Role of fiscal policy for private investment in Pakistan

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Abstract

Fiscal policy has much controversial debate regarding its effectiveness on private investment. Taxation and government expenditure are two main instruments of fiscal policy. This paper is aimed to analyze the effect of fiscal deficit and other variables on private investment of Pakistan. The data time span for this study is 1979-2012. After finding the integration order of all variables by Augmented Dicky Fuller Test, the impact of variables is analyzed by utilizing the Auto Regressive Distributed Lag approach of Cointegration which is a better estimation technique for small sample size. Error Correction Model is applied for short run dynamics. The results reveal that fiscal deficit, rate of interest, inflation and external debt are affecting negatively the private investment in Pakistan while exchange rate and exports have a positive impact on private investment.

Keywords: Fiscal Policy, Private Investment, co integration

JEL Classification: E62, C22

1.   Introduction

Fiscal policy plays a vital role as developmental tool in developing countries. The government policies regarding expenditures and taxes often result as imbalances in revenues and expenditures that cause to increase in public debt. Increasing public debt can affect investment and saving either directly or indirectly by interest rate and inflation. As a result, it can dampen the macroeconomic growth in these economies.

There are three contrasting views regarding the relationship between fiscal deficit and investment. These views are supported by theoretical and empirical analysis. The neoclassical economists are of view that financing of increased fiscal deficit through public borrowing can increase the interest rate and thereby result in crowding out of private sector investments. Blejer and Khan (1984) and Beck (1993) proved the neoclassical view of fiscal deficit and investment. When government steps up its borrowing in the domestic market to fulfill current consumption, then private sector has less opportunities for lending

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so private investment decreases. On the other side, due to same interest rate for government and private sector, banks prefer lending to government due to fewer chances to be default. Resultantly increased government spending financed by domestic borrowing at the expense of private investment can affect economic growth. This approach can be named as substitution approach.

Keynesian economists advocate that when government spending increases then it stimulates the domestic economic activity by a greater proportion through the multiplier process and crowds in private investment, especially when the economy is not at full employment level. The composition of government expenditures will determine the extent of crowding in. Husnain et al. (2009) found that private sector can benefit only if the public sector investment is in infrastructure, education and health that involve large fixed costs and long gestation period. Buiter (1999), Aschauer (1989), Greene and Villanueva (1990), Baldacci, Hillman and Kojo (2004) analyzed that public spending and private investment are compulsory so this approach can be recalled as complementary approach.

Beside the substitution and complementary approach, the third view is based on the Ricardian Equivalence Theorem. It states that deficit of current period will be equal to the present value of future taxation that would be required to finance the deficit. So the savings of individual households will increase because they expect that in future tax level will increase. As a result, the national savings will increase and therefore offset any increase in rate of interest. Thus, there will be no change in private investment and rate of interest. Bahmani-Oskooee (1999) found that fiscal deficits will not have much impact on aggregate demand if household spending decisions are based on the present value of their incomes that takes into account the present value of their future tax liabilities.

Many studies suggest that different type of government spending has different impact on private investment as described by Edelberg, Eichenbaum and Fisher (1998), Blanchard and Perotti (2002), Dotsey (1994) and Darrat (1998). In this paper, it is attempted to analyze that how fiscal deficit and other variables affect the private investment for a developing economy of Pakistan covering the period of 1979 to 2012.

2.   Historical Aspects of Fiscal Deficit and External Debt

2.1   Fiscal Deficit

Fiscal deficit means a situation when government expenditures exceed than its generated revenues. Uzair (2004) concluded that fiscal deficit has got greater attention after Brettonwoods, during the last two decades most of the developing countries including Pakistan have faced fiscal deficits and is considered as one of the major source of macro economic imbalances. But it is also difficult to conclude that whether reduced fiscal deficit causes a positive effect on the economy or not. If there is reduction of developmental expenditures in spite of expansion of revenues, then it has a negative effect on economic growth in long run.

After having a look on Pakistan economy, we come to know that fiscal deficit was only 2.1% of GDP in 1960's and it increased to 5.3% of GDP in 1970's due to 1971's war. After that, it decreased to 7.1% of GDP in 1980's and further reduced to 6.9% of GDP in 1990's due to commitments made with International Monetary Fund (IMF) by Structural Adjustment Program (SAP). In 2000's, fiscal deficit was reduced to 4.5% of GDP.

