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The impact of government expenditure on economic growth in Nepal

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Abstract

This study seeks to examine the nature and impact of government expenditure on Nepal's economic growth. Annual series data between 2000/2001-2017/2018 is used for the study. Real Gross Domestic Product, proxy for economic growth is adopted as the dependent variable whereas, government expenditure, remittance, import and export the independent variables. The study employed quantitative techniques and econometrics methods to analyze the data. The empirical result shows that the beta coefficient is positively significantly for import, it implies that higher the import higher would be RGDP. The P- value of Breusch-Godfrey serial Correlation LM Test, Heteroscedasticity test: Breusch-Pagan-Godfrey and normality test is greater than 5 percent which is desirable. So, this model is free from auto correlation and heteroscedasticity. The residual is normally distributed.

Keywords: Government expenditure, economic growth, import, export, remittance

1. INTRODUCTION

Nepal government activities may be divided into public investment, which is carried out by state-owned firms, and through government expenditures. The government expenditures consist of two types, current and capital. While the former includes wages, salaries, subsidies, transfers, and other expenses (i.e. consumption), the latter encompasses government spending on reinforcing human resources, providing social services and healthcare, developing economic resources, transportation and telecommunications, and increasing the availability of municipal and housing services The relationship between government expenditure and economic growth has continued to generate series of debate among scholars. Government performs two functions- protection (and security) and provisions of certain public goods and, Protection function consist of the creation of rule of law and enforcement of property rights. This helps to minimize risks of criminality, protect life and property, and the nation from external aggression. Under the provisions of public goods are defense, roads, education, health, and power, to mention few. Some scholars argue that increase in government expenditure on socio-economic and physical infrastructures encourages economic growth. For example, government expenditure on health and education raises the productivity of labor and increase the growth of national output. Similarly, expenditure on infrastructure such as roads, communications, power, etc., reduces production costs, increases private sector investment and profitability of firms, thus fostering economic growth. According to the neo-classical economists, reducing the role of private sector by crowding out effect is important because it reduces the inflation in the economy; increase in public debt, increases the interest rate which reduces inflation in the economy as well as output. The new Keynesians present the multiplier effect in response and argue that the increase in government expenditure will increase demand and thus increase economic growth. The vision of ensuring sustainable economic development and reduction of mass poverty is enshrined, in one way or another, in the government's development strategy documents of virtually all developing economies. In this respect, economic growth, which is the annual rate of increase in a nation's real GDP, is taken as main objective for overcoming persistent poverty and offering hope for the possible improvement of society (Kakar, 2011)

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2. LITERATURE REVIEW

The impact of government expenditures on economic growth is a topic that has been studied by many researchers. However, the results are still controversial. Keynes (1936) argued that the government must regulate aggregate demand through fiscal policy and monetary policy to have a higher level of employment. Keynes (1936) expected the government to have a greater responsibility to directly organize investments. He believed that the government expenditures, especially debt-financed expenditures, would increase aggregate demand thereby boosting economic growth. Several studies investigate the relationship between government spending and economic growth using different empirical methodologies, and yet the results are inconclusive.

Landau (1983) found that an increase in government expenditure's share in real GDP reduces the growth rate of per capita real GDP. Barro (1989) found a significant negative relationship between government consumption share and the growth of real per capita GDP and discerned insignificant positive effects of government investment. Josaphat et al. (2000) investigated the impact of government spending on economic growth in Tanzania using time series data over 1965-96 and found that increased productive expenditure (physical investment) has a negative effect on growth while consumption expenditure stimulates growth. Niloy et al. (2003) examined growth effects of government expenditure for a panel of thirty developing countries over 1970-80. They found that the share of government capital expenditure in GDP is positively and significantly correlated with economic growth, but current expenditure is insignificant. Other studies (such as Romer, 1990; Alexander, 1990; Folster concluded that total government expenditures seem to have a negative effect on economic growth. Suleiman (2009) found that the impact on public expenditures and then on deficits ascending from a structural deceleration in or from an upgrading in the growth potential. He submits that a good knowledge of the structural relation between the noncyclical section of government expenditure and possible output is crucial to obtaining a benchmark against which to assess the stance of expenditure policy and then of overall fiscal policy.

Rahn (1986) admitted that government spending influences the economy, but the government spending is not always directly proportional to economic growth rate. Rahn, R. introduced a model called “Rahn Curve” that reflected the relationship between public expenditure and economic growth. The Rahn Curve implied that public spending has a positive impact on economic growth when spending is moderate and allocated to public goods such as infrastructure, etc. but the impact will be reversed if public spending exceeds a certain threshold .

Devarajan, Swaroop, and Zou (1996) focused on the relationship between components of government expenditures and economic growth in 43 developing countries from 1970 to 1990. The results suggested that an increase in the share of recurrent expenditure has positive and statistically significant growth effects. By contrast, the relationship between the capital component of public expenditure and per-capita growth is negative. Devarajan et al. (1996) confirmed that developing-country governments had been misallocating public expenditures in favor of capital expenditures at the expense of recurrent expenditures. Sugata and Andros (2008) also got the same results when using panel data on 15 developing countries over 28 years (1972-1999) to examine the correlation between components of government expenditure and economic growth.

