292.57 and 55,306.25 million by the year 2014 respectively.

Project trend values of total Loans and Advances for next five years of BOK

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	51,187.60
2011	5	59,377.97
2012	6	67,568.34
2013	7	75,758.71
2014	8	83,949.08

Project trend values of total Loans and Advances for next five years of NABIL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	40,049.99
2011	5	46,054.18
2012	6	52,058.36
2013	7	58,062.55
2014	8	64,066.74

Project trend values of total Loans and Advances for next five years of SBL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	22,456.83
2011	5	25,750.62
2012	6	29,044.40
2013	7	32,338.19
2014	8	35,631.97

(Source: Appendix 2)

The above trend values show that the total loan and advances of BOK, NABIL and SBI is in increasing trend and the total it will reach upto 83,949.08, 64,066.74 and 35,631.97 million by the year 2014 respectively.

Project trend values of total Investment for next five years of BOK

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	12,179.46
2011	5	13,800.20
2012	6	15,420.94
2013	7	17,041.68
2014	8	18,662.41

Project trend values of total Investment for next five years of NABIL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	17,215.67
2011	5	19,602.86
2012	6	21,990.05
2013	7	24,377.23
2014	8	26,764.42

Project trend values of total Investment for next five years of SBL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	13,451.05
2011	5	15,675.95
2012	6	17,900.85
2013	7	20,125.74
2014	8	22,350.64

(Source: Appendix 3)

The above trend values show that the total Investment of BOK, NABIL and SBI is in increasing trend and the total Investment will reach upto 18,662.41, 26,764.64 and 22,350.64 million by the year 2014 respectively.

Project trend values of Net Profit for next five years of BOK

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	1,326.93
2011	5	1,540.57
2012	6	1,754.21
2013	7	1,967.86
14	8	2,181.50

Project trend values of Net Profit for next five years of NABIL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	1,483.20
2011	5	1,684.74
2012	6	1,886.29
2013	7	2,087.83
2014	8	2,289.37

Project trend values of Net Profit for next five years of SBL

Year (t)	X = t-2006	$Y_c = a + bx$
2010	4	495.81
2011	5	575.84
2012	6	655.86
2013	7	735.89
2014	8	815.91

(Source: Appendix 4)

The above trend values show that the Net Profit of BOK, NABIL abd SBI is in increasing trend and the total it will reach upto 2,181.50, 2,289.37 and 815.91 million by the year 2014 respectively.

4.7 Major Findings of the study:

- One of the challenges of Commercial banks to maintain capital standard is found to be non performing assets that are growing in volume and magnitude. This is mainly due to defective lending policies there is also challenge created from increase in loan loss provision and non-banking assets provisions. This has made regulation to undertake shock monitoring and supervision.

- Basel capital regulation framework has helped in developing suitable prudential norms to save the banks and financial institutions from financial crisis and signals of failure. It has become important to prevent unfavorable impact on the economy.

- During the time, the operating environment of the banks has changed radically, and their risk management systems have also improved.In the new conditions the calculation of capital charges under the current regime has proved insufficient because it covers only risk. Accordingly, a revision of the capital adequacy framework is justified in order to capture the various factors affecting banks risk exposure.

- New amendment in the capital adequacy has significantly changed the operating procedure of the commercial banks. Since there are the provisions for supervisory/regulatory authorities and the banks themselves would be granted more discretionary power on application of the provisions, the maintenance of required capital adequacy has got some broad area. When the new changes are made on july-8, 2008, the capital adequacy of the commercial banks seems to have showing resistance to change.

- Out of the three sampled commercial banks, only two were able to maintain the capital adequacy in terms of both Tier-I and Tier-II capital ratio. It means more than twenty five percentage of the commercial has not been able to maintain the capital fund as required by regulatory body.

- There is the continuous growth in the capital fund from its components but the rate of growth is very volatile. It means there is no consistency in the trend of capital fund.

- Nepalese commercial banks are seem to be showing negative net worth with the huge accumulated losses of the newly formed commercial banks records mismanagement and failure to fulfill the norms of NRB.

- All the commercial banks seem to care less about the credit risk mitigation that is allowed by the regulation. Very few no. of commercial banks used to disclose about the market risk and operational risk. Moreover there seems no attention about the credit risk mitigation process.

- Total capitalization of the commercial banks has significantly increased during the past years. However the rate on increment in the recent year is very high. The capital fund, one of the components of liabilities, witnessed a strong growth of 273.50 percent and reached to Rs.25778.0 million in mid July 2008 from Rs.6901.7

- Commercial banks held dominate share on the major balance sheet components of financial system. Of the total deposits Rs.508905.7 million in mid-July 2008, the commercial banks occupied 83.7 percent. Similarly, finance companies held 10.3 percent, development banks 5.1 percent, micro credit development banks 0.3 percent and others 0.6 percent. Likewise, on the loans and advances the share of commercial banks stood at 78.3 percent, development banks 6.0 percent, finance companies 13.2 percent, micro credit development banks 1.8 percent and others 0.7 percent in mid July 2008. In the same year the share of commercial banks in borrowings, liquid funds and investments constituted 45.9 percent, 68.3 percent and 90.5 percent respectively.

- The composition of the total liabilities shows as usual, deposit held dominant share of 72.05 followed by borrowing 4.44 percent and capital fund 3.65 percent respectively in mid July 2008. Likewise in the assets side, loan and advances accounted the largest share of 55.43 percent followed by investments 17.04percent, liquid funds 13.86 percent and other assets 13.67 percent in the same year.

- NRB has implemented consolidated capital adequacy framework effective from the mid july-2008. The consolidated capital adequacy of commercial banks improved remarkably and turned to positive of 4.04 percent in the mid July 2008 as against the continued negative figures in the proceeding years.

- The past trend of the capital fund of commercial banking industry was really very weak and always negative in successive years but due to the effective implementation of the revised framework of the capital adequacy framework, in 2008, commercial banking system has been able to maintain positive 4.40% of the total risk weighted exposure.

- Up on the analysis it has been found that Nabil Bank Ltd has not gave significant importance on supplementary capital. More the bank reduces the risk; more will be the capital adequacy ratio. In the sense, it can be concluded that, bank has become successful to minimize its risks to maintain capital as adequate as required by regulations. But as compared to other sampled banks Nabil has not maintained adequate capital.

- Despite the adequate level of core capital fund maintained by the Nabil Bank Limited, it shorts the total capita fund than the ratio prescribed by NRB and Basel-II. The only reason behind this is that, it has given low importance in maintaining the supplementary capital as the part of required capital fund as percentage of total risk weighted exposure.

- During the study period, BOK has always maintained the required capital fund in terms of core capital as well as total capital. However, the importance is given only on core capital as it has maintained very low portion of supplementary capita in its capital fund.

- As like other banks, Siddhartha bank has also maintained adequate level of total capital fund during all the study period. As compared to the core capital, supplementary capital of the Siddhartha bank is also very low. Around 90% of total capital is derived from the core capital and only small portion is from the supplementary capital.

- From the analysis of the sampled banks, it has been found that no. of commercial banks are operating under the low capital frame, despite they have maintained the adequate capital in terms of core capital.

