

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Government expenditure is a term used to describe money that a government spends from local city councils to federal organizations. The motive of government expenditure is to build up peace and harmony in the society along with economic development or growth. The function of government expenditure is to play prominent role in reducing regional disparities, developing social overheads, creation of infrastructure, education and training, growth of capital goods industries, and promotion of other development agenda in developing economics and in a well advanced economy, the motive of government expenditure is to maintain smooth rate of economic growth in order to get the stabilization and stimulation of economic activities (Lekhi, 2018).

Development, in general, is understood as a stage of significant change in any system social, economic, political on behalf of people's well-being. Acharya (2012) defined economic growth as a dynamic process which must be backed by proactive bunches of strategies of investment and technological innovation in the different sectors of economy to achieve sustainable development. Hence, the study of government expenditure and economic development has been the area of study for researchers and concerned.

There are several different types of government expenditure, including the purchase and provision of goods and services, investments, and money transfers. Government requires expenditure to maintain recurrent cost like the administrative expenses for law and order, defense, to develop infrastructure like irrigation, power, roads, to provide social safety nets like health and education, to lunch disaster settlement programs; and many other expenses for welfare consideration. Goode (1984) defined government expenditure as a means to carry out essential functions of administrating justice, providing national defense and to supply certain additional goods and services that are advantageous to a society but are not supplied by private enterprises.

In a free market economy, not all basic needs are generally met by the private sector. Some goods or services may not be produced at all, while others may be not being

produced in enough quantity or at an affordable rate for all citizens. Much of government expenditure is involved in the creation and implementation of these goods and services. This type of government spending is referred to as government final consumption. Some examples of government final consumption include the creation and maintenance of the military, police, emergency, and firefighting organizations. These are funded by federal and regional governments, in order to provide for both the safety of the country from attack, and the safety of citizens from crime and disasters. Others examples include programs such as health care, food stamps, and housing assistance for disabled or severely low-income citizens. Public education and public transportation infrastructure are other main categories of this form of government expenditure. However, the size and area of government expenditure is to be appropriate and growth promoting unless the cases of welfare consideration.

The government expenditures and its effect on economic growth has been an issue of sustained interest for decades among economists and other concerned professionals. Generally, opponents of economic stimulus intervention feel that the economy should correct itself by market forces. However, supporters of stimulus efforts argue that government involvement can reduce the unnecessary suffering of citizens and prevent the unnecessary failure of businesses and the collapse of industries. Moreover, government performs two functions- protection and provisions of certain public goods to minimize risk of criminality, protect life and property, and the nation from external aggression (Nurudeen&Usman, 2010).

Some scholars argue that increase in government expenditure on socio-economic and physical infrastructures encourages economic growth, is endogenous growth theory. The general concept is that the government expenditure on health and education raise the productivity of labor and increase the growth of national output. Similarly, expenditure on infrastructure such as roads, irrigations, power, communication, etc., reduces production costs, increases private sector investment and profitability of firms, thus fosters economic growth. The findings of Jones (1995); Abdullah (2000); Al-Yousif (2000); Mehrotra and Peltonen (2005); Rajan and Sharma (2008) and Cooray (2009), depicted that the expansion of government expenditure contributes positively to economic growth. Similarly, Kharel (2012) got positive effects of capital expenditure on economic growth in Nepal. However, some scholar did not support the

claim that increasing government expenditure promotes economic growth, instead they assert that higher government expenditure may slowdown overall performance of the economy. The rationale is that, government may increase tax or borrowing to meet rising expenditure so that individual's willingness to work decreases. In the same token, higher profit tax tends to increase production cost and reduce investment expenditure with decrease in profitability of firms. Furthermore, increase in internal borrowing crowds-out the private sector, thus decrease private investment. Moreover, in a bid to score cheap popularity and ensure that they continue to remain in power, politicians and government officials sometimes increase expenditure and investment in unproductive projects or in goods that the private sector can produce more efficiently. The studies carried out by Laudau (1986); Barro (1991); Engen and Skinner (1992); Folster and Henrekson (2001) and Regmi (2007) proved that large government expenditure has negative impact on economic growth and development. Thus, government activity sometimes produces misallocation of resources and impedes the growth of national output.

There are two major opposing theories in economics concerning the relationship between government expenditure and economic growth. One the Keynesian macroeconomic theory which assumed that increased government expenditure tends to high aggregate demand and in turn rapid economic growth. The other, Wagnerian theory which contends that increase in national income causes more government expenditure with less efficiency (Dandan, 2011). Classical economists like J. B. Say, Alfred Marshall, A. C. Pigou, etc., were in the favor of balanced budget with minimum government expenditure and 'laissez faire' - the economy better if led by market forces than that of the state control (Shapiro, 2001). However, J. M. Keynes insisted on the increase in government budget especially at the time of depression so that the consumption patterns increases which results on overall economic growth (Ackley, 2007). Nevertheless, the present concern is much more with the governments' expenditure at aggregate rather than disaggregate level and its impact on economic growth. Prior to 1951, there was no formal government expenditure process in Nepal. During the Ranaregime (1847-1951), their main intention was to keep the people out of the scenes of country's fiscal position. All types of financial authorities were centralized.

Officials were registered in central offices and their salary, wages etc. were fixed from the capital by specifying explicitly in a Darbandia authorized by Khadga-Nishana.

After the political changes in 1951, government expenditure was presented every fiscal year (Khanal, 1988). Until 1959, the government expenditure was published in the Nepal Raj Patra- the Government Gazette of Nepal. Since 1959, it was first presented to a legislative body whenever one existed and then published. After the First Five-Year Plan was introduced in FY 1955/56, the government expenditure was divided into two parts: regular and development. In a speech delivered on July 13, 1990, the minister of finance presented a government expenditure with four major objectives: to direct the development programs by eliminating the existing anomalies and by making them more realistic and productive, as well as overseeing their consistency in directly benefiting the deprived community; to rationalize the role of the private sector and the facilities provided by the government; to minimize the increasing hardship faced by the common people; and to start a process of repaying the accumulated financial liabilities of the government. Because the planned expenditures for development were rarely met, the 1990 budget lowered development expenditures to make the plan more realistic.

Though, Nepal adopted massive liberalization policies from 1992 onwards, the fiscal austerity measures are opposite of what it would be. It means the government expenditure has been increasing tremendously mainly after the restoration of democracy in 1991 and adoption of liberalization policy in 1992. However, the increasing trend of government expenditure with economic development is seldom studied. According to Shrestha (2009), decades of Nepalese planning exercise and development efforts with increasing government expenditure, has been the question for its contribution to economic growth. Hence, the government expenditure and its contribution to economic development are to be looked upon in the context of Nepal.

1.2 Statement of the Problem

The relationship between government expenditure and economic growth is an important subject of analysis and debate, especially for least developing countries like Nepal because Nepal has been experiencing increasing levels of government expenditure over time. The general view is that government expenditure, notably on physical infrastructure or human capital, can be growth-enhancing although the financing of such expenditures, if associated with taxation might be growth-retarding because of disincentive effects. In Nepal, overall public expenditure is rapidly increasing. However, the study on impact of such expenditures on economic growth is

absent. This study fills this gap. Therefore, the major problem statement is to examine the causal relationship between government expenditure and economic growth in Nepal at aggregate level. In this backdrop, the following research questions have been answered:

- What are the pattern and trends of government expenditure in Nepal?
- What is the effects of government expenditures on per capita income in Nepal?

1.3 Objectives of the Study

The general objective of this study is to examine link between government expenditure and economic growth in Nepal. However, the specific objectives are:

- To analyze the pattern and trends of government expenditures in Nepal, and
- To explore the effects of government expenditures on per capita income in Nepal.

1.4 Hypotheses of the Study

Considering the objectives of the study, it tests the following hypotheses:

i. H_0 : There is no relationship between government recurrent expenditure and per capita income in Nepal.

H_1 : Recurrent expenditure stimulates per capita income in Nepal.

ii. H_0 : There is no relationship between government capital expenditure and per capita income in Nepal.

H_1 : Government capital expenditure stimulates per capita income in Nepal.

1.5 Significance of the Study

The study gains its significance from the assumption that fiscal policy is on the top of the economic policies, which some researchers hold responsible for a lot of economic successes and failures. Moreover, the Nepalese budget has been suffering from structural and chronic deficit coupled with deterioration in savings and investments rates and a high level of public debt. Recurrent expenditures are sky climbing whereas capital expenditures are falling rapidly. In this context, this study discloses either both regular and development expenditure is contributing to economic growth or not. The results of the study would guide fiscal policy makers to reallocate scarce budgetary

resources toward productive sectors. Besides, historical trend and composition of budgetary classification reveals past ups and downs and policy shifts regards to overall fiscal policy. Further, historical data trends gathers and tie scattered information within single volume.

1.6 Limitations of Study

The major limitations of the study are:

- i. The study has used secondary data only.
- ii. This study is only confined with the period of FY 2004/05 to FY2016/17.
- iii. It is based on annual time series data.
- iv. This research study has taken only 13 observations.

1.7 Organization of the Study

The present study consists of five chapters to make it more systematic. The very beginning part of the study consists of preliminaries i.e. the title and others. The first chapter deals with background, statement of the problem, research questions, and objectives of the study, hypothesis of the study, rationale of the study, study limitations, and organization of the study.

The second chapter presents theoretical framework of the study. This chapter also deals with an extensive review of literature regarding international and national context covering both country case studies as well as cross-country studies.

The third chapter explains research methodology. It includes research design, sample period, sources of data, sample size, and estimation procedures along with detail discussion on specification of models and definition of variables.

The fourth chapter describes overall historical trends of economic growth in Nepal. This chapter also explains complete historical story of government expenditures and their classifications. Nevertheless, this chapter explains both dependent and explanatory variables utilizing descriptive statistics which are used in the empirical modeling. It is devoted to empirical analysis and it explores the empirical relationship between government expenditure and economic growth in Nepal.

The fifth chapter presents major findings, conclusions, and recommendations of the study. References and appendices are included at the end of the study.

CHAPTER II

LITERATURE REVIEW

2.1 Theoretical Development

A point of debate among economists is whether the public sector should or should not intervene to control the short-term fluctuations in economic activity. Classical and Keynesian economists have opposite views on such an approach. While classical economists believed that market forces were able to quickly bring economies to a long-run equilibrium, through adjustments in the labor market, the Keynesian school (Keynes, 1936) supports the fallibility of self-regulatory mechanisms, precisely because of the labor market rigidities. For this reason, the Keynesians evoke fiscal policies to support the economy during recession periods.

The link between fiscal policy and economic growth has raised a great deal of debate at both theoretical and empirical level. Public expenditure and national income have been the focus of public finance, since the amount of public expenditure has been increasing over time in almost all countries in the world.

Governments need to know the causal relationship between these two variables since the government expenditure play a significant role in the development of a country. The implication is that an increase in government expenditure could yield a positive or negative effect in the growth of a country's economy by increasing the national income.

From a theoretical standpoint, within the neoclassical framework, government policy, and particularly fiscal policy, has no role in determining the long-run economic growth rate, since this is determined by the exogenous population growth and technological progress rates. Due to the fact that neoclassical growth models omit those factors that explain long-run growth, sometimes the former are viewed as not particularly or, even worse, quite inadequate.

