

Public Spending and Economic Growth: Empirical Investigation in the Context of Pakistan

Kalim-Ullah Bhat
Chen Yan

School of Accounting, Dongbei University of Finance and Economics, China

Abstract

Purpose of the study is to empirically examine the hypothesis; either public spending stimulates economic growth in the context of emerging economy like Pakistan. Government expenditures studied in this paper includes capital expenditure, education expenditure and interest payments. All these explanatory variables were regressed on economic growth; the proxy used for economic growth is GDP growth. Thirty years data is used in this study from 1980 to 2010; it was passed through unit root tests to check stationary of the data which was found stationary at level. The results found consistent with some previous studied, there were found negative link between the spending on the education sector and economic growth. In the current study no significant link is found between development expenditure and economic growth. However the findings of the study reveals that interest rate negatively affect economic growth.

Keywords: Keynesian Hypothesis, Capital expenditure, interest payments, economic growth

1. Introduction

While considering developing countries and there economic growth, developed countries who achieved economic success are attention worthy, where credit is given to government intervention for economic development. It is dominant view of both public and policy makers that economic success is brought by government role consequently it is attributed to government. It is understood that government role leads economic development but question arises which instrument is used by the government to intervene economy. This instrument is called fiscal policy. An objective of expansionary fiscal policy is to push the economic growth by increasing public spending; most researchers argued in the literature that government expenditure is an exogenous factor means it boosts economic growth. There are also some contradictory results to consider government expenditure responsible for economic growth. It remained debatable topic in the literature that how public spending stimulates economic growth; nevertheless how government plays its role to stabilize the economy is also hot topic being discussed by academicians and policy makers.

Many types of studies have been conducted by researchers to understand the impact of government expenditures on the economic development, many models and variables were used for it. Some of the relationships were tested to examine impact of government expenditure on different sectors of economy, GDP growth etc. Some researchers examined the role of economic development on government expenditures. As it is a very difficult job to consider all the sectors and variables in a single study. So my analysis is narrowed down to the impact of government expenditures on GDP growth.

Keynes in all economists who discussed the relationship between public expenditures and economic growth was among the most noted with his apparently contrasting view point on this relation. Keynes put forward the statement that public expenditure is exogenous factor and stimulates economic growth. However the impact of government expenditure on economic growth is contradicted in the empirical literature. On the one hand (Ram, 1986) examined the relationship between government expenditure and economic growth and come to conclusion that there is positive relationship between government expenditure and economic development. Whereas as results varies (Landau, 1983) came with negative relationship that government expenditure in some developed and less developed countries has negative relationship with economic growth. (Ram, 1986) examines 63 developed and developing countries and proves that there is no casual pattern between government expenditure and economic growth. So it is found that the results forwarded by researchers varied so it is needed to examine either positive or no relationship existed in developing countries like Pakistan.

However, in the Keynes perspective of macroeconomic framework it is suggested in the effective demand theory that public spending being responsible to push the economy can be taken into consideration as a policy instrument to stimulate economic growth of particular economy. But in the perspective of Adolph Wagner 1890 it is suggested that public spending is a result of economic development.

While making Decisions about economy policy, it should be well understood which law prevails in our economy. As previous results come with different conclusions regarding time and geographical zone. In the Pakistan being a developing country we may come with different result. Objective of this paper is to investigate relationship between government expenditures and economic growth by using economic growth as a dependent variable and government expenditure as independent variables which include development expenditures, recurring expenditures and interest payments. Which will explore to us either Keynes model is applicable in

developing countries like Pakistan or not.

To the best of knowledge of the author As the empirical investigation relationship between government expenditure and economic growth has not been tested in Pakistan. So on the time and geographical basis there is need to investigate that relationship to come with findings which would help economists in practical field to make efficient policies as well as it will add up in the knowledge of body.

2. Literature review

The relationship between government expenditure and economic growth has been very keen topic in literature and is well documented. There is no doubt that some researchers come to conclusion with contradictory results because of geographic and time factor. Some researchers come with results that there is positive relationship between government expenditure and economic growth.(Clement A.U. Ighodaro, 2010) tested Keynes hypothesis and come to conclusion that government expenditure has positive relationship with economic growth. In other words we can say it act as exogenous factors and cause economic growth. (John Loizides, 2005)tested the relationship between government expenditure and economic through both bivariate as well as trivariate analysis and come with the findings that increase in the government expenditure increases economic growth. The hypothesis that public expansions hamper economic growth was rejected.