Ogbokor (2015) has studied about the dynamic relationship between the government expenditure and economic growth in the Namibia. The objectives of the research are to find out the relationship between the government expenditure and economic growth and to check the direction of causality between them. The annual time- series macroeconomics secondary data-set from 1990 to 2013 were used. Paper used the two- step Engle- Granger approach to check the causality between the variables and it uses the co-integration technique to check the long run relationship between them. The study found cointegration relationships among public expenditure and economic growth and there is unidirectional causality between them. Additional, the paper found that government spending and expenditures on education and health are all weak forecasters of economic growth.

3. DATA AND METHODOLOGY

3.1 Data Sources

This study is based on the analysis of time series data extracted from various sources. Annual series data between 2000/2001-2017/2018 is used for the study. Data series on real GDP (RGDP), Import (IMP), Export (EXPO), Government Expenditure (GE) and Remittance (REMM) were retrieved from various issues of Economic Survey published by Government of Nepal, Ministry of Finance.

3.2 Brief Description of Variables

Real Gross domestic product (RGDP): Real GDP is a measure of value added in the economy in a given year which is adjusted for price changes. Gross Domestic Product (GDP) is the total monetary value of all finished goods and services produced within a country's borders in a specific time period measured in terms of local currency. Since GDP relies upon monetary value of goods and services and is subject to inflation, RGDP is used to capture the overall economic performance of the country.

Government Expenditure (GE): Government expenditure is a term used to describe money that a government spends from local city councils to federal organizations and the motive of government expenditure is to build up peace and harmony with economic development or growth.Import (IMP): Imports are defined as purchases of goods or services by a domestic economy from a foreign economy. In most countries, international trade and importing goods represents a significant share of the gross domestic product (GDP). International trade is generally more expensive than domestic trade due to additionally imposed costs, taxes, and tariffs. On a business level, companies take part in direct-imports; a major retailer imports goods from an overseas manufacturer in order to save money.Export (EXPO): Export is defined as the act of shipping goods and services out of the port of a country. Legal restrictions and trade barriers are in place internationally to control

trade, whether goods are being exported or imported. When legal restrictions and trade barriers are lessened or lifted the producer surplus increases and so does the amount of the goods and services that are exported from the country. Exporting allows a country's producers to gain ownership advantages and develop low-cost and differentiated products. Remittance (REMM): Remittance refers to money that is sent or transferred to another party. It can be sent via a wire transfer, electronic payment system, mail, draft, or check. They can be made to satisfy an obligation such as a bill payment or an invoice when someone shops online. But they are most commonly made by a person in one country to someone in another. Most remittances are made by foreign workers to family in their home countries. They may also be payments that are made to a business. Remittances play an increasingly large role in the economies of small and developing countries. Remittances are often used as a way to help raise the standard of living for people abroad and help combat global poverty. In fact, since the late 1990s, remittances have exceeded development aid, and in some cases make up a significant portion of a country's gross domestic product (GDP).

3.3 Research Methodology

This study is based on secondary sources of data of Nepal for the period of 2000/01- 2017/18 leading to the total of 19 observations. The regression model has been tested for the analysis of the data. Also, Diagnostic tests were also carried out to evaluate the adequacy of the model specifications. The data has been analyzed by MS excel and advanced analysis has been made through Eviews10 .

3.4 The Model

In an attempt to find the relationship between government expenditure and economic growth (2000-2018), the multiple regression analysis was employed in our analysis. The model states that economic growth (GDP) depends on government expenditure, remittance, import and export . The functional representation of the model is as follows;

GDP=*f* (GE, REMM, EXPO, and IMP) ..…… (1)

Where; GDP= the gross domestic product or the economic growth rate

GE= government expenditure

REMM= remittance

EXPO= export

IMP= import

It can also be presented in a linear form as;

logGDP =logGE+ logExpo + logImp + logRemm + c

…… (2)

Where logGDP = log of Gross Domestic product

logGE = log of government expenditure

logEXPO= log of export

logIMP= log of import

logREMM= log of remittance

C= (constant)

4. RESULTS

The empirical result is shown in the table below. It shows the estimated parameters of the variables, the t-statistics and other diagnostic test of equations. With E-Views software, GDP was regressed on the explanatory variables.

