

Consequential Effects of Budget Deficit on Economic Growth of Pakistan

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Abstract

To achieve sustainable economic growth of a country balanced budget is not only important but necessary. This research aims at investigating the true impact of the budget deficit on the economic growth of the country. The sample taken for the current study comprises of time-series considering period of 1978-2009. Regression analysis is conducted to ascertain the impact of BD on the GDP, and explored a negative impact of budget deficit on the economic growth. Some policies are suggested for the government to avoid certain levels of the budget deficit to achieve desired level of growth.

Keywords: budget deficit, inflation, employment, economic growth (GDP), gross investment
B22, C32, E31, E22

Introduction

Planning is a key to success in any organization and a optimized planning is a key to success while it comes to the operational stage. Planning financial activities also matters in the success or failure of any organization. Efficient planning leads to success, no matters the planning is for an organization or for a country as a whole. The financial planning is termed as budget.

Budget is also considered as a very useful tool of control applied by the companies. It can help set developmental policies in the country. Budget is a black and white about the earnings and spending of an organization. Here we will take budget as budget of a country. When the actual expenditures are in conformity with the planned expenditure, then the planning becomes useful for that unit. Budget can be either deficit or surplus. Budget Deficit results in situations where the expenditures of the country exceed its revenues, earned from the taxes and other sources.

According to Sill (2005) the expenditure of an entity, which exceeds the earning or income it has is termed as budget deficit. In the absence of financing from external sources the deficit carry forward to next financial year. The deficit can be a result of delays in collection of the revenues i.e. sales, taxes or other sources of revenues (Anonymous, 2009).

Pakistan's budget deficit in fiscal year 2003-4 was around 4% of GDP, reduced to 3.4 in the next year. The figure further reduced to 3.2% in FY 2005-6, but it raised upto 4.2% in FY 2006-7. The deficit touched the highest points of 7.3 % in the FY 2007-8, but slightly reduced to 4.7% of GDP in FY 2008-9 (Report, 2008). One of the reasons for budget deficit may be lack of clearly outlined budget. The inability of the government to forecast expenditure and revenues results in the deficits of the budget.

The problem statement for the current study is; what is the impact of Budget Deficit on Gross Domestic Product (GDP) growth of the country (Pakistan)? Further objectives of the study are:

- Enumerate the causes of budget deficit.
- Investigate the impact of budget deficit on the GDP growth.
- Propose a suitable policy implication to overcome the budget deficit.

The study is planned as follows: the second section includes review of the relevant literature; the third section includes the methodology followed by interpretation of the results. Conclusions are ascertained in the section five, and study is concluded with the recommendations and policy implications.

Literature Review

Ahmed and Miller (2000) in a cross-sectional study of thirty nine states considering the data for period of 1975-1984, while using Ordinary Least Squares model (OLS), fixed effect and random effect methods appraised that government spending can be segregated into two parts. First is the spending on social security and welfare of its people and due to which it reduces the investment. Secondly, the spending on communication sector, including transport, increases investment by the private sector less developed countries (LDCs). He suggested that reduction in investment leads to less revenue generation hence causing deficit, and vice-versa when spending in transport and communication.

According to Al-Kheddar (1996) interest rates increases in short run due to budget deficit, but in long run there is not impact explored. He studied taking VAR model by selecting data of G-7 countries for the period 1964-1993. He also explored that the deficit negatively affects the trade balance. However the budget deficit has a positive and significant impact on the economic growth of the country. Aisen and Hauner (2008) explored that the budget deficit negatively affecting the interest rate. The results were taken from the study of the period 1985-1994 for different countries. However, the effect is positive after the year 1995. They further argued that there is a positive effect of budget deficit on interest rate, which the effect varies from state to state.

In a study conducted by Bahmani (1999), with the help of Johansen Juselius co integration technique, the association between the budget deficit and investment while using quarterly data for the period of 1947-1992. There is a crowding in impact of the budget deficit on the real investment, which is validation of the arguments of Keynesian regarding the expansionary effect of the budget deficit on the investment. Barro (1979) explored a positive and significant impact of budget deficit on the growth. This impact is due to the positive relationship between the budget deficit and the inflation.

There is a positive impact of the budget deficit and the interest rate. This impact is because of the high prices of the bonds. The study was conducted considering period of 1973 to 1996 to explore the relationship between the budget deficit and real interest rate, while using error correction model (Cebula, 2003). However, according to Ghali and Al-shamsi (1997) an increase in investment leads to increase in the economic growth of the country. The results were explored by taking quarterly data from oil producing country i.e. United Arab Emirates (UAE) for the period of 1973 to 1995.

Gulcan and Bilman (2005) used co-integration method and causality test and applied ADF, PP and RPSS unit root test to investigate the stationarity of the individual time series. They considered data of Turkey for the period 1960 to 2003 and proved there is a strong impact of budget deficit on the real exchange rate. The study shows that the role of the budget deficit to maintain the real exchange rate is very crucial. They suggested that government must focus to stable the budget because the trade balance is significantly affected by the real exchange rates.

