SAVING INVESTMENT AND CAPITAL FORMATION IN NEPAL

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Recommendation

This is to certify that the thesis

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Saving, Investment and capital formation in Nepal

Has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

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VIVA-VOCE SHEET

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And found the thesis to be original work of the student and written according to the prescribed format of faculty of management. We recommend thesis to be accepted as partial fulfilment of the requirement for the Masters Degree in the Business Studies (M.B.S.).

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Declaration

I hereby declare that research work reported as thesis entitled "Saving, Investment and Capital Formation in Nepal" submitted to the Faculty of Management, Central Department of Management, Tribhuvan University is my original work. It is carried out as the partial fulfilment of the requirements for the Degree in Master at Business Studies (MBS) under the supervision and guidance of Prof. Dr. Radhe S. Pradhan, faculty of management, Central Department of Management, Tribhuvan University, kirtipur.

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Dipak Raj Pandey

Researcher

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List of Abbreviation and Symbols

RIS	=	Research and information system
GDP	=	Gross Domestic Product
i.e.	=	that is
at.al.	=	and others
MPS	=	marginal propensity to save
APS	=	average propensity to save
UN	=	United Nations
IFC	=	International Finance Corporation
MSCIP	=	Morgan Stanley Capital International Perspective
NRB	=	Nepal Rastra Bank
CBS	=`	Central Bureau of Statistics
HMG/N	=	His Majesty's Government of Nepal
NEPSE/Ltd	=	Nepal Stock Exchange Limited
FY	=	Fiscal Year
SPSS	=	Software Programme for Social Science
VOL	=	Volume
VS	=	"Versus" against
Rs	=	Rupees
SEBO/N	=	Securities Board of Nepal
Ltd	=	Limited
etc	=	Etcetera
Co	=	Company
CDM	=	Central Department of Management
e.g	=	for example
IMF	=	International Monetary Fund
No	=	Number
Ed.	=	edition

CHAPTER-1

INTRODUCTION

1 General Background

Efficient capital market helps to mobilize the financial resources and provides efficient channel to productive investment. Capital market is the place where financial assets are traded for the purpose of transformation of saving (Light and White: 1979, 4). Development and expansion of capital market are essential for the rapid economic growth of the country, capital market helps economic development by mobilizing long-term capital needed for productive sector. It is a market for the long-term financing having maturity of greater than one year and they are vital to long-term growth and prosperity of the economy since they provide the channel through which needed funds can be raised. (Shrestha:1988,10). it is a mechanism through which public savings are channelized to industrial and business enterprises, capital market consists of smites market implies mobilization of the funds through issuance of the security; shares/bonds and debentures by government. The securities available in this market can be in the form of equity such as shares and stocks and, debt instruments such as corporate bonds and government securities or equity equivalent such as convertible bonds or debenture, non-securities market refers to the mobilization of the financial resources by the financial institution in the form of deposit and loans.

In order to assist in the economic development of the country, it is very essential to develop a healthy capital market. The recent adoption of liberal economic policies and privatization programs by this majesty's

government with the objectives of involving extensive private sectors participation in the eight plans is expected to provide ample investment opportunities in the country and will be necessary to develop and expands a healthy capital market. Hence to set up to the necessary intra-structure to achieve the aim of the eight plans and to attain speedy economic development capital market should be considered seriously and given priority.

In the context of securities market, the capital market consists of the priority market and secondary market (Poudyal; 1987, 54).The primary market deals with the selling of new securities when they are first issuance by issuing entities. Since many of the initial buyers of these securities will eventually want to resale them. There is also a secondary market for second hand or previously issued securities. The development of capital market conforms to a basic national development policy of mobilizing saving in productive investment in growth oriented sector of the economy. Capital is required to start and run any productive operation. Capital market is a medium through which scattered saving and investible resources are converted in to the actual investment. One of the mechanisms of financing the industries from the external resources in the modern era is the capital market through which the industrial enterprises with corporate organization assemble the funds by issuing various forms of securities from the surpluses spending units directly and for via financial intermediaries(Mahat ; 1981,28). Thus the capital market provides an important base for the development of industry, commerce and the economy.

Financial markets are a catalyst in the development of the country's economy. As such developed economies have highly sophisticated financial institution. Over the past decade or two many developing

economies have established capital markets as they moved towards more liberal economic policies. The emerging markets have shown extraordinary growth with very high volatility which has attracted many investors in the markets. In 1994, the government of Nepal established a stock market with the technical assistance of the IRIS Centre at the University of Maryland under the USAID Sponsored Economic liberalization project. This paper looks at the intuitional changes and the consequent market behavior that took place in this process and summarizes the lessons learned and needed policy responses drawn from the post 19992 Nepal experience at capital market development.

The saving growth rate depends among others on the level of country's per capita income and its growth rate. Population growth rate interest rate on saving or on bank accounts, banking and financial facilities, net factor income etc. The national income is the measure of the money value of goods and services available, in a year, to the national form the economic activities. Saving is the excess of income over consumption. In other words, it is the part of the income, which is left over after consumption. In other words, it is the part of the income, which is left over after consumption. And investment is the expenditure made for the construction of the fixed capital assets and other expenditure made for reproductive purposes. Mobilization of savings implies transfer of resource from surplus sending units to deficit units. Mobilization of voluntary saving is the main function of financial intermediaries. The amount of saving of a typical household in Nepal is small because the people have limited opportunities for financial investment. They prefer to spend saving as commodities rather than a hold financial assets. This restricts the process of financial intermediation which might otherwise bring benefits such as reduction of investment risk and increase in

liquidity. When capital is highly mobile internationally, saving from abroad can finance the investment needed at home but when capital is not mobile internationally domestic saving will limit investment of home. The study at natural income saving and investment is no more regarded as the sufficient indicators at the country's economic performance. However with the Keynesian revolution in economic thought, its study assumed greater important.

On the other side, capital formation refers to the creation of physical productive facilities such as buildings, tools equipment and roads. The process of adding to the amount or stock of the real assets produces growth in the economy. It is also known as capital accumulation. It means increasing a country's stock of real capital. It implies additions to the existing supply of capital goods in a country. It represents the addition of new capital stock to existing stock after deducting depreciation damage and other physical deterioration of the existing capital stock. Economic progress in a country depends upon its rate of capital formation (Seth: 1979, 783). A key factor in the development of an economy is the mobilization of domestic resources. In the process of capital formation the capacity to save of certain classes of people and institution increases. These people have varied assed preferences which change from time to time. The need of entrepreneurs who actually use the savings for productive purposes is also varied. Capital formation is regarded as one of the important and principal factors in economic development. It leads to the expansion of market. A rapid rate of capital formation gradually dispenses with the need for foreign aid. In fact, capital formation helps in making a country self-sufficient and reduces the burden of foreign aid. The process of capital formation helps in raising natural income.

Therefore, capital formation is necessary pre-requisite for economic growth.

At present, the expansion of capital market in Nepal is severely limited. On the one side, there is a very limited growth of primary and secondary markets for shares. On the other hand, financial institutions such as merchant banking which help in the execution at the capital are still in their infancy. The accelerating pace of the growth and development of Nepalese economy has created many economic problems, an important one of which is the accumulation and mobilization of capital. This will be improved with a better reorganization of the macro economic importance at capital market, the influence of information on international developments via internet, and the new generation of the better social recognition of brokerage and investment house enterprises is likely to bring more diversified companies to the stock exchange viewed in this perspective, the study devoted to saving investment and capital market in Nepal at macro and micro perspective may be very rewarding.

2. Statement of the problem

Saving is one of the most important and perhaps the chief source at investment. It is important therefore, to understand the various determinants of saving and its behavior in course of development. The Keynesian absolute income hypothesis postulates a linear relationship between aggregate saving and aggregate income. A number at studies have fitted the Keynesian savings function to cross section data for different samples of countries and found a significant positive relationship between saving and income. Domestic saving to be positively related to national income for both the developed and developing countries. This confirms that absolute income is also an important determinant at savings in poor countries.

The analysis of investment and its relation with growth has been one of the most strategic aspects of developing planning. With a view to test the theoretical presumption regarding the relationship between investment and growth, many authors resorted to empirical studies in the context of both the developed as well as developing countries. The study of Modigliani (1970); Sommers and Suits (1971); Robinson (1971); and Thirlwall (1974) pointed out that the growth rate is significantly influenced by the investment ratio. Devereux and Schientarelli (1989) and Gomes (2001) indicated that the cash flow is significantly associated with investment.

Barro (1991) suggested that the investment and real interest rate move in opposite direction. However, Cleary (1999) concluded that the financial factor as key explanatory variable along with liquidity status of firm investment. This study further observed that the investment decisions of firms with high creditworthiness are significantly more sensitive to the availability of internal funds that the firms with less creditworthiness while another study (Beaudry et. al. 2001) revealed that the significant negative correlation between the investment rate and the profit rate. The development in macro level of the natural economy has positive impact in the capital formation capacity of the economy. Capital formation is regarded as one of the most important and principal factors in economic development. It has emphasized that capital accumulation is a strategic factor of growth. Pesmazaglo (1972) also revealed that a strong association between capital accumulation and growth. Another study (Compbeell and Hamao: 1992) was suggested least partial integration of US and Japanese stock market in the capital market. The Jorion and Goetzman (1999) study indicated that global capital markets have been systematically subject to dramatic changes over this century. However,

Boutchkova and Megginson (200010 study focused on the privatization as key forces at the development of capital market.

The study by Poudyal (1988) verified the above mentioned results. It revealed that the GDP influenced not only the current values at investment but also past values. While saving positively influenced GDP, and it negatively influenced tax revenue. It also revealed that investment significantly influenced GDP, foreign and imports. Another study (Wagle: 2000) also found similar results except the relationship of taxation with saving.

The capital market is a part and parcel for corporate development. The development of financial institutions that link the surplus spending units with the deficit spending ones is in the rudimentary stage (Mahat: 1981). Though it is early stage of development, Nepalese investors in recent years have poured funds in newly established companies encouragingly. The Nepalese capital market had been passing through a transitionary phase over the past few decades. After restoration of democracy a network of financial institutions was erected of capital market. This trend is the milestone in the development of capital market. Development of vibrant and dynamic capital market is a pre-requisite for the development of an efficient economy.

The general conclusion that emerges from the above mentioned studies is that saving investment and capital market are determined not by a single factor rather there are the functions at number of interdependent variables. However pertinent question arises as to what extent these findings are still relevant in the present day context. Many changes have taken place after the completion of those studies. In order to verify these results, this study assesses the behavior of saving, investment and capital

formation in Nepal at macro and micro perspective. To sum up the study deals with the following issue.

- What is the role of saving investment and capital formation an economic development? Are the current values and the lagged values of saving investment and capital formation important in determining GDP?
- How do saving investment and capital formation behave? What are the determinants of saving investment and capital formation in Nepal?
- How do saving is affected by investment, capital formation, GDP, national income, foreign aid, exports, tax revenue and interest rates on deposit of commercial banks?
- What is the role of saving, capital formation, foreign aid, imports and interest rate on lending of commercial banks while determining the level of investment?
- Are the investment, saving, GDP and interest rate on lending of commercial banks important in determining capital formation?

3. Objectives of the study

The major objective of this study is to examine the behavior of saving, investment and capital formation in Nepal. The specific objectives are as follows:

1. To examine the role of saving, investment and capital formation on economic development.
2. To analyze determinants of the major macro economic variables such as saving, investment and capital formation.

3. To trace out the other variables and their relation with respect to the saving investment and capital formation.

4. Organization of the study

The study has been organized five chapters, each devoted to some aspects at the study of saving investment and capital market in Nepal. The chapters one to five consist of introduction, review of literature, research methodology, presentation and analysis of data and summary and conclusions. The rationale behind this kind of organization is to follow a simple research methodology approach.

Chapter one contains the introductory part of the study. As already mentioned, this chapter described the major issues to be investigated along with the general background, statement of problem, objective of the study and organization of the study. Chapter two includes a discussion on the theoretical framework and review of the major empirical works. The Theoretical analysis and review of related literature conducted in this chapter provide a framework with the help of which this study has been accomplished. Chapter three describes the research methodology employed in the study. This chapter deals with research design, nature and source of data, selection of enterprises, methods of analysis limitations of the study and definition of key terms. Chapter four consists of two sections which deal with the empirical analysis at the study section one deals with the role of saving, investment and capital formation on economic development. Analysis of determinants of saving investment and capital formation has been described in section 2. Lastly chapter five indicates summary and conclusions of the study. This chapter presents the major findings and compares then with theory and other empirical evidences to the extent possible. It also offers several directions for future research.

Chapter-2

THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

Review of literature is an essential part of all studies. A literature review is the process of locating, obtaining, reading and evaluating the research literature in the area of the interest at any researcher. It is way to discover what other research in the area of problem selection has uncovered. The purpose is to develop some expertise in one's area to see what new contribution can be made and to receive some idea for developing a research design. It is also a way to avoid investigating problems that have already been definitely answered (Wolft and Pant 2001). In view of the consideration this study incorporates the basic capital structure theories and relevant empirical studies in the chapter.

