

The Challenges before NABARD in the Midst of RBI's Sterilisation Policy

SHOUVIK CHAKRABORTY, ZICO DASGUPTA

Have huge inflows of speculative capital in the post-reform period affected the role of development institutions and banks like the National Bank for Agriculture and Rural Development, the apex bank for institutional credit in rural India? In order to prevent a possible appreciation of the currency, which would have had an adverse effect on the real sector of the economy, the Reserve Bank of India resorted to market intervention and the increase in the foreign exchange reserves, which would have caused a possible increase in the money supply, was neutralised by undertaking a "sterilisation" process. In the process, the RBI suffered a huge loss in its potential income and had to resort to a smaller transfer of funds to NABARD. On the other hand, NABARD, faced with an increasing demand for loans turned to open market borrowings at a higher interest rate, which ultimately led to a huge loss in its potential income. This paper finds that with the ongoing reforms, the banking system has not only sacrificed developmental aspects, but also failed to satisfy the profit norms of banking.

1 Burgeoning Foreign Exchange Reserves

The opening up of the economy over nearly the last two decades has been a consequence of the huge change in the external policy framework of the government of India. The first step towards this was in the sphere of trade liberalisation: by the replacement of the quantitative restrictions in the form of quotas with tariffs even before the World Trade Organisation (WTO) deadline, and the reduction of the tariff rate over a relatively short period of time by more than the amount required under the WTO norms. The second step was in abandoning the two-tier exchange rate system that prevailed before the reforms and making the currency fully convertible on the current account by August 1994. Third, the restrictions on the movement of international and domestic capital were slowly eased, which encouraged a huge inflow of foreign capital, mainly in the form of portfolio investments, leading to a relentless surge in foreign exchange reserves.

The prime reason for holding foreign exchange reserves in any economy is to facilitate the transactions on the current account by having sufficient funds for the payment of the import bill for a certain period (normally about three to four months). However, the current holdings of foreign assets in the Indian economy (\$2,62,905 million as on 13 November 2009)¹ is much greater than what is actually required to finance the imports for three to four months. This is because of speculative capital inflows in excess of what is needed to finance the current account deficit in the balance of payment.

In the mainstream development literature, it is often argued that foreign capital is required for the augmentation of domestic accumulation of capital and to accelerate growth in the economy. But the basic presumption behind this view is that the resources in the domestic economy are fully utilised. Such an assumption, nonetheless, seems to be rather off the mark as the Indian economy has been characterised by the existence of unutilised capacity and high level of unemployment in the post-liberalisation era, particularly till the early years of this decade (Chandrasekhar and Ghosh 2004). However, the huge presence of foreign assets in the economy seems to have another explanation. According to Rakshit (2003: 77),

...in the wake of a succession of currency crises during the last decade, central banks of emerging market economies have become aware of the volatility of international capital flows and the danger of the self-fulfilling speculative attack on their currencies.

This awareness of the central banks has made them hold huge amounts of foreign exchange reserves, so as to gain the confidence

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Shouvik Chakraborty (*mailshouvik@in.com*) and Zico Dasgupta (*zico.dasgupta@gmail.com*) are research scholars at the Centre for Economic Studies and Planning, Jawaharlal Nehru University, New Delhi.

of the speculators and prevent the economy from entering into a currency crisis.

Foreign exchange flows have a definite impact on the domestic economy and on the policy independence of the monetary authority. The extent of this impact depends largely on the kind of exchange rate regime followed in the country. In a fully floating exchange rate regime,² along with a huge inflow of foreign capital, there would be a natural tendency for the domestic currency to appreciate. Such an appreciation in the domestic currency would lead to a cheapening of imports and make exports dearer. This, in turn, would result in an enlargement of the output gap³ in the real sector of the economy, through an operation of the (negative) foreign trade multiplier. The operation of the foreign trade multiplier reduces domestic capital accumulation in the economy, by providing a disincentive for investment in the presence of an increasing output gap and positive inventories. On the other hand, the bulging foreign exchange reserves formed by the huge inflow of foreign speculative capitals (mainly from the foreign institutional investors (FIIs)), increase the external liability of the state by the cost of their future servicing. Thus, in the absence of intervention by the central bank, the movement in currency value in a situation of foreign financial inflows would have adverse effects on the economy. Furthermore, the inflows and outflows of capital from the emerging capital markets are not only highly volatile, but are often driven by the sentiments which do not necessarily reflect the fundamentals of those economies. The east Asian currency crisis of 1998, which was a consequence of the huge outflow of footloose capital of this sort from the east Asian economies, gives a clear example of the volatility of these forms of finance. Hence, it is always rational for the monetary authority not to leave the foreign exchange market to the whims of speculative capital.

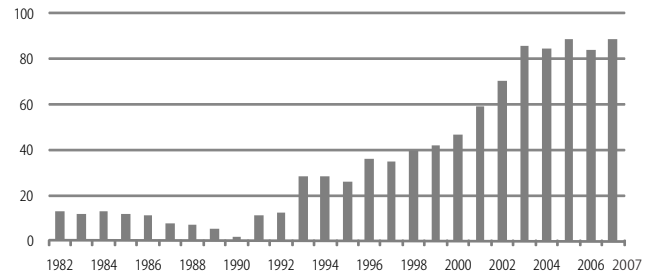
In the case of a fixed exchange rate regime, the excess foreign exchange inflows have to be added to the reserves of the central bank to maintain the desired level of the exchange rate. When the monetary authority intervenes in the foreign exchange market, during a period of huge capital inflow to purchase foreign exchange, it injects liquidity into the system by a corresponding sale of the domestic currency. For instance, if the monetary authority purchases foreign exchange from the market, both sides of the balance sheet of the central bank (assets of the central bank are foreign exchange assets and domestic assets, while the liabilities are the domestic currency in circulation and the deposits of the commercial banks) will see an increase. Conversely, when the monetary authority sells foreign exchange, domestic currency gets absorbed from the system leading to a decrease in both sides of the balance sheet. These interventions in the foreign exchange market cause an expansion or contraction of the monetary base, and hence, in the money supply, which may be inconsistent with the prevailing monetary policy of the economy. The central bank can intervene in such a situation in two forms – (a) an unsterilised intervention, where the central bank does not neutralise the changes in the monetary base due to increase (or decrease) of reserves, and (b) a sterilised intervention, where the central bank counterbalances the expansion or contraction in the

monetary base, by an equivalent adjustment in the domestic assets it holds.⁴ The working paper of the Reserve Bank of India (RBI) on the “Report of the Working Group on Instruments of Sterilisation” mentions two approaches for nullifying the effects of foreign exchange market interventions, namely, the market based approach and the non-market based approach. The report of RBI (2003: 2) states:

The market based approach involves financial transactions between the central bank and the market, which leads to withdrawal or injection of liquidity, as the case may be. The non-market based approach involves the use of quantitative barriers, rules or restrictions in market activity, which attempts to keep the potential injection of liquidity outside the domestic financial system. The market based approach aimed at neutralising part or whole of the monetary impact of foreign inflows is termed as sterilisation.

In India, there has been a huge inflow of capital in the recent years, especially from 1998-99 onwards. The Indian economy has become the favourite parking place for dollars by FIIs, which is reflected by the burgeoning level of foreign exchange reserves held by the RBI. The open market operations (OMOs), the liquidity adjustment facility (LAF), and recently, the market stabilisation scheme (MSS) mostly adjust the liquidity impact of such a huge inflow of capital. The other measures which are used by the monetary authority are the building up of government balances with the RBI, particularly through an increased issuance of 91-day treasury bills, and limited foreign exchange swaps. The OMO sales, the LAF operations and mobilisation under MSS by the RBI have been significant in the recent years in order to sterilise the inflow of foreign capital. These have led to a huge alteration in the composition of the portfolio of RBI over the last one and a half decades. The ratio of domestic assets to total assets declined from 94.58% in 1989-90 to 73.92% in 1995-96. But the decrease was much more rapid in the later period, with the ratio falling to 11.24% by the end of 2007-08. This, in other words, reflects the burgeoning level of foreign reserves being held by the RBI (Figure 1).

Figure 1: The Proportion of Foreign Assets to Total Assets of RBI (1982-2007)
(%)



Source: RBI, *Annual Report*, various issues.

There is an economic cost involved in such huge holding of foreign assets. One of the components of this cost, which has been substantially discussed in the literature, is often termed as the “quasi-fiscal” cost. This cost results from the substitution of low-earning, volatile foreign reserves in the place of high-earning, risk-free government securities in the portfolio of RBI as a result of sterilisation. Now, the relentless inflow of foreign capital has led to an increased proportion of foreign assets in the portfolio holding of RBI when compared to the pre-reform period. If the RBI had restricted this capital inflow and maintained the

earlier proportion of domestic assets to total assets, then it could have generated a much higher level of interest earnings,⁵ which, in turn, would have led to a higher level of profits.⁶ The gross income of the RBI is the income from foreign assets and that from domestic assets.⁷ The net disposable income of the RBI is the gross income less the expenditure and the transfers made to the contingency reserve and the asset development reserve. In our analysis, we are mainly interested in the gross income from both domestic and foreign assets of the RBI.⁸ Our aim is to find out the additional income the RBI would have got if it had maintained the same ratio of domestic to foreign assets as it had in the pre-inflow period. The pre-inflow period chosen is from 1982-83 to 1992-93, when owing to regulations on capital flows, the levels of capital inflow were relatively small as is evident from Figure 1. We use the term “potential loss” to refer to this additional income which the RBI could have earned.⁹

2 Potential Loss Suffered by the RBI

We divide the period 1982-83 to 2007-08 into almost two equal sub-periods. The first period (1982-83 to 1992-93) is denoted by t_1 and the second one (1993-94 to 2007-08) is denoted by t_2 . The rate of return earned by the RBI from any asset, domestic or foreign, is the ratio of the income earned from an asset to the total value of that asset held. Let r_d and r_f stand for the rate of return on domestic assets and foreign assets, respectively.

In period t_1 , the proportion of the domestic assets (DA) to total assets (TA) held by the central bank, RBI, is denoted by X_i , where i is an index held for the individual year. Here, we take an average value of the X_i 's over the period t_1 and denote it by X .

In period t_2 , the potential amount of domestic assets the RBI could have held, if it had maintained the same proportion as in period t_1 , but possessed an equal amount of total assets it holds in period t_2 , is denoted by Y_n where n denotes the individual years. Then,

$$Y_n = X \cdot (TA)_n \quad \dots(1)$$

where, $(TA)_n$ denotes the total amount of assets held by the central bank in year n .

The potential income $(PI)_n$ of the central bank in each year, n , is given by

$$(PI)_n = [r_d \cdot Y_n + r_f \cdot (TA - Y)_n] \quad \dots(2)$$

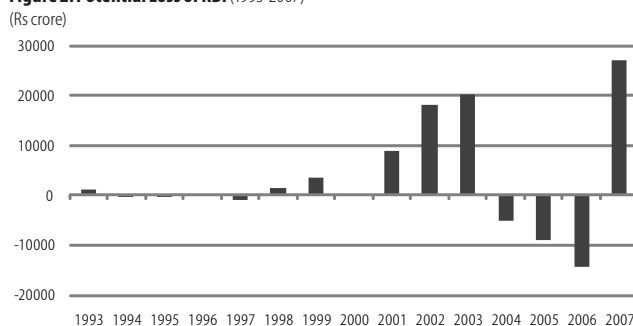
The potential loss $(PL_{cb})_n$ suffered by the central bank in each year, n , is then

$$(PL_{cb})_n = (PI)_n - (AI)_n \quad \dots(3)$$

where, $(AI)_n$ denotes the actual income of the central bank.¹⁰

The amount of total assets the RBI holds has several macro-economic consequences. An unwanted increase in the total assets of the RBI may affect the monetary policy followed by it. If the increase in total assets of the RBI is due to monetising the fiscal deficit, then it can increase the level of economic activity in the country, through a positive multiplier effect.¹¹ But, in our model, we are mainly concerned in estimating the amount of gross income of the RBI due to a change in the ratio of domestic to foreign assets in the portfolio holdings of the RBI. Hence, for simplicity we have assumed that the amount of the total assets of the RBI for each year would not be different from what they have been under the present policy regime.