Hakkio (1996) collected data of USA, Finland, Sweden and Germany for the period of 1979-1995, but could not explore any empirical association between the economies of United States of America (USA) and Germany. However, by applying simple regression technique and considering data from Sweden and Finland he was successful in exploring negative relationship between the budget deficit and the exchange rate.

Huynh (2007) conducted his study while collecting data from the developing Asian Countries for the period of 1990 to 2006. He concluded that there is negative impact of the budget deficit on the GDP growth of the country while simply analyzing the trends in Vietnam. Furthermore, he concluded the crowding-out effect surfaces as the budget deficit burden increases. There is a strong, significant and positive relationship between the budget deficit and the long-term nominal rate of interest in a study conducted for the period 1971 to 1984 on United States of America (Cebula, 1988). Saleh (2003) on the basis of previous researches, which are conducted by economists regarding the impact of budget deficit on different economic variables, concluded that budget deficit has diverse impact on different economic variables.

The diversity in the impact varied from country to country but could not ascertain the true impact on the economic growth. He used IS-LM model, while exploring the impact of budget deficit on different variables viz; interest rate using simultaneous equations model for trade deficit and used simple equation model in to assess the impact on the GDP. Sill (2005) also adopted the methodology of Saleh (2003) by taking sample of 94 countries and explored a positive relationship between the budget deficit and inflation. According to a study conducted by Vit (2004) the budget deficit resulted in some hurdles inflation, deficit in current account and subsequently these hurdles impeded the economy. The results were based on the quarterly data collected from Czech Republic’s economy for the period of 1995 to 2002.

Theoretical Framework

Model developed by shojai (1999) is used in this paper to assess the affects of budget deficit on the economic growth (GDP) and Ordinary Least Square (OLS) is employed to ensure the fulfillment of the assumptions thereof. These assumptions include, linearity of the model, its non stochastic characteristic, having mean value of 0, and distribution with equal variance etc. The mathematical expression of the model is as follow:

$$\text{Ln (GDP)} = \beta_0 + \beta_1 \text{ln (INFL)} + \beta_2 \text{ln (EXCH)} + \beta_3 \text{ln (RIR)} + \text{ln } \beta_4 \text{ (BD)} + \text{ln } \beta_5 \text{ (GI)} + u$$

Where,

- GDP = Gross Domestic Product (GDP)
- INFL = Inflation
- EXCH = Real Exchange Rate
- RIR = Real Interest Rate
- BD = Budget Deficit
- GI = Gross investment
- u = Stochastic Error Terms

Where, $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the respective parameters.

Methodology and Data Analysis

Data is collected for the period starting from 1978 to 2009 from International Financial Statistics (2009) and also from Economic Surveys of Pakistan, published periodically.

Null Hypothesis: There is unit root; **Alternative Hypothesis:** There is no unit root

Table:1 Unit Root Test(s)

Variables	Levels			1 st Difference		
	Lags	Intercept	Trend & Intercept	Lags	Intercept	Trend & Intercept
INFL	0	-5.606244* (-2.9627)	-6.391465* (3.5670)	1	-7.178729* (-2.9705)	-7.027458* (-3.5796)
GDP	0	-0.368259 (-2.9591)	-3.638398* (-3.5614)	1	-5.317199* (-2.9665)	-5.200621* (-3.5731)
GI	0	-1.023028 (-2.9591)	1.114639 (-3.5614)	1	-3.817422* (-2.9665)	-4.089002* (-3.5731)
BD	0	-2.812309 (-2.9591)	-2.949084* (-3.5614)	1	-3.788854* (-2.9665)	-3.745340* (-3.5731)
EXCH	0	-10.11490* (-2.9627)	-9.926192* (-3.5670)	1	-4.328583* (-2.9705)	-4.432884* (-3.5796)
RIR	0	-4.254405* (-2.9627)	-5.511926* (-3.5670)	1	-5.974181* (-2.9705)	-5.930496* (-3.5796)

Note: * The figures given in brackets are table value of Unit Root Test at 5% level of significance.

Table:2 Misc. tests

Tests	Results
Heteroscedascity Test	11.270 (11.070)
Autocorrelation Test	12.35 (11.070)
Jarque-Bera Test	0.562 (0.754)
Ramsey Reset Test	0.042 (0.838)

Interpretation

The value of R^2 (i.e. the coefficient of determination) in the model represents that 80% of the variations in the dependent variable (i.e. GDP) is due to independent variables included in the model, which validates the model. The model is free from the problem of autocorrelations (DW value = 1.515145), which is near to the value of 2, therefore the problem of autocorrelation can be ignored. Normality of the data is checked and is found to be normally distributed (Appendix-A)

The model is regressed using E-views software and there is a significant negative impact of the inflation on the economic growth (GDP) ($\beta_1 = -0.091$, $p = 0.0001$), which validates the results of Sill (2005).