The review has been described in four sections. Section 1 presents a discussion on the theoretical framework. The review of empirical works in saving investment capital market and the review at Nepalese studies have been presented in section 2 and 3 respectively section 4 is devoted to concluding remarks.

1. The Theoretical Framework

(I) Conceptual Consideration:

Saving is the process of withholding current income for future use and results in the accumulation of tangible and financial assets. The amount so accumulated over past periods is referred to as saving. The reverse at saving (i.e. when expenditure exceeds income) is defined as spending saving and spending occurs within all three major groups at economy. Individual business and government. There are two concept are used in national accounting, net saving and gross saving. On a net basis

individuals save when personal income after tax exceeds outlays, business saves through retain profit and government saves when current receipt exceeds current expenditures. On a gross basis, saving includes in addition depreciation allowances covering the wear and tear on real assets for future replacement (Greenwald 1982: 837).

Saving means excess of income over consumption or the difference between income and expenditure on consumption. So, saving is income not consumed (Eatwell al, 1987: 336). From the individual point of view saving is that part of his income which is not spent in consumption. Similarly form the communities' point of view aggregated saving is the part of natural income which is not spent on the consumption expenditure (Gupta: 1974, 110). In other words, it is equivalent to an earn surplus or changed in earned net worth during a given period. Current saving depends upon current income. Saving of an economic unit can be defined as the excess of current income over the current expenditure (Alamgir and Rahman 1974: 6).

Saving is bad only when they are hoarded. They become a virtue of they are invested. If savings are hoarded, they result in a decline in income, output and employment. What is in fact bad is not the act of saving but the act of hoarding (Keynes: 1936, 79-81). One of the basic motives for saving is the accumulation of wealth to ensure future welfare.

Investment is its broadest sense, means the sacrifice the current dollars for future dollars (sharp et. at: 1999.1). Two different attributes are generally involved: time and risk. The sacrifice takes place in the present and is certain. The reward comes later, it at all and magnitude is generally uncertain. A distinction is often made between investments and saving. Saving is defined as foregone consumption; investment is restricted to 'real' investment of the sort that increases national output in the future.

While this definition may prove useful in other contexts, it is not especially helpful here. However, it is useful to make a distinction between real and financial investment. Real investments generally involve some kind of tangible asset, such as land, machine or factories. Financial investments involve contracts written on pieces of paper such as common stock and bands. In primitive economies most investment is at the real variety, whereas in a modern economy much investment is of the financial variety. Highly developed institutions for financial investment greatly facilitate real investment. By and large, the two form of investment are complementary, not competitive (Sharpe at al: 1999, 1-2). An investment is a commitment of money that is expected to generate additional money. Every investment of money that is expected to generate additional money. Every investment entails some degree of risk; it requires a present certain sacrifice for future uncertain benefits (Francis: 1994).

An investment is a commitment of money that is expected to generate additional money. Every investment entails some degree of risk; it requires a present certain sacrifice for a future uncertain benefit (Clarks 2003: 68). How far to go in allocating resources to investment depends upon preference for current consumption vs future consumption or preferences between own consumption and that of children and grand children. It also depends on the production function, i.e. the term under which additional capital can be converted into additional future output (Eatwell et al: 1987, 931). Investment is capital formation, the acquisition or certain of resources to be used in production. The meaning of the term 'Investment' in economics is different form common use. In ordinary sense, investment means buying old shares, bonds or property. But there are merely transfers of assets from and person to another. They are

investment by one person but disinvestment by other person. They are not real investment but only financial investment. Because they do not add to the nation's physical stock of capital and do not increase income and employment. According to Keynes, "Investment means real investment. It means an addition to nation's physical stock of capital. It creates employment and generates income. As for example the building of new factories, new companies are real investments." Investment involves long-term commitment and waiting for a reward. An investment function is the relation between the acquisition of capital and a set of exclamatory variables. Capital is defined as buildings, equipment and inventories and sometimes intangibles, such as knowledge and technique, which are both outputs at the productive process and inputs to future production (Greenwarld 1982, 113).

The demand generating effect refers to the greater demand for consumer goods due to increased income through the multiplier process, while the capacity creating effect refers to investment in new capital goods to increase output after a time lag. The condition for an equilibrium growth rate in the sense of equating planned saving and planned investment requires that output and income grow at a rate (Poudyal, 1998).

$$\frac{\zeta y}{Y} \mathrm{X} \frac{S}{C} \text{.....(2.1)}$$

$$\frac{\zeta y}{Y} \times \frac{\zeta K}{\zeta Y} \mathrm{X} \frac{S}{Y} \mathrm{X} \frac{\zeta K}{Y} \mathrm{X} \frac{I}{Y} \quad (\ldots \zeta K \ \mathrm{X} I)$$

Where, S= saving ratio (S/Y)

C= incremental Capital output ratio ($\frac{\zeta K}{\zeta Y}$)

And $\frac{\zeta Y}{Y}$ X growth rate of income.

Equation 2.1 also shows that the rate of growth of income in any period is the product at the rate of saving, expressed as a ratio at saving to income and the reciprocal of the capital-output ratio. It is this relationship, which has been increasing used as a conceptual framework for planning purposes in developing countries.

Capital market refers to such type of market in which financial assets with a term to maturity of typically more than one year is traded to long term financial instruments such as stocks, bonds, government etc. The capital market is concerned with long term finance. In the widest sense it consists of a sense of channels through which savings of the community are made available for industrial and commercial enterprise and public authorities. It is concerned with those private savings, individual as well as corporate that are turned into investment through new capital issue and also new public loans floated by government semi-government bodies. In the capital market, demand comes from agriculture, industry trade and government while supply comes from the individual or corporate savings, institutional investor and surplus of governments. It comprises the savers individuals and institutions and bodies through which the saving is mobilized. The saving institutions like saving banks, investment trust or investment companies, specialized financial corporations and stock exchanges are some of the important constituents of capital market. (Kuchhal: 1988, 386)

Investment generally consists of physical investment and financial investment. Physical investment relates to real investment in economy or industry which is known as capital formation. Capital goods are generally to be such goods, which are used for future production. These goods normally have a life at more than one year. For the purpose of assessment, capital formation is generally divided into two parts. It consists of fixed capital formation which includes increase in fixed assets

such as building plants, machinery and equipments and the second comprises increase inventories and stock of goods which encompass raw materials, finished goods and work in progress. Capital formation may be gross or net. Net capital formation can be divided by subtracting depreciation and obsolescence changes form gross capital formation. Estimates of capital formation can be made either by measuring change in fixed capital or stock or by where may be called the savings and investment method. Capital formation shows the change in gross fixed assets of productive units or manufacturing industries. Gross fixed assets include land building plant, machinery and other equipment. Capital formation is the development of means of future production. Hence, capital market made up of the various sources of capital for (medium or long term) investment in new and already existing companies.

(II) Theory Regarding Saving Functions

Theories Regarding Saving Investment Function

There are various theories or hypothesis regarding to saving and investment functions and their behavior a century. They all relate the aggregate saving, personal or household saving. They are (a) Keynes "Absolute Income' hypothesis (b) Queensberry 'Relative Income' hypothesis (c) The Friedman "Permanent Income' hypothesis (d) Modigani-Brumber-Ando (MBA) 'Life Cycle' hypothesis.

In the literature the Kenynes hypothesis is known as Keynesian Saving function while the rest are lumped together under the heading of Neo-Keynesian saving functions. Obviously the entire late three hypotheses have emerged as attempts to offer alternatives to the Keynesian saving function and despite some analytical differences; they convey basically similar conclusions on the nature of saving functions. This study attempts

to test the Keynesian absolute income hypothesis only due to the data deficiencies.

The Keynesian absolute hypothesis shows a linear relationship between aggregate saving (s) and aggregate income (y) (Keynes 1936).

Where,

S= a0+a1y…….. (1)

It is assumed that a0<0 and 0<_a1<1, such that as the level of income rises, the saving will also increase. This hypothesis posits the marginal propensity to same (MPS) to be higher than the average prosperity to save (APC). The saving income relationship is per Capital terms can also express and in so doing the size of the population is also taken into the consideration.

Saving Investment Equality:

Saving is controversial topic in economic theory. The entire confusion in connection with the saving-investment controversy can be traced out to a failure to distinguish between schedules and observable (Klein 1956, 11). During 1930_s Keynes gave a new approach to the Macro economic theory. According to him saving is the function of income (derived from the consumption function and income is the function of investment, which is in opposition to the neo-classical views of saving as a determination of investment. Suppose, higher the income higher will be the saving and higher the investment higher will be the saving.

According to Keynes,

Saving= functions of investment

S=F (I)

Where, S= Saving I= Investment

Saving-Investment Classical Equality:

Keynes was not the first person to visualize equality between saving and investment. Classical economists also talked of this equality. However these are important also talked of this equality. However there are important and considerable differences between Keynes and classical (Gupta 1974, 170). Firstly, according to the classical equality between saving and investment is brought about by the rate of interest. If saving exceeds investment, the rate of interest declines and of investment exceeds saving the rate of interest rises.

Secondly, the classical economists believe that the equality between saving and investment is brought about at full employment level of income. In contrast to the classical view, Keynes believe that the equality between saving and investment is brought about the securities available in this market can be in the form of equality such as shares and stock, debt instrument and as corporate bonds and government securities or equity such as convertible bonds or debentures. Not by the rate of interest but by income. Further Keynes, believed that saving and investment can be equal in fact, normally are so at least than the employment.

Saving Investment Accounting Equality:

Accounting equality between saving and investment is also called logically identity, the national output (O) consists of Consumption goods (C) and investment goods (I). In algebraic term O= C+I. Similarly, national income (Y) is divided into consumption expenditure (C) and saving (S) in algebraic terms Y= C+I, it is known by the definition O=Y. From this follows that C+I=C+S or I=s. This equality between saving and investment can be expressed in another way also. Keynes defines saving

as the difference between income and consumption i.e. I=Y-C. Since Y-c is common in bother equation S=I (Gupta 1974, 171). Mathematically,

Y=C+I	300=180+120
S=Y-C	120=300-180
S=I	Hence 120=120

Therefore investment equals to saving. Thus, saving is the pre-requisite of investment and investment is meant the actual production of capital goods, which leads to saving. Saving is necessary for the process of investment while saving does not exist without investment.

Saving Investment Functional Equality:

Functional equality shows the actual behavior and the process of adjustment of saving investment in the economy as a whole. In other words, it puts life into dead statistics. through saving and investment in the statically sense are identically equals at all times and at any level of income, saving and investment in the schedule sense are equal only in equilibrium or in other words, at the equilibrium level of income (Gupta, 1974:172)

Therefore saving and investment in the schedule sense are brought into equality, overtime by the equilibrium mechanism of income. This way of looking at saving and investment is consistent with the common sense new that, through decisions to save and to invest are made by different people and for different motives in the course of time these decision get some how reconciled through the "invisible hand" of income. They implies that they may itself influence income influencing saving and investment.

2. Review of Empirical Works

After presenting the conceptual consideration in topic. It is very important to state and review the different imperial review on the topic. Some imperial studies have been made to test the different theories of saving in different countries in different time series which stated below. The stated imperial reviews shows the different factors like taxation, interest rates, export and foreign aids etc would affect the domestic saving apart from the principal hypothesis.There are various studies which have been some according to Keynesian saving function. A number of studies have fitted the Keynesian saving function to cross section data from different samples of countries and found a significant positive relationship between saving and income.

Engen and Gale (1999) indicated that tax reforms have very significant effects on saving output. The effect of fundamental tax reforms may work through many different avenues, but an important goal is to increase saving. The effect on saving of a switch to a flat-rate consumption tax would be influenced by at least several factors. First the effect on saving would depend on the magnitude of the tax burden places on saving in the current system. Second, it would be determined by the response of the rate of return on capital and the sensitivity of saving to the changes is it's after tax return. Third, the effect would be contingent upon the redistributed of tax burdens across group with different propensilities to save including any wind fall gain and losses created in the transition to the new system. The uncertainties the households face and the role of precautionary saving is important components for evaluation these issues.

Tawley (2000) however, argued that increase in tax revenues was largely spent on government consumption. This in conjunction with the dampening effect of taxation in private sector initiations to production

increase may cause as reduction in national saving. The study of Landau (Mikesell and Zinsen: 1999) relating to Latin American countries provided support employed three alternatives specification with different combinations of variables the first relates aggregate saving ratio in tax ratio, the second government saving ratio to tax ratio and per capita income and found that all of these cases in which the aggregate saving ratio to tax ratio and per capita income and found that in all of these cased in which the aggregate saving ratio is the dependent variable, the tax has negative effect on saving. On the other hand, as Mikesell and Zinser (1999) discussed in their survey article, the studies by Bhatia Krishnamurty, Morss and Shing among other authors do not provide the support to the please hypothesis. The empirical finding thus does not reveal a consistent and distinct pattern of relationship between saving and taxation. It should be recognized that the result obtained on the basis of statistical aggregate usually, employed should be taken with some reservation because as Mikesell and Zinser (1973) argued, government expenditure is most cases were mistakenly classified into current and capital expenditures.

