

Market Stabilisation Scheme and Management of Liquidity in the Period of Volatile Capital Inflows: The Indian Experience

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Abstract

India recorded large and exogenous capital inflow from the very beginning of this century. This made monetary and liquidity management increasingly complex and difficult in India. Independent monetary policy in the era of free and volatile capital flow became challenging. To deal with the problems of excess liquidity in the system, the Reserve Bank of India (RBI) in consultation with the Government of India (GOI) introduced Market Stabilisation Scheme (MSS) in April 2004 with the objective of impounding excess liquidity from the system. In this paper, we have attempted to examine whether MSS was effective as an instrument of sterilisation in absorbing excess liquidity from the system and enabled the RBI to manage the liquidity condition smoothly. This paper has found that MSS was an effective instrument of sterilisation that helped the RBI in managing liquidity conditions in the period of large and exogenous capital inflows. This paper has also found that MSS was even effective in injecting back liquidity into the system through unwinding of securities under MSS redemption and its buyback operations in the period of large capital outflows during the international financial crisis of 2008-09. This helped the large borrowing programmes of the government during 2009-10. The paper has estimated the cost of MSS operations and found it on the lower side considering the scale of operation of this scheme.

Keywords: Capital Inflows, Liquidity Management, Sterilisation, Market Stabilisation Scheme.

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1. INTRODUCTION

With the introduction of large and exogenous capital inflows, management of excess liquidity and monetary management in India have become increasingly complex and difficult, particularly in conditions when excess capital inflows come in the way of achieving domestic policy objectives. Almost all the emerging market economies faced similar problems and monetary authorities attempted to find the appropriate instruments for sterilisation of excess capital inflows. In India, after a long deliberation, Market Stabilisation Scheme (MSS) was introduced in April 2004 with the objective of sterilising the excess capital inflows not commensurate with the objectives and stance of the monetary policy of the Reserve Bank of India (RBI). This paper has attempted to have a comprehensive study of the objectives, operational details, functioning of MSS along with its success and limitations as an instrument of sterilisation and liquidity management in India. This paper has further attempted to estimate the fiscal cost of operations of the MSS.

In section two, we have described the background of introduction of MSS in India. Section three has discussed the operational framework of MSS in India. The role played by MSS in the management of liquidity by the RBI is delineated in section four. Section five has mentioned the methodology and data sources used for the estimation of fiscal cost of sterilisation through MSS in India. The result of the estimation and its analysis is presented in section six. Finally, we have concluded in section seven.

2. Background of MSS in India

From the beginning of the last decade, many emerging market economies including India started receiving large and exogenous capital inflows in the form of private capital inflows. As in India, exchange rate policy is similar to managed float, where the RBI intervenes at times in the foreign exchange market to control the volatility in the exchange rate movements. There does not exist any written rule for this intervention by the RBI, but at the same time the RBI intervenes when it feels that fluctuations in the foreign exchange market is beyond its comfort zone. In a period

of large capital inflows, this results in continuous accretion and accumulation of the foreign exchange reserves by the RBI. As a fallout of this continuous accretion to foreign exchange reserves by the RBI, fresh liquidity is injected into the domestic market, resulting in large increase in domestic liquidity. This presence of large excess liquidity for longer periods always has the potential to fuel inflationary conditions of the country and increase in delivery of credit to sectors with higher risk weightage. Thus, the liquidity condition was not commensurate with the objective and stance of the monetary policy of the RBI (RBI 2003a). More than this, what worried monetary policy makers most was the realisation that with the introduction of large and exogenous capital flow which was unpredictable in nature, management of independent monetary policy for domestic economic purposes was increasingly becoming difficult. The danger of adverse impact of uncertainties of the global economy on our domestic economy was increasing through this external channel. As a result of this, the policy makers of emerging market economies started realising that given the exogenous capital inflows, conventional monetary policy instruments were becoming inadequate to modulate domestic liquidity conditions and achieve the desired interest rate environment. In India, the amount of government securities held by the RBI was inadequate for absorption of such large amount of excess liquidity that the economy may experience soon. Moreover, it was also realised that after the implementation of the Fiscal Responsibility and Budget Management (FRBM) Act, the holding of government securities by the RBI would come down further and the cost of impounding through Open Market Operations (OMOs) will have serious adverse impact on the balance sheet of the RBI.

