1-1-2011

Internal debt and private investment: evidence from Pakistan

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ARTICLE

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ABSTRACT

In most of the developing countries financial sectors are characterized by limited availability of loanable funds. Public sector borrowing leads to crowding out of the private sector as well as high interest rates and inflation. In Pakistan, government has relied more on borrowing from the domestic sources as well. The study explores the impacts of internal debt on private investment in Pakistan applying the OLS technique for the period of 1972 to 2009. The study indicates that the stock of internal debt and debt servicing affects the private investment negatively in Pakistan. This implies that internal debt and internal debt servicing crowd out private investment in Pakistan due to shallow financial system and underdeveloped financial markets. The study also suggests some polices to retire the internal debt which includes the privatization of state owned enterprises, use of externally borrowed resources and the foreign exchange flows from external trade.

Key Words: Internal Debt, Private Investment, Government Expenditures, Debt Servicing

INTRODUCTION

The South countries like Pakistan are facing a multitude of economic challenges at macro level. They want to achieve the targets of economic growth and social development with limited financial constraints. As the demand for exportable of these countries is dwindling due to low level of quality and quantity, they are unable to earn hefty amount of foreign capital. They have to hinge on internal sources to finance the expenditures.

International economic environment is also paying the way to rely more on internal sources due to global financial crises. Pakistan is also concentrating on internal capital flows i.e. internal borrowing. So, internal debt-creating flows have become an essential element of financing the internal and external gaps developing countries like Pakistan.

Investment is a prime macro economic variable which can contribute significantly in promoting economic growth especially in the context of developing

95

countries. The behavior of private investment activity has long been of interest to economists and policymakers. There is no consensus among the economists about the impact of internal debt on private investment.

A relatively well-developed financial intermediation system is vital for internal borrowing from the banking system excluding the central bank borrowing. It lessens inflation and risk of debt crises. Nevertheless, economic theory claims that the internal debt crowds out the private investment which impedes economic growth. The governments borrow internally and use private savings that can be utilized for private sector lending. So, due to smaller supply of loanable funds, interest rate (cost of capital) increases in the market which reduces private investment and capital formation.

There are also arguments that internal debt can enhance the economic growth because it depends on method by which internal debt is spent. If governments spend the borrowed money to improve the quality of life of the people by investing in health, education and infrastructure, the economy would be better off in real terms. Conversely the opposite is true.

The study tries to analyze the crowding out impact of internal debt in Pakistan. The study is arranged as follows. Various theories about internal debt and private investment are discussed in section II. A brief review of empirical studies is given in section III. In section IV, trends of internal debt in terms of various economic indicators are shown. The econometric specification is mentioned in section V. The discussion on empirical results is presented in section VI. Finally, the conclusions are presented in section VII.

THEORETICAL ISSUES

There are various views about the effects of government expenditures and debt on private investment. The Neoclassical believe that individuals plan consumption over their entire life cycles. Budget deficits increase current consumption through shifting taxes to future generation. By assuming full employment, Neoclassical argue that increased consumption means a decrease in savings. Interest rates must go up for equilibrium in capital markets. High interest rates result in a decline in private investment. Consequently, budget deficits could crowd-out private investment. Aschauer (1989) analyses that higher public capital spending let the private investment down.

There are Keynesians who give a counter argument for the crowding out effect by the expansionary effects of budget deficits. The crux of the Keynesians approach is that the investors may lay claim to real resources in excess estimates of planned saving as capital accumulation generates new capacity and employment. Therefore,

96

an initial inflationary inclination may be offset by an increased supply potential and planned savings may get closer to forced savings again. They argue that usually budget deficits increase the internal production which makes private investors to become more optimistic about the future and invest more. This is known as the crowding in effect. Eisner (1989) concludes that deficits have not crowded out investment.

There is the Ricardian equivalence approach which states that a rise in budget deficits due to rise in government spending must be paid with the total present value of receipts fixed by the total present value of spending. So, a decrease in current taxes must be matched by rise in the future taxes leaving interest rates and private investment unchanged. A reduction in tax that substitutes debt-finance for tax-finance of unchanged government spending would leave consumer spending unchanged. If government consumption is increased and financed by debt, private consumption should decrease with each unit of money of higher permanent government spending.

It is a controversial topic in economics that public and private investments are substitutes or complements. Free markets advocators are against the government intervention in the economy and believe that public sector competes with private sector for scarce resources and drives their prices up. In particular, if public sector investment is financed by internal borrowing results in rise of cost of capital for the private sector therefore, private sector projects become unprofitable. The final result is the crowding out of private investment by public sector investment. On the other hand, it is argued that public investment may indeed be beneficial for the development of the private sector.

