

**THE RESERVE BANK OF INDIA'S
BALANCE SHEET:
ANALYTICS AND DYNAMICS
OF EVOLUTION**

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The present paper attempts to contribute to the growing literature on central bank balance sheets drawing from a case-study of the Indian experience. The analytical commentary of the evolution of the Reserve Bank of India balance sheet in relation to the post-Independence national macroeconomic experience is partitioned into three phases on the basis of shifts in the conduct of monetary policy. Interestingly, structural breaks in the time path of the Reserve Bank's rate of surplus transferred to the Government are able to mirror these regime changes reasonably well. We conclude with some emerging issues.

I. Introduction

Central banks, the world over, are products of history. They are characterised typically, by an evolutionary development rather than being programmed to undertake from the beginning what they subsequently did. Almost universally, central banks have transmigrated from mere issuers of the national currency to wardens of its value. Needless to say that central banking functions generally emanate from the context of evolving linkages and relationships within an economic system. Since this evolution of macro-linkages is reflected invariably in the balance sheets, there is a growing interest from economists, accountants and policy makers, in analysing the balance sheets of central banks. The balance sheet of a central bank is unique in its importance, derived not only as the source of money creation but also as a description of its relationships with the government on one hand and the banking and financial system on the other. Not surprisingly, the information context and health of central bank balance sheets are thus engaging attention the world over in an effort to unravel the mystique surrounding central banking. What *is* surprising is the fact that such an analysis has not been done

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comprehensively in the context of the Reserve Bank of India, despite its existence for nearly 70 years.

This is, of course, not to say that the importance of the Reserve Bank Balance Sheet has not been recognised. The multiple linkages between the Reserve Bank Balance Sheet and the Indian economy are succinctly summarised by Reddy (1997): "... Recently, one of my friends read the RBI Annual Report for the first time. He wondered why it is a thick volume referring to a whole range of economic issues – rather than a simple Annual Report with a balance sheet. Well I had to explain to him that ... the balance sheet of the RBI reflects and in a way, influences the development in the economy – the external sector, the fiscal and, of course, the monetary areas ...".

The Reserve Bank, set up in April 1935, is enjoined "...to regulate the issue of Bank notes and the keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage..." by the Preamble to the Reserve Bank of India Act, 1934. Its balance sheet, naturally, chronicles the causes and consequences of monetary policy in the backdrop of the many vicissitudes of the Indian economic experience. What are the broad contours of these transformations? How does it capture the macro-economic relationships between the monetary authority, the Central Government and the financial system in India? The present paper looks into some such questions, analysing the evolution of the Reserve Bank's Balance Sheet in the 70 years of its functioning.

We begin with an analytical framework to examine central bank balance sheets drawing on cross-country central banking experiences in Section II. Section III examines the anatomy of the Reserve Bank Balance Sheet in terms of structure, accounting practices and the impact of central banking operations. Section IV provides an analytical chronicle of the evolution of the Reserve Bank's Balance Sheet in the backdrop of India's macroeconomic experience. Finally, Section V concludes with a few emerging issues.

II. Analytics of Central Bank Balance Sheets

A Stylised Central Bank Balance Sheet

A central bank balance sheet typically centres around the three traditional central banking functions of (a) issuer of currency, (b) banker to government and (c) banker to banks. A stylised central bank balance sheet is presented in Table 1.

Table 1: A Stylised Central Bank Balance Sheet

Liabilities	Assets
1	2
Currency	Gold
Deposits, of	Loans and Advances, to
Government	Government
Banks	Banks
Loans (including securities)	Investments, in
Other Liabilities	Government securities
Capital Account	Foreign Assets
Paid-up Capital	
Reserves	Other Assets
Total Liabilities	Total Assets

Source: IMF (2001).

One needs to go beyond this relatively mechanistic functional classification to understand the structure of central bank balance sheets. In this context, it is important to understand the multiple linkages between the State and the monetary authority (Pringle and Courties, 1999). First, most governments fully own their central banks - even otherwise, there are restrictions on public shareholding (and dividend payout to non-government shareholders), although equity of some central banks (*e.g.*, of Belgium and the Netherlands) are traded on the exchanges. Secondly, central banks derive their right of note issue - easily their largest operation, from the State, which is thus entitled to the profits of currency issuance as *seignorage*. The Bank of England (BoE), for example, passes the entire profits of issuance to the Treasury. Thirdly, central banks usually act as sole bankers to the government. Finally, most central banks act as managers of public debt for a commission, though the

degree of underwriting varies from country to country.¹ It is to prevent an avaricious state from simply printing money and devaluing the currency that issuance is often linked to the central bank's holdings of monetary gold - a legacy of the Gold Standard - and foreign paper (Fry, 1993; Hawkins, 2003). In particular, central banks often maintain a high ratio of net foreign assets to currency to ensure the wherewithal to meet any domestic demand for foreign currency (with currency boards, such as Argentina earlier, as an extreme case). Besides, fiscal responsibility legislation in most countries, born out of the large literature on the virtues of central bank independence, now limit the central bank's primary subscription in government securities auctions. In some cases, such as, the Bank of England, Peoples' Bank of China (PBC), the Bank of Russia (BoR) and the US Federal Reserve (Fed), the central bank's primary subscription in government securities auctions is barred. Most central banks now have the statutory right to buffet their balance sheets with adequate reserves before passing their profits to the government.

A central bank balance sheet is usually analysed from the twin angles of the ability to issue currency and the ability to achieve the monetary policy objectives of price stability and growth. In order to track the channel of transmission of monetary policy, most monetary authorities redraw the assets and liabilities from the balance sheet to compile the following two macroeconomic liquidity aggregates by classifying liabilities according to their "moneyness" and by classifying assets and liabilities by sector of origin rather than the type of the financial instrument:

- reserve money, comprising currency and bank balances, which generate money supply through the process of multiple deposit creation; and
- excess bank reserves, *i.e.*, the balances banks maintain with the central bank over and above their reserve requirements and settlement balances (now christened voluntary reserves by the BoE), which in turn, serves as a measure of bank liquidity. For analytical purposes, excess reserves can be decomposed into i) borrowed and non-borrowed reserves, depending on commercial banks' automatic access to primary liquidity, as conceptualised by the Fed and ii) autonomous factors and

¹ The Bank of England's public debt office has now been segregated.

discretionary factors, depending on the central banks' control over its balance sheet, following the BoJ and ECB, in terms of sources of funds.

Most central banks conduct monetary operations through a mix of instruments such as open market operations (and occasionally, changes in reserve requirements and standing facilities), which adjust the quantum of primary liquidity and changes in policy rates, which change the price of base money (Borio, 1997; Van't dack, 1999). The ripple effects of each monetary instrument throughout the central bank balance sheet are very situation-specific (Schaechter, 2001).

As to the composition of central bank balance sheets, by and large, there appear to be three stylised patterns in terms of assets and liabilities. On the asset side, at the one extreme lie central banks, like the Fed, which support the high-powered money primarily by government paper of such different maturities that their assets and liabilities are relatively close substitutes (Table 2). At the other extreme, are the BoJ and ECB (and certain pseudo-currency boards in Hong Kong and Singapore), which maintain a diversified asset base, which does not match their monetary liabilities in terms of either the return distribution or the maturity structure. The scale of repo operations varies widely - from nearly half the balance sheet in case of BoE or the Reserve Bank of New Zealand (RBNZ) to less than a tenth in case of the Fed (Zelmer, 2001). Although most central banks prefer to transact in gilts in view of their high liquidity and minimal credit risk, the Bank of Canada (BoC), central banks in the Euro system and BoJ do accept private sector securities as collateral if they satisfy some predetermined minimum external credit rating. A third group of central banks, especially in emerging market economies, hold large foreign exchange reserves.

Table 2: Composition of Central Bank Assets in Select Countries in 2000

Central Bank	(per cent of balance sheet)					
	Domestic Assets				Net Foreign Assets	Memo: Balance sheet size as percent of GDP
	Government	Financial Institutions	Private sector	Other credit		
1	2	3	4	5	6	7
Euro System	10.0	48.0	1.0	2.0	39.0	14.5
Japan	60.0	20.0	12.0	4.0	4.0	28.5
Malaysia	0.0	1.8	4.9	34.3	59.0	45.3
Mexico	0.0	16.5	1.5	21.0	61.0	13.3
South Africa	10.2	8.6	0.0	0.2	81.0	12.3
U.K.	5.0	55.0	2.0	39.0	0.0	2.2
U.S.	88.0	7.0	0.0	0.0	5.0	6.5
India	32.5	1.5	0.0	29.4	36.6	20.3

Source: Zelmer (2001) and Hawkins 2003.

On the liability side, true to the textbook, currency is usually the dominant component of the monetary base in case of most central banks, such as the BoE, BoJ and the Fed (Table 3). Several central banks in emerging market economies still prescribe high reserve requirements or issue central bank bills. There are exceptions though - the Bank of Denmark has a diversified mix of liabilities while that of the Norges Bank is dominated by government deposits. While central banks usually prefer government securities to their own securities for liquidity management to avoid market fragmentation, many central banks in emerging market economies including the PBC, the Banks of Chile, Korea (BoK) and Thailand, the National Bank of Poland and Bank Negara Malaysia (BNM) – and the Bank of Denmark among developed countries - do issue their own bills - often with limits in terms of central bank net worth (*i.e.*, BNM) or money supply (*i.e.*, BoK) - especially as instruments of sterilisation.

Table 3: Composition of Central Bank Liabilities in Select Countries in 2000@

Central Bank	(Per cent of balance sheet)			
	Currency	Deposits of Banks	Government	Central Bank Securities
1	2	3	4	5
Euro System	43	30	6	0
Japan	60	6	23	5
Malaysia	16.7	43.1	8.6	7.5
Mexico	34.1	19.8	11.1	29.4
South Africa	27.9	37.9	7.7	5.4
U.K.	78	6	1	0
U.S.	95	3	1	0
India	80.0	18.6	0.0	0.0

@excludes other liabilities

Source: Zelmer (2001) and Hawkins 2003.

The size of the central bank balance sheet depends on the particular macroeconomic circumstance of the economy in question. There is, in general, a clear relationship between the size of the balance sheet and the level of financial development. A major factor is the degree of financial deepening of the economy, which determines the relative reliance on cash. Another determinant of the central bank balance sheet size is the particular operating procedure of monetary policy. Yet another determinant is the requirement of settlement balances, especially for inter-bank transactions which, in turn, depends on the parallel sophistication of payment and settlement systems. It is for this reason that the process of e-monetisation gives rise to concerns that the central bank might eventually shrink to a size which is too small to conduct effective monetary operations (Goodhart, 2000).

Accounting Policies of Central Banks

Central bank accounting practices assume importance not only because of the usual concerns about balance sheet health *per se*, but also because of their monetary and fiscal implications. Most central banks usually follow conservative accounting norms (Foster, 2000; Kurtzig and Mander, 2003). A

look at the accounting norms of select central banks allows us to discern the following stylised facts evident from Table 4:

- Incomes are recognised on an accrual basis.
- Asset portfolio is periodically revalued on prudential norms, adjusting losses against income while ignoring unrealised gains.
- Foreign currency assets are periodically revalued for exchange rate changes, with revaluation transferred to an adjustment account.
- Contingency reserves are maintained to meet unforeseen circumstances.
- Accounts are audited externally, at least on an annual basis.

Table 4: Accounting Norms of Select Central Banks

Central Bank	Basic Accounting Practices			Periodicity of Audited Accounts	External Audit
	Income Recognition	Revaluation			
		Price effects	Exchange rate effects		
1	2	3	4	5	6
Japan	Accrual basis	Lower of cost, determined by moving average method or market value.	Unrealised gains parked in reserves; loss adjusted against income.	Annual	Yes
U.K.	Accrual basis	At cost, with amortisation of changes in prices on straight-line basis.	Unrealised gains parked in reserves; loss adjusted against income.	Annual	Yes
U.S.A.	Accrual basis	At cost, with amortisation of changes in prices on straight-line basis.		Annual	Yes
India	Accrual basis	Lower of book or market value; depreciation adjusted against income.	At market value; gains and losses, realized and unrealised booked in an adjustment account.	Annual	Yes
South Africa	Accrual basis	Fair value on balance sheet date.	Booked in an adjustment account.	Annual	Yes

Source: Kurtzig and Mander (2003) and various central bank websites.

