TESTING RELATIONSHIP OF PRIVATE INVESTMENT AND GDP WITH FISCAL DEFICIT

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ABSTRACT: Effective macroeconomic management is directly seen to pave the way of growth-induced employment generation and poverty reduction. This study looks at the case of Pakistan, examining one particular aspects of its macroeconomic frame work, namely its fiscal policy stance. Impact of economic policies on fiscal adjustment initiated under the structural adjustment and stabilization reforms was assessed in Pakistan while using data for 30 years (1980-2009).

1. INTRODUCTION

Effective macroeconomic management is directly seen to pave the way of growth-induced employment generation and poverty reduction. This study looks at the case of Pakistan, examining one particular aspects of its macroeconomic frame work, namely its fiscal policy stance. Bound by the reform programmer Pakistan's policymakers have adopted numerous fiscal austerity measures since 1999 to satisfy rigid IMF conditional ties. Consequently, low rates of inflation and control of the balance of payments have prevailed, whilst investment and GDP growth has remained stagnant over a prolonged period. Focusing on Pakistan's Fiscal deficit and the concurrent development in macro economy between 1999 and 2001 throughout the decade of the 1990s, major emphasis in Pakistan remained on fiscal reform as a part of the reform programs undertaken by the various government of Pakistan.

Fiscal reforms assume significance considering the high budget deficits that Pakistan has been experiencing. These have added to Pakistan's total debt burden in general and external debt in particular. Increase in the burden of debt adds to debt-servicing expenditure, which further feeds back into the issue of high fiscal deficit. Debt servicing increased to almost 47 percent by the mid of 1990s and comprised 8.3 percent of the GDP, up from less than 1 percent during mid-1960s. Pakistan's external debt at over $32 billion in 1998 was 41 percent of its GNP, which was amongst highest in the South Asian region with India's at 20 percent of GNP in the same year and Sri Lanka's also at 41 percent of its GNP

In Pakistan, commitment to the IMF/World Bank reform agenda, since 1999, has been associated with both attainment of price stability and reduction of the balance of payments deficit. Yet, private investment and GDP growth have remained sluggish whilst Unemployment has sharply increased, from less than 4 per cent in the 1980s to 7.8 percent by 2001. Emphasis on fiscal contraction appears to have been achieved by squeezing out development and investment expenditure. This does not bode well for setting the economy on a path to sustainable long- run economic growth and to the goal of full, productive, Remunerative employment that ultimately holds the key to eliminating poverty.

Objective of Study

The broad objectives of the study are:

- To assess the ultimate impact of economic policies on fiscal adjustment initiated under the structural adjustment and stabilization reforms.
- To test the hypothesis that the fiscal stability depends on interaction between public finance and other macro indicator of economy, which are differently influenced by different policies?

The second section of the paper comprises of review of the relevant literature, followed by theoretical framework. Methodology and data collection presented in fourth section. Data is analyzed in section five and paper is concluded in the last section. However, the last section also suggests some implications for future researches.

2. 2. LITERATURE REVIEW

Aisen and Hauner (2008) found with the help of data from (1970-2006) of sixty advanced and states including emerging states, by using reduced form equation. Results of baseline showed that the coefficient is highly significant, as 1% increase in deficit increase the interest rate by 44 points. The result of overall countries showed that budget deficit have negative effect on interest rate during (1985-1994), but effect is positive after 1995. Over all conclusion divided into three portions firstly budget deficit have positive effect on interest rate, secondly this effect varied from country to country, and thirdly effect depend on interaction terms.

Anusic (1993) used data of Republic of Croatia from (1991-1992) and explored that budget deficit is a priori harmful for the proper and smooth economic system, he gave the reference of Keynesian economic theory; the increase in budget deficit will cause to increase real interest rate, this increase will cause decrease in real investment. The impact of budget deficit on overall economy and for it smoothness is harmful, but it also depends on the internal condition and way of financing of any country.

Glannaros and Kolluri (2010) applied the OLS technique on different models, i.e. fisher equations and the IS-LM general equilibrium model by using data set of five industrial countries from (1965-1985). They yielded three different results; firstly there is a negative relation between interest rate and inflation, secondly there is and indirect significant effect of budget deficit on interest rate, thirdly study did not find any clear relation between variables with the help of other exogenous variables.

Vamvoukas *et al* (2008) explored, with the help of Keynesian preposition and Ricardian equivalence, the effect of budget deficit on interest rate and inflation rate, while using data of Greek economy from (1948-2001) by applying co-integration analysis, granger causality and impulse function (IRF). According to Ricardian equivalence budget deficit has no effect on the interest rate, but IRF & Granger test resulted other way round. According to IRF results, the effect of budget deficit on inflation rate was positive. Keynesian proposition shows that there is a positive effect on interest rate and inflation, Granger causality and co-integration results also approved it.

