EFFECT OF PUBLIC EXPENDITURE ON ECONOMIC GROWTH

A CASE STUDY OF NEPAL (1975-2008)

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LETTER OF RECOMMENDATION

This is to certify that **Ms. Pramila Kumari Sharma** has prepared this dissertation entitled **"Effect of Public Expenditure on Economic Growth: A Case Study of Nepal (1975-2008)"** under my guidance and supervision for partial fulfillment of the requirements for the Degree of Master of Arts in Economics. I therefore recommend forwarding this thesis to the evaluation committee for the final approval and acceptance.

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APPROVAL LETTER

We certify that this dissertation entitled "Effect of Public Expenditure on Economic Growth: A Case Study of Nepal (1975-2008)" submitted by ***Ms. Pramila Kumari Sharma*** to the Central Department of Economics, Faculty of Humanities and Social Sciences, Tribhuvan University, in partial fulfillment of the requirement for the Degree of MASTER OF ARTS in ECONOMICS has been found satisfactory in scope and quality. Therefore, we accept this thesis as a part of said degree.

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Pramila Kumari Sharma

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Acronyms and Abbreviations

ADB	Asian Development Bank
Devt	Development
DFID	Department for International Development of the United Kingdom
EXP	Expenditure
FDI	Foreign Direct Investment
FY	Fiscal Year
GDP	Gross Domestic Product
GNP	Gross National Product
ILO	International Labour Organization
KM	Kilo Meter
M.A.	Master of Arts
MDG	Millennium Development Goal
SAP	Structural Adjustment Program
TFP	Total Factor Productivity
UK	United Kingdom
US	United state of America
US$	US Dollar

Abstract

The debate over the role of the government in the economy has lasted for many decades, dating back to the times of the predominantly laissez-faire and classical economy policies. Role of public expenditure has shown mixed result around the world.

Although Nepal initiated planned development, effort since more than five decade ago, her performance in terms of economic growth is not satisfactory. Nepal, allover the time, has remained second from the last in the list of south Asian countries for their growth, whether it is relatively closed economy regime (before 1985) or open market regime (after 1985). Although Nepal adopted the policy of market-oriented economy after 1985 and accelerated the pace towards free market economy, size of the government has not reduced. In this context, this thesis seeks to analyze the causal relationship between public expenditure and growth by taking the data for the period of 1975-2008.

For analyzing the problem, Nepal's position of growth and expenditure has been compared with other south Asian countries and has been evaluated based on established theory and literature. Finally, link between growth and public expenditure has been evaluated quantitatively by carrying out regression using Ordinary Least Square (OLS) method.

It is found that Nepal's growth rate was in its heyday before 1985 and after 2000, in average, it is declining. It is quite difficult to identify the causes behind decelerating growth after 2000 as two major events i.e. moist insurgency and restoration of democracy had been taken place during same period. It is equally possible that either one of both of those events are responsible for that. In one hand Maoist insurgency was demolishing several physical infrastructures and on the other hand corruption was increasing rapidly during the same period.

Expenditure pattern shows that it is increasing continuously but before 1990 i.e. before the restoration of democracy, capital expenditure had exceeded recurrent expenditure while after 1990 the scenario is just opposite. Less capital expenditure than recurrent expenditure is causing growth rate to decline. Again, it needs to identify the reason behind less capital expenditure.

If we see the sectoral allocation of expenditure, then we find that capital expenditure on major economic and social sector is declining. Capital expenditure on education and infrastructure is declining while it is almost in stagnation on health sector. Government reluctance on education and infrastructure has both long term and short-term impact on growth of the economy. Lack of good infrastructure has increased the cost of the economy and hence competitiveness of the Nepalese economy. This has reduced Nepal's access to the international market although Nepal is member of various regional and multilateral trade organizations.

Finally, regression result shows that only recurrent expenditure has significant impact on growth of Nepal leaving private and public investment for question. Investment is not effective for enhancing growth, which is very serious issue, and policy maker should think in this direction.

CHAPTER- I

INTRODUCTION

1.1. Background:

The debate over the role of the government in the economy has lasted for many decades, dating back to the times of the predominantly laissez-faire and classical economic policies. However, an agreement has not yet been reached. The classical economists were in favor of Laissez-faire market economy. They advocated a limited role for the government. For them, the government had to maintain only law and order and to work in the areas where the private sector did not invest. Hence, during that period, public expenditure was not a major concern of economics. Consequently, revenue mobilization was not an issue of great importance. However, after the Great Depression of 1930, the role of public expenditure came into the limelight. It was Keynes, who strongly favored government intervention and pointed out the need for expanding public expenditure.

The present state is welfare state. Hence, the government has to be actively involved in overall development activities. One of the main features of the contemporary world is the continuing growth in public sector expenditure in developing world as well as industrialized countries. In particular, since the World War II era there has been enduring growth of public expenditure, regardless of the nature of political and economic system. In this context, public expenditure plays a decisive role in development. The World Bank states, "Public spending plays a critical role in development. Through spending, the government preserves and promotes national identity, supplies infrastructure for development, influences both the course of economic growth and distribution of its benefits, and provides social services to meet the basic needs of the population" (Joshi, 1998). Endogenous growth theory welcomes the traditionally advocated role of government that is investment in public goods such as education, infrastructure, etc.

1.2. Statement of the Problem:

The role and size of government expenditures arouses a great deal of controversy in macroeconomics. While countries have moved towards economic freedom and open markets, government expenditures have increased more and more. A look into Nepal's economic performance in the past two decades show fluctuations which coincides with periods with

major reforms and periods marred by political conflicts. Clearly, the period between mid-1990s and early 2000s has been severely affected by insurgency problems. Real GDP growth declined from an average of 5 percent per annum in the 1990s to only 3 percent during 2000-2006. It should be noted that considering a population growth rate averaging 2-3 percent over the period, this translates to a lower growth in per capita income.

While the share of non-agricultural sector rose over the years, it is largely due to the growth in the services sector. Share of the industry sector which started to take off during the 1990s, averaging 21 percent during the period, lost foothold in succeeding years to settle back to around 17 percent. This seems to suggest that the political unrest in early 2000s did not only have a transient but also a structural effect on the economy. Starting in the 1990s, services had been the biggest contributor to GDP growth. However, the contribution of both services and industry are steadily losing to agriculture once again.

On the demand side, private consumption is the main driver of total expenditure, but investments are exerting a stronger push on the economy since the 1990s. In terms of growth, all major components showed a decline in recent years with investments showing the most significant slowdown. But it is the slowdown in private consumption and rise in trade deficit contributed the most to the slowdown in GDP growth.

In Nepal, public expenditure, since its planned development process has been increasing extensively but it is not concentrating to the development of socioeconomic infrastructure. If such investment and expenditure programs are not properly expanded, they have adverse effects on increasing resource gap, lack of resources etc. It may have adverse impacts on long term objectives such as stability and growth.

Nepal has completed more than half century of its planned economic development. However, the economic indicators have not shown positive sign. On the other hand, the volume of public expenditure is increasing in different plans but the basic issues are the same from first five year plan to eleventh three year interim plan, i.e. low level of economic growth, low level of investment, high population growth, heavy external debt, absolute poverty and vast gap between rich and poor. The effectiveness of the public expenditure policy and program should be reflecting in improvement of the social and economic indicator of the citizen. However, in our country most of the social and economic indicators are poor. In spite of increasing the volume of public expenditure, the effective result cannot be achieved. On the other hand, there is no comprehensive public expenditure policy in Nepal. Due to these reasons, there is low economic growth rate and huge unemployment. In such a situation, this

thesis can be a reference while formulating appropriate public expenditure policy that is to be developed and implemented in the prevailing condition of Nepal. Therefore, it is imperative to find the answer of the question "Is there significant impact of public expenditure and economic growth in Nepal"?

1.3. Objectives of the Study:

The specific objectives are;

I. To review the trend of public expenditure vis-à-vis economic growth of Nepal
II. To investigate if there is a significant relationship between the size of government Expenditure and economic growth in Nepal

1.4. Significance of the Study:

There are many thesis and articles for the study of trend and structure of public expenditure with different heads but the study of the effects of public expenditure in economic growth has not been done yet. Therefore, this study mainly deals with the effects of public expenditure in Gross Domestic Product. Nepal has also started systematic planned development process since 1956. Volume of public expenditure is increasing but the result is very poor. Hence, this study studies why and how this situation arrived. What are the factors behind this? Thus, this study mainly deals with the effects of public expenditure in GDP both in agricultural and non-agricultural sectors. Private sector needs to be encouraged to concentrate its investment on those sectors where it has competitive advantages. The rationale for the selection of this period (1975 to 2010) is that the public expenditure has increased highly. Government has introduced different plans and programs. In this period, large amount of public expenditure has been made but the economic condition of the country could not get changed, i.e. same problems as absolute poverty, higher unemployment, higher population growth rate, vast gap between rich and poor etc. this study also studies the effectiveness of public expenditure to increase GDP. This research will be helpful for policy makers to design macroeconomic policy,for researchers and university students to identify the problem of Nepalese economy in the context of growth. Thus, this thesis is expected to make additional contribution in the field of government expenditure in Nepal

1.5. Limitations of the Study:

This study will look at the Nepalese Government expenditures divided into three areas; consumption, investments and transfers. Only the annual central government budget will be examined and used as a proxy for the whole public sector. The study is limited to the period

1974-2008 and is divided into three periods; first, before the restoration of Democracy in Nepal (1975-1990); second, after 1990-2008 and third the aggregate from 1975-2008.

1.6. Organization of the Study

I have divided my thesis in five chapters that are as follows;

1. Chapter One: Introduction: Introduction chapter contains other sub heading which are; Background, Statement of the Problem, Objective of the Study, Significance of the Study, Limitations of the study and Chapter Plan.
2. Chapter Two: Review of Literature: This chapter is divided in Introduction, Theoretical Review and Methodological Review.
3. Chapter Three: Research Methodology: This, Research Methodology, has Research Design, Sample Size and Method of Analysis sub heading.
4. Chapter Four is the chapter of main findings of the thesis. It is presented in the heading of "Public Expenditure and Growth in Nepal" and has four sub headings, which are; Introduction, Nepalese Growth Scenario, Trend and Pattern of Public Expenditure and Expenditure Growth Relationship- Regression Analysis.
5. Chapter Five is the chapter of Summary, Conclusion and Recommendation.

CHAPTER- II

REVIEW OF LITERATURE

2.1. Introduction

There are many theories, research papers, surveys, articles and books written on public expenditure with various conclusions. Different research studies have shown that the trend, effects and achievements of the public expenditure came up with their own findings. Some research papers and dissertations are concerned with developing economy whereas some are concerned with developed economy. In this regard, it is worthwhile to review some relevant theoretical, international and national level researches.

2.2. Theoretical Review

2.2.1. Role of public expenditure in different growth model

There are so many theories on public expenditure. Classical economists gave less attention to public expenditure on economy. They gave narrow viewpoint that the government should not make interfere in the general activities. They advocated the Laissez-fair Policy. However, later on, after the great depression of 1930s, many economists suggested that the government must intervene in the economy. A moderate level of government intervention is necessary to run the economy smoothly. Hence, the analysis of public expenditure in different time and theories are examined.

Public expenditure is an important instrument for a government to control the economy. Economists have been well aware of its two-side effects in promoting economic growth. On the one hand, public investment is a factor contributing to capital accumulation. Public expenditures are also used to fill up the holes that are left untouched in a market economy such as public utilities, health care, social security, etc. On the other hand, however, tax, which is the entire financial source for public expenditures, does directly reduce the benefits of taxpayers. As human capital plays the key role in promoting economic growth, a lower benefit of citizens is associated with a lower economic growth rate. Considering the economy as a whole, the question of how to spend public expenditures appropriately has been a difficult task.

Previous studies have found no consensus on the impact of public expenditures on economic growth (Gupta, Verhoeven, & Tiongson, 2002). The effects of FDI although are confirmed as positive in most of the studies; however, the degree of such impact depends on the absorptive

capacity of the host country, which consists of the level of human capital, infrastructure, financial and institutional development, and trade policies (Makki & Somwaru, 2004).

Classical Views on Public Expenditure:

Classical economists were against the heavy role of government expenditure because they believed on market economy. They had strong argument intervention. Government intervention creates nothing but disturbances on automatic mechanism of market economy. Classical economists took government expenditure and revenue programs as "necessary evils" (Economic Dream, 2010). Hence, necessary in the sense that certain function of the economy must be done by government and evil in the sense that government activity disturbs market mechanism. Thus, they emphasized in 'less government role'.

They argued in favor of balance budget. In fully employed situation, if government increases public expenditure without increasing its revenues, this will lead to inflation. The classical view on government borrowing is that the expenditure should make on productive purposes. It is necessary for the state to borrow, and then this borrowing must be confined to the financing of productive enterprises. Otherwise, borrowing will be meaningful if it is used in productive sectors.

A debt of the government generally represents an opportunity that has been wasted. Hence, the government should try to repay its debt as early as possible. The interest on public expenditure followed downward trend till the advent of Keynesianism. This trend was the outcome of highly normative orientation of public finance which concern with the concept of equity in taxation based on voluntary exchange theory rather than the development of substantial positive hypothesis. Besides, it was a general opinion that the level and structure of public expenditure is determined politically and thus it is beyond theeconomist's proper orbit of thestudy (Weber, 1947).

Disregard of public expenditure was the sharpest in English public finance tradition where at least implicitly that most of the government expenditure was viewed useless and unproductive, the principle of British fiscaleconomist (Dalton, 1977) advancethe nation of equalizing marginal social benefits and marginal social costs. To them, the main task of public finance was simply to allocate the burden of taxes as fairly as possible among the member of the community. In conclusion, classical economists views to restrain government

interference in the private sector because public sector was fear of corruption. The position of classical economists can be epitomized as"the less government, the better" (Weber, 1947).

