



IMPACT OF PUBLIC EXPENDITURES ON ECONOMIC GROWTH OF AFGHANISTAN USING AN ECONOMETRIC MODEL OLS APPROACH

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Abstract

The public expenditure is an important phenomena and most important factor of economic growth and development; furthermore it is consider being significant proportion of gross domestic product (GDP). In 2015, public expenditure almost covered 12.5% of national expenditure in case of Afghan economy. The focus of this research is to assess the impacts of governmental expenditure on economical growth of the Afghan economy and to encounter whether there exist relationship between government total expenditure (GTE) and gross domestic product (GDP) in Afghanistan. This study cover the data from 2002 to 2015 and the data is retrieved from World bank development indicators, Ordinary Least Squire econometric approach is used to find-out cause and effect relationship between dependent variable (GDP) and independent variable (GTE). The empirical analysis indicated that there is positive relationship between dependent and independent variables thus the study fail to reject null hypothesis, in other word, the government should exercise significant fiscal policy measurement to stabilize economical performance and achieve macro-economical goals. On the other hand, bad governance and the lack of fiscal management policy and control will lead to economical cost that will bear by society.

Keywords: Afghan Economy, Economical Growth, Fiscal policy, Governmental Expenditure

Introduction

Several empirical studies have been conducted in countries around the world for investigation of existence of Keynesian and Wagner's Hypothesis. The empirical research of Srinivasan (2013) Several empirical studies have been conducted in countries around the world for investigation of existence of Keynesian and Wagner's Hypothesis.

Researches on public expenditure stated out that the alleged collapse of market economic to effectively and efficiently allocate economic resources for social and economic development. This failure brought the emergence of welfare economics (government manipulation and intervention in economic activities) leading to the rapid expansion of the government sector and growth in public expenditure. As the public sector ensure to rise relatively, the proper mechanism required for efficient resource allocation, In order to fill this gap, the concept of budget arise which has a package of public expenditure plan and tax collection legislation of the government and it consider to be useful tool for monitoring and controlling government expenditure plan to policy of finance and taxation. Government expenditures were usually broadly categorized into recurrent and capital expenditures.

Lacey (1989) suggested that government's purchase of current goods and services such as labour, consumables, wages, salaries and etc, while the latter would ideally include not merely investments in infrastructure like roads, schools, hospital and etc, but also all other expenditures that might contribute to development. In other way, the recurrent expenditure refers to financial outlays required for the day-to-day running of government requirements; however, the capital expenditure refers to investment outlets that increase the assets of the government. This categorization was not mutually exclusive but interrelated and linked. In some cases, capital expenditure rise recurrent expenditure through the operational and maintenance costs of completed capital projects, the available amount for investment is not only depend on size of revenue but also the amount that goes annually into the running of government.

Currently, the size and structure of government expenditures grow faster and government tries to fulfill excessive consumption expenditures, in other words, it is complex phenomena. The political development is not the only cause, however, the challenge of raising additional and identifying alternative sources of revenue to meet the additional needs of governance, so, overall, it needs more focus on government activities such as its expenditure.

Pigou (1928) explained in his legendary book Public Finance that in every residential society there is some form of government organization and the governing authorities such as central or local which are placed with some function and duties, although, the detailed nature which varies in some places. Some aspect of these duties involves expenditures and consequently the rising of revenue. Though Pigou's perception of what a government and its assign responsibility

got tremendous transformation and complexity over time undergone tremendous transformation, both in size and complexities over time, the underlying concept of public expenditure as a absolute instrument through which government policy choices are carried out and remains unaltered in today's economies.

Peacock and Wiseman (1961) findings, which was based on the political theory of public expenditure determination, suggested that governments wishes to spend more money, that citizens do not like to pay taxes, however, governments entitled to pay more attention to the likes of residential with the assumption that a reasonable level of taxation which according to the authors, acts as a restraint on government behavior. Fan et al (2004) stated that government expenditure is not the only way to reduce poverty but government expenditure helps to enhance economic growth and development as a result of efficient utilization of national resources which is the only way to find permanent solution to problems and to stimulate overall satisfaction and welfare of the people and society. Adubi and Obioma (1999), public expenditures almost cover for more than 20 percent of gross domestic product (GDP) in their study of the expenditure management in Nigeria.

Public expenditure plays four fundamental roles: stimulating effective demand for goods and services as well as rising desirable externalities to the economy and like-hood to society through its capital formation (Piana, 2001). Iyoha (2002) findings suggested although all studies have mentioned government expenditures are key factor to exhibit a tendency to rise at a faster rate than the GDP irrespective of the level of development. This finding was in tandem with a similar research by Thorn (1967), took the government spending of 52 countries world-wise and expressed a mean elasticity of central government expenditure to GDP to be 1.22 higher than unity.