Crowding out effect can be elaborated by using national savings identity (NSI) with exemption of the foreign sector.

$$(G-T) = (S-I) \Longrightarrow [(G-T) +I] = S$$

The left side from the equation 1 represents total demand for borrowing. It is comprised of two elements:

1)   Government demand for loanable funds (G-T)
2)   Private sector demand for loanable funds intended for investment (I).

On the right side of equation, the supply for loanable funds, i.e. national savings (S) are shown. We can express the crowding out effect by the figure 1. Equilibrium interest rate is determined at i_0 where demand and supply of loanable funds are equal to each other. At this interest rate level, the private capital level is I_0. That represents private demand for loanable funds under existing interest rates of i_0.

FIGURE 1:   CROWDING OUT EFFECT
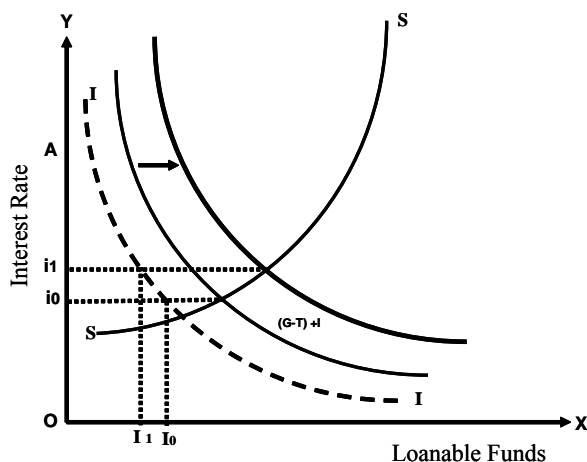
Therefore, under increased government borrowing to finance deficit, the total demand for loanable funds curve moves to the right as shown in figure and interest rate rises. The higher interest rate lowers private demand for loanable funds and forming the private demand at level I_1. So, the massive government borrowing crowds out the private investment. The amount for which the private investment is crowded out is (I_0-I_1).

REVIEW OF VARIOUS STUDIES

Various studies on the relationship of internal debt and private investment in context of developing countries are presented. We have included some important empirical studies of internal debt and private investment.

Christensen (2004) examines the role of internal debt markets for twenty seven Sub-Saharan African countries based on new data set over the period 1980-2000. Author also studies whether internal borrowing crowds out private sector lending. The study finds that internal debt markets in these countries are generally small, highly short term and have a narrow investor base. The study concludes that internal debt significantly crowds out private investment.

IMF (2005) discusses the impact of internal debt on private sector credit by taking forty low-income countries over the period 1993-2004 and finds limited evidence of government recourse to internal financing crowding out private sector borrowing.

98

Maana *et al* (2008) analyze the economic impact of internal debt on Kenya's economy. Authors examine the impacts of internal debt on private sector lending by applying ordinary least square technique using annual data over the period 1996 to 2007. The study finds that internal debt do not crowd out private sector lending in Kenya during the period due to substantial level of financial development in Kenya. The study also examines the effects of internal debt on real output by using a modified Barro growth regression model. The results indicate that increase in internal debt has a positive but insignificant effect on economic growth. The study suggests that government should continue to execute wider reforms that promote investment in financial markets.

Khan and Gill (2009) investigate the crowding-out effect of external and internal public borrowing on private investment for Pakistan by applying unit root, co integration test and vector error correction model for time series data over 1971-2006. The results of study show no evidence of crowding out rather provides the evidence of crowding in effect.

The review of some assorted studies shows that the relationship between internal debt and crowding out of private investment is of mixed nature.

TRENDS IN INTERNAL DEBT IN TERMS OF VARIOUS ECONOMIC INDICATORS

In this section, we explain trends in internal debt in terms of various economic indicators. Figure 2 shows the components of internal debt as percentage of GDP. The permanent debt to GDP ratio has steadily declined from 16 % in 1972 to 9.0 % in 1985, before spiking again to 17 % during 1993. From 1994 to 2000 again declined to 8 percent, start   increasing and reached to 12 percent in 2009. The declining trend was largely due to maturing market loans, Bearer National Fund Bonds and Federal Government Bonds. In particular, the total outstanding balance of these instruments has gone down. Maturing Federal Investment Bonds have also played a role in reducing the permanent debt to GDP ratio. However, the 2002 reversal of the declining trend is largely due to the introduction of the Pakistan Investment Bond. A major development in 2009 was the introduction of Ijara Sukuk Bonds within permanent debt. Although PIB maintained its main share in permanent debt compared to the previous couple of years.