Keynesian View on Public Expenditure:

John Maynard Keynes published "The General Theory of Employment, Interest and Money" in 1936. He opposed the classical theory in the sense that the classical notion of full employment equilibrium through wage-price flexibility is a rare and special case. He argued that wages and prices are sticky to downward due to the presence of trade union and so many other reasons. Similarly, he said that employment depends upon effective demand and there is no guarantee that there will be always adequate demand to generate full employment unemployment arises because of the deficiency of demand (Keynes, 1935).

During the time of inflation, the demand is high. Hence, the government should reduce its own expenditure and increase tax rate to cut the level of consumption. Thus, period of inflation, it is better to have surplus budget. But during the depression, there is deficiency of effective demand. Hence, the government should increase its expenditure and spend more on public works. In this way, additional resources can be employed. Thus in the period of depression it is better to have a deficit budget in order to increase the consumption (Keynes, 1935).

In this way, after the great depression of 1930s, economists came on the conclusion that government expenditure is necessary in the economy. J.M. Keynes pointed out that the fundamental cause of depression was the lack of spending. The decision to save in the household sector cannot lead to the decision to invest. And the government had to take step up its expenditure in order to "prime to pump" (Keynes, 1935) of the economy. The modern economists have given more emphasis on public expenditure.

Public Expenditure in Harrod Domar Model

During the 1940s economists Roy Harrod and EvseyDomar independently developed an economic growth model based on a fixed-coefficient, constant returns to scale function (this function assumes that capital and labor are used in a constant ratio to each other to determine total output – see graph). Outputs in this graph are isoquants (combinations of labor and capital that produce output). The model assumes that labor and capital are always used in a fixed proportion to produce out equal amounts of output. The model's equation is $Y = K/v$ where v is a constant found by dividing capital (K) by investment (Y) or v is the capital-

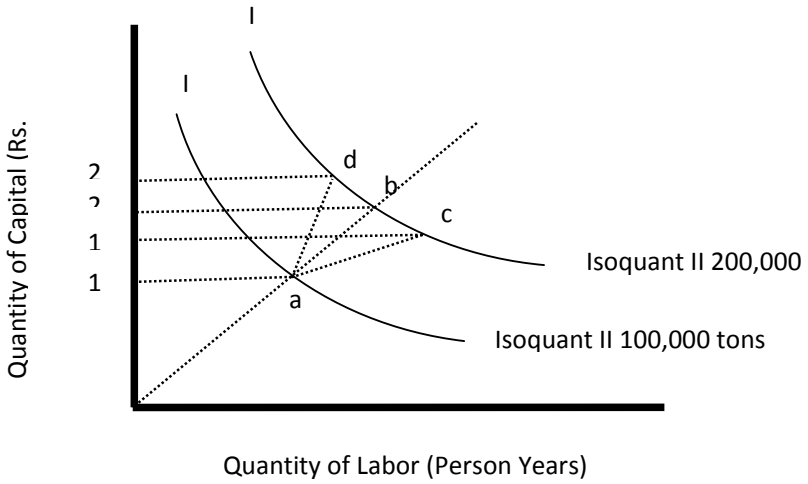
output ratio. This ratio is primarily a measure of the productivity of capital or investment (Dwight Perkins, 2001).

Harrod-Domar Growth Model

The Harrod-Domar model focuses on two critical aspects of the growth process: saving and the efficiency with which capital is used in investment. This model can provide accurate short-term predictions of growth and has been used extensively in developing countries to determine the "required" investment rate or "financing gap" to be covered in order to achieve a target growth rate. At MCC, the "financing gap" approach was inferred in the first slide, second bullet of Franck Wiebe's "Growth Diagnostics" presentation in terms of the need for MCC to provide foreign assistance which will in turn promote "… private capital investment, both foreign and domestic, eventually displacing aid." (Wiebe) The Harrod-Domar model is simple with relatively small data requirements and the equation is easy to use. However, the model only remains in equilibrium with full employment of both labor force and capital stock causing inaccurate longer term economic predictions and fails to account for technological change and productivity gains considered essential for long-term growth and development. This is known as the "knife edge" problem where as soon as either capital or labor grow faster there is increasing unemployment of either labor or capital

Neoclassical Growth Model

Figure 2.1: Neo-Classical Model of Productivity



Solow (Neoclassical) Growth Model – In the 1950s, MIT economist Robert Solow presented a new model of economic growth that addressed limitations in the Harrod-Domar model. He replaced the fixed-coefficients production function with a neoclassical production function.

This model allowed for substitution between the factors of production so that the relative endowments of capital and labor could be reflected (rather than the fixed ratios required by the Harrod-Domar model). The neoclassical production function has curved, rather than L shaped, isoquants allowing flexibility in using different combinations of capital and labor. Output can be expanded in one of three ways: (1) increases through fixed and equal portions of labor and capital, (2) increases in capital, or (3) increases in labor. The Solow Growth Model assumes a production function with the property of diminishing returns where each additional increment in capital per worker results in less output. However, technological change is seen as increasing productivity. The neoclassical production function showed increasing technology or knowledge as labor augmenting and increasing output. Solow assumes technology increases independent (exogenous) of the model in two forms: mechanical (improved machinery, computers, etc.) and human capital (improved education, health, worker skills, etc.). Key determinants of growth are population growth and technical change and over time poor and rich countries incomes should converge (Warsh, 2006).

Sources of Growth Analysis – Robert Solow also developed a procedure, "growth accounting" or "sources of growth analysis", to focus directly on the contribution of each term in the production function. The objective was to determine what proportions of recorded economic growth could be attributed to growth in capital stock, growth in the labor force, and changes in overall efficiency.

Using the formula Y=F(K, L, A) where Y is output, K is capital, L is labor, and A is a parameter meet to capture the effects of things other than capital stock and labor supply which might influence growth (increasing technology, worker skill levels, education, health, institutions, etc.). "A" is generally referred to total factor productivity (TFP). Since A captures not only efficiency gains but also the net effect of errors and omissions from economic data, the residual A is sometimes referred to as a measure of our ignorance about the growth process.

When Solow modeled data for US GNP from 1909 to 1949 of increased output less than one half of the gain could be explained by increased inputs in labor and capital. With more than fifty percent of growth attributable to the residual, logic would dictate that there must be a significant gain in productivity coming from one or more efficiency enhancing factor(s) (technical change, increased knowledge, innovation, entrepenuership, etc.) but the problem lies in actually identifying the factors affecting increased productivity.

Endogenous Growth Model

Endogenous Growth Model highlights the need for investment where technology, innovation, improved productivity and business processes and the subsequent increasing returns are keys to promoting economic growth (Romer, 1990). In an effort to define the attributes of economic growth more precisely, a new theory was developed in the 1980s. Paul Romer's(1990) paper, "Endogenous Technological Change", was a seminal contribution to the New Growth Theory. In his paper, Romer statesthat (1) technological change is an economic good and is the driving force of economic growth, (2) it arises due to people responding to market incentives, and (3) it is inherently different from other economic goods. Romer stated that technology was neither a good that was a conventional nor a public good but instead it is a non-rival, partially excludable good. This was an important distinction in that private goods are seen as provided by markets and public goods either occur naturally or are provided by governments to compensate for some type of market failure.

The distinction between rival and non-rival goods and the degree to which their use can be excluded from others is the key premise of Romer's model. A rival good is one that can be possessed by only one person at a time (writing with a pencil, eating an apple, etc.) whereas a non-rival good can be used unlimitedly by more than one person or firm (software program, business process, etc.). The access that more than one person or firm has to a rival or non-rival product is excludability termed. Technology is consideredas a non-rival input that is at least partially excludable. Human capital, on the other hand, is a rival good that is excludable since the person who possesses ability cannot be in more than one place at the same time.

Support to generate new technology is seen as a non-rival, partially excludable good, which is a requirement for production. Imperfect markets require government support of innovation and technology. The Neoclassical Growth Model, on the other hand, assumes perfect competition and argues that the market makes the best allocation of resources including investments in technology (actually technology is exogenous, not accounted for within the neoclassical model). The debate between public and private goods is important. Depending upon the theoretical approach, public support for innovation and improved business processes, activities at the heart of a "value chain" approach, can be justified.

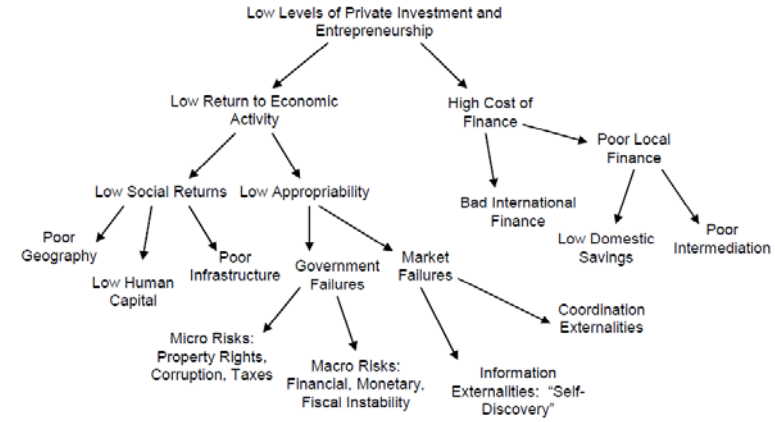
Growth Diagnostic Approach and Role of Public Expenditure

Growth Diagnostic Approach was recently developed by Hausman, Rodrik and Velasco (2005) (Hausmann, D, & A, 2005). The growth diagnostics approach provides a consistent framework for identifying the most critical or binding constraints to growth and for discerning the priorities and sequence of policies required to ignite and sustain growth. This approach denies "one-size-fit –all" approach of development and asserts that countries at an early stage of development may not have adequate capacity to implement a wide array of policy reforms at the same time. With the diagnostic approach, reforms can start with easing a few critical areas that truly constrain growth. Therefore, the approach offers a practical tool for policy makers and development planners to use in formulating country-specific growth strategies.

The growth diagnostics approach starts with a set of proximate determinants of growth investigates which of these post the greatest impediments or are the most critical constraints to higher growth, and figures out specific distortions behind the impediments. The point of departure of the inquiry is a standard endogenous growth model in which growth depends on the social return to accumulation, private appropriebility of this social return, and the cost of financing. Each of these three broad determinants of growth is in turn a function of many other factors, which can be presented in a problem tree (Figure 2.2).

The problem tree provides a framework for diagnosing critical constraints to growth. The diagnosis starts by asking what keeps the level of private investment and entrepreneurship low. Is it low social return to investment, inadequate private appropriability of the social return, or high cost of financing? If it is low social return, is that due to insufficient levels of complementary factors of production—in particular, human capital, technical knowledge, and/or infrastructure? If the impediment is poor private appropriability, is it due to macro vulnerability, high taxation, poor property rights and contract enforcement, labor-capital conflicts, information and learning externalities, and/or coordination failures? If high cost of finance is the problem, is it due to low domestic savings, poor intermediation in the domestic financial markets, or poor integration with external financial markets?

Figure 2. 2: Growth Diagnostics Framework



Source: Hausmann, Rodrik, and Velasco 2005.

At each node of the problem tree, the diagnosis looks for signals that would help answer the question. The two types of diagnostic signals that one can look for are price signals and non-price signals. Examples of price signals are returns to education, interest rates, and cost of transport. For instance, if education is undersupplied, returns to skills/education would be high and unemployment for skilled people would be low. If investment is constrained by savings, interest rates would be high and growth would respond to changes in available savings (for example, inflows of foreign resources). If poor transport link is a serious constraint, bottlenecks and high private costs of transport would occur.

The use of non-price signals is based on the idea that when a constraint binds, it results in activities designed to get around it. For example, high taxation could lead to "high informality" (e.g., under-reporting of income, resulting in lower tax revenues); poor legal institutions could result in high demand for informal mechanisms of conflict resolution and contract enforcement; and poor financial intermediation could lead to internalization of finance through business groups. Cross-country and cross-period benchmarking and results of business surveys are useful means to gauge whether particular diagnostic evidence signals a binding constraint for the country concerned.

Above Figure 2.2 shows that growth of a country can be enhanced by overcoming from the several constraints. In an underdeveloped country like Nepal where market is not developed properly, many of such problems requires government effort and public expenditure. For example, if human capital is a binding constraint then it requires government to invest in education and health, as private sectors are not interested to go in the rural area and many

poor people many not have capacity to purchase these services from private sector. Similarly, to overcome from the problem of infrastructure and information externalities, government's role is inevitable.

2.2.2. Public Expenditure and Growth- Empirical Evidence

Many research papers and articles had been written under the subject of public expenditure. There are different results of different researches for the trend, impact and achievements of government expenditure, especially between developed and developing countries. This differentiation can be seen differently. Some research papers are concerned with developing economy whereas some are developed economy.

In this regard, it is better to review some relevant literature both by the national and international researchers.

International Review and Public Expentiture:

Several scholars have shown empirical evidence of link between public expenditure and growth. The determinants of economic growth and investment were analyzed in a panel of around 100 countries observed from 1960 to 1995. The data reveal a pattern of conditional convergence in the sense that the growth rate of per capita GDP is inversely related to the starting level of per capita GDP, holding fixed measures of government policies and institutions, initial stocks of human capital, and the character of the national population.

With respect to education, growth is positively related to the starting level of average years of school attainment of adult males at the secondary and higher levels. Since workers with this educational background would be complementary with new technologies, the results suggest an important role for the diffusion of technology in the development process. Growth is insignificantly related to years of school attainment of females at the secondary and higher levels. This result suggests that highly educated women are not well utilized in the labor markets of many countries. Growth is insignificantly related to male schooling at the primary level. However, this level of schooling is a prerequisite for secondary schooling and would,therefore, affected growth through this channel (Barro, 1997).

