
OPINION

Reserve Requirements: Current Practices and Potential Reforms

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While cash reserve requirement (RR) may still be useful as a prudential measure and a tool for liquidity management, its importance as a monetary control instrument has been declining since early 1990s.¹ The key reasons is central banks' changing monetary policy strategies with switching over to interest rate operating procedures from reserve operating procedures.² Now most central banks implement monetary policy by focusing on the short-term interest rate as a reference for monetary policy. Even monetary aggregate targeting central banks seek to influence the money supply by keeping short-term interest rate within a desirable range instead of operating through bank reserves.³

Contemporary central bank practices show that RR is now being used to facilitate control over short-term interest rates. Towards this end, central banks have reformed reserve accounting frameworks by reducing complexities involved in its calculation and providing banks more flexibility in managing reserves. These reforms have helped the central banks level out banks' demand for reserves over the maintenance period and thus, smoothing of transitory fluctuations in short-term interest rates.

State Bank of Pakistan (SBP) has been using cash reserve requirement (CRR) since its inception and often synchronizing it with changes in monetary policy stance to reinforce its transmission. The CRR has also been used to supplement or substitute open market operations (i.e. liquidity management function of RR).

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¹ Some of the countries including Canada, Australia, New Zealand, Sweden, and Norway have eliminated RR while others have reduced the ratios to minimum.

² Other reasons include financial openness and deregulation started in early 1980s for moving towards market-based monetary policy.

³ Based on Bundesbank experience, Borio (1997) argues that there is no conflict of smoothing short-term rates with controlling monetary aggregates in long run from demand side, i.e., by changing the opportunity cost of holding reserves.

SBP has recently switched to interest rate operating procedure with the introduction of an interest rate corridor for overnight money market repo rate, which indicated a reduced role for CRR as a money supply controlling tool. This requires SBP to reassess the current reserve requirement practices and make it consistent with the new operating framework.

2. Reserve accounting framework of Pakistan: current practices and issues

Under current regulations (Section 36 of SBP Act, 1956), all scheduled commercial banks, microfinance banks, Islamic banks and Islamic banking subsidiaries of the commercial banks are required to maintain a certain proportion of their liabilities in the form of cash with SBP. Against their local currency liabilities, the banks have to meet two cash reserve requirements: (a) a daily minimum of 4 percent of their time and demand liabilities (TDL) subject to CRR and; (b) a weekly average of 5 percent of their TDL, subject to CRR, from Friday to Thursday.⁴ Currently, there is 'zero' CRR on banks' time deposits of above one-year tenor.⁵ Similarly, banks are required to maintain 5 percent as cash reserve and 15 percent as special cash reserves against foreign currency deposits. Besides meeting cash reserve requirement, banks' balances with SBP also include funds held for settlement of interbank transactions. It is also pertinent to mention that SBP does not remunerate required or excess reserves.

Currently, SBP is operating a semi-lagged (which is closer to contemporaneous) reserve accounting framework where required reserves are calculated on the basis of liabilities of the starting day (i.e. Friday) of the maintenance week. In other words, the maintenance and calculation periods overlap. This makes the liquidity management quite difficult for banks as they have to start fulfilling the requirement before the exact levels of required cash reserves are known to them. This uncertainty usually forces banks to hold reserves in excess of their best guess about required reserves to avoid penalties in case of shortfalls. Although automation and improved intra-branch networking by banks have helped in reducing this uncertainty over time, yet the issue has not been resolved completely.

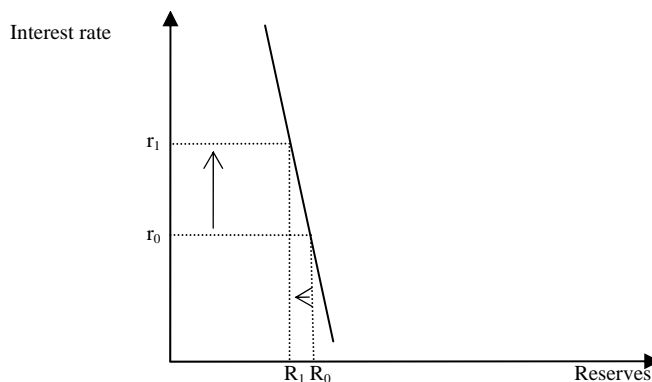
⁴ The TDL subject to CRR at present include demand deposits including time deposits of up to one year tenor.

⁵ In majority of countries, there is a uniform rate for all types and size of deposit base. However, there are exceptions. For example, in case of USA, Japan, Korea, Taiwan the reserve ratio increases with the size of deposit base of the banks; with differential ratio for demand and non-personal or business owned time and saving deposits in case of USA – currently, the latter are zero rated.