**Figure 1: Trends in Fiscal Deficit in Pakistan as % of GDP**
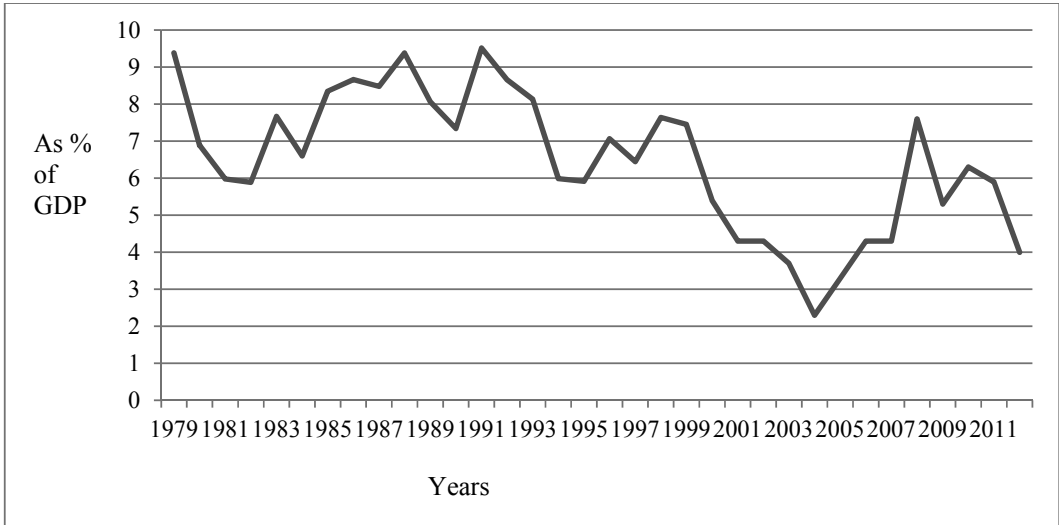
2.2   External Debt

When domestic savings are not capable to fulfill the requirements of private investment then government have to borrow from external sources or foreign savings. External borrowing is carried to increase the economic growth by investing in those sectors that have not sufficient resources from domestic financing. But excess of external debt causes some other severe problems like sovereignty of the country.

Pakistan is facing the financial crisis since its independence. There was a temporary relief during Afghan war and incident of 9/11 but after that debt problem became more severe. External debt was on average 43.2% of GDP in 1970's and declined to 36.8% of GDP in 1980's. There was a rising trend in 1990's and it reached to 60% of GDP on average. In the beginning of 2000's, economy of Pakistan started to improve due to American aid and macroeconomic indicators were better significantly so external debt reduced to 28.1% of GDP in 2011-12.

Figure 2: Trends in External Debt in Pakistan as % of GDP
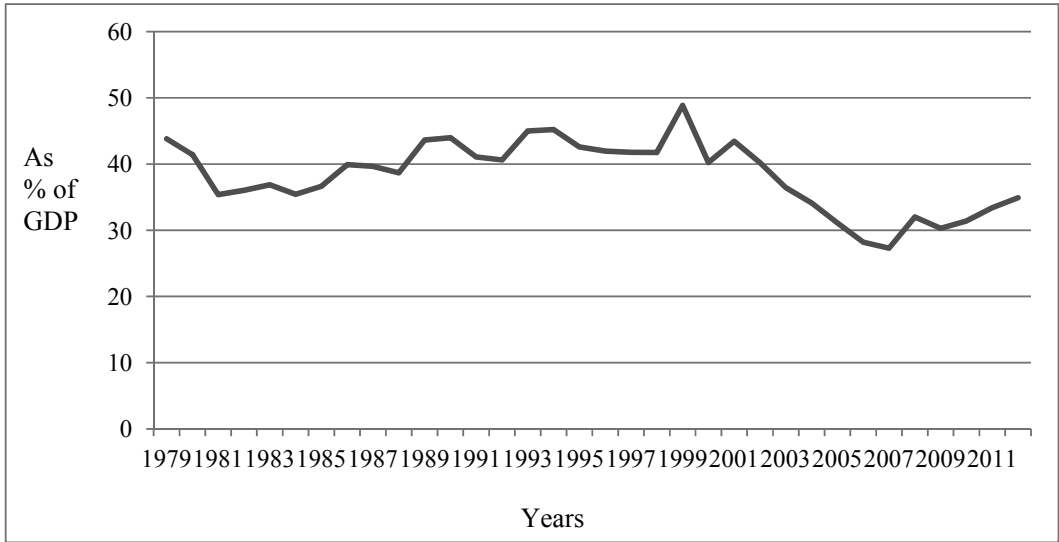
3. Literature Review