Greiner, Semmler and Gong (2005) have categorized public expenditure in five categories for explaining the impact of public expenditure on growth. The five categories are: (a) education and health facilities, which enhance human capital, (b) public infrastructure such as roads and bridges necessary for market activity, (c) public administration to support government

functions, (d) transfers and public consumption facilities, and (e) debt service. The study found that expenditure on human capital and infrastructure have significant role for enhancing growth (Greiner, Semmler, & Gong, 2005). Their analysis also suggests that aggregate current expenditure has no effect on growth, whereas aggregate capital expenditure has a positive effect. This implies that, for developing countries, decisions on current versus capital expenditure should (at least in the aggregate) favor the latter in order to enhance growth.

Bose, Haque, & Osborn, (June 2003) had stated that their results should not, however, be interpreted as implying that expenditure on education or on capital projects should be increased irrespective of how these are financed. Indeed, our analysis is careful in considering the role of the government budget constraint. Since tax revenue has a negative impact (although not always significant) on growth, while increasing the government deficit has a highly significant negative effect, the raising of additional finance will moderate the positive effects of education or capital expenditure. Perhaps the importance of our results can be considered most clearly in the context of a transfer of, say, one percentage point of government expenditure in relation to GDP from another sector towards education, or from current to capital expenditure, where our results imply that such a transfer will be growth enhancing (Bose, Haque, & Osborn, June 2003).

Policy makers and some researchers have argued that expenditure on growth-enhancing functions could enhance future revenue and justify the provision of "fiscal space" in the budget. But there are no simple ways to identify the growth-maximizing composition of public expenditure. The current paper lays out a research strategy to explore the effects of fiscal policy, including the composition of public expenditure, on economic growth, using a time series approach. Semmler and Gong (2005) developed a general model that features a government that undertakes public expenditure. Which are on (a) education and health facilities which enhance human capital, (b) public infrastructure such as roads and bridges necessary for market activity, (c) public administration to support government functions, (d) transfers and public consumption facilities, and (e) debt servicebased on the modeling strategy of Greiner. The proposed model is numerically solved, calibrated and the impact of the composition of public expenditure on the long-run per capita income explored for low-, lower-middle- and upper-middle-income countries. Policy implications and practical policy rules are spelled out, the extension to an estimable model indicated, a debt sustainability test

proposed, and the out-of-steady-state dynamics studied (Semmler, Greiner, Diallo, Rezai, & Rajaram, November 2007).

Taylor, (1961), has discussed significance of the public expenditure and explained the expansion of government activities. It has often been characterized as a movement in the direction of socialism that government obviously tends to socialize through public expenditure. It helps to correct the disorder that has been created by cyclical fluctuation, which mostly appeared during the depression. "Public work Projects and landing functions during the depression were instituted to soften the effects of the worst feature of capitalism-its recurrent tendency to break down". He opined that with the expansion of government activities, the objectives of strengthening capitalism have been far more evident than the intention to socialize the economy. However, his opinion is not acceptable. Even in U.S., U.K. and Germany where private sector was much strong, public expenditure was taken up for in reducing income disparities among have and haves not. Moreover, for developing countries like Nepal, public expenditure is indeed an essential device to socialize the economy.

Due & Friedlander, (1973) concerned with public expenditure of U.S. for the decade 1963-1973 analyzing the magnitudes of government activities. Defining the pure public goods, they suggested that activities relating to the provision of these goods should be exclusively handled by public sector. By their nature, these goods be can'tprovided by private enterprises, i.e. national defenses. On the other side, increasing demand of social services such as education, health, drinking water, in both developed and developing countries, the government has to invest in law enforcement and justice, fiscal management, and operation of the executive department, which clearly lies in to the part of public goods, causes a great volume of expenditure to the government.

United Nation Publication (1979) examined the Patterns of Government Expenditure on social services in developing countries, developed market and centrally planned economies in the 1970s. The available data on public expenditure for education, health, social security and welfare and housing are analyzed. And the silent factors and policies shaping the evolving pattern of expenditure are reviewed. Patterns of government expenditure on social services in the developing countries and the policies are reflected to add fresh emphasis to the need for considering the provision of social services as a part of the integrated process of raising levels of well being. The attempts of several governments to provide primary education to everyone

may not be hampered so much by the lack of resources in education-school and teachers, discrimination against females and the absence of transport facilities or sufficient income in the family to buy necessary things and for a child to attend school. This concern is an integral part of the changing perceptions of development that have attracted the attention of governments in most of the developing countries.

The World Bank (1988) studied on Public Finance in Development and drew the conclusion about public spending that in most developing countries the share of central government spending in GDP remains below that of industrial countries. In developing countries, the public sector tends to pay a greater attention on investor than on industrial countries. And in most of the developing countries SOEs account for important share both of total public expenditure and GDP.

Basanti (1990) analyzed in some detail The Role of Public Expenditure Management in Structural Program and the Slow Progress in Achieving Institutional and Systematic Improvements. The main objective of this study was to discuss some of the public expenditure management measures that were included fund supported structural adjustment. It had briefly outlined that the central role of the fiscal programs and their interaction with structural policies, the key area where measures were taken to strengthen public expenditure management in SAP programs. This paper also addressed the question of the degree of effectiveness on such system and process reforms in an attempt to highlight problem areas that may need to be taken into account in the design and implementation of PEM measures. He concluded that during program implementation, managing scarce resources in the public sector has often been the critical test to make or break programs. Public expenditure management issues have usually been most pressing either because domestic resources have been slow to improve or because growth has not yet materialized; in which case, accommodating political pressures for expenditure may be financially destabilizing and constituting a serious setback to the adjustment efforts.

Premchand (1990) has made a remarkable study under the title Expenditure Controls: Institutional and Operational Issues. He laid more emphasis to the importance of expenditure controls on the context of growing fiscal problems. Moreover, the study provided solution to current and future fiscal problems that it required a combination of policy measures and improvements in controlling techniques and procedures. Although, the exact combination of such policy measures and improvements depends on the scientific situation and type of

expenditure, the study mainly devoted to considering the nature of expenditure controls, practices, current problems and future direction. Expenditure controls essentially reflect a managerial process that includes the political and administrative levels, horizontal and vertical relationships within government organization. This study illustrated the continuing need of a regular review of the strategic, institutional and systematic approaches to expenditure controls. Indeed their effective contribution depends upon updating their capability and on eliminating weakness. He concluded that there is an important aspect related to the balance between policy measures and control techniques. An absence of restrictions on subsidies or less specific policies for entitlement payments can hardly be expected to be compensated for by stringent controls. Pragmatic approaches to control should be realistic in policy measures, the role of control and techniques and their mutual complementarily.

Andrew (2005) made a study on Performance – Based Budgeting Reform: Progress Problem and Pointers. The study concerned with introducing incentives for fiscal producing in developing countries through the budgeting process. He observed that, some governments have shown interest in reforms aimed at establishing result oriented budgeting approach. The emphasis on result of performance in the budgeting process has reflected a belief that public sector accountability should focus on what government does with the money it spends, rather than simply how it controls such expenditures. It is suggested that there are three reasons why reforms still has a way to go in establishing performance based accountability system in governments. First, even though performance based targets are now being developed, they are generally kept separate from the actual budget. Second, performance information suffers weakness commonly allowed to be in literature related to other settings. Outputs are confused with inputs and outcomes remain unconsidered. Third, the lack of rational construction in the budget itself. Even where effective performance based targets are provided, this kind of system commonly fails to specify who should be accountable for results. He concluded that all countries intent to developing a performance based budgeting approach need to understand the sequences involved in introducing result based governance and to know general points for effective reform, because bad performance based reform is probably worse than a good line-item budget.

(Shah, 2005)in his book Public Expenditure Analysis provided tool of analysis for discovering the orientation of the public sector and creating a scorecard on its role in safeguarding the interests of the poor and other disadvantageous. The book further provided a

framework for citizen-centre governance. In other words, creating an institutional design with appropriate policy, public sector must be accountable to the voter. It is illustrated tools of analysis for addressing the following questions

1. Who bears the burden of taxes and who benefits from public programs?
2. Are existing public programs intended to reduce poverty? Are they likely to do so?
3. Are there adequate safeguards for income security for the elderly and the poor?
4. Do programs ensure equality of access to women?
5. Are public programs responsive to citizen preferences?
6. Are citizens empowered to demand accountability from elected and appointed officials?

As a methodological tool, a welfare reform index is derived and applied to poverty data gathered in Philippines to rank policy changes in terms of their impact on social welfare. He concluded that in South Africa, a few local governments that had a strong commitment to citizen's voice mechanisms unnecessary and burdensome processes and these mechanisms had no impact on local government performance.

Schroeder (2007) in his studies Forecasting Local Revenues and Expenditures reviewed the rationale techniques available to local government financial managers for forecasting revenues and expenditure in developing and transition economies. It is illustrated how the techniques can be used and that discussion with illustrations they are actually used.

Several techniques have been used to forecast both revenues and expenditures. They range from simple judgmental approaches that rely on the knowledge of experts to more sophisticated multivariate statistical technique. For forecasting of revenues that are sensitive to economic condition, statistical forecasting may be most appropriate. But statistical analysis requires considerably more data and forecaster expertise than the alternatives. This study revealed that the most commonly used approaches are the deterministic approaches, in which forecasts of revenues or expenditures are based on simple links to variables assumed to directly influenced revenues and expenditures.

Nepalese Context

There are several thesis, research papers and articles related to the public expenditure in Nepal, which can guide us to formulate appropriate public expenditure policy in Nepal.

Singh S. (1977) in his book The Fiscal System of Nepal, analyzed the consistency between fiscal policy of Nepal and targeted growth rate from the time series data over the period of

FY 1954/55 to FY 1974/75. He also analyzed the trend of revenue and expenditure during the same period. He found that there was substantial change in the ratio of total public expenditure to GDP. He found that the ratio of total government expenditure to GDP was just 2.44 percent in the fiscal year 1954/55, which increased to 10.57 percent in the fiscal year 1974/75. He also found that development expenditure ratio to GDP increasing from 4.07 percent in fiscal year 1965/66 to 6.75 percent in 1974/75. The growth rate of regular expenditure was quite slower registering 2.13 percent in FY 1965/66 to 3.82 percent in fiscal year 1974/75. On the revenue side, in 1950s tax revenue to GDP ratio was hopelessly low. In percentage term, it was 1.27 percent of GDP, which stood up 6 percent of GDP in FY 1974/75.

Kanel, (1988)has found that the total government expenditure increased greatly during the study period of FY 1965/66 to FY 1984/85. He noticed that the total revenue collection and foreign grants also increased but not with the pace to meet the excess development expenditure, his finding supports the notion of growing trend of deficit financing within the economy. Though the deficit financing provides some encouragement to the developing country like Nepal, he recommended using this source of financing up to a proper scale and level.

Upadhayay (1981)in his dissertation of M.A. entitled Public Expenditure and Regional Development of Nepal: A Macro case study, making a study regarding resource allocation practices, observed that large amount of public expenditure centered in Central Development Region in the study period of FY 1972/73 to FY 1977/78. He found that the volume of development expenditure is increasing rapidly, though it has no effect for the overall economic growth of the country and thereby the standard of living and the per capita income. He concluded that the resource allocation practices were only growth promoting rather than balance regional development.

Integrated Development System (1987) carried out a study on financing public expenditure in Nepal covers the FY 1974/75 to FY1984/85, reported that government expenditure had grown rapidly relative to country's GDP. In fiscal year 1974/75, the share of government expenditure in GDP was only 9.13 percent, which reached to 20.11 percent on fiscal year 1984/85. It found that the major feature of government expenditure in Nepal was the dominance of current expenditure over capital expenditure. A major noticed fact was that the share of regular expenditure has increased significantly in relation to development

expenditure. This study found regular expenditure on Fiscal Year 1979/80 claimed just 51.41 percent share on total expenditure, which has increased to 59.34 percent by the fiscal year 1984/85. Except the year of fiscal crisis, there was found an upward trend of regular expenditure.

Kanel, (1988) in his Ph.D. dissertation entitled Public Expenditure in Nepal: Growth, Pattern and Impact examined and analyzed the growth, pattern and impact of public expenditure on the basis of time series data of Nepal over the period of 1965 to 1981. He has analyzed public expenditure growth through both supply and demand oriented factors such as targeted income, internal revenue and foreign aid in order to reveal the likely impact on country's long term development. He found that the public expenditure between the study time period has increased many folds in relation to country's GDP. The public expenditure has increased by 8.42 percent per annum on the average whereas the domestic product has increased only 2.04 percent during the same period. During the study period, regular, development and public investment expenditure have increased by 8.66, 8.59 and 9.08 percent respectively. Public expenditure share was 5.5 percent in 1966, whereas it rose to 15 percent in 1981. He concluded that the major expansion of the public expenditure had taken place only after 1970. He found that the elasticity coefficient for total development expenditure, economic services and social services with respect to per capita income being more than unity. At the same time, his finding was that the elasticity coefficient for the public investment being less than the unity.

Upreti (2002) analyzed the trend, pattern and impact of public expenditure during the period 1974/75 to 1991/92. He found that the growth of public expenditure in Nepal has taken place rapidly than the growth of GDP of the country. The growth rate of the development expenditure is almost equal to growth of development expenditure. He found that the larger percent of development expenditure has been covering from foreign aid. This trend highlights that the expenditure pattern in Nepalese economy is unable to create more resources ad to get faster economic growth. He concluded that the expenditure on agricultural sector is not friendly to create more employment while more than 80 percent employment has been providing for agricultural sector. But on the other hand, the higher average growth rate of public expenditure to agricultural sector has become unsuccessful to get more GDP growth rate form agricultural sector.

