



**Policy Note**

**Current Slowdown in Private Sector Deposits:  
Does Government Borrowing Play Any Role?**

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September 2014

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**Acknowledgements and Disclaimer:** We are grateful to Dr. Jameel Ahmad and Dr. Hamza Ali Malik, for their valuable comments. The views expressed in this note are those of the authors and do not necessarily represent those of the SBP or SBP policy. Research/Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.



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### Introduction

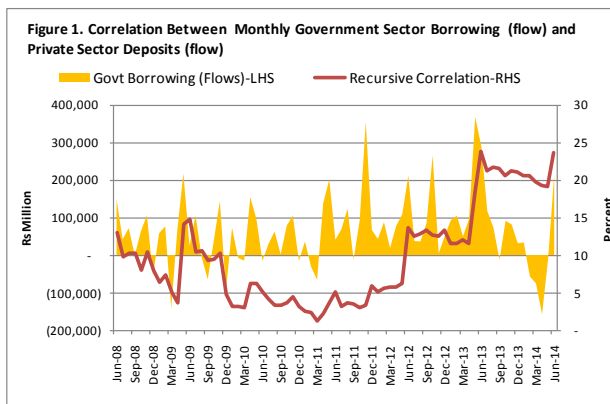
In pursuit of complying with program targets set under Extended Fund Facility (EFF) by the International Monetary Fund (IMF), Government of Pakistan (GoP) since FY14 has been trying to improve its net foreign assets (NFA) and curb its net budgetary borrowings from the banking system.<sup>1</sup> This effort has resulted in lower budgetary borrowings which were in turn mirrored by deceleration in growth of both currency in circulation and private sector deposits during this period. With signs of recovery in private sector credit witnessed after five years, the gradual deceleration in private sector deposits growth during FY14 raises some concerns about the sustainability of this recovery. Since private sector deposits represent the largest pool of funds for the banking sector<sup>2</sup>, recent observations compel us to investigate whether reduction in government borrowings, in addition to other determinants, have any significant impact on growth of private sector deposits and if so, then to what extent.

The question posed here is also linked with the ‘Ricardian Equivalence’ (RE) hypothesis, which states that budget deficits financed through additional government debt (held by private sector) leads to an increase in savings with no effect on long-term output (**see Appendix 1**). Our note, however, is a departure from the RE literature. Here, we do not focus on either growth or public debt. We also do not investigate how the public debt is being financed. We only look at governments sector borrowings from the banking system<sup>3</sup> and its impact on private sector deposits. In this sense, this note is similar to the work of Drakos (2001) who, using private sector bank deposits as a proxy for savings, found that government domestic borrowings has a positive impact on savings in Greece.

In another study by Abbas and Christensen (2010) on low-income and emerging economies the authors find evidence in support of moderate level of domestic debt positively influencing private savings and financial intermediation. They contend that governments as major players in the economy create large and liquid markets through issuance of its debt, putting in place the requisite trading infrastructure<sup>4</sup> that provides domestic savers with an alternative to investing abroad, therefore curtailing capital flight. However, they also find that higher levels of domestic debt undermine growth, lead to crowding out of private sector and erode banks’ efficiency.<sup>5</sup>

### Empirical Analysis

We explore the relationship between governments’ domestic borrowings and private sector deposits in Pakistan by first looking at recursive correlation computed over the period July 1977 to June 2014. **Figure 1** shows that, since June 2008, there is a positive correlation between government’s borrowings and private sector deposits. This relationship has been getting stronger, increasing from 1.4 percent in March



<sup>1</sup> Government’s net budgetary borrowings constitute more than 65 percent of NDA.

<sup>2</sup> 87 percent share in total liabilities of the banking sector, as on December 31, 2013.

<sup>3</sup> Borrowings include borrowings from the State Bank of Pakistan and Commercial banks, borrowings for commodity operations and others.

<sup>4</sup> The role of government debt as a collateral plays a particularly important part in developing economies where asymmetric information increases lending risks and where enforcements of contracts are weak.

<sup>5</sup> The study finds that economic growth (output) is negatively affected when domestic debt to deposits ratio exceeds 35percent.



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2011 to 23.86 percent in June 2013. This positive correlation supports the argument that as government increases its domestic borrowings it transfers resources (by way of payments) to private agents. If private agents, in turn, save some of the additional income then deposits of the banking sector would increase.