Public expenditures are not complied with unfavorable development that need to be curtained so long as it was sufficiently matched with extension in government revenue, resourcefully managed will not fuel inflation and the composition was productive stimulating and development oriented (Aigbokhan, (2003). Ram (1986), attempt and formulated the theoretical bases for explaining the impacts of government expenditure on growth, the data covered 115 countries through the use of production functions precise for both public and private sectors. The research was efficient to derive broad generalization for the market economies investigation.

Al-Yousif (2000), placed two different models when investigating the effect of government expenditures on economic growth in Saudi Arabia and found contradiction results, he confirmed that the model with positive relationship between government size and economic growth more applicable and therefore concluded that government size could have a positive effect on economic growth. Folster and Henrekson (2000) reported a strong negative relationship between government expenditure and growth. Their study was carried out in more developed countries from 1970 to 1995. Their estimated coefficients recommended that a 10

percentage increase in government expenditure was associated with a decrease of 0.7 – 0.8 percentage points in growth rate.

In developing countries, due to lack of professional fiscal management policy less consideration is given to effectiveness and productivity of different components of government expenditures, this was concluded that the primary focus of fiscal policy is aggregate demand management (Diamond 1990). Furthermore, this view placed importance on aggregate government expenditure and appeared indifferent to distinguish between or among the various components of public expenditures.

Oduola (1996), used a simultaneous equations model to find out the cause and effect interrelationship between military expenditure and economic growth in Nigeria. This was important due to inherent relationship between public expenditure and economic growth, making any deductions from a single equation model invalid. This study revealed that there was inverse relationship between aggregate military spending and economical growth at 10 percent significant level, however, recurrent and capital expenditures had dominant positive effect than the latter.

Ogiogio (1995), analyzing the impact of recurrent, capital and sectoral spending on economical growth over the period 1970-1993, in this research, there exist a long-run relationship between public expenditure and economical growth, recurrent government expenditures, had more significant effect than the capital expenditures, however, five-year lags of capital expenditures were more growth inducing. This study also pointed out that government investment programs in socio-economic infrastructure provided a better contributing to environment for private-sector led growth.

Methodology

The existence of two opposite views to describe actual relationship between total public expenditure and economic growth or national income are considered to be Keynesian and Wagner's theories. Wagner suggested that incremental in public expenditure due to rising in real per-capita income, this is known as Wagner's view. In other words, increasing in public expenditure is caused by increment in national income such as economical growth, furthermore, that indicates the tendency goes from national income towards Government expenditures. On another hand, based on Keynesian perspective government expenditures causes national output or economical growth, the tendency of relationship or causality goes from government expenditure toward economical growth means short term and long term.

Many studies have been persuaded around the world and different research was conducted in many countries to test Keynesian and Wagners Hypothesis. The study of Srinivasan conducted in 2013 and the study of Ebaidalla which were followed in 2013 that supports Wagners Hypothesis, however, the research conducted by Musgrave in 1969 did not support both views.

The specific and core objective of this study: to illustrate the impact of public expenditure on economic growth in Afghanistan, furthermore, this study examine the relationship between gross domestic product(GDP) and government expenditure in assign country(Afghanistan). The impact of this study will be limited to a spanning period of 14 years from 2002 to 2015 and the Ordinary Least Square (OLS) method of econometric technique was used. This study will rely mainly on secondary data retrieved from World Bank Development Indicators.

The OLS (Ordinary Least Squared) econometric model were consider to be used by Guseh (1997) and Alexiou (2009). The OLS technique will help us to find-out the independent effect of each input variables on target variable, while some limitation to be met for OLS estimators to be Best Linear Unbiased Estimations, like multicollinearity between inputs variables and the error term equal to zero. The relationship between total government and economic growth is econometrically expressed as follows:

$$GDP_{it} = \alpha + \beta GTE_{it} + u_{it}$$

The data collected were not showing linear distribution in both GDP (Gross Domestic Product) and GTE (Government Total Expenditure) in-order to fulfill Ordinary Least Square technique assumptions, so the data were converted in to natural log form. The final equation for OLS estimator is:

$$LnGDP_{it} = \alpha + \beta LnGTE_{it} + u_{it}$$

The mention above econometric equation is used by Peacock & Wiseman (1961) and then by Goffman & Mahar (1971) and Mulumba (2009). The following equations assess the tendency of economical growth with respect to government expenditure.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
lnGTE	14	19.66	21.66	20.9360	.71363	-.523	.597	-1.228	1.154
lnGDP	14	22.14	23.75	23.0922	.59502	-.360	.597	-1.494	1.154
Valid N (listwise)	14								