Khadka (1998) studied the role and trend of public expenditure and problem of resource mobilization during the period 1974/75 to 1994/95. He used log linear regression model to analyze the data. He found that the calculated t-values 18.017, the regression coefficient of GDP in model-1 54.3, the regression coefficient of total revenue in model-2 45618, the regression coefficient of foreign aid in model 3 are strongly significant at one percent level and 1.578; the regression coefficient of total revenue in model 3 is significant at only 20 percent level. On the empirical analysis, he found that there is strong relationship between total expenditure and GDP. In the same way, the relationship between regular expenditure and total government revenue also shows strongly. However, the relationship with development expenditure with total government revenue and foreign aid is weak. Hence, the estimated parameters are less than unity. In the study period, he found that all regular expenditure, development expenditure and GDP increased but average growth rate of regular expenditure is 19.9 percent whereas average growth rate of development expenditure is 17.1 percent. He found that the share of total expenditure in GDP was 9.1 percent in the initial period has increased to 21 percent in later time. In the same way, the regular expenditure covers 34.8 percent of the total expenditure and the remaining 65.2 percent in development expenditure on the average of the study period.

Sharma, (1999) has made a remarkable studying 1999 under the title the Problem and Prospect of Regular and Development Budget of HMG/Nepal. Prof. Sharma has began study specify the importance of budget and analyzing the trend of public expenditure for the decade of the 1980s and first half of the 1990. Sharma observed that public expenditure during the period grew steadily rate of GDP. But relative growth of public sector is not seen as related to the growth of real per capita income.

He has found that the regular or non-planned expenditure increased faster than development expenditure during the review period. On the other hand, large amount of money from development budget was spent on non- development activities due to not being clear concept of regular and development expenditure. These facts helped to minimize the pace of development of the country. Prof. Sharma also has presented the various conceptual visions in classifying the budget. He has viewed the expenditure growth in the light of need to provide efficient public administration and an essential security infrastructure to properly managed development activities and regular services while ensuring stability in the country.

Pyakuryal (2004) under the study titled Nepal's Conflict Economy: Cost, Consequences and Alternatives asserted that the Nepalese economy has lost its productive capacity to respond the sustained growth following the government expenditure pattern. He found that the ratio of regular expenditure to GDP in FY 1996/97 was 8.6 percent but increased to 11.5 percent in 2001/02. The revenue during the same time period decreased from 7.3 in 1996/97 to 7 percent in 2001/02. Development expenditure also decreased from 9.5 to 7.5 during the same period. Analyzing this pattern he recommended for contractionary fiscal policy rather than expansionary one during the war period.

Mahendra (2009) in his M.A. thesis entitled An Analysis of Public Expenditure in Nepal, examined and analyzed the trend and pattern of public expenditure in Nepal over the period of 1991/92 to 2005/06. he has analyzed the impact of public expenditure in agriculture development, infrastructure sector, the road network has been extended by more than 8582 km at the fiscal year 2005/06; there was altogether 17433 km road consisting 5048 km of black top roads, 4727 km of gravel, and 7658 of fair weather road, where in the beginning of the study, there was only 8851 km road altogether. On the other hand, the telephone distribution has expanded annually by 17.3 percent covering 58 towns during the study period. Consumption of the electricity in thousand tons oil equivalent went up from 55 in 1991/92 to 216 in 2005/06. Irrigation facilities in fiscal year 2005/06 were expanded to additional area of 18402 hectors during the study period. On the other hand, establishment of no. of schools and students participants shows good sign.

Development expenditure exceeds the regular expenditure until FY 1997/98 then after it is lesser than regular expenditure. It is due to increasing expenses on defense. The study showed that the growth of public expenditure in Nepal was in rapid tempo. On the other hand, the growth rate of revenue was lower than government expenditure during the study period which shows that there was resource gap. This study also showed that the budgetary process in Nepal suffering from unrealistic in revenue collection, foreign aid and to complete new projects. There was haphazard flow of foreign aid but from FY 2000/01 to 2005/06 contribution of internal source was higher.

2.3. Methodological Review

Bose, Haque, & Osborn (June 2003) studied impact of public expenditure on growth by using panel data for thirty countries for the period of 1970-1990. They have analyzed impact of both capital and current expenditure in aggregate and disaggregated form. They have

disaggregated public expenditure into defense, education, health, agriculture, transport and communication, and manufacturing.

For estimation purpose, they classified the variables into three distinct sets: I, M and Z. The set I consists of variables that commonly appear as conditioning variables in growth regressions. The set Z includes variables that often have been included in previous studies as indicators for monetary policies, trade policies, and market distortion. Finally, the set M consists of variables that are of particular interest for their study, namely Central Government expenditures and their major components at aggregate and sectoral levels. These variables have been expressed as percentages of GDP. Panel estimation is carried out by the seemingly unrelated regression (SURE) method, with two equations for each country (one equation for each decade).

Singh & Weber (1997) use a polynomial distributed lag model (pdl-model), which is recommended by (Kocherlakota & Yi, 1997) to estimate the growth effects of exogenous variables. It seems that using longer time spans allows a better capture of long-run growth effects of fiscal policies due to the following reasons. Growth effects of public expenditures such as infrastructure expenditure may emerge rather gradually over time because infrastructure expenditure may be complementary to private investments that are undertaken only at a slow pace (Nijkamp & Poot, 2004).

If the relative share of public expenditure devoted to the two goods g1 and g2 is below their relative output elasticities (β and γ are the output elasticities of g1 and g2, respectively), then a shift in the mix towards g1 will increase the economy's long-run growth rate. Both elasticities may be positive (i.e., both components of government expenditure are complementary with private production), yet if the above condition holds, transferring resources from g2 to g1 will raise the steady-state growth rate. further, $\beta>\gamma$ is not sufficient to guarantee that a shift in favor of g2 will increase the growth rate; it must be the case that the relative budget shares are below the relative output elsaticities. Now consider the more general case of a CES technology, where $\theta\neq1$. Assume $\beta>\gamma$ and defineø as the critical value above which an increase in the share of expenditure going to g1 will not increase the growth rate (Devarajan, Swaroop, & Zou, 1996).

According to Kocherlakota and Yi (1997), the key feature of endogenous growth models is that they imply that permanent changes in government policy can have permanent effects on growth rates. In this paper, they developed and implemented an empirical framework to test

this implication. In a regression of growth rates on current and lagged policy variables, the sum of the slope coefficients for each policy variable should be nonzero (zero) for endogenous (exogenous) growth models. In their estimation, they use time series data spanning up to 100 years for the United States and 160 years for the United Kingdom. They found that the implication for exogenous growth is usually rejected when both tax variable and a public capital variable are included in the regression; failing to include both variables biases the results in favor of exogenous growth models. Their findings showed that it is possible to have endogenous growth even when U.S. and U.K. GDP growth rates appear to be stable over time. They conclude that at the aggregate level, the production function appears to exhibit constant returns to scale in reproducible inputs(Kocherlakota & Yi 1997).

Estimation of how government expenditure affects economic growth have been carried out with a standard macroeconomic model which was based on endogenous growth. Private and government investments and consumption were together with interest rates and transfers regressed in an attempt to estimate their impact on the economic growth rate in Sweden (Sjoverg, 2003).

In a recent study reviewing the empirical evidence of 93 economic journal articles about the impact of fiscal policy on economic growth, (Nijkamp & Poot, 2004) come to the conclusion that only for public expenditures on infrastructure and education a robust and positive impact on economic growth can be found. However, only a minority of the reviewed studies, 21 out of 93 reviewed articles, are time series studies.

Among the time series studies is the seminal study of Kocherlakota and Yi (1997) who analyse how public capital and taxes affected economic growth in the United States and the United Kingdom in the period from 1891 to 1991 and from 1831 to 1991 respectively. They find that public capital boosts economic growth and taxes hinder economic growth as is predicted in endogenous growth theory. Kocherlakota and Yi (1997) only take into account physical investment and not investment in human capital. Cullison (1993) analyses the growth effects of the composition of public expenditures for the United States. According to Cullison's findings, government expenditure for education, active labour-market policies, justice and diverse benefits provided by the state boosted economic growth in the period from 1952 to 1991. Singh and Weber (1997) who analyse Swiss data from 1950 to 1994 come to the conclusion that only education but not public infrastructure is growth-enhancing. Singh and Weber (1997) exclude, however, the revenue side of the government budget. According to the conclusion drawn by Kocherlakota and Yi (1997), the result regarding public

infrastructure of Singh and Weber (1997) could be due the fact that the growth effects of public infrastructure and taxation are exactly offsetting at the margin. Moreover, Singh and Weber (1997) find that healthcare expenditure is unfavourable to growth.

Recently, Ramirez (2004) comes to the conclusion using Mexican data for the period from 1955 to 1999 that public infrastructure, comprised of transport, communications, water and sewer systems, education and health care, positively affects growth. A study for Turkey in the period from 1963 to 1999 by Ismihan(et al. 2005) ascertains a significant impact of public and public core investment on growth in the medium- but not in the long-term.

Overall, these studies provide some evidence that public infrastructure and education are growth-enhancing. Moreover, some evidence has been found that expenditure typically not characterised as productive, such as certain kinds of social benefits and justice, may well be conducive to growth. Only two studies have been found, which analyse the composition of public expenditure (Cullison, 1993; Singh and Weber, 1997). Thus, there is a lack of time series studies analysing the effects of the composition of government expenditures on growth. This study aims to fill this gap.

As already mentioned in the introduction, another time series study about the impact of the composition of public expenditure on growth has been carried out by Singh and Weber (1997) for Switzerland. The present paper extends the observed time period by ten years but does not adopt the approach applied by Singh and Weber (1997). Contrary to the latter study, the revenue side of the government budget is taken into account. Furthermore, Singh and Weber (1997) use a polynomial distributed lag model (pdl-model), which is recommended by Kocherlakota and Yi (1997) to estimate the growth effects of exogenous variables. It seems that using longer time spans allows a better capture of long-run growth effects of fiscal policies due to the following reasons. Growth effects of public expenditures such as infrastructure expenditure may emerge rather gradually over time because infrastructure expenditure may be complementary to private investments that are undertaken only at a slow pace (Nijkamp and Poot, 2004, 105). Moreover, as business cycles last on average eight years at least eight lags should be taken into account in distributed-lag models. This, along with the rather short time series of fiscal data available for Switzerland, leads to a considerable loss of the number of degrees of freedom if a pdl-model is applied. Therefore, to have a reasonable number of degrees of freedom, which is statistically recommended another approach is chosen (see Stahel, 2004, 180). To smooth business-cycle fluctuations and, in an attempt to capture long-term GDP, he applies the Hodrick-Prescott-filter (HP-filter) to Swiss real GDP for the time period from 1950 to 2004. The resulting trend or long-term real GDP is a centred

moving average of actual GDP. The HP-filter aims at minimising fluctuations in the output gap and in trend growth.2 The HP-filter is commonly used by international organisations or governments as an instrument for cancelling out business-cycle fluctuations (Colombier, 2006). Following the usual practice which is recommended by Hodrick and Prescott (1997),

CHAPTER- III

RESEARCH METHODOLOGY

3.1. Research Design:

This study is based on the published secondary sources of data and information. In this study, different statistical tools such autocorrelation. This study is based on certain research techniques consisting of simple regression analysis, tabular analysis and graphical analysis, secondary data are used for the purpose of analysis. The major variables are Private investments (I) Interest rates (R) Private consumption (C) Government consumption (G) Government Investments (H) Government Transfers (T).

3.2. Sample Size:

The analysis is based on the time series data of 30 years covering the period between the FY 1974/75 to 2008/09. Hence, rationale for selecting this period is that during that period, there was large volume of public expenditure by the government introducing different plans and programs.

3.3. Presentation and Data Analysis:

Quantitative as well as qualitative methods have been used to analyze the data. However, use of quantitative tools has been employed widely. Tabulation of data and graphical presentation of the data are made to make the information visible as well as understandable easily.

The model

Growth theory suggests that growth is driven by accumulation. Therefore, gross investments will be included in the model. Since this study is trying to estimate the defect of government variables on economic growth, private and government investments are separated. In addition, government and private consumption will be two different variables. Government transfers and interest rates are added to form the function. Equation displays the function for economic growth and is expressed as:

$$\Delta Y = F(I, R, C, G, H, T) \qquad (1)$$

Dependent variable is the growth rate in real GDP, denoted ΔY . Table bellow summarizes all the independent variables and there expected signs in the regression.

Table 3.1: Summary of Methodology

Variables	Expected sign
(I) Private investments	+
(R) Interest rates	-
(C) Private consumption	+
(G) Government consumption	+/-
(H) Government Investments	+
(T) Government Transfers	-

Private and government investments are expected to have positive signs since both build to the capital stock. Private consumption is also expected to have positive sign because of the multiplier effects of increased consumption. Although government consumption adds to the GDP, the sign is undecided since higher taxes could have a negative effect on private consumption. Interest rates and transfers are both expected to have negative signs. Interest rates because of its negative effects on investments and transfers because it is disturbing effects on the markets through higher taxes.

Ordinary least square regression is used to estimate the coefficients of the variables in equation 1. Equation 2 displays the growth regression and is formulated as:

$$\Delta Y = \alpha + \beta_1 I + \beta_2 R + \beta_3 C + \beta_4 G + \beta_5 H + \beta_6 T \qquad (2)$$

The constant is denoted α while β_n are the coefficients of the different variables. The estimates obtained for each coefficient shows how much a one-unit increase in each individual variable will affect the growth rate in national output. A convenient way would be to take the logarithm of the variables before running the regression. In this case, each coefficient would be respective variable's elasticity.

Data Source

Secondary data will be taken while conducting this research. The data is drawn from Economic Surveys for the period of 1975-2008. Real interest rates are obtained by subtracting the annual inflation rate from three months treasury bills. Investments are like GDP growth measured in their annual growth rate. All the other independent variables are

measured as their share of the GDP for each year. Since these are percentage values current prices are used.