Some Cross sectional studies proved that the positive relationship between government expenditure and economic growth. (Niloy Bose a, 2003)They conducted a cross sectional study of 30 developing countries and proved it that government expenditure has positive relationship with economic growth.(Lai**, 1997) The researchers conducted study in the Korea to examine relationship between government expenditure and economic growth where research supports the Keynes frame work that government expenditure cause increase in economic growth.

The relationship between government expenditure and economic growth was tested in EU. A. (Turrini**, 2008) estimated long and short-run relationship between government expenditure and potential output across EU and come with results that the relationship between government expenditure and potential output are linked by a stable long run relation.(Shantayanan Devarajan, 1996) They used data of 43 developing countries for a period of 20 years and come to conclusion increasing in current expenditure results in higher growth effects. But in contrast there is negative relationship between capital expenditure and per capita income. It is found that misallocation of public expenditure is done in favour of capital expenditures. (Manh Vu Le, 2005)Examined the interrelationship between public expenditure and FDI and its impact on economic growth and it was found that the effect of FDI on economic growth is reduced when the ratio to GDP of public expenditure exceeds 25%. However a contradictory relationship is found in developed countries.

There is also empirical evidence for negative relationship between government economic growth and public spending .(Habibian, 2011), reported a causal link between economic growth and government expenditure. Huang, examined the relationship by using Pesaran bounds test which resulted that there is not co integrating relationship between government expenditure and economic growth as well as no casual relationship were found. (Dr. Chiung-Ju Huang, 2006)findings partly varied from previous cross sectional results, however no consistent evidence was found in support of the argument that government expenditure causes increase in per capita growth. It was found that government expenditure partly contribute a small portion to growth of economy. (Abu Nurudeen*, 2010), conducted an empirical study to investigate the link amid economic growth and public spending in the context of Nigeria. It is revealed in the results of the study that public spending has negative effect on economic growth, public spending includes the education expenditure and development expenditure. However, communication, transport and health expenditures affect positively on economic growth.

Some researchers come with results that public spending with good governance leads to economic growth. (Coaray, 2009) Carried out cross sectional study to examine the impact of public expenditure supported by good governance on economic growth and come with results that public spending with good government governance cause increase in economic growth. The evidence for interaction between good government expenditure and governance which reveals that countries with good governance make effective use of public spending and that increase of public expenditure leads to economic growth.(Habibian, 2011) investigated relationship between government expenditure and economic growth by using data of 18 developing countries and come to conclusion that there is negative relationship between government consumption expenditures and economic growth, whereas positive relationship was found between government's constructive expenditures and economic growth.

After going through literature it has been concluded that the test of relationship between government expenditure and economic growth conducted in many geographical location at different time periods, where the results vary due to different regions and time periods. It has been found that there is need to examine the relationship in the developing countries like Pakistan and come with empirical evidence.

Hypotheses

H1: Development expenditure affects positively and significantly on economic growth

H2: Increase in the education expenditure has a positive and significant effect on economic growth

H3: Increase in interest expense stimulates economic growth

3. Research Methodology

Data and Methodology

This study attempts to investigate empirically the link between economic growth and public spending in the context of Pakistan. The data for the study is collected for the period 1990-2010; the link is being investigated by using different statistical techniques. The data was collected from the website of World Bank and economy survey of Pakistan. The method used to conduct this study was previously used in Kingdom of Saudi Arabia (Dandan, 2011)

Calculation and definition of variables

Economic growth is considered as growth in the GDP annual and is dealt in percentage education expenditures are the public spending on education and it is used in the study as percentage of GDP. Capital expenditures are related with acquisition and construction of long term assets such as machinery, buildings and roads and it is used as percentage of GDP in the study. Interest expenses are calculated as interest on external and internal government debt subsidies for loans given to many sectors and it is being used as a percentage of GDP in the study.