Figure 2: Potential Loss of RBI (1993-2007)



Source: RBI, Annual Report, various issues.

Now, with this assumption, we can say that if the term $(PL_{cb})_n$ is positive, then the RBI is actually suffering a loss due to the replacement of domestic assets by foreign assets. If the term is zero, then there is no such loss; yet it remains the case that though in numerical terms both the situations are the same, yet the RBI is building up a higher external liability for the state and a higher future servicing cost, which is avoidable. But if $(PL_{cb})_n$ is negative, then one can easily conclude that the central bank is making a potential profit on holding foreign reserves. The absolute value of the $(PL_{cb})_n$ also has a significance. The higher the value of $(PL_{cb})_n$, the higher is the amount of loss suffered by the central bank of the country.

In India, the RBI used to hold on an average 0.888 proportion (X in our analytical framework) of its total assets in the form of domestic assets, over the time period of 1982-83 to 1992-93.¹² Now, if the RBI had maintained the same proportion even in the period 1993-94 to 2007-08, then the potential holding of the domestic assets in the portfolio allocation of the RBI would have been much higher than its actual holdings of the domestic assets. The potential loss suffered by the RBI started from Rs 1,104.50 crore in 1993-94, which eventually turned into a potential gain of Rs 827.89 crore by 1997-98. But, the scenario changed dramatically thereafter. The rate of return from the foreign assets declined at an accelerating pace to reach an all time low of 1.73% in 2003-04 from 5.59% in 1997-98, and an accelerated capital inflow made the RBI suffer a loss of Rs 27,165.24 crore in the year 2007-08. However, the potential loss of the RBI seems to have declined during the period 2004-05 to 2006-07 according to our accounting method. This has been primarily led by the booking of substantially higher depreciation in the value of rupee securities as the yields hardened during the relevant time period (*Annual Report*, RBI 2006-07).¹³ The sharp rise in the depreciation was led by the hardening of the yield during the relevant years as the interest rates of the domestic assets increased with the rise in the interest rates of the assets in the developed countries. However, such a rise in the interest rates of the domestic assets due to rise in the interest rates in the developed countries was a logical corollary of the financial liberalisation in case of the developing economies like India (Patnaik 2007). In totality, the total net loss suffered by the RBI over the last decade (1993-94 to 2007-08) on account of holding foreign assets amounted to Rs 50,949.13 crore, which is a substantial amount under any economic condition for a developing country like India (Table 1, p 74). The diagrammatic analysis in Figure 2 reveals that there has

Table 1: Potential Loss of the RBI

Year	Income (FA) (Rs/Crore)	Income (DA) (Rs/Crore)	Total FA (Rs/Crore)	Total DA (Rs/Crore)	% Rate of Return (DA) 6=(3/5*100)	% Rate of Return (FA) 7=(2/4*100)
1	2	3	4	5		
1993	722	6,424	51,429	1,29,764	4.95	1.40
1994	2,939	6,283	61,613	1,56,546	4.01	4.77
1995	3,723	8,209	61,417	1,74,039	4.72	6.06
1996	4,586	8,671	90,983	1,59,314	5.44	5.04
1997	5,687	8,396	1,01,831	1,91,482	4.38	5.59
1998	6,307	12,914	1,32,505	2,03,971	6.33	4.76
1999	6,515	15,446	1,50,901	2,09,081	7.39	4.32
2000	10,086	11,763	1,91,226	2,16,262	5.44	5.27
2001	9,986	14,704	2,67,333	1,86,238	7.90	3.74
2002	9,827	13,359	3,65,001	1,54,941	8.62	2.69
2003	9,104	5,220	5,24,865	84,897	6.15	1.73
2004	16,980	2,049	5,75,864	1,06,953	1.92	2.95
2005	24,538	1,782	7,18,701	90,107	1.98	3.41
2006	47,001	5,887	8,39,879	1,62,076	3.63	5.60
2007	15,245	5,868	12,98,552	1,64,447	3.57	1.17

Year	Total Assets 8=(4+5)	Potential Holding of DA 9=(0.888*8)	Potential Holding of FA 10=(8-9)	Potential Income 11=(6/100*9+7/100*10)	Actual Income 12=(2+3)	Potential Loss(+)/Gain(-) 13
1993	1,81,193	1,60,899	20,294	8,250	7,145	1,104.50
1994	2,18,159	1,93,725	24,434	8,941	9,222	-281.47
1995	2,35,456	2,09,085	26,371	11,460	11,932	-471.45
1996	2,50,297	2,22,264	28,033	13,510	13,257	253.51
1997	2,93,313	2,60,462	32,851	13,256	14,084	-827.89
1998	3,36,476	2,98,791	37,685	20,711	19,220	1,490.23
1999	3,59,982	3,19,664	40,318	25,356	21,961	3,395.42
2000	4,07,489	3,61,850	45,639	22,089	21,849	239.78
2001	4,53,571	4,02,771	50,800	33,697	24,690	9,006.99
2002	5,19,942	4,61,709	58,234	41,376	23,186	18,190.56
2003	6,09,762	5,41,468	68,293	34,479	14,324	20,155.10
2004	6,82,817	6,06,341	76,476	13,870	19,028	-5,158.20
2005	8,08,808	7,18,222	90,587	17,299	26,320	-9,021.35
2006	10,01,954	8,89,736	1,12,219	38,596	52,888	-14,291.84
2007	14,62,999	12,99,144	1,63,856	48,277	21,112	27,165.24