The explosion of works on endogenous growth, developed mainly since the early 1990s, has generated a number of models linking public spending to the economy's long term growth rate. In endogenous growth models (Romer, 1986), the production function is specified without diminishing returns. This implies that anything that affects the level of technology also affects the long-run per capita growth rate. From a

fiscal policy perspective, this means that the growth effects of distortionary tax wedges are far greater than in neoclassical growth models. Thus, fiscal policies can be used to enhance efficient allocation of resources by correcting market failures and encourage higher human and physical capital productivity.

Barro (1991) offered a particularly simple version of endogenous growth models. His work, demonstrate to be a breaking point in the literature on the evolution of the role of public spending in growth theory. By allowing for productive public spending, i.e. public spending that increases private capital marginal productivity (infrastructures or property rights), Barro identifies the existence of a positive correlation between government spending and long-run economic growth. In this work, government spending in terms of public services is considered complementary to private production.

Despite its apparent importance, the effects of public expenditure composition on growth have been rarely investigated, apart from few notable exceptions. These include theoretical works such as Barro (1991), who show that when a government increases public consumption (utility enhancing) while reducing public spending (producing enhancing), growth rates fall regardless of the level of total spending.

2.1.1 Wagner Hypothesis

Wagner (1939) examined that relative growth of the government sector is an intrinsic characteristic of industrializing economies. His hypothesis of increasing state activity holds that as per capita income and output increases in the industrial nations, the government of these nations necessarily grows as a proportion to total economic activity. Wagner observed the public sector growth of a number of European countries, United States, and Japan. He has divided government expenditure into two parts: (a) expenditure for internal and external security, (b) culture and welfare which implies health, transport, education, banking and the like. Expenditure for internal security would increase in a growing economy as the nature of use of force by the state from simple hostility to prevention of attack and use of sophisticated weapons.

Similarly, the expenditure for internal security would increase due to greater friction between economic units and urban people. The growth of government expenditure on education, health and welfare services was explained by Wagner in terms of their income elasticity of demand. For him, these services represents superior or income

elastic wants, thus, the income in the economy rises, real GDP augments, and public expenditure on these sector elevate more than proportion, which would account for the rising ratio of government expenditure to GDP.

Wagener's hypothesis is widely criticized by noted economists such as Allan Peacock and Jack Wiseman. According to them, it is not a comprehensive analysis, ignores the influences of war, and it lacks inter-disciplinary relationship. Wagner's law seems to have been intended to apply only in industrial countries but that can't have wider application in case of developing countries (Goode, 1984).

2.1.2 Peacock-Wiseman Hypothesis

This hypothesis of the growth of government expenditure was developed by Peacock and Jack Wiseman in 1961 by analyzing the British time series data during the period 1890-1955 on the government expenditure. This hypothesis, generally known as 'displacement effect'- is probably one of the best known analyses of the time series of government expenditure. According to this hypothesis, government expenditure does not follow any smooth and continuous trend but it increase in step-like manner or jerks. During these phase, some social or other disturbance takes place which shows the need of increased expenditure as the existing government revenue could not meet the situation (Singh, 2018).

The Peacock-Wiseman hypothesis is made on three separate concepts, they are: displacement effect, inspection effect, and concentration effect, (Lekhi, 2018). According to displacement effect, government expenditure is displaced upward from private expenditure to government expenditure for the period of crisis because government expenditure collected from taxes alone cannot be sufficient. Hence, government borrows from private sector to substantiate the required expenses. It occurs during war, famine, natural calamities, conflict, transition process etc.

After the end of social disturbance, the government expenditures do not increase as before however the people are habitual of carrying a heavier tax burden than it previously had. In this way, the public expenditure and revenue get stabilized at a new level and until another disturbance occurs to cause displacement effect.

The concentration effect refers to the apparent tendency for central government economic activity to grow faster than that of the state of social disturbances. The government enters into many economic activities and diverts the government expenditure for development activities. In fact, concentration effect is closely related with the political set up of the country.

2.1.3 Colin Clark Hypothesis

The growth of government expenditure advanced by Colin Clark in his 'Public Finance and Changes in the Value of Money' is known as the 'Critical-Limit hypothesis' which is about tax tolerance. He observed the inter-war data of several western countries and opined that when the share of the government sector exceeds 25 percent of the total economic activity in the economy, inflation occurs even in balanced budget. To support statement, Colin argues that when the government share of aggregate economic activity reaches the critical limit of 25 percent, the producers are also affected by reduced incentive due to high tax incidence, and thus their productivity suffers. People become less resistance to various inflationary means of financing government expenditure which in turn reduces the aggregate supply. On the other hand, increased purchasing power tends to expand aggregate effective demand.

Inflation occurs from maladjustment between demand and supply under condition of high employment of resources. The basic drawback of Colin Clark's hypothesis is of choice of a definite limit of 25 percent as a critical limit (Clark, 1945).

2.1.4 Baumol's Hypothesis (Productivity Lag Hypothesis)

The hypothesis developed by W. J. Baumol which is also called productivity lag hypothesis and it is also known as 'Baumol's Disease'. The hypothesis is based on productivity differential of private and public sector. When the economy is not automatically stabilized, then expansion in government expenditure is required. It is necessary to keep the same output level in the non-productive public sector by increasing tremendous labor input. As a result public sector expansion takes place at the cost of private sector. It follows that productivity gains are less likely to be experienced in the public sector than private sector. Hence there is inherently greater labor intensity in the public sector as compared with private sector. Baumol has given two causes that create productivity lag. They are: (a) technical barriers opposing in the public sector are higher than in the private sectors (b) institutional barriers are greater in public sector in comparisons to the private sector (Baumol, 1972).

2.1.5 The Armey Curve

The economic growth provides different methods and tools to evaluate the role of the government into the economic process. One of these is the Armey Curve (1995), which takes its name from the Republican Senator Richard Armey, who first

popularized it during a debate on the effects of public spending. This Curve correlates government expenditure and GDP growth rate, and has an inverse U shape. It is based on the fundamental law of diminishing returns, highlighting the government involvement's proportion into the economy and the real GDP growth rate. Armeij suggested the idea that, in absence of a public sector, the economy produces a very low output (theoretically equal to zero). At low levels of public expenditure, the government cannot guarantee it will respect private contracts and the property rights protection, thus determining a very low level of growth. Conversely, with very high levels of public expenditure, the citizens have not sufficient incentives to invest and produce because the amount of taxation necessary to finance this level of expenditure is too high. Once again, the growth appears to be extremely low. It is reasonable to assume that, starting with low levels, an increase of public expenditure is beneficial to growth. Similarly, starting with an extremely high level of expenditure and subsequently decreasing it leads to an increased GDP. However, those economic systems characterized by a mix of private and public decisions on the resource allocation display a higher and expected level of output (Barro, 1991).

Many models that explain why an excess of public expenditure can be negative for growth can be found in the literature. On the one hand, taxation generates a distortion in the economic agent behavior, and therefore reduces efficiency. When spending to finance expenditures is high, taxation will be high as well, and distortion will be greater. On the other hand, from a dynamic point of view, a high tax burden on capital and labor income reduces growth and discourages physical and human capital accumulation. Furthermore, public spending can be beneficial to growth if it is complementary to private spending, while if the latter replaces the former, private spending will slow down the growth rate.

2.1.6 Stanley Please Hypothesis

This Stanley Please Hypothesis is based on the basis of say's law of market or say's law of public expenditure which is considered as relevant to the development countries. Under this hypothesis, marginal increment of tax revenue tends to increase the public expenditure more than public saving and investment which is known as the "Please effect". Public expenditure especially for consumption is driven by available resources rather than the other way around. According to Stanley, private saving is not enough for development finance. To raise the public saving curtailing the

unnecessary public consumption through the means of taxation is considered to be significant. But in some developed countries like India, Sri Lanka even though tax revenue is increasing, public saving or investment is not so significant which is due to the increase in expenditure in official's salary, consumer subsidies, and internal security etc. Therefore, there exist unnecessary rise in expenditure. In this case, Please asked the question that increasing government saving by means of taxation is reality or mirage?

Finally, the author found that increase in government saving by means of taxation leads to increase the government consumption, therefore increase in national saving by taxation is just a mirage. Thus, Please effect is very relevant especially for developing countries.

2.1.7 Samuelson Approach

Samuelson developed a pure theory of public expenditure, which aimed for the Optimal resource allocation in an economy in which there are two types of goods, private and public. The theory takes into account both allocation & distribution facets of the problem and thus presents a unified system of general equilibrium (Samuelson, 1955). Samuelson considers the optimal choice between private consumption good like team (X), and public consumption good like national defense (G), in a two-man economy (A&B). Since X is a normal private good, which is divisible in consumption; that is amount of X consumed by A cannot be consumed by B, & conversely. This can formally be stated by the condition that $X_a + X_b = X$ where X_a & X_b represent the amount of private good X respectively consumed by A & B.

Since G is pure public good, it is not divisible in consumption. The amount of g is equally available for consumption by each person; the total amount of G is in a sense consumed equally by each. This can be stated formally by the condition that: $G_a = G_b = G$, where G_a & G_b represent the amount of Consumed by A & B respectively. Samuelson further assumes that the tastes of A & B are constant and society's production possibility frontier as given. The condition needed for efficiency in a world of private and public good can be stated as follows: For efficiency between private goods,

$$MRS_A = MRS_B = MRT$$

For efficiency between private good and public good,

$$MRS_A + MRS_B = MRT$$

Where, MRT is marginal rate of transformation between X & G and MRS_A & MRS_B are the marginal rate of substitution between X & G for individuals A & B respectively. In general case for an economy characterized by the existence of public goods, private goods and many individuals, the condition for the optimal supply of public goods. Therefore, that the sum of the marginal rate of substitution must equal the marginal rate of transformation.

$$\sum_{i=1}^n \text{MRS}_{ijk} = \text{MRT}_{jk} \quad i=1, \dots, n \text{ (the number of individual consumers)}$$

$$i=1 \text{ and } j, k=1, \dots, m \text{ (the number of commodities)}$$

So, the Samuelson's model for the optimum supply of pure public good is a general equilibrium model which determines the existence, uniqueness and stability of a set equilibrium prices of public & private goods.

2.1.8 Classical Views on Public Expenditure

Classical economists developed esoteric argument to justify the role of government and thus defined the areas of public wants. They were against the heavy role of government because they believed on full employment. The classical economists were the followers of the doctrine of *lassies faire*. According to them; economics function best under private initiative & competitive conditions rather than under state control.

Their arguments were designed to restrain government interference in private sector because government has viewed with apprehension & fear hence, was suspected of corruption. The position of classical economists can be epitomized "The less government the better" (Khanal, 1998).

Musgrave (1959) has given to raise the large & growing literature on the theory of public goods. According to Froyen, classical economists mistrusted government and stressed the harmony of individual & national interest when the market was left unfettered by government regulations, except those necessary to see that the market remained competitive (Froyen, 2003).