There is a persuasive view that the central bank accounting practices are *sui generis* because the monetary authority is itself unique. An alternate argument is that the adoption of the international best practices would, by their very nature, strengthen the conduct of monetary policy, especially since the sensitivity of central bank balance sheets to market fluctuations heighten with the process of financial liberalisation. It is in this context that the International Monetary Fund (IMF) has introduced a safeguard assessments standard, based

on five areas: External audit mechanism, Legal structure and independence, financial Reporting, Internal audit mechanism and system of internal Controls, acronymed ELRIC (Catsambas and Hemus, 2003). There are now three basic accounting standards, *viz.*, the International Accounting Standards (IAS), adopted by the ELRIC, US Generally Accepted Accounting Principles (US GAAP) and the European Central Bank GAAP (ECB GAAP) to which central banks could conceivably benchmark as detailed in Table 5. Many central banks are now beginning to migrate to the IAS, which is also incorporated in the ELRIC, within the structure of their national priorities, although the European Central Bank system of central banks (ESCBs) are adopting the ECB-GAAP as expected.

Table 5: Accounting Standards

Standard	IAS	US GAAP	ECB GAAP	Memo: Reserve Bank of India
1	2	3	4	5
Financial Statements	Balance sheet, income statement, cash flows, statements of realised gains and losses and accounting statements	Similar to IAS.	Balance sheet and income statement.	Balance sheet, income statement, notes to accounts. Realised gains/losses available in accompanying commentary.
Revenue recognition	Based on four criteria, <i>viz.</i> , measurement of revenue, whether economic benefits will flow to the enterprise, identification of date at which transaction effected and costs measured.	Based on four criteria, <i>viz.</i> , vendor's price determinable, evidence of arrangement, occurrence of delivery and collectability assurance.	Realised gains/losses taken to profit and loss account.	Realised gains/losses taken to profit and loss account. Besides, unrealised losses also adjusted against income.
Measurement of Financial Assets	Depends on classification. If held to maturity, at fixed cost, otherwise fair value, against income or equity.	Similar, but unrealised gains and losses recognised against equity.	Market price.	Lower of book or market value. Unrealised losses adjusted against income.

Source: Kurtzig and Mander (2003).

A related set of issues revolve around central bank reserves. First, there is the question whether central banks require reserves at all, given that the owner in most cases, is the sovereign itself. A line of argument is that 'tax-

based' monetary systems, such as the Fed, which have some form of fiscal guarantee, are relatively more effective as their monetary policy action is less fettered by balance sheet concerns, than 'reserve-based' monetary systems, such as the ESCB, which must pay for the greater degree of central bank independence by ensuring their own solvency (Zhu, 2003). There now appears to be an emerging consensus that central bank reserves act as a cushion in the sense that well-capitalised central banks are relatively more credible in a market economy because they can bear larger quasi-fiscal costs of market stabilisation especially in case of large fiscal deficits (Stella, 1997; Stella, 2002). The size of central bank reserves varies widely depending on the national circumstance as revealed by Table 6. Irrespective of the professed government commitment, central banks in emerging market economies tend to maintain large reserves, especially as their fiscal position is often not strong enough to protect central bank balance sheets.² Secondly, there is a question of the form of reserves in terms of its three constituents, *viz.*, paid-up capital, contingency reserves and revaluation accounts. Most central banks appear to prefer to build-up reserves by transfer from their annual profits rather than augmenting paid-up capital, while revaluation accounts adjust to prevailing market trends. Finally, there is the question of determining the share of the central bank (*i.e.*, in the form of reserves), the Government and non-Government owners in central bank income. In most cases, central banks have the first charge on annual income. Although governments typically appropriate the dominant share (often up to 90 per cent), especially given the right of *seignorage* for having farmed out the right of issue, it must be recognised that this is counter-balanced by parallel restrictions on the monetisation of the fiscal deficit. Central bank legislations statutorily link the size of reserves to the size of the balance sheet, paid-up capital, annual surplus, or some macroeconomic variable, such as GDP or money supply. In any event, transfers to the

² Hawkins (2003), however, shows that the median size of central bank capital, as proportion to total assets, at 8.8 per cent in emerging market economies, still lags that of advanced economies, at 15.3 per cent as of May 2003.

Government seldom cross 0.5 per cent of GDP, barring exceptions such Hong Kong SAR and Singapore.

Table 6: Rules of Central Bank Reserves

Central Bank	Appropriation of Central Bank Surplus			Deciding Authority	First Charge	
	Government	Central Bank	Others			
	Rule	Share to GDP, 2001				
1	2	3	4	5	6	7
India	Balance to Government	0.4	Contingency reserves of e 12 per cent of balance sheet by 2005		Central bank, in consultation with Government	Central bank
Japan	Balance surplus		At least 5 per cent to reserve fund	Up to 5 per cent	Government	Central bank
Mexico	Balance to federal government	0.0	Provisions to reserves aimed at maintaining real value in line with GDP		Government and central bank	Central bank
Poland	Balance to Government	0.4	At least 2 per cent of net profit to reserve capital		Central bank	Central bank
South Africa	Balance to Government after appropriations	0.0	10 per cent to the central bank reserve fund		Statutory	Central bank
U.K.	Net profits (after corporation tax) to the treasury		Allocations from banking department, if any.		Government and central bank	
U.S.A.			Remainder to surplus fund.	6 per cent of capital	Central bank	Shareholders

Source: Pringle and Courties (1999).

Central bank accounting raises several issues beyond the standard accounting standards. For example, although there is very little doubt that the basic thrust of the IAS (especially, IAS 39) in determining the fair value of the investment portfolio is welcome, the allied principle that all gains and losses, realised and unrealised, have to pass through the income statement, opens the possibility of draining off the “hidden” reserves emanating from unrealised gains to the fisc. In any case, the net worth of a central bank is difficult to establish, especially as the ‘franchise’ value of currency issuance is almost impossible to measure (Fry, 1993; Stella, 1997). The identification and valuation of contingent liabilities is another area of concern (Blejer and

Schmacher, 2003). It is, of course, possible to write fair values for contingent liabilities for the explicit contracts entered into by the central bank, such as repurchase agreements and swaps – and this is already done by most central banks. The trouble is that the principal contingent liability of central banking is implicit in the great unknown of its lender-of-the-last-resort function, which is very difficult to evaluate. While some central banks do tend to build cushions for systemic financial instability, it is almost impossible to determine the scale of such requirements.

Against this analytical chronicle of central bank balance sheets, we now turn to the structure and dynamics of the balance sheet of the Reserve Bank of India.

III. Balance Sheet of the Reserve Bank of India: Structure and Dynamics

(a) Balance sheet structure

The structure of assets and liabilities of the Reserve Bank are, more or less, in line with the stylised balance sheet followed by most central banks. The accounts of the Reserve Bank are, however, bifurcated into the Issue Department, reflecting the currency issue function and the Banking Department, accounting for all other central banking functions (such as banker to the Government and banks) in terms of Section 23(1) of the Reserve Bank of India Act, 1934, following the recommendations of the Hilton Young Commission (1926) (RBI, 1970; RBI, 1983).³ This was primarily to ensure the sanctity of the currency issue function of the Reserve Bank, in line with the then existing practice at the Bank of England.⁴ We take a quick rundown through the items of the balance sheets of the Issue and Banking departments as a prelude to the discussion on balance sheet dynamics.

³ On the issue of bifurcation of the Issue and Banking departments in the Reserve Bank balance sheet, the Hilton Young Commission (1926) opined that "... (If) such a separation is proposed, it is because we have been impressed by the view put forward by many witnesses that the accounts of the Reserve Bank should be presented in the simplest possible form and that it is essential from this point of view to set out in a separate statement the assets and liabilities in respect of the note issue. We think that such a separation would inspire greater confidence in the new note. Although this is a novel way of dealing with the matter, there would seem to be no strong reason why it should not be adopted...".

⁴ The Bank Charter Act 1844 requires that the Bank of England's note issue function should be separated from its other activities for accounting purposes.

Issue Department

A stylised account of asset and liabilities of the Issue Department is presented in Table 7. The liabilities of the Issue Department comprise the vault cash in the Banking Department and the notes issued to the public, banks and treasuries under Section 22 of the Reserve Bank of India Act, 1934, which accords the Reserve Bank the sole right to issue bank notes. The assets eligible to back the issuance of notes, under Section 33, include gold coin and bullion, eligible foreign securities, Government of India Rupee securities, Rupee coins and eligible internal bills of exchange and other commercial paper (not yet held).⁵ The sum of foreign securities and gold is stipulated at a minimum of Rs.200 crore, with at least Rs.115 crore in gold. As the Reserve Bank acts as the agent of the Central Government in the issue, distribution and handling of Rupee and small coins under Section 38, inventories are held in the Issue department (with a minor amount held as vault cash in the Banking department).

Table 7: Assets and Liabilities of the Issue Department of the Reserve Bank of India

Liabilities	Assets
1	2
Notes held in the Banking Department	Gold Coin and Bullion (a) Held in India (b) Held outside India
Notes in circulation	Foreign Securities Rupee Coin Government of India Securities Internal Bills of Exchange and other Commercial Paper
Total Liabilities (= Total Notes Issued)	Total Assets

Source: RBI (1983).

⁵ Foreign securities include: i) balances with the bank which is the principal foreign currency authority of the foreign country and other balances or securities maintained with or issued by the IMF, IBRD, IDA, IFC, ADB, BIS and any other banking or financial institution notified by the Central Government in this behalf which is repayable within a period of ten years, ii) bills of exchange bearing two or more good signatures and drawn on or payable at any place in a foreign country which is a member of the IMF and having a maturity not exceeding 90 days and iii) Government securities of such a foreign country maturing within 10 years.

Banking Department

The balance sheet of the Banking Department reflects the Reserve Bank's functions as banker to the Government and banks as can be seen from Table 8. The balance sheet effects of monetary policy actions, in terms of changes in investments in government paper and foreign assets span both the Issue and Banking departments. Encumbered securities, such as government securities acquired under reverse repurchase agreements or foreign currencies held under swaps can, however, be accounted only in the investment portfolio of the Banking department as they are not eligible for backing note issuance.

Table 8: Assets and Liabilities of the Banking Department of the Reserve Bank of India

Liabilities 1	Assets 2
Capital Paid-up	Notes
	Rupee Coin
Reserve Fund	Small Coin
	Bills Purchased and Discounted
	(a) Internal
	(b) External
	(c) Government Treasury Bills
National Industrial Credit (Long Term Operations) Fund	Balances held Abroad
National Housing Credit (Long Term Operations) Fund	Investments
Deposits	Loans and Advances to
(a) Government	(i) Central Government
(i) Central Government	(ii) State Governments
(ii) State Governments	Loans and Advances to
(b) Banks	(i) Scheduled Commercial Banks
(i) Scheduled Commercial Banks	(ii) Scheduled State Co-operative Banks
(ii) Scheduled State Co-operative Banks	(iii) Other Scheduled Co-operative Banks
(iii) Other Scheduled Co-operative Banks	(iv) Non-Scheduled State Co-operative Banks
(iv) Non-scheduled State Co-operative Banks	vi) Others
(v) Other Banks	Loans, Advances and Investments from National Industrial Credit (Long Term Operations) Fund
(c) Others	Loans and Advances to
Bills Payable	(i) Industrial Development Bank of India
Other Liabilities	(ii) Export Import Bank of India
	(iii) Industrial Investment Bank of India
	(iv) Others
	Investments in bonds/debentures issued by
	(i) Industrial Development Bank of India
	(ii) Export Import Bank of India
	(iii) Industrial Investment Bank of India
	(iv) Others
	Loans, Advances and Investments from National Housing Credit (Long Term Operations) Fund
	(a) Loans and Advances to National Housing Bank
	(b) Investments in bonds/debentures issued by National Housing Bank
	Other Assets
Total Liabilities	Total Assets

Source: RBI (1983).