Fatima et al. (2011) explored the impact of fiscal deficit on investment and economic growth for the economy of Pakistan over the period of 1980 to 2009. The two stage least square method is adopted to estimate the simultaneous equation model. GDP growth and investment are considered as dependent variables while fiscal deficit, investment, exports, imports, foreign aid, inflation, real interest rate and population growth are taken as independent variables. It is concluded that fiscal deficit affects economic growth of country very adversely because of poor tax collection, inelastic tax system, complex tax laws, and heavy reliance on foreign trade taxes, large tax exemptions and incentives. Results also show that there is persistence deficit in balance of payments that creates fiscal deficit. Improvement in tax system and lowering the interest rate are policy implications for government in this study.

Ali and Ahmad (2010) examined the effects of fiscal policy on macroeconomic activities over the period 1972-2008 for the economy of Pakistan. They applied the auto regressive distributed lag model and error correction model to determine the long and short run effect of fiscal policy on economic growth of Pakistan. Fiscal deficit and current account deficit are used as fiscal variables while private investment and inflation are treated as control variables. They found that long run relationship exists overall fiscal deficit and economic growth. Non development expenditure and politically motivated expenditure restrains the economic growth. They also analyzed that fiscal deficit positively affects up to some threshold level and it was considered in the narrow band of 3 to 4 percent of GDP. They advised that if government is able to reduce its budget deficit, eventually it would get

rid of the vicious circle of debt overhanging problem, because the debt-GDP ratio would increase only if the fiscal deficit as a percentage of GDP exceeds the real GDP growth rate.

Alesina et al. (2002) evaluated the effects of fiscal policy on investment using a panel of 18 OECD countries namely; Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Norway, Spain, Sweden, United Kingdom and United States covering the time period of 1960 to 1996. A VAR model is applied and results show that fiscal policy plays an important role for private investment. There is a sizeable negative effect of public spending on private investment. Various types of taxes also have negative effects on profits but the effects of government spending on investment are larger than those of taxes. These results support the non Keynesian effects of fiscal adjustments.

Paiko (2012) explored the implications of deficit financing on private investment in Nigeria covering the period from 1990-2007. The researcher derived five equations to determine relationship of different variables. The results show that government expenditure crowds out private investment by explaining above 92% of the total variation in private investment. Budget deficit has also a negative relationship with private investment. It is analyzed that external debt has negative and significant impact on private investment. To avoid crowding out effect, it is recommended that deficit should be financed through the capital market.

Akpokodje (1998) used time series data to examine impact of fiscal policy on private investment. The long run regression results proved that a fiscal policy weakened by fiscal deficit has strong and significant effect on private investment in Nigeria.

Blejar and Khan (1984) found that fiscal deficit have a negative impact on private investment in Thailand and Argentina and public expenditure or consumption crowds out private investment.

Rama (1993) and Solamano (1993) proved for the economy of Nigeria that fiscal deficit has indirect impact on private investment because real interest rate rises in response of domestic debt financing.

Blanchard and Perotti (2002) analyzed that increase in public spending and taxes have a negative impact on private investment.

Looney (1995) analyzed the impact of government expenditure on investment and suggests that private investment does not suffer from government's non infrastructural investment.

Hyder (2001) used the vector error correction method for Pakistan and proved a complementary relationship between public and private investment.

Aisen and Hauner (2008) analyzed for sixty advanced and emerging states by using reduced form equation. The conclusion of study showed that budget deficit have negative effect on interest rate during 1985-1994 and effect was positive after 1995. Overall conclusion divided into three groups. Firstly budget deficit have positive effect on interest rate, secondly this effect varied from country to country and thirdly effect of budget deficit depends upon interaction terms.

Chaudhary and Abe (1999) found that budget deficit is responsible for high inflation, low growth and crowding out of private investment in Pakistan.

Ahmad and Qayyum (2008) examined the effects of government spending and macroeconomic uncertainty on private fixed investment in service sector of Pakistan from 1972 to 2005 and found that an increase in government spending and interest rate discourage private investment.