- Correlation of capital fund with the non performing loan is found to be perfectly negative. As the analysis has been made about the trend of nonperforming loan and the capital of the past 5 Years, NPL has been continuously decreasing where as capital fund has a trend of continuous increment as it is in the level of positive 4.04% in the year 2009.

- Majority of the bankers and experts believe that the present capital adequacy framework prescribed by the central bank is adequate and the commercial banks should follow the standards for the betterment of every concern parties associated directly or indirectly with the performance and risk of the bank.

- From the primary data analysis, it has been disclosed that the capita standard framework is somehow complicated in the sense that, it is difficult to compute and update the ever changing RWA and the risk components. Must of the respondents believe that the framework is complicated plus the training provided by the regulatory

body (NRB) is not well enough to change the existing composition of capital components.

- New capital regulation of NRB about the maintenance of the paid up capital at least 2 billion by 2010 is not good for the development of the commercial banking industry in Nepal. Moreover, the same capital standard for the all banks operating in the demographic variation is not good for the health and performance of the commercial banks.

- Commercial Banks are seem to be giving low focus on credit risk mitigations that could help them to increase their eligible capital components, which is the another cause that some of the the commercial banks have lower capita adequacy

- Out of many available tools of risk assessment, Nepalese commercial banks use only the basic indicator approach and standardized approach to assess their risk weighted exposure.

Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

As the Basel-II capital accord are being imposed internationally as the capital adequacy framework of all financial institutions, Nepalese financial market is also began to be affected by the rules. Nepal Rastra Bank also started imposing capital regulation framework with amendment in every successive periods. Though some study was previously made on the effectiveness of capital accord in Nepalese prescriptive, It is still felt a research gap where lots of confusion exist and lots or facts to be explored about the matter. For the purpose, in partial fulfillment of the masters in business study, A research is being started to prepare a thesis report.

As like other research paper, It has also been prepared in the format of research paper for which total research work has been classified in different chapter. In the first chapter, the brief introduction about the research was mentioned under which background of the study, statement of problem, objective of the study and the limitation of the study are presented. Objective of the study is the main core factor of the chapter whereas methodology is being created to serve as the guide path for the completion of report. Major problems about the research have been presented in statement of problem and limitation of study. Along with this, Short history of the research and its subject matter has also been presented in this chapter.

Second chapter is totally based on the past study of the related literatures. All the relevant sources of the study are examined and presented in this chapter. As it is the exploratory types of study, it was very important to examine all the corners of regulation that is implemented to the commercial banks. So the NRB directives for the implementation of capital regulation are studied in detail and all regulation and capital adequacy framework is presented as the literature review. Under this chapter, based on NRB directives, eligible capital funds, various kinds of risk faced by the bank and the NRB review process are presented. At the end of the chapter a review about the past related studies are done which served as the basis for finding research gap up on which new visional analysis was required. Previous article and journals including unpublished student thesis and research papers are also presented in the chapter.

The third chapter is about the research methodology which is over map of the research paper. Under this topic, Research design, population and sample, nature and tools of the study are presented. The research is designed as exploratory type and total no of commercial banks is the population from where three banks with the history of more than 5 years are taken as sample. The means of presentation is also mentioned here which has disclosed the analytical graphs and tables to be used in the research process. More over tools of the presentation and analysis used in the study are also presented here.

As an another major step in study, data collection and presentation is done. Under this chapter all the secondary as well as primary data collected from various sources, which were felt to be useful for the study has been presented. Based of the collected data, a detail analysis of the capital standard maintained by the sample banks are presented in systematic manner. The sampled banks, Nabil bank, BOK and Siddhartha bank are the major focus of the chapter to disclose their capital condition as compared to NRB regulations. A comparative analysis of the capital adequacy is also presented in this chapter where the trend of the capital improvements of the bank is analyzed as well. After the analysis of secondary data, an attempt has also made on the analysis of primary data. A 12 question questionnaire is prepared to obtain the various dimensional effects of the capital regulation. Answer of the each of the questions is analyzed with care presenting and tabulating the result from respondent. The findings are also presented along with the analysis of the data.

As another step a conclusive chapter is being prepared summarizing all the study procedures and drawing conclusion about the findings along with the recommendations if any.

5.2 Conclusions

- After detail analysis of capital adequacy directives issued by NRB on july-15, 2008; Basel-II recommendations, international practice in capital adequacy, the current status of Nepalese commercial banks and their management effort to built strong capital base, primary questionnaire and interview, following conclusion are drawn on the basis of quantitative and qualitative analysis on the sampled data of selected commercial banks related to capital adequacy.
- During the study period, the risk management system of the commercial banks as well as the operating environment of the commercial banks has improved significantly. The calculation the the capital charge under the current regime has provided sufficient

because it covers all the three components of capital risk. Accordingly, a revised capital adequacy framework is justified in order to capture the various factors affecting banks risk exposures. However the proposed changes make the assessment of capital adequacy little bit more complex procedure than under the existing condition before July 2008. Since there are the provisions for supervisory response and the banks themselves would be granted more discretionary power on the application of provisions, it is therefore, assumed to be more relevant frame as it is revised.

- Previously about 25% of the total commercial banks were unable to maintain capital adequacy norms based on core capital to risk weighted assets. But the rate of banks maintaining low or negative capital fund has been significantly decreased by the end of 2008. Unlike others, Nabil Bank Limited has not yet been able to maintain the required total capital ratio with the risk weighted framework. Other bank seems satisfactory in terms of their capita condition with respect to total risk weighted exposure.

- One of the challenges of Commercial banks to maintain capital standard is found to be non performing assets that are growing in volume and magnitude. This is mainly due to defective lending policies there is also challenge created from increase in loan loss provision and non-banking assets provisions. This has made regulation to undertake shock monitoring and supervision.

- As per the analysis of Basel capital regulation framework it has been concluded that it has helped in developing suitable prudential norms to save the banks and financial institutions from financial crisis and signals of failure. It has become important to prevent unfavorable impact on the economy. During the study period, the operating environment of the banks has changed radically, and their risk management systems have also improved. In the new conditions the calculation of capital charges under the current regime has proved insufficient because it covers only risk. Accordingly, a revision of the capital adequacy framework is justified in order to capture the various factors affecting banks risk exposure.

- Due to the revision of capital adequacy framework, it is concluded that it has significantly changed the operating procedure of the commercial banks. Since there are the provisions for supervisory/regulatory authorities and the banks themselves

would be granted more discretionary power on application of the provisions, the maintenance of required capital adequacy has got some broad area. When the new changes are made on july-8, 2008, the capital adequacy of the commercial banks seems to have showing resistance to change.

- Due to the ever changing investment pattern of the commercial banks and the inconsistency in the banks management and policies, despite the continuous growth in the capital fund from its components but the rate of growth is very volatile and there is no consistency in the trend of capital fund.

- Nepalese commercial banks are seem to be showing negative net worth with the huge accumulated losses of the newly formed commercial banks records mismanagement and failure to fulfill the norms of NRB. The major cause behind this is the use of high leverage in the capital structure and the investment in risky assets and the establishment & upgrade of new commercial banks to compete in profit motive environment.

- All the commercial banks seem to care less about the credit risk mitigation that is allowed by the regulation. Very few no. of commercial banks used to disclose about the market risk and operational risk. Total risk weighted exposure of commercial banking, is however increasing due to the increase in the no. of commercial banks.