Figure 2: Components of Internal Debt as Percentage of GDP
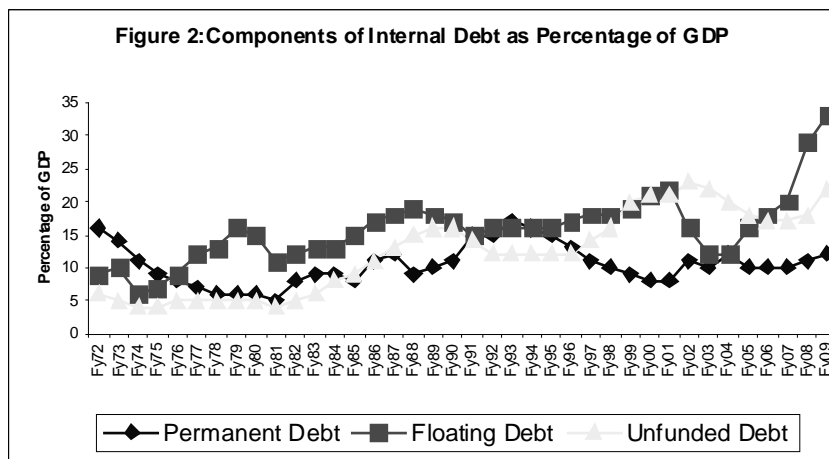
The floating debt to GDP ratio has increased persistently reached maximum of 22 % in 2001, after this has decreased to 18 % in 2006 and again start to increase in 2009. The unfunded debt to GDP ratio has increased continuously from 1972 to 2002 largely due to higher profit rates relative to other government debt instruments. Figure 3 shows the trends in internal debt servicing in relation to GDP. It is noticeable from the trends that the interest payments on internal debt have remained the same till 1981. The averages of interest payment in 1970s, 1980s, 1990s and 2000 are 1%, 2.7%, 5.1% and 5.5% respectively. The average in 2000 is greater than the total period average, which is 5.5 percent. Due to structural adjustment programs, interest rates increased significantly per annum.

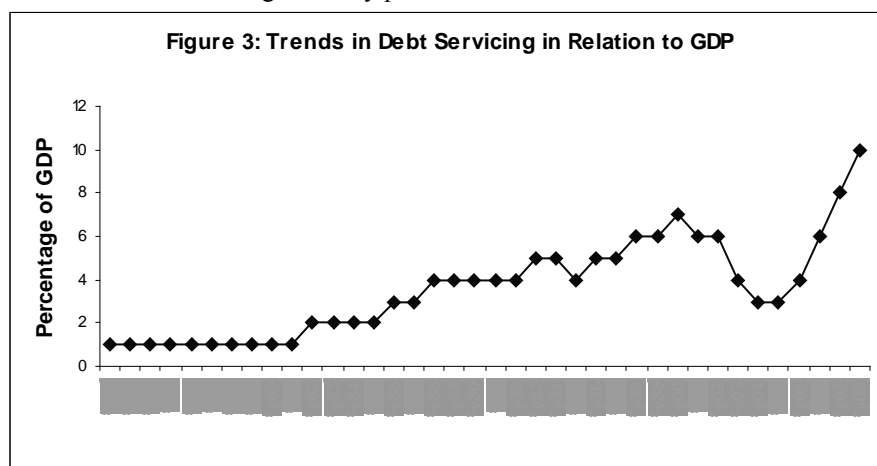Figure 3: Trends in Debt Servicing in Relation to GDP

100

Figure 4 shows the trends in internal debt servicing in relation to major macroeconomic indicators. Interest payments on internal debt have used a major part of limited budgetary resources especially in 2000 which were 29 % of total expenditures. After this interest payments decreased to 22 % in 2009 but these are still a burden on budget. Interest payments on internal debt in relation to tax revenues were 66 % in 2000. After this period, the ratio has decreased sharply to 24 % in 2006 and increased again to 43 % after this period.