Our whole data made of fourteen year annual observation from 2002 to 2015, the descriptive statistics are showed in table 1 with 14 observations. Since the data is converted in to natural log, therefore, gross domestic product and government total expenditures are described as lnGDP and lnGTE respectively. In table 1, mean for lnGTE and lnGDP is 20.9360 and 23.0922 respectively and following the standard deviation 0.71363 and 0.59502, whereas relative dispersion is seems to be 3.4% for lnGTE and 2.6% for lnGDP. In the following table 1, Skewness data normality is -0.9 and -0.6, Kurtosis data normality is -1.06 and -1.3 that means the data is normally distributed.

Table 2: Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
lnGDP	.178	14	.200 [*]	.885	14	.068
lnGTE	.234	14	.037	.875	14	.050

*. This is a lower bound of the true significance

a. Lilliefors Significance Correction

Table 2 indicates the normality test for the data set, which consist of 14 years data. Government Total Expenditures are denoted by (GTE) and economical growth is mentioned by Gross Domestic Product (GDP) and the data is converted into natural log. To measure data normality, two tests are proposed: Shapiro-Wilk and Komogorov-Smirnov for each dependent and independent variables. Tests showed: Shapiro-Walk normality test concluded that the data is normal when the test result or significant level is or above 0.05, in case of GDP and GTE it is 0.068 and 0.050 respectively, which declared that the data is normality distributed, Kolmogorov-Smirnov normality test shows that GDP (Gross Domestic Product) data set is normally distributed where significant level is greater than 0.05 that is 0.20, however, the data set for GTE (Government Total Expenditure) doesn't show significant normality but it show significant normality following Shapiro-Wilk test.

Table 3: Correlations

		lnGDP	lnGTE
Pearson Correlation	lnGDP	1.000	.994
	lnGTE	.994	1.000
Sig. (1-tailed)	lnGDP	.	.000
	lnGTE	.000	.
N	lnGDP	14	14
	lnGTE	14	14

Table 3 describes relationship between dependent variable, in a case, Gross Domestic Product (GDP) and independent variable Government Total Expenditure (GTE). Pearson Correlation Model is used to assess the existence of relationship between assign variables. Test concluded: the degree of relationship between GDP and GTE is 0.994 and significant level is 0.000, which is less than 0.005. It means 99.4% relationship persist that insures a significant correlation.

Table 4: The Coefficient of Determination and Durbin-Watson Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.994 ^a	.988	.987	.06912	1.861

a. Predictors: (Constant), lnGTE

b. Dependent Variable: lnGDP

The coefficient of determination and the result of Durbin-Watson test is explained in table 4 where R Square is 98.8%, which shows that the data points are highly closed to best fitted regression line and standard error of the estimate is 0.06912, the statistics of Durbin-Watson test is 1.861 that fitted into the range, which mean there doesn't exist autocorrelation or serial correlation in residuals or efficient Ordinary Least Squares estimates.

Table 5: Coefficients and OLS estimators

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.745	.563		10.209	.000
	lnGTE	.829	.027	.994	30.842	.000

a. Dependent Variable: lnGDP

Coefficients and OLS estimators are shown in table 5, where y-intercept is 5.745, government total expenditure coefficient is 0.829 and t-statistics is 30.842. The calculated p-value is 0.000, which is less than significant level 0.005 that shows there is significant positive cause and effect relationship between government total expenditures (GTE) and gross domestic product (GDP), in other words, one percent increase in GTE can cause 0.829 percent increase in GDP.

Conclusion

The aim of this study is to encounter the cause and effect relationship between economical growth and government expenditure in the case of Afghan economy. The Ordinary Least Square (OLS) econometric model was used to predict estimators.

The analytical portion of this study indicated outstanding results: the empirical findings illustrated a significant positive effect of public expenditure on economical growth in Afghanistan; in addition, there exist relationship between economical growth and government expenditure. Furthermore, the tendency of relationship goes from government expenditure toward economical growth. Therefore, Afghan government should increase government involvement in-order to cause economical growth. However, the government budget or spending policy should be observed and clearly evaluated in-order to meet macroeconomic goals. Clearly, assess society needs, otherwise, insufficient fiscal policy may result negative influence on economical growth and society will pay the cost.

These results indicated that the Keynesian hypothesis model is sufficiently applicable in Afghanistan economy. Furthermore, an empirical result indicates that one percent increase in government spending would effects 82.9 percent increase in gross domestic product of a county.

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