- One of the major reasons behind the lower capital adequacy of some commercial banks is the negligence towards the effective allocation of the source of the fund which could help in increasing the supplementary capital which could lead the bank to sufficiency of capital.

- Analyzing the relationship of the capital fund with the non performing loan, Correlation of capital fund with the non performing loan is found to be perfectly negative. As the analysis has been made about the trend of nonperforming loan and the capital of the past 5 Years, Total capital fund tends to be increasing in all the years where the NPL tend to decrease.

- Majority of the bankers and experts believe that the present capital adequacy framework prescribed by the central bank is adequate and the commercial banks

should follow the standards for the betterment of every concerned parties associated directly or indirectly with the performance and risk of the bank.

- The capita standard framework is somehow complicated in the sense that, it is difficult to compute and update the ever changing RWA and the risk components. Must of the respondents believe that the framework is complicated as well as the training provided by the regulatory body (NRB) is not well enough to change the existing composition of capital components.

- One of the new directives of the NRB about the maintenance of the paid up capital at least 2 billion by 2010 is not good for the development of the commercial banking industry in Nepal. Moreover, the same capital standard for the all banks operating in the demographic variation is not good for the health and performance of the commercial banks.

- Commercial Banks are not giving more focus on credit risk mitigations that could help them to increase their eligible capital components, which is the another cause that some of the commercial banks have lower capita adequacy. To strengthen the capital fund of the commercial banks, they should focus on credit mitigation along with the supplementary capital fund. Commercial Banks of Nepal are also not seemed to give attention towards the operational risk and market risk. Their disclosure about the market and operational risk also should complete and justified to all the stakeholders.

5.3 Recommendations

After detail analysis of the capital adequacy framework by the NRB, Basel-II report and other related sources, following recommendations are made to fill the leakage and improve the capital adequacy of the commercial banks of Nepal. To develop prudent capital adequacy norms and to make strong capital base in commercial banks, based on the findings of the study, following suggestions are forwarded.

- Commercial banks are seem to be focused only on minimization of credit risk, but low focus on the effect of the market risk and operational risk, so they are suggested to give appropriate weighted for the market and operational risk as well. By the end of 2010 branches of the international banks can be established in Nepal as the

globalization and membership of Nepal with WTO, adequate capital and risk assessment provide the base to compete with the international financial institutions.

- To maintain the adequate capital, the creditworthiness of the commercial banks should be assessed which is not currently available in Nepalese financial market. So, in the direction of the NRB a national level credit rating agency should be established and the capital adequacy framework should be imposed according the credit rating of the institutions. This will prevent the burden of the banks having high credit worthiness to maintain more capital.

- Adequate rules and capital adequacy should be issued for nonbank thrift institutions as well, because they are the institutions competing with the commercial and other banks and the customers of both industry are same. So to protect the savers, along with the banking industry, other financial institutions are also should be complied with the new framework of capital adequacy.

- Good management informations system and risk management technique should be implemented. Supervisory response should be done regularly and huge negative net worth problem should be solved by introducing reasonable tools by the regulatory body. For risk management, banks should always focus on efficient portfolio of assets and maturity matching of liabilities with the assets.

- Commercial banks should also focus on the supplementary capital as the major component of the capital fund. Moreover, it has been found that only few commercial banks are using the risk mitigation techniques, so they are advised to make a move towards the risk mitigation to make more of their fund eligible for capital fund.

- In course of action of maintaining capital adequacy, Nabil bank should prepare clear capital plan and maturity matching of its assets and liability portfolio. To increase its capital adequacy it should open the path of two short of capital fund inflow. One is to increase the internal fund mobilization and another is external fund mobilizations. Internal fund mobilization can be possible through improving profitability position of the bank and retaining the more fund in risk reserves. Revaluation of assets and displacement of risky securities investment to treasury bills can also improve the capital adequacy problem. Like wise capital fund can also be improved through

external sources, like issue of additional equity shares in premium and issue of nonredeemable preference shares.

- One of the main reasons of the Nabil bank to have low capital adequacy is the large amount of risk weight assets it carry. So, the bank should try to increase the investment in assets which carry low risk weight. It can further go for better loan screening process which reduces the default loan approvals and thus helps in reducing the nonperforming loan which is the part of credit risk. The weight of non performing loan with respect to total loan investment should be around zero to ensure the stakeholders about the minimization of credit risk.

- As per the new regularity issue of the commercial Banks, NRB has disclosed that, all commercial banks to be eligible for operating as commercial bank, should have at least 2 billion paid up capital by 2010 A.D. Non of the commercial bank of Nepal has been able to maintain the paid up capital as mentioned in the directives. So, various alternatives of the capital improvement should be analyzed. To increase the paid up capital the banks can go for stock dividend and bonus shares rather than cash dividend payment.

- Risk weighted exposure of Siddhartha bank limited has increased tremendously in the recent year. However it has maintained the capital adequacy at preset, it may by harmful for it for future if the same growth rate persists, So It is advices to the SBL to control the rapid growth in the risk weighted exposure by divesting its investment in risky assets to less risky investments.

- Rate of increment in the risk weighted exposure of the Nabil bank is also higher than its average growth rate in past, so it also should try to maintain the risk exposure more consistently by following the tool of cutting of risky investment and investing in less risky assets. Such action can reduce the profit in short run but proves to be the mainstay for the future growth.

- Out of many available tools of risk assessment, Nepalese commercial banks use only the basic indicator approach and standardized approach to assess their risk weighted exposure. So, The NRB should start introducing the various models for determining the capital standard of Nepalese commercial Banks.

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Appendix:-1

Trend analysis of total deposit of BOK

(Rs. In million)

Year (t)	Total Deposit (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	11,524.68	-2	4	-23,049.40	4,406.73
2005	14,254.58	-1	1	-14,254.60	14,732.14
2006	18,927.31	0	0	0	25,057.54
2007	24,488.86	1	1	24,488.86	35,382.95
2008	34,451.73	2	4	68,903.46	45,708.35
2009	46,698.10	3	9	140,094.30	56,033.76
Total	150,345.26		19	196,182.70	

$$a = \frac{y}{n} = \frac{150345.25}{6} = 25057.54$$

$$b = \frac{xy}{x^2} = \frac{196182.70}{19} = 10325.40$$

Trend analysis of total deposit of NABIL

(Rs. In million)

Year (t)	Total Deposit (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	14,119.03	-2	4	-28,238.10	6,980.75
2005	14,586.67	-1	1	-14,586.70	15,211.94
2006	19,347.40	0	0	0	23,443.12
2007	23,342.29	1	1	23,342.29	31,674.30
2008	31,915.05	2	4	63,830.10	39,905.48
2009	37,348.26	3	9	112,044.80	48,136.66
Total	140,658.70		19	156,392.40	

$$a = \frac{y}{n} = \frac{140658.70}{6} = 23443.12$$

$$b = \frac{xy}{x^2} = \frac{156392.40}{19} = 8231.18$$

Trend Analysis of Total Deposit of SBL

(Rs. In million)