The liabilities of the Banking Department, comprising the capital account, national funds, deposit liabilities and other liabilities, can be analytically partitioned on the basis of their “moneyness”. Non-monetary liabilities essentially comprise the Reserve Bank’s dues to its owner (paid-up capital) and on itself (reserves), balances parked abroad (such as IMF Account No.1) and illiquid provisions such as employees provident funds. Government balances with the Reserve Bank, in line with international best practices, are considered non-monetary because the State is treated as a part of the money issuing sector along with the central bank because of its ability to create money by *fiat*. The bulk of the deposit liabilities, along with currency issued outside the Reserve Bank, are ‘monetary’ in that they provide the base for deposit creation as components of reserve money.

The capital account, in the strict sense of the term, comprises the paid-up capital of Rs.5 crore, fully owned by the Government of India since January 1, 1949 under Section 4 and reserves, comprising the initial contribution of Rs.5 crore by the Central Government in terms of Government securities under Section 46 and transfers following gold revaluation up to October 1990. Other reserves, including the Contingency Reserve and Asset Development Reserve, under Section 47 and revaluation accounts, including the Currency and Gold Revaluation Account and the Exchange Equalisation Account, are parked in Other Liabilities.

National funds, the second set of liabilities, were constituted from time to time out of contributions from the Reserve Bank's disposable surplus under Section 46C(1) to provide agricultural credit (1956-82, when monies were transferred to the newly constituted National Bank for Agriculture and Rural Development), industrial credit (1964-2002) and the National Housing Bank (1987-).

The third set of liabilities include deposit balances maintained by the Government, banks and other eligible parties. The Central Government deposits all its cash balances with the Reserve Bank, free of interest, subject to a mutually agreed minimum under Sections 20 and 21 of the Reserve Bank of

India Act, 1934. Minimum cash balances of the State Government are linked to the volume of budgetary transactions in accordance with agreements under Section 21A. Scheduled bank deposits with the Reserve Bank include their required reserves, as prescribed under the Section 42(1), settlement balances and excess reserves. Non-scheduled banks are required to maintain a minimum of three per cent of their net demand and time liabilities in various eligible forms, including in current account with the Reserve Bank under Section 18 of the Banking Regulation Act, 1949. Other deposits comprise, mainly, i) deposits of *quasi*-Government and other financial institutions including primary dealers, ii) accounts of foreign central banks and governments, iii) accounts of international agencies such as the International Monetary Fund (IMF) *etc.*, iv) provident, gratuity and guarantee funds of the RBI staff and v) some temporary accounts.

The final set of liabilities include a broad head of other liabilities and bills payable include mainly outstanding drafts, telegraphic and mail transfers and payment orders drawn up by the Reserve Bank's offices. Besides the reserves and revaluation accounts, other liabilities include a number of current income accounts, other sundry liabilities and special deposit accounts, such as the Resurgent India Bond / India Millennium Deposit Maintenance of Value accounts.

The assets of the Banking Department comprise financial assets such as claims on the Government, banks and other eligible financial institutions and other assets in the form of loans and bonds and non-financial assets, such as immovable property. The loan portfolio includes advances to the Government, banks and financial institutions, under Section 17 of the Reserve Bank of India Act, 1934. Ways and means advances (WMA) to the Central Government, under Section 17(5), are repayable within three months from the date of the advance, in accordance with agreement with the Government in respect of the maximum amount and rate of interest. WMA to States encompass “normal” WMA, linked to the three-year average of revenue receipts *plus* capital expenditures, “special” WMA provided against holding of Government

securities and overdrafts up to ten consecutive days within limits linked to normal WMA limits. Credit to banks and financial institutions, including primarily dealers, is typically in the nature of refinance against government securities - besides NABARD enjoys two lines of support, General Line of Credit (GLC I), against loans to commercial and state co-operative banks for agricultural loans and GLC-II as a financial institution *per se*. The investment portfolio of the Banking Department comprises investments in the share capital of the State Bank of India and other financial institutions⁶, Government paper held in the form of Treasury Bills and dated securities, including reverse repos, special securities by the Government in favour of the Reserve Bank for various purposes, including revaluation of RIBs and IMDs, Gold Bonds 1998 and foreign securities, including swaps.

The other assets of the Banking department include till money in the Banking department in form of rupee coins (which is a claim on the Issue department) and small coin (which is a claim on the Central Government), and “other” assets, including the value of gold held in Banking Department, premises, furniture and fittings, debit balances under various heads of expenditure pending transfer to Profit and Loss Account, loans and advances granted to members of the staff towards housing, purchase of motor vehicles *etc.* The Reserve Bank has now discontinued schemes of discounting various bills.

Analytical Approaches to Analysing RBI Balance Sheet

The methodology of analysing the Reserve Bank Balance Sheet has evolved over time along with the particular monetary policy framework in vogue. The Reserve Bank traditionally followed the so-called balance sheet approach (also called the structural or credit-counterparts approach) of examining the variations in money stock (RBI, 1961, 1977; Jadhav, 1994;

⁶ These include the Deposit Insurance and Credit Guarantee Corporation, National Bank for Agriculture and Rural Development, Discount and Finance House of India, Securities Trading Corporation of India, National Housing Bank, Bharatiya Reserve Bank Note Mudran (Private) Limited and Infrastructure Development Finance Company.

Jalan, 2002). A focused analysis of the Reserve Bank Balance Sheet began with the Reserve Bank's first Working Group on Money Supply (1961) which introduced a parallel construct of the monetary base, called 'government money', deemed useful for forecasting money supply. Although the case for compiling reserve money was revived by Gupta (1976), a number of Reserve Bank economists were critical of the underlying money multiplier theory terming it as unduly 'mechanistic' and unsuitable for 'operational' significance as it did not take the relationship between the monetary and real sectors into account (Shetty *et al*, 1976; Mujumdar, 1976; Chona, 1976; Madhur, 1976; RBI, 1977; Khatkhate, 1980). The monetary targeting framework, recommended by the Chakravarty Committee, transformed monetary analysis at the Reserve Bank by embracing the money multiplier approach, given the reasonable degree of association between reserve money and money supply (Rangarajan and Singh, 1984; RBI, 1985; Rangarajan, 1987).

While the two approaches are useful for tracking money supply, a third and more recent paradigm of monetary policy links the movements in the central bank balance sheet to the determination of interest rates through bank reserves (RBI, 2000). One methodology is to compute excess bank reserves as the sum of 'autonomous' and 'discretionary' liquidity, by partitioning the Reserve Bank's balance sheet flows on the basis of policy interventions (RBI, 2000; Sen Gupta *et al*, 2000). A second related methodology, is to decompose excess reserves into exogenous factors and forecastable factors, on the degree of predictability and policy position (RBI, 2002). To the extent that excess reserves is essentially an *ex ante* measure, the Reserve Bank has recently experimented with an *ex poste* measure of the "liquidity overhang" crystallised as the sum of the balances under repos under the Liquidity Adjustment Facility and the Market Stabilisation Scheme (RBI, 2004).

Accounting Practices

The Reserve Bank has traditionally followed the most conservative cannons of central bank accounting in its accounting practices (Table 4). The

Reserve Bank satisfies, by and large, the Code on Transparency of Monetary and Financial Policies framed by the International Monetary Fund (IMF), in terms of the following three criteria, *viz.*, i) releasing data in consonance with the IMF's SDDS standards, ii) disclosing balance sheet on a pre-announced schedule and iii) after a pre-determined interval, disseminating selected information on its aggregate market transactions. This is testified to by the Advisory Group on Transparency in Monetary and Financial Policies (Chairman: Shri M. Narasimham), set up by the Standing Committee on International Financial Standards and Codes (Chairman: Dr. Y.V. Reddy).

The Reserve Bank Central Board submits the annual audited accounts, together with a report on its working to the Central Government, after due approval in its August meeting, within two months of the end of the accounting year (*i.e.*, June 30) under Section 53(2) of the Reserve Bank of India Act, 1934. The formats of the profit and loss and reserve fund accounts are prescribed in the Reserve Bank General Regulations 1949 in pursuance of Section 58. Besides the annual accounts, a *Weekly Statement of Affairs* (WSA) of the Issue and Banking departments, as at close of business on Friday, is transmitted to the Central Government under Section 53(1) after due approval of the weekly meeting of the Committee of the Central Board, which usually meets on the Wednesdays. A consolidated statement on the assets and the liabilities of the Reserve Bank is published in the *Weekly Statistical Supplement* (WSS) to the monthly *Reserve Bank Bulletin* (along with reserve money), which is released the following Saturday while accounts of the Issue and Banking departments are published in the *Reserve Bank Bulletin* by the beginning of the following month. In terms of monetary impact, there is very little difference between the audited balance sheet and the weekly accounts because the suspense accounts net the surplus from the day-to-day operations pending appropriation, which is in the nature of non-monetary liabilities.

In view of the growing importance of the strength of the central bank balance sheet with financial liberalisation, these practices have been further tightened in the 1990s as shown in Table 9 (Tarapore, 1997). This has been

accompanied by greater transparency in terms of balance sheet disclosures, including prior commitment to certain balance sheet allocations, such as, the transfers to the central bank reserves. This is reinforced by data on forward assets/liabilities, money market operations and now, daily bank reserves. Although there is no explicit provision for maintaining reserves, the Reserve Bank has created a number of reserves under the enabling provisions of Section 47 of the Reserve Bank of India Act, 1934. Contingency reserves, in particular, are targeted at 12 per cent of the balance sheet by June 2005.⁷

Table 9: Reserve Bank's Accounting Policies – Recent Changes

Item	Standing Practice	Changes
1	2	3
Gold	Valued at 90 per cent of London price since October 1990.	
Foreign securities	Valuation at lower of book value or market price at exchange rates based on RBI Reference Rate.	Foreign exchange contracts are evaluated half- yearly since 1995-96.
Foreign currency transaction	Valued at RBI Reference Rates.	Frequency changed to weekly since 1996-97.
Government securities	Lower of book value or rates based on yield curve, with depreciation charged against current income.	At market rate, if available since 1996-97.
Profit/loss on sale of securities	Profit/loss booked only on redemption or when accumulated sales proceeds exceed book value of the entire lot in that category.	Accounted for each transaction since 1997-98.

Source: RBI Annual Reports.

(b) Balance Sheet Dynamics

The flows in the Reserve Bank balance sheet emanate from its regular central banking functions and the consequent monetary operations undertaken to steer monetary conditions to their desired objectives. We now turn to the impact of central bank operations using the Reserve Bank as a case study. For the sake of expository convenience, we divide the operations of the Reserve Bank into two broad categories: regular operations and monetary operations.

⁷ This is in line with the recommendations of the Informal Group (Chairman: V. Subramanyam) which proposed a cover of 5 per cent of balance sheet, for risks for a 10 per cent volatility in prices of domestic assets and foreign securities because of monetary /exchange rate policy compulsions; 5 per cent, for revaluation of foreign assets and gold; and 2 per cent, for systemic risks and requirements relating to central bank development functions (Reddy, 1997).

Regular Operations

Issuer of Currency

The impact of cash demand on the Reserve Bank Balance Sheet essentially depends on the form in which it is financed. For instance, cash demand could be set off by public expenditure which is funded by monetisation - the increase in currency on the liability side would, thus, be matched by the Reserve Bank's primary support to the Centre on the asset side without any change in bank liquidity *per se*. Alternately, the banking system would have to fund cash flows as currency leakage from the banking system to the extent it is held by the public as a direct claim on the central bank. If cash drawals are accommodated by changes in bank reserves, there is no change in the size of the balance sheet (and reserve money) although a decline in excess reserves could put pressure on interest rates. If the banking system has to take recourse to the Reserve Bank either through the standing facilities or repo operations, there would be a similar expansion in the balance sheet (and reserve money) without any change in bank liquidity or interest rates.

Banker to Government

The impact of the public finances upon the Reserve Bank Balance Sheet depends not only on the fiscal position but also on the form of financing the fiscal deficit. If the fiscal gap is met by resource mobilisation from the banking system, liquidity conditions change because funds would have to be diverted from competing uses to the Government. In case the Government takes direct recourse to the Reserve Bank, the impact of the Government deficit on liquidity conditions depends on the end-use of Government spending. Illustratively, if the money is utilised to fund redemption of past public debt, which are largely held by banks, there would actually be an increase in bank liquidity, which would ease monetary conditions. Similarly, if the money is spent on public works, there could be a significant increase in currency, without impinging on bank liquidity.