Autocorrelation

Autocorrelation is common when using time series data in regressions. It occurs when the residuals does not form a random trend around the regression line. Positive autocorrelation, which is the common one for time series, is when the trend of the residuals is formed systematically above or below the line.

One way of eliminating autocorrelation is by identifying the factors responsible for the autocorrelation and extends the regression accordingly. The Cochrane-Orcutt method does this with an interactive process with five different steps. First, the original equation is regressed. Second, residuals are being calculated. Third, e_t regressed against e_{t-1} to estimate the correlation between the two (p). The fourth step is put the residuals and the process starts over at step three until the autocorrelation is eliminated.

CHAPTER IV

PUBLIC EXPENDITURE AND GROWTH IN NEPAL

4.1. Introduction

Prithivi Narayan Shah started unification of Nepal by joining various small hill states as well as Baise-Chaubise. These small states had used public policies as ad-hoc basis. Kings' interests were the base to formulate public expenditure policy. Some period after the unification of Nepal, the Rana Regime started. Ranas isolated Nepalese economy from relation with rest of the world. Therefore, Nepal could not take benefit from the changing world economy. After the establishment of democracy in 1950, Nepal came to the main stream of the world economy. Nepal started systematic development process.

Nepal presented its first budget in parliament and introduced first medium term plan in 1956 as a five-year, which had allocated about Rs. 576 million for development expenditures. Transportation and communications received top priority with over 36 percent of the budget allocations. Agriculture, including village development and irrigation, took second priority with about 20 percent of budget expenditures. The plan also focused on collecting data statistics. However, it was not well conceived, and resulted in actual expenditures of about Rs. 382.9 million--two-thirds the budgeted amount. In most cases, targets were missed by a wide margin. For example, although the plan had targeted constructing highways approximately 1,450 kilometers, met one-third target only, which was about 565 kilometers.

After suspension of Parliament in 1960, which had been established under the 1959 constitution, the Second Plan failed to materialize on schedule. A new plan was formulated as a three-year plan, 1962-65. It had expenditures of almost Rs. 615 million. Transportation and communication again received top priority as first five-year plan with about 39 percent of budget expenditures. Industry, tourism, and social services were the second priority. The Targets were missedagain. However, there were improvements in industrial production, road construction, telephone installations, irrigation, and education. The plan only met the target of the organizational improvement area.

The first two plans were developed with very little research and a minimal database. The administrative mechanism to execute these plans also was inadequate. The National Planning Commission, which formulated the second plan, noted the difficulty of preparing plans in the absence of statistical data. Further, as in the case with the first plan, the bulk of the

development budget depended on foreign aid--mostly in the form of grants. The failure of these plans was indicated by the government's inability to spend the budgeted amounts.

The Third Five-Year Plan (1965-70) increased the involvement of local Panchayat. It also focused on transport, communications, and industrial and agricultural development. Total planned expenditures were more than Rs. 1.6 billion. The Fourth Five-Year Plan (1970-75) increased proposed expenditures to more than Rs. 3.3 billion with the top priority of Transportation and communications, followed by agriculture with receiving 41.2 percent of expenditures, which was 26 percent of the total budget. Although the third and fourth plans increased the involvement of the Panchayat in the development process, the central government took the most of responsibilities.

The Fifth Five-Year Plan (1975-80) proposed more than Rs. 8.8 billion for expenditures. For the first time, poverty was taken as a problem in a five-year plan, although no specific goals were mentioned. Top priority was given to agricultural development, and emphasis was placed on increasing food production and cash crops such as sugar cane and tobacco. Increased industrial production and social services also were targeted. Controlling population growth was considered a priority.

The Sixth Five-Year Plan (1980-85) proposed an outlay of more than Rs. 22 billion. Agriculture remained the top priority; increased social services were second. The budget share allocated to transportation and communication was less than that allocated in the previous plan; it was felt that the transportation network had reached a point where it was more beneficial to increase spending on agriculture and industry. The Seventh Five-Year Plan (1985-90) proposed expenditures of Rs. 29billion. It encouraged private sector participation in the economy (less than Rs. 22 billion) and local government participation (Rs. 2 billion). The plan targeted increasing productivity of all sectors, expanding opportunity for productive employment, and fulfilling the minimum basic needs of the people. For the first time since the plans were devised, specific goals were set for meeting basic needs. The availability of food, clothing, fuel wood, drinking water, primary health care, sanitation, primary and skill based education and minimum rural transport facilities was emphasized.

Because of the political upheavals in mid-1990, the new government postponed formulating the next plan. The July 1990 budget speech of the minister of finance, however, implied that for the interim, the goals of the seventh plan were being followed.

Foreign aid as a percentage of development averaged around 66 percent. The government continually failed to use all committed foreign aid, however, probably as a result of inefficiency. In the Rs26.6 billion budget presented in July 1991, approximately Rs11.8 billion, or 44.4 percent of the budget, was expected to be derived from foreign loans or grants.

Establishment of multiparty democracy system in 1991 opens new door for Nepal. Nepal had entered in to the global economy and adopted liberalization, globalization and privatization policies. The total development expenditure of the plan period was envisaged to be Rs. 113,479 million at 1991/92 prices.

Table 4.1: Matrix of Five Yearly Plan Objectives and Priority

Plan	Year	Objective	Priority	Expenditure (% of GDP	GDP Growth Rate	
					Targeted	Achieved
1	1956-1961		Transportation and Communication	7.7*	-	3.39*
2	1962-1965		Transportation and Communication	5.7	-	1.45
3	1965-1970		Transportation and Communication	6.5	-	1.51
4	1970-1975		Transportation and Communication	8.8	-	3.66
5	1975-1980		Agriculture	12	-	1.84
6	1980-1985	1. to attain higher growth rate in production, 2. to increase productive employment opportunity, 3. to fulfil minimum basic needs *of* the people	Agriculture	17.4	-	4.4
7	1985-1990	1. to attain higher growth rate in production, 2. to increase productive employment opportunity, 3. to fulfil minimum basic needs *of* the people	Agriculture	18	-	4.7
8	1992-1997	-sustainable economic growth -Poverty alleviation -reducing regional imbalance	-social service -agriculture	16.5	5.1	5.1

Plan	Year	Objective	Priority	Expenditure (% of	GDP Growth Rate	
10	2002-2007	1. to alleviate poverty 2. to extend economic opportunities for dalit, women and people of remote area and backward community	-agriculture - Social service -agriculture	18.5	a. 6.2 (Improved situation) b. 4.3 (Deteriorated situation)	3.4
11	2007-2010	1. to establish peace 2. to reducing the existing unemployment, poverty and inequality	- Electricity gas and water - Transportation, communication and storate		5.5	-

*Due to lack of data, growth rate covers only the period from 1960-1961
Source: Obtained and Calculated from the data available from *Source: Economic Survey,WDI, MOF; IFS, IMF; Statistical Year Book, CBS- Various Issues, and, NRB in Fifty Years*

4.2.Nepalese Growth Scenario

As shown in Table 4.2, Nepal had three distinct phases of growth in the GDP; namely, a phase of slow growth between 1961-80, a phase of high growth between 1981-00, and again a phase of slow growth in 2001-06. In 2007, the economy registered a 5.6% growth, the highest in the past 7 years. The favorable monsoon coupled and good policy implementation had contributed to the increase in agriculture and non-agriculture value-added.

Table 4.2: Annual Average Growth Rate of Real GDP (%)

Country	1961-70	1971-80	1981-90	1991-00	2001-06	2007
Bangladesh		1.5	3.7	5.0	5.7	6.5
Bhutan			9.3	5.6	8.1	
India	4.1	3.2	5.5	6.0	7.8	8.7
Nepal	2.5	2.4	4.3	4.9	2.9	5.6*
Pakistan	7.4	5.2	6.1	3.8	6.0	7.0
Sri Lanka	4.6	4.8	4.0	5.3	5.8	6.8

*Notes: *Nepal figures is for 2007/2008, and data for Bangladesh pertains to 1971 onward.*
Source: 2007/2008 Nepal Economic Survey, World Bank. World Development Indicators

During 1961-80, the economy could be characterized as small, centrally planned and closed with few incentives for the outside investors. During this period, the development focus was mainly on improving transportation and communication infrastructure, and development of agriculture and industrial sector. However, the development plans during this period were

rarely adequately funded and the key targets under these plans could not be achieved. As a result, the economy largely remained agrarian based with outputs, employment and social relations/setup dominated by the agriculture and agricultural production. Neither the industrial or service sectors grew nor the agriculture sector modernized. In addition, the protectionist policies constrained the growth in trade to less than 5% per annum. External shocks such as high oil prices resulting from the oil restriction weakened the growth and fuelled inflation. The average annual GDP growth during this period averaged at only about 2.3%.

The policies prior to 1980s were not only ineffective in accelerating growth, but also created long-term problems for the economy. By early 1980s, the development expenditures had risen to the levels where less than 17% of these were being financed by the revenue surpluses[1] and the remainder were being financed by the borrowing from the banking sector. Excessive borrowing by the Government from the banking sector had effectively crowded out the private investment and majority of the expansion of the domestic banking sector was on account of the Government borrowing. To counter and correct these, the country initiated a number of reforms to transform itself from a centrally planned economy to a market-oriented economy. In this connection, a number of key reforms were implemented in the mid to late 1980s under an economic stabilization program. Amongst others, the key initiatives in the program included (i) devaluation of the currency, (ii) deregulation of the financial sector, (iii) liberalization of trade, (iv) reduction of budget deficit by curtailing public expenditure, (v) removal of subsidies on inputs and input taxes, and (vi) removal of subsidies on power for agriculture and industrial sectors. In terms of public sector investment, the focus was mainly on the development of agriculture and provision of social services. While the provision of transportation and communication related infrastructures continued to remain an important area of focus, the resource allocation for these was significantly reduced. As a result, the trade, restaurant and hotel, and manufacturing industries grew, which with the improved performance in the agriculture sector led to a 4.3 % GDP growth during the 1981-1990 period. Although the GDP growth rate was lower than India and Pakistan, it was higher than those for Bangladesh and Sri Lanka. However, the growth rate would have been higher if it was not for the external shocks such as severing of trade and transit treaties with India in 1989, and poor performance of the agricultural and industrial sectors during the period.

[1] Revenue surplus is defined as total revenue minus the regular expenditures.

In the 1990s, despite the political instability, the country accelerated the pace of liberalization of the economy and implemented a number of key reforms. Some of the major initiatives in the early 1990s included: (i) deregulation of the trade, industry, finance, and foreign exchange regimes, (ii) streamlining of price controls and subsidies, (iii) privatization of key public enterprises, (iv) massive reductions in tariffs, (v) liberalization of foreign exchange, (vi) industrial policy and supporting (1992), (vii) improved opportunities and access for foreign investment (1992). In addition, the country undertook a number of initiatives to improve investment climate including (i) introduction of a basic legal mechanism for the corporate sector and enactment of Cooperative Act of 1991; (ii) enactment of Hydropower Development Policy and the Electricity Act (1992) and Electricity Regulations (1993) to reduce monopoly of Nepal Electric Authority; (iii) development of financial sector through Development Bank Act (1995) and Financial Intermediary Societies Act (1998); (iv) Improved access to microfinance through establishment of Rural Self-Reliance Fund (1990), Regional Rural Development Banks (1992) and Rural Microfinance Development Center (1998); and (v) reform of income tax law through Income Tax Act (2002).As a result of these initiatives and policies that helped develop the non-agriculture sector, annual average GDP growth was about 5% even in the presence of political instability and the lackluster performance of the agriculture sector. GDP growth rate during this period also compared favorably with countries in the region such as Bangladesh, Bhutan and Sri Lanka and was even higher than that of Pakistan.

Although the country stayed on the path of economic reforms and implemented a number of key initiatives in the 2000s such as (i) reformed income tax and excise tax laws and established the Large Taxpayer Office (2005); (ii) improved autonomy, governance and accountability of the central bank through Nepal Rastra Bank Act (2002). (iii) continued reforms in financial sector through directive on credit information and blacklisting of defaulters (2002), Public Debt Act and Foreign Exchange Regulation Act (2003).establishment of Debt Recovery Tribunal (2003), and New Bank and Financial Institutions Ordinance (2004). (iv) privatized a number of state owned enterprises; and (v) joined World Trade Organization and enacted a new Customs Act (2004), the growth rates in the 1980s and 1990s could not be sustained. The conflict that started in 1996 in the north-western regions of the country escalated to a national scale. Political fragility increased further. As a result, the average GDP growth rate fell to about 2.9% during 2001-06 with the economy contracting in 2002. While the preliminary data for 2007 suggested that that the

declining trend will continue, the economy was able to register a much higher growth rate for FY 2007/2008 as the agriculture sector, and some sub-sectors in industry and services grew significantly. However, the erratic growth performance remains a cause for concern since Nepal has gone from being one of the better performing economies in the region during 1991-2000 to one of poorest performing economy during 2001-06.

Taking into account the growth in population, which rose from about 9.3 million in 1960 to 26.4 million in 2007 for an annual average growth rate of 2.25%, Nepal in 1960 and 1970 had a per capita GDP of about was $134 and $ 142 expressed in 2000 US dollars respectively (Table 4.2). It was already behind India and Bangladesh for the same period. However, the slow growth especially during the 1970s as well as in 2000s had since widened the gap in per capita GDP. While this has been increasing it still has to catch up with the other South Asian countries. Nepal's per capita GDP had only risen to about $243 by 2007 or an increase of about 81% over the 1960 levels. In comparison over the same period, the per capita GDP of India had risen by about 250%, and by about 237% in case of Pakistan. In case the per capita GDP was to grow at an average annual rate of 1.92%, the growth rate recorded between 1990 and 2007, it would take 36 years to double the per capita GDP and about 31 years to raise it to the levels where the Bangladesh was in 2007. However, if the growth was at the more modest levels of 1.15% that prevailed since 2000 then it would take the country 61 years to double its per capita GDP or 52 years to raise it to the levels of Bangladesh.