Figure 4:Trends in Internal Debt Servicing
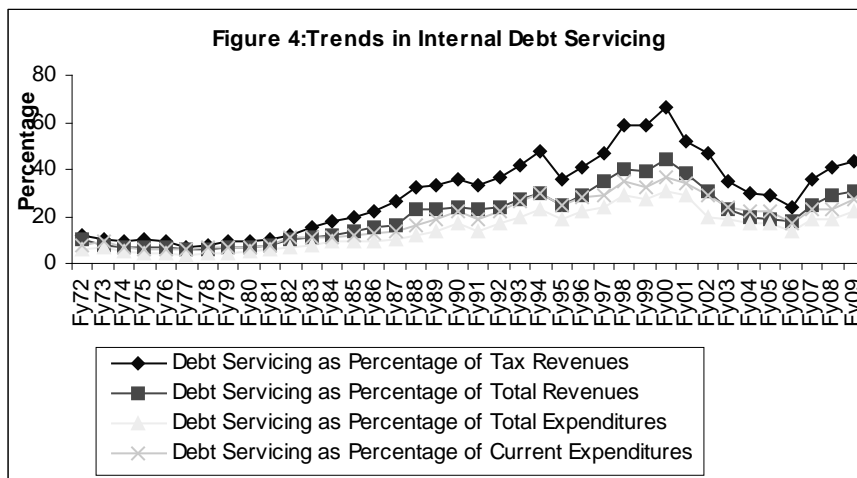
The rise in interest payments on internal debt is largely due to heavy interest payments on floating debt. However, higher interest rates on NSS instruments and a large debt stock implied that interest payment on unfunded debt comprised of the single largest component of total internal debt servicing. Trends of total revenues that are used to pay off the interest on internal debt are analogous to tax revenues. The share of interest expenditure on internal currency debt in current expenditures amounted to 37 % in 2000 and it decreases after this period.

ECONOMETRIC SPECIFICATION

In the light of above discussion, the following equations are specified in order to study the effects of internal debt or internal debt servicing on private investment. In these equations, we include internal debt or internal debt servicing alternatively as the independent variables. We construct the following mathematical models for analysis.

PI = f [GE, TDD, EX, PI [(-1)]]   -- (1)

PI = ƒ [GE, INT_DD, EX, PI [(-1)] -- (2)
The econometric equations specified in linear forms are given as follows:
$PI = \alpha_1 + \alpha_2\,GE + \alpha_3\,TDD + \alpha_4\,EX + \alpha_5\,PI[(-1)] + \mu$ ------------------------ (3)
$PI = \beta_1 + \beta_2\,GE + \beta_3\,INT\_DD + \beta_4\,EX + \beta_5\,PI[(-1)] + \mu$ -------------------- (4)
$\alpha_2,\ \alpha_4,\ \alpha_5,\ \beta_2,\ \beta_4,\ \beta_5 > 0$
$\alpha_3,\ \beta_3 < 0$
Where:
PI = Private Investment
GE = Total Government Expenditures
INT_DD = Internal Debt Servicing
EX = Exports
TDD = Total Internal Debt
PI [(-1)] = One Year Lagged Private Investment
μ = Error term

RESULTS AND DISCUSSION

The equations 1 and 2 are mathematical models and equations 3 and 4 are econometric models. For the estimation of private investment function, we use annual data for the period 1971-72 to 2008-09. All the data are taken from various issues of *Annual Reports* of the SBP and *Economic Survey* of the Ministry of Finance, the government of Pakistan. In carrying out estimations, all the equations are estimated by the method of OLS. After the first round of estimation, regression errors in all the estimated equations are tested for autocorrelation with the help of Durban Watson (DW) test.

The results of estimation are arranged in Table1.Two models specified in equation 3 and 4 are estimated. Both the models have five variables. Private investment is dependent variable, whereas government expenditures, exports, one year lagged value of private investment, total internal debt and internal debt servicing are independent variables. Now we discuss the value of individual regression coefficients in both equations.

The value of regression coefficient of government expenditures in equation 4 is 0.13 suggesting that an increase in one million government expenditures increase private investment by about 0.13 million. The effect is very minor and statistically insignificant. Similarly in equation 3 the value of regression coefficient of government expenditures is 0.24 which means one million rise in government expenditures increases the private investment to 0.24 million, although this effect is small but statistically significant. The reason of this positive relationship of government expenditures and private investment may be that both are complements. Government spending promotes the economic activity by assisting the private sector