Year (t)	Total Deposit (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	7,198.32	-2	4	-14,396.60	2,834.49
2005	8,654.77	-1	1	-8,654.77	8,081.66
2006	11,002.04	0	0	0	13,328.84
2007	11,445.29	1	1	11,445.29	18,576.02
2008	13,715.40	2	4	27,430.80	23,823.19
2009	27,957.22	3	9	83,871.66	29,070.37
Total	79,973.04		19	99,696.34	

$$a = \frac{y}{n} = \frac{79973.04}{6} = 13328.84$$

$$b = \frac{xy}{x^2} = \frac{99696.34}{19} = 5247.18$$

Appendix:- 2

Trend analysis of Loans & Advance of BOK

(Rs. In million)

Year (t)	Loans & Advance (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	7,130.13	-2	4	-14,260.30	2,045.37
2005	10,126.06	-1	1	-10,126.10	10,235.74
2006	12,776.21	0	0	0	18,426.12
2007	17,286.43	1	1	17,286.43	26,616.49
2008	26,996.65	2	4	53,993.30	34,806.86
2009	36,241.21	3	9	108,723.60	42,997.23
Total	110,556.69		19	155,617.73	

$$a = \frac{y}{n} = \frac{110556.69}{6} = 18426.12$$

$$b = \frac{xy}{x^2} = \frac{155617.73}{19} = 8190.37$$

Trend analysis of Loans & Advance of NABIL

(Rs. In million)

Year (t)	Loans & Advance (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	8,189.99	-2	4	-16,380.00	4,024.87
2005	10,586.17	-1	1	-10,586.20	10,029.06
2006	12,922.54	0	0	0	16,033.25
2007	15,545.78	1	1	15,545.78	22,037.43
2008	21,365.06	2	4	42,730.12	28,041.62
2009	27,589.93	3	9	82,769.79	34,045.80
Total	96,199.47		19	114,079.50	

$$a = \frac{y}{n} = \frac{96199.47}{6} = 16033.25$$

$$b = \frac{xy}{x^2} = \frac{114079.50}{19} = 6004.19$$

Trend analysis of Loans & Advance of SBL

(Rs. In millions)

Year (t)	Loans & Advance (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	5,143.66	-2	4	-10,287.30	2,694.13
2005	6,213.88	-1	1	-6,213.88	5,987.91
2006	7,626.74	0	0	0	9,281.70
2007	9,460.45	1	1	9,460.45	12,575.48
2008	12,113.70	2	4	24,227.40	15,869.27
2009	15,131.75	3	9	45,395.25	19,163.05
Total	55,690.18		19	62,581.90	

$$a = \frac{y}{n} = \frac{55690.18}{6} = 9281.70$$

$$b = \frac{xy}{x^2} = \frac{62581.90}{19} = 3293.78$$

Appendix:-3
Trend analysis of total investment of BOK

(Rs. In millions)

Year (t)	Total Investment (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	3,862.48	-2	4	-7,724.96	2,455.03
2005	3,934.19	-1	1	-3,934.19	4,075.77
2006	5,602.87	0	0	0	5,696.51
2007	6,505.68	1	1	6,505.68	7,317.25
2008	6,847.03	2	4	13,748.06	8,937.99
2009	7,399.81	3	9	22,199.43	10,558.72
Total	34,179.06		19	30,794.02	

$a = \frac{y}{n} = \frac{34179.06}{6} = 5696.51$

$b = \frac{xy}{x^2} = \frac{30794.02}{19} = 1620.74$

Trend analysis of total investment of NABIL

(Rs. In millions)

Year (t)	Total Investment (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	5,835.95	-2	4	-11,671.90	2,892.53
2005	4,257.52	-1	1	-4,257.52	5,279.72
2006	6,178.53	0	0	0	7,666.91
2007	8,945.31	1	1	8,945.31	10,054.10
2008	9,939.78	2	4	19,879.56	12,441.29
2009	10,826.38	3	9	32,479.14	14,828.48
Total	46,001.47		19	45,356.59	

$a = \frac{y}{n} = \frac{46001.47}{6} = 7666.91$

$b = \frac{xy}{x^2} = \frac{45356.59}{19} = 2387.19$

Trend analysis of total investment of SBL

(Rs. In millions)

Year (t)	Total Investment (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	1,907.52	-2	4	-3,815.04	101.65
2005	2,607.68	-1	1	-2,607.68	2,326.55
2006	3,758.98	0	0	0	4,551.45
2007	2,659.45	1	1	2,659.45	6,776.35
2008	3,088.89	2	4	6,177.78	9,001.25
2009	13,286.19	3	9	39,858.57	11,226.15
Total	27,308.71		19	42,273.08	

$a = \frac{y}{n} = \frac{27308.71}{6} = 4551.45$

$b = \frac{xy}{x^2} = \frac{42273.08}{19} = 2224.90$

Appendix:-4
Trend analysis of Net Profit of BOK

(Rs. In millions)

Year (t)	Net Profit (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	152.67	-2	4	-305.34	45.06
2005	232.15	-1	1	-232.15	258.71
2006	350.54	0	0	0	472.35
2007	501.40	1	1	501.40	686.00
2008	696.73	2	4	1,393.46	899.64
2009	900.62	3	9	2,701.86	1,113.28
Total	2,834.11		19	4,059.23	

$a = \frac{y}{n} = \frac{2834.11}{6} = 472.35$

$b = \frac{xy}{x^2} = \frac{4059.23}{19} = 213.64$

Trend analysis of Net Profit of NABIL

(Rs. In millions)

Year (t)	Net Profit (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	455.31	-2	4	-910.62	273.94
2005	520.11	-1	1	-520.11	475.48
2006	635.26	0	0	0	677.03
2007	673.96	1	1	673.96	878.57
2008	746.47	2	4	1,492.94	1,080.11
2009	1031.05	3	9	3,093.15	1,281.66
Total	4062.16		19	3,829.32	

$a = \frac{y}{n} = \frac{4062.16}{6} = 677.03$

$b = \frac{xy}{x^2} = \frac{3829.32}{19} = 201.54$

Trend analysis of Net Profit of SBL

(Rs. In millions)

Year (t)	Net Profit (Y)	X = t-2006	X^2	XY	$Y_c = a + bx$
2004	60.85	-2	4	-121.70	15.67
2005	57.39	-1	1	-57.39	95.69
2006	117.00	0	0	0	175.72
2007	254.91	1	1	254.91	255.74
2008	247.77	2	4	495.54	335.76
2009	316.37	3	9	949.11	415.79
Total	1,054.29		19	1,520.47	

$a = \frac{y}{n} = \frac{1054.29}{6} = 175.72$

$b = \frac{xy}{x^2} = \frac{1520.47}{19} = 80.02$

Appendix:-5
Coefficient of correlation between Outside assets between Net Profits of BOK

(Rs. In million)

Year	Outside Assets (X)	Net profit (Y)	X^2	Y^2	XY
2003/04	10,992.62	152.67	120,837,694.46	23,308.13	1,678,243.30
2004/05	14,060.24	232.15	197,690,348.86	53,893.62	3,264,084.72
2005/06	18,379.08	350.54	337,790,581.65	122,878.29	6,442,602.70
2006/07	23,792.11	501.40	566,064,498.25	251,401.96	11,929,363.95
2007/08	33,870.68	696.73	1,147,222,963.66	485,432.69	23,598,718.88
2008/09	43,641.02	900.62	1,904,538,626.64	811,116.38	39,303,975.43
Total	144,735.75	2,834.11	4,274,144,713.52	1,748,031.08	86,216,988.98