The major findings of the study are stated, first the variance of predictable movements in consumption that are due to movement in the precautionary term are of the same order of magnitude as those due to movement in the real interest rate. Second, movements in consumption due to precautionary saving are negatively correlated with movement in consumption sue to the real interest rate. This finding can rationalize the puzzling low correlated between aggregate consumption growth rates and the real interest rate. The importance of precautionary saving for understanding economic fluctuations seems large. For example, consider a positive, temporary shock to government spending that lowers

precautionary saving. Then, precautionary saving and the real interest rate work in opposite direction on consumption. So, that government spending has a large impact on economic activity.

Economic development is transforming the lives of millions of people thought-out the developing world. The share in its benefit is largely determined by now a country manages its investment resources. This concept is about that it is in investment process viewed from the experience of for development for more than thirty five years.

Specially investments in the form of specific projects; how to identify the most promising projects in each sectors how to prepare them, how to carry them through to successful completion, how to operate and maintain then after word. The project, some time described as the, "Cutting edge of development" has become an important means of marshaling a country's resources human and material for investing in process to investment and decisions and the natural level, where projects are aggregated into a national investment plan and a framework of macroeconomic policies is put in place; at the sector level, where sector investment strategies and priorities along with supporting policies are elaborated, and at the project level where specific project are identified, prepared and implemented. (*1 for consumption or variety, we shall also refer to the world banks as "The Bank". Its formal name is the International Bank for Reconstruction and Development).

In the years after World War II a new found concern with the raising the living standard of the two third of mankind is the developing world led to international co-operation for development on an unprecedented scale. International leading agencies were established and program of bilateral aid lunched to transfer resources and provide technical assistance to developing countries.

Investment spending is guided by the profit motive; the business sector buys capital goods only when it expects such purchases to be profitable (Campell R McConnel;2000).

We must now move form micro to macro, which is from a single firm's investment decision to an understanding of the total demand for investment for investment goods by the entire business sector. Evenly firm in the economy has estimated that expected rate of profit from all element investment project and these data have been collected. These estimates can now be cumulated by asking; how many dollars worth of investment projects entail and expected rate net profit of say, 16% or more? 14% or more? 12% or more?

He find that there are no prospective investments which will yield and expected net profit of 16% or more. But there are $5 billions of investment opportunities with an expected rate of net profit between 14% to 16% an additional of $5 billion yielding between 12% to 14%. Still on adding additional $5 billion yielding 10% to 12%, next $5 billion yield 0% to 2%.

The conception of investment decision allows us to anticipate an important aspect of macroeconomic policy. We shall find in our discussion of monetary policy that by changing the supply of money government can alter the interest rate. This is done primarily to change the level of investment spending.

The analysis of investment and its relation with growth has been one of the most strategic aspects of development planning. With a view to test the theoretical presumption regarding the relationship between investment and growth many authors have restored the empirical studies in context of both the developed as well as developing countries.

A study on taking 39 developed countries found that the growth rate significantly influenced by the investment ratio(Robinson;2003). The coefficients of investment ratio took values ranging between 0.08 to 0.19 and were statistically significant. In his specification the included as an additional exclamatory variables but it did not appear to be significant.

A study on the growth of income and investment ratio in a sample of 68 developed and developing countries for the period 1958-68(Thirwall;2004). He found significant positive relation between the growth of income and investment. This study also worked with the sub-samples and found that the image of investment on growth was higher in the developed countries group than in the developing countries group. From the above review of empirical work it thus seems that there is significant positive relationship between growth and investment.

A study indicated that in a world of integrated capital markets the price of credit (i.e. Short term expected real interest rate) is determined to equate the world aggregate national saving (Barro;2005). In this study, annual observation of variables used for ten countries usually, the expected real interest rate is determined to equate total investment demand and desired saving that makes small modification to the framework in B/X uses in the study. The ratio of real gross domestic investment demand to real GDP for country 'I" at time "t" depends on a "q" variables:

$$(I/Y)_{it}= \alpha_{oi}+\alpha_1 \log(q_{i.t-1})+\text{error term}$$

The world perspective explains a good deal of the common experience of real interest ratio for the developed countries and this common experiences comprised a large part of the variations of real interest rate for each country individually over the last three decade. The framework of a single world credit market leaves unexplained the divergence of each

country's real interest rate form the average of rates across the countries. Although the individual country components are substantial and often persistent overtime, these components do not relates systematically to observable variables. Such as stock returns, investment ratio or monetary and fiscal policies. For the various countries shifts to the Willingness to save, which he relates to change in oil prices and to fiscal and monetary policies, more investment and real interests rates in opposite direction from the above, it is clear that Barro study supported the theoretical proportion of the saving investment classical equality with respect of the rate of interest effects.

A study on the financial factors as key explanatory variable along with liquidity status of firm investment (Clearly;2006). This study used 1317 US firm as sample over the 1988 to 1944 period in order to examine the sensitivity of firm investment decision to liquidity status. Firms are classified according to financial statement variables that are related to their ability to raise external finance. An objective multivariate classification index and factor used t determine firms finance status and this status is allowed to vary from one period to the nest. The captures desired cross section properties of a large number of firms and successfully classified firms that increase or decrease dividends 74% of the time. Additionally, Bootstrag methodology is used to determine significance across different from categories. The following regression equation was estimated using fixed firm and year effects.

$$I/K_{it}=B_M/B(MB)_{it}+BCF/K(CF/K)_{it}+U_{it}$$

Where, 'I' represents investment in plant and equipment during period't'. 'K' is the beginning of period of book values for net property, plant and equipment; CF represents current period cash flow to the firms as

measure d by net income plus depreciation plus the change in deferred taxes and M/B represents the firm's common equity market to book ratio based on the previous year's actual market value at year end. Fixed effects estimation maintains separate intercepts for each firm and for each year in order to account for unobserved relationship between investment and the independent variables and to capture business cycle influences. Large sample evidence, demonstrates that the investment decision of form with high credit worthiness are significantly more sensitive to the availability to internal funds than are firms that less credit worthy.

The major finding of this panel of worthy is as follows: first, despite the presence of liquidity constraint, it is hard to find evidence that cash flow adds significant explanatory power to the investment regression. Second, financing constraints are also not necessary to obtain these cash flow effects in this model. It is possible to construct simple examples where investment equations, even in the absence of financial friction. Third, in the context of these general equilibrium models, the correlation between investment, cash flow and sales is quite artificial and a reflection of the underling technology shocks. In a related pointed, he also found that it is possible to observe cash flow effects solely due to the misspecification includes and by fitting a linear equation to a non linear decision rule.

A study was directed towards the predictability of monthly excess return on US and Japanese equity portfolio over the US Treasury bill rate to study the integration of capital markets in those two companies (Campbell and Hamao;1992).

There are main ways in which this system can be used in empirical works. Either one assume that certain factors are observable or one can assume that factor are unobservable but the number of factors are small relative to the number of assets and forecasting variables.

By the study, they have found that international capital market integrates by comparing the predictable component of excess stock return in US and Japan. The main results of this study are as follows: first in both countries it is generally possible to forecast excess stock return relative to the US Treasury bill rates using similar sets of domestic variables. The domestic dividend price ratio has a generally positive effect on excess stock returns; while the relative short rate has a dividend price ratio has a generally positive effect on excess stock returns, while the relative short rate has a dividend price ratio relative to the US. Dividend price ratio is a powerful forecasting variable for Japanese return in 1980's while there is weaker evidence that Japanese variables helps to explain US excess stock return. Third, the movement of expected excess return on the US and Japanese market as not well explained by a model where assets have constant betas on a single "international factor" provided by a worlds stock index return whose risk price change overtime. Finally in the 1970's expected excess stock returns in the US and Japan are positively correlated. This common movement of expected excess return in suggestive of at least partial integration of US and Japanese stock market. These results are consistent with the view that an important determinant of expected stock return is the changing price market. However, they do not wish to over sale the strength of evidence.

A study also on the long term estimates of expected return on equity are typically derived from US data only (Jorion and Goetman;2009). The standard data on capital appreciation index of 34 markets have collected from Morgan Stanley Capital International Perspective (MSCIP) for developed markets and the international finance corporation (IFC) for emerging markets. Decomposing the total return in stocks ($R_{s)}$ into capital

return (CR_s) and income return (IR_s) and the Treasury bill rate (RT_B) into the inflation component and the real rate. It can be written as:

$$\text{Equity premium} = R_s - R_{TB}$$

$$= (CR_s + IR_s) - (IP - K^*)$$

$$= (CR_S - \text{inflation}) + (IR_S - \text{Real Rate})$$

The methodology measures the capital return in excess of inflation, which is the first bracketed term. To the extent that cross sectional variables in the second bracketed term are small, this allows comparisons of equity premium across countries because of wide differences inflation across time and country; they primarily focus on WPI- deflated returns. Return in dollars, as a common currency should give similar result over the long run if exchange rate moves in time with inflation differentials i.e. if purchasing power parity holds.

The main lesson from their long term data is that globe capital market has been systematically subject to dramatics changes over this country. Major disruptions have afflicted merely all the market in their sample, with the exception of a few such as United State. Market have been closed or suspected due to financial crises, war, expropriations are political upheaval.

A study on the growth on global capital market Valuation, trading and security issuance over the past two decades revealed that (Boutchkova and Megginson;2000). According to them one of the means of analyzing privatization and the raise of global capital market was econometric model.

Their research study of the following key points:

- The fraction to total domestic credit provided by the banking sector as a percent of GDP has remained virtually constant (125%) since 1990 for the world as a whole as well as for most major countries groping. During that same 1990 to 1998 period, stock market capitalization as % of GDP increased from 52 to 82% for the world as whole and form 56 to 95% for higher income countries. Share issued privatization (SIP) contributed significantly to the nearly 11 fold increase, form $3.4 trillion to $35.0 trillion, in the total capitalization of the world's stock market that occurred between 1983 and 1999.
- Privatization has significantly improves stock market liquidity during the last ten years.
- Privatized firms are the most valuable companion in the most developing countries.
- SIP has transformed international equity issuance and investment banking practices.
- Academic research has now clearly established that in most countries. STP investors earn significantly positive excess return on the shares they purchase over both short and long term holiday periods.
- Privatizations have dramatically increased the no. of shareholder in many countries. However this study does not consider other aspect rather than privatization on relation to capital market.

3. Review of Nepalese Studies

There are some research works regarding the saving investment and capital market in Nepal. A study by Mahat (1981) briefly examined the

state at capital market and the development of financial institutions in the country based on time series data. The growth of financial institutions has been examined both in terms of the growth in the number of financial institutions and in terms of the growth in their assets.

Their role in the national economy has been evaluated in term of some indicators such as total financial institutions in the ratio: assets/GDP ratio etc. The role was examined in term of shares of various sources as percentage of the change in total gross assets. For this purpose, sources and use of funds tables at industries have been prepared. The temporal coverage of the study was 1972 to 1975. The method followed to derive the sources and uses of funds has been the usual one, i.e. taking the first differences of the balance sheets for consecutive financial years. The population of the study was 91 companies with the paid up capital of Rs. 563 million as at 1975 while the sample of the study was 54 companies accounting for a paid up capital or Rs 504 million as at 1975, thus covering nearly 89 percentage of the paid up capital of the population as at 1975. A good deal of data on which the study has been based on primary and supplementary information was sought for personal interviews.

This study indicated that Nepal's situation where the industrial sector had very little access to private savings. The availability of industrial security was nearly absent. The development of financial institutions that link the surplus spending units with the deficit spending ones was in the rudimentary stage. Nowadays, the very that short term deposits should finance only short term loans is being questioned, because it is based on the simplistic assumption that all deposits will be withdrawn at the date of maturity and not on the behavioral pattern of it that is fairly stable. Even apart from this, the problem does not appear thorny because of certain

favorable factors. Firstly, there have been conspicuous shifts in the structure of bank deposits in favor of fixed deposits. Secondly term finance by banks has been provided legal sanction since 1974. Thirdly, there is readiness on the part of the NRB to lend commercial banks to maintain their liquidity requirements besides providing loans under remittance scheme during normal conditions. Finally the resources being mobilized by financial institutions like provident fund and NIC are basically long term in nature and hence can be utilized for long term investment. Besides, there are various other ways in which short term saving can be transformed into long term investment with the development of security market. Studying the uncovered areas, incorporating new data with the larger sample period in many areas and adopting more satisfactory method of estimation can improve these efforts of Mahat.

A study on the foreign trade aid and development in Nepal (Poudyal:1988a) indicated that,firstly it analyzed the behavior and determinants of the macro-economic variables such as investment. saving exports and imports; and secondly it developed simple macro-economic model to estimate the saving gap and the trade gap for identifying the nature of constraints to development.

