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## Public Expenditure and Economic Growth of Nepal

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### Abstract

*This study intended to evaluate the trends of public expenditure and to show the relationship between public expenditure and economic growth in Nepal. In order to fulfill these objectives, the chart, correlation, and regression were employed by using time series data sets over the period of 1974/75 to 20108/19. Economic growth (RGDP) (proxied as the real GDP with rebasing 2009/10) as dependent variable and recurrent expenditure (RE), capital expenditure (CE), expenditure on education (EE), expenditure on health (HE), and expenditure on transportation and communication (TCE) were proxied as public expenditure. The study revealed that there is positive correlation between dependent and predictors. The results of regression also confirmed that there is positive relationship between public expenditure on economic growth of Nepal. Particularly, HE and TCE had negative relationship with RGDP. This study applied 45 annually observed times series data sets and mainly fitted regression model to examine the relationship between public expenditure and economic growth in Nepal. The main policy implication of this study is that government and concern body should give more concern about capital expenditure for enhancing productive activities and attention about recurrent expenditure. Also, education, health, and transportation and communication are the economic infrastructure, so government should most attention to increase expenditure on these sectors that may produce long-run impact on economy.*

**Keywords:** *Public expenditure, economic growth, real GDP, recurrent expenditure, capital expenditure, regression*

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## **Introduction**

The main objective of the government is to provide maximum social welfare in the society. Through the economic development to ensure fulfillment of this objective, government allots. Its expenses in order to speed up economic growth and sustain the stability. Hence, public Expenditure is an important tool of the economy (Khadka, 2002).

After the great depression of 1930s, economists came on the conclusion that government expenditure is necessary in the economy. J. M. Keynes pointed out that the fundamental cause of depression was the lack of spending. The decision to save in the household sector cannot lead to the decision to invest. And the government had to take step up its expenditure in order to “prime to pump” of the economy. The modern economists have given more emphasis on public expenditure (Khanal, 1988).

Today, the income inequality between developed and developing countries is increasing year by year (Shoup, 1969). The development gap and the gap between haves and haves not are also increasing. Now these problems have become global. Due to these reasons, all over the world there is the problem in peace among the countries and enmity between and among is increasing. In such a situation, what may be the solution? How are these problems solved? Definitely to solve these problems public expenditure is essential (Upadhayay, 1981).

In underdeveloped countries, where the basic infrastructures for development have not been created, it can be done by public expenditure (Kelly1999). First of all, government should try to invest in social sector.eg. Road, hospitals, school, etc. Public expenditure may have direct and indirect effect on development. Directly; public expenditure on industry and commerce may lead economic development where, indirectly it can feed up the economic development by its suitable policies and encouraging private participants by providing the transportation, communication, health, education, and other social welfare programs in the economy (Acharya, 1999).

Nepal started its systematic and planned development process after the establishment of democracy in 1951 (Nepal Chamber of Commerce, 1997). An introduction of planned process, the volume of public expenditure in each plan is in increasing trend. Hence increase in its size of public expenditure, the performance or achievement has been below expectation (Regmi, 1971). From the very beginning of the planned process, public expenditure policies have mainly been guided by accelerating high growth, better allocation of resources, achieving equitable distribution of income, and maintaining price stability. However, the outcomes have not been realized as expected. Still almost all economic indicators are poor. The government expenditure policy is facing problems such as growth rate of public expenditure is higher than

growth rate of GDP. On the other hand, the trend of resource gap is also in increasing form and the dependency of foreign aid is also a serious problem (Upreti, 2002).

## Review of Literature

Nelson and Plosser (1984) concluded the Keynesian view of demand side economy. They pointed out that the Keynesian point of view gives utmost importance to expenditures, aiming that increased effective demand. It was evident that the increase in government expenditures should be considered a basic tool of economic policy.