2.1.9 Keynesian views on Public Expenditure

The foundation of Keynesian theory is the failure of classical theory. When the former asserted that the competitive process of free enterprise economy does not necessarily ensure an effective demand such as to absorb all productive resources at full employment. Supply does not operate its own demand economy may attain

equilibrium at underemployment level. According to Keynes lack of spending is basic causes of depression. The decision to save in the household sector did not necessarily lead to a decision to invest and the government had to step up its expenditure in order to "prime to pump" of the economy. At the level of income corresponding to full employment, the gap between total income and total consumption is so high in a mature economy that private investment is inadequate to fill it. If unemployment is to be avoided, the gap must be filled either by government expenditure or by increasing the propensity to consume. To show the positive effect of public spending. Keynes uses the concept of government. The model is:

$$Y=C+I+G\dots\dots\dots (1)$$

Where Y= Aggregate national income in three sector economy

C= Consumption expenditure

I= Investment expenditure

G= Government expenditure

$$C= C_a+bY\dots\dots\dots(2)$$

Where C_a = autonomous consumption

b = marginal propensity to consume and $0 \leq b \leq 1$

$$I = I \dots\dots\dots (3)$$

$$G = G \dots\dots\dots (4)$$

From equation 1, 2, 3 & 4:

$$Y= C_a+bY+I+G$$

$$(1-b) Y= C_a+I+G$$

$$Y = \frac{1}{1-b} (C_a+I+G)$$

$$1-b$$

$$dY = \frac{1}{1-b} dG$$

$$1-b$$

And $dY = \frac{1}{1-b} dG$ which is government expenditure multiplier.

$$dG/ 1-b$$

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In Keynesian view budget deficit is positive instrument to shore up aggregate income to stimulate all vectors to spend more. At the time of depression, Keynes favors higher public expenditure through deficit financing which can increase effective demand. And the period of inflation, better to reduce public expenditure & also impose heavy tax through surplus budget.

2.1.10 Economic Base Theory

Economic base theory suppose that all local level economic relevant activities can be labelled as basic or non basic. Firms that sale stuff to both local and an export market essentially, be allocated to one of these areas or some means of assigning their employment to each sector must be employed. Ways of allocating firms to basic and non basic sectors is debated in the different techniques outlined below.

Why the difference between basic and non basic is important? Economic base theory profess that the ways of strengthening and improving the local economy is to establish and expand the basic sector. The basic sector is therefore determined as the "engine" or "wheel" of the local economy. The economic base technique is on a rely on simple causal model that asserts the basic sector is the basic reason of local economic growth, that it is the economic base of the local economy. Economic base theory also points that the local economy is at its best when it promotes those economic sectors that are not linked to the local economy. By establishing firms that depends mainly on external markets, the local economy offers a protective shell from the economic downfall since, it is believed, that these external markets will still be powerful even if the local economy suffers from serious issues. In opposite to that, a local economy completely rely upon local factors will have immense problem responding to stagnant economy.

2.1.11The Solow Model

The theory is based on neo-classical assumptions and assumes a multifactor production function including labor and capital which are assumed to be close substitutes. It assumes that the production function increases with each input and input bears diminishing marginal return. When zero units of input are used for either K or L, then nothing is produced. Also the production function exhibits constant returns to scale. The Solow Models (1956, 1957) consist of a production function which is given by: $Y = F(K, L)$.

Where, Y is output, K is capital and L is labor. Capital stocks include plant and machinery, bridges, factories and labor represents economically active population. Consequently, for an economy to grow based on this model there must be an increment in the stocks of capital through investment and supply of labor through population growth. Investment on capital stock depends on savings and capital inflows i.e. such as external debt, grants, foreign direct investment, remittances, can be used as substitute or to increase the domestic fund hence increase in capital funds. Solow model can be augmented adding extra explanatory variables into the equation. This study flow augmented Solow type of model examining core messages of the economic base theory.

2.1.12 Harrod-Domar Growth Theory

Harrod-Domar growth model is the integration between classical and Keynesian income determination model with dynamic analysis in them. This model is considered as highly unstable model. Stability under this model is like Razor's Edge. This model shows dual effect of investment both demand side and supply side. The demand side of economy is income generating force which is based on Keynesian school. On the other hand, capacity generating force which is supply side and based on classical school. The growth rate of an economy depends of growth rate of capital formation which also depends on growth rates of saving or marginal propensity of consume. Higher the growth rate of saving leads the higher rate of capital formation and higher economic growth.

2.2 Empirical Review

2.2.1 International Context

There are several papers looking at the government expenditure and economic growth with economic development in international context. This section reviews some of these methods and findings.

Taylor (1961) discussed that significance of public expenditure stressed the expansion of government had often been characterized a movement in the direction of socialism that government obviously tended to socialize through public expenditure. It helped to correct the disorder that had created by cyclical fluctuation, which mostly appeared during the depression. Public works projects and landing functions during the depression were instituted to cushion the effects of the worst features of capitalism. Its

recurrent tendency to break down 'pump-priming' the injection of public expenditure to fill a void left by deficient private expenditure in recession has as its goal the prevention of serious break down.

Abdullah (1993) examined the relationship between agriculture exports and growth in Malaysian agricultural sector and pattern of government expenditure. Annual observations were used by the author for the period of 1960 to 1989. Vector Autoregressive (VAR) model was used for the results. According to the results, there was still a very small use of capital in agriculture sector. A large amount of capital should be used for the growth of this sector. The results showed that there was positive relationship between agriculture export and economic growth and government expenditure has significant positive impact on agriculture productivity. It concluded that increase in the agricultural export would help to maintain a large contribution in the Malaysian economy.

Echevarri and Cristina (1997) studied that the relation between income levels and rates of growth as well as role of government were explained as effective changes in sectoral composition driven by different income elasticity's of premises, manufacturing and services. They used dynamic general equilibrium methods to interrogate the connection between sectoral component and achievement. This study had proven that growth was influenced by sectoral composition but in the opposite order. The study found that role government expenditure has significant positive impact on various sector such as primary, secondary and service sector of the economy.

Henneberry, Khan, and Piewthongngam (2000) examined the relationship among Pakistan's agriculture sector and industrial sector and impact of government expenditure. Authors took Pakistan because Pakistan was the semi-industrialize country and also its economy heavily depended on agriculture. Annual observations of time series were used. According to the results, these sectors were complementary while industry was getting more benefits from agriculture. Study found that government expenditure has significant positive impact on agriculture and semi-industry. The impact of government expenditure on industry sector is more than impact on agriculture sector. It is concluded that government expenditure more effective industrial sector and less effective agriculture. It also recommended that

government should promote agriculture which ultimately boost up other sector of the Pakistan.

Tang (2002) studied the inter sector integration in Malaysian economic transition and change. He used time series data in this study for the period of 1960 to 1998. According to the results there was no long run stability exist between these sectors. Manufacturing output was influenced by the agriculture sector in the short run but the agriculture sector affects the services sector output negatively. There was a very limited influence of manufacturing sector on the output of agriculture sector. The study concluded that there was a need of growth in agriculture sector because any increase in this sector had sizeable and positive effect on the growth of manufacturing sector.

Lopez and Miller (2007) used the sample data of 29 middle income countries for the period 1980-2004. The main sample were taken from 10 middle income countries of Latin America, six countries of East Asia, three European countries and six countries from the Middle East and Northern Africa and the data from other rest of the world. The objective of their study was to find out if the reallocation of government expenditure from private to public goods can be sustained over time promotes faster economic growth. The other issues of their study were budget constraint and the interpretation of the effects of the share of expenditure in public goods, the efficiency of government spending and the lagged effects of government expenditure. They mainly relied upon the simultaneous equation system of two equations for empirical analysis. The two key endogenous variables on which they focused on were the rate of GDP growth and the share of expenditures in public goods in total government expenditures. They used the variety of control variables including macroeconomic variables. Macro-fiscal variables were government consumption expenditures over GDP, taxes over GDP, and total investment over GDP. They also estimated expended versions of the benchmark model which use instrumental variables to incorporate some of them as endogenous variables in an extended system of equation.

The study carried out by Lopez and Miller found that government's provision of public goods and services contribute to reduce the impact of market imperfections was a key source of economic growth. Using the sensitivity analysis, they found that there was positive relationship of government expenditure and public goods. Further, they show that a 10 percent permanent increase of the share of public goods in total

government expenditures raise the immediate per capita growth rate from 2.2 percent to 2.9 percent once the feedback effects were accounted for. Similarly, Lopez and Galinato (2007) used the detailed rural data for certain countries in Latin America and shown increased rural per capita income and share of public goods by the increase in rural government expenditure.

Schroeder (2007) reviewed the rationales for and techniques available to local government financial managers for forecasting revenues and expenditures in developing and transition economics. It illustrated how the techniques can be used and buttresses that discussion with illustrations of how they are actually used. The World Bank studied on the role of public finance in development in 1988. One aspect of sound public finance is the prudent control of fiscal deficit. The report has underlined some general conclusion on public spending in developing and industrial countries (World Bank). In most developing countries the share of central government spending in gross national product (GNP) remains below that of the industrial countries central government spending as a percentage of GNP is higher in low and middle income countries than in the industrial countries. Next, in developing countries the public sector trends to play a greater role as an investor than in industrial countries. Another is in most developing countries state owned enterprises account for important shares both of total public spending and gross domestic product (GDP). The state and local government appear in general to have smaller role in developing countries than in industrial countries.

Nurudeen and Usman (2010) studied that the government expenditure and economic growth in Nigeria was positive. The objective of their study was to find out if the government expenditure on different headings was growth promoting in the context of Nigeria. They used the ordinary least square method accompanied with co-integration and error correction model to analyze the relationship between government expenditure and economic growth. Their framework for the study was on the basis of Keynesian and endogenous growth models. The model was economic growth (GRY) as a function of various levels and components of government expenditure that included total capital expenditure (TCAP), total recurrent expenditure (TREC), expenditures on defense (DEF), agriculture (AGR), transport and communication (TRACO), education (EDU), and health (HEA). Their result revealed that government total capital expenditure, total recurrent expenditures, and government expenditure on

education as being negative effect on economic growth. On the contrary, rising government expenditure on transport and communication, and health caused an increase in economic growth. They suggested for the proper use of capital and recurrent expenditure to raise the nation's production capacity and accelerate economic growth. Further, they concluded with the importance of government investment in transport and communication to reduce the business cost and increase profitability of firms and importance of investment in health and education for the development of capable manpower.

Arpaia and Turrini (2008) studied the relationship between government expenditure and economic growth. The objective of their study was to find out if government expenditure and potential output linked by a stable long-run relationship, and long-run elasticity between government expenditure and potential GDP greater than one as predicted by Wagner law. The data were taken from 15 EU countries for the period 1970-2003. They used panel cointegration and error correction method to show the long-run stability and short-term adjustment.

Their results showed that the assumption of a common long-run elasticity was accepted and such elasticity slightly below the unity. Country-specific short-term elasticity implied on average a speed of adjustment of government expenditure to potential output of about three years. They found that the estimation method matters substantially for the measurement of the relation between government expenditure and potential output. Further, they found the average of individual country-level estimates would have yielded a long-run elasticity of government expenditure well above unity.

Abu-Bader and Abu-Qarn (2003) used variance decomposition and multivariate cointegration method to examine the causal relationship between government expenditure and economic growth for Egypt, Israel, and Syria. In causality test within the tri-variant framework (that include share of government civilian expenditure in GDP, military burden, and economic growth) demonstrated that military burden had a negative impact on economic growth in the three countries. Moreover, in the bivariate framework, the author examined a bi-direction a long run negative relationship between government spending and economic growth. However, the author found positive effect on civilian government expenditure and economic growth for both in Egypt and Israel.