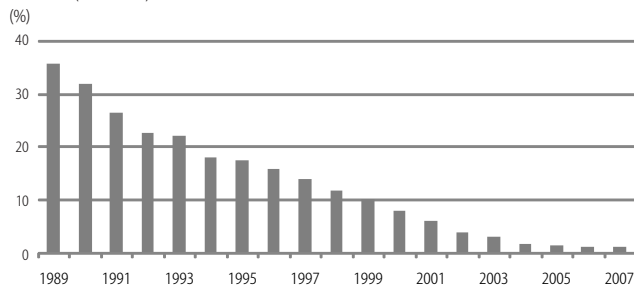
DA implies domestic asset and FA implies foreign asset. Figures are in Rs crore.
Source: RBI Annual Report, various issues.

been a substantial loss of potential income of the RBI over the last few years (1999-2000 to 2007-08); but no concrete measures were taken to roll back the policies followed during this period.

Thus, the sterilisation process, which itself has been necessitated by the massive inflows of capital under a more "liberal" regime, has been responsible for a huge reduction in the potential profitability of the RBI. The continuous and the colossal potential loss in income of the RBI has got significant macroeconomic and socio-economic consequences for the economy as a whole. This loss in potential income has not been caused by the need to satisfy some prudential norms.¹⁴ It has been caused, as we have seen, by an entirely different set of factors.

3 Potential Loss of the RBI and Its Effect on NABARD

One of the most important macroeconomic implications of such a huge proportion of foreign reserves in the portfolio of the RBI is that the central bank in the process forgoes the option of pursuing an independent monetary policy (assuming that it cannot fully neutralise the effect of these inflows through sterilisation). In the mainstream literature, while there is much discussion about making the central bank autonomous of the political process, there is hardly any discussion of the implication of massive

Figure 3: Proportion of Borrowing from Govt (Including IDA/IBRD) to Total Borrowing of NABARD (1989-2007)

Source: Handbook of Statistics on Indian Economy, RBI various issues.

financial inflows. What is more, the RBI's potential loss of income also has an important socio-economic consequence. Many of the development banks established in the nationalisation period of banking rely heavily on the net transfers from the RBI. As a result, they have suffered owing to the net loss of potential profitability of the central bank. NABARD is one such institution, which has suffered due to these policies of the monetary authority. According to Patnaik (2004),

The decline in RBI's profitability is significant not only in itself, but also for an additional reason, namely, that much of the finance for rural credit through the National Bank for Agriculture and Rural Development (NABARD) comes from the RBI's profits. With the drying up of RBI's profits there has been a drying up of such funds for rural credits as well.

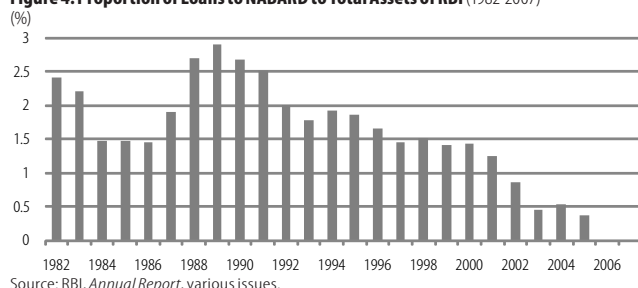
During its establishment in 1982, NABARD was instructed to have organic links with the RBI: the latter was to contribute half of its share capital, while the other half was to be contributed by the central government. The central bank was also supposed to have a say in the policy decisions of the bank as three members of the central board of directors of the RBI were supposed to be appointed on its board; and the deputy governor of the RBI was to be appointed as its chairman. After the establishment of NABARD in 1982, it took over the entire undertaking of the Agriculture Refinance and Development Corporation, and also took over from the RBI its refinancing functions in relation to the state cooperative banks and the regional rural banks (RRBs). It now acts as a coordinating agency with the central government, state governments, Planning Commission and other institutions in the development, planning and execution of the various schemes in the expansion of the small-scale industries, rural crafts, agriculture and other linked economic activities in the rural areas. For its short-term operations NABARD can borrow funds from the RBI in the form of line of credit under Section 17(4E) of the RBI Act. Under this act, the RBI was permitted to grant short-term loans to the Agricultural Refinance and Development Corporation; the act was later amended to accommodate NABARD. For its long-term operations, NABARD can draw funds from the central government, World Bank, the domestic market and other multi-lateral and bilateral aid agencies. The bank, due to financial constraints, was heavily dependent on the RBI for the various credit transactions, varying from short-term to the medium-term and the different refinance schemes.

The financial support which NABARD used to get from the RBI and the government of India has got highly restricted over the last few years. The borrowings from the government of India as a

percentage of total borrowings of NABARD have shown a steady decline over the last one and a half decade, where the proportion has fallen from 35.58% in 1989-90 to 1.10% by 2007-08 (Figure 3, p 74).

Further, an analysis of the balance sheet of the RBI reveals that there has been a continuous and significant decline in the loans forwarded to NABARD by the RBI since the onset of the liberalisation process and the drop off has been at a more rapid pace over the last few years. The amount of the loans forwarded to NABARD by the RBI as a percentage of the RBI's total assets increased from 2.42% in 1982-83 to 2.89% in 1989-90, but thereafter, there was a constant decline in the post-liberalisation era. Now, this share has reached a level of 1.92% in 1994-95, and by 2005-06 it had reached 0.37%. But most significantly, this share has declined to zero as the RBI has actually stopped providing any loan to NABARD after 31 December 2006 (Figure 4).