Monetary authorities and policy makers around the world realised the problem of impossible trinity but were compelled to manage domestic interest rates and monetary conditions congenial for domestic growth as well as maintain stable exchange in the period of free capital mobility of private capital inflows. The problem of controlling excess liquidity in India was further complicated as the RBI realised that the amount of government securities held by it was not sufficient to absorb excess liquidity from the system. Moreover, it would not even be sustainable for the RBI to bear the cost of sterilisation on their balance sheets for a longer period.

To deal with the excess capital inflows, many central banks started using market-based instruments like Foreign Exchange Swaps, Standing Deposit Facilities, Central Bank Securities/Bills, Monetary Stabilisation Bonds (MSBs), Certificates of Deposits by Central Banks, Government/Public Sector Deposits with the Central Bank *etc.* In many cases, non-market instruments like Liberalisation of Capital Outflows, Restrictions on Capital Inflows (Capital Controls,

Unremunerated Reserve Requirements, Interest Equalization Tax/Tobin Tax) and other measures like Moral Suasion *etc.* were used (RBI 2003b).

In the Indian context, it is noteworthy to mention that India has experienced large amount of capital inflows from 2002 onwards. The consequent impact of these inflows increased domestic liquidity resulting in higher inflation and inflationary expectations mostly in direct contradiction with the monetary policy objectives. Thus, when the domestic monetary policy measures were directed towards controlling inflation, excess capital inflows and the consequent excess liquidity conditions were fuelling inflationary expectations. But restricting capital inflows through capital control was also not possible as it would trigger negative expectations of foreign investors that would lead to large capital outflows resulting in a crisis in India. This created a dilemma for the monetary authority.

The Working Group on Instruments of Sterilisation set up by the RBI submitted its report in December 2003 (RBI 2003b). After a long deliberation, given the nature of capital inflows, monetary policy framework and the legal issues, MSS was introduced in April 2004 with a Memorandum of Understanding (MoU) with the Government of India (GOI) on March 25, 2004. The main feature of this understanding was that the GOI would provide Dated Securities (DS) and Treasury Bills (TBs) to the RBI for issuances to absorb excess liquidity from the system. The RBI will maintain, a separate account for the purposes of MSS operations. It should not in any way be linked with the others maintained by the GOI with the RBI. In each year, before the beginning of the financial year, a limit of the MSS issuances would be set in a meeting of the RBI with the GOI based on the expected monetary and liquidity conditions for the coming financial year. The payments/receipts for interest and discounts will not be made from the MSS Account but from the GOI account maintained with the RBI. The MSS account will be operated and maintained by the RBI and by its very structures all costs of issuances of MSS securities and interest payments would be borne by the GOI. Such receipts and payments towards interest, premium and discount would be shown in the budget and other related documents as distinct components under separate subheads. Before India, only South Korea used a similar instrument earlier almost for the same purpose which was known as Market Stabilisation Bonds. However, its operational procedure was different from that adopted in India.