Ahmed *et al* (1998) stated that due to inefficient and unsuccessful revenue generation policies, Pakistan is facing highest fiscal deficit. They further argued that inherently structural problems in tax system of Pakistan are one of the biggest reasons of fiscal deficit. Lozano (2008) collected quarterly data of last 25 years (1983-2007) and using vector error correction (VEC) model explored a mixed relationship of inflation and money growths with fiscal deficit.

3. MODEL SPECIFICATION AND DATA COLLECTION

To investigate the relationship between fiscal deficit and macroeconomic indicators a single equation model is not enough, as there are direct and indirect effects of fiscal deficit on GDP. Therefore, a simultaneous equations model consisting two equations is used in this study to investigate the relationship between fiscal deficit and macroeconomic indicators. A unique feature of simultaneous equations system is that the endogenous variables in one equation may appear as an explanatory variable in another equation of the system. Consequently, such endogenous explanatory variable becomes stochastic and usually correlated with disturbance term of the equation in which it appears as an explanatory variable. In such situations the classical method cannot be applied because the estimators thus obtained are not consistent, that is they do not converge to their true population values no matter how large the sample size they have. The two-stage least squares method (2-SLS) is used to estimate following simultaneous equation model. The number of observations covers 30 years period i.e. 1980 to 2009, and the data were collected from International Financial Statistics, Pakistan Economic Surveys and State Bank of Pakistan's annual reports. The following equation is used to estimate model.

Mathematical representation of the model is as follows:

$$Y = \alpha_0 + \alpha_1 INV + \alpha_2 EX + \alpha_3 IM + \alpha_4 FD + \varepsilon_1 \qquad (1)$$

This equation measures the direct effect of fiscal deficit on economic growth. Where Y, INV, EX, IM, FD and ε_1 represent real GDP per capita (dependent variable), (independent variables) investment share of real GDP per capita, exports as a share of real GDP Per Capita, imports as a share of GDP, fiscal deficit and error term, respectively; whereas α_0, α_1, α_2, α_3 and α_4 denote respective parameters.

$$INV = \beta_0 + \beta_1 Y + \beta_2 RI + \beta_3 INF + \beta_4 FD + \beta_5 PG + \varepsilon_2 \qquad (2)$$

The second equation measure indirect impact of fiscal deficit on GDP though investment as a share of real GDP per capita (dependent variable), (Independent variables) are real GDP per capita, real interest rate, inflation rate, fiscal deficit, population growth and error term, respectively; whereas, β_0, β_1, β_2, β_3, β_4, β_5 denote respective parameters.

4. ESTIMATION AND RESULTS

Unit Root Test, Dickey-Fuller (DF) and Augmented Dickey-Fuller (ADF) tests were used to check the stationarity of the data and result showed that all series strongly reject the unit root null hypothesis at 5 percent significance level.

Table 1: Result of unit root test

Variables	Level		
	Lags	Intercept	Trend & intercept
Y	1	-2.2588 (-4.1745)	-3.2587 (-4.5248)
INV	1	-2.4789 (-7.8975)	-3.4785 (-5.7881)
EX	0	-2.178 (-6.4789)	-3.5247 (-6.038073)
IM	0	-2.7895 (-5.7895)	-3.5279 (-5.7895)
FD	1	-2.9358 (-8.4582)	-3.5247 (-8.7861)
RI	0	-2.4158 (-6.216451)	-3.4589 (-6.7841)
INF	1	-2.7895 (-3.7895)	-2.7446 (-3.1627)

PG	1	-2.9358 (-7.4587)	-3.5247 (-6.6923)

Table 2: **Result of Model**

Dependent variables	Growth in Real GDP per Capita Y (1)	INV as a share of real GDP per capita (2)
Constant	5.7854** (3.2589)	5.2569** (4.2589)
Y		0.7858* (2.1587)
INV	0.7818 ** (3.2578)	
EX	0.0789* (2.8957)	
IM	-0.7854** (-5.4988)	
FD	-0.8954** (-4.1284)	-0.4587** (-3.5897)
RI		-0.1245* (-2.8957)
INF		-0.8498* (-2.8974)
PG		0.2540** (4.2589)
Adjusted R^2	0.8975	0.7415
D.W Stat	2.7895	2.0145

Note: *, ** indicates rejection of the null hypothesis at 1% and 5%, levels of significance

The result of regression 1 showed direct impact of fiscal deficit on real GDP per capita. INV and EX showed positive and significant impacts on Y, i.e., higher INV leads to higher GDP per capita. Sandarajan and Thakur (1980) also showed that higher rate of physical capital leads to higher rate of economic growth. Similarly, the coefficient of EX also showed a positive and significant impact of exports on GDP. Higher exports led to higher GDP, as the GDP increased with an increase in exports, because market size will expand and it led to greater division of labour and reduction in the cost of production. The inflow of foreign capital and investment helps the developing countries to produce value added goods. With the rise in demand of goods, the domestic resources are fully utilized; it leads in reduction of underemployment in the developing world.

