

The Relationship between Budget Deficit and Economic Growth of Pakistan

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Abstract

This study examine the impact of budget deficit on economic growth in Pakistan during the period from 1976-2007. Co integration technique, VAR Granger Causality test and vector error correction model is used. Economic growth was measured as growth in GDP. The technique of time series econometrics such as Granger Causality, Johansen co integration and error correction models has been used. Johansen co integration shows that all variables are co integrated and error correction term is also significant. However we have not found any significant impact of budget deficit on economic growth of Pakistan. The results showed that GDP cause investment and investment cause deficit. However budget deficit does not cause GDP growth. The results of this study also support Keynesian view about budget deficit. The findings also show that the budget deficit has a positive impact on the growth.

Keywords: Budget Deficit, Economic Growth

Introduction

Planning is an important factor of success in any field and in any organization. In the success or failure of any organization, the planning of economic activities plays a key role. Efficient planning brings success, no matter if this planning is for a single organization or for a whole country. This planning when financial is called budget. Budget is very useful in helping to set developmental and constructive policies for the country. When the spending of the government beats its revenues, it is called budget deficit. Economic trends affect the growth or reduction of fiscal deficits in many ways. Growth of the economy is measured as the percentage addition in GDP. Economic growth increases the production of goods in the country and increases its wealth. The quality of lives of a country's people will be higher when its economy is growth is higher. The country's policies play a major role in its production.

Traditionalists claim that increase in budget deficit is harmful for a country. While the ricardians claim that debt do not harm the economy. A wide and huge budget deficit is one of the major economic issues of Pakistan and this budget deficit further causes many problems like low growth, high inflation and less investment. Pakistan is facing current account deficit from the last fifty years and this deficit is financed through international loans which caused indefensible international debt. For long run economic growth, balanced budget is required. If a country is facing the issue of budget deficit it means that the level of public saving is negative which is harmful for economic growth. Economic growth is determined by factors such as labor, capital, natural resources etc. Some economists think that budget deficit helps in the growth of the economy if it is due to productive expenditures like expenditures on education, health etc. whereas other economists state that budget deficit is harmful for the growth. They agree with neo-classical economies.

Increased budget deficit gives rise to macro-economic problems. These problems are:

- Increased level of inflation
- Increased debts in the economy
- Deficit of current account
- Reduced economic growth

Objective of the Study

1. To measure the impact of budget deficit on economic growth of Pakistan.
2. To recommend policy changes.

Significance of the Study

This research is carried out to find the effect of budget deficit on the economic growth of Pakistan. It is found out that there is positive impact of budget deficit on economic growth. It is suggested that for reduction of budget deficit a cut in government spending, increase in tax and high economic growth is necessary.

LITERATURE REVIEW:

Chaudary and Shabbir (2005) studied the impact of budget deficit on Pakistan's foreign sector and found the fiscal and monetary variables as essential for determination of economic stability in this sector. They used OLS model. They examined the shock of government deficit on money supply, price and output level and balance of

payments. They stated that short run devaluation should be avoided and currency has to stabilize to control the swings in money supply, prices and reserves. Both fiscal and monetary policy must be consistent to achieve balance as monetary policy actions are dependent on fiscal policy.

Rehman (2010) studied the relationship between deficit and growth and observed that there is no relationship between deficit and growth while productive expenditure has positive relation with the economic growth.

Bos, Haque and Osborn (2003) examined the relationship between deficit and growth for 30 developing countries and concluded that productive expenditures such as expenditures on health, education and capital help in economic growth.

Mohanty (1997) studied the relationship between fiscal deficit and growth both in the long and short run in India. He observed a negative relationship between deficit and growth in the long run and stated that high fiscal deficits lead to lower growth.

Alfredo Schclarek (2004) studied the relation between debt and growth for developing and industrial economies and found that for developing countries, growth rate is high when external debt is lower. And there is no relationship between debt and growth of the economy.

Ghali and Al-Shamsi (1997) found by taking quarterly data from oil producing country i.e United Arab Emirates from 1973-1995. They developed an endogenous growth model. They found out that increase in investments boost up the growth of a country. Therefore investment is positively related to economic growth. They used co-integration and granger's causality test in their research to examine the impact of fiscal policy on economic growth.

Shojai (1999) found in his study that deficit spending also gives rise to inefficiencies in economic markets and also cause high price increases in the developing countries. Budget deficit also destroy exchange rates and interest rates, as a result which weakens the international competitiveness of the economy. He used ordinary least square method in his study.

Siddiqui and Ilyas (2011) studied the impact of revenue gap, debt burden and economic growth to find out short and long term effect of revenue breach on deficit, debt load and the growth on the economy of Pakistan. They found that the revenue gap has small and extended relationship with budget deficit and growth while revenue gap did not affect debt burden. They also stated that the revenue accessibility and mobilization is the main tool to manage and run an economy. Revenue is very essential because nations set revenue targets to be achieved while making budgets for its nation.