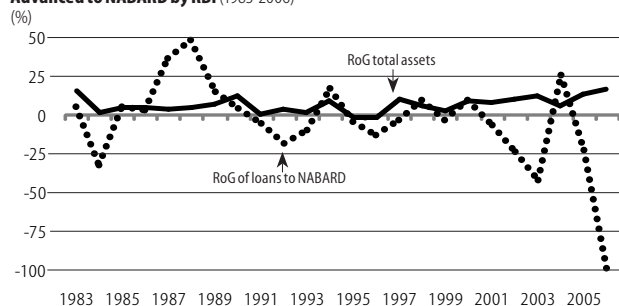
Figure 4: Proportion of Loans to NABARD to Total Assets of RBI (1982-2007)



Source: RBI, Annual Report, various issues.

A further analysis of the annual growth rate of the RBI's loans to NABARD and the RBI's total assets shows that there has been a decline in the annual growth rate of RBI's loans to NABARD, in the post-reform period, though the annual growth rate of total assets of RBI has almost remained unchanged (Figure 5).

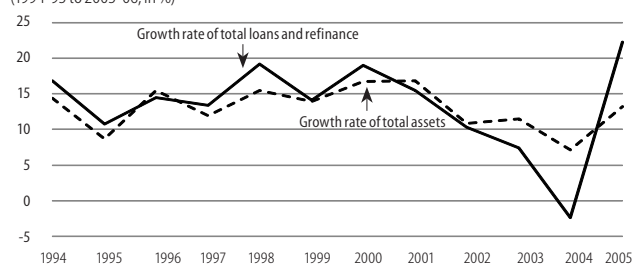
Figure 5: A Comparison of the Rate of Growth of Total Assets of RBI and Loans Advanced to NABARD by RBI (1983-2006)



RoG is rate of growth.

Source: RBI, Annual Report, various issues.

Figure 6: Rate of Growth of Assets and Refinance and Loans and Advances of NABARD (1994-95 to 2005-06, in %)



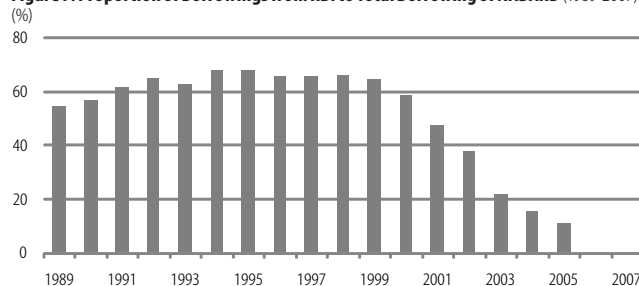
Source: Handbook of Statistics on Indian Economy, RBI various issues.

The deterioration in the loans and advances of the RBI to NABARD has had a serious impact on the NABARD's performance in terms of loans and advances and refinance facilities provided

by it to the cooperative banks and RRBS. The annual growth rate of the loans and refinance facility of NABARD dwindled from 1994-95 to 2004-05. The fall was more in the period of the late 1990s when the annual rate of growth of loans and refinance of NABARD declined from 19.3% in 1998-99 to -2.3% in 2004-05. Over the same period, from 1998-99 to 2004-05, the annual growth rate of assets also deteriorated from 15.6% in 1998-99 to 7.2% in 2004-05 (Figure 6). This clearly points to the fact that the loans and advances and refinance facilities of NABARD have undergone a sharp fall in the post-liberalisation era, especially after 1998-99.

The share of NABARD's total net borrowings from the RBI to the total borrowings made from all sources has declined from 54.41% in 1989-90 to 11.10% in 2005-06 and then to zero from 2006 onwards, after reaching a peak of 67.65% in 1994-95 (Figure 7). This fall in the share was not only in percentage terms, but also in absolute value. In the last five years, the general line of credit to NABARD from the RBI has continuously fallen from Rs 6,600 crore in 2000-01 to Rs 3,927 crore by 2005-06, while it ceased to exist thereafter (*Handbook of Statistics on Indian Economy*, RBI, 2008-09).

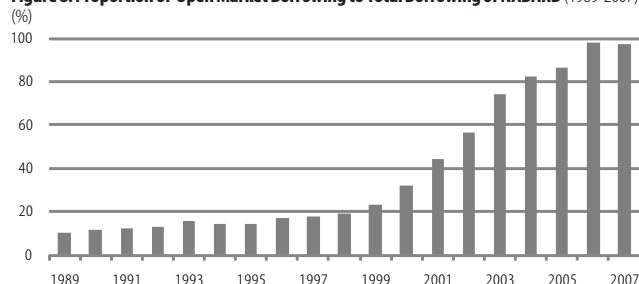
Figure 7: Proportion of Borrowings from RBI to Total Borrowing of NABARD (1989-2007)



Source: RBI, Handbook of Statistics on Indian Economy, various issues.

NABARD, starved of funds from the RBI, had to resort to open market borrowings, to meet the demand for loans and refinance facilities. Thus, the proportion of open market borrowings as a percentage of the total borrowings of the NABARD has increased enormously from 10.01% in 1989-90 to 97.38% by 2007-08 (Figure 8).

Figure 8: Proportion of Open Market Borrowing to Total Borrowing of NABARD (1989-2007)



Source: Handbook of Statistics on Indian Economy, RBI various issues.

This has some significant implications in terms of the profitability of NABARD. The rate at which NABARD borrows from the open market is much higher than the rate at which it borrows from the RBI. The increased proportion of borrowings from the open market at a higher rate of interest, when denied loans by the RBI, has caused a potential loss in income of the NABARD, in the form of an increased cost in borrowing. In the next section, we estimate the amount of potential transfers the RBI could have made to NABARD if it had maintained the same average ratio of the loans and advances to NABARD as in the pre-inflow period.¹⁵

Then, we further estimate the gain NABARD could have made in its potential income by reducing the cost of borrowing, if these loans and advances had been made to NABARD.