Null hypothesis: There is no significant impact of Budget deficit on Economic growth
 $H_0: \beta_4 = 0$
 $H_0: \beta_4 \neq 0$

Table: 3 OLS Test, taking GDP as Dependent Variable (1978-2009)

Variables	Coefficient	Std. Error	t-Statistics	P-Values	R^2	DW	F-Statistics
C	14.08712	0.227335	61.96637 *	0.0000	0.803553	1.515145	739.7758
INFL	-0.091279	0.019429	4.698159 *	0.0001			
GI	0.791162	0.094472	8.374560 *	0.0000			
BD	-0.118886	0.033645	3.533542 *	0.0017			
EXCH	-0.461460	0.012457	37.04323 *	0.0000			
RIR	-0.022568	0.005321	4.241547 *	0.0003			

Note: *at 1% level of significant

The results show a very significant positive impact of gross investment (GI) on the economic growth ($\beta_2 = 0.791162$, $p = 0.0000$). 1% increase in will lead to 0.79 times increase in GDP. The results attest the findings of Ghali and Al-shamsi (1997), as when investment in an economy increases it affects growth in the same direction. The impact is due to the fact that increase in investment also generates employment in the country which ultimately boosts the economy.

The budget deficit, in the above table, has a significant and negative impact on the economic growth of the economy ($\beta_3 = -0.11$, $p = 0.0017$) at 1% level of significance. The result shows that 1% increase in BD results in 0.11 times decrease in the GDP. The results validate the findings of Anusic (1993) as by increasing real interest rate, this increase will cause decrease in real investment.

Conclusion and Recommendations

This research work is primarily meant to find the relationship between budget deficit and economic growth. For the purpose, an application of unit root test and OLS model using home country dataset of budget deficit and output growth for the period 1978 to 2009. The negative impact of the budget deficit on the economic growth is because governments are short of the resources to meet their expenses in the long run. Their savings as well as revenues are not enough to meet their expenses. Different development projects started by the governments on the one hand increase their growth, but on the other hand make the administration in jeopardy to meet the actual expenses (including some unforeseen expenses).

The other variables included in the model also affect the economic growth, i.e. inflation has a negative impact on GDP, and increase in inflation also affect the interest rate, which is another variable, which affects the economic growth. The governments must take measures to control the deficit to achieve certain level of the economic growth. Government of Pakistan must utilize its underutilized resources to overcome the problem of the budget deficit, as mere acquiring the loans to meet the unforeseen expenditures (those for which government doesn't plan) is not the solution.

Another reason is the overprinting of the paper money for internal use, which increases the circulation of money. This increase in circulation of money result in higher purchase powers of the people, which is the sign of the inflation in the country. This is not the appropriate way to meet their expenses, as some solid steps should be taken to avoid such deficits. Government can increase the ratio of the direct taxes and the indirect taxes. Introduction of new forms of the taxes are also one of the solutions to increase the revenues of the government.

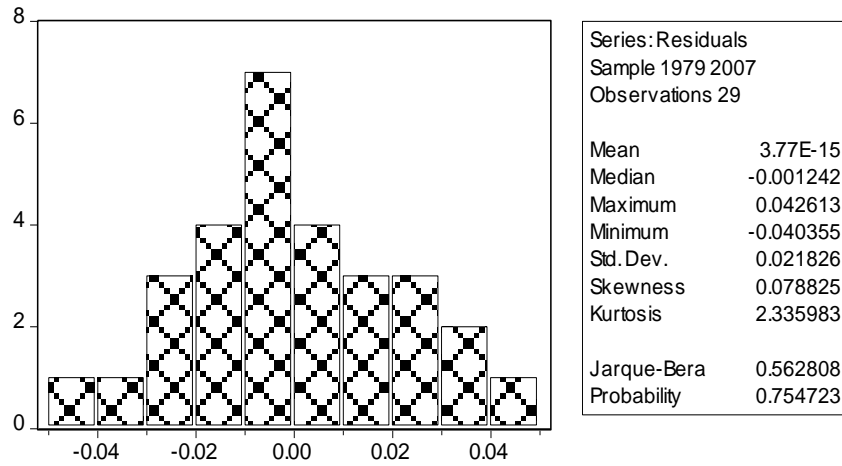
Suitable policies to encourage the rich to pay their due shares of taxes, which should include some incentives for those, who evade taxes should be formulation and implemented. There are also implications for the researchers to apply the model in the different period of time to validate the results of this study. The same study can be repeated with the budget surplus as a major variable in the model to check the impact of the budget surplus on the economic growth of the country. Research can also be carried out taking both of the variables (i.e. budget deficit and budget surplus) to check their respective impact on the economic growth of the country. These researches will be useful for the policy makers in the country to formulate certain policies, which would be appropriate to achieve the desired level of the economic growth.

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Appendix-A

Jarque Berra Normality Test



Cusm of Squares

Appendix-B