Komain and Brahasrene (2007) looked upon the relation between government expenditure and economic growth in Thailand applying Granger causality test. Their findings show that government expenditures and economic growth were not cointegrated. However, the results indicated a unidirectional relationship as causality runs only from government expenditure to growth. Finally, the results illustrated a significant positive effect of government spending on economic growth.

Olugbenga and Owoye (2007) studied the association between government expenditure and economic growth for a group of 30 OECD countries during the period 1970-2005. They found the causal relationship between government expenditure and economic growth. The study applied the time series OLS regression model. Study found that, government expenditure has significant positive impact on economic growth and development. It means government expenditure reduces the poverty and improves the living standard of the people.

Gregoriou and Ghosh (2007) applied the heterogeneous panel data to find the impact of government expenditure on economic growth. Employing the GMM technique, the authors discovered that countries with large government expenditure tended to experience higher growth, but the effect varies from one country to another. The study found that most of the country has significant positive impact government expenditure on GDP in different countries.

Rajan and Sharma (2008) studied the effect government development expenditure on economic growth for the period 1950-2007 in India. The study applied OLS regression model. The dependent variable is GDP of India and development expenditure is independent variable. Study applied time series ADF test for conversion non stationary level data into stationary in first difference. They found the significant positive impact of government expenditure on economic growth. It recommended that government development sector expenditure and current expenditure should be used in productive sector so that, it boost up other sector and promote productivity and reduce the inflation of India.

Easterly and Robelo (1993) studied the regularities relating fiscal policy variables and the level of development and the rate of growth. The objective of their research was to detect the fiscal policy variables on the level of development and the rate of growth on subsequent sector. The regression analysis was done on per capita growth on

public investment with agriculture, education, health, housing and urban infrastructure, transport and communication, and industry and mining. They employed historical data and cross-section data from 1970-1988 with 125 different countries of the world.

The findings of Easterly and Robelo depicted strong relation between development level and fiscal structure that the poor countries relied heavily on international taxes, while income taxes were only important in developed countries. The other finding of them depicted the positive association of government investment on health, education, housing and urban infrastructure, transport and communication, and industry and mining.

Cooray (2009) investigated the role of the government in economic growth by extending the neo-classical production function to incorporate two dimension of the government- a size and a quantity dimension. His research was entitled “Government Expenditure, Governance, and Economic Growth”. The size and quantity augmented model (the Solow augmented Mankiw-Romer-Weil), where size was measured by government expenditure and quality by governance was tested on a cross section of 71 economies developed, developing, and transition. Estimation was also carried out on the sample by income distribution. The data used for the estimation covered the period 1996-2003. In order to correct for endogeneity and ensure that the results were robust, dummy variables and the generalized method of moments are used.

Coorey (2009) investigated that both increased public spending and good governance can improve growth outcomes. He got the evidence on and interaction between government expenditure and governance made more effective use of public expenditure. Further, his study noticed the human capital as being one of the major components that caused significant positive impact on economic growth. The empirical results indicated that both the size and quality of the government were important for economic growth. He concluded that countries should promote good governance to use public expenditure efficiently, thus fosters the economic growth.

Hsieh and Lai (1994) attempted to untangle the nature of the relationship between the growth rate and government expenditures by examining the inter-temporal interaction among the growth rate in per capita real GDP, the share of government spending, and the ratio of private investment to GDP. The title of their study was “Government

Spending and Economic Growth: The G-7 Experience” They conducted the multivariate time series analysis with particular attention to causal patterns and the shape of impulse-response function in the context of vector auto-regression. The analysis was based on the historical data for the group of seven countries.

Their findings did not show consistent dynamic behavioral pattern neither across countries, nor across time. Their empirical result showed no consistent evidence that government spending can increase per capita output growth. Looking at the whole scenario depicts the mixed response. Within shorter lags, government spending appeared to slow down economic growth. For, instance, five years after the shock, the effect of government expenditure was negative in five of the seven countries other than the UK and the USA. They concluded that that there was not any consistent evidence that government spending can increase per capita output growth.

Alm and Rogers (2011) studied the effects of taxation and expenditure policies on state economic growth taking data for the period of 1947-1997 for the 48 contiguous states. The study carried out by them was entitled “Do State Fiscal Policies Affect State Economic Growth?” The objective of their study was to find the factor affecting economic growth. They applied orthogonal distance regression to deal with the likely presence of measurement error in many of the variables.

Their result indicated that the correlation between state and local taxation policies was often statistically significant but also quite sensitive to the specific regressor set and time period; in contrast, the effects of expenditure policies were much more consistent. Further, they got moderately strong evidence that a state’s political orientation had consistent and measurable effects on economic growth and a more “conservative” political orientation associated with lower rate of economic growth. They also noticed the importance of error measurement via orthogonal distance regression estimation. In fact, their estimation results did not supported conditional convergence in state per capita income.

2.2.2 National Context

Singh (2008) analyzed the consistency between targeted growth and fiscal policy of Nepal taking the time series data for the period of mid-July 1954 to mid-July 1974. The author also analyzed the trend of expenditure and revenue during the same period. He found that there was substantial change in government expenditure ratio to

GDP which was just 2.44 percent in the FY 1954/55 and increased up to 10.57 percent in the FY 1974/75; development expenditure to GDP ratio increased from 4.07 percent in FY 1965/66 to 6.75 percent in FY 1974/75 and the growth rate of regular expenditure was quite lower recording 2.13 percent in FY 1965/66 to 3.82 percent in FY 1974/75. On the revenue side, tax revenue to GDP ratio was 1.27 percent in FY 1954/55 which increased up to 6 percent in FY 1974/75.

Integrated Development System (1987) carried out study for the period of mid July 1974 to mid-July 1984. The main objective of their study was to look upon if the government expenditure impact on GDP. Their study showed that government expenditure grown up rapidly in relation to the country's GDP. In 1974 the share of government expenditure in GDP was only 9.13 percent which reached 20.11 percent in 1984. The expenditure on economic services in relation to GDP registered the highest each year during the study period. Its share on GDP was just about 0.2 percent in 1974 and increased about to 1.21 percent in 1984. The share of regular expenditure increased greatly than the increase in development expenditure. The share of regular expenditure to total expenditure was about 15.41 percent in 1979 and noticed high recording about 59.24 percent in 1984. They underscored the importance of capital expenditure if the government desire to achieve likely economic growth.

Khanal (1988) analyzed the growth, pattern, and impact of public expenditure on economic growth. The main objective of his study was to find out 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. His study was mainly based on annual time series data from mid July 1965 to mid-July 1981.

During his study period, the result depicted that the public expenditure increased by 8.42 percent per annum whereas the GDP increased by only 2.04 percent during the same period. The regular expenditure, development expenditure, and public investment expenditure increased by the 8.66 percent, 8.59 percent and 9.08 percent, respectively. Public expenditure share was 5.5 percent in 1966, whereas it increased to 15 percent in 1981. His study disclosed the fact that the major expansion of the public expenditure increased only after 1970. The elasticity coefficient for total expenditure, development expenditure, economic services, and social services with

respect to per capita income was found more than unity. However, the elasticity coefficient for the public investment was noticed less than unity. The author concluded that his findings supported Wagner's hypothesis.

Basyal (1994) analyzed about growth of development expenditure of Nepal in different plan periods and sources of financing development expenditure. The objective of his study was to find the sources of government financing and the impact of government expenditure on economic growth.

The author noticed the dominance of foreign capital in Nepal's plan financing. During the fifth plan (1976 to 1980), sixth plan (1981 to 1985), and seventh plan (1986 to 1990); the foreign grants and loans financed the total development expenditure by the extent of 47.3 percent, 48.1 percent, and 59.5 percent respectively. His study showed the increasing trend of foreign dependency and decreasing share of revenue to GDP. Further, he concluded that the expenditure made on agriculture sector was not friendly for employment generation. The increasing expenditure on agriculture sector was found vague (expenditure without increase in agriculture sector contribution to GDP). His study noticed the increasing foreign aid dependency as being major hurdle for economic growth.

Regmi (2007) studied the relationship between fiscal policy and economic growth in Nepal. The objective of his study was to investigate the impact of fiscal policy on economic growth in Nepal. He took the annual time series data 1981-2003. The endogenous growth model with some minor modification was applied in his study. He took economic growth as dependent variable and productive government expenditure (expenditure on health, education, and economic services), unproductive government expenditure (total consumption less recurrent expenditure on health, education, and economic services), distortionary tax revenue, indirect tax revenue, non-tax revenue, budget deficit, total revenue, and private investment as independent variables. He used ordinary least squares method to find the impact of fiscal policy variables to economic growth.

The study of Regmi found negative effect of all the fiscal policy variables including distortionary taxes, productive expenditure, non-tax revenues, private investment and budget deficit on economic growth. But unproductive expenditure and non-distortionary taxes did not have effect on economic growth. He concluded that the

inefficiency associated with the use of public fund as being the cause of significant negative effect of productive investment in economic growth. Further, he suggested the revision of public expenditure to expedite the pace of economic growth in Nepal.

Kharel (2012) developed a macroeconomic forecasting model focusing on fiscal policy and economic growth in Nepal. The structure of model comprised of two blocks-real sector and fiscal sector. Real sector was comprised with two behavioral equations and three identities; public sector block contains four behavioral and six identities - a total of 14 equations (6 behavioral equations and 8 identities). He used annual time series data from mid-July 1992 to mid-July 2009 to estimate the model and provide out-sample forecasts for FY 2010/11 to 2012/13 in order to evaluate the plan performance.

The empirical evidence suggested that fiscal policy, particularly governments' capital expenditure affects economic growth positively and also crowds-in private investment. However, there existed trade-off between fiscal stability and high level of economic growth as the policy goal of achieving both objectives seem to be unattainable. Positive effect of fiscal policy to economic growth and crowd-out effect of public investment to private investment are the main findings of his study.

Sharma (1999) studied the problems and prospects of development budget taking data from mid July 1979 to mid-July 1994. He got the increasing trend of recurrent expenditure higher than the increasing trend of development expenditure as being major hurdle for economic growth. World Bank (2000) showed the inefficiency and mismanagement on government spending. The deficiencies in the budget planning, resource allocation, and expenditure management process was pointed a major factor contributing to low productivity. Upreti (2002) noticed resource gap as problem of Nepalese economic development and suggested for optimal use of scarce resources.

Pyakuryal (2004) pointed that Nepalese economy lost productive capacity to respond to sustained growth. Gyanwaly (2004) found higher deficit budget (that influence increase in demand of foreign goods due to supply bottlenecks in home country) as being problem of Nepalese economy. Khanal and Kanel (2005) noticed decreasing trend of development expenditure. Further, they pointed that the low level of resources allocated to poverty related programs and decreasing expenditure on agriculture sector as being major problems of government expenditure. The

aforementioned reviews depict slow process of structural change, low rate of capital formation, higher increasing trend of recurrent expenditure than the increasing trend of development expenditure, inefficiency of bureaucrats, conflict, and political instability as being problems of economic growth in Nepal.

Kharel and Pokhrel (2012) investigated the role of financial structure in economic growth of Nepal during 1994 to 2011 using Johansen's co-integrating vector error correction model. They argued that the banking sector played a key role in promoting economic growth compared to capital market in Nepal. They favored the policy to be focused on the banking sector development by enhancing its quality and outreach to promote economic growth in Nepal.