4.3. Trend and Pattern of Public Expenditure:

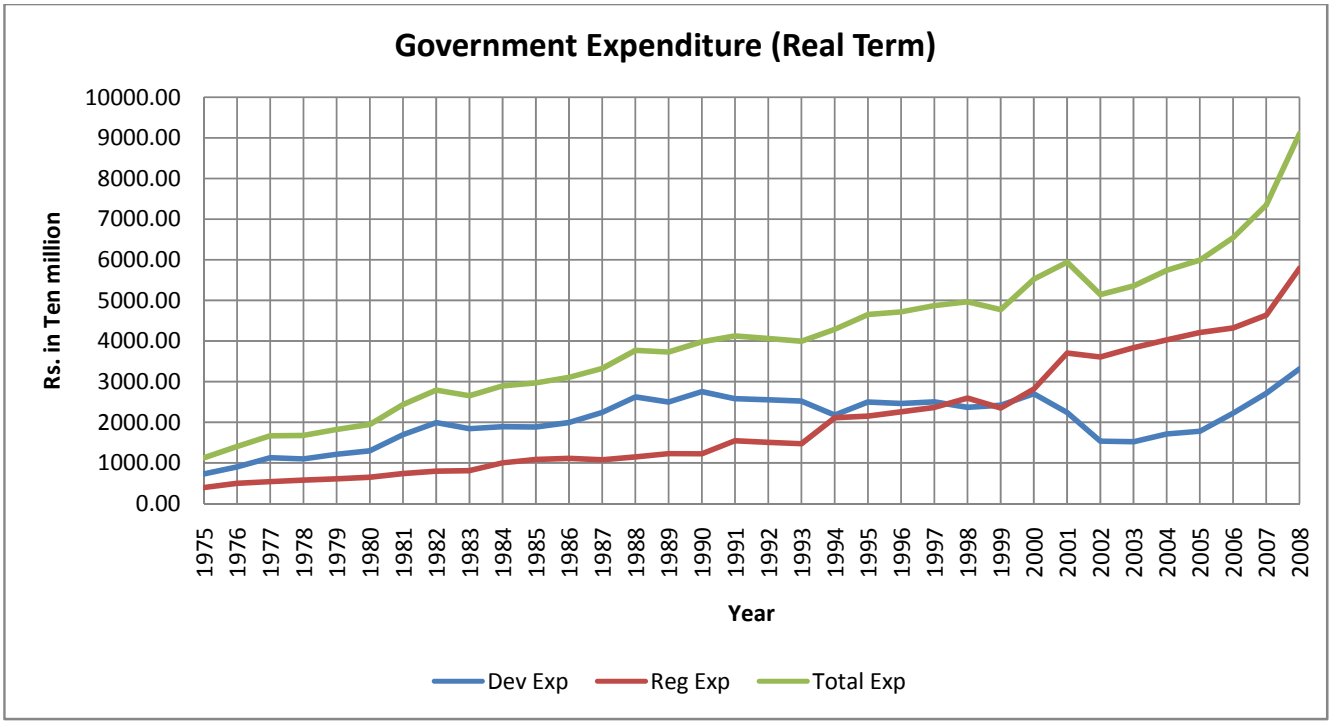
4.3.1. Total government expenditure

While there is broad consensus that renewed economic growth is a necessary condition for meeting development objectives such as the MDGs, it is also widely accepted that growth alone is insufficient. In order for growth to become a sufficient condition, more direct public action is required, especially in the form of more agriculture-intensive investments. However, it is not just the scale of government spending that matters; when, where, and how governments intervene is also crucial. Furthermore, it is important to recognize that there do not always have to be trade-offs between equity and efficiency. The poor are often poor because they are disproportionately affected by market failures. This leads to "win-win" possibilities because government intervention, if designed properly, can lead to both a more efficient and a more equitable allocation of resources.

The trend and pattern of public expenditure has been analyzed with the help of nominal values excluding permanent influences like population and prices. Hence, an attempt is make to analyze the actual public expenditure growth in Nepal during the period under the study in terms of real growth rates.

A simple approach of examining the growth rate public expenditure and GDP is shown below which help to examine the relation between these variables. Growth rate of total, regular and development expenditure do not show the any specific pattern rather than the random attribute. In some fiscal year, there are large upswing and in some fiscal year there are large downswing in the growth rate of all categories. Public expenditure in Nepal has shown faster than the national income. This trend can be explained in the following figure.

Figure 4.1: Government Expenditure (Real Term)

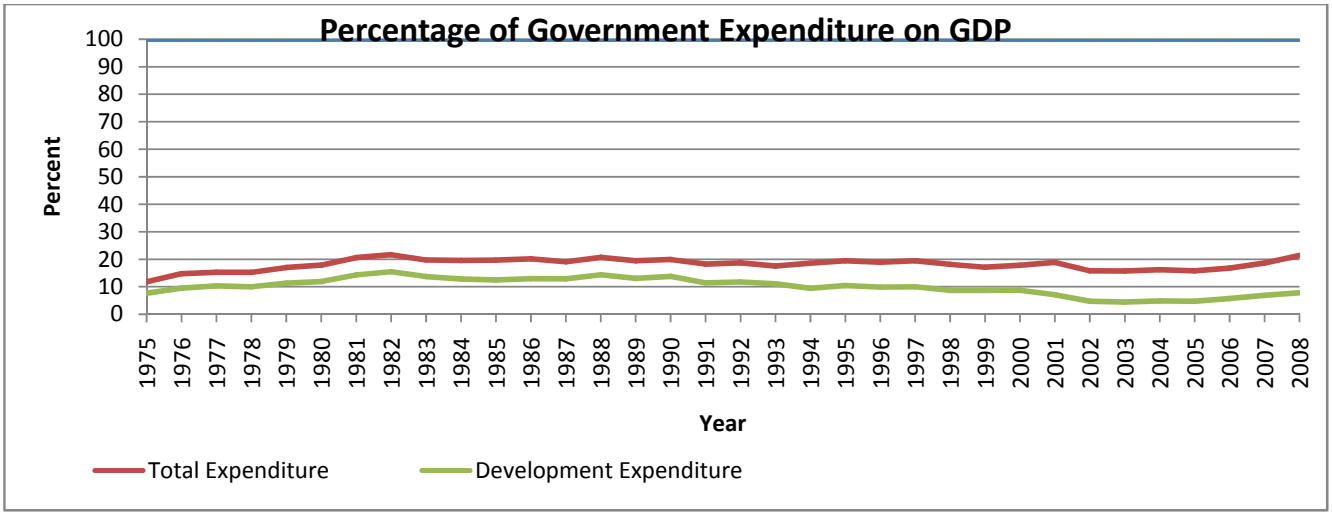


The trend of public expenditure is in increasing in Nepal. The above graph shows that public expenditure has been gradually increasing. Development expenditure has increased faster than regular expenditure till 1998/99, then after regular expenditure exceeds. There have been found that the public expenditure is increasing trend from the restoration of democracy in 1991. Some support of notion of being welfare state in democratic setup, where some others

are to establish norms in the fiscal practice. The trend of total expenditure, regular expenditure and development expenditure are shown in a given table.

Thus, as above table and figure show the increasing trend of regular expenditure and decreasing trend of development expenditure. It shows the misallocation of public expenditure which is the main cause of backwardness of Nepalese economy. Therefore, the concerned stakeholders should correct their policies. The priority should be given development expenditure rather than the regular expenditure. The increasing share of regular expenditure and decreasing development expenditure is really alarming sign for developing economies like Nepal.

Figure 4.2: Percentage of Government Expenditure on GDP



Government expenditure as a percentage of GDP

The above graph shows that the total expenditure has not changed in relation to GDP from the early 1970s to early millennium. Total public expenditure as a percentage of GDP has fluctuated around 19 percent during the period of study. In FY 1991/92 the share was 18.23 percent and it rose to 19.88 percent in FY 2005/06. The share3 of total expenditure on GDP was 20.26 in FY 2000/01, which was the highest during the study period. It remained 17.54 percent in FY 1993/94, which was the lowest one. In an average it remained 19 percent during the 15 years of the study period. However there are remarkable changes in regular expenditure and development expenditure. In FY 1991/92, regular expenditure as percent of GDP was just 6.83 percent, which rose to 14.57 percent at the end of the study. It was near about two times more. This case of development expenditure is just opposite. Development

expenditure as percent of GDP was 11.39 percent in FY 1991/92, which come down to 5.31 percent at the end of study period. It was near about two fold less.

Figure 4.3: Development Expenditure Pattern 1975 to 1990

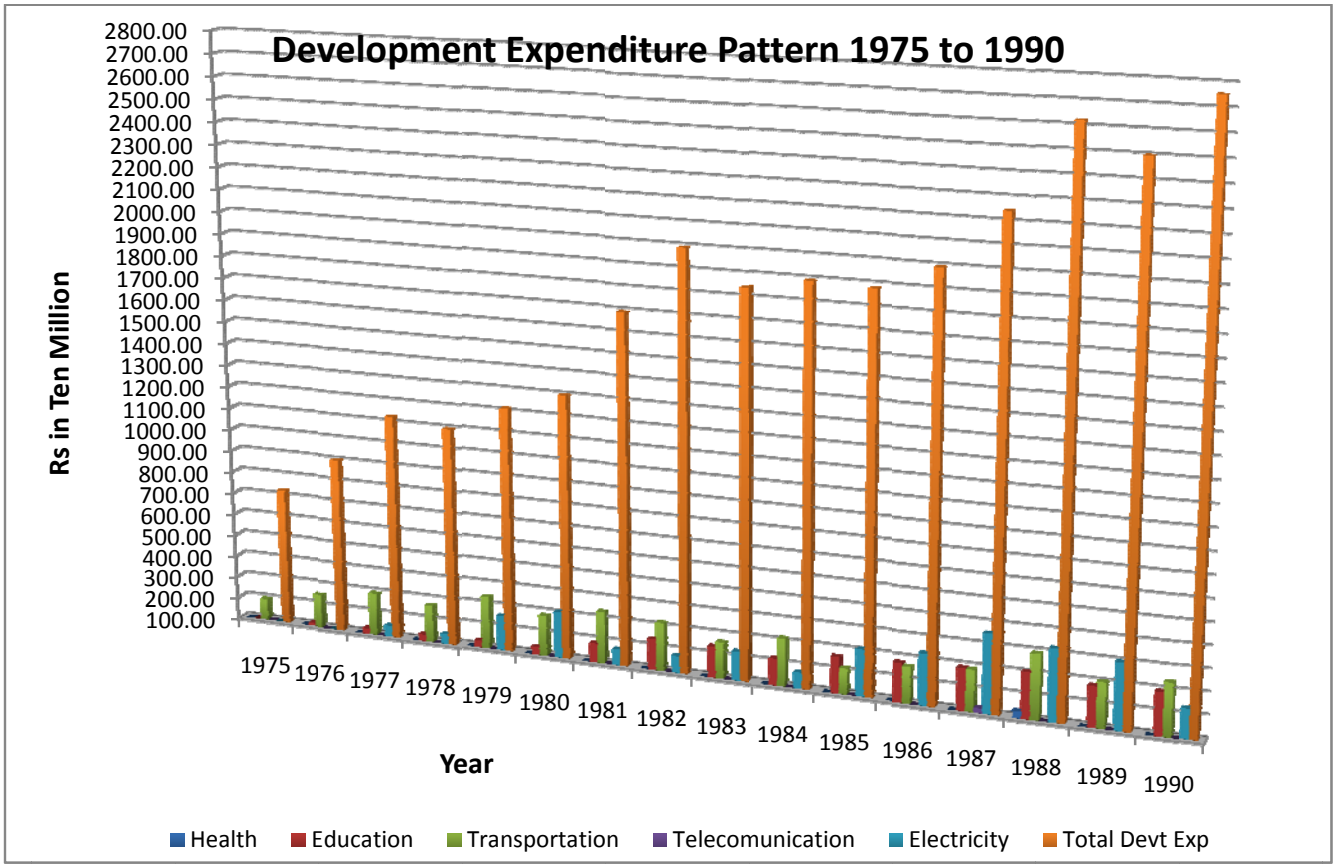
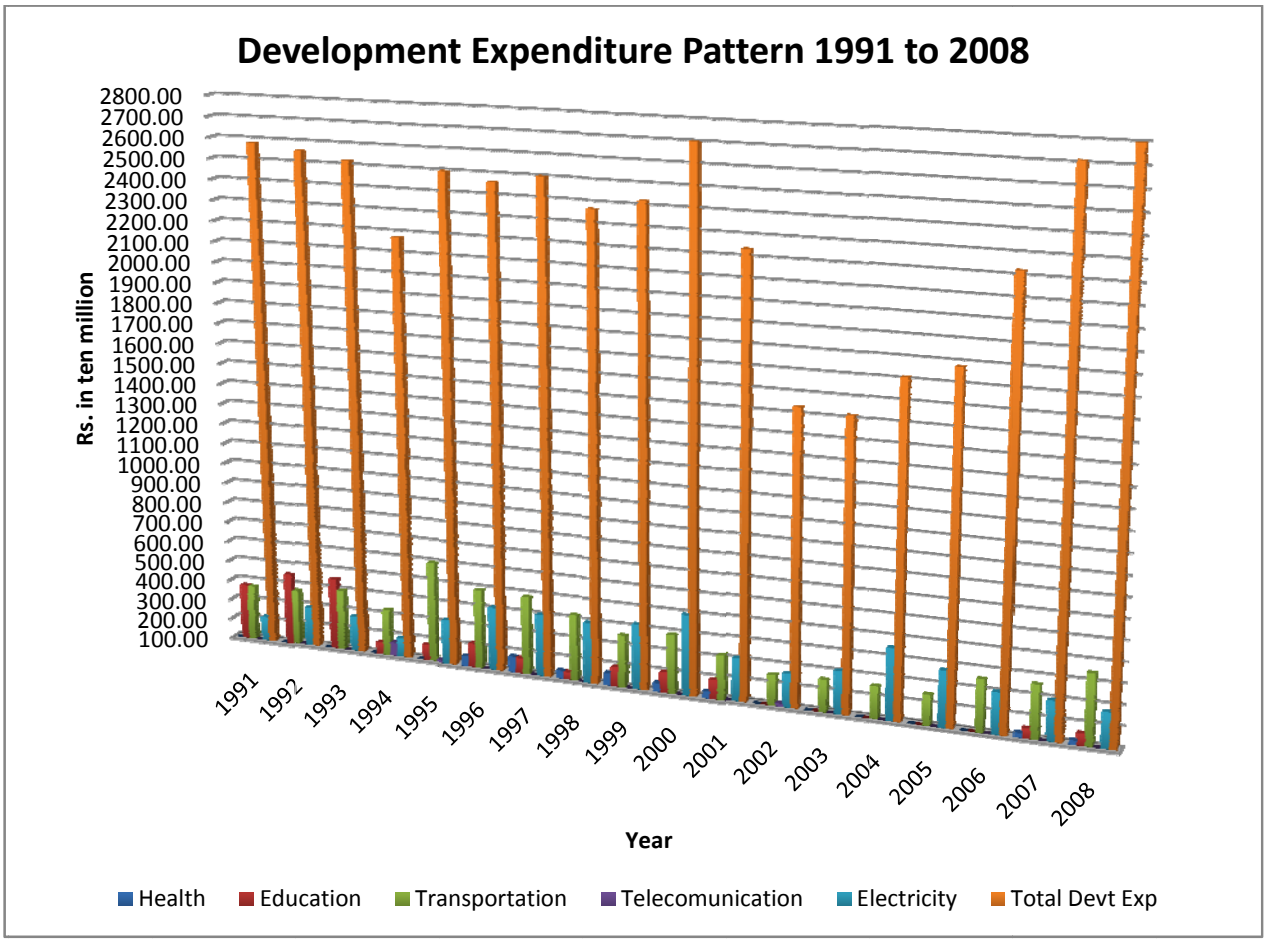