4.   Model Specification and Methodology

4.1   Model Specification

In this section, a framework is derived to investigate the impact of fiscal policy on private in an economy.

Obstfeld and Rogoff (1995) presented a lifetime utility function. According to them, the consumption index, on which utility depends, is given by

$$ C = \left[\int_0^1 c(z)^{(\theta-1)/\theta} \, dz \right]^{\theta/(\theta-1)} \tag{1} $$

Where $\theta > 1$ and $c(z)$ is a home individual's consumption of product z. If $p(z)$ is the price of good z, then consumption based money price index is

$$ P = \left[\int_0^1 p(z)^{1-\theta} \, dz \right]^{1/(1-\theta)} \tag{2} $$

If r_t is the real interest rate earned on bonds between dates t and $t+1$, F_t and M_t denote the stocks of bonds and money held by consumer, then individual's budget constraint is

$$ P_t F_t + M_t = P_t(1+r_{t-1})F_{t-1} + M_{t-1} + p_t(z)y_t(z) - P_t C_t - P_t T_t \tag{3} $$

Where y is the individual's output and T shows the real taxes paid to government. An individual maximizes a utility function that depends positively on consumption and negatively on work effort, which is positively related to output.

$$ U_t = \sum_{s=t}^{\infty} \beta^{s-t} \left[\log\left(Cs + \delta Gs\right) \frac{x}{1-\epsilon} \left(\frac{Ms}{Ps}\right)^{1-\epsilon} - \frac{k}{2} Ys(z)^2 \right] \tag{4} $$

Where U_t is utility at time t, β is discount factor $(o < \beta < 1)$, C is consumption index, Ms is the nominal money supply and Ps is the price level. Ys is the output of good z and K is the parameter, Gs stands for government spending. In this case, an individual's demand for product z in period t is

$$C_t(z) = \left[\frac{pt(z)}{Pt} \right]^{-\theta} C_t \tag{5}$$

Here θ is the elasticity of demand with respect to relative price. Now government consumption for product z is

$$G = \left[\int_0^1 g(z)^{(\theta-1)/\theta} \, dz \right]^{\theta/(\theta-1)} \tag{6}$$

It is assumed that government purchases do not directly affect private utility. Government expenditures are financed by tax revenues or seignorage.

$$G_t = T_t + \frac{M_t - M_{t-1}}{Pt} \tag{7}$$

G_t is government spending, T_t is taxes while M shows the seignorage. By combining the private and government demand, we get following demand function for good z in the period t.

$$y_t^d(z) = \left[\frac{p_t(z)}{P_t} \right]^{-\theta} (C_t + G_t) \tag{8}$$

Where

$$C_t = nC_t + (1-n)C_t \tag{9}$$

is private consumption demand. And

$$G_t = nG_t + (1-n)G_t \tag{10}$$

is government consumption demand.

There is a notable work to examine the transmission channels of fiscal policy by Baldacci et al. (2004). The Generalized Method of Moments was applied and found the total factor productivity channel to be most effective, through which fiscal policy affect macroeconomic activities.

According to Baldacci et al. (2004), general equilibrium model can be used to examine the effects of fiscal policy.

$$M = f(FP, Xt) \tag{11}$$

Where *FP* represents fiscal policy variables, *M* is for macroeconomic activities like investment, fiscal deficit and inflation and vector *X* stands for vector of control variables. To find out the impact of fiscal policy variables on macroeconomic activities, following model is estimated as:

$$M = \alpha_0 + \alpha_1 FP + \alpha_2 X + \mu \tag{12}$$

Where *M* stands for macroeconomic activities, *FP* shows the fiscal components and *X* represents the control variables.

No doubt, investment plays a vital role for economic growth of an economy. Different researchers used different variables to determine the private investment in developing countries. Solimano (1992) found that domestic output, real interest rate, public investment, external debt, credit availability, exchange rate and macroeconomic stability are the important factors for private investment in developing countries. Ribeiro and Joanilio (2003) used real GDP, real interest rate, public sector investment, real exchange rate, ratio of private sector credit to GDP, external debt, change in inflation rate and foreign direct investment as determinants of private investment in Pakistan. Keeping in view the private investment equations of these authors, following variables are selected for Pakistani economy.

$$PI = f\,(FD,\ INT,\ INF,\ ER,\ ED) \tag{13}$$

Where *PI*= private investment, *FD*= fiscal deficit, *INT*= rate of interest, *INF*= inflation, *ER*= exchange rate, *ED*= external debt.