Calculation

Variables	Variables	Calculation
Edu	Education expenditure	Percentage of GDP
Cap	Capital expenditures	Percentage of GDP
Int	Interest payments	Percentage of total expense
Ggdp	Economic growth rate	Economic growth rate

Theoretical Framework

$$Gdp = \alpha + \beta_1 \text{edu} + \beta_2 \text{cap} + \beta_3 \text{int}$$

Analysis

The data were passed through many statistical techniques to reach accuracy. First the co linearity tests were conducted to check the linearity among explanatory variables. I test the stationary of data by unit root test. Correlation test was done to check the association of dependent variable with independent variables. Finally regression has been run to check casual relationship of independent variables with dependent variables.

4. Results

The results of co linearity diagnostics are mentioned below in the table 1, the results o table 1 reveals that tolerance of capital expenditure is .620 and VIF is 1.612, Education expenditure has tolerance value .767 and VIF is 1.303 and Interest expenditure has tolerance .598 and VIF is 1.672. So it is concluded that there co linearity among explanatory variables does not exist among explanatory variable which help us to avoid spurious results.

Table 1

	Co linearity Statistics	
	Tolerance	VIF
Capital expenditure	.620	1.612
Education expenditure	.767	1.303
Interest expenditure	.598	1.672

Table 2

Null Hypothesis: GGDP has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.801652	0.0073
Test critical values:		
1% level	-3.670170	
5% level	-2.963972	
10% level	-2.621007	

The data was passed through unit root test to check the stationary of the data. Table 2 reveals that series of economic growth is stationary at significance level of 1%, where ADF > t-statistics at 1% level.

Table three shows stationary of series development expenditure. The results of table 3 tell us that

development expenditure is stationary at 5% significance level; where ADF is greater than t-statistics at 5% significance level.

Table 3

Null Hypothesis: DEVELOPMENT_EXP has a unit root			
Exogenous: Constant			
Lag Length: 1 (Automatic - based on SIC, maxlag=3)		t-statistics	
Augmented Dickey-Fuller test statistic		-3.312935	0.0235
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

Table 4

Null Hypothesis: INT_EXP has a unit root			
Exogenous: Constant			
Lag Length: 0 (Automatic - based on SIC, maxlag=7)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.257707	0.0263
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	

The results of table 4 reveal the stationary of series interest expenditure. It is found that the data of interest expenditure is stationary at 5% significance level, where ADF is greater than t-statistics at 5% level.

Table 5

		Co- relation			
S.N		1	2	3	4
1	GDP growth	1			
2	Capital expenditure	0.082	1.000		
3	Education expenditure	-0.277	0.412	1.000	
4	Interest Expense	-0.312	-0.594	-0.447	1

The results of table 2 tell use association among variables either it is positive, negative or there is no association.co- relation between capital expenditure and economic growth is .082 which shows there is very weak association between capital expenditure and economic growth. The co relation between education expenditure and economic growth is -0.277 which reveals that there is negative association between education expenditure and economic growth. Co- relation between interest expense and economic growth is -0.312 which tells us about the negative relationship between interest expense and economic growth.

Results of OLS are mentioned in the table 6 .All the variable were found stationary after passing through the unit root test , so operating least method(OLS) is used to find out the casual relationship between explanatory variables and dependent variable. The results show that there is no significant relationship between development expenditure and economic growth in developing country like Pakistan. Results do not support our both hypothesis null

Table 6 Ordinary Least Square

Dependent Variable: GGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.10651	7.088639	2.977512	0.0061
DEVELOPMENT_EXP	-0.055434	0.257176	-0.215547	0.8310
EDUCATION_EXP	-2.956355	1.050739	-2.813596	0.0090
INT_EXP	-0.249602	0.090842	-2.747647	0.0106
R-squared	0.314565	Mean dependent var		5.127397
Prob(F-statistic)	0.015612			

And alternative as no significant relationship is found between development expenditure and economic growth. There is found a significant negative relationship between education expenditure and economic growth, where T = -2.81 and p < 0.01, the results support the null hypothesis that there is negative relationship between education expenditure and economic growth. Significant Negative relationship is also found between interest expense and economic growth, where T = -2.74 and p < 0.05, it also supports null hypothesis that there is negative relationship between interest expense and economic growth.