Pyakuryal (2004) under the study titled *Nepal's Conflict Economy: Cost, Consequences and Alternatives* asserted that the Nepalese economy has lost its productive capacity to respond the sustained growth following the government expenditure pattern. He found that the ratio of regular expenditure to GDP in FY 1996/97 was 8.6 percent but increased to 11.5 percent in 2001/02. The revenue during the same time period decreased from 7.3 in 1996/97 to 7 percent in 2001/02. Development expenditure also decreased from 9.5 to 7.5 during the same period. Analyzing this pattern he recommended for contractionary fiscal policy rather than expansionary one during the war period. Public expenditure is clearly one of the central, indeed often the central instrument through which governments influence economic events. Public expenditure leaves its effect in the structure of an economy. The level of government spending relative available resources powerfully shapes the environment in which private firms operate. The nature of public expenditure has respective effects on the public and private activities. Public sector activities increases or decreases relative to the private sectors areas. Public expenditure has formed antiquity, being used as an investment of state policy.

Sing, (1977) in his book *The Fiscal System of Nepal*, analyzed the consistency between fiscal policy of Nepal and targeted growth rate from the time series data over the period of 1954/55 to 1974/75. He also analyzed the trend of revenue and expenditure during the same period. He found that there was substantial change in the ratio of total public expenditure to GDP. He found that the ratio of total government expenditure to GDP was just 2.44 percent in the fiscal year 1954/55, which increased to 10.57 percent in the fiscal year 1974/75. He also found that development expenditure ratio to GDP increasing from 4.07 percent in fiscal year 1965/66 to 6.75 percent in 1974/75. The growth rate of regular expenditure was quite slower registering 2.13 percent in 1965/66 to 3.82 percent in fiscal year 1974/75. On the revenue side, in 1950s tax revenue to GDP ratio was hopelessly low. In percentage term it was 1.27 percent of GDP, which stood up 6 percent of GDP in 1974/75.

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

United Nation (1979) examined the *Patterns of Government Expenditure on social services* in developing countries, developed market and centrally planned economies in the 1970s. The available data on public expenditure for education, health, social security and welfare and housing are analyzed. And the silent factors and policies shaping the evolving pattern of expenditure are reviewed. Patterns of government expenditure on social services in the developing countries and the policies are reflected to add fresh emphasis to the need for considering the provision of social services as a part of the integrated process of raising levels of well-being. The attempts of several governments to provide primary education to everyone may not be hampered so much by the lack of resources in education-school and teachers, discrimination against females and the absence of transport facilities or sufficient income in the family to buy necessary things and for a child to attend school. This concern is an integral part of the changing perceptions of development that have attracted the attention of Governments in most of the developing countries

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

Premchand (1990) has made a remarkable study under the title *Expenditure Controls: Institutional and Operational Issues*. He laid more emphasis to the importance of expenditure controls on the context of growing fiscal problems. And

the study provided solution to current and future fiscal problems that it required a combination of policy measures and improvements in controlling techniques and procedures.

Shah (2005) in his book *Public Expenditure Analysis* provided tool of analysis for discovering the orientation of the public sector and creating a scorecard on its role in safeguarding the interests of the poor and other disadvantaged. The book further provided a framework for citizen-center governance.

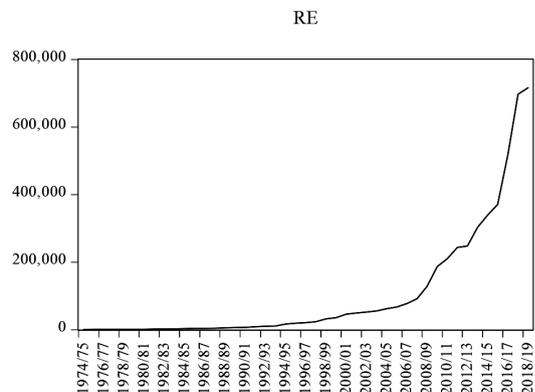
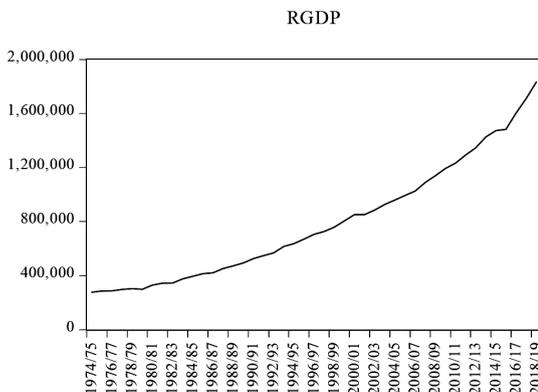
## Objectives

The objective of the article is twofold. Firstly, to examine the trend and structure of government expenditure in Nepal and secondly, to study the relationship of Government expenditure and economic growth of Nepal.