Besides, the accommodation available from the central bank in pursuance of its banker-to-Government and development functions, the Government's claim on the Reserve Bank stems from its entitlement to *seignorage*, reinforced by its position as sole owner. The critical difference is that direct support requires deliberate asset creation and is, therefore, monetary, while the profit transfer is out of income created out of past asset creation and hence, is non-monetary.

Banker to Banks

The sources and uses of the commercial banking system directly impact the Reserve Bank Balance Sheet through their current accounts at the central bank. If banks utilise their balances with the central bank to match fluctuations in cash demand, there would be a change in the composition of the liabilities of the Reserve Bank Balance Sheet (and reserve money) without affecting the size. If changes in bank reserves mirror changes in banks' investments in government paper and foreign currency or availment of standing facilities, there is a corresponding change in the size of the Reserve Bank balance sheet as well as a change in the composition of its assets and liabilities.

Management of Foreign Exchange Reserves

The flows in the net foreign assets of the Reserve Bank reflect the interplay of three sets of factors: i) foreign currency operations, essentially with a view to building up foreign exchange reserves and stabilising the foreign exchange market, ii) aid receipts by the Government, and iii) income generated by foreign currency assets.

The purchase or sale of foreign currencies from authorised dealers (essentially, banks) result, as a first step, in a change in the foreign currency portfolio of the Reserve Bank with a corresponding change in bank reserves. This, *ipso facto*, implies a change in the size of the Reserve Bank Balance Sheet (and reserve money and bank liquidity). On the other hand, since the Reserve Bank routes the rupee equivalent of aid receipts to the Government

while adding the foreign currency to the foreign exchange reserves, there is no monetary effect. The income on foreign currency assets also add to foreign exchange reserves but do not have a monetary impact as they are appropriated into the income from foreign sources sub-account in the non-monetary Other Liabilities account which are a claim of the Reserve Bank on itself.

The revaluation of the net foreign exchange assets of the Reserve Bank depends on the change in prices as well as the changes in the exchange rate. The revaluation in foreign currency assets arising out of changes in exchange rates are money-neutral by transfer to the Currency and Gold Reserve Account (CGRA) (which is a constituent of the non-monetary Other Liabilities). There is, thus, no monetary or profitability impact although the size of the balance sheet changes with implications for the rate of surplus because of higher contingency reserve requirements. The revaluation of foreign securities arising out of changes in market prices, is adjusted against current income in case of depreciation, while appreciation is not provided for; there is thus, no monetary impact although the size of the balance sheet is altered. In case of gold, the entire change in value, because of either price or exchange rate changes, is transferred to the CGRA, affecting the size of the balance sheet without impacting either reserve money or profitability.

Table 10: Balance Sheet Disclosures by the Reserve Bank

Item/year introduced	1992	1993	1994	1995	1999
1	2	3	4	5	6
Notes to Accounts	√				
<i>Details of</i>					
Sources of Income	√				
Domestic Income				√	
Income from OMO					√
Foreign Income				√	
Expenditure	√				
Interest Payments	√				
Other Assets/Liabilities			√		
Contingency Reserves		√			
Investments in Shares of Subsidiaries/Associate Institutions				√	
Unrealised gains in foreign currency assets				√	

Source: RBI Annual Reports.

Monetary Operations

Changes in Reserve Requirements

Changes in reserve requirements alter the composition and profitability of the balance sheet (and reserve money) as well as bank liquidity as summarised in Table 11. A change in the cash reserve ratio (CRR) alters the ratio of currency and reserves on the liability side. The impact on the asset side depends on the particular monetary environment. For example, if the CRR is raised to sterilise the impact of capital inflows, there would be a shift in favour of net foreign assets. Second, if CRR is raised in order to tighten monetary conditions to stem capital outflows, the market liquidity gap generated by the mix of higher reserve requirements and drawdown of foreign currency assets is likely to be funded by an increase in net domestic assets either through reverse repos or higher recourse to standing facilities. Finally, a reduction in CRR is almost always associated with a reduction in domestic assets as banks either invest the release of resources in repos or redeem standing facilities.

Table 11: Impact of Cash Reserve Ratio Changes on the Reserve Bank Balance Sheet

Action	Liquidity Impact			Monetary Conditions			Balance Sheet Impact			
	NDA	NFA	RM	Interest Rate	Exchange Rate	Payout on CRR balances	Income from		NFA	
							NDA	NFA		
	Direct	Valuation	Direct	Valuation						
1	2	3	4	5	6	7	8	9	10	11
Contain monetary effect of inflows	↔	↑	↑	↑	↔	↑	↔	↓	↑	↔
Tighten monetary policy with outflows	↑	↔	↑	↑	↔	↑	↑	↓	↔	↔
Ease monetary policy	↓	↔	↓	↓	↔	↓	↓	↔	↔	↔

NDA: Net Domestic Assets; NFA: Net Foreign Assets

The impact of reserve requirements on central bank profitability also depends on the monetary circumstance. First, the payout in the form of interest on CRR balances is a charge on income. Secondly, a change in the ratio of domestic to foreign assets affects central bank income to the extent of the differential between domestic and international interest rates. Finally, a hike in CRR reduces the value of government paper and hence, profitability, although the reverse does not hold because appreciation is ignored under the extant prudential norms.

Open Market Operations

The impact of OMO on the central bank balance sheet (and reserve money) is essentially situation-specific as summarised in Table 12. When OMO, especially repo/reverse repos under the Liquidity Adjustment Facility (LAF), is necessitated by changes in demand for either currency or bank reserves, there would be a corresponding change in the size of the balance sheet (and reserve money). In case, OMO is driven by capital flows, there is no impact on the balance sheet size (and reserve money) although monetary conditions in terms of money market rates and exchange rates could be affected. In each case, the composition of the balance sheet (and reserve money) in terms of net domestic and foreign assets would undergo a change depending on the operations involved.

Table 12: Impact of Open Market Operations on the Reserve Bank Balance Sheet

Action	Liquidity Impact			Monetary Conditions			Balance Sheet Impact			
	NDA	NFA	RM	Interest Rate	Exchange Rate	Payout on CRR balances	Income from		NFA	
							NDA	NFA		
	Direct	Valuation	Direct	Valuation						
1	2	3	4	5	6	7	8	9	10	11
Contain monetary effect of inflows	↓	↑	↔	↑	↔	↔	↓	↓	↔	↔
Tighten monetary policy with outflows	↓	↔	↓	↑	↔	↔	↑	↓	↔	↔
Ease monetary policy	↑	↔	↑	↓	↔	↔	↑	↔	↔	↔
Excess demand for bank reserves, due to strong credit demand	↑	↔	↑	↓	↔	↔	↑	↔	↔	↔
Currency expansion	↑	↔	↑	↓	↔	↔	↑	↔	↔	↔

NDA: Net Domestic Assets; NFA: Net Foreign Assets

In terms of profitability, there are two effects: direct and indirect. In case Government securities held (sold) outright, the Reserve Bank earns (foregoes) interest income from the Government. It also incurs profits/losses in the conduct of outright open market sales. In case of LAF operations, the Reserve Bank earns (pays) interest to the counterparties, *viz.*, commercial banks and primary dealers, in case of reverse repos (repos). Besides, tightening monetary conditions results in a depreciation of the Government securities portfolio, which would have to be accounted for against current income.

The scope of open market operations is circumscribed by the provisions of the Reserve Bank of India Act, 1934. The Reserve Bank cannot pay interest on Government balances or on bank balances, in excess of CRR stipulations, borrow clean beyond the paid-up capital of Rs.5 crore or issue paper in its name. Since the Reserve Bank cannot pay interest on bank balances, over and above CRR stipulations or borrow more than its paid-up capital, repo (reverse repo) operations, which are essentially collateralised borrowings (lendings) to absorb (inject) market liquidity have to be camouflaged as two-leg sell-buy

(buy-sell) outright transactions in the underlying Government securities. There is thus, an asymmetry in the scope of repos (limited to the Reserve Bank's holding of Government securities) and reverse repos (limited, technically, only by the stock of non-monetised public debt). Besides, since the Government cannot receive interest on surplus balances with the Reserve Bank, it typically 'buys back' Government paper from the central bank (up to Rs.10,000 crore) for the period of surplus and saves the interest payment. This means if capital flows do not follow the seasonality of the Government expenditure and the Centre runs a surplus, the Reserve Bank needs to have a sufficient stock of Government paper to transfer to the Government.

It is in this context that the Reserve Bank's Working Group on Instruments of Sterilisation proposed the institution of a Market Stabilisation Scheme (MSS), in which the Government would issue paper to mop up liquidity generated by capital flows and park the proceeds with the Reserve Bank. The monetary impact of the accretion to the Reserve Bank's foreign assets, arising out of the absorption of surplus capital flows is thus nullified by the decline in the Reserve Bank's net credit to the Centre, because of the accretion to the Centre's cash balances with the Reserve Bank. Although it is money neutral, the MSS enlarges the Reserve Bank Balance Sheet because the proceeds are immobilised in a separate identified account within the head of the Centre's balances with the Reserve Bank, unlike in the case of traditional open market operations which shrink the balance sheet. While the impact of the MSS on the Reserve Bank's income is limited in terms of income, the central bank's rate of surplus declines because the consequent increase in the size of the balance sheet requires higher allocations to be made in terms of Contingency Reserves.

Refinance Facilities

An increase (reduction) in standing facilities in order to match either currency expansion (contraction) or excess demand (supply) of bank reserves results in a change in the size of reserve money.

Bank Rate/ Repo Rate

Changes in the policy rates, viz., the Bank Rate and the repo rate impact central bank income in terms of i) receipts from the standing facilities, and ii) outgo on account of interest payable on CRR balances (in case of the Bank Rate) and net repos under the LAF (in case of the repo rate) as summarised in Table 13. The impact of interest rate signals from the Reserve Bank on the interest rate structure feed back into the balance sheet (and profitability) through revaluation of investments in government paper.

Table 13: Impact of Bank Rate/Repo Rate Changes on the Reserve Bank Balance Sheet

Action	Liquidity Impact			Monetary Conditions			Balance Sheet Impact			
	NDA	NFA	M ₀	Interest Rate	Exchange Rate	Payout on CRR balances	Income from		NFA	
							NDA	NFA	Direct	Valuation
	Direct	Valuation	Direct	Valuation						
1	2	3	4	5	6	7	8	9	10	11
Contain monetary effect of inflows	↔	↔	↔	↓	↔	↓	↑	↔	↔	↔
Tighten monetary policy with outflows	↔	↔	↔	↑	↔	↑	↑	↓	↔	↔
Ease monetary policy	↔	↔	↔	↓	↔	↓	↓	↔	↔	↔

Having discussed the structure and dynamics of the Reserve Bank balance sheet, let us now turn to an analytical chronicle of its evolution, insofar it has a bearing on the macroeconomic developments in India.

IV. The Reserve Bank Balance Sheet and the Macroeconomy

Periodisation Scheme

It is appropriate to track the transformation in the Reserve Bank Balance Sheet in terms of phases in terms of changes in the conduct of monetary policy. Clubbing the formative years of central banking till the inception of the

planning process (*i.e.*, 1935-50), an analysis of the vicissitudes of the monetary strategy allows us to discern three logical phases over the post-Independence period (*viz.*, 1950-2004):⁸

- Foundation Phase (1951-69),
- Phase of Social Control (1970-90),⁹ and
- Phase of Financial Liberalisation (1991 onwards),

The foundation phase saw the Reserve Bank play a key supportive role in the nation-building process adopted by the Five Year Plans. The entire financial system came to be geared to funding the fisc in the phase of social control in the 1970s and 1980s, beginning with the nationalisation of 14 banks in 1969. The 1990s were, on the other hand, marked by the process of financial liberalisation, which gathered momentum after the balance of payments crisis of 1991.