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 86216988.98 - 144735.75 \times 2834.11}{\sqrt{6 \times 4274144713.52 - (144735.75)^2}\sqrt{6 \times 1748031.08 - (2834.11)^2}} = 0.997264959$$

Coefficient of Determination (r^2) = 0.997264959 × 0.997264959 = 0.994537399

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.994537399}{\sqrt{6}} = 0.001504201$$

6 (P.Er) = 0.009025205

Appendix:-6
Coefficient of correlation between Outside assets between Net Profits of NABIL

(Rs. In million)

Year	Outside Assets (X)	Net profit (Y)	X^2	Y^2	XY
2003/04	14,025.94	455.31	196,726,992.88	207,307.19	6,386,150.74
2004/05	14,861.70	520.11	220,870,126.89	270,514.41	7,729,718.79
2005/06	19,101.08	635.26	364,851,257.17	403,555.27	12,134,152.08
2006/07	24,491.09	673.96	599,813,489.39	454,222.08	16,506,015.02
2007/08	31,304.84	746.47	979,993,007.43	557,217.46	23,368,123.91
2008/09	38,416.32	1,031.05	1,475,813,642.34	1,063,064.10	39,609,146.74
Total	142,200.97	4,062.16	3,838,068,516.10	2,955,880.52	105,733,307.28

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 105733307.28 - 142200.97 \times 4062.16}{\sqrt{6 \times 3838068516.10 - (142200.97)^2}\sqrt{6 \times 2955880.52 - (4062.16)^2}} = 0.964253895$$

Coefficient of Determination (r^2) =0.964253895× 0.964253895= 0.929785574

$$Probable\ (P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.929785574}{\sqrt{6}} = 0.01933448$$

6 (P.Er) = 0.116006929

Appendix:-7
Coefficient of correlation between Outside assets between Net Profits of SBL

(Rs. In million)

Year	Outside Assets (X)	Net profit (Y)	X^2	Y^2	XY
2003/04	7,051.18	60.85	49,719,139.39	3,702.72	429,064.30
2004/05	8,821.56	57.39	77,819,920.83	3,293.62	506,269.33
2005/06	11,385.72	117.00	129,634,619.92	13,689.00	1,332,129.24
2006/07	12,119.91	254.91	146,892,218.41	64,979.11	3,089,486.26
2007/08	15,202.59	247.77	231,118,742.71	61,389.97	3,766,745.72
2008/09	28,417.93	316.37	807,578,745.48	100,089.98	8,990,580.51
Total	82,998.89	1,054.29	1,442,763,386.75	247,144.39	18,114,275.37

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 18114275.37 - 82998.89 \times 1054.29}{\sqrt{6 \times 1442763386.75 - (82998.89)^2}\sqrt{6 \times 247144.39 - (1054.29)^2}} = 0.8266923$$

Coefficient of Determination (r^2) = 0.8226692348× 0.8226692348 = 0.683420

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.683420}{\sqrt{6}} = 0.087174$$

6 (P.Er) = 0.523047

Appendix:-8
Coefficient of correlation between total deposit between and Net Profits of BOK

(Rs. In million)

Year	Total deposit X	Net profit Y	X^2	Y^2	XY
2003/04	11,524.68	152.67	132,818,249.10	23,308.13	1,759,472.90
2004/05	14,254.58	232.15	203,193,050..98	53,893.62	3,309,200.75
2005/06	18,927.31	350.54	358,243,063.84	122,878.29	6,634,779.25
2006/07	24,488.86	501.40	599,704,264.10	251,401.96	12,278,714.40
2007/08	34,451.73	696.73	1,186,921,699.99	485,432.69	24,003,553.84
2008/09	46,698.10	900.62	2,180,712,543.61	811,116.38	42,057,242.82
Total	150,345.26	2,834.11	4,661,592,871.62	1,748,031.08	90,042,963.96

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 9004296396 - 150345.26 \times 2834.11}{\sqrt{6 \times 466159287162 - (150345.26)^2}\sqrt{6 \times 1748031.08 - (2834.11)^2}} = 0.994466282$$

Coefficient of Determination (r^2) = 0.994466282 × 0.994466282 = 0.988963187

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.988963187}{\sqrt{6}} = 0.003039$$

6 (P.Er) = 0.018234

Appendix:-9
Coefficient of correlation between total deposit between and Net Profits of NABIL

(Rs. In million)

Year	Total deposit X	Net profit Y	X^2	Y^2	XY
2003/04	14,119.03	455.31	199,347,008.10	207,307.19	6,428,535.55
2004/05	14,586.67	520.11	212,770,941.69	270,514.41	7,586,672.93
2005/06	19,347.40	635.26	374,321,886.76	403,555.27	12,290,629.32
2006/07	23,342.29	673.96	544,862,502.44	454,222.08	15,731,769.77
2007/08	31,915.05	746.47	1,018,570,417.50	557,217.46	23,823,627.37
2008/09	37,348.26	1,031.05	1,394,892,525.03	1,063,064.10	38,507,923.47
Total	140,658.70	4,062.16	3,744,765,280.56	2,955,880.52	104,369,158.42

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6(10436915842) - (140658.70)(4062.16)}{\sqrt{6(3744765280.56) - (140658.70)^2}\sqrt{6(2955880.52) - (4062.16)^2}} = 0.952842935$$

Coefficient of Determination (r^2) = 0.952842935 × 0.952842935 = 0.907909659

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.907909659}{\sqrt{6}} = 0.025358316$$

6 (P.Er) = 0.152149896

Appendix:-10
Coefficient of correlation between total deposit between and Net Profits of SBL

(Rs. In million)

Year	Total deposit X	Net profit Y	X^2	Y^2	XY
2003/04	7,198.32	60.85	51,815,810.82	3,702.72	438,017.77
2004/05	8,654.77	57.39	74,905,043.75	3,293.62	496,697.25
2005/06	11,002.04	117.00	121,044,884.16	13,689.00	1,287,238.68
2006/07	11,445.29	254.91	130,994,663.18	64,979.11	2,917,518.87
2007/08	13,715.40	247.77	188,112,197.16	61,389.97	3,398,264.66
2008/09	27,957.22	316.37	781,606,150.13	100,089.98	8,844,825.69
Total	79,973.04	1,054.29	1,348,478,749.21	247,144.39	17,382,562.93

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6(17382562.93) - (79973.04)(1054.29)}{\sqrt{6(1348478749.21) - (79973.04)^2}\sqrt{6(247144.39) - (1054.29)^2}} = 0.796369651$$

Coefficient of Determination (r^2) = 0.796369651 × 0.796369651 = 0.634204622

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.634204622}{\sqrt{6}} = 0.100726685$$

6 (P.Er) = 0.604360112

Appendix:-11

Coefficient of correlation between Total Deposit between and Interest Earned of BOK

(Rs. In million)