4.1 Empirical Results

Dependent Variable: LGDP
Method: Least Squares
Date: 03/16/20 Time: 01:28
Sample: 2000 2018
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LIMP	0.295994	0.037080	7.982494	0.0000
LREMM	-0.014945	0.030624	-0.488005	0.6331

LEXPO	0.022504	0.056067	0.401379	0.6942
LGE	-0.002814	0.006716	-0.418978	0.6816
C	19.17209	1.127784	16.99979	0.0000

R-squared	0.994878	Mean dependent var	27.15099
Adjusted R-squared	0.993414	S.D. dependent var	0.239854
S.E. of regression	0.019465	Akaike info criterion	-4.819510
Sum squared resid	0.005304	Schwarz criterion	-4.570973
Log likelihood	50.78534	Hannan-Quinn criter.	-4.777447
F-statistic	679.8091	Durbin-Watson stat	0.958289
Prob(F-statistic)	0.000000		

Source: Output of the E-Views Regression

In the above table, the R square of 0.994878 shows that the explanatory variable explained 99% variation in the dependent variable of RGDP. Furthermore, the value of adjusted R square is 0.993414 shows that the study has accounted for 99.3414% of the variance in RGDP. Likewise, it is observed that value of F- statistics is 679.8091 and level of significance is less than 0.05 which means that there is significant impact of at least one of the independent variables on RGDP..
In addition, the result shows that the coefficient of import and export are positive, which implies that increase in import and export increases the RGDP .Whereas, remittance and government expenditure have negative impact on RGDP. Among the predictor, import is significant i.e. its p-value is less than 0.05.

4.2 DIAGNOSTIC TESTS

Diagnostic test	F-Statistics /Jarque-bera	Probability value (p)
Serial Correlation LM Test	F(2,15)= 1.237620	0.3221
Heteroskedasticity Test	F(3,15)= 0.897237	0.4655
Normality	JB= 0.116157	0.943576

Diagnostic tests were also carried out to evaluate the adequacy of the model specifications. When a model is assessed, diagnostic tests can be applied to appraise model residuals ,which also help as tests of model competence .The P- value of Breusch-Godfrey serial Correlation LM Test , Heteroscedasticity test: Breusch-Pagan-Godfrey test and Normality test is greater than 5 percent which is desirable. So, this model is free from autocorrelation and heteroscedasticity. The residual is normally distributed. The stability of the parameters was also tested by applying the CUSUM and CUSUMSQ tests developed by Brown, Durbin and Evans,(1975).

Figure 1: Plot of Cumulative Sum of Recursive Residuals

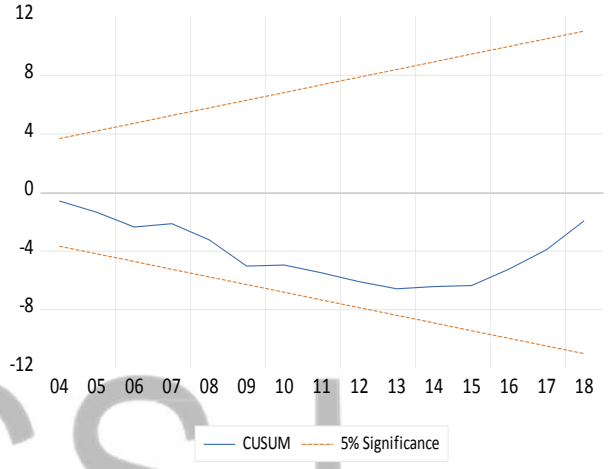

Figure 2: Plot of Cumulative Sum of Squares of Recursive Residuals

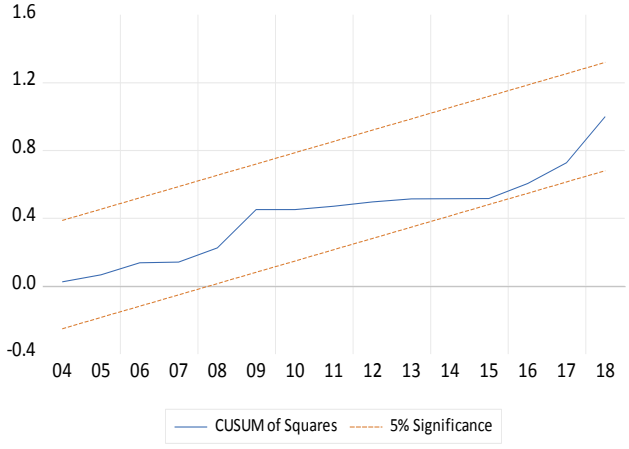

Figure 1 and 2 show plots of the cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) respectively. These results depict that the parameters are stable as graphs of the CUSUM and CUSUMSQ are within the critical bounds at 5 percent level of significance. Thus, the models are structurally stable.

5. CONCLUSION

This paper examines the impact government expenditure on economic growth in Nepal. In study of overall regression model, RGDP has positive and significant relation with import which means that increase in import will lead to increase in RGDP of Nepal. The P- value of Breusch-Godfrey serial Correlation LM Test, Heteroscedasticity test: Breusch-Pagan-Godfrey and normality test is greater than 5 percent which is desirable. So, this model is free from autocorrelation and heteroscedasticity. The residual is normally distributed. It implies that this model is robust and stable as the both lines long run and short run coefficients are acceptable over the study period 2000/2001 to 2017/18. The diagnostic tests confirm that the models have the desired econometric properties. It is concluded that the models are structurally stable.

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