This periodisation is roughly borne out by the data. A logical indicator of the changing course of central banking in the Indian context is the size of the Reserve Bank balance sheet, scaled by the GDP at market prices (Chart 1). Another reasonably good indicator turns out to be the rate of surplus transferred to the Central Government of the Reserve Bank balance sheet (Chart 2). As the share of establishment and other expenditure in the Reserve Bank operations remain a negligible fraction of the balance sheet, the governing explanation of the Reserve Bank's rate of surplus emanates from the changing macroeconomic environment (Table 14). While the conduct of monetary policy most certainly did not consciously target central bank profitability, the movements in the

⁸ The Reserve Bank began to gradually assume the standard central banking functions in the mid-1930s. The Reserve Bank took over the management of currency from the Controller of Currency in April 1935 and began to issue notes in January 1938. An agreement with the Secretary of State for India in Council on April 5, 1935 determined the terms and conditions of services as banker to the Government, under Section 21, of the Reserve Bank of India Act. After the emergence of Provincial Autonomy in April 1937, the central bank entered into similar agreements with the Provincial Governments.

⁹ Our periodisation is largely in line with Malhotra (1990) and Jadhav (2003), with the difference that our phase of social control covers the phases of expansion and consolidation and diversification. Our decision to club the two phases is guided by the fact that incipient attempts at financial sector reforms during the 1980s do not seem to have significantly affected the macroeconomic outcome.

Reserve Bank's rate of surplus does appear to reflect the turns in the monetary trends in the Indian economy over the years.

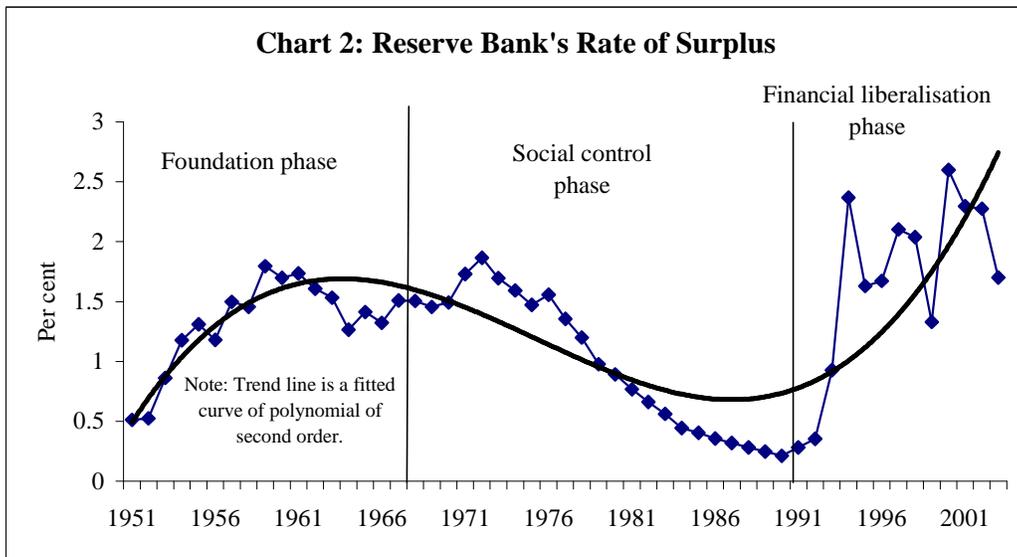
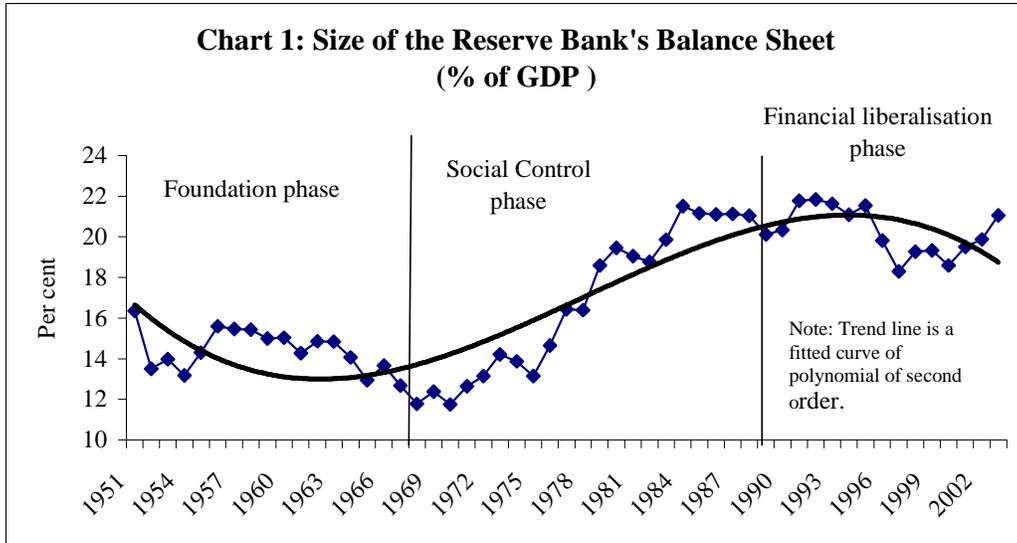


Table 14: Select Establishment and Other Expenditure

(Per cent of balance sheet)				
Item	1935-50	1951-69	1970-90	1990-2003
1	2	3	4	5
Establishment	0.1	0.1	0.2	0.2
Agency Charges	0.0	0.0	0.2	0.2
Security Printing (Cheque, Note forms <i>etc.</i>)	0.0	0.0	0.1	0.2
Miscellaneous Expenses	0.1	0.9	0.0	0.0
Total	0.3	1.1	0.5	0.6

Source: RBI Annual Reports.

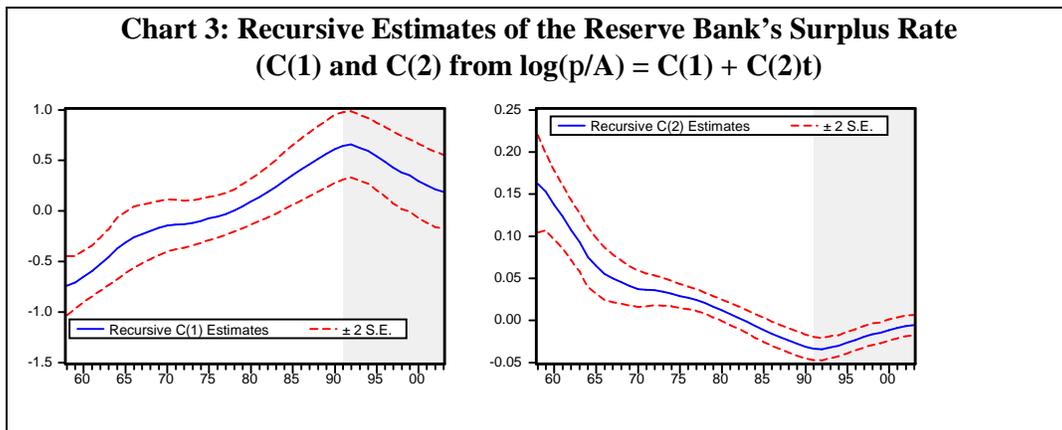
We have subjected the notion of these *a priori* breaks to formal statistical testing. When we concentrated on the trend rate of surplus and estimated a linear trend equation, the multiple Chow's test confirms a break in the data on the Reserve Bank's rate of surplus in 1971, close to our partition of 1969 between the first and second phases (Table 15).

Table 15: Break in the Trends in the Surplus Rate of the Reserve Bank - Results from Multiple Chow's Test

Break at	Chow's F	p-values
1	2	3
1955	2.21	0.12
1956	2.20	0.12
1957	2.12	0.13
1958	2.11	0.13
1959	2.04	0.14
1960	2.14	0.13
1961	2.18	0.12
1962	2.26	0.12
1963	2.23	0.12
1964	2.15	0.13
1965	1.82	0.17
1966	1.74	0.19
1967	1.61	0.21
1968	1.75	0.19
1969	1.94	0.15
1970	2.15	0.13
1971	2.48	0.09
1972	3.29	0.05
1973	4.61	0.02
1974	6.08	0.00
1975	7.82	0.00
1976	9.83	0.00
1977	13.25	0.00
1978	17.18	0.00

Note: The basic equation, *viz.*, $\log \pi/A = a + bt$ is estimated over the interval (1950, 2002) with the sub-samples spanning over (1955, 1990), where π is the RBI's surplus and A is RBI's assets.

A second test is the recursive estimation, which traces the evolution of estimates for any coefficient as more and more of the sample data are used in the estimation. Chart 3 presents a plot of selected coefficients in the equation for all feasible recursive estimations, along with two standard error bands around the estimated coefficients. Since the coefficients display significant variations as more data is added to the estimating equation, there is a strong indication of instability in the trend of the rate of surplus. This confirms a break in 1991, which is again the point of departure between the second and third phases.



Having confirmed the periodisation scheme, let us now move to a chronicle of the Indian economy to relate the macroeconomic outcome to specific features of the Reserve Bank balance sheet.¹⁰

Formative Years (1935 – 1950)

The Reserve Bank was tried and tested at birth (RBI, 1970; Goldsmith, 1983). A cheap money policy in the wake of the Depression followed by a large build-up of sterling balances with the Reserve Bank as a result of war expenditures by the American and British forces in the Indian sub-continent began to feed inflation by the mid-1940s (Table 16). The latter half of the 1940s also saw a number of shocks beginning with the partition of the country

¹⁰ For a detailed commentary on the Indian economy, see Joshi and Little (1992).

in August 1947, followed by the first devaluation of the Rupee in September 1949, in tandem with a devaluation of the sterling and a sudden jump in raw material demand arising out of the Korean War. As a result, a post-war easy money policy in support of reconstruction had to be reversed to rein in inflation.

Table 16: Inflation in the 1930s and 1940s

Period	Growth Rates			Ratio of RBI's Foreign Assets to Domestic Assets	(Per cent)
	GDP	WPI	Money		Currency to GDP
1	2	3	4	5	6
1936-40	1.3	4.3	9.6	39.1	8.0
1941-45	1.0	18.1	37.8	117.2	12.5

Source: RBI (1954) and Sivasubhramanium (2000) for the GDP series and the inflation rate.

In tandem, the size of the Reserve Bank Balance Sheet enlarged from 10.2 per cent of GDP in 1935-36 to 21.6 per cent in 1944-45 with the accumulation of sterling balances. The rundown of sterling balances in order to pay for the transfer of power and meet the deficit in hard currency areas was, however, substituted by a higher monetisation of public debt. The Reserve Bank's rate of surplus began to climb in the early 1940s reflecting the war-time hardening of interest rates and the concomitant increase in the share of the Government in the central bank surplus with the advent of war (with the share of dividends declining steadily to 1.5 per cent of net disposable income by June 1944 from 10.4 per cent in June 1940). Profitability, however, declined since the late 1940s, with the softening of interest rates, as most central banks eased monetary conditions in order to aid post-war reconstruction.

Foundation Phase (1950-1969)

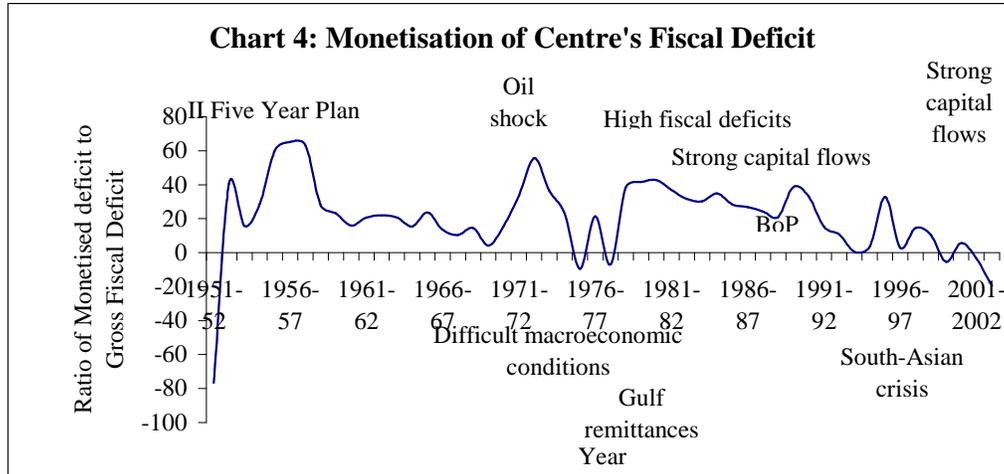
India, like most developing economies, adopted the path of planned economic development in the 1950s and the 1960s. The role of the Reserve Bank in the planning process was charted out in the First Five-Year Plan (1951): "...Central banking in a planned economy can hardly be confined to the regulation

of overall supply of credit or to a somewhat negative regulation of the flow of bank credit. It would have to take on a direct and active role, first in creating or helping to create the machinery needed for financing developmental activities all over the country and secondly, ensuring that the finances available flow in the directions intended...”.