Year	Total Deposit (X)	Interest Earned (Y)	X^2	Y^2	XY
2003/04	11,524.68	731.40	132,818,249.10	534,945.96	8,429,150.95
2004/05	14,254.58	886.80	203,193,050..98	786,414.24	12,640,961.54
2005/06	18,927.31	1,172.75	358,243,063.84	1,375,342.56	22,197,002.80
2006/07	24,488.86	1,584.99	599,704,264.10	2,512,193.30	38,814,598.21
2007/08	34,451.73	2,194.28	1,186,921,699.99	4,814,864.72	75,596,742.10
2008/09	46,698.10	3,267.95	2,180,712,543.61	10,679,497.20	152,607,055.90
Total	150,345.26	9,838.17	4,661,592,871.62	20,703,257.98	310,285,511.51

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 3102855115.1 - 150345.26 \times 9838.17}{\sqrt{6 \times 4661592871.62 - 150345.26^2}\sqrt{6 \times 207032579.8 - 9838.17^2}} = 0.997246044$$

Coefficient of Determination (r^2) = 0.997246044 × 0.997246044 = 0.994499672

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.994499672}{\sqrt{6}} = 0.001514589$$

6 (P.Er) = 0.009087536

Appendix:-12

Coefficient of correlation between Total Deposit between and Interest Earned of NABIL

(Rs. In million)

Year	Total Deposit (X)	Interest Earned (Y)	X^2	Y^2	XY
2003/04	14,119.03	1,001.61	199,347,008.10	1,003,222.59	14,141,761.64
2004/05	14,586.67	1,068.75	212,770,941.69	1,142,226.56	15,589,503.56
2005/06	19,347.40	1,310.00	374,321,886.76	1,716,100.00	25,345,094.00
2006/07	23,342.29	1,587.76	544,862,502.44	2,520,981.82	37,061,954.37
2007/08	31,915.05	1,978.70	1,018,570,417.50	3,915,253.69	63,150,309.44
2008/09	37,348.26	2,798.49	1,394,892,525.03	7,831,546.28	104,518,732.13
Total	140,658.70	9,745.31	3,744,765,280.56	18,129,330.94	259,807,355.13

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 259807355.13 - 140658.70 \times 9745.31}{\sqrt{6 \times 3744765280.56 - 140658.70^2}\sqrt{6 \times 18129330.94 - 9745.31^2}} = 0.977148108$$

= 0.977148108

Coefficient of Determination (r^2) =0.977148108× 0.977148108= 0.954818426

$$Probable\ (P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.954818426}{\sqrt{6}} = 0.01244135$$

6 (P.Er) = 0.074648131

Appendix:-13

Coefficient of correlation between Total Deposit between and Interest Earned of SBL

(Rs. In million)

Year	Total Deposit (X)	Interest Earned (Y)	X^2	Y^2	XY
2003/04	7,198.32	493.60	51,815,810.82	243,640.96	3,553,090.75
2004/05	8,654.77	578.37	74,905,043.75	334,511.86	5,005,659.32
2005/06	11,002.04	708.72	121,044,884.16	502,284.04	7,797,365.79
2006/07	11,445.29	831.11	130,994,663.18	690,743.83	9,512,294.97
2007/08	13,715.40	970.51	188,112,197.16	941,889.66	13,310,932.85
2008/09	27,957.22	1,460.45	781,606,150.13	2,132,914.20	40,830,121.95
Total	79,973.04	5,042.76	1,348,478,749.21	4,845,984.55	80,009,465.64

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 80009465.64 - 79973.04 \times 5042.76}{\sqrt{6 \times 1348478749.21 - (79973.04)^2}\sqrt{6 \times 4845984.55 - (5042.76)^2}} = 0.97646595$$

Coefficient of Determination (r^2) = 0.97646595 × 0.97646595 = 0.953485752

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.953485752}{\sqrt{6}} = 0.012808325$$

6 (P.Er) = 0.076849949

Appendix:-14

Coefficient of correlation between Loans & Advance between and Interest Paid of BOK

(Rs. In million)

Year	Loans &Advance (X)	Interest Paid (Y)	X^2	Y^2	XY
2003/04	7,130.13	326.20	50838753.82	106406.44	2325848.41
2004/05	10,126.06	354.55	102537091.10	125705.70	3590194.57
2005/06	12,776.21	490.95	163231542.00	241031.90	6272480.30
2006/07	17,286.43	685.53	298820662.10	469951.38	11850366.36
2007/08	26,996.65	992.16	728819111.20	984381.46	26784996.26
2008/09	36,241.21	1,686.98	1313425302.00	2845901.52	61138196.45
Total	110,556.69	4,536.37	2657672463.00	4773378.41	111962082.35

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 111962082.35 - 110556.69 \times 4536.37}{\sqrt{6 \times 2657672463 - (110556.69)^2}\sqrt{6 \times 4773378.41 - (4536.37)^2}} = 0.9826654$$

Coefficient of Determination (r^2) = 0.9826654 × 0.9826654 = 0.9656313

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.9656313}{\sqrt{6}} = 0.009463884$$

6 (P.Er) = 0.056783307

Appendix:-15
Coefficient of correlation between Loans & Advance between and Interest Paid of NABIL

(Rs. In million)

Year	Loans &Advance (X)	Interest Paid (Y)	X^2	Y^2	XY
2003/04	8,189.99	282.95	67,075,936.20	80,060.70	2,317,357.67
2004/05	10,586.17	243.54	112,066,995.30	59,311.73	2,578,155.84
2005/06	12,922.54	357.16	166,992,040.10	127,563.26	4,615,414.39
2006/07	15,545.78	555.71	241,671,275.80	308,813.60	8,638,945.40
2007/08	21,365.06	758.44	456,465,788.80	575,231.23	16,204,116.11
2008/09	27,589.93	1,153.28	761,204,237.40	1,330,054.76	31,818,914.47
Total	96,199.47	3,351.08	1,805,476,274.00	2,481,035.29	66,172,903.88

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 66172903.88 - 96199.47 \times 3351.08}{\sqrt{6 \times 1805476274 - 142200.97^2}\sqrt{6 \times 2481035.292 - 3351.08^2}} = 0.982794148$$

Coefficient of Determination (r^2) =0.982794148× 0.982794148= 0.965884337

$$Probable\ (P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.965884337}{\sqrt{6}} = 0.009394207$$

6 (P.Er) = 0.056365244

Appendix:-16
Coefficient of correlation between Loans & Advance between and Interest Paid of SBL

(Rs. In million)

Year	Loans &Advance (X)	Interest Paid (Y)	X^2	Y^2	XY
2003/04	5,143.66	255.92	26,457,238.20	65,495.05	1,316,365.47
2004/05	6,213.88	258.43	38,612,304.65	66,786.06	1,605,853.01
2005/06	7,626.74	334.77	58,167,163.03	112,070.95	2,553,203.75
2006/07	9,460.45	412.26	89,500,114.20	169,958.31	3,900,165.12
2007/08	12,113.70	454.92	146,741,727.70	206,952.21	5,510,764.40
2008/09	15,131.75	824.70	228,969,858.10	680,130.09	12,479,154.23
Total	55,690.18	2,541.00	588,448,405.80	1,301,392.67	27,365,505.97

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 27365505.97 - 55690.18 \times 2541}{\sqrt{6 \times 588448405.80 - 55690.18^2}\sqrt{6 \times 1301392.67 - 2541^2}} = 0.941697602$$

Coefficient of Determination (r^2) = 0.941697602 × 0.941697602 = 0.886794374

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.886794374}{\sqrt{6}} = 0.031172694$$