To investigate these arguments further, we regress changes in private sector deposits on changes in government borrowings. We use output, inflation, interest rates and home remittances to control for demand and supply conditions. Policy rate has been used as a proxy for interest rates on deposits because historical data on weighted average deposit rates (WADR) is not available prior to 2004. Moreover both WADR and policy rate exhibit high correlation.<sup>6</sup> We use monthly data from 1977:7 to 2014:1 in the OLS regression. We estimate the following empirical model;

$$\Delta P_t = \alpha_0 + \sum_{j=1}^4 \beta_j \Delta G_{t-j} + \sum_{j=0}^4 \gamma_j \Delta Y_{t-j} + \sum_{j=0}^4 \varphi_j \Delta \Pi_{t-j} + \sum_{j=0}^4 \omega_j \Delta i_{t-j} + \sum_{j=0}^4 \theta_j \Delta R_{t-j} + \epsilon_t \quad (1)$$

Where,  $\Delta P_t$  denotes change in private sector deposits,  $\Delta G_t$  is change in government sector's domestic borrowings,  $\Delta Y_t$  is change in monthly LSM index,  $\Delta \Pi_t$  is change in monthly CPI,  $\Delta i_t$  is change in policy rate and  $\Delta R_t$  is change in home remittances. Taking first differences ensures stationarity which is verified by Dickey-Fuller unit root tests.

Regression results in **Table 1** show that changes in government's domestic borrowings, LSM and CPI positively and significantly impact changes in private sector deposits. A Rs100 increase (decrease) in governments' monthly domestic borrowings leads to Rs33 worth of

**Table 1. Long-run Coefficients**

Dependent variable:	Government	LSM	CPI	Interest	Remittances
Private sector deposits	Borrowing			Rate	
Sum of Coefficients	0.33	3,166	11,338	-21,206	235
<i>t-value</i>	<i>3.18**</i>	<i>3.00**</i>	<i>1.65*</i>	<i>-1.82*</i>	<i>1.16</i>
<i>R-square</i>	0.43				
<i>Observations</i>	434				
Coefficients are in Rs millions					
** & * indicate significance 5 and 10 percent, respectively.					

increase (decrease) in private sector's monthly deposits. Analyzing it through RE lense, these results imply that private sector does perceive, albeit partially, an increase in their wealth (as additional government bonds/securities) and responds to it by increasing current consumption while saving around 33 percent of their additional income.<sup>7</sup> Change in monthly remittances plays a positive but insignificant role in influencing change in private sector deposits. This is consistent with Hameed and Agha (2008)'s study where they find a similar insignificant relationship between remittances and deposits.

Result for interest rate implies that as interest rate increases, there is a slowdown in growth of deposits. This is contrary to expectations and may be attributable to a slowdown in demand for private sector credit when interest rates are high, leading to a slowdown in the economy and hence deposit growth. Moreover, SBP's policy intervention of imposing minimum rate on savings and term deposits and its subsequent linking to SBP's repo rate, may also be resulting in lower demand for deposits by the banks. Empirical evidence suggests that indeed this is the case (**see Box 1**).

<sup>6</sup> The correlation between WADR and Policy Rate is 86 percent for the period Jan-04 to Mar-14.

<sup>7</sup> If true RE were to hold a Rs 100 increase in government borrowing would have resulted in an equivalent increase in savings because private sector would treat the additional borrowing by the government as a precursor for future tax increases by the same amount.



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### Box 1: Policy Intervention and Private Sector Deposits

We carry out an adjunct investigation in order to ascertain the impact of policy intervention and to explain the peculiar result of interest rate having a negative impact on change in private sector deposits. We modify the empirical model (1) by including a dummy variable  $D_t$  to capture policy intervention from June 2008 onwards. We also include interactions of this dummy variable with each lag of the interest rate. The following modified model is then estimated:

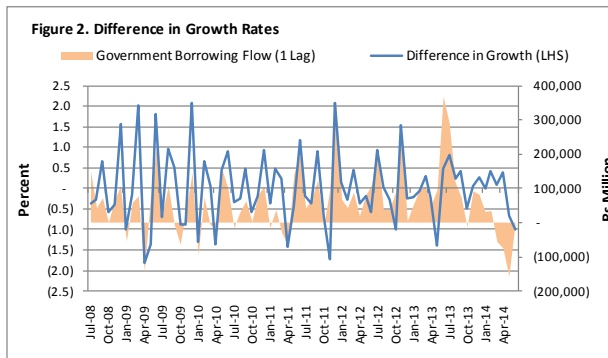
$$\Delta P_t = \alpha_0 + \sum_{j=1}^4 \beta_j \Delta G_{t-j} + \sum_{j=0}^4 \gamma_j \Delta Y_{t-j} + \sum_{j=0}^4 \varphi_j \Delta \Pi_{t-j} + \sum_{j=0}^4 \omega_j \Delta i_{t-j} + \xi D_t + \sum_{j=0}^4 \delta_j (D_t \Delta i_{t-j}) + \sum_{j=0}^4 \theta_j \Delta R_{t-j} + \epsilon_t \quad (2)$$