A large part of this study was concerned with the estimation of parameters and protections of selected macro-entities and therefore, the statistical technique of regression analysis, both simple and multiple, linear and non-linear and with or without lagged variables where restored in number of cases for the 1964/61 to 1981/82 period.

Poudyal studies result indicated that the GDP is influenced not only by the current values of investment but also by past values while saving positively affected by GDP, and negatively affected by tax revenue.

Investment significantly influenced by GDP and foreign aid. This study was also partially published in the Economic journal of Nepal (Poudyal:1988b). Poudyal study may be improved by studying the hitherto uncovered areas, including more satisfactory specifications, incorporating new data in many areas, deflating data by the relevant deflators and adopting more satisfactory method of estimation.

A study on the securities market in Nepal witnessed a sharp growth during the past couples of years (Sharma:1996). The volume of trading has increased. The size of the market has been widened. The number of investing population has grown up in aggregate. The tendency of raising capital form general public is rising. Most importantly the market consciousness has developed so that investors have begun to think about risks, return and availability of timely corporate information regarding the investment. There studies have only theoretical explanation rather than econometric analysis.

A study about growth and performance of securities market in Nepal revealed that (Gurung:2004), his study pointed out that the growth and performance of security market in Nepal. The study on the securities market performance reveals that there is no synchronization among different securities market performance indicators but it is true that they almost have depicted an erratic trend doing the observed period. This indicated the unstable and poor performance at Securities Market Relative to the overall economy, the size of securities market is very small and the liquidity at securities also poor. These facts suggest that the Nepalese capital market now is passing through a bearish situation. The growth and performance of Nepalese securities market, even after the introduction of new mechanism in 1993/94 are not satisfactory through it is improving gradually.

A study on the financial institutions and their impact on capital market have the main objective to examine the state of capital market and development of financial institution if country based on the time series data. The growth of financial institution has been examines both in terms of the growth in their assets (Mahat:2005).

The findings of the study are as under:

- This study indicated that Nepal's situation where the industrial sector had very little access to private saving.
- The availability of industrial security was nearly absent.
- The development of financial institution that links the surplus spending units with the deficit spending ones was in the sedimentary stage.
- Now a days, a very few that short term deposit should finance only.
- Short term loan is being questioned because it is based on the simplistic assumption that all deposits will be withdrawn at the date of the maturity not on the behavioral pattern of it that is Farley stable.

A study on micro economic variables has the main objectives to analyze a large part of this study concerned with estimation of parameters and projections of selected macro-entities and therefore, the statistical technique of regression analysis, both simple and multiple, linear and non-linear and with or A study by Poudyal (1998) analyzed foreign trade, aid and development in Nepal (Poudyal:2006).

The findings of the study are as under:

The GDP influenced not only by the current values of investment but also by past values.

- Saving positively affected by GDP, and negatively affected by tax revenue.
- Investment significantly influenced by GDP and foreign aid.

A study on the relationship between the saving and investment has the main objectives to also analyzed trends of saving, investment and capital formation in Nepal (Wagle:2007).

The findings of the study are as under:

- GDP was influenced by investment, saving and gross capital formation with the theoretically correct signs.
- Gross domestic saving was significantly affected by GDP and tax revenue.
- The foreign aid coefficient was not significant with the theoretically correct signs.
- Gross domestic saving investment and GDP coefficient were significant.
- Investment coefficient significant explaining variations in saving and foreign aid.

A study on the development in domestic saving mobilization in Nepal has the main objectives to analyze the Factors affection the mobilizing of saving in Nepal (Basyal:2008).

The findings of the study are as under:

- The saving relationships as identified for Nepal provide the gross domestic saving has significantly positive association with bank branch expansion policy. Bank branch expansion is also positively and significantly associated with financial saving mobilization.

- The foreign saving, on the other hand, has significantly negative relationship. But foreign saving has positive but statistically insignificant relationship with the private saving. The public saving, on the other hand has statistically significant negative coefficient with the foreign assistance as it puts less pressure for the government to increase domestic saving.
- The increased foreign saving, the government would be less inclined to collect more taxes.
- The coefficient of real growth rate has an expected sigh for private sector but the relationship is insignificant.
- Government saving has had a significantly positive association with the nominal gross domestic product. This shows the significance of the GDP in the determination of saving.
- Real rate of interest is not found to have statistically significant positive coefficient, the expected inflation has had a significant negative impact on public saving as government expenditure rise to meet the rising cost due to inflation.

A study on the Saving investment and capital market in Nepal has the main objective to analyze and examine the role of saving, investment on economic development of Nepal (Sharma:2009).

The findings of the study are as under:

- The relationship between investment and economic development revealed that there is positive relationship of investment with GDP. The relationship between investment and GDP is examined using unlagged as well as Almon Lag Specification at current prices and in real terms too. The results show that GDP is significantly determined by investment. The importance point to be noted here is

that the findings of this aspect of the study is similar to the findings of the study made by F. Modigliani, P.M. Sommers and D.B. Suits, Robinson, A.P. Thirlwall, S.R. Poudyal and Starad Wagle. These findings are also consistent with the theory of economic.

- The role of capital formation on economic development indicated there is positive relationship between capital formation and GDP. The relationship of capital formation with GDP is also examined at current prices as well as in real terms with and without ALMON Lag Specifications. The result shows that capital formation has significant effect on GDP. The finding of this aspect of the study is similar to the findings of the study made by J. Permazoglu and Sharad Wagle as well as theoretical propositions.
- The current values and past values of saving, investment and capital formation have positive impact on economic development but the current values have the largest impact. On the other side, the strong role-played by saving and capital formation while weak role- played by investment.
- The relationship between saving and national income represented that there is positive relationship of saving with national income. The result shows that saving is significantly determined by national income hypothesis as well as the study made H.S. Houthakker, H.B. Chenery and P. Eckstein, L. Landau, S.K. and S.R. Poudyal.
- The relationship of saving with foreign aid and exports found that there are positive relationship between saving and foreign aid, and exports. The results represent that saving is significantly influenced by foreign aid and exports. The results are similar to the findings of study made by S.R. Poudyal and Sharad Wagle.

A study on the saving investment and capital formation in Nepal has the main objective to analyze and examine the role of saving investment and capital formation on economic development of Nepal and to analyze determinant of the major macro-economic variables such as saving investment and capital formation (Khadka:2011).

The findings of the study are as under:

- The level of GDP highly up on investment in current price and saving in real terms but saving investment and capital formation play a vital role in GDP.
- The level of saving significantly determined by national income compare to other variables and it has the positive relation with foreign aid and exports and saving is significantly influenced by foreign aid and exports.
- Saving has positive relationships with tax revenue but has negative relationships between interest rate and deposits.
- The investment has positive relationship with foreign aid and import. Nepalese investment is significantly determined by imports but investment and level of internet rate has negative relationship.
- Capital formation has positive relationship between investment and GDP. There is positive relationship at investment with GDP, saving, capital formation, foreign aid and imports and negative relationship with interest rate on lending at commercial banks.

4. Concluding Remarks

Saving is one of the most important and perhaps the chief source of investment. It is important to understand the various determinants of saving and its behavior in course of development. Most of the empirical studies are however, devoted to testing saving hypothesis against cross-

section data. The overall picture that emerges from the review at empirical literature is that the Keynesian absolute income hypothesis, which postulates a positive relationship between saving and the level of income, provides a satisfactory explanation of saving behavior.

On the other hand, in the empirical literature considerable attention has been paid to analyzing the relationship between growth and investment, and identifies the various determinants at investment. The findings in general reveal strong positive association between the rate of growth and the investment. This may be also indicative at the fact that a certain stage has to be reached before the investment rates play an important role in the growth of output. However, it is found that there is a significant positive relationship between GDP and investment. The lagged value of investment is also found to be important in determining GDP, but it is the current value, which has the largest impact. This would imply that fresh investments activate the ongoing projects that directly or indirectly contribute to raise level of GDP.

Similarly, the capital market is concerned with long term finance. Development and expansion of capital market are essential for the rapid economic growth at the country. It depends upon the industrial development of the country. A capital market is a complex at institutions and mechanisms through which the saving of the people are mobilized and placed at the disposal of spending units. The developments at macro level of the national economy have positive impact in the capital formation capacity at the economy. Capital formation is regarded as one of the most important and principal factors in economic developments. It is capital formation which helps remove market imperfection by the creation of economic and social overhead capital. This capital formation is a necessary pre-requisite of economic growth.

The general conclusion that emerges from these studies is that saving investment and capital market are determined not by a single factor rather there are functions at number of interdependent variables. From the above discussion, it is clear that the different authors including economists, financial theorists, management scientists and practicing business executives have found the behavior of saving investment and capital market in different ways.

Though there are various studies in the context at developed and big capital market, their applicability is yet to be seen in the context of smaller and under developed capital markets. There are various studies already conducted on saving investment and capital market in Nepal. Many changes have taken place in and outside Nepal after completion at these studies. Nepal has also followed a policy of liberalization privatization and globalization. Considering the above mentioned studies in the context of Nepal, it has now become necessary to find out whether their findings are still valid. Thus, the study on saving, investment and capital market in Nepal may be very rewarding.

CHAPTER -3

RESEARCH METHODOLOGY

Research Methodology is a way to systematically solve the research problem. It may be understood as a science of studying low search is done scientifically (Kotharai 2004). It defines the reason why a research study has been undertaken, how the research problem has been defined in what way and why the hypothesis has been formulated, what data have been collected and what particular method has been adopted and also why particular technique of analysis data has been used. Thus, every research should describe the methodology. This chapter has been divided into 5 section. Section one present the research design of the study while section two deals with the nature and source of data. Section three consists of the population and sample of the study, section four explain the method of analysis and section five explain the limitation of the study.

1. Research Design

Research design in the plan, structure and the strategy of investigation conceived so as to obtain answer to research questions and to control variance (Kerlinger:1986, 275) . The research design refers to the entire process of planning and carrying out a research study (Woeff and Pant: 2000, 53).The required data have been collected from the various sources covering a period of 22 years, i.e., from 1990/91 to 2011/12 at macro perspective while 5 years. To conduct the study, descriptive cum analytical research approach has been adopted. Descriptive approach has been utilized mainly for conceptualization of the problem. Analytical

approach has been followed mainly to analyze the relationship among saving, investment, capital market and other related variables.

2. Nature and Source of Data

This study is based on secondary data only. Primary data are excluded because this study is at macro level. The necessary data and information at macro level have been collected on macro- economic variables such as saving, investment capital formation, gross domestic product, national income, tax revenue, foreign aid export and other related variables used in this study from the various publication and the data available in the record of Central Bureau of Statistics of HMG/N. The major sources of data and information are as follows:

- Economic Survey, FY 2007/08, 2008/09, 2009/10, 2010/11 and 2011/12 Ministry of Finance, HMG/N.
- National Account of Nepal 2011, CBS, HMG/N.
- Various Plan Documents, National Planning Commission, HMG/N.
- Quarterly Economic Bulletin, Nepal Rastra Bank, Various Issues.
- Statistical Pocket Book 2010, CBS, HMG/N.
- Website of NEPSE Ltd.: http://www.nepalstock.
- Previous Research studies, Dissertation and Articles on the subject.

3. Population and Sample of the Study

Data of Nepal Rastra Bank on macro-economic variables such as saving, Investment, capital formation, gross domestic product, national income,

tax revenue, foreign aid, export and other related topics of past 22 years are the population and sample of the study.

4. Method of Analysis

Analysis is the careful study of available facts so that one can understand and draw conclusion from them on the basis of establishment principles and sound logic (Cottle et. al.: 1988, 29**).** A large part of this study is concerned with estimation of parameters of selected macro entities. The statistical techniques of regression analysis, both simple and multiple; linear nonlinear; and with or without variables are resorted to a number of cases. Various possible alternative specifications are also attempted where necessary in each case in order to obtain the best result; the empirical results have been estimated in this study by using annual data for the 1990/91 to 2011/12. Both at current prices and in real terms and with and without the entire- periods of study divided into sub- periods. All the micro-economic variables have been converted into real terms by means of national's urban consumer price index and then regression run.

