SCITECH
RESEARCH ORGANISATION

The Relationship between Investment and Output

[1*]Hina Ali, [2]Imran Sharif Chaudhry, [3] Huma Ali

[1]Assistant Professor, Department of Economics, The Women University, Multan. Pakistan.

[2]Chairman Department of Economics, Bahauddin Zakariya University, Multan, Pakistan.

[3]Lecturer, Al-Falah Institute of Banking and Finance, Bahauddin Zakariya University, Multan, Pakistan.

Abstract

A country faces fiscal deficit when the payments exceeds receipts. The two essential elements of fiscal policy are Government spending and taxes. The relationship between investment and output is investigated by constructing model of single equation. The economy's output level is completely depends on the level of investment made within an economy. The aggregate demand shocks enhance the profitability of the investment, which leads to change in demand for labor and hence positively affect the output level. OLS technique is applied to estimate the model of this study. The results obtained are significant as coefficient of GDP is 4.51 at 1% level. It shows one unit change in GDP brings 4.51 units change in investment. The result of this study shows the negative link between investment and imports of an economy as imports have insignificant coefficient. The coefficient of saving is 0.61 and it is significant and positively related to the economic growth.

Keywords: Investment; Saving; Economic Growth; Pakistan.

1. Introduction

To measure the economy's growth rate fiscal policy plays an important function in country. Fiscal play acts like an instrument by using the tools of Government spending and taxes. While discussing the economic policy, through change in the taxes and government spending, short-run fluctuations of output and employment are controlled. An economy attains its possible output by gaining the control over its aggregate demand. This study aims to investigate the relationship between investment and output by understanding fiscal policy's impact on economic growth. This article examines the effect of saving and gross domestic product on economy's growth rate.

The claim that the correlation of output and investment is due to demand shocks provides a challenge to neoclassical and neo-Keynesian theories alike. Neoclassical theories of investment view output as the consequence of firms' choice of capital stock and other factors, not the cause (Shapiro M.D, 1986).

Investment means increase in the economic growth and level of employment as compared to preceding years. During whole decade of 1990, economy of Pakistan allocated 9 percent of GDP for paying debt. The debt rate of Pakistan was less than 1% during the 1960 increased up to 50% .During the year of 1998, 40% of GNP was equal to the external debt of the economy.

Income level is negatively affected by the loan of IMF. Foreign Direct Investment also shows negative but significant impact on level of income. Pakistan always faces trade deficit. It explains the situation when imports exceed than the exports. In other words a condition, when capital outflow is higher than capital inflow is called trade deficit, which has negative impact on the economy.

To reduce a budget deficit, Government can use two ways; by borrowing money or by increasing the tax revenue. The Govt. bonds issued and Government has borrowed quite to a large extent in the preceding years to finance infrastructural projects. Domestic borrowings always affect the private sector negatively. The most expected inference of the borrowing from the local market made by Government may come in crowding out the private sector.

The building blocks or key element of fiscal policy are the base of fiscal deficit. Fiscal policy engross two major elements; Government spending and Taxes. Government spending includes that expenditure which is incurred by Government on different development project for instance; construction of dams, roads, hospitals and educational institutions. It endows with long run benefits for the economy. Taxes have depressing impact on economy's growth rate. Increase in tax rate turns down than level of income. Decrease in the level of income leads to the decrease in the level of investment. So investment is the key element of economic growth. Rapid Increase in level of taxes leads to decline in economic growth due to which fiscal deficit occurs.

2. Literature Review

Olasunkanmi and Babatunde (1981) explore the growth effects of fiscal variables. Economic growth attained by the fiscal variables has negative effects on budget deficit. After the fiscal year of 2003-04, Pakistan faced decrease in budget deficit. It was about 4% of GDP and then declined to 3.4% next year. The progress in economics growth approached to turn down the budget deficit in the next year.