Theoretical Framework and Research Methodology:

It is important to determine the relationship between budget deficit and economic growth. Balanced budget is necessary for sustainable economic growth. The increase in the level of production overtime is the economic growth and budget deficit is when government spending is more than its collection. Some economists say that the relation between budget deficit and economic growth is positive and budget deficit helps in economic growth if the expenditures are due to productive expenditures like education, health etc while others are of the opposite view that budget deficit and economic growth has negative relationship. In this study budget deficit is an independent variable and economic growth is dependent variable.

ECONOMIC MODEL:

The model which I have used to measure the effect of budget deficit and economic growth is taken from the study by Nur Hayati Abd Rahman on "The relationship between budget deficit and economic growth from Malaysia's perspective.

The model is given below:

$$GDP = \beta_0 + \beta_1 Lab + \beta_2 Inv + \beta_3 FD + U_i$$

Where, GDP = gross domestic product or economic growth

Lab= Labor

Inv= Investment

FD= Fiscal Deficit

Construction of Variables:

In this study there is one dependent variable i.e GDP and other independent variables such as labor, investment and fiscal deficit.

Gross Domestic Product:

Gross domestic product is the total market value of all the final goods produced in a year in a particular year. It is equal to total consumption, government spending, investment, exports are added, and imports are subtracted. GDP includes those goods which are produced within the geographical boundaries of a country. GDP can be taken as the size of the economy.

The gross domestic product can be defined in three different ways, which gives the same results. First

is the expenditure approach that it is equal to total expenditures of all final goods and services in a particular period. Second is the income approach that it is equal to the total income produced by production. Third is that it is equal to the total value added in every step of production.

Budget Deficit:

The economic planning for a country as a whole is called budget. Budget is very useful instrument to help countries in making developmental policies. It shows about the earning and spending of a country. For a sustainable economic growth of a country, balanced budget is very important. Budget can be surplus or deficit. Budget deficit is simply termed as the surplus of public sector spending over revenues. Budget deficit is also called national debt, when it is associated with federal government spending. Countries having large fiscal deficits face difficulty in financing expenditures than those with lesser deficits. Budget deficit is when government spending is more than its collection.

Investment:

It is another variable in my study. There are two definitions of investment.

1) In finance, investment is defined as the buying of a financial product in order to get favorable return in future. While in general, investment means to use money in order to make more money.

2) In business, investment is the buying of a physical product by a producer to improve future business. Foreign direct investment is very useful instrument to transfer technology. It significantly contributes to economic growth of a country than domestic investment. Investment has an impact on both demand and supply. Investment may possibly bring instability, if it cannot stimulate enough demand for its production.

Estimation and Data Source:

Co integration technique, VAR Granger Causality test and vector error correction model is used in this study. This study is based on secondary data. Data is collected from handbook of statistics on Pakistan economy and state bank of Pakistan.

Results and Discussion

Table 4.1 Optimal Lag for VAR Model

Lag	LogL	LR	FPE	A/C	SC	HQ
0	-413.1948	NA	4.92e+09	30.82925	30.97323	30.87206
1	-335.6778	132.0660	30918648	25.75391	26.32984*	25.92516
2	-329.8659	8.610158	40336526	25.99007	26.99794	26.28976
3	-319.7547	12.73270	40024998	25.90775	27.34757	26.33589
4	-313.3851	6.605445	56488631	26.10260	27.97437	26.65918
5	-292.0418	17.39085*	29769999*	25.18828*	27.49199	25.87330*

In table 4.1,

*= the lag order selected by the criterion.

25.18828* is the optimal lag for 5 years.

LR is the sequential modified LR test statistic. Each test is conducted at 5% level. FPE shows the final prediction error. AIC is the akaike information criterion. SC is the Schwarz information criterion and HQ shows the Hannan-Quinn information criterion.

Table 4.2 Granger Causality Test

Hypothesis	Chi square	Probability	Decision
Deficit cause Invst	4.646487	0.4605	Reject
GDP cause Invst	10.76478	0.0562	Reject
Invst cause Deficit	12.38429	0.0299	Accept
GDP cause Deficit	2.457914	0.7828	Reject
Invst cause GDP	3.600620	0.6082	Reject
Deficit cause GDP	8.988773	0.1095	Reject

As shown above that GDP cause investment. And investment cause deficit. GDP is dependent variable. So, the budget deficit does not cause GDP growth. The deficit is not significant.

Table 4.3 Co-integration Test (Trace Statistics)

Hypothesized	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
No. of CE(s)				
None *	0.482371	27.85268	24.27596	0.0170
At most 1	0.301915	10.73178	12.32090	0.0910
At most 2	0.051949	1.387021	4.129906	0.2796

Table 4.4 Co-integration Test (Max Eigen Statistics)

Hypothesized No. of CE(s)	Eigen value	Max Eigen Statistic	0.05Critical Value	Prob.**
None	0.482371	17.12090	17.79730	0.0629
At most 1	0.301915	9.344757	11.22480	0.1052
At most 2	0.051949	1.387021	4.129906	0.2796

The table 4.4 shows that the trace statistics indicates 1 co integrating eqn at the 0.05 level.

* denotes rejection of the hypothesis at the 0.05 level. **Mackinnon-Haug-Michelis (1999) p-values. There is co integration and long run relationship between GDP, investment and budget deficit. So we will pick up this test.