A. The Econometric Models

This study attempts to assess the role of saving, investment and capital formation on economic development by estimating various models. The theoretical statement of the models is that the gross domestic product (GDP) may be regarded as subject to the constraints of saving (S), investment(I) and capital formation (CF) as indicated by Wagle (2000, 32). The theoretical statement maybe framed as under:

GDP = f (S.I.CF) ..(3.1)

This equestion to be estimated has therefore been specified as under:

$GDP = a+b_1S+b_2I+ b3CF+ U_i$ …(3.2)

Where, U_i= Error term or disturbance

Although the lag models are extensively used in econometric analysis, all economic problems may not correspond to the assumption to monotonically decreasing lag pattern, there are some situations where the effect of lagged independent variable may follow cyclical pattern, the coefficient increasing gradually before reaching a peak and then decrease. This type of lag pattern can be taken care of using the Almon (1965)Polynomial Lag Model. The Almon Lag Scheme is expressed as a linear function of the current and the K previous values of X, namely,

$Y_t = \alpha+\beta_t+\beta X_{t-1}+\beta X_{t-2}+\ldots\ldots\ldots+\beta X_{t-k}+U_t$ …(3.3)

Where the coefficient βo is known as the short, or impact multiplier because it measures the change in the mean value of Y following a unit in X in the same periods andβ_1, β_2, β_3……β_t are called delay or interm multipliers because they measure the impact on mean Y of a unit in X in various time periods. The sum of βS….. is called the long run, or total, or distributed lag multiplier. Equation (3.3) can be written more compactly as:

$$Y_1\alpha+\sum_{1X0}^{k} \beta 1X_{1-1}+U_1$$

Where the lagged effect of X is postulated up to K periods. In the present study, the distributed lag models discussed above to analyze some important macro-economic relationship, which have vital bearing on the Nepalese economy. The relationship between GDP and saving, investment and capital formation is analyzed the framework of Almon Polynomial Lag Scheme, as these relation are expected to follow an invested V- type lag pattern. For applying the Almon Lag scheme between the variables specified, 5 years as the length of lag and approximate β_i by a third degree polynomial. The reason for this choice of lag length is that periodic plans (expect the second) in Nepal are worked out for time horizon of 5 years.

On the other side, to analyze the determinants of saving, investment and capital formation in Nepal, the theoretical statement of models are specified as for the earlier studies (Poudyal: 1988a and Wagle: 2000). Saving may be regarded as subject to the constraints of various macro-economic variables. As an approximation to the theory, the formation may be written as:

$$S= f (Y) \quad \ldots(3.5)$$

$$S= f (GDP) \quad \ldots(3.6)$$

$$S= f (F,X) \quad \ldots(3.7)$$

$$S= f (T, WR_D) \quad \ldots(3.8)$$

$$S= f (I,CF) \quad \ldots(3.9)$$

Where Y= National income, F= Foreign aid, X= Aggregate exports, T= Tax revenue, WRD= Weight Average Interest rate on deposits of commericial banks.

The equations to be estimated have, therefore, been specified as under:

$$S= a+b_1Y \quad \ldots(3.10)$$

$$S= a+b_1GDP \quad \ldots(3.11)$$

$$S= a+b_1F+b_2X \quad \ldots(3.12)$$

$$S= a+b_1T+b_2WRD \quad \ldots(3.13)$$

$$S= a+b_1I+b_2CF \quad \ldots(3.14)$$

To determine whether the macro-economic variables are related to investment, the theoretical functions may be stated as:

$$I=f(S,CF) \quad \ldots(3.15)$$

$$I= f(F) \quad \ldots(3.16)$$

$$I=f(M) \quad \ldots(3.17)$$

$$I=f(WRL) \quad \ldots(3.18)$$

Where, M= Aggregate imports, WRL= Weightage average interest rate on lending of commericial banks. In equation:

$$I= a+b_1S+b_2CF \quad \ldots(3.19)$$

$$I = a + b_1 F \quad \ldots(3.20)$$

$$I = a + b_1 M \quad \ldots(3.21)$$

$$I = a + b_1 \text{ WRL} \quad \ldots(3.22)$$

Since capital formation is a major function of capital market, it is an indicator of the capital market and hence taken as a dependent variable in the regression models, capital formation may be influences by investment, saving gross domestic product and weightage average interest rate on lending of commercial banks, the theoretical statement formed above may be stated as under:

$$CF = f(I) \quad \ldots(3.23)$$

$$CF = f(S) \quad \ldots(3.24)$$

$$CF = f(GDP) \quad \ldots(3.25)$$

$$CF = f(WRL) \quad \ldots(3.26)$$

The equations are :

$$CF = a + b_1 I \quad \ldots(3.27)$$

$$CF = a + b_1 S \quad \ldots(3.28)$$

$$CF = a + b_1 GDP \quad \ldots(3.29)$$

$$CF = a + b_1 WRL \quad \ldots(3.30)$$

Statistical Tools Used

In this process of estimating above models, various statistical tools has been used, e.g. coefficient of multiple determination (R^2), standard error or estimate (SEE), student's t-statistics, F-statistics. In this study, the statistical parameter is calculated with the help of computer via SPPSS for the models prescribed above. A brief explanation of statistical tools employed in this study is as follows.

Coefficient of Multiple Determinations (R^2)

The coefficient of multiple determinations is a measure of the degree (extent or strength) of linear association for correlation between two variables, one of which happens to be independent and other being dependent variables(s). In other words, R^2 measure the percentage total variation in dependent variable explained by explanatory variables. The coefficient of determination can have value ranging from zero to one (i.e. $0> R^2<1$). If R^2 equal to 0.90, which indicates that the independent variables used in regression model, explain 90 percent of the total variation in the dependent variables. A value of one con or only if the unexplained variation is zero, which simply means that all the data points in the scatter diagram fall exactly on the regression line.

Regression Constant (a)

It is known that the numerical constant which determines the distance of the flitted line directly above or below the origin (i.e. Y-intercept). The value of the constant which is the intercept of the model indicates the average level of dependent variable when independent variable(s) is zero. In other words, is better to understand that 'a' (constant) indicates

the mean or average effect on dependent variables if the entire variable omitted from the model.

Regression Coefficient (b_1,b_2,b_3.....)

The regression coefficient of each independent variable indicates the marginal relationship between that variable and value of dependent variable, holding constant the effect of all other independent variables in the regression affect the values of dependent variable's estimate. It is also known that the numerical constant which determines the change is dependent variable per unit change in independent variables. (i.e. slope of the line)

Standard Error Estimate (SEE)

With the help of regression equation perfect prediction is practically impossible. Standard error of an estimate is a measure of the reliability of the estimating equation, indicating the variability of the observed points around of regression line, i.e. the extent of which observed values differ from their predicted values on the regression line. The smaller the value of SEE, the closer will be the dots to the regression line and better the estimates based on the equation for this line. If SEE is zero, then there is no variation about the line and the correlation will be perfect. Thus, with the help of SEE, it is possible to ascertain how good and reprehensive the regression line is as a description of the average relationship between two series.

Student's t-Statistics

To test the validity of assumptions of the study for small samples, t-test is used. It is very difficult to make a clear-cut distinction between small

samples and large samples. However, form practical point of view, in most of the situation a sample is termed as small if n≤30. It should be clearly understood that the exact sample techniques (Tests) can be used, even for large samples but large samples theory cannot be used for small samples (Gupta: 1995, 1208). For applying t-distribution, the t-value are calculated first and compared with the critical values at a certain level of significance for given degree of freedom. If computed value of 't' exceeds the table value (say $t_{0.05}$), it is known that the difference is significant at 5 percent level of significance but if t-values are less than the corresponding critical values of the 't' distribution is not treated as significant.

F-test

The Fisher's F-distribution is defined as a distribution of the ratio of two independent chi-square variables each divided by the corresponding degrees of freedom. It is clear that F-distribution has a single mode. Note that the shape of F-distribution depends on the value of degrees of freedom and the value of F lies between zeros to infinity. The F-test, sometimes called variance ratio test, is based on F-distribution. In order to test goodness of fit to regression models, F-test is used.

5. Limitations of the study

- Econometric analysis at the Nepalese economy is severely inhabited by wide rage if data deficiencies. The availability and equality of the statistical data still remain for short of the ideal. So, it may be difficult to analyze the different issue in the relationship between macro economic variables.

- The non availability of various relevant price indices, it has not been possible to estimate the structural relationship of various macro-economic entitles in constant price.
- There is no data base, which makes it difficult to carry on any research in Nepalese capital market. In order to make a study on saving investment and capital market in Nepal more fruitful. It is essential that data should be of frequent time intervals.
- The use of annual data in this study is thus likely to make the conclusion somewhat less valid and less reliable. In the absence of monthly or quarterly data, many on the approaches to the study could also not be employed.
- This study is based on only Data of Nepal Rastra Bank a macro economic variables such as saving investment, capital formation gross domestic product, national income, tax revenue foreign aid export and other related topic.
- The regression results are based on pool cross section analysis at only limited data of Nepal Rastra Bank macro economic variables.
- This study is based mainly in the secondary data which are collected form economic bulletin, books and reports at NRB. So, the secondary data are not accurate the primary data.

CHAPTER - 4

PRESENTATION AND ANALYSIS OF DATA

This chapter consisting of two sections which fully devoted to analyzing the various issues at macro perspectives. Section 1 examines the role of saving, investment and capital formation on economic development. The analysis of determinants of saving, investment and capital formation has been described in section 2. Tables are presented in the same section if they are necessary.

1. Role of Saving, Investment and Capital Formation on Economic Development

One of the most important indicators of economic development is the growth rate of GDP. Even there are some other indicators of economic development; the overall effect of development efforts is examined in terms of growth in GDP. Although the growth rate GDP alone does not truly reflect the level of economic progress, it is widely used as a measure of economic development (Wagle: 2000, 35). The empirical results are estimated by using annual data for the period of 1990/91 to 2011/12. Because of the non-availability of important price indices such as, saving deflector, investment deflector, and other important deflector, it has not been possible to estimate the specific relations in constant prices. However, as an alternative, though not a satisfactory way to do, values of all variables have been converted into real terms by using notional urban consumer price index. The results thus obtained are compared with those obtained by using current prices data, at the end of the section.

Estimates at Current Prices

First of all, the time series linear results of the model show the role of saving, investment and capital formation on economic development is presented in table 4.1

Table 4.1

Regression of Gross Domestic Product (GDPc) on saving (Sc) Investment (Ic) and capital formation (CFc) at current prices for various model.

Regression Equation $GDP_c = a + b_1 S_c + b_2 I_c + b_3 CF_c$ .....(4.1)

S.N.	Dependent Variable	Intercept	Regression Coefficient of			SEE	R^2	F	P. Value (Sig)
			S_c	I_c	CF_c				
I	GDPC	55685	3.40 (3.27)	-	2.17 (10.42)	56167.8	98.2%	529.62	**0.000**
II	GDPC	55460	1.79 (2.16)	2.51 (13.16)	-	45764.9	98.8%	802.58	**0.000**
III	GDPC	74017		4.83 (4.93)	-1.88 (-1.98)	4650.4	98.8%	777.06	**0.000**

Source: Appendix - 1

Note: Figures in the parentheses are t-value. Bold entries are statistically significant at 5 % level of significant.

The overall results are presented in expressions I to III of table 4.1. It presents the usual simple linear relationship between GDP saving, investment and capital formation. These results show the customary strong saving investment and capital formation effect on GDP. In the expression I, one rupee increase in saving leads to the about Rs. 3.04

increase in GDP at current prices holding, other variable constant. The same is noticed to be Rs 1.79 in expression II. The coefficient of multiple determination is quite high (i.e. R^2 = 98.8 %) for all expressions. it means that 98.8 % at the total variation in GDP has been explained by the regression model (i.e. the explanatory variables of regression model). On the other side one rupee increase in investment resulted in only Rs 2.51 increase in GDP holding saving & capital formation constant. The same is noticed to be Rs 483 in expression III. Similarly one rupee increase in capital formation leads to the about Rs2.17 increase in GDP holding all outer independent variable constant. The same is noticed to be Rs. 1.88 expressions III. The t-value of all expression are statistically significant.

The regression expression presented above, show the strong role played by saving and investment and weak role played by capital formation.

It may now be interesting to see the results when entire periods of the study are divided in to four sub periods for the regression model. Table 4.2 presents the regression result of gross domestic product on saving investment and the capital formation of current price for various time periods.

Table 4.2

Regression of Gross Domestic Product (GDPc) on saving (Sc) Investment (Ic) capital formation (CFc) at current prices for various time periods.

Regression Equation $GDP_c X a \Gamma b_1 S_c \Gamma b_2 I_c \Gamma b_3 CF_c$.....(4.2)

Time Period	Intercept	Regression Coefficient of			SEE	R^2	F	P. Value (Sig)
		S_c	I_c	CF_c				
1990/91 1996/97	18291	-0.90 (-0.28)	-0.88 (-0.32)	5.81 (1.05)	7115.74	99.2%	123.64	**0.001**
1997/98 2004/05	102622	-0.59 (-0.17)	3.95 (2.67)	-057 (-0.47)	41123	90.4%	12.61	**0.017**
2004/05 2011/12	175838	-1.67 (-0.55)	1.18 (0.90)	-1.15 (-0.88)	68515.2	97.9%	47.24	**0.005**
1990/91 2011/12	51013	1.31 (1.44)	3.88 (3.96)	-1.24 (-1.20)	45237.6	98.9%	548.08	**0.000**

Source: Appendix-1

Note: Figures in the parentheses are t-value. Bold entries are statistically significant at 5 % level of significant.