5. Conclusion

(Abu Nurudeen, 2010) The scholars conducted study in the Nigeria and reported findings that there is negative relationship between education expenditure and economic growth which is consistent with my results that there is negative relationship between education expenditure and economic growth.(Dr. Chiung-Ju Huang, 2006) Studied the relationship between government expenditure and economic growth and reported findings that there is no casual relationship between government expenditure and economic growth, which is consistent with my results that no significant relationship is found between capital expenditure and economic growth.(Karagöl*, 2002) Reported negative relationship between public debt and economic growth this is consistent with my results that there is negative relationship between interest expenditure and economic growth.

The negative relationship between education expenditure and economic growth is connected with mismanagement as well expenditures may not be allocated as they should be. So proper planning is needed to allocate education expenditure in productive ways. (Cooray, 2009)He reported the findings that good governance with public expenditure leads to economic growth, as our findings proved there is no significant relationship between capital expenditure and economic growth, so policy makers should review their policies and take effective measures to allocate development expenditures effectively. There is found a negative relationship between interest expense and economic growth, non productive expenditures should be reduced and the loans should be allocated honestly to development projects to cover its cost while considering financial stress in mind. This can help us to reduce huge interest expenses.

Future research can be done by conducting studies of other government expenditures like consumption expenditure, transfers with economic growth. It is also suggested that same study can be conducted in other developing countries.

References

- Abu Nurudeen, A. U. (2010). Government Expenditure And Economic Growth In Nigeria, 1970-2008: A Disaggregated Analysis *Business and Economics Journal*, 2010(BEJ-4), 1-11.
- Abu Nurudeen*, A. U. (2010). Government Expenditure And Economic Growth In Nigeria, 1970-2008: A Disaggregated Analysis. *Business and Economics Journal*, 1-11.
- Clement A.U. Ighodaro, D. E. O. (2010). Does the Relationship Between Government Expenditure and Economic Growth Follow Wanger's Law in Nigeria? *Annals of the University of Petroşani, Economics*, 185-198.
- Cooray, A. V. (2009). Government expenditure, governance and economic growth. *Comparative Economic Studies*, 401-418.
- Dandan, D. M. M. (2011). GOVERNMENT EXPENDITURES AND ECONOMIC GROWTH IN JORDAN. *International Conference on Economics and Finance Research*, 1-5.
- Dr. Chiung-Ju Huang, F. C. U. s., Taichung, Taiwan. (2006). Testing Wagner 's Law Using Bounds Test and a New Granger Non-Causality Test: Evidence for Taiwan. *The Journal of American Academy of Business in Essex, Cambridge*.
- Habibian, A. J. S. a. F. (2011). Government Size & Economic Growth: New Evidence from Some Developing Countries. *Journal of Basic and Applied Scientific Research*, 118-123.
- John Loizides, G. V. (2005). Government Expenditure and Economic Growth: Evidence from Trivariate Causality Test *Journal of Applied Economics*, 125-152 Vol. VIII.
- Karagöl*, E. (2002). The Causality Analysis of External Debt Service and GNP:The Case of Turkey. *University Of York, Department of Economics and Related Studies, Heslington, York, UK*, 1-26.
- Lai**, B. S. C. a. T. W. (1997). Government Expenditures and Economic Growth in South Korea: A VAR Approach. *JOURNAL OF ECONOMIC DEVELOPMENT*, 1-24 Volume 22,.
- Landau, D. (1983). Government expenditure and economic growth: a cross-country study, . *Southern Economic Journal* 783-792. Volume 749.
- Manh Vu Le, T. S. (2005). The Effects of FDI and Public Expenditure on Economic Growth:From Theoretical Model to Empirical Evidence. *Graduate School of International Cooperation Studies Kobe University*, 1-12.
- Niloy Bose a, b., M Emranul Haque a, and Denise R Osborn. (2003). Public Expenditure and Economic Growth:A Disaggregated Analysis for Developing Countries. *a Centre for Growth and Business Cycle Research, School of Economic Studies, University of Manchester, Manchester, M13 9PL, UK b Department of Economics, University of Wisconsin, USA*, 1-24.
- Ram, R. (1986). Government size and economic growth: a new framework and some evidence from cross-section and time-series data. *The American Economic Review*, 191-203 volume 176.
- Shantayanan Devarajan, V. S., Heng_fu Zou. (1996). The composition of public expenditure and economic growth *Journal of Monetary Economics* 313-344.
- Turrini**, A. A. a. A. (2008). Government expenditure and economic growth in the EU:long-run tendencies and short-term adjustment. *European Communities*, 1-52.