Figure 4.4: Development Expenditure Pattern from 1991 to 2008



Souce: Calculated from Economic Surveys

4.3.2. Trend and Pattern of Sectoral Expenditure

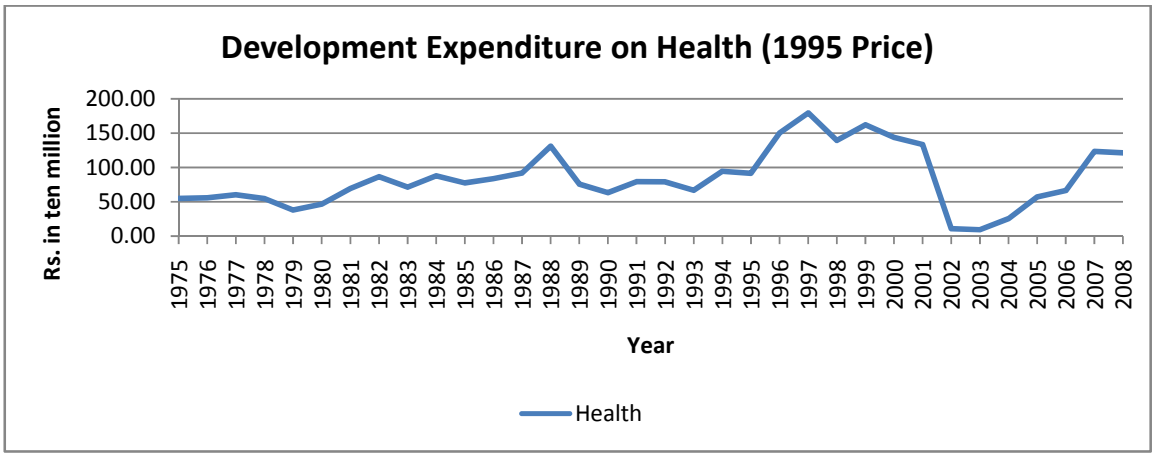
Expenditure on Health

Although, in general, the relationship between government spending and growth is considered to be negative. The positive effect of public health expenditure on life expectancy, saving and growth, when it is sufficiently intense, could offset the effect of taking away resources from investment. This could be the situation in developing countries and, in such a context, higher government health spending would lead to faster growth. However, the standard negative relationship probably still holds in developed countries.

In the long run, an increase in health care expenditure effectively enhances the economic growth of a country. However, with regard to different levels of growth, in countries with low and high levels of income, health care expenditure growth cannot effectively enhance economic growth. This is mainly due to different levels of economic growth; thus, the

characteristic of health care expenditure also changes. The latter will not stimulate economic growth; instead, it will hinder economic growth (Wang, 2011).

Figure 4.5: Development Expenditure on Health (1995 Price)



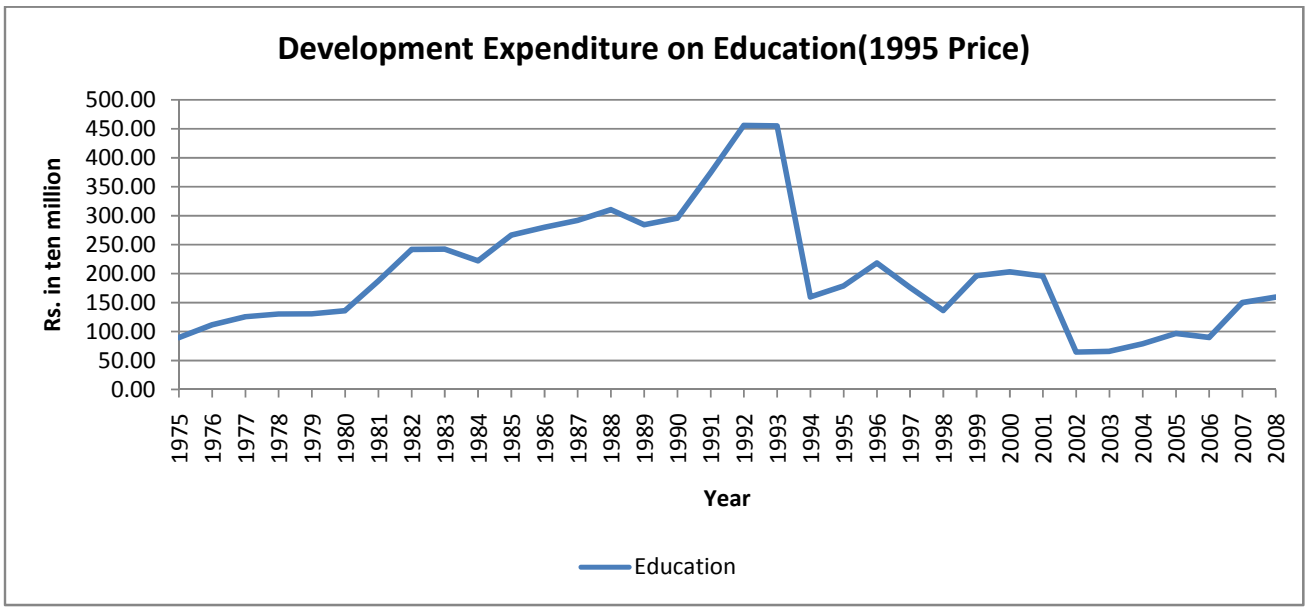
However, many economists and researchers have indicated that the expenditure on health and growth has positive relation, health sector never get priority in any of five-year plan in Nepal. As figure 4.3 and figure 4.4 shows the pattern of development expenditure from 1975 to 2008, expenditure on health always is seen in the bottom of the figure in comparison with other development expenditure. Figure 4.5 shows that trend of expenditure on health for 20 years from 1975 to 1995 looks almost similar. It started increasing from 1996 and reach to peak (Rs. … million) in 1997 but in 2002 and 2003 it is dramatically decreased to around Rs. 10 million. After the year 2004, health expenditure is noticeably increasing. The cause of dramatically decrease of development expenditure on health in2002 and 2003 might be the Maoist insurgency. While the Maoist insurgency is in peak, most of the allocated development expenditure could not be disbursed. In these years economic growth also remained below 2% in Nepal.

Expenditure on Education

Human capital has taken a central role in the theory of economic growth, with formal schooling often considered a primary conduit for human capital accumulation. Since government plays a role in financing formal schooling in most countries, there is a potential link between public education expenditures and growth. However, no clear empirical validation of this link exists. One possible explanation is that public education expenditures crowd out other factors, which also contribute to growth. We consider this possibility in the

context of a simple endogenous growth model. Human capital accumulation drives growth and in turn is driven by public and private human capital expenditures. The direct effect of increasing the share of output devoted to public education expenditures is an increase in the steady-state growth rate. However, general equilibrium adjustments in other factors that affect growth may act in the opposite direction (Blankenaua & Simpson, 2004).

Figure 4.6: Development Expenditure on Education(1995 Price)



The figure 4.3 and figure 4.4 show the significant contribution of expenditure on education from the beginning of the study period (1975) to 1993. After 1993, the graph shows that no identical increase in government expenditure on education but it was lowest ever in 2002. After this point, growth rate in education expenditure is crippling. Although education expenditure had decreased, it was higher expenditure than in health.

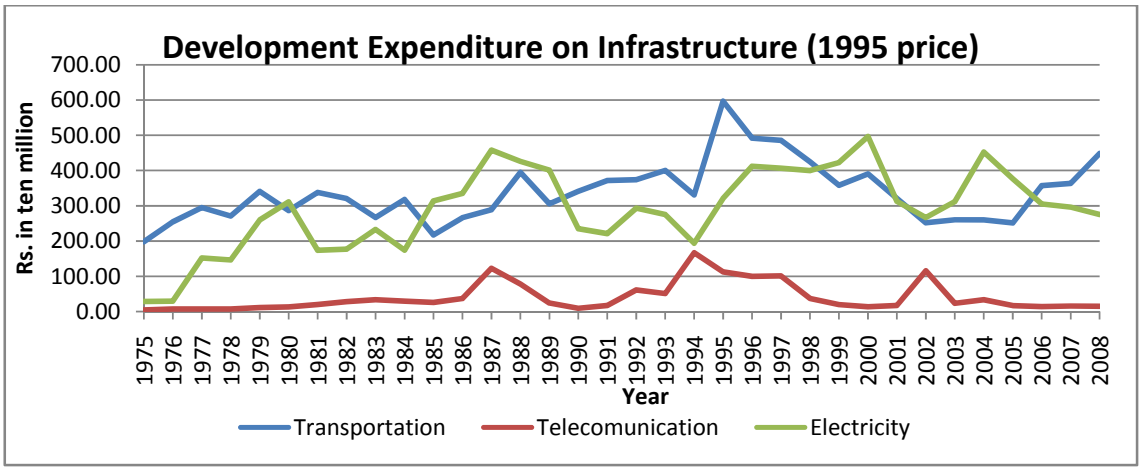
Expenditure on Infrastructure

Three heading have been taken as components of infrastructure in this study, which are; transportation; telecommunication and electricity. According to ADB, DFID, ILO (2009) quality and quantity of infrastructure is one of the major constraints to growth of Nepal. Many theoretical and empirical studies have found strong correlation of infrastructure and development. The majority of economists have recognized the role of infrastructure on economic growth and development since quite long time. Although role of infrastructure on

growth is very complex, there is plenty of literature to explain the influence of infrastructure development on economic growth directly via capital accumulation and indirectly via increment in total factor productivity. Hirschman (1958) identified availability of electric power and transportation facilities as a prerequisite of economic development. Similarly Rosenstein-Rodan (1943) stressed for heavy investment in social overhead capital in underdeveloped country due to its indivisibility nature. Rostow (1960) also believed that social overhead capital; especially transport and communication, is one of the major pre-conditions for takeoff. Role of infrastructure in economic growth is so important that "1 percent increase in the stock of infrastructure is associated with a 1 percent increase in GDP across all countries" Summers and Heston, (1991).

Development of infrastructure requires huge initial investment. Furthermore, Nepal's rugged topography demands huge amount of money for building roads and other infrastructures. The government is not in a position to allocate adequate budget. Domestic resource mobilization is not satisfactory. It has always remained below fifteen percent of GDP. Widening regular expenditure, repayment of debts, administrative overheads and other recurrent expenditure take away more than eighty percent of government's revenue Pyakuryal(et. al, 2008). This has forced Nepal to be dependent on foreign aid for development expenditure. Foreign aid meets more than two-thirds of Nepal's development expenditure. It is difficult to materialize donor's commitment because of the inadequacy of matching fund (ibid). This has compelled to allocate less amount of money in infrastructure development as shown in the following figure.

Figure 4. 7: Development Expenditure for Infrastructure (1995 Price)



Souce: Calculated from Economic Surveys

The figure shows that development expenditure for transportation is declining continuously. Same is true for communication. Expenditure for electricity is more or less stable. In the history of five decades long planning economy, Nepal always put infrastructure development as top priority up to fourth five-year plan. From fifth five-yearplan, priority is for either agriculture development or poverty reduction. The reason behind low level of infrastructure development is thus due to lack of sufficient funds.

Unit cost of constructing road in Nepal is estimated to be about US$ 0.1 million per Km^2. Based on this expenditure, if all development expenditures had been spent for road construction, Nepal would add 532 Km road every year from 1988. Available data shows on average, Nepal has added 135 Km black topped road every year since 1991. This indicates that besides lack of fund, there could be other possible constraints for the underdevelopment of Nepal's infrastructure development. Often complained problem is poor fund release and procurement mechanism. Lengthy and complicated procurement process does not allow faster and uninterrupted development of infrastructure. Current fund release process requires at least four months time to reach first installment of the fund to the project site. Such bureaucratic delays encourage people to rush to spend remaining fund less professionally at the end of fiscal year. This results into low quality infrastructure. Similarly, uncompetitive bidding process increases the cost of production as well.