## Methods and Materials

To analyse the public expenditure and economic development of Nepal is based on the descriptive cum exploratory method of analysis. This study has used 45 years of secondary data from 1974/75 to 2018/19 for analysis propose. The required data were extracted from Economic Surveys published by Ministry of Finance and NRB publications. The economic growth by proxied of real GDP (RGDP) was taken as dependent variables and rebasing it at 2009/10 price and capital expenditure (CE), recurrent expenditure (RE), expenditure on education (EE), expenditure on health (HE), and expenditure on transportation and communication (TCE) by proxied of public expenditure were taken as predictors. This study has examined the relationship between public expenditure and economic growth in Nepal by employing correlation and regression analysis. The regression model with natural logarithm is presented as follows:

$$\text{LnRGDP} = \beta_0 + \beta_1(\text{LnCE}) + \beta_2(\text{LnRE}) + \beta_3(\text{LnEE}) + \beta_4(\text{LnHE}) + \beta_5(\text{LnTCE}) + \varepsilon_t$$



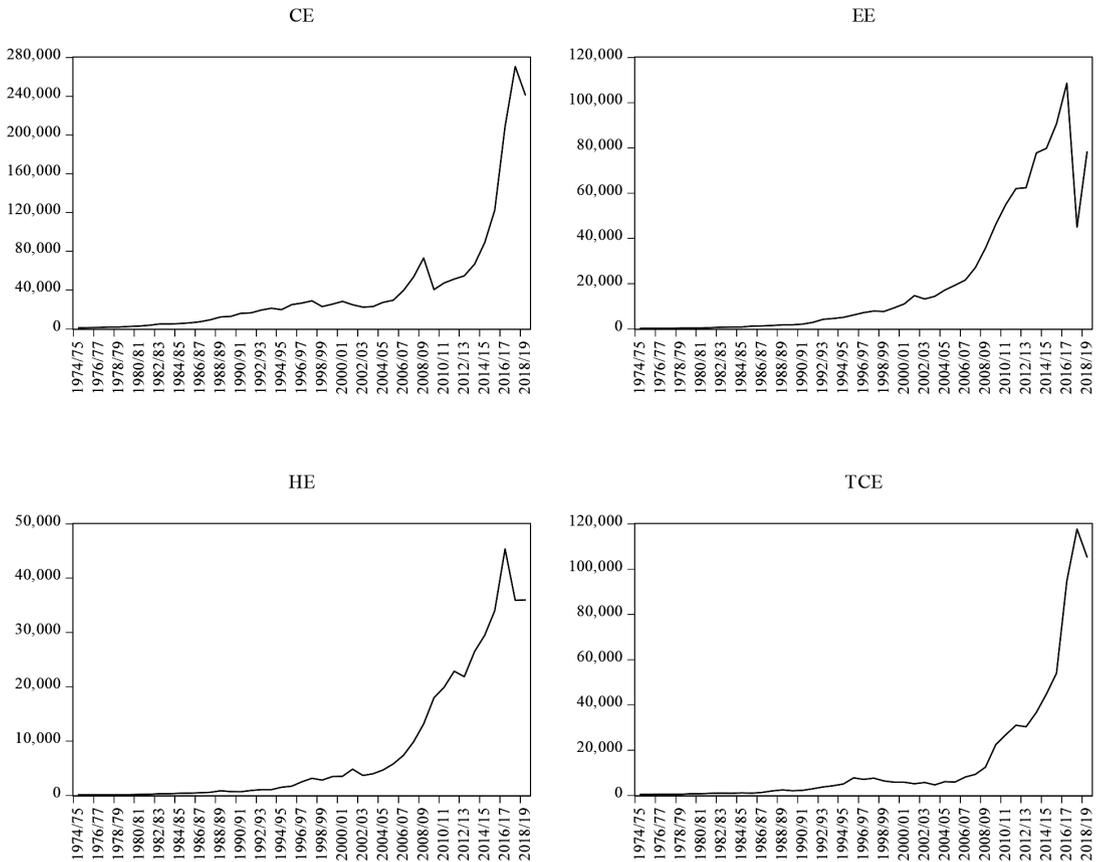


Figure 1. Graph of Various Government Expenditures and Real GDP of Nepal.

### Results and Discussion

This study is an analysis of the public expenditure and economic growth of Nepal based on the above-mentioned objectives and methodology. The government expenditure in different sectors is increasing year by year as it has increased in the real GDP of Nepal. It can be seen from Figure 1 that RE, CE, EE, HE, and TEC have similar upward fluctuation trends. The RGDP of Nepal also has an increasing trend. After 2014/15, all government expenditures have a higher rate of upward trending, and lately, some corrections have emerged. Expenditure on education has reduced in recent years.

Correlation coefficient is measured to determine the direction and closeness of the linear association between two variables (Johnston and DiNardo, 2007) of interest. Table 1 shows that the correlation between RGDP and predictors, namely, RE, CE, EE, HE, and GCE.