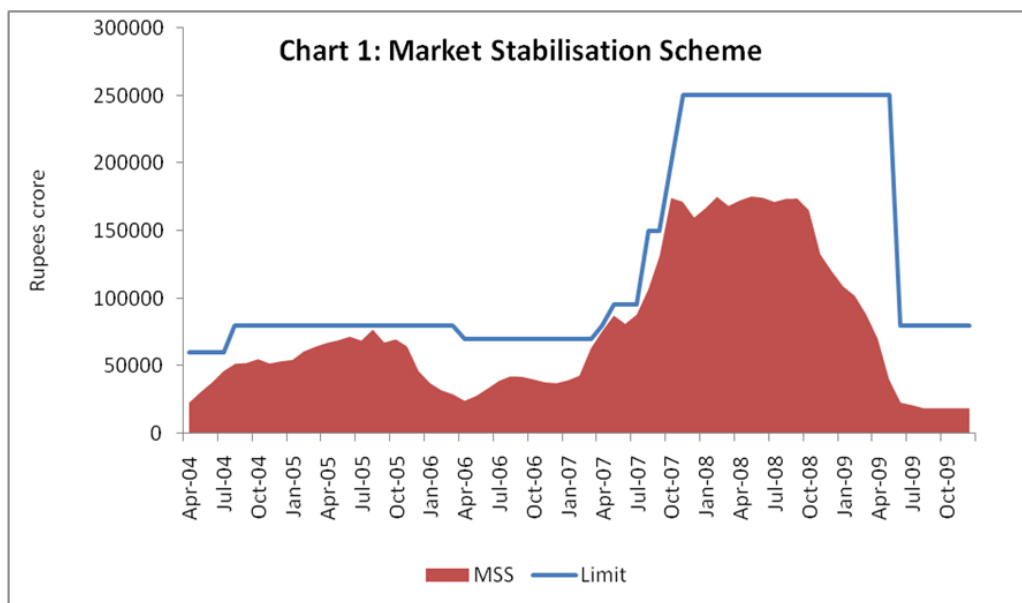
The Treasury Bills and Dated Securities issued for the purpose of the MSS would be matched by an equivalent cash balance held by the Government with the Reserve Bank. Thus, there will only be a marginal impact on revenue and fiscal balances of the Government to the extent of interest payment on

Treasury Bills and/or dated securities outstanding under the MSS.

According to the above memorandum, the cost of MSS operations i.e., the interest payment on MSS will be borne by the GOI. This arrangement is mainly because the cost of sterilisation at times may be so high that the RBI may face bankruptcy. It may damage its reputation as the lender of the last resort as well as diminish its capacity as a monetary and banking regulator. However, the limitation of this arrangement is that the monetary authority will always have to take the approval of the central government before increasing the limits of the MSS and may not be able to conduct such a number of MSS which it may have wished or found appropriate for the management of liquidity. Another related argument could be that central bank autonomy might be restricted to some extent as use of some of the instruments will depend on fiscal authorities as they will bear the fiscal cost of sterilisation through MSS. But in all practical purposes in India, the monetary authority works in very close co-ordination with the fiscal authority and MSS alone cannot be a threat for autonomy of the monetary authority. Moreover, all profits of the central bank are transferred to the government and if the central bank bears the cost of sterilisation, the amount of profit transferred to the GOI by the RBI would be reduced to that extent. Therefore, the consolidated balance sheet of the Centre and the Reserve Bank will remain same independent of who bears the cost. As the size of the balance sheet of the RBI is much smaller than that of the GOI, it was always better to keep the cost of sterilisation in the larger balance sheet to keep the credibility of the RBI intact in the event of a large sterilisation and high cost resulting in net loss for the central bank.

3. Operational Framework of MSS

To understand the operations under MSS, the analysis should start from the RBI's intervention in the foreign exchange market reflecting large capital inflows and its consequent pressure on continuous exchange rate appreciation. In the first leg of the operation, the RBI intervenes in the foreign exchange market and purchases foreign exchange from Authorised Dealers (ADs) in exchange of rupee liquidity. Thus, equivalent amount of rupee liquidity is injected in the domestic economy. It may be noted that capital inflow per se does not increase domestic rupee liquidity unless and until the RBI purchases foreign exchange from the foreign exchange market through ADs. Otherwise, only exchange rate will appreciate. In the second leg, the RBI sells securities under MSS on behalf of the GOI and the proceeds of that sale are kept in the separate MSS account of GOI created for this purpose with the RBI. This MSS account is separate from the current account that is maintained by the GOI with the RBI. The proceeds of the sales of securities under MSS were thus kept in the MSS account are not used by the GOI and therefore the amount received through issuances of MSS securities is absorbed from the system or sterilised. In the beginning of each financial year, based on the assessment of liquidity position, a limit of MSS operations is decided after consultation with the GOI. The limit could however be changed within the fiscal year with the change in liquidity conditions and expectation of capital inflows and consequent intervention by the Reserve Bank in the foreign exchange market (Chart 1). MSS auctions were conducted weekly, spreading it over a period, depending upon the liquidity conditions and movement of yields in government security markets (RBI 2005).