Bhatta (2014) examined the relationship between various sectoral shares and real GDP for Nepal during the 1975 to 2012. The study is used OLS technique and unit root test was conducted for time series data. Variance Inflation Factor test was conducted to check multicollinearity among explanatory variables. Along with independent variables role of agriculture, manufacturing and service sectors, it included mean years of schooling as human development, working age population as labor, life expectancy as health index, Gross Fixed Capital Formation as capital stock and population growth and per capita income is dependent variable. Domestic as well as the World Bank data sets were employed for the analysis. Nevertheless, the paper used Pender (2000) methodology. The results showed that industrial sector was significant to increase per capita income compared to the agriculture and services sectors in Nepal. Moreover, health as indicated by life expectancy and population at working age were presented as significant to increase the income whereas it showed that education and capital formation were inconsistent with the theory and international empirics. Finally, it recommended that developing agricultural sector viewed prerequisite for high and sustainable growth however efforts should be made in increasing investment significantly for the mechanization and modernization of agriculture. It added to its recommendation that developing infrastructures and fostering favorable business environment were other pre-requisites to support growth. In addition, employment-led service sector development was must with more emphasis on the tourism and human capital development.

Gautam (2014) analyzed the relationship between economic growth and financial development in Nepal consisting data for the period 1975 to 2012. The study used

Augmented Dickey-Fuller and Philips-Perron tests to test for the existence of unit root, Co-integration test to examine long run relationship and Granger Causality test to find out causal relationship. In addition, vector error correction method applied to find out the speed of adjustment and the dynamics of relationship. The empirical evidence confirmed that the financial development causes economic growth. In fact, financial development was the cause for economic growth in terms of short-term dynamics, while economic growth sustained financial development in the long-run.

Timsina (2014) examined the impact of commercial bank credit on economic growth and government expenditure in Nepal using time series data for the period of 1975-2013. Employing Johansen Cointegration Approach and Error Correction Model, the study found positive effects of bank credit to the private sector on the economic growth only in the long run. His study found that government expenditure promotes the financial sector of Nepal. It also indicated the feedback effect from economic growth to private sector credit in the short run.

2.3 Research Gap

By analyzing both national and international review of literature, it is found that economic growth is influenced by development expenditure in most of the cases. However, in some case it found that economic growth is influences by both current and capital expenditure. It is also found that there is problems of management development and current expenditure. These all study applied descriptive analysis of the study. There is lack of study of trend of current, capital and financial sector management. In the context of national, most study analyzed the impact of development expenditure and its impact on economic growth. There is no analysis of trend of current, capital and financial expenditure and their impact of per capita of Nepal. This study try to fulfill gap of study of these variables. This study applied both descriptive as well as analytical tools use.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

The study is associated with the relationship between PCI and government expenditure at aggregate level. Particularly, this research work seeks to answer the questions: Is there a meaningful causal relationship between recurrent expenditure and PCI? What are the natures of such relationships? Are such relationships significant? The econometric procedures answer these questions. Ordinary Least Squares (OLS) estimation technique is applied to examine causal relationship. Further, growth rate of government expenditure of different classification are analyzed with descriptive statistics. Thus study is descriptive as well as analytical in approach. So, it utilizes quantitative data and it bears quantitative nature. The research is completely based on time-series annual secondary data.

3.2 Study Period

The study has based on annual data on different variables from FY 2004/05 to FY 2016/2017.

3.3 Nature and Sources of Data

The nature of study is descriptive, analytical and econometrical. The study primarily based on the secondary sources of data. In reviewing the theoretical and empirical concepts on public expenditure and economic growth nexus, the study employs various journals, working papers, study reports, case studies, peer-reviewed articles, books, among others, published by various national and international academic institutions and scholars along with unpublished theses and dissertations.

Quarterly Economic Bulletins (NRB); Banking and Financial Statistics (NRB); Government Finance Statistics (NRB); Economic Survey Reports (MOF, GON); National Accounts of Nepal (CBS); Statistical Year Book of Nepal (CBS); Statistical Pocket Book (CBS); International Monetary Fund and World Bank Data sheet is the major sources of data and information for the study. Annex of the study defines and arrange data sets applied for the whole study.

3.4 Data Analysis Techniques

For data analysis, descriptive tools such as frequency distributions, means, percentages, and variance and cross tabulations between the identified variables are

used. This may involve the use of tables, graphs, spread sheets, pie charts, bar diagrams and words to draw the results of a research. All variables of the model are converted into natural logarithms. Basic structures of the transformed variable regarding its central location (mean), spread (standard deviation), shape (skewness and kurtosis), and volatility and normality (Jarque-Bera) is presented as a summary statistics. A correlation matrix of the used variables is presented to know how the dependent variable is proportional to explanatory variables in the regression model. The overall explanatory power of the all explanatory variables is gauged by adjusted R-squared and R-squared statistics. The F test is used to determine the overall goodness of model. The t-test is used to test individual coefficients of explanatory variables. Stationary test is used to convert non -stationary into stationary. Computer packages Microsoft Excel, 2010 and EVIEWS 7 is used for estimation procedures.

3.5 Model Specification

The equation explains the relationship between dependent and explanatory variables. The study purposes following model to explore relationship between government expenditures and PCI in Nepal.

$$PCI = f(GCE, GRE, GRR) \quad (3.1)$$

Where,

PCI = Per Capita Income

GCE = Government Capital Expenditure

GRE = Government Recurrent Expenditure

GPR = Financial Repayment

The simple specification of the mathematical models for equation (1.1) is:

$$\ln PCI_t = \alpha_1 + \alpha_2 \ln GCE_t + \alpha_3 \ln GRE_t + \alpha_4 \ln PR_t + \varepsilon_t \quad (1.2)$$

Where,

lnPCI = Natural Log of Per Capita Income

lnGCE = Natural Log of Government Capital Expenditure

ln GRE = Natural Log of Government Recurrent Expenditure

lnGPR = Natural Log of Government Financial Repayment

t = time

ε_t is white noise error term

3.6 Time Series Analysis

One of the important types of data used in empirical analysis is time series data. Researcher takes such data in practice because they cause several challenges to econometricians and practitioners. Generally, empirical works based on time series data assume that the underlying time series is stationary. Therefore, it is important to determine the characteristics of the individual series before conducting empirical analysis. This is important because in the absence of non-stationary of time series variables, the normal properties of t-statistics and measures such as R-squared break results, hence a problem. The econometric methodology applied therefore begins by examining the rank of integration for the series of the dependent and explanatory variable in their natural log format using the Augmented Dickey-Fuller test. The regression equation for the ADF test of unit root can be written as follows:

$$\Delta Y_t = \alpha + \beta t + \sum \delta \Delta Y_{t-1} + \mu_t \quad (3.4)$$

Where, the t symbol denotes time trend, Y is the variable in estimation procedure, μ represent the distributed random error term with zero mean and constant variance. Assuming that μ_t is serially uncorrelated and using the AR (ρ) process, the hypothesis for the ADF test is specified as follows:

$H_0 : \delta = 1$ is the Null Hypothesis implying unit root, and

$H_1 : \delta < 1$ is the Alternative Hypothesis implying stationary

This study considers Augmented Dickey-Fuller (ADF) unit root tests to all individual empirical variables of the model. Non-stationary individual series are then transformed to stationary through difference stationary process.

3.7 Serial Correlation

One of the important assumption of OLS is there is no autocorrelation among the error terms. i.e. $COV(u_i, u_j) = 0$. Where u_i and u_j are error terms. If this assumption is violated or if error terms are correlated each other's then it is termed as autocorrelation i.e. $COV(u_i, u_j) \neq 0$. It is also termed as serial correlation.

The most common type of autocorrelation is first-order autocorrelation, and it is usually present when an observed error tends to be influenced by the observed error that immediately proceeds in the previous time period. The existence of autocorrelation in the residuals indicates that the assumption $E(\varepsilon_i \varepsilon_j) = 0$ has been violated. It is important to be sure that there is no autocorrelation in the residuals because otherwise the standard errors are invalid.

Consequences of Autocorrelation: The value of parameter are linear, unbiased but variance of parameters are inefficient.

Detections of Autocorrelation

Durbin-Watson (DW-test) and Breusch-Godfrey Serial Correlation LM test are applied to detect the problem and order of serial correlation in the error terms.

Durbin Watson (DW) Test

One of the important assumption of Ordinary Least Square Method is there is no autocorrelation among the error terms. Violation of this assumption is called autocorrelation or Serial correlation. Hence, DW test is used to check or detect whether there exists the autocorrelation among the error terms.

DW test is given as:

$$DW = \frac{\sum (e_t - e_{t-1})^2}{\sum e_t^2}$$

When value of DW test is near to zero then there is positive autocorrelation.

When value of DW test is near to 4 then there is negative autocorrelation.

When value of DW test is near to 2 then there is no autocorrelation.

Where,

e = estimated error t

3.8 Heteroscedasticity

The existence of heteroscedasticity in the errors implies that the assumption of constant variance in the errors is violated i.e. $V(\varepsilon_i) \neq \sigma^2$. If this is the case, heteroscedasticity in the errors do not affect the un-biasness of the OLS estimates but it affects their precision. The standard errors become biased and the tests of statistical significance cannot be valid. Breusch-Pagan/Godfrey Lagrange Multiplier test of error

term is conducted to detect the problem of heteroscedasticity and weighted least squares technique is used to minimize it.

H_0 : Heteroscedasticity or variance of error is not constant.

H_1 : Homoscedasticity or variance of error is constant.

If p value of Breush-Pagan Godfrey LM is more than five percent then variance of error terms are constant i.e. homoscedasticity.

If p value of Breush-Pagan Godfrey LM is less than five percent then variance of error terms are not constant, i.e. heteroscedasticity.

3.9 Normal Distribution

It is also important to check that the residuals are normally distributed; this is done with the Jarque-Bera (J-B) statistic. This statistic tests whether there is a significant difference of skewness and kurtosis of the residuals from the normally distributed residuals. The null hypothesis is that the residuals are normally distributed. The J-B has a Chi-square distribution and if it is rejected the residuals are said to be normal. Two components of this statistic are Skewness and Kurtosis. Skewness measures the symmetry of a normal distribution and its expected value is zero. Regarding Kurtosis, this is an indicator that measures how peaked and flat the distribution is, a normal distribution is expected to have kurtosis equal to 3.

H_0 : Error terms are not normally distributed.

H_1 : Error terms are normally distributed.

If p value of JB statistics more than five percent then error terms are normally distributed.

If p value of JB statistics less than five percent then error terms are not normally distributed.

3.10 R^2 and Adjusted R^2 Estimation

The degree of relationship existing between dependent and independent variables is shown by the coefficient of determination (R^2). Hence, in each case, the coefficient of determination (R^2) has been calculated in order to test the explanatory power of independent variables.

After estimating the regression parameters, R^2 is used for judging the explanatory power, which measures the dispersion of observations to the line, the better

explanatory of the variations of Y (dependent variable) by the change in the explanatory variables. Thus, in overall, R^2 has been computed to show the percentage of the total variation of the dependent variable that is explained by the independent variables. The formula to derive R^2 and adjusted R^2 are mentioned below:

$$R^2 = 1 - \frac{\sum e^2}{\sum y^2}$$

Where $y = Y - \bar{Y}$

Similarly, Adjusted R^2 can be calculated by using following formula given as:

$$R^2 = 1 - \frac{\sum e^2 / (n - K)}{\sum y^2 / (n - 1)}$$

$R^2 \equiv 1$, refer to higher degree of goodness of fit estimated regression model

$R^2 \equiv 0$, refer to low degree of goodness of fit or poor fit estimated regression model

Where,

n = Total number of observation.