4.2   Methodology

The presence of unit root in time series data is checked by applying Augmented Dicky Fuller Test. After finding the integrating order of variables, the long run ARDL model is estimated because it is a reliable approach for small sample size. In the next step, the error correction model is determined for short run dynamics.

4.3   Data and Variables

A consequential research requires an adequate and reliable data of all the variables. The data for this paper consists of annual observations for the period 1979-2012. The real values of variables are used instead of nominal values for estimation. The data set for the most of variables have been taken from Pakistan Economic Survey (Various Issues)[1], Handbook of Statistics on Pakistan Economy[2] and World Development Indicators[3]. The details of the variables are given below:

  ER = Exchange Rate. It is constructed by taking the data of domestic prices, nominal
         exchange rate and foreign prices

  ED = External Debt as percentage of GDP

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[1] Published by Ministry of Finance, Islamabad, Pakistan

[2] Handbook is Present at the official website of State Bank of Pakistan, Karachi

[3] The WDI data set is available on the official website of World Bank

FD = Fiscal Deficit as percentage of GDP

INF = Inflation Rate =Consumer Price Index

PI   = Private Investment as percentage of GDP

X   = Exports as percentage of GDP

INT = Rate of Interest = 9-months T-bill rate

5.   Empirical Analysis

The integration order of variables describes that all variables are integrated at order of I(0) or I(1) then F-statistics is calculated in order to test the existence of long run relationship. The calculated F-statistics value is 5.13 while the critical Bound values are at 10% level of significance (2.035-3.153), at 5% level of significance (2.365-3.553) and at 1% level of significance (3.027-4.296) so it shows that there is long run relationship among the variables. Before estimating the coefficients, lags are selected via Schwartz Bayesian criterion which is given below.

Table 1: Lags Defined Through VAR-SBC

VARIABLES LAGS	PI	INT	FD	INF	ED	ER	X
0	2.27	0.75	0.92	0.23	1.99*	0.55*	1.47*
1	2.18	1.04	0.56*	0.20	2.55	4.04	1.87
2	1.98*	0.54*	0.70	0.14*	2.13	3.71	2.31

Note: * Shows minimum Schwarz SBC.

After finding the long run relationship and lag order of variables, coefficients are estimated by using ARDL technique. The mathematical form of ARDL model is as follows;

$$\Delta PINV = \alpha_0 + \sum_{i=0}^{n} \alpha_1 \Delta INT_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta FD_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta INF_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta ED_{t-i} + \sum_{i=0}^{n} \alpha_5 \Delta ER_{t-i} +$$

$$+ \sum_{i=0}^{n} \alpha_6 \Delta X_{t-i} + \beta_1 PINV_{t-1} + \beta_2 INT_{t-1} + \beta_3 FD_{t-1} + \beta_4 INF_{t-1} + \beta_5 ED_{t-1} + \beta_6 ER_{t-1} + \beta_7 X_{t-1} + \varepsilon_t$$

In this model, private investment (PINV) is dependent variable while interest rate (INT), fiscal deficit (FD), inflation rate (INF), external debt (ED), exports (X) and exchange

rate (ER) are taken as independent variable. All data is applied after log transformation. The diagnostic tests are also applied to check the efficiency of data. The estimated results are given below.

Table 2: Estimated Long Run Coefficients for Private Investment Equation

Dependent Variable: Private Investment				
Regressors	**Coefficients**	**Std. Error**	**t-Statistic**	**Prob.**
INT	-0.20*	0.04	-4.43	0.00
FD	-0.23*	0.05	-4.36	0.00
INF	-0.05***	0.03	-1.65	0.10
ED	-0.92*	0.10	-8.38	0.00
ER	0.30	0.23	1.26	0.22
X	0.36**	0.15	2.33	0.03
R^2=0.96 Adjusted R^2=0.94 DW-stat =1.94 Serial Correlation LM Test=0.75(0.48) ARCH Test =0.73(0.48) White Heteroscedasticity =0.70(0.74) Jarque-Bera Test =0.51(0.77)				

Note: *and **shows significance at 1% and 5% level of significance.