6 (P.Er) = 0.187036165

Appendix:-17

Coefficient of correlation between Working Fund between and Net Profit of BOK

(Rs. In million)

Year	Working Fund (X)	Net Profit (Y)	X^2	Y^2	XY
2003/04	13,225.49	152.67	175,708,015.14	23,308.13	2,023,715.66
2004/05	16,274.06	232.15	264,845,028.88	53,893.62	3,778,023.03
2005/06	21,330.14	350.54	454,974,872.42	122,878.29	7,477,067.28
2006/07	27,590.85	501.40	761,255,003.72	251,401.96	13,834,052.19
2007/08	38,873.31	696.73	1,511,134,230.36	485,432.69	27,084,201.28
2008/09	53,010.81	900.62	2,810,145,977.86	811,116.38	47,742,595.70
Total	170,334.66	2,834.11	5,978,063,127.38	1,748,031.08	101,939,655.13

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6(101939655.13) - (170334.66)(2834.11)}{\sqrt{6(5978063127.38) - (170334.66)^2}\sqrt{6(1748031.08) - (2834.11)^2}} = 0.99338976$$

Coefficient of Determination (r^2) = 0.99338976 × 0.99338976 = 0.986823215

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.986823215}{\sqrt{6}} = 0.003628405$$

6 (P.Er) = 0.021770431

Appendix:-18

Coefficient of correlation between Working Fund between and Net Profit of NABIL

(Rs. In million)

Year	Working Fund (X)	Net Profit (Y)	X^2	Y^2	XY
2003/04	16,745.49	455.31	280,411,435.34	207,307.20	7,624,389.05
2004/05	17,064.08	520.11	291,182,826.25	270,514.41	8,875,198.65
2005/06	22,329.97	635.26	498,627,560.20	403,555.27	14,185,336.74
2006/07	27,253.40	673.96	742,747,811.56	454,222.08	18,367,701.46
2007/08	37,132.76	746.47	1,378,841,865.22	557,217.46	27,718,491.36
2008/09	43,867.40	1,031.05	1,924,348,782.76	1,063,064.10	45,229,482.77
Total	164,393.10	4,062.16	5,116,160,281.33	2,955,880.52	122,000,600.03

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6(122000600.03) - (164393.10)(4062.16)}{\sqrt{6(5116160281.33) - (164393.10)^2}\sqrt{6(2955880.52) - (4062.16)^2}} = 0.953880553$$

Coefficient of Determination (r^2) =0.953880553× 0.953880553= 0.90988811

$$Probable\ (P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.90988811}{\sqrt{6}} = 0.024813523$$

6 (P.Er) = 0.148881138

Appendix:-19

Coefficient of correlation between Working Fund between and Net Profit of SBL

(Rs. In million)

Year	Working Fund (X)	Net Profit (Y)	X^2	Y^2	XY
2003/04	8,440.41	60.85	71,240,520.97	3,702.72	513,598.95
2004/05	10,345.37	57.39	107,026,680.44	3,293.61	593,720.78
2005/06	13,035.84	117.00	169,933,124.51	13,689.00	1,525,193.28
2006/07	13,901.20	254.91	193,243,361.44	64,979.11	3,543,554.89
2007/08	17,187.45	247.77	295,408,437.50	61,389.97	4,258,534.49
2008/09	30,916.67	316.37	955,840,483.89	100,089.98	9,781,106.89
Total	93,826.94	1,054.29	1,792,692,608.74	247,144.39	20,215,709.28

Coefficient of Correlation (r):

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = \frac{6 \times 20215709.28 - 93826.94 \times 1054.29}{\sqrt{6 \times 1792692608.74 - (93826.94)^2}\sqrt{6 \times 247144.39 - (1054.29)^2}} = 0.830872341$$

Coefficient of Determination (r^2) = 0.830872341 × 0.830872341 = 0.690348847

$$Probable(P.Er) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.6745 \times \frac{1 - 0.690348847}{\sqrt{6}} = 0.085266617$$

6 (P.Er) = 0.5115997

Appendix no:-20

Regression equation between net profit on total working fund of BOK

(Rs. In million)

Year	Working fund X	Net profit Y	X^2	Y^2	XY
2003/04	13,225.49	152.67	175,708,015.14	23,308.13	2,023,715.66
2004/05	16,274.06	232.15	264,845,028.88	53,893.62	3,778,023.03
2005/06	21,330.14	350.54	454,974,872.42	122,878.29	7,477,067.28
2006/07	27,590.85	501.40	761,255,003.72	251,401.96	13,834,052.19
2007/08	38,873.31	696.73	1,511,134,230.36	485,432.69	27,084,201.28
2008/09	53,010.81	900.62	2,810,145,977.86	811,116.38	47,742,595.70
Total	170,334.66	2,834.11	5,978,063,127.38	1,748,031.08	101,939,655.13

X= independent variable

Y= dependent variable

Let the regression equation of Y on X is

$Y = a + bx$ ……...…equation (i)

To find the value of a and b we have two normal equation

$y = na + b\ x$ ……...equation (ii)

$xy = a\ x + b\ x^2$ …….equation (iii)

Substituting the value of n, x, y, x^2, xy in equation (ii) and (iii) we get,

2834.11= 6a + 170334.66 b..……..….equation (iv)

101939655.13 = a 170334.66 + 5978063127.38b ……..equation (v)

Now multiplying equation iv by 28389.11 then subtracting v we get

80457860.54 = 170334.66a +4835649399.55 b

-101939655.13 = - a 170334.66 +- 5978063127.38b

-21481794.56 = -1142413727.83b

b = 0.018804

Putting the value of b in equation (iv) then we get

2834.11= 6a + 170334.66 x 0.018804

a = -61.48

Appendix no:-20

Regression equation between net profit on total working fund of NABIL

(Rs. In millions)

Year	Working fund X	Net *profit* Y	X^2	Y^2	XY
2003/04	16,745.49	455.31	280,411,435.34	207,307.20	7,624,389.05
2004/05	17,064.08	520.11	291,182,826.25	270,514.41	8,875,198.65
2005/06	22,329.97	635.26	498,627,560.20	403,555.27	14,185,336.74
2006/07	27,253.40	673.96	742,747,811.56	454,222.08	18,367,701.46
2007/08	37,132.76	746.47	1,378,841,865.22	557,217.46	27,718,491.36
2008/09	43,867.40	1,031.05	1,924,348,782.76	1,063,064.10	45,229,482.77
Total	164,393.10	4,062.16	5,116,160,281.33	2,955,880.52	122,000600.03

X= independent variable

Y= dependent variable

Let the regression equation of Y on X is

$Y = a + bx$ ……...…equation (i)

To find the value of a and b we have two normal equation

$\sum y = na + b\sum x$ ……...equation (ii)

$\sum xy = a\sum x + b\sum x^2$ …….equation (iii)

Substituting the value of n, $\sum x$, $\sum y$, $\sum x^2$, $\sum xy$ in equation (ii) and (iii) we get,

4062.16 = 6a + 164393.10b……..….equation (iv)

122000600.03= 164393.10a + 5116160281.33b ……..equation (v)