Relatively more problematic, both for banks and SBP, is requiring banks to hold reserves on a daily basis. The daily minimum requirement does not allow banks to benefit from reserve averaging – where banks could cover the deficit in reserve requirement on a particular day with a surplus on another day. As banks have to hold a minimum 4 percent of their liabilities as cash reserve on each day of the week, they cannot arbitrage by holding low reserves on a particular day by high reserves on another day to meet the required average over the one week period. This suggests that banks' demand for reserves is highly interest (i.e. overnight money market repo rate) inelastic as it remains fixed at the minimum required amount irrespective of the current or expected level of money market repo rate.

This insensitivity of demand for cash reserves to interest rate is not helping to cushion the changes in supply of reserves, caused by autonomous liquidity flows in particular. When banks are already maintaining cash reserves close to required weekly average on a daily basis (and the demand for reserves is minimal), any change in the supply of cash in the banking system only results in fluctuation of overnight repo rate, hitting either ceiling or floor of the corridor.⁶ In essence, interest inelastic demand for cash reserves amplifies the impact of changes in supply of cash on overnight repo rate: even a small change in supply (or increase in demand for cash) results in a bigger change in overnight repo rate. This phenomenon is explained with the help of Figure 1. It also shows that in case of instability in demand for reserves, i.e., when demand for reserves frequently changes at given interest rate, it requires active liquidity management by the

Figure 1. Interest Rate Sensitivity of Demand for Reserves



central bank to stabilize the money market interest rates.

⁶ As difference between daily minimum and weekly average is only 1 percent.

3. Reserve accounting framework of Pakistan: potential reforms

Based on the above discussion, following reforms are suggested to make the reserve accounting framework flexible and a supplement to monetary operations for effective implementation of monetary policy:

(a) *Remove the daily minimum requirement and extend averaging period from current one-week to two-week initially that could be extendable to one month depending on the experience*

Removing the daily requirement and lengthening of the maintenance period would provide banks considerable flexibility in management of cash reserves.⁷ This flexibility will encourage banks to arbitrage expected intraday movement in the cost of holding reserves (i.e. overnight repo rate), by substituting excess cash reserves on a particular day when perceived cost is low for holding less than required amount on another day.⁸ And, in case banks are not expecting any perceptible change in the cost of holding reserves over the maintenance period, they would tend to hold balances that are close to the required amount. This would make the demand for reserves more elastic around the expected level of overnight money market repo rate over the maintenance period. However, this interest elasticity of demand for reserves would tend to decline towards the end of maintenance period as number of days to offset the deficit/excess balances falls.

Besides acting as liquidity cushion for banks, reserve averaging will also help in absorbing autonomous liquidity shocks (liquidity flows not caused by monetary instruments) and thus, muting their impact on overnight money market repo rate. For instance, if the market is short due to tax related outflows on a particular day, banks short of cash would withdraw their balances held with SBP and would not borrow from the interbank market to meet cash needs. Similarly, in case a market is long on a particular day, due to a sudden increase in government deposits or short-term foreign inflows, banks with surplus cash would not be inclined to lend in the market at lower rates but place funds in its current account to fulfill the averaging requirement over the maintenance period.

Length of averaging period

Currently there is no procedure to determine the optimal length of averaging period consistent with tolerable volatility in short-term interest rate. However, it is

⁷ However, banks should not be allowed an overdraft position on a single day.

⁸ This, however, is not possible at very low levels of required reserves and short averaging period.

important to consider how far a central bank can influence market expectations about short-term interest rate (cost of holding reserves) when deciding the length of averaging period. This is because interbank rates largely depend on expected changes in central bank interest rates (the rates charged for lending to commercial banks) and market liquidity conditions during the course of maintenance period. Given the difficulty in engineering anticipated changes in policy rate, longer averaging period would lead the banks to speculate about changes in the policy rate towards the end of averaging period (Bindseil, 2004). On the other hand, a shorter period does not provide banks sufficient room for maneuvering of reserves in respect of expected changes in the short-term rate.

In addition, most countries have adopted central bank best practices regarding the length of the averaging period. Recent international practices show that majority of central banks in developed countries operate one-month reserve maintenance period and two-weeks in case of emerging economies (Borio, 1997 and BIS, 1999). Some central banks have even synchronized ending day of the reserve maintenance periods with meetings of the monetary policy committees (ECB, for example). The objective of doing so is to enable banks to adjust reserves with monetary policy changes in order to avoid any opportunity cost associated with holding reserves.

