Volume 13 Issue 30
Originally issued as B5

Global Journal of Management and Business Research
Economics and Commerce
Volume 13 Issue 5 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Role of Budget Deficit in the Economic Growth of Pakistan

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Abstract - The basic aim of this paper is to investigate the relation between Budget Deficit and Gross Domestic Product of Pakistan. There are three views about this relation. Keynesian says that there is a positive relation between budget deficit and economic growth while neo-classical views that there is an inverse relation between budget deficit and economic growth. Recardian says that there is neutral relation between budget deficit and economic growth. A time series data for the period of 1971-2007 has been used to check the relation between budget deficit and economic growth of Pakistan. GDP is taken as dependent variable, FDI and budget deficit as independent variables. ADF test has been used to check the stationary of the data. All variables get stationary at 5% level of significance at level. The results of Granger causality test show that there is bi-directional causality running from budget deficit to GDP and GDP to budget deficit.

Keywords : *GDP, budget deficit, OLS, Pakistan.*

GJMBR-B Classification : *JEL Code: F43, O49*



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The Role of Budget Deficit in the Economic Growth of Pakistan

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Abstract - The basic aim of this paper is to investigate the relation between Budget Deficit and Gross Domestic Product of Pakistan. There are three views about this relation. Keynesian says that there is a positive relation between budget deficit and economic growth while neo-classical views that there is an inverse relation between budget deficit and economic growth. Recardian says that there is neutral relation between budget deficit and economic growth. A time series data for the period of 1971-2007 has been used to check the relation between budget deficit and economic growth of Pakistan. GDP is taken as dependent variable, FDI and budget deficit as independent variables. ADF test has been used to check the stationary of the data. All variables get stationary at 5% level of significance at level. The results of Granger causality test show that there is bi-directional causality running from budget deficit to GDP and GDP to budget deficit. OLS results show that there is positive but insignificant relation between budget deficit and GDP of Pakistan. In this way, the results follow the Recardian approach that there is neutral relation between budget deficit and economic growth of the country. Budget deficit has no role in bringing back the economy to its equilibrium.

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I. Introduction

The basic aim of this paper is to investigate the relationship between Gross Domestic Product and budget deficit of Pakistan. Economic growth and economic development are two terms used together but they are different from each other. Economic development is the increase of the welfare of the society and economic growth is the increase in average income of that economy. Najid Ahmad (2012) shed light on the importance of investment for economic growth of Pakistan. He views that investment is necessary for economic growth. He says that one percent increase in investment will raise GDP by 0.89 percent. He suggests that government should spend most of its budget share on productive tasks as it will lead to economic growth. Government should encourage national and international investors who are positively contributing for the progress of the country. Najid Ahmad (2012) explores the relationship between GDP and energy consumption of Pakistan. He thinks Pakistan's economy as energy dependent. For his study he uses GDP as dependent variable and energy consumption as independent variable for the period of 1973-2006. He views one percent increase in energy consumption will raise GDP by 1.23 percent. He thinks energy consumption necessary for economic growth and for energy we should utilize our own resources like by constructing biogas plants and solar energy because these will reduce the foreign dependency.

Najid Ahmad (2012) finds trade as an engine for economic growth and development of Pakistan. He views that economic growth is hidden in trade liberalization. Trade liberalization reduces poverty and at another place he suggests economic growth in educational sector and finds positive relation between primary enrollment and economic growth of Pakistan. It is necessary to focus on our educational sector for the prosperity of the country. Najid Ahmad (2012) finds positive and significant relation between economic growth and exports of Pakistan. He used OLS techniques and says one percent increase in exports will raise GDP by 0.81 percent. The expansion of exports leads to economic growth and this expand growth will lead to more exports.

Budget deficit means the situation where the expenditures exceed its revenues. There are different views of the economists about the relationship between budget deficit and economic growth. Keynesian says there exists positive relationship between budget deficit and economic growth. On the other hand neo-classical are in a view that there is an inverse relationship between budget deficit and economic growth while Recardian says that there is neutral relation between budget deficit and economic growth. Nur Hayati (2012) explores the relationship between budget deficit and economic growth in Malaysia. She uses quarterly data for the period of 2000-2011 for her analysis. She finds no relationship between budget deficit and economic growth in the long run. She suggests policy that government should increase national income, per capita income and also there is need to improve the quality of life so that Malaysia can be in the list of developed country till 2020. She says there is no role of budget deficit on economic growth and the shocks in the Malaysian economy can be controlled with the help of productive expenditures.

Bose (2007) finds positive relation between budget deficit and economic growth in 30 developing countries while Ghali (1997) finds neutral relation between budget deficit and economic growth in Saudi Arabia. Kormendi and Meguire (1985) find no relationship between these two variables. Here is Huynh

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(2007) who says that there is negative impact of budget deficit on economic growth in Vietnam while Saleh (2003) concluded by saying that budget deficit has diverse effect on GDP. Gohar Fatima (2012) finds negative relation between budget deficit and economic growth of Pakistan. She suggests balance budget for economic growth. She says that budget deficit is because of government short resources to meet expenses in the long run. Savings are not enough to meet the expenses. Here is Yaya Keho (2010) who finds the mix results about the relation of budget deficit and economic growth in seven West African Countries. The author finds no causality between budget deficit and economic growth in three countries and four countries show negative relation between budget deficit and economic growth. Most governments' in Pakistan faced budget deficit because of lesser revenue and high expenditures. Government can increase revenue by increasing taxes, using previous surplus. Government can also print money and borrow it by using internal and external sources.