**Table 1:** Correlation matrix

		RGDP	RE	CE	EE	HE	TCE
RGDP	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	45					
RE	Pearson Correlation	0.879**	1				
	Sig. (2-tailed)	0.000					
	N	45	45				
CE	Pearson Correlation	0.828**	0.965**	1			
	Sig. (2-tailed)	0.000	0.000				
	N	45	45	45			
EE	Pearson Correlation	0.903**	0.681**	0.585**	1		
	Sig. (2-tailed)	0.000	0.000	0.000			
	N	45	45	45	45		
HE	Pearson Correlation	0.916**	0.949**	0.886**	0.870**	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		
	N	45	45	45	45	45	
TCE	Pearson Correlation	0.825**	0.986**	0.983**	0.639**	0.922**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	45	45	45	45	45	45

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

It is evident from correlation matrix of Table 1, RGDP is positive correlated or associated with all predictors (RE, CE, EE, HE, and TCE). All the explanatory variables has significant relationship with RGDP at 0.05 level of significant.

Correlation coefficient show the linear association between two variables while regression predicts the average value of one variable on the basis of the fixed values of other variables (Gujrati, 2007). Table 2 presents the regression results of the RGDP as regressed on the components of public expenditure namely, RE, CE, EE, HE, and TCE with natural logarithm.

**Table 2:** Regression analyses test results

Dependent Variable: LOG(RGDP)				
Method: Least Squares				
Sample: 1 45				
Included observations: 45				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.78103	0.053996	199.6642	0.0000
LnRE	0.277277	0.026728	10.37420	0.0000

LnCE	0.010234	0.014836	0.689835	0.4944
LnEE	0.011898	0.023045	0.516295	0.6086
LnHE	-0.012804	0.032465	-0.394390	0.6954
LnTCE	-0.022732	0.017139	-1.326320	0.1924
R <sup>2</sup>	0.997695	Mean dependent var		13.42723
Adjusted R <sup>2</sup>	0.997399	S.D. dependent var		0.575073
S.E. of regression	0.029326	Akaike info criterion		-4.097097
Sum squared resid	0.033541	Schwarz criterion		-3.856208
Log likelihood	98.18467	Hannan-Quinn criter.		-4.007296
F-statistic	3376.062	Durbin-Watson stat		1.247068
Prob(F-statistic)	0.000000			