Source: Reserve Bank of India

4. MSS as an instrument of Sterilisation and Liquidity Management during 2004-2010

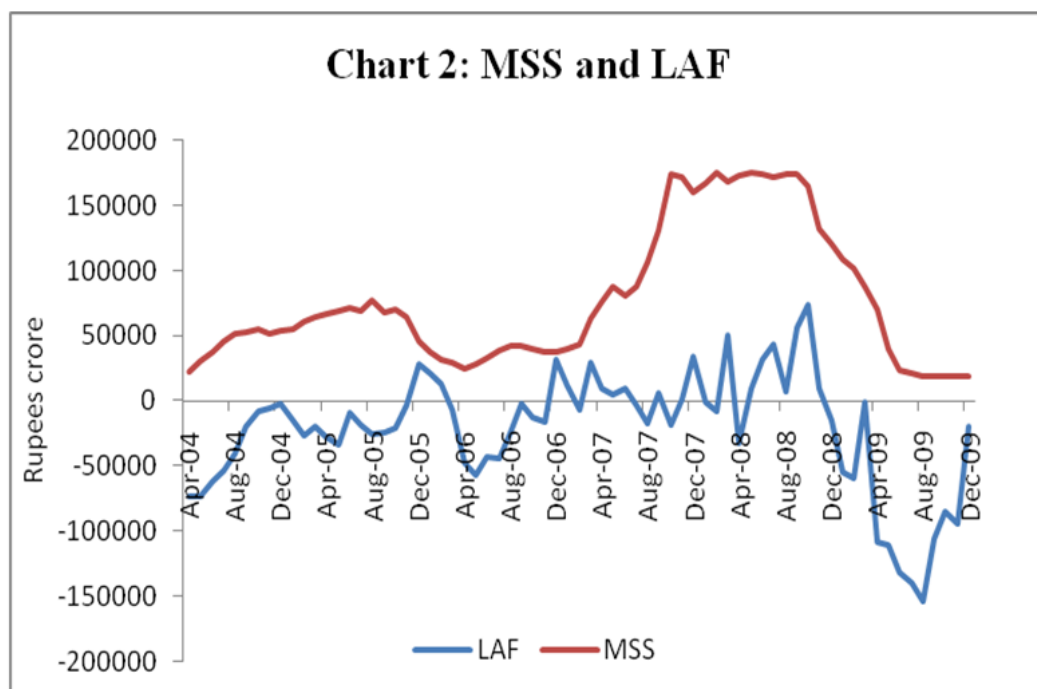
MSS was introduced to absorb excess liquidity of enduring nature from the system. This would help the RBI to adjust the liquidity conditions required to sustain an interest rate environment required for the macroeconomic development of the country. Liquidity Adjustment Facility (LAF) which was introduced in 1998 based on the recommendations of the report of the Committee on Banking Sector Reforms in India was mainly to manage temporary mismatches in liquidity on a day-to-day basis. Thus, large absorption or injection through LAF window was never advisable. But this was happening for a large part of 2003-04 (RBI 2004).

The introduction of MSS had succeeded in restoring LAF to its intended function of daily liquidity management (Chart 2). With MSS levels averaging about Rs.54,000 crores in November 2004, total surplus liquidity averaged around the levels seen before the introduction of MSS as excess capital flows continued. With the beginning of large capital inflows in October 2004, the ceiling on the outstanding amount under the MSS, fixed by mutual consultation, was raised from the initial Rs.60,000 crores to Rs.80,000 crores on October 14, 2004. The RBI's operations to balance the foreign exchange market resulted in an accretion of nearly Rs.40,000 crores to its net foreign assets. As at end-March 2005, the liquidity absorbed through the MSS (Rs.64,211 crores) and the LAF (Rs.19,330 crores) was Rs.83,541crores (RBI 2005, 2010b).