(b) Allow banks to carry over the deficit or surplus of the previous maintenance period into next maintenance period

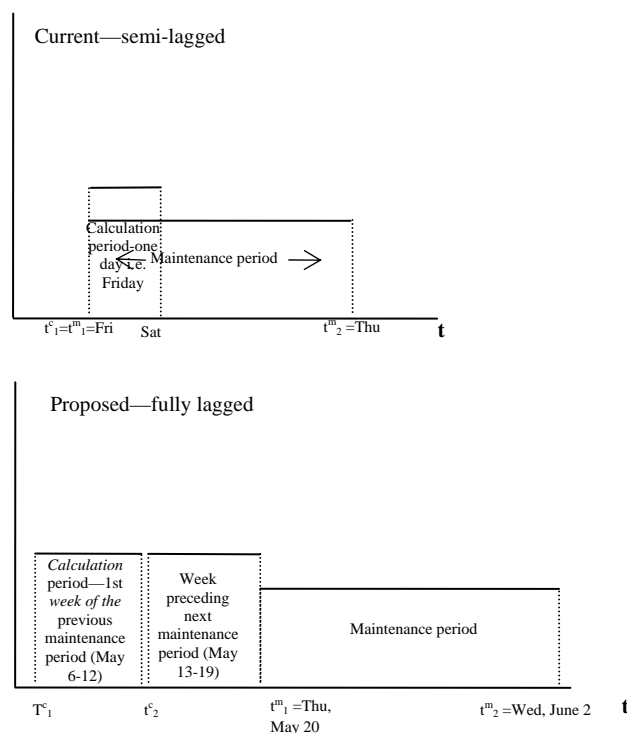
Removing the daily minimum and allowing averaging, however, might increase pressure on overnight money market repo rate towards the end of each maintenance period in case banks are running either a deficient or surplus position. This issue can be resolved by allowing only a limited carry over facility. For instance, banks' may be allowed a limited carry over, say 5 percent of their surplus or deficient balance, to next maintenance period and penalize banks for remaining deficiency (only) in required reserves.

(c) Adopt lagged reserve accounting

While longer maintenance period provides banks with more flexibility, lagged reserve accounting provides information to the central bank and depository institutions about the demand for reserves in advance. Lagged reserve accounting also makes it easier (and less costly probably due to reduced uncertainty) for banks to calculate the amount of required reserves for the current maintenance period with greater certainty. This certainty about aggregate demand for reserves not only benefit the individual bank in managing their reserves, but also helps the central bank to assess the need for OMOs and better control overnight money market repo rate (Whitesell, 2006 and Borio, 1997).

The base for calculation of required cash reserves for the next maintenance period may be defined either as average of banks' liabilities of one week prior to the maintenance period or banks' liabilities as on the first day of the previous maintenance period (assuming adoption of 15-day maintenance period). This means that banks would be using the average of their liabilities for the previous week as base for calculating required reserves for the next maintenance period. For instance, if banks are allowed reserve averaging over a 15-day maintenance period starting from Thursday May 20th, 2010, they may be allowed to calculate the required reserves based on their average demand liabilities (including time liabilities of up to one-year) during the week of May 6th to 12th, 2010 (Figure 2).

Figure 2. Required Reserve Accounting



Adopting lagged reserve accounting, however, has a downside as well. It might weaken the direct and contemporaneous link between reserves and broad money supply as contemporaneous (or a shorter lag in) reserve accounting is considered to be more effective when central bank aims to achieve monetary control by

exploiting the link between reserve money and broad money supply.⁹ SBP's switching to an interest rate operating procedure with the introduction of interest rate corridor in 2009 indicates its intentions of controlling monetary aggregate (M2) via demand side (by varying the opportunity cost of holding reserves) instead via supply side (by maneuvering banking system reserves).

(d) Remuneration of required reserves

Reserve requirement is considered as a tax (reserve tax) on banks' profitability as banks have to maintain a portion of their deposits with the central bank unremunerated. However, banks are perceived to pass this on either to depositors in the form of lower return or borrowers in the form of higher lending rates, thus distorting the interest rate structure. In this viewpoint, some of the central banks offer remuneration on banks' required reserves, usually at a rate below the prevailing market interest rate or at an official bank rate (e.g. ECB, RBI, etc.). Even some of the countries with standing deposit facility in place do offer remuneration on required reserves, and in certain cases, on excess reserves as well.¹⁰

However, offering remuneration on required reserves might reduce incentive for banks to arbitrage as the opportunity cost spread (the difference between the rate of remuneration on reserves and overnight money market repo rate) would narrow down.

4. Conclusion

The above discussion suggests that CRR with averaging provision would strengthen SBP's day-to-day liquidity management, which has not been as active as warranted by the new operational framework. How far reserve averaging could help, however, would depend on the level of cash reserve ratio, length of the averaging period and more importantly, banks' willingness to arbitrage the expected changes in overnight money market repo rate. A longer averaging period and an adequate level of required reserves (current requirement seems sufficient vis-à-vis daily liquidity surplus/deficit position of banks) would provide banks sufficient room for maneuvering while lagged accounting would reduce the uncertainties surrounding the amount of reserves to be held. In sum, besides providing greater flexibility to banks in calculating and managing required reserves, the proposed changes would help the market in absorbing autonomous liquidity shocks, probably partially overcoming our lacking in liquidity

⁹ For details, see Whitesell (2006), Weiner (1992), and Friedman (1982).

¹⁰ Examples are ECB, Mexico, Indonesia, Philippines, etc.

forecasting, and smoothing fluctuations in overnight money market repo rate. The issue regarding remuneration of the required reserves is open for debate.

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