The coefficients of IM and FD showing negative and significant impact on Y. Pakistan's imports are always greater then exports i.e., a trade deficit. Pakistan's main imports consisted textile machinery, electrical machinery, agricultural machinery, medicine product, iron, steel etc. Pakistan is experiencing trade deficit from last many years. This trade deficit led fiscal deficit to increase and it affected GDP adversely. The coefficient of FD also showing negative and significant impact on Y. Vit (1999) proved that budget deficit creates many hurdles in the economic growth e.g. high level of inflation, current account deficit, highly indebted economy and due to all these economic growth affects adversely.

In regression 2, dependent variable is INV. The results showed indirect impact of fiscal deficit on Y through INV. INV affects Y and PG positively and significantly. The other independent variables have negative and significant impact on INV which ultimately affects GDP per capita. Pakistan is facing high inflation rate from last many years and fiscal deficit is one of the reason of this problems. Result showed that a 1 % increase in inflation led to decrease in investment by 84%, which indicates that there are adverse affects of inflation on Y. The fiscal deficit itself showed a negative and significant impact on INV. Lower INV will stimulate lower Y and it clearly showed that fiscal deficit not only affected Y directly but indirectly through INV. D. Watson stats in both regressions showed that the models are free from autocorrelation problem.

5. CONCLUSION AND RECOMMENDATION

This paper explained possible consequences of fiscal deficit which affects economic growth directly and indirectly. It is also concluded from above results that fiscal deficit affects economic growth of country very adversely. In case of Pakistan, country is facing this adverse situation of fiscal deficit from last many decades. There are many reasons behind this. First of all it is evident from economic history that process of revenue generation i.e. tax collection is very poor. The ratio of indict tax is higher than direct tax and more than half population is not paying tax which is only source of revenue generation. The tax GDP ratio stood at around 11.5 % during last several years. It is mainly attributed to narrow tax base, inelastic tax system, complex tax laws, heavy reliance on foreign trade taxes, large tax exemptions and incentives. All these facts created situation of fiscal deficit.

Another reason of fiscal deficit is that if we look the expenditure side of economy, defense and debt servicing are taking a vey major share of the current revenue. Results also showed that there is persistent deficit in balance of payments which ultimately creates fiscal deficit. Pakistan financed budgetary gap through external borrowing. Domestic non bank borrowing and borrowing from banking systems. All these sources again creates fiscal deficit situation in country. Price instability and political instability are very important and common problem of Pakistan.

Government should take some remedy measures to overcome these problems which will be helpful to reduce fiscal deficit. As lender interest rate in Pakistan is very high that's why very few investors mostly invested and few employment opportunities are there, to increase the investment ratio in GDP government must decrease the interest rate that small investors can also invest, due to this government revenues increases. The Tax system of Pakistan needs to be improved to increase revenues. Government should increase the ratio of direct taxes, more taxes from rich and less from poor. There should be proper   allocation of these revenues. Sustain trade balance is also key to remove fiscal deficit. Government official like parliamentarians should

reduce their expenditure as much as they can. More than 50% revenues utilized on these expenditures and it increase fiscal deficit.

This study is helpful for other researchers to validate this phenomenon in other countries. The model which was developed in this paper is also helpful to demonstrate same study in other economies. The variables which used in this study to highlight fiscal deficit problem, are also very useful in this context that policies makers can use these variables to remove fiscal deficit problem. For example it is proved that higher inflation affects investment adversely and GDP will be lower. Instability in prices people mostly hoarded those commodities which people demand more, it all creating distortion in the economy.

6. REFERENCES

[1] Aisen A and Hauner D "Budget Deficits and Interest Rates". IMF Working Paper. (2008).   42: 1-21.

[2] Giannaros D. Kolluri B. "The Impact of Budget Deficits on Real Interest Rates: An International Empirical Investigation". International Economic Journal, (1989), 3(2): 17 -25.

[3] Lozano I "Budget Deficit, Money Growth and Inflation: Evidence from the Colombian Case". Borradores de Economia, (2008), 537, 1-26.

[4] Metin K. "The Relationship between Inflation and the Budget Deficit in Turkey". Journal of Business & Economic Statistics, (1998), 16: 412-422.

[5] Vamvoukas, G. A. "Short- and Long-Run Effects of Budget Deficits on Interest Rates" (2000), Spoudai, 50: 58-73.

[6] Vit K. "The Possibilities of Budget Deficit Financing". Ministry of Finance of the Czech Republic, (2004), 44: 1-17.

[7] Shojai, S. (ed.), "Budget Deficits and Debt: A Global Perspective". (1999). Praeger Publishers, USA.