The initial period of 2005-06 recorded large excess liquidity in the system and the average amount

of securities issued under MSS was around Rs.70,000 crores till November 2005. But the liquidity condition changed thereafter. The year 2005-06 recorded strong and sustained credit demand, a relatively lower order of accretion of the foreign exchange reserves. So, the liquidity management operations of the RBI were mainly through injection of liquidity through LAF operations and unwinding of the balances under the MSS. This was largely in contrast to liquidity absorption through issuances under the MSS during the preceding year. The, unwinding of MSS was used successfully to restore liquidity in such a manner so that temporary mismatches can easily be handled through LAF. The outstanding amount under MSS was Rs. 29,652 crores at end March 2006 (RBI 2006, 2010b). Thus, MSS provided an elbow room to the RBI in the management of liquidity even in the most uncertain period.

Capital inflows continued in 2006-07 and the balances under MSS increased from Rs.29,063 crores at end-March 2006 to Rs. 62,974 crores at end-March 2007. In March 2007, after consultation with the GOI, the RBI announced to enhance the MSS programme. The continuous increase in capital inflows required upward revisions in the ceiling for the MSS four times for 2007-08, from the initial Rs. 80,000 crores in April 2007 to Rs. 2,00,000 crores on October 4, 2007 and further to Rs. 2,50,000 crores on November 7, 2007 (RBI 2008). Outstanding balances under the MSS increased from Rs. 62,974 crores at end-March 2007 to Rs 81,137 crores on June 29, 2007, and further to Rs. 1,68,392 crores at end-March 2008 (Chart 2).