Max- Eigen value test indicates no co integration at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level. **Mackinnon-Haug-Michelis (1999) p-values.

5 Co-integrating Equation

Cointegrating Eq:	CoIntEq1
LINVST(-1)	1.000000
DEFICIT(-1)	6.04E-06 (1.3E-05) [0.47509]
GDP(-1)	-1.384026 (0.62842) [-2.20238]

Table 4.6 Vector Error Correction Model

Error Correction:	D(LINVST)	D(DEFICIT)	D(GDP)
CoIntEq1	0.006340 (0.01183) [0.53580]	-4.584273 (3157.28) [-0.00145]	0.652448 (0.21838) [2.98768]
D(LINVST(-1))	0.497157 (0.39717) [1.25175]	-16968.24 (105976.) [-0.16011]	2.612069 (7.33000) [0.35635]
D(LINVST(-2))	-0.485840 (0.36859) [-1.31812]	83137.27 (98348.7) [0.84533]	-6.870772 (6.80248) [-1.01004]
D(LINVST(-3))	0.721572 (0.35954) [2.00694]	22107.09 (95934.5) [0.23044]	-5.420732 (6.63549) [-0.81693]
D(LINVST(-4))	-0.356524 (0.42863) [-0.83178]	50946.93 (114370.) [0.44546]	-3.932384 (7.91059) [-0.49710]
D(LINVST(-5))	0.498942 (0.30024) [1.66181]	-193901.1 (80112.0) [-2.42038]	5.445619 (5.54110) [0.98277]
D(DEFICIT(-1))	1.17E-06 (1.3E-06) [0.93092]	0.206758 (0.33461) [0.61792]	3.59E-05 (2.3E-05) [1.55059]
D(DEFICIT(-2))	-4.54E-07 (9.8E-07) [-0.46369]	0.613618 (0.26111) [2.35001]	4.33E-05 (1.8E-05) [2.39910]

D(DEFICIT(-3))	-4.26E-08	-0.841170	5.93E-05
	(1.6E-06)	(0.42835)	(3.0E-05)
	[-0.02653]	[-1.96375]	[2.00190]
D(DEFICIT(-4))	-1.97E-06	-0.418588	6.86E-05
	(2.1E-06)	(0.56502)	(3.9E-05)
	[-0.93093]	[-0.74084]	[1.75446]
D(DEFICIT(-5))	2.51E-06	0.902159	6.21E-05
	(2.9E-06)	(0.76876)	(5.3E-05)
	[0.87166]	[1.17352]	[1.16823]
D(GDP(-1))	0.023234	-1572.751	-0.543320
	(0.01481)	(3951.95)	(0.27334)
	[1.56869]	[-0.39797]	[-1.98768]
D(GDP(-2))	0.029301	-3232.053	-0.598187
	(0.02056)	(5485.57)	(0.37942)
	[1.42525]	[-0.58919]	[-1.57658]
D(GDP(-3))	0.004132	-6724.512	-0.336120
	(0.02679)	(7147.22)	(0.49435)
	[0.15426]	[-0.94086]	[-0.67992]
D(GDP(-4))	0.014247	-6616.864	0.280216
	(0.01897)	(5062.17)	(0.35013)
	[0.75098]	[-1.30712]	[0.80031]
D(GDP(-5))	-0.005777	-318.4506	0.298500
	(0.01316)	(3512.51)	(0.24295)
	[-0.43888]	[-0.09066]	[1.22865]
R-squared	0.571935	0.815848	0.797060
Adj. R-squared	-0.070162	0.539620	0.492649
Sum sq resids	0.085186	6.06E+09	29.01517
SE equation	0.092296	24627.15	1.703384
F statistics	0.890730	2.953531	2.618370
Log likelihood	37.48075	-287.3725	-38.31879
Akaike AIC	-1.652366	23.33634	4.178368
Schwarz SC	-0.878152	24.11056	4.952582
Mean dependent	0.139943	-13957.04	0.015385
S.D dependent	0.089220	36295.76	2.391433

In table 4.6, CointEq1 shows short run disequilibrium which is significant but has wrong theoretical sign.

() = the standard term

[] = t- statistics

Conclusion

This study concludes that there is a positive impact of budget deficit on economic growth and is significant. The VAR granger causality test indicates that GDP cause investment while investment cause deficit. GDP is dependent variable in this study. Budget deficit does not cause GDP growth because budget deficit is unsustainable as it is 7% today. Co integration test is also used in this study. Trace statistics indicates 1 co integrating equation at 0.05 levels. Max Eigen value test indicates no co integration. Trace statistics is preferred over Max Eigen statistics. Vector Error Correction Model indicates that |t| statistics is greater than 2 and is significant but the sign is theoretically incorrect.

5.2) Recommendations

There are different policies and recommendations suggested to reduce budget deficit. A budget deficit generally occurs when government spending is much more than revenue collected. So this phenomenon gives rise to

deficit. If deficits remain unsustainable it leads to higher interest payments, loss of confidence in the government and the government may default. To reduce budget deficit, the government should increase the taxes and cut government spending. However it can cause lower economic growth.

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