Now multiplying equation (iv) by 27398.85 then subtracting (v) we get

111298512.52= 164393.10a +4504181887.93b

-122000600.03= -164393.10a +- 5116160281.33b

-10702087.50 = -611978393.40 b

b = 0.017487

Putting the value of b in equation (iv) then we get

4062.16 = 6a + 164393.10 x 0.017487

a = 197.903

Appendix no:-20

Regression equation between net profit on total working fund of SBL

(Rs. In millions)

Year	Working fund (X)	Net profit (Y)	X^2	Y^2	XY
2003/04	8,440.41	60.85	71,240,520.97	3,702.72	513,598.95
2004/05	10,345.37	57.39	107,026,680.44	3,293.61	593,720.78
2005/06	13,035.84	117.00	169,933,124.51	13,689.00	1,525,193.28
2006/07	13,901.20	254.91	193,243,361.44	64,979.11	3,543,554.89
2007/08	17,187.45	247.77	295,408,437.50	61,389.97	4,258,534.49
2008/09	30,916.67	316.37	955,840,483.89	100,089.98	9,781,106.89
Total	93,826.94	1,054.29	1,792,692,608.74	247,144.39	20,215,709.28

X= independent variable

Y= dependent variable

Let the regression equation of Y on X is

$Y = a + bx$ ……...…equation (i)

To find the value of a and b we have two normal equation

$y = na + b \quad x$ ……...equation (ii)

$xy = a \quad x + b \quad x^2$ ……equation (iii)

Substituting the value of n, x, y, x^2, xy in equation (ii) and (iii) we get,

1054.29 = 6a + 93826.94 b……..….equation (iv)

20215709.28 = a 93826.94 + b 1792692608.74…….equation (v)

Now multiplying equation(iv) by 93826.94 and equation (v) by 6 then subtracting (v) we get

98920804.57 = 562961.64a + 8803494669.76b

-121294255.68 = -562961.64a +. 10756155652.40b

-22373451.11 = -1952660982.64b

b = 0.01146

Putting the value of b in equation (iv) then we get

1054.29 = 6a + 93826.94 x 0.01146

a = -3.4944

Appendix no:-21

Regression equation between net profit on total deposit of BOK

(Rs. In million)

Year	Total deposit X	Net profit Y	X^2	Y^2	XY
2003/04	11,524.68	152.67	132,818,249.10	23,308.13	1,759,472.90
2004/05	14,254.58	232.15	203,193,050..98	53,893.62	3,309,200.75
2005/06	18,927.31	350.54	358,243,063.84	122,878.29	6,634,779.25
2006/07	24,488.86	501.40	599,704,264.10	251,401.96	12,278,714.40
2007/08	34,451.73	696.73	1,186,921,699.99	485,432.69	24,003,553.84
2008/09	46,698.10	900.62	2,180,712,543.61	811,116.38	42,057,242.82
Total	150,345.26	2,834.11	4,661,592,871.62	1,748,031.08	90,042,963.96

X= independent variable

Y= dependent variable

Let the regression equation of Y on X is

$Y = a + bx$ ……...…equation (i)

To find the value of a and b we have two normal equation

$\sum y = na + b\sum x$ ……...equation (ii)

$\sum xy = a\sum x + b\sum x^2$ …….equation (iii)

Substituting the value of n, $\sum x$, $\sum y$, $\sum x^2$, $\sum xy$ in equation (ii) and (iii) we get

2834.11 = 6a + 150345.26b……..….equation (iv)

90042963.96= 150345.26a + 4661592871.62b …….equation (v)

Now multiplying equation (iv) by 150345.26 and equation(v) by 6 then subtracting (v) we get

426095004.82= 902071.56a +2260369720.44 b

-540257783.76= -902071.56a +. 27969557229.70b

-114162778.94 = -25709187509.30.b

b = 0.00444

Putting the value of b in equation (iv) then we get

2834.11 = 6a + 150345.26 x 0.00444

a = **361.096**

Appendix no:-21

Regression equation between net profit on total deposit of NABIL

(Rs. In million)

Year	Total deposit X	Net profit Y	X^2	Y^2	XY
2003/04	14,119.03	455.31	199,347,008.10	207,307.19	6,428,535.55
2004/05	14,586.67	520.11	21,270,941.69	270,514.41	7,586,672.93
2005/06	19,347.40	635.26	374,321,886.76	403,555.27	12,290,629.32
2006/07	23,342.29	673.96	544,862,502.44	454,222.08	15,731,769.77
2007/08	31,915.05	746.47	1,018,570,417.50	557,217.46	23,823,627.37
2008/09	37,348.26	1,031.05	1,394,892,525.03	1,063,064.10	38,507,923.47
Total	140,658.70	4,062.16	3,744,765,280.56	2,955,880.52	104,369,158.42

X= independent variable

Y= dependent variable

Let the regression equation of Y on X is

$Y = a + bx$ ……...…equation (i)

To find the value of a and b we have two normal equation

$\sum y = na + b\sum x$ ……...equation (ii)

$\sum xy = a\sum x + b\sum x^2$ …….equation (iii)

Substituting the value of n, $\sum x$, $\sum y$, $\sum x^2$, $\sum xy$ in equation (ii) and (iii) we get

4062.16 = 6a + 140658.70 b……...equation (iv)

104369158.42 = 140658.70 a+3744765280.56.b ……equation (v)

Now multiplying equation (iv) by 140658.70 and equation (v) by 6 then subtracting (v) we get

571378144.79 = 843952.20a + 19784869885.60 b

-626214950.52 = -843952.20a +- 22468591683.30b

-54836805.73 = -2683721797.7

b = 0.02043

Putting the value of b in equation (iv) then we get

4062.16 = 6a + 140658.70 x 0.02043

a = 198.084

Appendix no:-21

Regression equation between net profit on total deposit of SBL

(Rs. In million)

Year	Total deposit X	Net profit Y	X^2	Y^2	XY
2003/04	7,198.32	60.85	51,815,810.82	3,702.72	438,017.77
2004/05	8,654.77	57.39	74,905,043.75	3,293.62	496,697.25
2005/06	11,002.04	117.00	121,044,884.16	13,689.00	1,287,238.68
2006/07	11,445.29	254.91	130,994,663.18	64,979.11	2,917,518.87
2007/08	13,715.40	247.77	188,112,197.16	61,389.97	3,398,264.66
2008/09	27,957.22	316.37	781,606,150.13	100,089.98	8,844,825.69
Total	79,973.04	1,054.29	1,348,478,749.21	247,144.39	17,382,562.93

X= independent variable

Y= dependent variable

Let the regression equation of Y on X is

$Y = a + bx$ ……...…equation (i)

To find the value of a and b we have two normal equation

$y = na + b \quad x$ ……...equation (ii)

$xy = a \quad x + b \quad x^2$ …….equation (iii)

Substituting the value of n, x, y, x^2, xy in equation (ii) and (iii) we get,

1054.29 = 6a +79973.04 b……..….equation (iv)

17382562.93=79973.04 a +1348478749.21 b …….equation (v)

Now multiplying equation (iv) by 13328.84 then subtracting (v) we get

14052462.73 = 79973.04a +1065947854.47 b

-17382562.93=-79973.04 a +-1348478749.21 b

-3330100.20 = -282530894.74b

b = 0.01179

Putting the value of b in equation (iv) then we get

1054.29 = 6a +79973.04 x 0.01179

a = 18.568