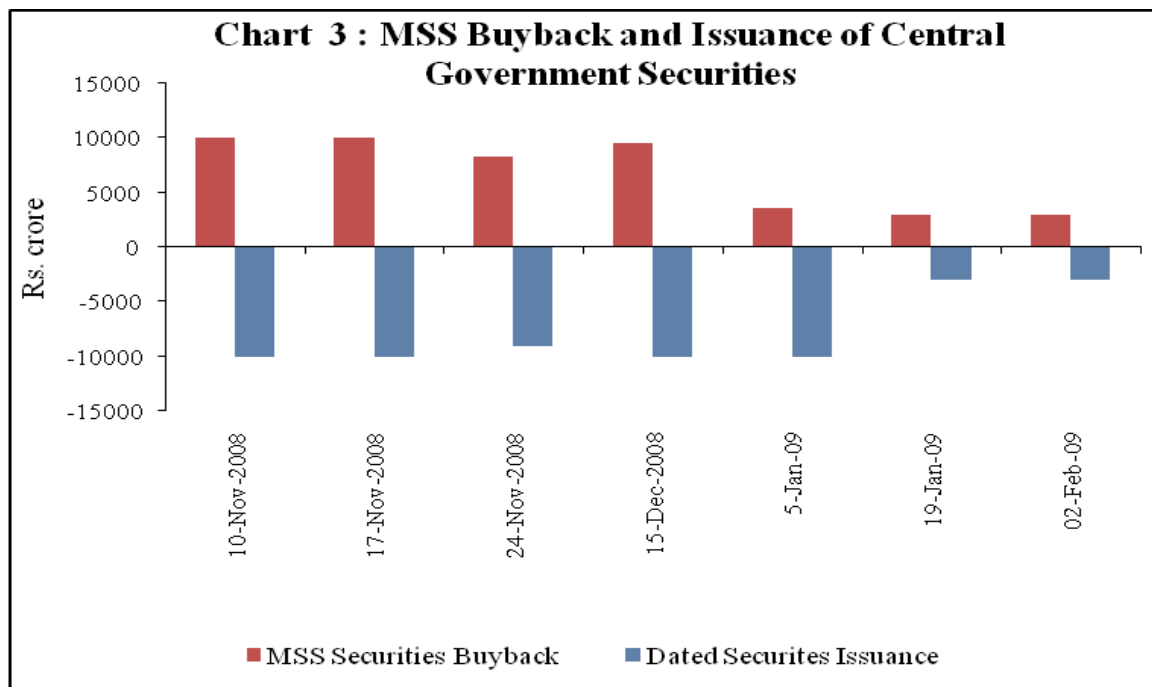


Source: Reserve Bank of India

With the unfolding of the international financial crisis in September 2008, the reversal of capital inflows started from all developing countries and India was no exception. In this period, MSS emerged as a useful instrument of monetary easing through injection of liquidity by simply unwinding it through buyback of MSS securities from the commercial banks apart from the redemption of MSS securities (Chart 3). The buyback of MSS securities was synchronised with the government borrowing programme in such a manner that the government borrowing programme could be completed smoothly without having much impact on market liquidity and interest rates (RBI 2008, 2010). During the fiscal years 2008-09 and 2009-10, borrowing programme of GOI was large. Large borrowing programme could have a significant impact on interest rates environment as well as on the total interest burden of the government. In order to reduce its market borrowing programme, the GOI decided to use the deposits kept under MSS balances with the RBI to finance its expenditure as this borrowed money was kept idle and GOI was already paying interest on it. The liquidity conditions also reversed from surplus to deficit mode and therefore there was no problem for creation of excess liquidity by releasing the deposits under MSS. Moreover, both monetary and fiscal authorities were in expansionary mode to boost the domestic demand. The GOI and the RBI amended the existing MoU of 2004 on the MSS in February 2009. This amendment allowed the RBI to

transfer a part of the amount in the MSS cash account to the normal cash account (RBI 2010a). This helped in meeting the expenditure of the market borrowing programme of the GOI. RBI transferred an amount of Rs.45,000 crores from the MSS cash account to the normal cash account of the GOI in separate instalments by March 31, 2009 (RBI 2009, 2010a). Thus, as the situation reversed in the crisis and post-crisis period primarily on account of change in the direction of external capital flows, the need for management of large excess liquidity disappeared. Therefore, the liquidity sterilised under MSS cash account was transferred to the normal cash account of the GOI maintained with RBI. Thus, the instrument that was originally aimed at sterilising liquidity in the period of excess capital inflows also found beneficial as an instrument of injecting liquidity as well. In financial market many innovative financial instruments are introduced at regular interval. However, only a few of them can achieve their desired goal. Here, we have found that MSS is a successful instrument to sterilise excess liquidity in India and achieved more than its desired goal.

Now, every instrument of liquidity adjustment has a cost and MSS also has a cost. The cost of MSS operation in borne by GOI by its very design. So, it would be important to estimate the cost of MSS operations in India.



Source: Reserve Bank of India

5. Methodology and Data used for Estimation of Fiscal Impact of MSS

In a world of fully flexible exchange rate systems, the cost of large capital inflows is borne through exchange rate adjustments and its consequent

impact on the real economy. In case of India, where some sort of managed float is used to resist excessive volatility in the exchange rate emanating from exogenous capital inflows, the RBI intervenes in the foreign exchange market thereby injecting liquidity into

the system. However, this resultant injection of liquidity may be unwarranted for the RBI to maintain monetary and liquidity conditions consistent with the desired interest rate environment to achieve a right balance between the twin objectives of economic growth and inflationary conditions in the domestic economy. Therefore, sterilisation of excess liquidity is an integral part of the monetary policy framework in today's world and it has a cost. In this section, we shall try to explain the methods and data sources used for estimation of the cost of sterilisation through MSS in India from 2004-05 to 2007-08. This was the period of major MSS operations in India.

The cost of MSS is the amount of interest paid by the GOI on the government securities minus the interest earned on the equivalent amount of foreign exchange assets in the international market. All these operations are conducted by the RBI on behalf of the GOI. As the RBI is fully owned by the GOI, all interest income belongs to the GOI only.

Cost of sterilisation = Amount of interest paid on securities issued under MSS by GOI – Amount of interest earning from equivalent amount of foreign exchange assets invested abroad.