Results in Table A show that interest rate on its own still plays a negative role but it is not statistically significant. The impact of policy intervention by SBP is, however, positive and significant. This implies that deposits have increased after the intervention relative to the no intervention period. The negative long-run coefficient<sup>8</sup> of the interactions between policy dummy and interest rate reveal that the positive impact of policy intervention has reduced as interest rates have increased. This implies that, post policy intervention, the reduction in demand for deposits by banks due to increase in interest rates has outweighed the increase in supply of deposits by the private sector.

**Table A: Long-run Coefficients**

Dependent variable:	Interest Rate	Policy Dummy	Interest Rate* Policy Dummy
Private sector deposits			
Sum of Coefficients	-1,859	28,403	-53,672
t-value	-0.14	2.37**	-1.88*
R-square	0.47		
Observations	434		
Coefficients are in Rs millions			
* * & * indicate significance 5 and 10 percent, respectively.			
Note: Chow test shows that both the intercept and slope for the model are different for pre and post intervention period.			

We extend our investigations further and attempt to explore private sector's own dynamics in deposit growth. This is done by separating the impact of government induced flows (33 percent) from private sector deposit flows. Difference in growth rates of private sector deposits (due to government's domestic borrowings and one without it) is graphically represented in **Figure 2** along with a lag of monthly changes in government borrowings. It can be seen that when government domestic borrowing is relatively higher, private sector deposits grow more than growth implied by their own dynamics.



### Conclusion

The above results show that private sector deposits have a positive relationship with government borrowing. As government borrows more, they spend more, which in turn increases private sector's income. If private agents do not increase their consumption proportionately with income, then deposits of the banking sector would increase. This note helps explain one aspect of the recent deceleration witnessed in private sector deposit growth and among other factors, highlights the extent of

<sup>8</sup> Sum of the coefficients on current and lagged values of explanatory variables (x) is the long-run change in y given a permanent change in x Wooldridge (2002).



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government induced change in private sector deposit flows. However, this note does not in any way advocate for higher government borrowings to promote deposit growth. As mentioned earlier, domestic debt to deposits ratio that exceeds 35 percent has been found to retard economic growth (Abbas and Christensen 2010) and in case of Pakistan this ratio is above 50 percent (State Bank of Pakistan 2012).

It is also interesting to note that increasing interest rates impact flow of deposits negatively. This influence, in our case, emanates from SBP's policy interventions as well. Although on its own, the policy of imposing a minimum rate has helped boost deposits but in combination with the increase in interest rates it has led to a decline in deposits; a highly pertinent observation that merits further exploration.



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### Appendix 1: Ricardian Equivalence (RE)

Fiscal theory states that government meets its expenditure through three sources; tax revenues, borrowing or creating money. The following accounting identity presents this;

$$G = T + \Delta D + \Delta M \quad (1)$$

Where  $G$  is government expenditure,  $T$  is tax revenue,  $\Delta D$  is change in stock of public debt held by the private sector and  $\Delta M$  is change in stock of money. As per Ricardian equivalence, holding government expenditure ( $G$ ) and money creation ( $\Delta M$ ) constant, a tax cut will lead to increase in government borrowing, thereby increasing government debt. However, private sector does not perceive the cut in taxes as a reduction in overall tax liability but only a postponement of it (Drakos 2001). Therefore, they do not increase consumption in response to the tax cut but increase savings. This phenomenon could be viewed in terms of the following macroeconomic identities:

$$Y \equiv C + I + G \quad (2)$$

$$S \equiv (Y - T) - C \quad (3)$$

Where  $Y$  is output,  $C$  is personal consumption and  $I$  is private investment in (2) and  $S$  is private savings in (3). Combining (2) and (3), we get

$$S - I \equiv G - T \quad (4)$$

As government expenditure  $G$  remains unchanged and taxes  $T$  declines, savings  $S$  will rise to compensate for the fall in taxes. Here, the implied assumption is that investments  $I$  also do not change. This also means that output  $Y$  remains unchanged in (2) as well.