II. Objectives

The basic aim of this paper is to investigate the relationship between budget deficit and economic growth of Pakistan. There are different views of the economists about this relation. Some favor budget deficit and think it beneficial for economic growth and some think surplus budget as a blessing for the economy. While some of them views that there is no role of budget deficit in economic growth of the country.

III. Hypothesis

H_0: There exists no relation between budget deficit and economic growth in Pakistan.

H_1: There exists positive and significance relation between budget deficit and economic growth in Pakistan.

IV. Methodology, Data Collection and Interpretation

A time series data has been used to check the relation between budget deficit and economic growth in Pakistan. The time period is taken from 1971-2007. The data on these variables (GDP mls $, FDI mls $, Budget Deficit mls $) has been collected from world development indicator (WDI) and economics survey of Pakistan (various issues). All variables have been converted into log form.

The econometric model is given as:

$$GDP^*=\alpha+\beta_1(BD^*)+\beta_2(FDI^*)+\mu$$

GDP* is the gross domestic product of Pakistan in mls $, BD* is the budget deficit of Pakistan (mls $) and FDI* is the foreign direct investment of Pakistan in mls $. The symbol star (*) indicates the log form of the variable. Augmented Dickey Fuller Test is used to check the stationary of the variables. A time series data usually show trend with the time. This trend can be removed by differencing. It is necessary to check the stationary of the data for an appropriate technique. The results of ADF test are given in table 1:

Table 1 : Results of Augmented Dickey Fuller Test at level with intercept

Variables	ADF (t-critical) value at 5% significance level	T-Value	Probability
D(GDP*)	-2.9499	-6.503840	0.0000
D(BD*)	-2.9499	-3.468581	0.0016
D(FDI*)	-2.9499	-3.676786	0.0009
Source: Author			

All variables get stationary at 5% level of significance with intercept. So Ordinary Least Squares method can be used to check the relationship among the variables. Before applying the OLS I am using Granger Causality Test for the direction of the variables. The results of Granger Causality test are as:

Table 2 : Results of Granger Causality Test

Lag 2:

Null Hypothesis	Obs	F-Statistic	Probability
FDI* does not Granger Cause GDP* GDP* does not Granger Cause FDI*	35	1.95436 7.71700	0.15927 0.00198
BD* does not Granger Cause GDP* GDP* does not Granger Cause BD*	35	9.24649 5.72021	0.00074 0.00786
BD* does not Granger Cause FDI* FDI* does not Granger Cause BD*	35	1.72818 1.76868	0.19482 0.18788
Source: Author			

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The results show that foreign direct investment does not Granger Cause GDP and GDP does Granger Cause FDI. There is uni-directional causality running from GDP to FDI. Null hypothesis is rejected at 5% level of significance. GDP does Granger cause FDI as probability is 0.00198 and F-Statistic is 7.71700. P-value is less than 5% so null hypothesis is rejected. Budget deficit does Granger cause GDP and GPD does Granger cause budget deficit (p-value is less than 5%). There is bi-directional causality running from budget deficit to GDP and GDP to budget deficit. The results also show that there is no causality between FDI and budget deficit. Keeping in view the above results we can use OLS for our model. The results of Ordinary Least Squares Method are given in table 3.

Table 3 : Results of Ordinary Least Squares Method

Dependent Variable: D(GDP*)
Method: Least Squares
Sample(adjusted): 1972- 2007
Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std.Error	t-statistic	Prob
C	0.018633	0.009895	1.882987	0.0685
D(FDI*)	0.117738	0.059331	1.984421	0.0556
D(BD*)	0.024375	0.063215	0.385596	0.7023

R-squared	0.116311	Mean.dependent.var	0.029349
Adjusted R-squared	0.062754	S.D.dependent var	0.052390
S.E. of regression	0.050720	Akaike info criterion	-3.045355
Sum squared resid	0.084892	Schwarz criterion	-2.913396
Log likelihood	57.81640	F-statistic	2.171734
Durbin-Watson stat	1.881778	Prob(F-statistic)	0.129998

Source: Author

Here Durbin-Watson stat is 1.88 that is good sign for our model. The R-squared is 0.116311 that means 12% variation in dependent variable (GDP) are due to independent variables (FDI and budget deficit) and others are due to error term. The coefficient C has positive sign (0.018633). The variable FDI has positive and significant relation with dependent variable GDP. One percent increase in FDI will raise GDP by 0.12%. The variable budget deficit (BD) has positive but insignificant relation with GDP of Pakistan.

V. Conclusion

An attempt was made to find the relation between budget deficit and economic growth of Pakistan. GDP was taken as dependent variable while budget deficit and FDI as independent variables. All variables get stationary at 5% level of significance at level. The results of Granger Causality test show that there is bi-directional causality between GDP and budget deficit of Pakistan and uni-directional causality running from GDP to FDI. The results of Ordinary Least Squares show that FDI has positive and significant relation with the gross domestic product of Pakistan. One percent increase in FDI will raise GDP by 0.11%. There is need to invite foreign investors so that our country can make progress. Government should encourage foreign investors by giving them incentive and facilitation for the promotion of FDI in Pakistan. Political instability is the element that is harming FDI. This factor should be kept in mind before making any policy. The OLS results show that there is positive but insignificant relation between GDP and budget deficit. The results follow the Recardian approach who said that there is neutral relation between budget deficit and economic growth of the country. Budget deficit has no role in bringing the economy to its equilibrium. There are other factors that are affecting the GDP of Pakistan. What are those factors it appeals for further research.

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