The results obtained shows that interest rate have negative and significant impact on investment. High interest rate reduces the power of private sector to get loans so investment decreases due to high interest rate. It is evident that fiscal deficit negatively affects the investment. It might be due to fact that fiscal deficit lowers the access to bank credits by the private sector because of much loans by the government. Hence, fiscal deficit causes to crowd out investment. It is clear from the results that coefficient of inflation is negative and significant. It is due to that high inflation rate increase the cost of production and creates the shortage of supply, which lowers the investment. Exchange rate positively affects the private investment. The appreciation of exchange rate decreases the demand for home country's goods and services abroad. So it decreases the investment in the country. It is shown that external debt has negative impact on investment because investors lose their confidence by fluctuation of the economy. Exports of the country have also positive effect on investment because the demand of home country's goods increases which have attraction for investors to invest more.

After estimating the long run relationship, the error correction model for short run dynamics is estimated. The ECM form of growth model is following;

$$\Delta PINV = \alpha_0 + \sum_{i=0}^{n} \alpha_1 \Delta PINV_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta INT_{t-i} + \sum_{i=0}^{n} \alpha_3 \Delta FD_{t-i} + \sum_{i=0}^{n} \alpha_4 \Delta INF_{t-i} +$$

$$+ \sum_{i=0}^{n} \alpha_5 \Delta ED_{t-i} + \sum_{i=0}^{n} \alpha_6 \Delta ER_{t-i} + \sum_{i=0}^{n} \alpha_7 \Delta X_{t-i} + ECM_{t-1} + \varepsilon_t$$

The estimated results are following;

Table:3 Estimated Short Run Coefficients

Dependent Variable: Private Investment				
Regressors	**Coefficients**	**Std. Error**	**t-Statistic**	**Prob.**
ΔINT	-0.26*	0.03	7.60	0.00
ΔFD	-0.29*	0.04	-6.40	0.00
ΔINF	-0.03	0.03	-1.00	0.37
ΔED	-0.84*	0.13	-6.25	0.00
ΔER	0.38	0.23	1.65	0.28
ΔX	0.43**	0.16	2.65	0.05
ECM_{t-1}	-0.67**	0.27	-2.47	0.00
$R^2 = 0.94$ Adjusted $R^2 = 0.91$ DW-stat =1.88 Serial Correlation LM Test=0.08(0.91) ARCH Test =1.78(0.19) White Heteroscedasticity =0.91(0.59) Jarque-Bera Test =0.85(0.65)				

Note: *and **shows significance at 1% and 5% level of significance.

The estimated lagged error correction term ECM_{t-1} is negative and significant. The significance of error term represents the long run relationship of variables estimated in the above described model. The feedback coefficient is -0.67 which indicates that 67% disequilibrium is corrected in the short run. The results also indicate that INT and FD have significant negative effect in short run while X has significant positive impact in short run. INF and ER have not a significant effect in short run.

6.   Conclusion and Policy Implications

The basic purpose of this paper is to analyze the impact of tools of fiscal policy on private investment for the economy of Pakistan covering the period from 1979 to 2012. First of all, Augmented Dicky Fuller test is applied to test the presence of Unit Root in the variables. Results of test suggest that all variables are stationary either at I(0) or I(1). On the basis of derived results, Autoregressive Distributed Lag Model is applied to examine the impact of variables in long run as well as in short run.

Results indicate that fiscal deficit has negative impact on private investment. When government lends more from commercial banks or other domestic institutions to finance its expenditure, then private investors have fewer chances to get loans. So reduction in private investment leads to slow down the economic growth.

By decreasing the interest rate, attraction can be created for investors to invest more because it has negative effect on private investment. Result derived in the paper is also supported by economic theories that enlighten the negative impact of rate of interest on investment.

To increase the level of private investment in the country, there is need to decrease the inflation rate because inflation increases the cost of production and investors have less attraction to invest in the country. Due to high inflation rate, it is difficult to compete in international market.

External debt is affecting badly the level of private investment in Pakistan. It has multiple negative impacts on the economy. Rising debt causes to fluctuate more the economy rapidly and investors hesitate to invest in highly debited economies.

Exports of the country have also positive impact on the private investment. If the domestic goods compete the international markets then investors like to invest more to earn their profit and it causes to increase the foreign reserves of the country.

References

Aisen A. and Hauner D., 2008, 'Budget Deficits and Interest Rates', *IMF Working Paper*, 42, pp. 1-21.

Ahmad I. and Qayyum A., 2008, 'Effect of Government Spending and Macroeconomic Uncertainty on Private Investment in Services Sector: Evidence from Pakistan', *European Journal of Economics*, Finance and Administrative Sciences ISSN 1450-2275 Issue 11.