The concomitant concept of “development central banking” involved a three-pronged strategy of developing an institutional framework of industrial financing alongside the extension of rural credit and designing concessional financing schemes for economic development (Singh, Shetty and Venkatachalam, 1982).¹¹ As a result, the Reserve Bank’s exposure to the financial system began to enlarge with investments in the equity of the newly constituted financial institutions and the State Bank of India (1955), higher refinance, especially against rural credit and the institution of national funds to advance lines of credit to financial institutions.

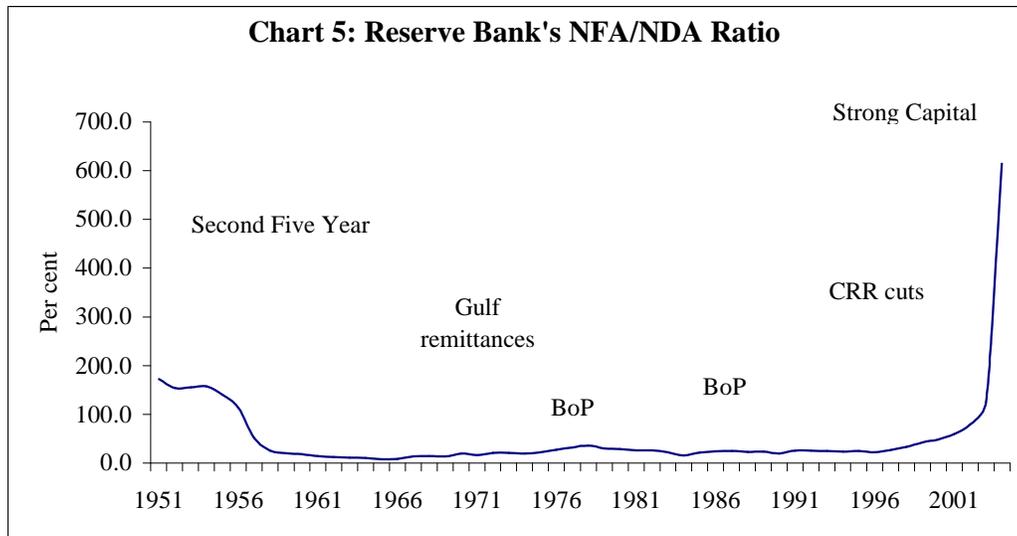
A natural corollary of the process of state-led development was the gradual increase in the Government’s demand for funds. Deficit financing, for example, accounted for as much as 25 per cent of the Second Five-Year Plan outlay, up from 13.3 per cent during the First Five Year Plan reflecting the widespread consensus that public investment could spur growth - although there were certainly voices of dissent as well (Sen, 1951; Rama Rau, 1960; Chandler, 1962; Narasimhan, 1968) (Chart 4). The fiscal deficit exacerbated in the 1960s with the levelling-off of foreign aid and the increase in defence expenditure in the wake of conflicts, followed by serious droughts in the mid-1960s, resulting in a second devaluation of the Indian Rupee in June 1966.

¹¹ Including the Industrial Finance Corporation of India (1948), for medium- and long-term finance, Refinance Corporation of India (1958), to provide banks refinance against industrial loans, Industrial Development Bank of India (1964), the apex term-lending institution (which also took over the Refinance Corporation) and the Industrial Reconstruction Corporation of India (1971), to fund the revival of sick industries. The Reserve Bank also played an active role in setting up a network of State Financial Corporations to meet the credit needs of local medium- and small-scale industries in the early 1950s. The Reserve Bank also subscribed 50 per cent of the initial capital of the Unit Trust of India (1964).



Large-scale imports, necessary for the process of industrialisation envisaged in the Second Five-Year Plan, resulted in a sharp drawdown of the foreign exchange reserves from the mid-1950s. The composition of the Reserve Bank Balance Sheet thus changed quite dramatically by the late 1950s, with net foreign assets falling from an average of 149 per cent of net domestic assets during 1951-56 to 23.7 per cent during 1957-62 (Chart 5). The proportional reserve system, which required that 40 per cent of the note issue had to be backed by foreign assets (including gold) was gradually replaced by a minimum requirement of Rs.200 crore.¹²

¹² The Reserve Bank of India (Amendment) Act, 1956 required that note issuance to be backed by Rs.400 crore in foreign securities and Rs.115 crore in gold and bullion. The value of gold was revalued from Rs.40 crore to Rs.118 crore at the price agreed by the IMF at the time of the September 1949 rupee devaluation. The Reserve Bank of India (Amendment) Act, 1957 diluted the minimum holding of gold, bullion and foreign securities to Rs.200 crore (with at least Rs.115 crore in gold) with the Central Government empowered to even waive this nominal requirement of foreign securities. In view of the scarcity of foreign exchange, the Foreign Exchange Regulation Act of 1947 was made permanent in 1957.



With the Government taking increasing recourse to the Reserve Bank, there emerged a practice of automatically creating *ad hoc* Treasury Bills in favour of the Reserve Bank to the extent of the shortfall in Government balances.¹³ The ceiling on the Reserve Bank's investments in government paper (and maturities thereof) in the Banking department in terms of capital, reserves and deposit liabilities had already been removed in 1951. In order to avoid problems of roll-over in view of sustained budgetary requirements, the Reserve Bank began to fund *ad hocs* into marketable securities which could be offloaded to the market in due course by 1959, especially as the Banking Regulation Act of 1951, for example, was amended in 1962 to raise the minimum statutory liquidity requirement to 25 per cent of banks' eligible demand and time liabilities from the original 20 per cent, in order to provide a

¹³ The Reserve Bank is authorised to grant ways and means advances to the Government repayable not later than three months from the date of making the advance under section 17(5) of the Reserve Bank of India Act. The Reserve Bank and the Ministry of Finance agreed in early 1955, that whenever the cash balances of the Government fell below Rs. 50 crore, *ad hoc* Treasury bills would be created in favour of the central bank to restore the Central Government's cash balances to Rs. 50 crore. The then Finance Minister, Shri T.T. Krishnamachari, did assure the Reserve Bank that it would be the duty of the Finance Ministry to formulate its proposals for borrowing and deficit financing in consultation with the Reserve Bank but as subsequent history shows, a seemingly innocuous operational arrangement opened up the floodgates of automatic creation of *ad hocs* to finance the Government deficit (Rangarajan, 1993).

captive audience for government paper.¹⁴ In case of State Governments, an increase in the limit for clean advances was reinforced by the introduction of another facility of special advances against the pledge of government securities in April 1953.

Although inflation was still believed to be structural, the central bank was not unaware of the potential for deficit financing to put pressure on prices.¹⁵ Reserve requirements were enlarged from the original levy of a daily minimum of 5 per cent of demand liabilities and 2 per cent of time liabilities to between 5 and 20 per cent of demand liabilities and 2 and 8 per cent of time liabilities on an average basis (1956) and thereafter between 3 and 15 per cent of demand and time liabilities (1962). Additional reserve requirements were, in fact, imposed between March-November 1960, as the monetary expansion began to feed inflation.

The size of the Reserve Bank balance sheet declined to 13.2 per cent of the GDP at current market prices during the 1960s from 14.8 per cent during the 1950s and 15.1 per cent during 1936-47. This reflected the gradual spread of banking habits with the expansion of the banking network during the foundation phase, inducing a shift from cash to the banking channel.

As the domestic interest rates in relation to the international interest rate were relatively higher during the latter half of the 1950s than during the first half of the 1950s, the switch in favour of domestic assets, boosted the rate of

¹⁴ This was supported by several measures to tighten the grip of the planning process over the banking system, including the introduction of the Credit Authorisation Scheme in 1965, under which approvals for large-size working capital limits required prior central bank approval, extension of selective credit controls, and the regulation of deposit and lending rates under Sections 21 and 35A of the 1949 Banking Regulation Act, which took root in the early 1960s. Another step to contain the interest cost of public debt was to sell Treasury Bills on tap (with a discounting facility) at a fixed price effective July 1965, discontinuing the auctions, introduced as early as 1917.

¹⁵ With a gradual increase in inflation during the second half of the 1960s, there was a relook at the process of deficit financing. In February 1966, Governor Bhattacharyya stressed that, "...The monetary assets of the central bank are both domestic and foreign assets; though in terms of their impact on money creation with the economy there may not be (superficially at least) any distinction, the precise manner in which the expansion is given effect to is clearly important. To the extent to which the expansion takes place as a result of accumulation of foreign assets, there is, in a manner of speaking a built-in adjustment mechanism in the form of the potential created for financing an import surplus at a subsequent stage. But where the expansion in the assets takes the form of domestic assets the responsibility of central banking policy to watch the impact of the monetary expansion is all the greater...There is always the possibility of the monetary expansion itself turning out to be larger than anticipated...- and the safe level of deficit financing being breached...".

the Reserve Bank's surplus to 1.6 per cent of the asset base during 1957-62 from 0.9 per cent during 1951-56. Since the national funds were funded out of central bank income, there was a corresponding reduction in the rate of surplus.

Phase of Social Control (1970-1990)

Although the foundation phase ended on a sombre note, the strategy of social control, which began with the nationalisation of commercial banks in 1969, continued to be strengthened in the 1970s. The entire monetary and banking system came to be geared to carrying out of the objectives of the Government as the "primary entrepreneur of the economy" through an inter-linked programme of bank nationalisation, directed credit and concessional financing (RBI, 1985).¹⁶ The Reserve Bank continued to provide substantial accommodation to the Government, especially during the first half of the 1970s in view of the difficult macroeconomic challenges fostered by war (1971), drought (1972) and the oil price shock (1973). The brief respite in the latter half of the 1970s following strong remittances, especially from the Gulf, especially after the launch of the Foreign Currency (Account) [FCNR(A)] scheme in November 1975 (-August 1994) with the Reserve Bank's exchange rate guarantee, was dissipated by the early 1980s, when the severe strain on the balance of payments, primarily as a result of the second oil shock, required India to seek a line of credit with the IMF under its Extended Fund Facility in 1981-82. The fiscal gap began to widen further in the 1980s - the gross fiscal

¹⁶ The range of sector-specific refinance facilities offered by the Reserve Bank began to expand by the mid-1960s. The method of provision of refinance and its cost varied from a slab basis (1960-64), the net liquidity ratio (1964-75) and a basic refinance limit of 1 per cent of banks total demand and time liabilities (1973-8). The Reserve Bank offered advances against Government and other authorised securities (a facility which persisted into the mid-1990s); against demand promissory notes executed by banks supported by i) usance promissory notes of their clients (under the Bill Market Scheme of 1952-70 and the subsequent Bill Rediscounting Scheme; ii) export credit of various forms (since 1963); iii) agricultural credit (since 1975), which, along with the funds under the national funds for agriculture, is presently routed through NABARD (since 1982) and iv) import financing (since July 1978). The Reserve Bank also administered the Credit Guarantee Scheme, introduced in July 1960, to guarantee advances by banks and other institutions to small-scale industries. While some degree of concessional finance was necessary, it is a moot point if the Reserve Bank should have routed high-powered money through scheduled commercial banks for purchase of foreign exchange by Indian shipping companies for buying ships abroad under the Ships Acquisition From Abroad Under New Scheme (SAFAUNS) during 1977-80.

deficit averaged 7.7 per cent of GDP in the latter half of the 1980s - searing the macroeconomic balance (RBI, 2003).

The fiscal dominance on monetary policy deepened in the 1980s. Voluntary subscriptions were hard to come by despite the hike in interest rates on government paper during the 1980s. As a result, the Reserve Bank had to fill up the fiscal gap, with its net credit to the Government famously coming to account for 90 per cent of the monetary base in the 1980s, pushing up the ratio of monetisation to GDP almost double to 2.1 per cent during the 1980s from 1.1 per cent during the 1970s (Jadhav, 1994). The Reserve Bank began to lose control of its balance sheet as *ad hoc*s emerged as a mainstay of the Centre's fiscal deficit. By 1982, the Reserve Bank began to fund *ad hoc*s into an instrument called the 4.6 per cent special securities without any maturity, as it was becoming increasingly difficult to further offload gilts to the market.