102

through the provision of social overhead capital in the country. Alani (2006) explores that government expenditures crowd in private investment in Japan. Everhart and Sumlinski (2001) finds that public investment stimulates higher levels of private investment as both are complement. The public investment provides infrastructure and other sources of positive externalities which may decrease the cost of production for private investment. Government expenditures positively influence private investment by raising effective demand which can raise the profitability. In addition, government expenditures can crowd in private investment when it targets activities which have strong linkages with the rest of the economy (Tun Wai and Wong, 1982). Private investment in Pakistan is positively related by government expenditures (Sakar1993). The value of regression coefficient of exports in equation 4 is 0.26 indicating that if exports go up by one million, the private investment increases by about 0.26 million. Similarly value of regression coefficient of exports in equation 3 is 0.59 shows that if exports increase by one million, private investment goes up by about 0.59 million. Both values are positive and statistically significant. The possible reason of this positive relationship of exports and private investment may be that both are the components of aggregate demand so an increase in net exports will enhance output which results in rise in private investment according to accelerator principal. Balasubramanyam *et al* (1996) describe that the highly integrated economy attracts investment in tradable sectors in order to enhance productivity and competitiveness.

TABLE 1: PARAMETERS ESTIMATES OF PI EQUATION
(DEPENDENT VARIABLE IS PRIVATE INVESTMENT)

Independent Variables	Equation 3	Equation 4
Intercept	-16960.41	-16581.62
	(-1.386748)	(-1.286744)
Government	0.246720	0.131203
Expenditures	(1.723398**)	(1.035762)
Total Internal debt	-0.219691	--------
	(-2.898643*)	
Debt servicing on Total	--------	-0.695356
Internal debt		(-2.373330*)
Lagged value of	0.742962	0.901965
Private Investment	(5.411714*)	(7.912190*)
Exports	0.590068	0.265769
	(5.035387*)	(4.094994*)
R^2	0.81	0.85
DW Statistic	2.14	2.18
Sample Size	37	37

Note: The t-statistics (in parenthesis) significant at 5% and 10% levels are indicated by * and ** respectively. All the estimations are carried out by Eviews.

The values of regression coefficient of one year lagged values of private investment in both equations are positive and statistically significant, which shows private investment of previous year impacts on current year investment. To remove the problem of autocorrelation, we have used one year lagged values of dependent variable.

We now come to the main focus of our analysis that is the effects of internal debt or internal debt servicing on private investment. The value of regression coefficient of total internal debt in equation 3 is –0.21 which demonstrates that one million increase in total internal debt decreases the private investment 0.21 million. Similarly, value of regression coefficient of internal debt servicing in equation 4 is-0.69 suggesting that one million rise in internal debt servicing, decreases private investment to 0.69 million.   So, in the investment functions the volume of internal debt and internal debt servicing has negative and significant effect on private investment efforts.

We observe that our specified models perform quite well in terms of overall explanatory powers of the models. The value of R^2 is in the range of 0.81 and 0.85 respectively in both models. Thus, our models explain 83% of variation on average in private investment. In both estimated equations, the DW-statistic does not fall in the rejection range and lies within the acceptance range. Thus, we can accept the null hypothesis that autocorrelation is absent from the regression errors.

CONCLUSION

The main objective of this paper was to study the crowding out impact of internal debt in Pakistan for the period 1972 to 2009. The study finds that internal debt and internal debt servicing crowd out private investment in Pakistan. Due to shallow financial system and underdeveloped financial markets in Pakistan internal debt crowds out private investment. The cost of internal debt increases rapidly along with increase in the debt stock particularly in shallow financial markets where financial resources are limited and extensions in internal debt will result in higher internal interest rates. The rise in interest rates reduces the private investment.

The cost of internal debt is more than the external debt and it is therefore expensive to maintain. So, it is need of time that the government formulates and implements debt reduction schemes for internal debt. Internal debt reduction could be achieved through the receipts from the privatization of state owned enterprises or

104

by the use of externally borrowed resources which are mostly on concessional terms. Further, the foreign exchange from external trade can be used to retire internal debt without injecting liquidity in the system.

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If, as an individual, you really have some concern about the best way to change our present world to a better one, not a bad principle to follow is to identify the enemy. It should not be true, but unfortunately it is, that your immediate enemies remain as they have always been, your rulers – your government At all times, it is a wise thing to suspect both their intellectual honesty and their intelligence in economic matters. Nothing can be lost, everything can be gained, by doing so. Make them prove themselves in these reports – and be utterly ruthless in you judgement. When they see most plausible, in your particular interests, it is not a bad course to suspect their economic intelligence the most.

Harry Scherman: *The Promises Men live By pg 480*

106