K = Number of parameter.

3.11 T- Test

The small sample test, t- test, is performed in order to identify the statistical significance of an observed sample regression coefficient and the formula for calculating the values is:

$$t = \frac{\beta}{SE(\beta)}$$

Where,

$SE(\beta)$ = Standard Error of β

Higher value of t test indicates that there is significant relationship between estimated coefficient and population parameters. Similarly, low value of t test is not significant which means there is no significant relationship between estimated coefficient and population parameter.

3.12 F – Test

F -Test is used to measure the overall significant of the estimated regression, which is also a test significance of R^2 because these two vary directly. When $R^2 = 0$, F is zero

and when $R^2=1$, F is infinite. That is to say, higher the value of R^2 , the greater the values of F test. Thus, larger value of F test implies that overall significant of estimated regression model. The value of F test can be computed by using following formula as:

$$F = \frac{R^2 / (K-1)}{(1-R^2) / (n-k)}$$

Where,

K = Total Number of Parameters to Estimated

n = number of observation

R^2 = Coefficient of determination

3.13 Standard Error of Regression Line

The standard error of regression line (estimate) is a measure of precision in the reduction of value of dependent variable base the regression equation gives the value of dependent variable.

The standard error of the regression line is used to measure the dispersion about an average line called regression line.

For the regression equation Y on X i.e., $Y = a + b X$, the standard error of the regression equation is given by:

$$S_{xy} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n-2}}$$

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

4.1 Performance of Principle Repayment

Budget is estimated income and expenditure of a nation during a fiscal year period of a time. Natures of budget are surplus, deficit and balanced budget. Nature of budget in developing countries is always deficit. It means expenditure is greater than government income. The gap between income and expenditure is fulfilled by public borrowing from both internal and external sources. The government repay interest of loan as well as principles is known as principle repayment. In Nepalese budgetary system fiscal year 2004/05 started to separate on topics principle repayment. The nature of principle repayment of Nepalese economy is increasing in each year except in 2008 and 2011. The principle repayment was NRs. 13,533.30 million in 2005 and reach NRs. 102,836.50 million in 2017. The average repayment payment is NRs. 42,884.48 million during the study period. Similarly, the growth rate of principle repayment is ups and down during study period. The growth rate was 5.4 percentages in 2006 and 1.2 percentage in 2017. The average growth rate of principle repayments is 21.53 percentages during the study period. The figure 4.1 (a) shows the trend line of principle repayment and figure 4.1(b) shows the trend line of growth rate of principle repayment.

Table 4.1

Performance Principle Repayment

Year	Principal Repayment (NRs.)	Growth Rate of Principal Repayments
2005	13,533.30	
2006	14,264.70	5.40
2007	16,757.20	17.47
2008	15,995.60	-4.54
2009	18,803.20	17.55
2010	18,432.30	-1.97
2011	17,220.50	-6.57
2012	33,310.50	93.44
2013	52,069.30	56.31
2014	59,415.30	14.11
2015	93,302.10	57.03
2016	101,557.70	8.85
2017	102,836.50	1.26
Average	42,884.48	21.53

Source: Economic Survey, FY 2007/08 and FY 2016/17

Figure 4.1(a)

Trend Line of Principal Repayment

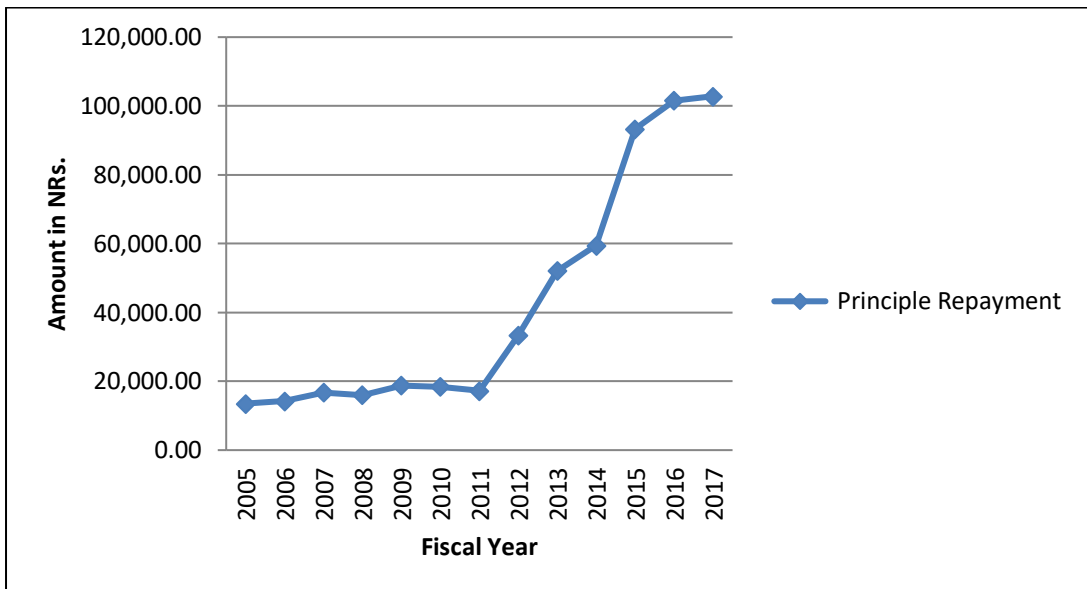
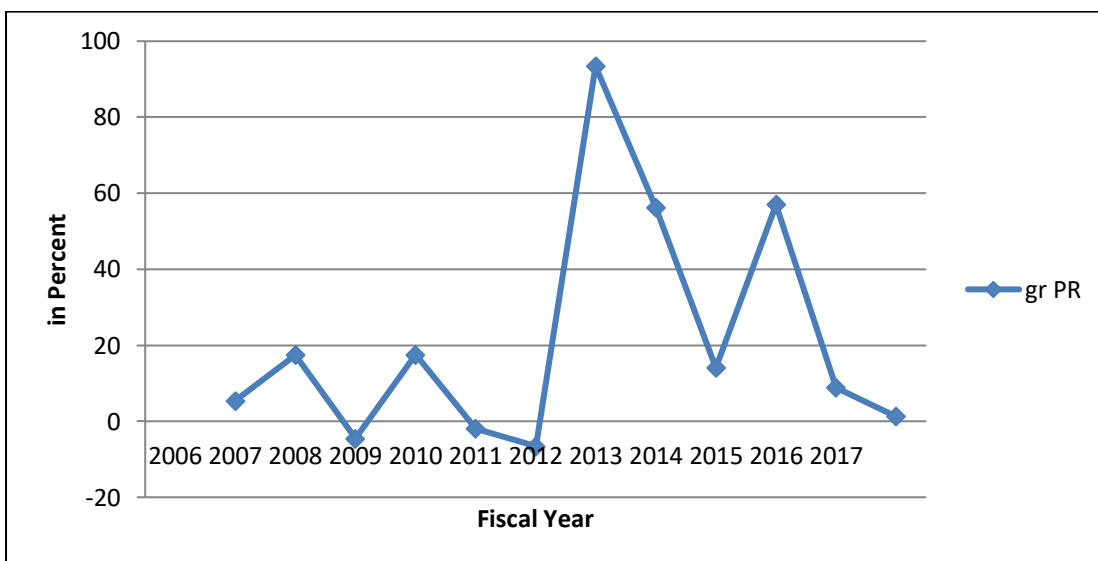


Figure 4.1(b)

Trend Line of Growth Rates of Principal Repayment



4.2 Performance of Recurrent Expenditure

The current expenditure is expenditure made by government on regular budgetary expenditure such as wage and salary of government servants, police, army, and other allowances. The nature of Current Expenditure of Nepalese economy is increasing in each year from 2005 to 2017. The Current Expenditure was NRs. 59,017.70 million in 2005 and each NRs. 501,619.60 million in 2017. The average

Expenditure is NRs. 207,334.58 million. Similarly, the growth rate of current expenditure is ups and downs during the study period. The growth rate is 9.4 percentages in 2006 and 37.6 percentage in 2017. The average growth rate of current expenditure is 20.09 percentages in the study period. The figure 4.2 (a) shows the trend line of current expenditure which is continuously increasing during the study period and figure 4.2 (b) shows the trend line of growth rate of current expenditure which is ups and down during the study period.

Table 4.2

Performance Current Expenditure

Fiscal Year	Recurrent Expenditure	Growth Rates of Recurrent Expenditure
2005	59,017.70	-
2006	64,580.70	9.425986
2007	74,139.80	14.80179
2008	88,335.50	19.14721
2009	119,569.00	35.35781
2010	146,248.90	22.31339
2011	166,013.60	13.51443
2012	236,270.20	42.31979
2013	243,651.70	3.124177
2014	296,552.20	21.71153
2015	334,881.50	12.92498
2016	364,469.20	8.835275
2017	501,619.60	37.63018
Average	207,334.58	20.09

Source: Economic Survey, FY 2007/08 and FY 2016/17

Figure 4.2 (a)