By the early 1980s, it was clear that the increasing order of deficit financing, that was a natural result of the increasing scale of government, was beginning to spill over into inflation, especially as the output response was limited by structural constraints (Bhattacharyya and Lodh, 1974; Jadhav, 1994).¹⁷ Monetary expansion emanating from the monetisation of the fiscal deficit was clearly excessive, even accounting for a decline of the M_3 income velocity from 3.7 during the 1970s to 2.6 during the 1980s with the spread of the 'banking habits' in the economy. Besides, while the initial objective of creating a large network was achieved, it was apparent that the banking system was not able to allocate resources efficiently because the gradual extension of 'social control' had blunted the process of price discovery. This mood of cautious revisionism was exemplified in the report of the Committee to Review the Working of the Monetary System (Chairman: Sukhamoy Chakravarty), which proposed a degree of financial liberalisation to allow 'controlled' price competition among banks through deregulation of deposit and lending rates and

¹⁷ In February 1979, Governor Patel pointed out that: "...I am afraid this country of ours, great and blessed as it is, enjoys no such divine dispensation of immunity from monetary laws – which are after all, only reasonable approximations to the laws of supply and demand which at least business men should not belittle or deride..." (Patel, 1979).

development of financial markets beyond the basic recommendation of money targeting, which in itself made a case for fiscal discipline. Deficit financing was seen to exceed 'safe limits', preventing the Reserve Bank from achieving an acceptable order of inflation, taken at 4 per cent to reflect "changes in relative prices necessary to attract resources to growth sectors".

The ability of the Reserve Bank to combat the growing inflation was constrained by the shrinkage in its armory of monetary policy instruments with the gradual withering away of financial markets since the 1960s (Table 17) (RBI, 1985; Narasimhan, 1968; Mitra, 1967; RBI, 1985). Of the major tools of monetary policy, the efficacy of the Bank Rate was increasingly limited by the extension of the administered interest rate regime - although it is doubtful if it was particularly effective even earlier given the lack of developed money markets - and the scope of open market operations was circumscribed by the narrowness of the government securities markets. The Reserve Bank had to, therefore, repeatedly raise reserve requirements to contain the inflationary effect of deficit financing, pushing the combined statutory pre-emptions (along with statutory liquidity requirements) to over 60 per cent of deposit mobilisation by 1991, constraining banks' portfolio choices (Malhotra, 1990). This could not arrest the upward drift in the money multiplier to 2.7 during the 1970s from 1.9 during the 1960s, as the spread of branch banking in semi urban and rural areas pulled down the share of currency in broad money to 23.2 per cent as at end-March 1982 from 39.8 per cent as at end-March 1971.

Table 17: Monetary Policy Instruments

Instrument/Decade	1950s	1960s	1970s	1980s	1990s
1	2	3	4	5	6
Cash Reserve Ratio			√	√	√
Standing Facilities	√	√	√	√	Sector-specific refinance de-emphasised.
Credit Control	√	√	√	√	Phased out.
Open Market Operations	√	√	√		Reactivated 1991-92
Bank Rate	√	√	√		Reactivated 1997-98

Note: √ denotes the use of the instrument during the decade.

Source: RBI (2003).

The composition of foreign exchange reserves underwent a transformation after the breakdown of the Bretton Woods agreement in the early 1970s.¹⁸ The Reserve Bank traditionally maintained its foreign exchange reserves in pound sterling.¹⁹ After the fixed exchange rate system collapsed in August 1971, the Reserve Bank initially pegged the Rupee to the US dollar, thereafter to pound sterling and finally to a basket of currencies of India's major trading partners (September 1975 -March 1992), with the central bank targeting a band around the base value of Rs.18.3084 per pound. Simultaneously, the Reserve Bank began to deal in other currencies such as the US dollar (since October 1972), the Deutsche mark (since March 1974) and the Japanese yen (since end-May 1974) although sterling continued to be the intervention currency for another 20 years.

This strategy of neutralising the monetary impact of deficit financing, on the asset side, by the higher reserve requirements, on the liability side, began to inflate the Reserve Bank's balance sheet (as a proportion of GDP) from the mid-1970s. Notwithstanding the acceleration in the process of financial deepening after 1969, this reversed the declining trend in the size of the Reserve Bank Balance Sheet relative to GDP of the previous two decades. In the late 1970s, for example, the higher CRR impounded nearly Rs.2,000 crore of lendable resources from banks, amounting to about 10 per cent of the balance sheet as on end-March 1981. As a result, the ratio of bank balances to cash began to rise sharply in the latter half of the 1970s.

The Reserve Bank's rate of surplus actually recorded a sustained decline during the 1970s and the 1980s, again in contrast to the foundation phase. This reflected the impact of three inter-related factors. First, the composition of the Reserve Bank's balance sheet came to be heavily loaded in favour of *ad hoc*s during the 1970s and 1980s – barring a few years of strong reserve accretion in

¹⁸ Consequent upon the second amendment of the articles of the International Monetary Fund, the Reserve Bank received a part of the gold Rs.21.12 crore and also purchased a further Rs.21.13 crore in a non-competitive bid.

¹⁹ After India, like most of the sterling area countries, began to diversify its portfolio, the British Government entered into a three-year commitment, in September 1968, to compensate for the erosion in the value of the sterling vis-à-vis the US dollar, in return for a minimum sterling proportion.

the mid-1970s. This effectively implied that the bulk of the Reserve Bank's interest income was pegged to the interest rate on *ad hoc* Treasury Bills, left unchanged at 4.6 per cent since July 1974, in contrast to the periodic increases in the 1950s and 1960s. Secondly, the Reserve Bank increased its allocations to the national funds, which rose to an average of 10 per cent of the balance sheet during 1975-80 from 7.1 per cent of the balance sheet during 1971-75 in line with societal considerations. Thirdly, the share of the interest-bearing bank reserves component began to increase to 37.0 per cent of reserve money as at end-March 1990 from 4.3 per cent as at end-March 1971, with the sustained hike in reserve requirements. At the same time, the rate of interest on required reserves beyond the mandatory minimum of 3.0 per cent of banks' demand and time liabilities was raised steadily to 10.5 per cent by March 1990 from 4.75 per cent in June 1973, to cushion the impact of the hike in the CRR.

Phase of Financial Sector Liberalisation (1991 onwards)

After the payments crisis of 1991, the 1990s witnessed a comprehensive programme of financial liberalisation, with the deregulation of interest rates, withdrawal of balance sheet restrictions to allow a greater play of portfolio choice and liberalisation of the external sector, which transformed the Indian financial landscape. Although the twin objectives of monetary policy remain the pursuit of price stability and the provision of adequate credit to the productive sectors of the economy, the growing complexities of macroeconomic management increasingly required that the monetary policy formulation be based on multiple macroeconomic indicators rather than being predicated on a single monetary aggregate (RBI, 1998a; RBI, 1998b). The monetary policy operating procedure had to be recast comprehensively to hone up an array of indirect instruments to modulate liquidity conditions in consonance with the process of price discovery (Kanagasabapthy, 2001; Vasudevan, 2002). The Reserve Bank is able to influence the quantum of liquidity through a policy mix of open market (including repo) operations alongside changes in reserve requirements and standing facilities, reinforced by

interest rate signals, through changes in the policy rates (Bank/repo rates) which impact the price of primary liquidity (Reddy, 1997, 2001 and 2002).

The precise sequencing of changes in the Reserve Bank's monetary policy framework reflected the compulsions of the macroeconomic environment (RBI, 2003). The decade opened with a balance of payments crisis in 1991 requiring swift monetary and credit measures to contain demand, including import compression. With capital flows pouring in after macroeconomic stabilisation, the Reserve Bank had to absorb the excess foreign exchange in its balance sheet in order to maintain the external competitiveness of the economy, especially with the gradual floatation of the Indian rupee, in March 1993, and at the same time, contain the monetary impact to rein in inflation, which was rising to double digits.²⁰ Open market (including repo) operations were re-introduced in 1992-93 to sterilise the surplus capital flows. Although the Reserve Bank repeatedly emphasised its desire to reduce reserve requirements, which effectively acted as an indirect tax on the banking system, the CRR, nevertheless, had to be raised to impound surplus liquidity. It was only once inflation was reined by mid-1990s, that the Reserve Bank was free to pursue its medium-term goal of cutting the CRR to the statutory minimum, abetted by the fact that the onset of the domestic slowdown simultaneously required the easing of monetary conditions. This was further facilitated by the gradual phasing out of the automatic monetisation of the fiscal deficit.²¹ The parallel liberalisation of the interest rate structure

²⁰ On the recommendations of the Rangarajan Committee (1992), the Reserve Bank initially introduced the Liberalised Exchange Rate Management System (LERMS) in March 1992, in which 40 per cent of the exchange earnings had to be surrendered at an official rate determined by the Reserve Bank, which in turn was obliged to sell the foreign exchange only for essential commodities such as oil, fertiliser and life saving drugs, besides funding the Government's debt servicing obligations while the balance could be converted at market-related rates.

²¹ The Union Budget of 1994-95 announced the 'historic' decision to replace *ad hoc* Treasury Bills with a system of Ways and Means advances (WMA) by April 1997. A supplemental agreement between the Government and the Reserve Bank on September 9, 1994 stipulated that the net issue of *ad hocs* at the end of the year 1994-95 was not to exceed Rs.6,000 crore and that, if the net issue of *ad hoc* Treasury Bills exceeded Rs.9,000 crore for more than ten consecutive working days at any time during the year, the Reserve Bank would automatically reduce the level of *ad hoc* Treasury Bills, by auctioning Treasury Bills or selling fresh Government of India dated securities in the market. Similar ceilings at Rs.5,000 crore for the year-end and Rs.9,000 crore for the intra-year were stipulated for 1995-96 and 1996-97. The critical distinction between the present WMA scheme provided by the Reserve Bank to the Central Government and the earlier *ad hocs* is that the former are subject to an absolute mutually agreed limit and therefore, do not take the cumulative character of the latter. If the WMA crosses 75 per cent of the limit, the Reserve Bank could trigger off a fresh floatation of government securities depending on the prevailing monetary conditions.

enabled the Reserve Bank to re-activate the Bank Rate as a signaling device in 1997-98.

The composition of the Reserve Bank balance sheet changed dramatically during the 1990s reflecting the impact of financial liberalisation (RBI, 2004). The ratio of foreign assets to reserve money climbed to 111 per cent as at end-March 2004 from 7.8 per cent as at end-March 1990, reflecting both the scale effect of the sustained cut in reserve requirements as well as the substitution effect of sterilisation operations (RBI, 2002; RBI, 2003). The composition of the Reserve Bank's domestic assets has also changed with the phasing out of sector-specific facilities and the concessional finance available to development financial institutions out of the national funds in tune with the increasing market orientation of central banking. This effectively means that the Reserve Bank's domestic claims are increasingly sovereign in character, imparting an intrinsic strength to its balance sheet. As a result of the shift to indirect instruments of monetary control, the share of bank reserves in the overall liabilities has been coming down in the latter half of the 1990s to 13.1 per cent of overall liabilities as at end-June 2004 from 29.2 per cent of overall liabilities as at end-June 1995. Reflecting the changes in reserve requirements, the size of the Banking department relative to the issue departments has followed an inverted U curve in the last thirty odd years.

The process of financial liberalisation began to transform the behavioural relations between the various components of the Reserve Bank balance sheet. The intimate correlation between cash demand and the monetised deficit fostered by the deficit financing of public expenditure in the 1970s and the 1980s, for example, began to weaken as the fisc came to be increasingly funded by bank liquidity generated by capital flows.