Lozano (2008) presents evidence from the Colombian case of budget deficit, money growth and inflation. Budgeting system can be best illustrated by type of services and projects that must be funded by it. Capital projects comprise the provision of all long lasting infrastructures for example; facilities of water, drainage & sewers, parks, roads, buildings etc. It includes those projects which lead to the provision of better standard of living as telecommunication, purchases of land at low price and equipment like fire trucks. When Government formulate long capital projects or long lived projects, labor force provided by the new job opportunities, raises per capital income of the labor. This brings the progress in economy. So, fiscal deficit can be managed through capital projects. The two main factors; labor supply and productivity level of an economy's coerced economy's long term growth. Advanced technology, level of investment and magnitude of capital are those factors which determine the high level of productivity. In other words both factors bring a boost in the level of investment and stock of capital. These also play an important in an increase in the level of investment and capital stock to remove budget deficit. High level investment boosts the productivity. Certain level of production can be obtained by optimum level of labor. So, maximum number of labor is needed. This situation raises employment opportunities in the economy.

Gale and Orissa (2003) investigate the economic effects of sustained budget deficit. Deficit has less effect on interest rate as compared to national saving and economy's growth rate. It shows there is direct effect on national saving level then interest rate. Fiscal variables are potentially endogenous. A number of studies admit that initial income is highly correlated with various fiscal variables. It means an increase in Government transfer payments and level of investment increases per capital income that brings increase in economic growth rate. In other words positive relationships between Governments transfer payments and public investment while negative among tax and growth.

Anusic (1991) studied the relation between budget deficit and inflation. From previous few decades Pakistan is facing budget deficit because the payment level exceeds receipts level. The central budget fails because inflation effects are incorrectly accounted. Inflation shows direct impact on national debt as it reduces the households' burden of loans.

Fatima et al., (2011) explore the impact of fiscal deficit on economy's growth by analyzing the case of Pakistan. Fiscal policy plays significant role for Asian countries economic growth. It provides a stable environment for progressive investment. A stable macroeconomic environment attracts the foreign direct investment external borrowing occurs to the economy which enhances the output growth level.

Habibullah (2009) analyses the upshots of fiscal variables on economic growth of Asian countries. Deficit means payments exceed receipts of an economy. In simple words, it shows a situation when imports exceeds than level of exports. The high rate of growth contributes an important role by creating job opportunities and raising the living standard. In the preceding years controls over the balance of payment is gained by low rate of inflation. Current economic development is caused by control over the fiscal deficit by making high-quality economic policy measures.

According to Pakistan survey Pakistan's fiscal deficit in year 2003-2004 was almost 4% of GDP. Next year it reduced to 3.4%. The reduction in fiscal deficit explains an improvement in economy's investment level. In 2008 Pakistan survey reported the high fiscal deficit at point 7.3%. Macroeconomic indicators of economy are the directly influenced by fiscal policy variables. These policy variables and public finance are directly related, use for the attainment of the desired economic growth.

3. Data Source and Methodology

This section describes the sources and nature of data, techniques of data and variable's construction.

3.1. Data Source

The Secondary data used in this study is taken for time period of 1970-2000. The data is collected from Economic survey of Pakistan (various issues) and Hand Book of Statistics.

Investment is taken as a dependent variable while Exports(X), Gross Domestic Product (GDP), Imports (IM), Saving(S) and are used as independent variables. Investment has a vital role for economy's growth.

3.2. Methodology

The model to test this study is constructed as.

a. Model Specification

The substantial relationship between investment and economy's growth is depicted by the model. This model illustrates the role of saving on the growth of economy. The model equation and signs of estimated coefficients are given below

$$INS = \beta_0 + \beta_1 GDP + \beta_2 X + \beta_3 IM + \beta_4 S + \mu \qquad (1)$$

This equation measures the relationship between saving and investment where investment is a dependent variable while GDP, S X and IM are independent variables.

Where INS=investment, S=saving, IM=Imports, X=export, GDP=gross domestic product, μ is the error term.

b. Econometrics Model

$$INS = \beta_0 + \beta_1 GDP + \beta_2 X + \beta_3 IM + \beta_4 S + \mu$$

c. Estimation

To check the stationarity of the data Unit Root Test and Augmented Dickey Fuller (ADF) are used. Results of the test show that all variables are stationary at level   I (0). So Ordinary Least Square Technique is used to estimate the model.