The interest paid on securities under MSS is directly available from each year's financial accounts of the Union Budget. The interest earned from equivalent amount of foreign exchange assets needs to be estimated. The estimation is done in the following way. The annual average return earned by the RBI on foreign exchange assets are available from the Annual Report of the RBI. We have collected this data for each year from the respective Annual Reports of the RBI (RBI 2005, 2006, 2007, 2008). Total return on foreign exchange assets on the average amount of assets held throughout the year provides us the average yield or return on the assets throughout the year. The MSS equivalent foreign exchange assets is taken for consideration in our study for comparison of costs. Finally, now total return on MSS equivalent foreign exchange assets is derived through the average MSS

holding throughout a year multiplied by the average yield/ return on foreign assets of the RBI.

6. RESULT AND ANALYSIS

The estimates below show that the cost of sterilisation of MSS was not high in comparison to its scale of operations. In 2004-05, it was only Rs.574 crores. This cost was only Rs.1,010 crores and Rs. 876 crores in 2005-06 and 2006-07 respectively. Even in the year 2007-08 when India recorded huge capital inflows and the RBI had to intervene in the foreign exchange market frequently, this cost of sterilisation was Rs.2,173 crores. If we see it from the view of the enormous challenges faced by the RBI in the period of large and exogenous capital flows, the cost of sterilisation was not high. Thus, MSS has played a crucial role in the most complex period of liquidity management with a much lower cost than expected (Table1). The synchronisation of issuance of MSS with the borrowing programme of the GOI also helped in putting lesser pressure on the interest rates in the government securities market too. MSS buyback during 2008-09 has saved a huge amount of public money by helping the government from raising the amount of money from the market with a higher yield. This also helped economic recovery of the Indian economy by aiding the RBI to keep a low interest environment. Thus, MSS is found to be a useful instrument for management of monetary and liquidity conditions in India in the period of large and exogeneous capital inflows in India.

In this context, it must be noted that many of the securities used under MSS had maturities below 1 year. The inbuilt mechanism within the MSS to enhance its limit in consultation with the GOI as and when required, provided RBI the required flexibilities to use medium-term securities for liquidity absorption. So, when it was found that excess liquidity condition was under control, gradual unwinding of medium-term MSS securities was possible. This reduced the fiscal cost of MSS to a large extent. As excess liquidity gradually reduced and finally reversed during the period of international financial crisis, the MSS buyback options helped to inject liquidity automatically and reduced fiscal cost of MSS operations simultaneously.

Table 1: Cost of MSS operations

Rupees Crores				
Item	2004-05	2005-06	2006-07	2007-08
Outstanding MSS (monthly average of the year)	46445	58792	37698	128684
Interest Payments by the Union Government on MSS	2060	3420	2610	8350
FCA annual average earning (in %)	3.2	4.1	4.6	4.8
Interest earned on foreign currency assets equivalent to MSS	1486	2410	1734	6177
net loss (-)/Gain (+)	-574	-1010	-876	-2173
Source: Annual Report RBI (2004-5 to 2008-09), Union Finance Accounts; Union Budget Documents (2004-5 to 2008-09)				

7. CONCLUSION

MSS was introduced against the backdrop of large capital inflows and its consequent expansionary impact on the domestic liquidity conditions. As the RBI did not have holding enough government securities to absorb or impound large market liquidity through traditional OMO operations on one hand, and did not feel it safe to take the entire cost of sterilisation of excess liquidity on its balance sheet, MSS was introduced in April 2004 after a long consultation with the GOI.

This study has shown how MSS was successful in absorbing excess liquidity of an enduring nature from the market and allowed LAF to be used only for smoothing the daily liquidity mismatches. This was the main objective of the RBI behind introduction of MSS as an instrument of sterilisation of excess liquidity. The MSS played a much bigger role than initially perceived. During the period of the financial crisis in 2008-09, buyback and unwinding of securities under MSS not only paved the way for injection of large amount of liquidity over a short period in the market, it also provided the GOI the flexibility to use MSS balances to finance a part of government expenditure. This also indirectly helped to keep the interest rate low that was essential for a quick recovery of the domestic economy in the aftermath of the international financial crisis. This paper has estimated

the fiscal cost of MSS operations and has found it on the lower side considering the scale of operation of this scheme.

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