The overall results are presented in the table 4.2 indicate that the estimated coefficient have expected sign of saving investment and capital formation for all period. The same is also saving have not expected sign except the 1990/91 to 2011/12 period. The same is also investment have expected sign except the 1990/91 to 1996/97 period and same is also capital formation have not expected sign except the 1990/91 to 1996/97 period. There for the overall period of saving investment and capital formation as statistically significant.

Similarly it may be interesting to see the result when applying the Almon lag scheme. Saving investment and capital formation contribute to GDP in a lagged pattern. Now perform the Almon lag scheme to test the structure of the effect saving investment of capital formation on GDP. The result come out as shown in table 4.3

Table 4.3

Regression of gross domestic product (GDPc) on saving (Sc) and its one to five year lag value; GDP_c on investment (Ic) and its one to five year lag values; and GDP_c on capital formation (CFC) and its five year lag values at current prices for the period at 1990/91 to 2011/12.

Regression Equation:

$$GDP_c = a + b_1 S_{ct} + b_2 S_{ct-1} + b_3 S_{ct-2} + b_4 S_{ct-3} + b_5 S_{ct-4} + b_6 S_{ct-5} \quad \ldots\ldots(4.3)$$

$$GDP_c = a + b_1 I_{ct} + b_2 I_{ct-1} + b_3 I_{ct-2} + b_4 I_{ct-3} + b_5 I_{ct-4} + b_6 I_{ct-5} \quad \ldots\ldots(4.4)$$

$$GDP_c = a + b_1 CF_{ct} + b_2 CF_{ct-1} + b_3 CF_{ct-2} + b_4 CF_{ct-3} + b_5 CF_{ct-4} + b_6 CF_{ct-5} \quad \ldots\ldots(4.5)$$

Equation	A	b_1	b_2	b_3	b_4	b_5	b_6	SEE	R^2	F^1	P. Value (Sig)
4.3	-503525 (-6.09)	6.16 (3.25)	7.11 (1.65)	9.88 (2.40)	1.99 (0.44)	-2.16 (-0.43)	-5.53 (-1.19)	86556.3	97%	53.10	**0.000**
4.4	56829 (3.19)	0.696 (2.26)	0.798 (2.41)	0.143 (0.21)	1.36 (1.01)	-1.15 (-0.88)	3.02 (2.87)	23629.6	99%	733.21	**0.000**
4.5	128614 (4.65)	1.10 (2.12)	0.471 (0.77)	0.172 (0.18)	-0.05 (-0.04)	1.03 (0.74)	1.84 (1.54)	49441.9	99%	166.191	**0.000**

Source : Appendix-1

Note: Figures in the parentheses are t-value. Bold entries are statistically significant at 5 % level of significant.

The coefficient of saving, investment and capital formation are all positive except four year and five year lag value of saving , four year lag value of investment and three year lag value of capital formation which are statistically significant but overall p-value statistically significant. It means that GDP is influenced not only by the current value of saving investment and capital formation but also by past values. However ,current value of saving investment and capital formation have the highest and significant impact on GDP.

Estimated in real terms:

It may now be the interesting to be the results when values of all variables have deflated in the real terms by means of national urban consumer price index. First of all the time series linear results of the model show the role of saving investment and capital formation on economic development is presented in table 4.4

Table- 4.4

Regression of Gross Domestic Product (GDP_R), on saving (S_R) investment (I_R) and capital formation (CF_R) in Real term for various model.

Regression Equation:

$$GDP_c \; X a \Gamma b_1 S_R \Gamma b_2 I_R \Gamma b_3 CF_R \text{.....} (4.6)$$

SN	Dependent Variable	Intercept	Regression Coefficient of			SEE	R^2	F	P. Value (Sig)
			S_R	I_R	CF_R				
I	GPP_R	143998	2.27 (2.22)	-	1.98 (12.30)	49544	92.6%	119.04	**0.000**
II	GPP_R	150627	0.996 (1.21)	2.32 (16.3)	-	38199.5	95.6%	206.72	**0.000**
III	GPP_R	172916	-	3.63 (4.88)	-1.13 (-1.66)	37043.8	95.9%	220.42	**0.000**

Source: Appendix - 3

Note : Figures in the parentheses are t-value. Bold entries are statistically significant at 5 % level of significant.

The overall results are presented in the expression I to III of table 4.4 are encouraging. The sign of the all coefficient are as expected. It presents the usual simple linear relationships between GDP saving, investment and capital formation, there results show the customary strong saving investment and capital formation effect on GDP. In expression I, one rupee increase in saving leads to the about Rs.2.27 increase in GDP at real term holding other variable constant. The same noticed to be Rs. 0.996 in expression II. The coefficient of multiple determinations is

92.6%. it means that 92.6% of the total variation in GDP has been explained by the regression model. On the other side one rupee increase in the investment resulted in only Rs.2.32 increase in GDP. Holding saving and capital formation constant. The same is noticed to be Rs.3.63 in expression III. Similarly one rupee increase in the capital formation leads to the about Rs. 1.98 increase in GDP holding all other independent variable constant. The same is noticed to be Rs. 1.13 expression III t value at all expression are statistically significant.

Regression expression presented above show the strong role played by saving investment and weak role played by capital formation.

It may now be interesting to see the results when entire periods of the study are divided in to four sub periods for the regression model. Table 4.5 presents the regression result of gross domestic product on saving investment and the capital formation of real term for various time periods.

Table- 4.5

Regression of gross domestic product (GDP_R) on saving (S_R) investment (I_R) and capital formation (CF_R) in the real term for various time period.

Regression Equation $GDP_R = a + b_1 S_R + b_2 I_R + b_3 CF_R$ .....(4.7)

Time Period	Intercept	Regression Coefficient of			SEE	R^2	F	P. Value (Sig)
		S_R	I_R	CF_R				
1990/91 1996/97	210380	1.08 (0.41)	1.44 (0.59)	-0.06 (-0.01)	1155.7	95.4%	20.54	**0.017**
1997/98 2004/05	268174	-1.80 (-0.58)	3.49 (2.62)	-0.54 (-0.47)	44386.7	79.4%	5.13	0.074
2004/05 2011/12	314500	-1.28 (-0.61)	74.2 (0.89)	-72.0 (-0.86)	37732.6	92.7%	12.62	**0.033**
1990/91 2011/12	151858	0.521 (0.58)	3.38 (3.85)	-0.942 (-1.22)	37709.5	95.9%	141.92	**0.000**

Source: Appendix - 3

Note: Figures in the parentheses are t-value. Bold entries are statistically significant at 5 % level of significant.

More precisely during the 1990/91 to 1996/97 period, the estimated coefficients have expected signs for saving and capital formation and these are statistically significant. During the 1997/98 2004/05 period the estimated coefficient have not expected signs for saving and capital formation but investment have expected sign that are statistically not significant. On the other side during the 2005/06 to 2011/12 period, also same to the period 1997/98 to 2004/05, but these are statistically significant lastly, during the period 1990/91 to 2011/12 period, estimated

coefficient have expected sign for saving and investment but capital formation have not expected sign, the coefficient are statistically significant.

Similarly, it may be interesting to see the results when applying to Almon Lag scheme. It is hypothesized to saving investment and capital formation contribute to GDP in a lagged pattern. The estimate of Almon lag scheme to test the lag structure of the effects of saving investment and capital formation on GDP in real terms are presented in the table 4.6.

Table:4.6

Regression of gross domestic product (GDP_R) on saving (S_R) and its one to five year lag values; GDP_R on investment (I_R) and its one to five year lag value; and GDP_R on capital formation (CF_R) ant its one to five year lag values in real terms for the period 1990/91 to 2011/12.

Regression Equation

$$GDP_R = a + b_1 S_{Rt} + b_2 S_{RtZ1} + b_3 S_{RtZ2} + b_4 S_{RtZ3} + b_5 S_{RtZ4} + b_6 S_{RtZ5} \text{.....(4.8)}$$

$$GDP_R = a + b_1 I_{Rt} + b_2 I_{RtZ1} + b_3 I_{RtZ2} + b_4 I_{RtZ3} + b_5 I_{RtZ4} + b_6 I_{RtZ5} \text{.....(4.9)}$$

$$GDP_R = a + b_1 CF_{Rt} + b_2 CF_{RtZ1} + b_3 CF_{RtZ2} + b_4 CF_{RtZ3} + b_5 CF_{RtZ4} + b_6 CF_{RtZ5} \text{.....(4.10)}$$

Equation	a	b_1	b_2	b_3	b_4	b_5	b_6	SEE	R^2	F	P. Value (Sig)
4.8	-511190 (-0.56)	4.27 (0.75)	-4.64 (0.57)	7.89 (1.9)	4.28 (0.60)	-0.11 (-0.02)	5.87 (0.95)	136273	55.5 %	1.92	**0.173**
4.9	177219 (4.40)	1.16 (2.05)	0.478 (0.72)	0.125 (0.1)	0.37 (0.29)	-1.33 (-1.06)	2.24 (2.12)	373293	96.5 %	46.09	**0.000**
4.10	269739 (6.16)	1.53 (2.34)	0.204 (0.24)	0.000 (0.0)	-0.40 (-0.31)	-0.16 (-0.08)	1.32 (1.24)	53365.3	92.9 %	21.70	**0.000**

Source : Appendix-3

Note : Figures in the parentheses are t-value. Bold entries are statistically significant at 5 % level of significant.

The overall results are presented table 4.6 indicate that the estimated coefficient have expected sign for all expression except two year and four year lag value of saving, four year lag value of investment and three year

and four year value of investment and three year and four year lag value of capital formation which are statistically not significant. Both expression 4.8 is statistically not significant. The time series linear regression results show a positive relationship at current price and real term as well. The lagged values of saving investment and capital formation are also found to be important in determining GDP but the current values have the largest impact. As a whole this section suggests that the saving, investment and capital formation played a significant role in determining the level of GDP.

2. Analysis of Determinants of saving investment and capital formation.

The determinants of saving investment and capital formation have been studied through regression analysis. The empirical results are estimated in this section by using annual data for the 1990/91 to 2011/12 period. The result obtained in the real term are compared with those obtained by using current prices data as well.

Determinants of Saving

In order to assess the determinants of saving the time series linear regression of saving on its determinants are presented below.

I) Estimates at correct prices

i) $\mathbf{S_C}$ =17257 + 0.0718 Yc ……(4.11)

(11.42)

R^2 = 86.7% SEE = 11904.6 F= 130.48

P-value(sign) = **0.000**

ii) $\mathbf{S_C}$ =16356 + 0.0743 GDPc……(4.12)

(12.21)

R^2 = 86.7% SEE = 11904.6 F= 130.48

P-value(sign) = **0.000**

iii) $\mathbf{S_C}$ =-1290 + 1.4 Fc + 0.661Xc ……(4.13)

(3.35) (2.70)

R^2 = 86.1% SEE = 125087.6 F= 58.65

P-value(sign) = **0.000**

iv) $\mathbf{S_C}$ = 51555 + 0.1511 Tc – 3661WRD ……(4.14)

(13.07) (-3.76)

R^2 = 91.1% SEE = 9986.69 F= 97.41

P-value(sign) = **0.000**

v) $\mathbf{S_C}$ =17570 + 0.720 Ic - 0.493CFc ……(4.15)

(3.00) (-2.11)

R^2 = 88.4% SEE = 11421.7 F= 72.24

P-value(sign) = **0.000**

Note: figures in the parentheses are t-value and bold entries are statistically significant at 5% level of significant.

II Estimates in Real Terms

i) $\mathbf{S_R}$ = 40567 + 0.03982 Y_R ……..……(4.16)

(3.12)

R^2 = 32.8% SEE = 10145.1 F= 9.7

P-value(sign) = **0.005**

ii) $\mathbf{S_R}$ = 40364 + 0.04046 GDP_R ……..……(4.17)

(3.19)

R^2 = 33.7% SEE = 10174.2 F= 10.18

P-value(sign) = **0.005**

iii) $\mathbf{S_R}$ = 14476 + 0.903 F_R + 0.571 X_R……..……(4.18)

(1.80) (3.67)

R^2 = 50.7% SEE = 8917.68 F= 9.76

P-value(sign) = **0.001**

iv) $\mathbf{S_R}$ = 69713 + 0.190 T_R - 2577 WRD……..……(4.19)

(2.85) (0.00)

R^2 = 52.7% SEE = 8728.40 F= 10.60

P-value (sign) = **0.001**

v) $\mathbf{S_R}$ = 40389 + 0.491 I_R - 0.369 CF_R ……..……(4.20)

(2.54) (-2.08)

R^2 = 42.8% SEE = 9605.57 F= 7.10

P-value (sign) = **0.005**

Note: figure in the parentheses are **t-value**. Bold entries are statistically significant at 5% level of significant.