The results of regression, according to Table 2, revealed that there exists a positive relationship between LnRE, LnCE, LnEE and LnRGDP. Although, the results of regression of LnHE and LnTCE show the negative relationship between LnRGDP. However, the results also indicated that LnRE has significantly related to LnRGDP and in the other hand, LnCE, LnEE, LnHE, and LnTCE have not significantly related to LnRGDP. The regression results specifies the regression equation as follows:

$$\text{LnRGDP} = 10.781 + 0.277 \text{LnRE} + 0.010 \text{LnCE} + 0.012 \text{LnEE} - 0.012 \text{LnHE} - 0.023 \text{LnTCE}$$

The regression equation revealed that 1% increases in recurrent expenditure 27.7% increases in real GDP. Similarly, 1% increases in capital expenditure 1% increases in real GDP, and 1% increases in education expenditure 1.2% increases in real GDP. Meanwhile, health expenditure and transportation and communication expenditure has not positive impact on real GDP. 1% increases in education expenditure 0.8% decreases in real GDP and 1% increases in transportation and communication 2.3% increases in real GDP. The results of Table 2 had evident that there is positive relationship of overall recurrent expenditure and capital expenditure to economic growth of Nepal. However, health expenditure and expenditure on transportation and communication had negative impact to economic growth of Nepal. Although expenditure on education sector had positive impact on economic growth of Nepal.

As shown in Table 2, the P-value (F-statistic) is significant at 5% and it revealed that there is significant relationship between explanatory and dependent variables. The adjusted R<sup>2</sup> concluded that the government expenditures explains 99.74% of the change in economic growth.

**Table 3:** Results of diagnostic tests

Diagnostic Tests	$\chi^2$	P-Value	Decision
Breusch-Godfrey Serial Correlation LM Test	4.128807	0.1269 (not significant)	No serial correlation
Heteroskedasticity Test: White	24.66059	0.2147 (not significant)	No heteroskedasticity, autocorrelation
Jarque-Bera Test	0.573486	0.750705 (not significant)	Residuals are normally distributed

The diagnostic tests against serial correlation (Breusch-Godfrey test), heteroscedasticity (White), and normality of errors (Jarque-Bera test) showed the insignificant at 5% level which revealed that there is no serial correlation; free from heteroscedasticity and autocorrelation; and normally distributed residuals. These results confirmed that the regression model was fit to predict the relationship between government expenditure and economic growth.

### Conclusion

This study aimed to examine the trends of government expenditure and to determine the relationship and predictability of public expenditure and economic growth of Nepal. In this study, recurrent expenditure, capital expenditure, expenditure on education, expenditure on health, and expenditure on transportation and communication were proxied as public expenditure and the dependent variable, economic growth proxied by real GDP with base year 2009/10 for the time series over the period from 1974/75 to 2018/19. In order to know the trends of public expenditure, we illustrated the chart of every predictors. However, to determine the relationship, we employed multiple regression model. This study mainly focused on the impact of public expenditure on economic growth and which was determined by regression model. Most of the reviewed literatures supported to the positive relationship of government expenditure and economic growth.

All the variables of public expenditure under this study showed that positive correlation with economic growth of Nepal. Regression results of this study revealed that there is positive relationship between public expenditure and economic growth of Nepal. But expenditure on health and expenditure on transportation and communication was negatively related to economic growth. It is evident that as increased in overall public expenditures can increase economic growth of Nepal. It is evident that the Keynesian view of increasing government expenditure results higher economic growth. In contrary, negatively effect the expenditure on health and expenditure on transportation and communication on economic growth in Nepal. This study also revealed that as developing stage of Nepal, the capital expenditure,

expenditure on education, expenditure on health, and expenditure on transportation and communication needed longer period of time to effect on economic growth of Nepal due to the insignificant relationship of these variables on economic growth of Nepal. Based on the study, it is suggested that the government must be focused on the capital expenditure which produced productive economic activities and more cautious about recurrent expenditure. In short-run recurrent expenditure enhanced economic growth but government should be focused on capital expenditure to increase economic growth. Education, health, and transportation and communication are the economic infrastructure, so government should most attention to increase expenditure on these sectors that may produce long-run impact on economy.

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