Alesina A. et al., 2002, 'Fiscal Policy, Profits and Investment', *The American Economic Review,* 92, 3, June 2002, pp. 571-589.

Ali S. and Ahmad N., 2010, 'The Effects of Fiscal Policy on Economic Growth: Empirical Evidences Based on Time Series Data from Pakistan', *The Pakistan Development Review*, 49:4 Part II (Winter 2010) pp. 497-512.

Aschauer D., 1989, 'Is Public Expenditure Productive?', *Journal of Monetary Economics*, 23, pp. 177-200.

Bahmani-Oskooee, 1999, 'Do Budget Deficits Crowd in or Crowd out Private Investment: Evidence from Europe', *International Journal of Public Policy*, 1, pp. 223-232.

Baldacci, Emanuele, Hillman, Arye L. and Naoko C. Kojo, 2004, Growth, Governance and Fiscal Policy Transmission in Low-Income Countries, IMF Working Paper WP/03/237.

Beck S.E., 1993, 'Ricardian Equivalence Proposition: Evidence from Foreign Exchange Markets', *Journal of International money and Finance*, 12 (May), pp. 154-169.

Blanchard O.J., and Perotti R., 2002, 'An Empirical Characterization of the Dynamic Effeects of Changes in Government Spending and Taxes on Output', *Quarterly Journal of Economics,* 117, 4, pp. 1329.1368.

Blejer M.I. and Khan M.S., 1984, 'Government Policy and Private Investment in Developing Countries', Staff Papers, International Monetary Fund, 31 (June), pp. 379-403.

Buiter, Willem, 1999, 'The Fallacy of the Fiscal Theory of the Price Level', *Economic Journal*, NBER Working Paper, 7302.

Chaudhary, M.A. and Abe K., 1999, 'Pakistan economy: Past Trends, Current Situation and Future Prospects', *Chiba University Economic Journal*, 14, 1, pp. 49-85.

Darrat A.F., 1998, 'Having Large Budget Deficits Caused Rising Trade Deficits?', *Southern Economic Journal*, 54, pp. 879-87.

Dotsey M., 1994, 'Some Unpleasant Supply Side', *Arithmetic Journal of Monetary Economics*, 33, pp. 507–524.

Edelberg, Wendy, Martin Eichenbaum and Jonas Fisher, 1998, 'Understanding the Effects of a Shock to Government Purchases', NBER Working Paper, No 6737.

Fatima G., Ahmad A.M., and Rehman W., 2011, 'Fiscal Deficit and Economic Growth: An Analysis of Pakistan's Economy', *International Journal of Trade*, Economics and Finance, 2, 6.

Greene J. and Villanueva, 1991, Private investment in developing countries, IMF staff papers, 38.

Husnain M.I., Khan M., Padda I., Akram N. & Haider .A, 2011, 'Public Spending, Foreign Direct Investment and Economic Growth: A Time Series Analysis for Pakistan (1975-2008)', *International Research Journal of Finance and Economics*, 61, pp. 21-27.

Hyder K., 2001, 'Crowding-out Hypothesis in a Vector Error Correction Framework: A case study of Pakistan', The Pakistan Development Review, 40,4, pp. 633-650.

Looney E., 1995, 'Public Sector Deficits and Private Investment: A Test of the Crowding-out Hypothesis in Pakistan's Manufacturing Industry', The Pakistan Development Review, 34, 3, pp. 277-292.

Paiko I.I., 2012, 'Deficit financing and its Implication on Private Sector Investment: The Nigerian Experience', Arabian Journal of Business and Management Review, 1, 9, April 2012, pp. 45-62.

Rama M., 1993, 'Empirical Investment Equations for Developing Countries', Working Paper, The World Bank, Washington, D.C.

Riberio M. and Joanilio T.R., 2003, 'An Econometric Analysis of Private Sector Investment in Brazil', CEPAL Review 7, 4.

Solimano A., 1992, 'Understanding the Investment Cycle in Adjustment Programs: Evidence from Reforming Economies', PRE Working Paper No.912.

State Bank of Pakistan, 2010, Handbook of Statistics on Pakistan Economy, SBP, Karachi, Pakistan.

Uzair M., 2004, Economy of Pakistan: Perspective and Problems, Karachi: Royal Book Company, Karachi.