4 Potential Loss Suffered by NABARD

In continuation of our previous analytical framework, we again assume here that the period of study is divided into two sub-periods – period t_1 denotes the phase with regulated capital inflows (i.e., 1982-83 to 1992-93) and period t_2 denotes the second half.¹⁶

In period t_1 , the amount of the loans and advances forwarded to NABARD by the central bank, RBI, as a proportion of the latter's total assets (TA) is denoted by L_i , where i symbolise the particular year. Here, we take an average value of the L_i 's over the period t_1 and denote the same by L .

In period t_2 , the potential amount of transfers the RBI could have made to NABARD, if it would have maintained the same proportion as in period t_1 is denoted by $(PT)_n$, where n is an index for the year. Then,

$$(PT)_n = L \cdot (TA)_n \quad \dots(4)$$

During this period, the central bank, RBI, is making a certain amount of transfer to the development bank, NABARD which is denoted by $(AT)_n$. Then, the amount of potential transfers denied to NABARD by RBI in each year, n , is given by

$$(T)_n = (PT)_n - (AT)_n \quad \dots(5)$$

If the value of $(T)_n$ is greater than zero, then one can conclude that the RBI is making a lesser amount of transfers to NABARD in comparison with the level of transfers made in period t_1 , and if the value is less than zero, then the converse is true. If the value equals zero, then the two transfers match each other, and no amount is denied to NABARD.

Now, if the RBI is transferring a lesser amount of funds to NABARD¹⁷ and the latter is in need of more funds,¹⁸ then it must resort to open market borrowings.¹⁹ For its borrowings, either from RBI or from the open market, NABARD has to bear a cost in the form of interest payments. The rate of interest on borrowings from an agency is calculated as the ratio of the interest payment on the borrowing at any time period (t) to the total amount of that borrowing made by the bank from that agency in the previous time period ($t-1$). Let i_m and i_c stand for the rate of interest on borrowings from the open market operations and RBI, respectively.

Thus, the cost of borrowing²⁰ from the open market is denoted by $C_{1n} = i_m \cdot (A)_n$... (6) where, $(A)_n$ denotes the total amount of open market borrowing made by NABARD.

In the total amount of market borrowings made by NABARD, a certain amount $(T)_n$ could have been transferred from the central bank,²¹ if RBI maintained the same average ratio L . Now, the cost of borrowing from the open market, if the potential transfers were made to NABARD from the central bank, RBI will be given by

$$C_{2n} = i_c \cdot (T)_n + i_m \cdot \{(A)_n - (T)_n\} \quad \dots(7)$$

Thus, the potential loss of income in each year, n , suffered by NABARD for undergoing open market borrowings, in a phase of reduced transfers from the RBI, is shown by

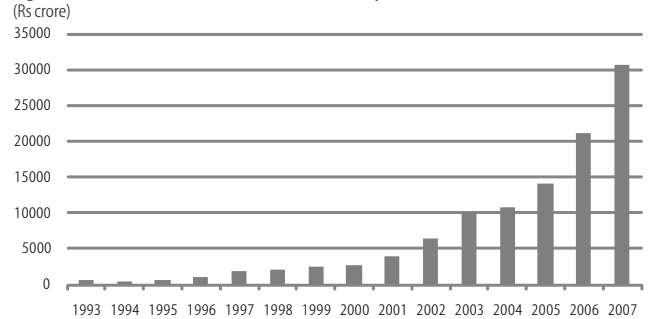
$$(PL_{db})_n = C_{1n} - C_{2n} \quad \dots(8a)$$

$$= (i_m - i_c) \cdot (T)_n \quad \dots(8b)$$

Now, if the $(PL_{db})_n$ term is positive, then one can state with certainty that NABARD is undergoing a potential loss in income due to the increased cost of borrowing from the open market, and the converse holds true if the term turns out to be negative. The term $(PL_{db})_n$ can also assume the value zero, if either T_n is zero or the bracketed term in equation (8b), i.e., the interest rate differential, is zero. The former case is ruled out by assumption at the beginning of our analysis and for the latter, if the rate of interest payment on the borrowings from the open market or from RBI remains equal, then NABARD can borrow from either of the institutions. But usually the rate of interest charged by the RBI on such loans remains at a substantially lower level, and mobilising funds from the open market at such a lower level of interest seems to be a chimera.

In India, the RBI used to transfer on an average 0.0210 proportion (in our model L) of its total assets to NABARD, over the time period of 1982-83 to 1992-93.²² Now, if the RBI had maintained the same proportion even in the period 1993-94 to 2007-08, then

Figure 9: Potential Transfers Denied to NABARD by RBI (1993-2007)



Source: Calculations made from NABARD Annual Report, various issues.

the potential transfers made to NABARD by the RBI could have been much higher than its actual transfers. The potential transfer forgone by RBI to NABARD started from a level of Rs 588.06 crore in 1993-94. The scenario worsened considerably thereafter, especially after 1997-98. The potential transfers denied by the RBI to NABARD increased from Rs 1,904.47 crore in 1997-98 and reached