4.4.Expenditure Growth Relationship- Regression Analysis

As explained in the methodology, stationarity of the variables was checked using Dickey_Fuller test. The test showed that all the variables are stationary in their first difference. The test statistics is shown in the following table.

Table 4. 3: Dickey-Fuller test for Stationarity

Variables	Test Statistic in Level Form	Test Statistic in First Difference	Critical τ value for 5% level of significance
GDP (gdp)	2.311	-6.815	-2.978
Private Consumption (priv_con)	0.952	-6.152	
Public Consumption (pub_con)	1.515	-8.235	
Private Investment (priv_inv)	1.084	-4.956	
Public Investment (pub_inv)	-2.061	-5.046	

[2] Based on the unit cost for Ameliya-Tulsipur- Salyan (92 Km) road available at http://www.mof.gov.np/invest/pdf/ministry_physical.pdf

Since the variables are stationary in their first difference, following regression equation is estimated.

$$\Delta gdp_t = \beta_0 + \beta_1(\Delta pub\_con)_t + \beta_2(\Delta priv\_con)_t + \beta_3(\Delta pub\_inv)_t + \beta_3(\Delta priv\_inv)_t + u_t$$

Following table shows estimates

Table 4. 4: OLS estimate of the change in GDP equation

Δgdp	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
$\Delta priv\_con$	.1282983	.2584007	0.50	0.623	-.4010117	.6576082
Δpub_con	2.940888	1.378093	2.13	0.042	.1179927	5.763782
Δpub_inv	1.651068	1.577833	1.05	0.304	-1.580976	4.883112
$\Delta priv\_inv$	.7812751	.6753762	1.16	0.257	-.6021703	2.16472
_cons	467.4785	292.1792	1.60	0.121	-131.0235	1065.98

The R-squared value of the above regression is 26.6 percent while the overall regression is significant at five percent. However, the coefficients are not significant expect public consumption. Increase in public consumption significantly increases GDP. Once unit change in public investment leads to change GDP by about three units i.e. the value of public consumption expenditure multiplier is about 3. But all other variables are not significant although their signs are as per expectation.

Now the major question is why there is no causal effect between investment and growth. The possible reason is the lack of strong institution. In public investment most of the capital formation data includes the expenditure that are in fact similar to the nature of consumption expenditure. Similarly, development expenditure is not channeled to the area where it is productive rather development expenditure is made on the ad hoc basis of politicians. But public consumption is significant because most of the Nepalese people who has off farm income is through government services.

CHAPTER V

Summary, Conclusion and Recommendation

Conclusion:

1. Share of development expenditure in total public expenditure is in decreasing rate. The public expenditure in Nepal is growing rapidly. The growth rate of regular expenditure and development expenditure are approximately equal. But there is a fluctuation in regular as well as development expenditure. There is increasing trends in regular as well as development expenditure, but the growth rate of regular expenditure is higher than development expenditure. The share of regular expenditure on total expenditure at the beginning of the study period was 37.49 percent where development expenditure was 62.51 percent. But at the end of the study period, the share of regular expenditure on total expenditure was 73.3 percent where development expenditure was only 26.7 percent of the total expenditure. It shows that there is very low share of development expenditure on total expenditure. The development expenditure has not been able to achieve the economic and development targets. The growing public expenditure reflects alarming situation with regard to the fiscal discipline and overall development programs of the country. The huge investment in each successive plan and annual budget for rapid economic growth and social infrastructure leads to the increase in public expenditure but the expenditure on development activities are not utilizing properly.
2. Government Expenditure is not enhancing economic growth. Although government expenditure has been increasing regularly, economic growth rate of Nepal has not crossed the average of 4 percent. In the context of Nepal, many development projects are conducted under the foreign aid. The donor agencies are also involved in the decision-making process. On the other side,plans are being made in ad-hoc basis. We have to depend upon foreigners for fund as well as skill work force too. Ad-hoc plan, political instability, lack of peace, socio-economic factors, lack of capital and geographic constraint are the major difficulties for the implementation and completion of the projects.

Recommendations:

1. Private sector needs to be more competitive to contribute on high rate of economic growth. The Rule of Law and a strong role of the Government as regulator and supervisor are the two core requirements for private sector development. An urgent public debate is

required to get a better understanding of the role of the State in the modern world, and to substantially reduce the reach and direct influence of the Government, and strengthen the role of the Government to ensure the rule of law, and as regulator. For the Rule of Law to work and create a favorable environment, the legislation governing the private sector needs to be balanced and transparent. Specialized courts are needed to deal with specialized issues specific to the private sector. The Government has to ensure that the legislative framework is "enabling", as opposed to "directive" or "interventionist". A review of existing legislation for clarity, comprehensiveness and transparency is urgently needed

2. It requires good institution for investment to be productive. As there is need have either to undertake wide-ranging reforms to control the expenditure and improve budget planning or promoting existing domestic resource mobilization. This study develops some suggestions, which will be helpful to the concerned parties reforming public expenditure policy in Nepal.It is necessary to reduce non-productive type of public expenditure in order to promote the capital accumulation process. The development expenditure must be increased and that should utilize in the productive sector. Therefore, the major reforms in planning and budgeting are required.

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ANNEXI

Government Expenditure (1995 Price)								
								Rs in ten million
Year	Regular Expenditure		Development Exp.					
	Pension and Allowances	Total Exp	Health	Education	Transportation	Telecommunication	Electricity	Total Development Exp
1975	5.12	396.76	54.88	89.59	198.18	4.76	28.59	728.65
1976	7.53	500.92	55.75	111.73	254.71	7.16	29.38	902.04
1977	8.63	541.81	60.19	125.75	294.94	7.19	151.94	1129.94
1978	8.78	578.72	54.72	130.28	271.22	7.17	146.44	1099.33
1979	8.26	611.63	38.00	130.58	341.21	11.79	260.16	1215.05
1980	8.38	648.19	46.52	136.00	286.33	13.19	311.05	1300.52
1981	9.91	742.86	69.45	187.41	338.18	20.14	173.73	1694.00
1982	8.68	798.84	86.52	241.84	320.88	28.08	177.32	1992.84
1983	15.18	811.71	71.36	242.36	266.71	33.96	233.21	1844.21
1984	15.41	1002.14	87.86	222.14	318.28	29.34	174.10	1892.62
1985	17.97	1086.03	77.55	266.48	217.30	26.24	313.76	1882.82
1986	26.51	1114.49	83.57	280.14	266.49	37.27	334.92	1994.05
1987	28.50	1079.52	91.71	292.10	289.19	122.81	458.26	2244.76
1988	21.77	1147.77	131.06	310.38	395.15	78.02	426.26	2623.13
1989	21.73	1230.04	75.73	284.58	305.79	24.35	401.46	2499.52
1990	24.93	1225.22	63.24	295.86	341.29	9.41	235.02	2755.09
1991	29.70	1547.25	79.25	374.25	372.03	17.73	221.00	2580.13
1992	43.01	1507.91	78.97	455.92	374.21	61.59	293.30	2554.42
1993	26.10	1475.38	66.73	455.01	400.38	51.10	275.26	2522.40
1994	51.30	2115.24	94.34	159.74	330.84	166.79	193.95	2175.26
1995	58.90	2153.39	91.55	179.10	596.85	112.79	321.02	2498.05
1996	54.20	2258.38	150.29	218.43	491.81	99.90	412.28	2460.61
1997	62.98	2367.13	179.47	176.10	485.81	101.14	406.70	2502.07
1998	85.47	2596.47	139.37	136.39	424.74	36.99	399.81	2370.89
1999	96.20	2352.76	162.23	196.33	358.18	20.24	422.45	2421.94
2000	100.06	2820.03	143.84	203.03	390.53	13.83	496.92	2703.17
2001	111.82	3704.47	133.40	195.84	321.15	17.65	312.43	2237.86
2002	205.19	3607.89	10.95	64.66	251.92	115.49	266.81	1536.71
2003	218.76	3837.10	9.36	66.01	260.39	23.45	312.25	1519.45
2004	223.63	4029.09	25.66	79.01	260.13	33.65	452.55	1713.94
2005	209.19	4211.79	57.05	96.84	251.37	17.06	376.42	1781.28
2006	196.86	4320.58	66.41	89.91	357.54	14.06	305.32	2225.76
2007	206.56	4635.39	123.41	150.22	363.89	15.92	296.41	2712.70
2008	285.73	5791.31	121.39	159.60	448.55	14.97	275.35	3313.64

Source: Economic Survey 2051/52 and 2066/67

ANNEX II

Nominal GDP at Factor Cost					GDP at Factor Cost (1995 Price)		
	Rs. In ten million				Rs. In ten million		
Year	Total GDP	Agriculture	Non Agriculture	**Deflator**	Total GDP	Agriculture	Non Agriculture
1974	1605.1	1155	450.1		0.0	0.0	0.0
1975	1623.1	1161.1	462	**5.88235294**	9547.6	6830.0	2717.6
1976	1578.4	1050.6	427.8	**6.02**	9502.0	6324.6	2575.4
1977	1754.1	1175.2	578.9	**6.25**	10963.1	7345.0	3618.1
1978	1985	1352.2	632.8	**5.55555556**	11027.8	7512.2	3515.6
1979	2042.8	1368.3	674.5	**5.26315789**	10751.6	7201.6	3550.0
1980	2293.8	1567.9	725.9	**4.76190476**	10922.9	7466.2	3456.7
1981	2605.6	1790.3	815.3	**4.54545455**	11843.6	8137.7	3705.9
1982	3221.9	1928.2	1293.7	**4**	12887.6	7712.8	5174.8
1983	3767.1	2277.1	1490	**3.57142857**	13453.9	8132.5	5321.4
1984	4288	2417.1	1870.9	**3.44827586**	14786.2	8334.8	6451.4
1985	4985.6	2713.6	2272	**3.03030303**	15107.9	8223.0	6884.8
1986	5706.8	3062.6	2644.5	**2.7027027**	15423.8	8277.3	7147.3
1987	7317	3675.5	3641.5	**2.38095238**	17421.4	8751.2	8670.2
1988	8583.1	4257.2	4325.9	**2.12765957**	18261.9	9057.9	9204.0
1989	9970.2	5047	4923.2	**1.92307692**	19173.5	9705.8	9467.7
1990	11612.7	5536.8	6075.9	**1.72413793**	20021.9	9546.2	10475.7
1991	14493.3	6515.6	7977.7	**1.5625**	22645.8	10180.6	12465.2
1992	16535	7009	9526	**1.31578947**	21756.6	9222.4	12534.2
1993	19159.6	8058.9	11100.7	**1.19047619**	22809.0	9593.9	13215.1
1994	20997.4	8556.9	12440.5	**1.0989011**	23074.1	9403.2	13670.9
1995	23938.8	9689.6	14249.2	**1**	23938.8	9689.6	14249.2
1996	26957	10878.5	16078.5	**0.92704181**	24990.3	10084.8	14905.4
1997	28979.8	11249.5	17730.3	**0.86445367**	25051.7	9724.7	15327.0
1998	33001.8	13237.3	19758.7	**0.83097889**	27423.8	10999.9	16419.1
1999	36625.1	14513.1	22112	**0.76283469**	27938.9	11071.1	16867.8
2000	42545.45	15562.45	26983	**0.72928821**	31027.9	11349.5	19678.4
2001	44405.2	16609.02	27796.18	**0.7108331**	31564.7	11806.2	19758.4
2002	47354.6	17280.26	30074.34	**0.68737971**	32550.6	11878.1	20672.5
2003	51799.33	18612.49	33186.84	**0.65789474**	34078.5	12245.1	21833.4
2004	56657.86	19936.81	36721.05	**0.62688064**	35517.7	12498.0	23019.7
2005	63033.03	21170.45	41862.58	**0.60164852**	37923.7	12737.2	25186.6
2006	69736.39	22682.3	47054.09	**0.56022409**	39068.0	12707.2	26360.8
2007	77944.68	24719.1	53225.58	**0.50689376**	39509.7	12530.0	26979.7
2008	93952.24	30671.4	63280.84	**0.45337081**	42595.2	13905.5	28689.7

Source: Economic Survey 2051/52 and 2066/67

ANNEX III

Private Consumption and Expenditure

Year	Private Consumption (Rs. In ten million)	Gross fixed capital formation(Rs. In ten
1974/75	1365.2	171.8
1975/76	1406	181.1
1976/77	1368.9	189.1
1977/78	1572.1	218.1
1978/79	1774.1	212.5
1979/80	1919.5	221.5
1981/81	2241.1	247.6
1982/82	2527.2	297.8
1983/83	2745.8	363.5
1983/84	3186	376.8
1984/85+	3597.7	575.7
1985/86	4478.2	552.2
1986/87	5074.6	709.8
1987/88	6240.7	793.1
1988/89	7017.3	849.0
1989/90	8631.4	903.4
1990/91	9777.1	1409.7
1991/92	12137.2	1894.5
1992/93	13340.2	2550.9
1993/94	15406.5	2865.2
1994/95	16644.3	3330.0
1995/96	19146.9	3845.7
1996/97	21636.4	4140.2
1997/98	23139.2	4280.2
1998/99	26494.4	4138.1
1999/00	28794.7	4688.8
2000/01	34898.9	6668.7
2001/02	37140.2	7245.0
2002/03	40046.8	8335.4
2003/04	41929	9422.6
2004/05	45953	10032.6
2005/06	52781.4	11802.3
2006/07	57691.1	12757.8
2007/08	64108.5	14722.5
2008/09 R	77276.2	16415.6
2009/00 P	91706.6	19450.0
Source: Various Economic Surveys		