Results of Model

Dependent Variable: INS				
Method: Least Squares				
Sample(adjusted): 1971- 2000				
Observations: 30 endpoints adjusted				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	11421.27	76258.21	0.149771	0.0822
GDP	4.518675	9455.556	-0.170754	0.0058
IM	-3.872116	28.44518	1.329616	0.1961
X	14.09405	34.97576	-0.404110	0.0097
S	0.617128	0.290572	2.158252	0.0011
AR(1)	0.291467	0.213506	1.365145	0.0049
R-squared	0.808191	Mean dependent var		348810.2
Adjusted R-squared	0.790314	S.D. dependent var		225212.5
S.E. of regression	105558.7	Akaike info criterion		26.14878
Sum squared resid	2.67E+11	Schwarz criterion		26.42902
Log likelihood	-386.2317	F-statistic		21.60130
Durbin-Watson stat	1.939402	Prob(F-statistic)		0.000000
Inverted AR Roots	.29			

4. Results and Interpretation

The estimated coefficient of GDP is 4.51 and it is significant .It shows if GDP changes one unit, it will bring 4.51 units change in Investment. The coefficient of Import is negatively insignificant. Investment decreases 3.87 units by one unit change in import. The estimated value of the coefficient of export is 14.09 and it is significant at one percent level. One unit change in export increases Investment 14.09 units. The coefficient of saving is 0.61 and it is positive and significant. One unit change in saving shows 0.61 increase in level of investment. The investment is an explained variable while saving, export, GDP, imports are explanatory variables. The results illustrates that investment has positive relationship with exports, saving and GDP and inverse relationship exists between investment and imports.

The degree of change in dependent variable (INS) due to change in independent variables (GDP, IM, X, S) is shown by R square. R-Square values and adjusted R-Square are 0.8081 and 0.7903 respectively which show that model is fit.

Conclusion

The basic contemplation of this study is to analyze the relation between investment and output. The results of this study conclude that fiscal deficit badly influence economic growth. There should be use of fiscal policy as a most important policy instruments to increases the economic growth level. Stabilization policies play the prime goal by gaining the control over economy's deficit. Government expenditure is the main tool of stabilization policy in a country. The fiscal deficit has bidirectional effects on the economic growth. Investment declines when fiscal deficit increases. Increase in imports also decreases the investment. Another important reason of fiscal deficit is the expenditure made by Government of an economy. A large share of the current revenue spend on defense and serving debt. However, the increase in level of investment and GDP are positively related.

References

[1]   Anusic, Z. (1991). Budget deficit and inflation. *Ekonomskipregled, Zagreb*, vol.7, pp.8

[2]   Gale, W.G., & Orzag, P. R. (2003). Economic effect of sustained budget deficit.*National tax journal vol.1, pp.3.*

[3]   Goher, F., Maqsood, A., & Rehman, F. (2011). Fiscal deficit and economic growth. *International journal of trade, economic and finance, vol.2, pp.6.*

[4]   Habibullah, M. S. (2009). The effect of fiscal variables on economic growth in Asian economies. *International journal of business and management vol.4, pp.1.*

[5]   Hand Book of Statistics (Various Issues) *www.sbp.org.pk*

[6]   Huynh, N.D. (2007). Budget deficit and economic growth in developing countries the case of victnam. *Kansai institute for social and economic research (KISER).*

[7]   Lozano. (2008). Budget deficit ,money growth and inflation; evidence from the Colombian case. *Borradores deeconomic,* vol.537, 1-26.

[8]   Olasunkanmi, O. I., & Adegbemi, O. (2012). Fiscal policy variables-growth effect: hypothesis testing. *American journal of business and management, vol.3, 100-07.*

[9]   Shapiro, M. D., Blanchard, O. J., & Lovell, M. C. (1986). Investment, output, and the cost of capital. *Brookings Papers on Economic Activity*, 111-164.