Table 2: Potential Loss of the NABARD

Year	OMB	TB	IPMB	IPRBI	IPMB%	IPRBI%	IRD	PT	L/G
1	2	3	4	5	6=(4/2)*100	7=(5/3)*100	8=(6-7)/100	9	10=(8*9)
1993	910	3,674	95.11	139.55	10.45	3.80	0.07	588.06	39.13
1994	1,000	4,661	104.21	163.43	10.42	3.51	0.07	403.98	27.93
1995	1,045	4,991	116.24	201.16	11.12	4.03	0.07	554.40	39.32
1996	1,245	4,875	131.06	226.64	10.53	4.65	0.06	1,136.24	66.79
1997	1,370	5,017	147.85	206.57	10.79	4.12	0.07	1,904.47	127.12
1998	1,633	5,649	157.98	208.81	9.67	3.70	0.06	19,044.70	119.12
1999	2,141	5,884	197.24	281.25	9.21	4.78	0.04	24,549.20	108.82
2000	3,614	6,600	273.96	335.14	7.58	5.08	0.03	27,309.10	68.34
2001	6,078	6,500	477.78	356.81	7.86	5.49	0.02	38,701.40	91.78
2002	8,702	5,792	644.48	317.86	7.41	5.49	0.02	64,431.30	123.59
2003#	14,383	4,194	839.57	148.31	5.84	3.54	0.02	10,072.90	231.78
2004#	21,504	3,927	1,059.55	139.55	7.367	3.327	0.040	10,706.46	432.467
2005#	23,313	2,998	1,210.92	175.39	5.631	4.466	0.012	14,022.34	163.343
2006#	31,392	0	1,430.88	95.55	6.138	3.187	0.030	21,041.04	620.830

OMB: Open market borrowings, TB: Total borrowings from RBI, IPMB: Interest payment on open market borrowings, IPRBI: Interest payment on borrowings from RBI, IRD: Interest rate differential (in units), PT: Potential transfers foregone to NABARD, L/G: Potential Loss(+)/Gain(-) of NABARD.

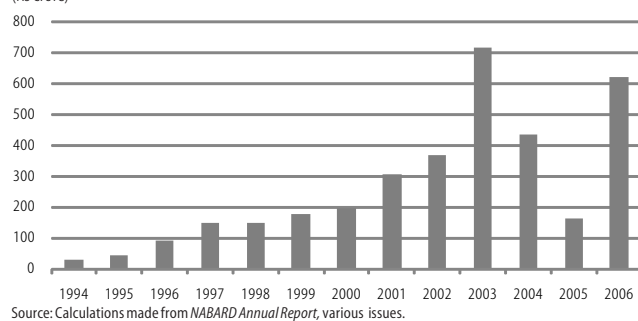
The Open market borrowings include also corporate borrowings, commercial banks and other financial institutions. The figures are in rupees crore.

Source: NABARD Annual Report, various issues.

a peak of Rs 30,722.99 crore by 2007-08 (Figure 9, p 76). This period is also the one when the country experienced large capital inflows from abroad and the RBI added to its foreign exchange assets, while resorting to the “sterilisation” process.

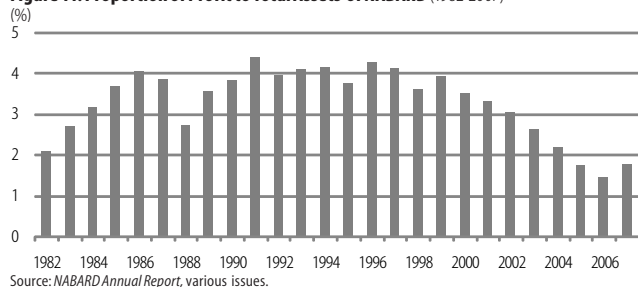
With a continuous rise in the amount of transfers forgone by the RBI to NABARD over the same period, the latter resorted to open market borrowings at a higher interest cost. This has led to a huge amount of loss in potential income of the NABARD. The loss in potential income started off from Rs 28.29 crore in 1994-95 and reached a level of Rs 620.83 crore by 2006-07, while a peak of Rs 713.91 crore in 2003-04 (Table 2, p 76). A diagrammatic analysis of the same from 1993-94 onwards reveals that the loss in the potential income of the NABARD over the last five years has been always highly positive, and in absolute terms the total amounted to Rs 3,421.3 crore by the end of 2006-07, which is a substantial amount under any circumstances. This is of special concern in a world where satisfying profitability norms claims a higher priority than the social objectives (Figure 10). A greater transfer from RBI to NABARD would have also led to an increase in the level of total assets of NABARD.

Figure 10: Potential Loss (+)/Potential Gain(-) of NABARD
(Rs crore)



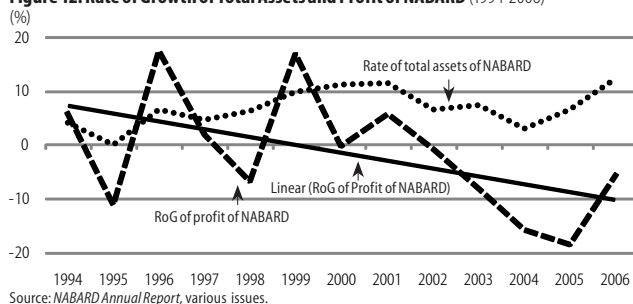
This potential loss suffered by NABARD has had a major impact on its profits. The profit earned by any establishment is defined as the difference between the revenue generated and the amount of cost incurred, during a given period of time. The profits of NABARD as a proportion of its total assets have declined from 4.16% in 1994-95 to 1.77% in 2007-08²³ (Figure 11).

Figure 11: Proportion of Profit to Total Assets of NABARD (1982-2007)



The annual rate of growth of profits of NABARD had also shown a steady decline over the same period, 1994-95 to 2006-07. This dwindling of the annual growth rate of profits has been more sharp since 1999-2000, when the growth has sharply fallen from 16.80% in 1999-2000 to -5.65% in 2006-07. But, over the same period, the rate of growth of the assets of NABARD has increased quite substantially from 4.04% in 1994-95 to 12.17% in 2006-07. This indicates that the profitability of NABARD has been coming

Figure 12: Rate of Growth of Total Assets and Profit of NABARD (1994-2006)



down in the post-liberalisation era, while the decline has been sharp since 1999-2000 onwards.