Trend Line of Recurrent Expenditure

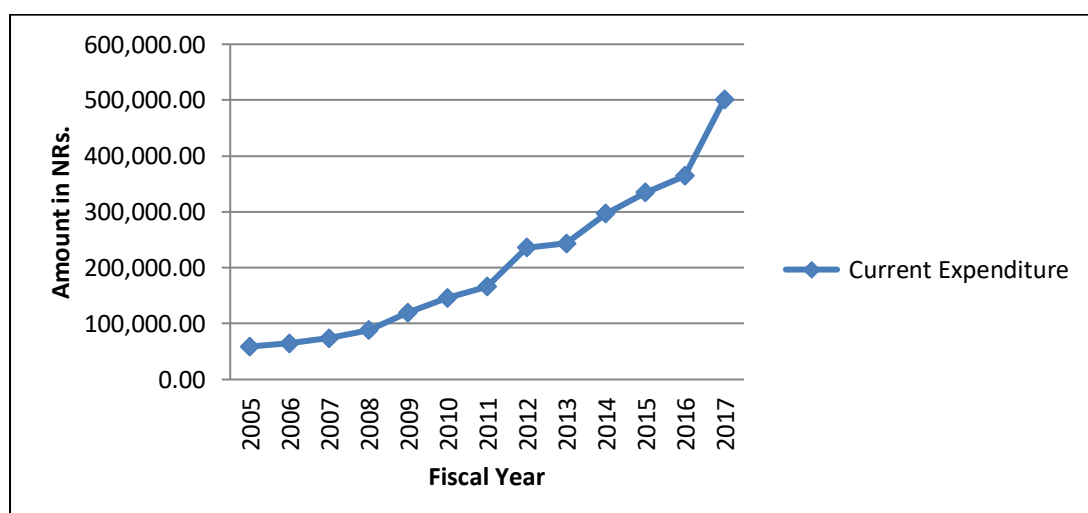
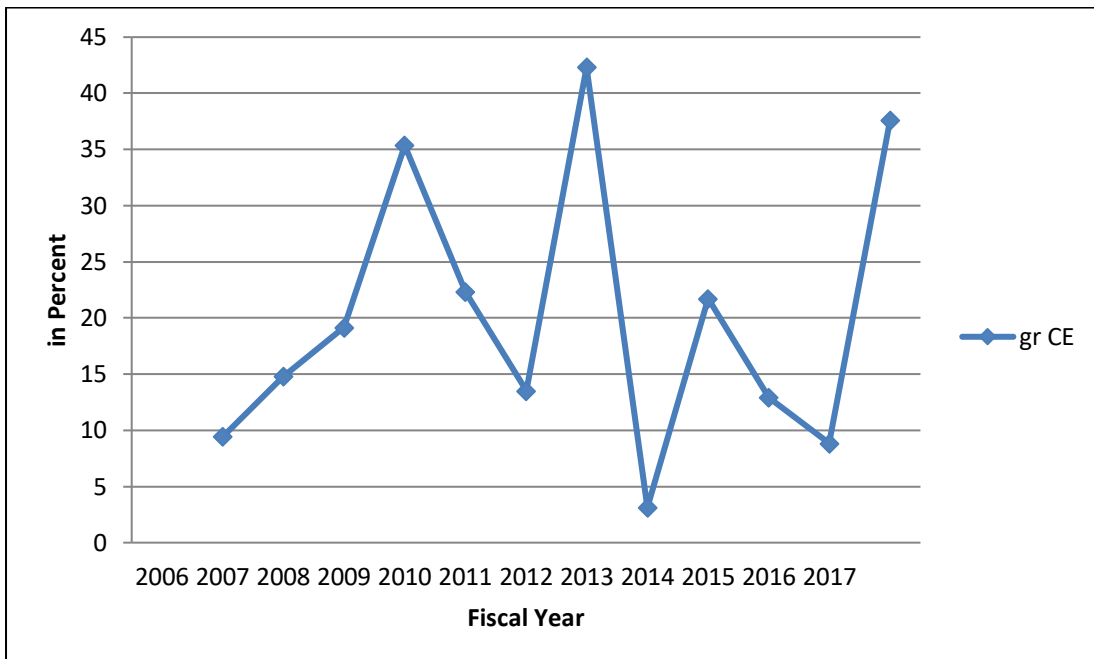


Figure 4.2 (b)

Trend Lines of Growth Rats of Recurrent Expenditure



4.3 Performance of Capital Expenditure

The expenditure made on development activities such as basic infrastructure, health, road construction, bridge electricity, etc. The nature of capital expenditure of Nepalese economy is increasing in each year except in 2012. The capital expenditure was NRs. 16,439.80 million in 2005 and each NRs. 5189,456.60 million in 2017. The average expenditure is NRs. 67,940.96 million. Similarly, the growth rate of capital expenditure is ups and downs during the study period. The growth rate was 24.6 percentages in 2006 and 63.78 percentage in 2017. The average growth rates of capital expenditure are 26.74 percentages in the study period. The figure 4.3 (a) shows the trend line of recurrent expenditure and figure 4.3 (b) shows the trend line of growth rate of recurrent expenditure.

Table 4.3

Capital Expenditure

FY Year	Capital Expenditure	Growth Rates of Capital Expenditure
2005	16,439.80	
2006	20,484.60	24.60370564
2007	32,307.20	57.71457583
2008	43,250.10	33.87139709
2009	62,730.40	45.04105193
2010	75,956.20	21.08355757
2011	87,889.00	15.71010661
2012	45,447.30	-48.29011594
2013	51,203.60	12.66587894
2014	61,360.00	19.83532408
2015	81,030.30	32.05720339
2016	115,677.40	42.7582028
2017	189,456.60	63.78013337
Average	67,940.96	26.74

Source: Economic Survey, FY 2007/08 and FY 2016/17

Figure 4.3(a)

Trend Line of Capital Expenditure

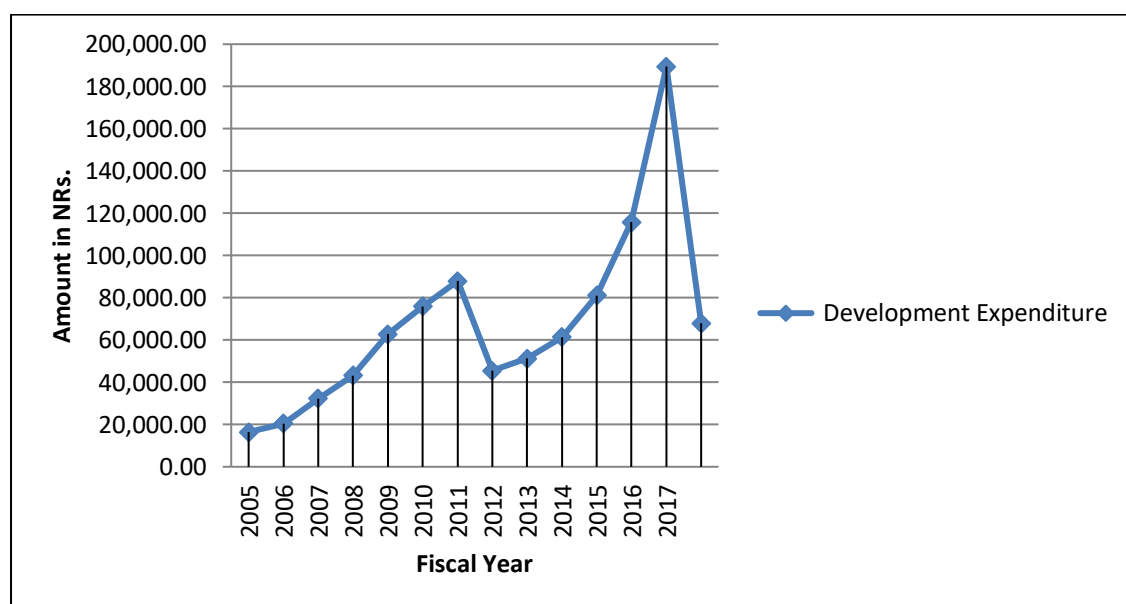
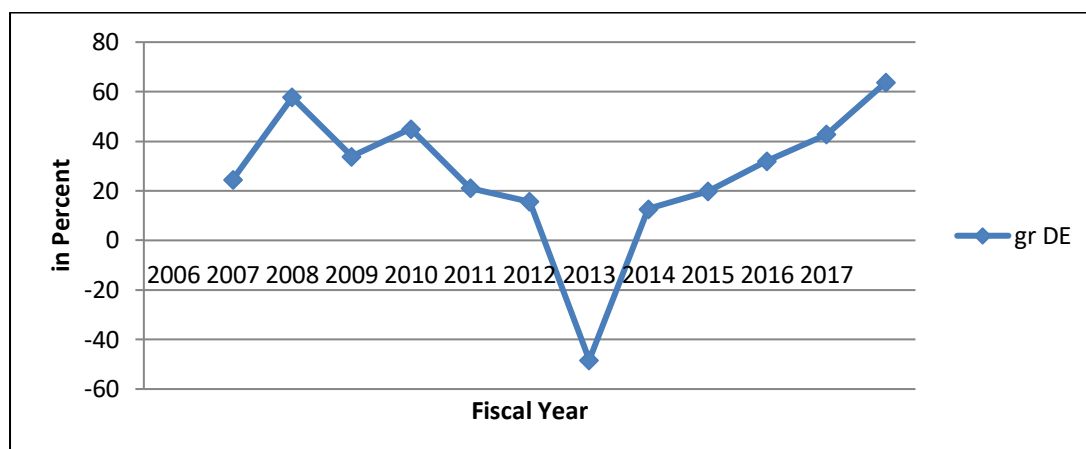


Figure4.3 (b)

Trend Line of Capital Expenditure



4.4 Per Capita Income

It is average income of a nation. It is ratio between total national income and total number of population. Level PCI indicates the purchasing power of individual person. Under study PCI is GDP (PCI). It is ratio between GDP and number of population. PCI is NRs. 19950.6 thousands in 2005 and reached NRs.28163.12 thousands in 2017. The average PCI I is 24016.1 thousands during the study period. The growth rate is 1.7 percentage is 2006 and 1.2 percentage in 2017. Average growth rate during the study period is 2.9 percentage. The growth rate during the period is ups and down.

Table 4.4

Per-Capita Income

Year	Per Capita Income (in Thousands)	Growth Rate of PCI
2005	19950.6	
2006	20294.32	1.723
2007	20930.35	3.134
2008	21416.54	2.323
2009	22427.06	4.718
2010	23116.96	3.076
2011	24090.36	4.211
2012	24376.98	1.190
2013	25376.01	4.098
2014	26228.58	3.360
2015	27386.15	4.413
2016	28452.28	3.893
2017	28163.12	1.016
Average	24016.1	2.927

Source: Economic Survey, FY 2007/08 and FY 2016/17

4.5 Summary Statistics

The study has four variables and each variable consists of 13 annual observations. Basically, Summary statistics includes mean, median, maximum, minimum, standard deviation, skewness, kurtosis and Jarque-Bera (JB) of each individual variable. However, this study presents the results based on statistical software Eviews 7.0.

The positive values of kurtosis for all variables suggest that these variables frequency curves are peaked. The positive values of skewness all variables further indicate that they positively skewed. The JB statistics for each observations show that individual variables heterogeneous in the sense that some of the variables are normal and some are not normal. The overall summary statistics infer that all variables show somewhat similar characteristics. The summary statistics of variables are calculated in arithmetic scale (Table 4.5).

Table 4.5

Summary Statistics

	RE	CE	PCI	PR
Mean	207334.6	67940.96	24016.10	42884.48
Median	166013.6	61360.00	24090.36	18803.20
Maximum	501619.6	189456.6	28452.28	102836.5
Minimum	59017.70	16439.80	19950.60	13533.30
Std. Dev.	136960.8	45933.61	2959.559	35297.20
Skewness	0.709947	1.426142	0.133343	0.825514
Kurtosis	2.547925	4.823472	1.703717	2.026900
Jarque-Bera	1.202756	6.207809	0.948713	1.989441
Probability	0.548056	0.044874	0.622285	0.369827
Sum	2695350.	883232.5	312209.3	557498.2
Sum Sq. Dev.	2.25E+11	2.53E+10	1.05E+08	1.50E+10
Observations	13	13	13	13

Source: Based on Table 4.1, 4.2, 4.3 and 4.4

4.6 Correlation Coefficients

The Correlation co-efficient between Current Expenditure and PCI is 0.956 which is high degree positive correlation. The Correlation coefficient between Current Expenditure and Development Expenditure is 0.78 which is also high degree positive correlation. The Correlation coefficient between Current Expenditure and Principle Repayment is 0.941 which is also high degree positive correlation.

Table: 4.6
Correlation Coefficient

	CE	PCI	DE	PR
CE	1	0.956	0.852	0.941
PCI	0.956	1	0.7828417	0.924
DE	0.852	0.782	1	0.749
PR	0.941	0.924	0.749	1

Source: Self-Calculation

4.7 Regression Analysis

1. To show the causes and effects relationship between the dependent and independent variables. Under this study LNPCI is dependent variable and LNPR, LNCE and LNDE are independent variables. Let us use OLS regression line. The result is given below.