The dependent variable namely Sc and S_R respectively denotes the gross domestic saving at current price and gross saving in real term. The independent variables, namely Y_c, GDP_c , F_c, X_c ,T_c, I_c, CF_c and WRD respectively, denotes National income gross domestic product, foreign aid, exports, tax revenue, aggregate investment, capital formation at current prices and weightage interest rate on deposits of commercial

banks while Y_R, GDP_R, F_R, X_R ,T_R, I_R, CF_R and WRD mean same as above in real terms.

The overall results presented in expression (4.11 to 4.20) are encouraging the signs of all the coefficients are as expected. The coefficient are also statistically significant except the coefficient of investment and capital formation and the goodness of fit at the model is also satisfactory.

With respect to the linear relationship between aggregate saving and aggregate income, the result as indicated by expressions (4.11) and 4.16 support the Keynesian absolute income hypothesis. Regarding the linear relationship between aggregate saving and gross domestic product. It may be stated that results as indicated by expression (4.12) and (4.17) support the finding at earlier study by Khadka (2011). The expression (4.13) and (4.18) indicated that the saving is positively influenced by the foreign aid and exports. The statistically significant results of the present study may be attribute to the increased the study period. Similarly, the expressions (4.14) and (4.19) indicated that the saving is positively effected by tax revenue while it is negatively affected by weightage average interest rate as deposits of commercial banks. On the other side, the results presented by expression (4.15) and (4.20) indicated that the saving is positively influenced by investment while it is negatively affected by capital formation.

The overall result suggests that saving is affected by the national income, GDP, foreign aid, export, tax revenue, investment capital formation and weighted average interest rate on deposits of commercial banks. It means that the increase interest rate leads to reduction in saving. This result does

not support the hypothesis that the increase in the real interest rates is expected to induce people to save more due to flow of data for the 1990/91 to 2011/12 period. The aggregate saving has growing trends which weighted average interest rate on deposits at commercial banks has declining trends over the years.

Determinants of Investment

The analysis of investment behavior and its relation with macro economic variables has been one of the strategic aspects of development planning. Even since the time of classical economists to present the day, it has received a good deal of theoretical and empirical attention. In order to assess investment behavior and its determinants, the estimated regression expression based on time series data are presented below.

I Estimates at Current Prices

i) $\mathbf{I_C} = 1203 + 0.4455\ S_C + 0.877 CF_C$……..……(4.21)

(3.00) (26.33)

$R^2 = 99.6\%$ SEE = 8979.06 F= 2472.12

P-value (sign) = **0.000**

ii) $\mathbf{I_C} = -86392 + 10.94\ F_C$ ……..……(4.22)

(16.14)

$R^2 = 33.7\%$ SEE = 10074.2 F= 260.60

P-value (sign) = **0.000**

iii) $\mathbf{I_C} = 17102 + 1.124\ M_C$ ……..……(4.23)

(55.29)

R^2 = 99.4% SEE = 11403.7 F= 3057.08

P-value (sign) = **0.000**

iv) $\mathbf{I_C}$ = 585793 - 32336 WRL ……..……(4.24)

(3.96)

R^2 = 43.9% SEE = 105913 F= 15.16

P-value (sign) = **0.001**

II Estimates in Real term

i) $\mathbf{I_R}$ = -2328 + 0.5175 S_R + 0.866 CF_R……..……(4.25)

(2.14) (27.02)

R^2 = 98.2% SEE = 9855.57 F= 523.43

P-value (sign) = **0.000**

ii) $\mathbf{I_R}$ = -170550 + 13.53 F_R ……..……(4.26)

(5.18)

R^2 = 57.3% SEE = 47035.9 F= 26.80

P-value (sign) = **0.000**

iii) $\mathbf{I_R}$ = -32661 + 1.192 M_R ……..……(4.27)

(21.47)

R^2 = 95.8% SEE = 14673.7 F= 460.82

P-value (sign) = **0.000**

iv) $\mathbf{I_C}$ = 397299 - 18010 WRL ……..……(4.28)

(-4.72)

R^2 = 52.7% SEE = 494930 F= 22.26

P-value (sign) = **0.000**

Note: figure in the parentheses are t-value and bold entries are statistically significant at 5% level of significant.

In the above expressions, the sign at coefficient are all as per a priori expectation except the coefficient of weighted average interest rate on lending at commercial banks. Through the coefficient of all independent variables are statistically significant at 5% level of significant.

Investment is positively affected by saving and capital formation as indicated in expression (4.21) and (4.25) moreover the overall hit of the model has gone poor in expression (4.21) as compared to expression (4.25). Investment is also significantly influenced by foreign aid as indicated in expression (4.22) and (4.26). The results at present study are more or less similar to the result of studies by the Poudyal (1988) Wagle (2000) and Sapkota (2007).

Imports have significantly influenced on investment as indicated b y expressions (4.23) and (4.27). The coefficient at imports seems to have increase from 1.124 for the expression (4.23) to 1.192 for the expression (4.27).

Investment is negatively affected by weighted average interest rate on lending are commercial banks as lending of commercial banks as indicated by expression (4.24) and (4.28). The regression coefficient of the weighted average interest on lending at commercial banks has statistically significant at 5% level of significant and negative sign. One

has therefore reason to believe that increase in interest rate leads to reduction in investment.

Determinants of Capital Formation

Development and expansion of capital market are essential for the rapid economic growth of the country. Development of capital market depends upon the industrial development of the country. The developments in macro level of the national economy have positive impact on the capacity of the economy. Capital formation is a major function of capital market, it is an indicator at the capital market, it is an indicator of the capital market as a dependent variable for the regression models. The time series regression results of the models showing the capital formation behavior and its dete4reminansts dare presented below.

I Estimates at Correct Prices

i) $\mathbf{CF_C}$ = -12818 + 1.027 I_C ……..……(4.29)

(59.40)

R^2 = 99.4% SEE = 10941.4 F= 3128.54

P-value (sign) = **0.000**

ii) $\mathbf{CF_C}$ = -84933 + 4.063 S_C ……..……(4.30)

(9.84)

R^2 = 82.9% SEE = 60288.2 F= 96.88

P-value (sign) = **0.000**

iii) $\mathbf{CF_C}$ = -44069 + 0.3485 GDP_C ……..……(4.31)

(26.58)

R^2 = 95.8% SEE = 14673.7 F= 706.58

P-value (sign) = **0.000**

iv) $\mathbf{CF_C}$ = 569935 - 3178 WRL ……..……(4.32)

(-3.65)

R^2 = 40% SEE = 112910 F= 13032

P-value (sign) = **0.002**

II Estimate in Real term

i) $\mathbf{CF_R}$ = -23395 + 1.078 I_R ……..……(4.33)

(28.59)

R^2 = 97.9% SEE = 121321 F= 817.15

P-value (sign) = **0.000**

ii) $\mathbf{CF_R}$ = -51773 + 3.061 S_R ……..……(4.34)

(2.46)

R^2 = 23.3% SEE = 687447 F= 6.07

P-value (sign) = **0.023**

iii) $\mathbf{CF_R}$ = -97526 + 0.4208 GDP_R ……..……(4.35)

(13.96)

R^2 = 96.7% SEE = 23942 F= 194.96

P-value (sign) = **0.000**

iv) $\mathbf{CF_R}$ = 381195 - 17996 WRL ……..……(4.36)

(-3.96)

R^2 = 44.2% SEE = 58636 F= 15.54

P-value (sign) = **0.001**

Note: figure in the parentheses are t-value, bold entries are statistically significant at 5% level of significant.

All the expression are strong and provide the coefficients of investment saving and gross domestic products. That are statistically significant with the theoretically correct signs in all the cases.

Capital formation is positively influenced by investment as indicated by expressions (4.29) and (4.33). but the coefficients of investment seem to have slightly increase from1.027 for the expression (4.29) to 1.078 for the expressions (4.33). True result are similar to the earlier studyby Sapkota 2010 to some extent.

Capital formation is also significantly affected b y saving as indicated expression (4.30) and (4.34), moreover, the overall fit of the model has gone poor in expression (4.34) as compared to the expression (4.30). But the coefficients of saving decreased from 4.063 from the expression (4.30) to 3.06 for the expression (4.34).

Capital formation is also positively affected by gross domestic product as indicated by the expression (4.31) and (4.35). This result is also more or less similar to the study by Wagle (2000). On the other side, it is negatively related with weighted average interest rate on lending at commercial banks as indicated by the expressions (4.32) and (4.36). These results are in contradiction with the theoretical prepositions of the other of real interest rates is expected to include people to capital formation move due to the flow of data. In Nepal, the aggregate capital formation has increasing trends white weighted average interest rate in lending of commercial banks has declining trends over the years.

The results of present study are more or less similar to the result at earlier studies. Most of the expressions have better values of t, R^2, and p-value (sign). The better result of the present study may be attributed to the increased study period. While going through the result presented in this section, the question may arise as to why some of the results are contradicts with the findings of earlier study. In this connection it is worth while to the note that the nature and sources data and the specialization at the models may themselves be responsible for the difference in the results.

Concluding Remarks

The purpose of this study has been investigate the role and impact of saving investment and capital formation on economic development and to analyze determinants of the major macro economic variable such as saving investment and capital formation. The regression equation used in this study have been estimated at current price and real term with the entire study period divided in to different sub periods.

The result presented in this study suggest that in all cases GDP is significantly associated with saving investment and capital formation both at current price and real term. There is a strong role played by saving and investment on economic development while weak role played by capital formation. All cases are statistically significant at 5% level of significant. The level of GDP highly depends upon investment in current price as well as real term. The level of saving is significantly determined by national income compare to other variable and its positive relation with foreign aid, export, tax revenue, investment and gross domestic product. Whereas there is negative relation with capital formation and interest rate on deposit in current price as well real term. Investment has positive relation with saving, capital formation, foreign aid, and import

and negative relation with interest rate on lending in current price as well as real term. Capital formation have positive relation with investment, saving, gross domestic product and negative relation with interest rate on lending in current price as well as real term. Overall the results are statistically significant.

Moreover in Nepal GDP is seems to be in increasing trend but it is very low,import is in increasing trend but export is in decreasing trend. Investment is in decreasing trend and mainly focused on import business, capital formation has relatively low increasing trend. By observing these conclusions economic development of Nepal is being worst comparing to other countries and its own past history.

CHAPTER- 5

SUMMARY AND CONCLUSIONS

Capita market is a medium through which scattered savings and investible resources are converted into actual investment. The development of the sound capital market with its constituent financial institutions is one of the mechanisms, which enables the efficient transformation of saving. Such a financial development also tends to raise, in general. The rate of saving and investment by providing positive incentives to both savers and investor (Patrick: 1966). An efficient capital market is a pre-requisite of economic development and the development of capital market in our country is dependent up-on the availability of saving, proper organization of intermediary instruction to bring the investor and business ability together for mutual interest. Capital market makes available the long term finance at a reasonable rate at return for any proposition, which after a prospective yield sufficient to make borrowing worthwhile, giving the ruling rate of the interest.

This study mainly aims to examine the role of saving, Investment and capital formation on economic development and to analyze determinants of the major Macro-economic variables such as saving investment and capital formation at macro perspective in the context of Nepal. This study deals with the current value and lagged values at saving investment and capital formation important in determining GDP.

This is perhaps the first study of its kind in Nepal. This study is based on secondary data only for the purpose of the study. The necessary data on saving, investment capital formation and outer related variables were

collected for the 1990/91 to 2011/12 period at Macro level. The necessary data information at Macro level has collected from statics Department of Nepal Rastra Bank Baluwatar, Kathmandu.

The expression used in Macro analysis has estimated at correct prices as well as in real terms. Using the national urban consumer price index has deflated the macro-economic variables. The study on the role of saving, investment and capital formation on economic development and the analysis of determinants of saving, Investment and capital formation were accomplished by using various regression models. In this study results were tested at 5 % level of significance. This study have been used various statistical tools are coefficient of multiple determination (R^2), standard error or estimate (SEE), student's t-statistics, F-statistics. In this study, the statistical parameter is calculated with the help of computer via SPSS for the models prescribed above.

Major Findings

The major findings of the analysis of the study are stated as follows:

1. The study of role of saving on economic development revealed that there is positive relationship between saving and GDP. The relationship of saving with GDP is examined using unlagged as well as Almon Lag specifications at current prices and in real terms too. This result show that saving significantly influenced by GDP. This result supports to the Wagle study as well as theoretical proposition of economics.

2. The study of relationship between investment and economic development revealed that there is positive relationship of investment with GDP. The relationship between investment and GDP is examined using unlagged as well as Almon Lag Specification at current prices and in real terms too. The result show that is significantly determined be investment. The important point to be noted here is that the findings of this aspect of the study is similar to the findings of the study made by F. Modigliani, P.M. Summers and D. B. Suits, Robinson, A. P. Thrillwall, S. R. Poudyal and Sharad Wagle. These findings are also consistent with the theory of economics.
3. The study of the role of capital formation on economic development indicated there is negative relationship between capital formation and GDP. The relationship of capital formation with GDP is also examined at current prices as well as in real terms with and without Almon Lag Specifications. The result shows that capital formation has significant effect on GDP.
4. The current values and past values of saving, investment and capital formation have positive impact on economic development but the current values have the largest impact. On the other side, the strong role-played by saving and investment while weak role-played by capital formation.
5. The study of relationship between saving and national income represented that there is positive relationship of saving with national income. The results show that saving is significantly determined by national income. The findings of this study supports to the Keynesian absolute income hypothesis as well as the study made by H. S. Houthakker, H. B. Chenery and P. Eckstein, L. Landau, S. K. Singh and S. R. Poudyal.