5 An Analysis of the Possible Effects on the Indian Rural Economy

The falling annual growth rate of profit and a higher proportion of costs incurred to total assets of NABARD may have some serious consequences. NABARD may probably, then, further cut down on its loans and refinance facilities to the cooperative and RRBS for rural credits and invest in other forms of assets that have a more assured and higher level of returns. This is mainly to earn a higher level of interest income, and it might lead to an increase in its profitability through higher revenue. But the associated cost in such a process will be a further reduction in loans and advances to the rural sector. This point has some empirical basis. The NABARD has increased its investments in government securities from Rs 2,747 crore in 2001-02 to Rs 6,256 crore in 2005-06, a growth rate of around 127.1% (*Handbook of Statistics on Indian Economy*, RBI 2006-07). This pattern of investment may seriously hamper the cooperative banks and the RRBS, which are heavily dependent on the loans and advances from NABARD. Thus, the loan portfolio changes to accommodate for this higher cost of funds.

As discussed, the cooperative banks and the RRBS heavily depend on NABARD for loans and refinance facilities from the latter (Sen 2005; RBI 2004). The NABARD, in turn, is depended upon the RBI for loans and advances and refinance facilities. The annual growth rate of loans and advances of NABARD is falling, especially from the period of 1998-99 to 2005-06, which in turn, has affected the growth rates of loans and advances of the cooperative banks and the RRBS. NABARD, on being denied such loans from the RBI, has had to resort to open market borrowings to meet the demand for rural credit. This operation of open market borrowing was able to meet the loans and advances and refinance facilities to some extent. But, this open market borrowing was not enough to meet the huge requirements of credit in the rural areas.

6 Conclusions

To conclude, it can be stated that with an inflow of foreign capital in the post-liberalisation era, especially after 1998, the RBI has undergone a loss in its potential income. Therefore, during this period, the RBI's transfer to NABARD sharply declined, since the RBI used to transfer a certain share of its profits to NABARD. These, in turn, have affected the loans and advances and refinance facilities provided by NABARD, which depends upon the

transfers of funds from RBI. The former, then had to resort to open market borrowings to meet to some extent the loans and refinance requirements of the cooperative banks and the RRBS. These open market borrowings led to a fall in the profitability of NABARD, due to an increase in the cost of borrowings. The loans and advances and refinance facilities of NABARD are not sufficient to meet the credit requirements of the rural sector, through

the cooperatives and the RRBS. The cooperative banks and the RRBS, in turn, have reduced their loans and advances to the agriculture and allied sectors in the rural areas (Sen 2005; Chakraborty 2005). Thus, the cumulative effects of all these factors have led to a collapse of the formal credit market in the rural areas, and as a result adversely affected the rural economy of our country.

NOTES

- 1 RBI Bulletin, *Current Statistics*, 11 December 2009.
- 2 The assumption is that the central bank does not intervene in the purchase or sale of foreign exchange in the currency market.
- 3 This is the gap between the full employment (or full capacity) output and the actual gross domestic product of the economy.
- 4 Suppose, the foreign exchange reserves increase by Rs 100 crore and the money multiplier in the economy is 4.85. Then, the money supply in the economy would rise by Rs 485 crore (assuming that there is an infinite elasticity of demand for money). But, if the central bank intervenes and sells Rs 100 crore of government securities in the market, then money supply does not change.
- 5 This is because the rate of return on domestic assets is much higher than that on foreign assets.
- 6 We assume that the expenditures and the transfers remain the same in both the present situation and the hypothetical situation of capital control.
- 7 The income from foreign sources is mainly in the form of discount, exchange and interest earnings and that from the domestic assets is mainly in the form of discount, exchange, interest earnings, rent realised, commission and other sources of income.
- 8 Since, in our analysis we have assumed the level of costs to remain same in both the present and the hypothetical situation.
- 9 The potential loss of the RBI is the potential income less the actual income.
- 10 The actual income denotes the gross earnings of central bank from domestic and foreign assets in the period n.
- 11 In India, where there exists a huge amount of unemployment and underutilised capacity, such a deficit would contribute to an increase in the level of investment, which in turn, leads to an increase in the level of income, and thus, accelerate the process of economic growth and development Patnaik (2000).
- 12 In calculating the average we have taken three years moving average, and then a simple average of the resultant three years moving average.
- 13 While the income from the domestic assets declined from Rs 5,220 crore in 2003-04 to Rs 1,782 crore in 2006-07, the depreciation on the domestic assets increased from Rs 2,744 crore in 2003-04 to Rs 5,570 crore in 2006-07 (*Annual Report*, RBI 2007-08).
- 14 Though the Narasimham Committee Report on the Financial System, 1991 seems to have led the maximum emphasis on fulfilling the prudential and profitable norms of the banking system.
- 15 The pre-inflow period is chosen to be the same period as in the previous analysis, i.e., 1982-83 to 1992-93.
- 16 The period of analysis is the same as in the first analytical framework.
- 17 In other words, the amount of potential transfers forgone to NABARD by the central bank, RBI is always positive, i.e., $(T)_n > 0$.
- 18 Even if $(T)_n$ is less than or equals 0, then also NABARD may have to resort to open market borrowings. This special case may arise if there is a huge demand of loans from NABARD and even after the transfers made from the central bank, the former is not in a position to meet all the

- demands for loans. Whether RBI should make more transfers in this case, is a discretionary policy of the same.
- 19 We assume there are no other sources of funds.
- 20 The cost of borrowing for simplification is assumed only to be the interest payment made by the bank on such borrowing. The other forms of cost like transaction costs are assumed to be negligible.
- 21 The actual amount of open market borrowing is assumed to be higher than the amount of potential transfers forgone by RBI. If the actual amount of open market borrowing is less than or equal to the transfers forgone by the central bank, then RBI would not have to resort to open market borrowing. This assumption does not alter the final result.
- 22 In calculating the average we have applied the same method as before by taking three years moving average, and thereafter, a simple average of the resultant three years moving average.
- 23 The profits from 2001-02 to 2005-06 include income tax. Before 2001-02 the NABARD did not have to pay any such income tax, so for a consistent analysis we have included those taxes into the profit term of NABARD.

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