Dependent Variable: LNPCI				
Method: Least Squares				
Date: 08/28/18 Time: 17:17				
Sample: 2005 2017				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNDE	0.026033	0.015522	1.677234	0.1278
LNCE	0.104396	0.028123	3.712081	0.0048
LNPR	0.043928	0.018507	2.373601	0.0417
C	8.084718	0.091290	88.56104	0.0000
R-squared	0.985674	Durbin-Watson stat		2.241080
Adjusted R ²	0.980899			
F-statistic	206.4120			
Prob(F-statistic)	0.000000			

The coefficient on LNDE is 0.026 which indicates that increase in development expenditure by one percentage cause increase in PCI by 0.026 percentages. The coefficients of LNCE are 0.104 which indicates that increase in current expenditure by one percentage causes in PCI by 0.104 percentages. The coefficient of LNPR is 0.043 which indicates that increase in principle repayment by one percentage cause increase in PCI by 0.043. There are positive effects of CE, DE and PR on PCI of Nepal.

The value of adjusted R^2 is 0.98 which indicates that dependent variables PCI depends on independent variables DE, CE and PR by 98 percentages. The model is best fit. The value of F statistics is very high 206.41 and its P value is significant at 1 percentage. This indicates that model is over all best fit. The value of DW test is 2.24 which is near to 2 indicates that there is no autocorrelations among the error terms.

The coefficient of CE and PR are statistically significant at 5 percentages. But coefficient of DE is not statistically significant and valid by theory. Breush-GodferySerila LM test observed R-squared is 1.51 and its Chi-square p value is 0.46 which is more than 5 percentage indicated that null hypothesis is rejected. It means there is no autocorrelation among the error terms. (See Appendix I)

HeteroscedasticityBreush- Pagan- Godfery test observed R-squared is 2.72 and Chi-squared P value is 0.43 which is more than five percentage indicates that null hypothesis is rejected. It means the variance of errors terms are constantan. (See in Appendix I)

The value of JB test is 1.03 and its p value is 0.59 which is more than 5 percentage indicates that error terms are normally distributed with mean zero and variance constant.

CHAPTER V

SUMMARY OF MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Major Findings

Economic development of any country depends upon the utilization of available resources. Domestic resources are not sufficient to meet growing development needs of the people. It is average income of a nation. It is ratio between total national income and total number of population. Level PCI indicates the purchasing power of individual person. Under study PCI is GDP (PCI). The per capita income of a nation is influenced by current, capital and development expenditure. It is average income of a nation. It is ratio between total national income and total number of population. Level PCI indicates the purchasing power of individual person. Under study PCI is GDP (PCI). It is ratio between GDP and number of population. PCI is Rs 19950.6 thousands in 2005 and reached Rs.28163.12 thousands in 2017. The average PCI I is 24016.1 thousands during the study period. The growth rate is 1.7 percentage in 2006 and 1.2 percentage in 2017. Average growth rate during the study period is 2.9 percentage. The growth rate during the period is ups and down.

Summary of major findings are as follows:

- Budget is estimated income and expenditure of a nation during a fiscal year period of a time. Natures of budget are surplus, deficit and balanced budget. Nature of budget in developing countries is always deficit. It means expenditure is greater than government income. The gap between income and expenditure is fulfilled by public borrowing from both internal and external sources. The government repay interest of loan as well as principal is known as principle repayment. In Nepalese budgetary system FY 2004/05 started to separate on topics principle repayment. The nature of principle repayment of Nepalese economy is increasing in each year except in 2008 and 2011. The principle repayment was NRs. 13,533.30 million in 2005 and reach NRs. 102,836.50 million in 2017. The average repayment payment is NRs. 42,884.48 million during the study period. Similarly, the growth rate of principle repayment is ups and down during study period. The growth rate was 5.4 percentage in 2006 and 1.2 percentage in 2017. The average growth rate of principle repayments is 21.53 percentage during the study period.

- The recurrent expenditure is expenditure made by government on regular budgetary expenditure such as wage and salary of government servants, police, army, and other allowances. The nature of recurrent expenditure of Nepalese economy is increasing in each year from 2005 to 2017. The recurrent expenditure was NRs. 59,017.70 million in 2005 and each NRs. 501,619.60 million in 2017. The average expenditure is NRs. 207,334.58 million. Similarly, the growth rate of current expenditure is ups and downs during the study period. The growth rate is 9.4 percentages in 2006 and 37.6 percentage in 2017. The average growth rate of current expenditure is 20.09 percentages in the study period.
- The expenditure made on development activities such as basic infrastructure, health, road construction, bridge electricity, etc. The nature of Development Expenditure of Nepalese economy is increasing in each year except in 2012. The Development Expenditure was Rs. 16,439.80 million in 2005 and each NRs. 5189,456.60 million in 2017. The average expenditure is Rs. 67,940.96 million. Similarly, the growth rate of capital expenditure is ups and downs during the study period. The growth rate was 24.6 percentage in 2006 and 63.78 percentage in 2017. The average growth rates of capital expenditure are 26.74 percentage in the study period.
- Correlation coefficients shows the degree and direction relationship between the variables. The values of correlation coefficients lies between -1 to $+1$. The value near to $+1$ indicates that there is higher degree positive correlation between the variables. The value near to -1 indicates that there is negative higher degree of correlation between the variables. The correlation co-efficient between recurrent expenditure and PCI is 0.956 which is high degree positive correlation. The Correlation coefficient between recurrent expenditure and capitalexpenditure is 0.78 which is also high degree positive correlation. The correlation coefficient between recurrent expenditure and principal repayment is 0.941 which is also high degree positive correlation.
- The coefficient on LNDE is 0.026 which indicates that increase in development expenditure by one percentage cause increase in PCI by 0.026 percentage. The coefficients of LNCE are 0.104 which indicates that increase in current expenditure by one percentage causes in PCI by 0.104 percentage.

The coefficient of LNPR is 0.043 which indicates that increase in principal repayment by one percentage cause increase in PCI by 0.043. There are positive effects of CE, DE and PR on PCI of Nepal.

- The value of adjusted R^2 is 0.98 which indicates that dependent variables PCI depends on independent variables DE, CE and PR by 98 percentages. The model is best fit. The value of F statistics is very high 206.41 and its P value is significant at 1 percentage. This indicates that model is over all best fit. The value of DW test is 2.24 which is near to 2 indicates that there is no autocorrelation among the error terms.
- The coefficient of RE and PR are statistically significant at 5 percentages. But coefficient of CE is not statistically significant and valid by theory. Breush-GodferySerila LM test observed R-squared is 1.51 and its Chi-square p value is 0.46 which is more than 5 percentage indicated that null hypothesis is rejected. It means there is no autocorrelation among the error terms. (See Appendix I)
- HeteroscedasticityBreush- Pagan- Godfery test observed R-squared is 2.72 and Chi-squared P value is 0.43 which is more than five percentage indicates that null hypothesis is rejected. It means the variance of errors terms are constantan. (See in Appendix I)
- The value of JB test is 1.03 and its p value is 0.59 which is more than 5 percentage indicates that error terms are normally distributed with mean zero and variance constant.

5.2Conclusion

Nepal is facing problems of low per capita income as well as high current expenditure, very low capital expenditure and high principle repayment. Generally, all expenditure boosts up PCI of Nepal but very low impact. The coefficient of development expenditure is relatively very lower than the coefficient of current expenditure and financial management. The coefficient of development expenditure is statistically not significant. The expenditure made by government has various problems such as legal constraint, bureaucratic problems, and management problems.

5.3Recommendations

The per capita income of a nation indicates the purchasing power as well as living standard consumption level of the people. The amount of PCI indicates long term

productivity and investment pattern of each person and nation. The per capita of Nepal is very low of Nepalese people. Increase productivity of primary, secondary and service sector boost up GDP of Nepal and increase the PCI. Based on the above descriptive and econometric analysis, the following recommendations are prescribed:

- i. Current expenditure has positive and significant role in boost up PCI of Nepal. Hence, it recommended that current expenditure should use in productive sector.
- ii. The PCI of Nepal is very low it should increase by increasing the productivity of primary, secondary and service sector. For this government should formulate easy access investments, trade and other polices.
- iii. There is positive relationship between development expenditure and PCI of Nepal. But coefficient of development expenditure is very low. Hence, government should formulate increase in development expenditure polices
- iv. The coefficient of financial management is positive with PCI. Government should increase domestic borrowing than external borrowing.

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APPENDIX- I

Dependent Variable: LNPCI

Method: Least Squares

Date: 09/07/18 Time: 17:02

Sample: 2005 2016

Included observations: 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNDE	0.041389	0.010471	3.952798	0.0042
LNCE	0.091888	0.017859	5.145192	0.0009
LNPR	0.053215	0.011804	4.508048	0.0020
C	7.975118	0.063627	125.3415	0.0000

R-squared	0.994057	Mean dependent var	10.06560
Adjusted R-squared	0.991829	S.D. dependent var	0.117823
S.E. of regression	0.010651	Akaike info criterion	-5.985192
Sum squared resid	0.000907	Schwarz criterion	-5.823557
Log likelihood	39.91115	Hannan-Quinn criter.	-6.045036
F-statistic	446.0617	Durbin-Watson stat	2.112643
Prob(F-statistic)	0.000000		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.434356	Prob. F(2,6)	0.6665
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Obs*R-squared 1.517684 Prob. Chi-Square(2) 0.4682

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 09/07/18 Time: 17:02

Sample: 2005 2016

Included observations: 13

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNDE	-0.007420	0.014960	-0.495941	0.6376
LNCE	-0.001093	0.021735	-0.050301	0.9615
LNPR	0.005000	0.014897	0.335632	0.7486
C	0.041598	0.081897	0.507932	0.6296
RESID(-1)	-0.417921	0.561547	-0.744232	0.4849
RESID(-2)	-0.428153	0.531411	-0.805691	0.4512

R-squared 0.126474 Mean dependent var -1.33E-15

Adjusted R-squared -0.601465 S.D. dependent var 0.009083

S.E. of regression 0.011494 Akaike info criterion -5.787076

Sum squared resid 0.000793 Schwarz criterion -5.544623

Log likelihood 40.72246 Hannan-Quinn criter. -5.876841

F-statistic 0.173742 Durbin-Watson stat 2.150628
 Prob(F-statistic) 0.962899

Heteroscedasticity Test: Breusch-Pagan-Godfrey

F-statistic 3.229917 Prob. F(3,8) 0.0821
 Obs*R-squared 6.573129 Prob. Chi-Square(3) 0.0868
 Scaled explained SS 2.725677 Prob. Chi-Square(3) 0.4359

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 09/07/18 Time: 17:10

Sample: 2005 2016

Included observations: 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000469	0.000508	-0.922124	0.3834
LNDE	9.10E-05	8.36E-05	1.087482	0.3085
LNCE	0.000129	0.000143	0.904759	0.3920
LNPR	-0.000193	9.43E-05	-2.046666	0.0749

R-squared 0.547761 Mean dependent var 7.56E-05
 Adjusted R-squared 0.378171 S.D. dependent var 0.000108
 S.E. of regression 8.51E-05 Akaike info criterion -15.64467

Sum squared resid	5.79E-08	Schwarz criterion	-15.48303
Log likelihood	97.86801	Hannan-Quinn criter.	-15.70451
F-statistic	3.229917	Durbin-Watson stat	2.621359
Prob(F-statistic)	0.082104		