6. The study of relationship of saving with foreign aid and experts found that there are positive relationship between saving and foreign aid and experts. The results represent that saving is significantly influenced by foreign aid and experts. The results are similar to the findings of study made by S. R. Poudyal and Sharad Wagle.
7. There is positive relationship observed between saving and tax revenue. The results show that saving is significantly determined by tax revenue. This result supports to the findings of the study made by K. Krishnamurthy and P. Saibab, S. K. Singh, E. M. Engen and W. G. Gale and Sharad Wagle.
8. There is negative relationship exists between saving and interest rate on deposits. The results show that saving is negatively influenced by interest rate. The important point to be noted here is that the findings of this aspect of the study is similar to the findings of the study made by J. G. Williamson, and P. O. Gourinchas and J. A. Parker and contradict with the study by R. K. Gupta and Brown.
9. The relationship among saving , investment and capital formation is observed positive in all cases. These results indicated that saving is positively determined by investment and capital formation. This results support to the findings of the study made by Sharad Wagle as well as the theoretical proposition.
10. Saving is positively related to national income, GDP, foreign aid experts, tax revenue, investment and capital formation; and negatively related to interest rate on deposits of commercial banks.
11. The study of the relationship between investment and foreign aid revealed that the positive relationship between them. These results represented that investment is significantly determined by foreign

aid. The findings of this study are more or similar to the findings of the study made by S. R. Poudyal and Sharad Wagle.

12. The relationship between investment and imports is observed positive in all cases. The results indicate that investment and imports is observed positive in all cases. The results indicate that investment is significantly determined by imports. The important point to be noted here is that the findings of the study made by S. R. Pudyal.
13. The study of the relationship between investment and interest rate on lending represented that there is negative relationship between them. This result showed that the investment is negatively determined by interest rate on lending. The result of present study is in contradiction with the theoretical proposition of economics. The reason is that the aggregate investment has growing trends while interest rate on lending has declining trends over the years.
14. There is a positive relationship of investment with GDP, saving, capital formation, foreign aid and imports; and negative relationship with interest rate on lending of commercial banks.
15. The study of the relationship of capital formation with interest rate on lending indicated that there is negative relationship between them. This result represented that the interest rate on lending has negative impact on capital formation. This finding contradicts with the theory of economics due to the flow of interest rate on lending and capital formation in opposite directions over the years.
16. Capital formation is positively related to investment, saving and GDP; and negatively related to interest rate on lending of commercial banks.

Directions for Further Research

There are several directions for further research in the area of saving, investment and capital market in Nepal at Macro and Micro perspective. First, an extension of the present study is to test the non-Keynesian theories for Nepalese economy. Second, an avenue of research is to make study by adding additional years. Third, further efforts can improve up on this work by the studying the hitherto uncovered areas, including more satisfactory specifications, incorporating new data in many areas and adopting more satisfactory method of estimation. Fourth, a direction of further research is to conduct the households survey on saving, investment and capital formation in Nepal. Finally, another avenue of research is to survey of the opinions of financial executives on saving, investment and capital mark in Nepal.

Appendix-1

Basic Data Relating to saving (S_c). Investment (I_c). Capital Formation (CF_c). Gross Domestic Product (GDP_c), National Income (Y_c), Tax Revenue (T_c). Foreign, Aid (F_c), Exports (X_c) and Imports (M_c) for the period of 1990/91 to 2011/12 at correct price.

(Rs in million)

Year	S_c	I_c	CF_c	GDP_c	Y_c	T_c	F_c	X_c	M_c
90/91	11514	25074	22780	120370	122517	8176.3	6446.1	7387.5	23226.3
91/92	16207	31619	29277	149487	152202	9875.6	7800.4	13705.8	31940.0
92/93	23172	39653	37278	171474	174705	11662.5	9235.6	17266.5	39205.6
93/94	29220	44644	42032	199272	203135	15371.5	11557.1	19393.4	51570.8
94/95	32465	55231	48370	219175	223992	19660.0	11249.4	17639.2	63679.5
95/96	34426	68017	56081	248913	252479	21668.0	14289.0	19881.1	74454.5
96/97	39162	71084	60794	280513	285173	24424.3	15031.9	22636.5	93553.4
97/98	41438	74728	65375	300845	306870	25939.8	16457.1	27513.5	89002.0
98/99	46563	70061	65269	342036	352917	28752.9	16189.0	35676.3	87525.3
99/00	55507	88402	73309	378033	391158	33152.2	17523.9	49822.7	108504.9
2000/01	62018	99301	78031	411275	427447	38865.1	18794.4	55654.1	115687.2
01/02	51281	102174	71613	422807	441182	39332.8	14384.8	46944.8	107389.0
02/03	54778	118020	87024	546675	472869	42027.7	15885.5	49930.6	124352.1
03/04	62386	130993	95124	496745	509700	48175.7	18912.4	53910.7	136277.1
04/05	68110	156194	155907	589412	543902	54104.9	23657.3	58705.7	149473.6
05/06	57757	175949	175633	654084	659040	57427.0	29413.2	60234.1	173780.3
06/07	71453	208886	208779	727827	735259	71168.0	30124.8	59383.1	194694.6
07/08	80188	247144	247272	815658	823605	85147.1	30913.6	59266.5	221937.7
08/09	93011	313213	312810	988053	1000021	117051.8	35071	67697.5	284469.6
09/10	86613	410167	410725	1171905	1262796	156290.7	38546	60824	374335.2
10/11	89636	406738	406919	1346816	1376979	172755.2	49327.4	64338.5	396175.5
11/12	155467	511081	510590	1558174	1572959	207237	45922.2	74722	461219

Source: i) Central Bureau of Statistics, Kathmandu,

ii) Nepal Rastra Bank, Quarterly Economic Bulletin

iii) Financial Comptroller General Office

Appendix 2

National Urban Consumer Price Index

Base Year : 2005/06 = 100

Year	Overall Index
90/91	34.3
91/92	41.5
92/93	45.1
93/94	49.2
94/95	52.9
95/96	57.3
96/97	61.9
97/98	67.0
98/99	74.7
99/00	77.2
2000/01	79.1
01/02	81.4
02/03	85.2
03/04	88.6
04/05	92.6
05/06	100
06/07	105.9
07/08	113.0
08/09	127.2
09/10	139.4
10/11	152.7
11/12	171.7

Source: NRB,Quarterly Economic Bulletin December 2011

Appendix 3

Basic Data Relating to saving (S_R), investment (I_R), capital formation (CF_R), Gross Domestic Production (GDP_R), National Income (Y_R), Tax Revenue (T_R),Foreign Aid(F_R) Exports (X_R) and Imports (M_R) for the period of 1990/91 to 2011/12 in Real Terms.

(Rs in million)

Year	S_R	I_R	CF_R	GDP_R	Y_R	T_R	F_R	X_R	M_R
90/91	33569	73102	66414	350933	357192	23838	18793	21538	67715
91/92	39053	76190	70547	360210	366752	23797	18796	33026	76964
92/93	51379	87922	82656	380208	387373	25859	20478	38285	86930
93/94	59390	90740	85431	405024	412876	31243	23490	39214	104819
94/95	61371	104406	91437	414319	423425	37164	21265	33344	120377
95/96	60080	118703	97873	434403	440625	37815	24937	34679	129938
96/97	63267	114837	98213	453171	460700	39458	24284	36569	151136
97/98	61848	111534	97575	449022	458015	38716	24563	41065	132839
98/99	62333	93790	87375	457879	472446	38491	21672	47759	117169
99/00	71900	114510	94960	489680	506681	42943	22699	64537	140550
2000/01	78404	125538	98648	519943	540388	49134	23764	70359	146254
01/02	62999	121521	87977	519419	541992	48320	17672	57672	131928
02/03	64293	138521	102141	641637	555010	49328	18645	58604	145953
03/04	70413	147848	107363	560660	575282	54374	21346	60847	153812
04/05	73553	168676	168366	636514	587367	58429	25548	63397	161419
05/06	58757	175949	175633	654084	659040	57427	29413	60234	173780
06/07	67472	197248	197147	687278	694295	67203	28446	56075	183848
07/08	70963	218712	218825	721821	728854	75351	27357	52448	196405
08/09	73122	246237	245920	776771	786180	92023	27571	53221	223640
09/10	62133	294237	294638	840678	862838	112117	27651	43633	268533
10/11	58701	266364	266483	882001	901754	113134	32303	42134	259447
11/12	90545.72	297659	297373	907498	916109	120697	26745.6	43559.7	268619

Source : Appendix 1 and 2

Appendix-4

Structure of Weighted Interest Rate on Deposit (WRD) and lending (WRL) of Commercial Banks (% PA)

WS = weight age of saving deposit
RS = Average interest rate on saving deposit
WF= weight age of fixed deposit
RF = Average interest rate on fixed deposit
WA = weight age of loan in Agricultural sector
RA = Average interest lending interest on Agricultural sector
WI = weight age of loan in industrial sector
RI = Average interest lending interest on industrial sector
WC = weight age of loan on commercial sector
RC = Average interest lending interest on commercial sector
WSe = weight age of loan on service sector
RSe = Average interest lending interest on service sector

Year	WS	RS	WF	RF	⌊ WRD	WA	RA	WI	RI	WC	RI	WSe	RSe	⌊ WRL
90/91	0.32	8.75	0.68	10.66	10.05	0.17	15.5	0.42	17	0.38	19.50	0.03	17.50	17.71
91/92	0.33	9.50	0.67	11.06	10.05	0.16	18	0.36	18.5	0.45	19	0.03	18.50	18.64
92/93	0.38	9.50	0.62	11.19	10.55	0.18	17.5	0.37	18.5	0.41	18	0.04	17.75	18.08
93/94	0.43	7.25	0.57	7.08	7.15	0.13	14	0.44	15	0.38	15.75	0.05	14.37	15.12
94/95	0.48	7.50	0.52	7.29	7.39	0.14	14.25	0.44	16	0.37	15.50	0.05	14.75	15.51
95/96	0.46	7.75	0.54	8.58	8.20	0.07	15.25	0.51	16.25	0.36	16.75	0.06	16	16.34
96/97	0.45	7.50	0.55	8.67	8.14	0.10	15.25	0.48	16.50	0.37	16.25	0.05	16.37	16.28
97/98	0.44	7.50	0.56	7.83	7.74	0.09	15	0.49	15.35	0.37	15.75	0.05	15.75	15.49
98/99	0.47	6.87	0.53	7.47	7.19	0.10	14.75	0.49	14	0.36	14	0.05	12.87	14.02
99/00	0.50	5.25	0.50	6.22	5.73	0.10	13.25	0.49	13	0.35	12.25	0.06	12.63	12.92
2000/01	0.52	5	0.48	5.47	5.23	0.09	13.50	0.49	11	0.35	11.50	0.07	11.87	11.46
01/02	0.53	4.38	0.47	4.75	4.55	0.09	13	0.46	11.25	0.34	11.50	0.11	11.62	11.07
02/03	0.56	3.42	0.44	4.53	3.91	0.06	12.5	0.47	11.25	0.37	11.75	0.10	10.87	11.47
03/04	0.58	3.71	0.42	4.31	3.96	0.09	11.75	0.45	11	0.36	11.75	0.10	10.54	11.29
04/05	0.60	3.38	0.40	3.54	3.44	0.14	11.50	0.43	10.87	0.34	11	0.09	8.87	10.82
05/06	0.60	3.50	0.40	4.45	3.88	0.14	11.25	0.46	10.75	0.32	11	0.08	9.37	10.78
06/07	0.61	3.50	0.39	4	3.70	0.14	11.25	0.45	10.75	0.34	11	0.07	9.34	10.81
07/08	0.98	4.25	0.42	4.75	4.46	0.13	10.75	0.44	10	0.35	10.75	0.08	9.39	10.31
08/09	0.55	7.75	0.45	6.13	5.37	0.14	10.75	0.45	10.75	0.36	11	0.05	9.37	10.77
09/10	0.44	7.0	0.56	9	8.12	0.16	11.25	0.42	10.75	0.36	11	0.06	11.75	10.98
10/11	0.48	7.0	0.52	8.75	7.97	0.12	11.25	0.47	10.75	0.34	11	0.07	12.5	11.02
11/12	0.48	7	0.52	8.75	7.97	0.11	11.25	0.46	10.75	0.36	11	0.07	12.5	11.02

Source: NRB , Quarterly Economic Bulletin Various Issues and Annual Report

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