The impact of monetary reforms on the rhythm in the Reserve Bank balance sheet has varied from time to time as is natural in a time of transition. Banks were allowed, for instance, to maintain required reserves on an average basis since 1992-93 to facilitate the management of their portfolio. Since inter-bank liabilities were subject to reserve requirements, cash surplus banks began

to switch from the inter-bank market to tap Treasury bills and repos, which would not attract CRR, on reporting Fridays, artificially compressing the Reserve Bank Balance Sheet and killing the inter-bank market. The decision to withdraw CRR on inter-bank liabilities, on the recommendation of the Sodhani Committee to facilitate the pricing of 14-day money, rekindled the inter-bank market on reporting Fridays and imparted a greater degree of stability to the Reserve Bank balance sheet. Secondly, Indian banks had long followed the Scottish practice of offering lines of credit to their *clientele*, thus taking on themselves the onus of cash management, which could be conveniently passed onto the central bank balance sheet through purchase (and discounting) of tap Treasury bills, with a discounting facility. The restrictions on cash credit in favour of term loans in the early 1990s and the phasing out of tap Treasury Bills in April 1997, buttressed by limits on banks' call money transactions, easing out of non-bank intermediaries from the inter-bank call money market and the simultaneous development of the non-Reserve Bank repo market now provides an incentive for banks and their borrowers to now frame their individual liquidity management strategies and insulates the central bank from day-to-day fluctuations in funds flows. Finally, the prescription of capital to risk-weighted assets (CRAR) requirements in 1992-93 often induces banks to switch to 'risk-free' bank reserves and/or repos. As a result, the size of the Reserve Bank (and reserve money) on March 31 is heavily influenced by banks' portfolio preferences, expanding on March 31, 2004 (in the event of a switch to excess reserves) and contracting on March 31, 2003 (because of large-scale repos).

The relationship between the central bank balance sheet and fluctuations in financial prices was driven home during the balance of payments crisis of 1991. As the Exchange Fluctuation Reserve (EFR) was drawn down to meet the mounting exchange losses under the FCNR(A) scheme after the devaluation of the Rupee in July 1991, it had to be replenished from the Contingency Reserve, which in turn was eroded to a nominal amount of Rs.859.1 crore as at end-June 1993. As a result, the Contingency Reserve itself had to be rebuilt in

the mid-1990s, taking advantage of a sharp increase in foreign income arising from the firming up of short-term interest rates in overseas markets (Table 18). This was backed by the institution of an Asset Development Reserve in 1997-98, in order to meet the internal capital expenditure, and investments in its subsidiaries and associated institutions. The need for adequate reserves is reinforced by the experience of 2004-05 when the upswing in the interest rate cycle cost the Reserve Bank as much as Rs.6,000 crore in terms of the associated depreciation of domestic and foreign securities.

Table 18: Reserve Bank's Capital Account

End-June	Capital Account	Reserves	Contingency Reserves (including Asset Development Reserve)	Exchange Fluctuation Reserve	Exchange Equalisation Account	Per cent to total assets	
						Capital Account	Memo Item: National Funds
1	2	3	4	5	6	7 = 1+2+3+4+5	7
1935	2.1	2.1				4.2	
1951	1.1	1.1				2.2	
1971	0.0	2.6				2.6	6.3
1991	0.0	5.2	4.5	2.9	4.4	17.0	4.7
1996	0.0	2.3	2.8	5.3	1.2	10.4	2.1
2003	0.0	1.3	11.7	10.0	0.1	23.0	0.0
2004	0.0	1.1	10.2	10.2	0.0	21.5	0.0

\$ Includes previous balances under the National Industrial Credit (Long-Term Operations) Fund.
Source: RBI Annual Reports.

The size of the Reserve Bank balance sheet continued to expand in the first half of the 1990s as the monetary impact of the accretion to the Reserve Bank's foreign assets on the asset side was sought to be neutralised by the increase in reserve requirements, more or less, in line with the earlier strategy of neutralising the monetised deficit. The ability of the Reserve Bank to trade the surpluses on the external account and the deficit on the Government account with the re-introduction of open market operations began to insulating its balance sheet from the switches in capital flows by the mid-1990s. The size of the balance sheet began to shrink in the latter half of the 1990s with the

sustained reduction in reserve requirements to ease liquidity conditions in response to domestic slowdown. This trend was, however, reversed in 2003-04 with the institution of the Market Stabilisation Scheme which pumps up the balance sheet by the amount of the proceeds parked by the Government with the Reserve Bank.

The profitability of the Reserve Bank during the 1990s has fluctuated in response to the various structural shifts in the operating procedure of monetary policy (Chart 6). The share of income from foreign sources in the Reserve Bank's total income is now substantial - although the interest differential between the domestic and international interest rates ensures that the ratio of foreign income to domestic income tends to be lower than the ratio of foreign assets to domestic assets (Table 19). The Reserve Bank's income from domestic sources is increasingly growing sensitive to fluctuations in financial prices. The resultant volatility in the income from open market operations imparts a greater degree of volatility to the Reserve Bank's balance sheet.

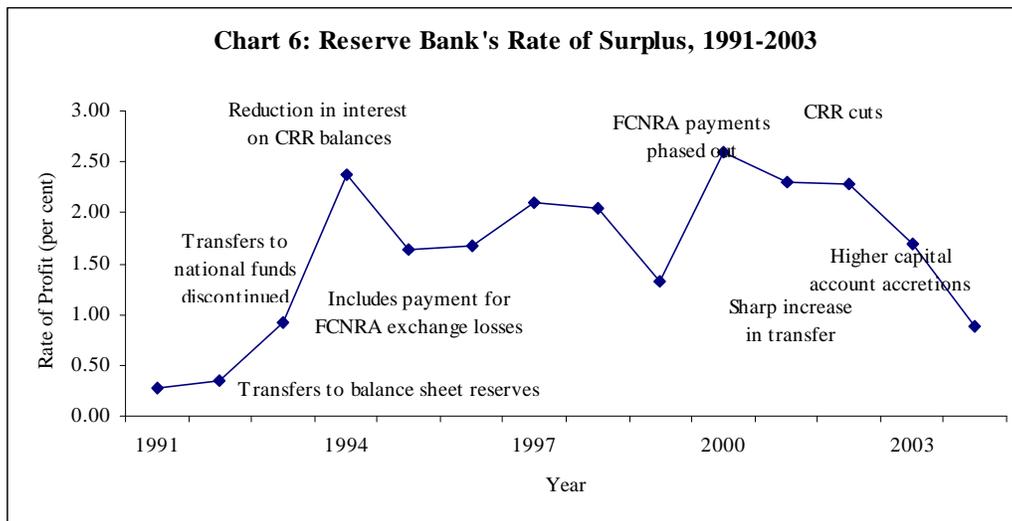


Table 19: Composition of Reserve Banks' Income

End-June	Domestic Income		Foreign Income	Per cent to total
	Total	OMO Profits		<i>Memo Item:</i> Interest Rates on Government Borrowing (per cent)
1	2	3	4	5
1997-98	59.5	3.8	40.4	12.01
1998-99	67.1	6.0	32.8	11.86
1999-2000	70.3	14.9	29.7	11.77
2000-01	53.7	0.4	46.2	10.95
2001-02	59.5	12.4	40.4	9.44
2002-03	57.6	20.7	42.4	7.34
2003-04	36.4	16.2	63.6	

Source: RBI Annual Reports.

The impact of monetary reforms on the Reserve Bank's rate of surplus has been non-linear primarily because the programme of financial liberalisation is essentially about removing the cross-subsidies which obfuscated the process of price discovery. What is important to appreciate is that the various drivers, irrespective of their diverse impact, have in common, an organic link with monetary reforms. On balance, the rate of surplus climbed in the first half of the 1990s reflecting three factors:

- Discontinuation of allocations to national funds (apart from a token contribution of Rs. one crore for each fund every year pending the amendment of the Reserve Bank of India Act, 1934), effective June 1992, in order to cut back on concessional finance;
- Acquisition government paper at market-related rates, far higher than the interest rate of 4.6 per cent earned on *ad hoc* Treasury Bills, especially as the weighted average interest rate on government borrowing rose to 13.75 per cent by 1995-96; and,
- Transfer of the quasi-fiscal costs of the exchange rate guarantee for FCNR(A) deposits, in terms of liabilities relating the exchange loss to the Government effective July 1, 1993, with the Reserve Bank transferring the correspondingly larger surplus to avoid fiscal implications between July 1993-August 1997.²² Although the Reserve

²² This correspondingly inflated the rate of profit from 1993-94 onwards - for instance, while the Reserve Bank transferred Rs.1500 crore to the Government during 1992-93 (July-June) after bearing a FCNR(A) exchange loss of Rs.2,570 crore, the higher surplus transfer of Rs.4,288 crore to the fisc, included a transfer of Rs.2,788 crore towards the FCNR(A) exchange losses. Reduction in interest paid on CRR balances, which along with the cuts in CRR, reducing the share of interest paid to scheduled commercial banks on additional eligible CRR balances to 42.5 per cent of total expenditure during 1993-2001 from 63.6 per cent during 1984-92.

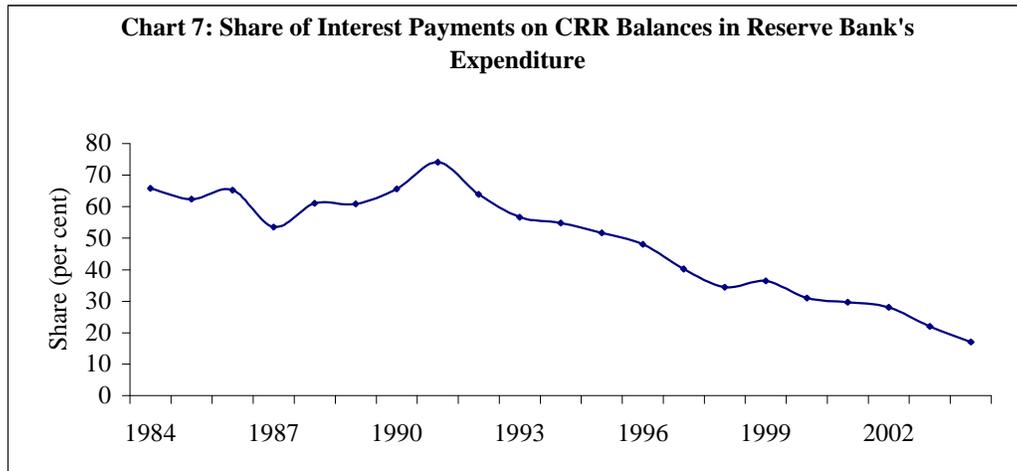
Bank continued to promote mobilisation of foreign currency deposits through bullet Resurgent India Bonds (1998-2003) and India Millennium Deposits (2000-), it no longer provides an exchange rate guarantee.²³

Similarly, the decline in the Reserve Bank's rate of surplus in the latter half of the 1990s driven by three factors:

- Interest rates on Government declined in the latter half of the 1990s. It is a measure of the pace of change that the drop in the Reserve Bank's rate of surplus during 2003-04 was largely contributed by the depreciation of the investment portfolio, following the turn in the interest rate cycle.
- Ratio of foreign currency assets in overall assets increased, reflecting the differential between domestic and international interest rates.
- Higher allocations were made to Contingency Reserves (and the Asset Development Reserve) since 1992-93 in order to strengthen the balance sheet.

This was partly moderated by the increase in domestic income with the conversion of 4.5 per cent special securities created out of *ad hoc* and tap Treasury Bills into marketable paper at market-related interest rates and a decline in interest payments on CRR balances as a result of the sustained cut in reserve requirements - although the rate of interest, which worked out to 2-3 per cent in the early 1990s was hiked to the Bank Rate (now 6.0 per cent) (Chart 7).

²³ The State Bank of India, which mobilised the RIBs and IMDs, typically swapped a bulk of the foreign currency with the Reserve Bank in exchange for government paper, thereby altering the central bank's ratio of domestic and foreign assets. At the time of redemption of RIBs, a reverse transaction took place. In case of exchange rate fluctuations, the Reserve Bank revalues the foreign currency on the asset side and parks the gains/losses in its Currency and Gold Revaluation Account on the liability side. The Government issues special securities of like amount in favour of the Reserve Bank and parks the monies received with the Reserve Bank in a maintenance of value account in the broad Other Liabilities account head. The transaction is non-monetary because i) the change in the RBI's NFA as a result of exchange rate fluctuations is offset by the transfer to the CGRA account in the Reserve Bank's net non-monetary liabilities (NNML) and ii) the increase in net RBI credit to the Centre as a result of acquisition of special securities is offset by the equivalent increase in the MoV account in the RBI's NNML.



V. Some Emerging Issues

It is difficult to present the distinct conclusions from an analytical documentation of this nature. At the same time, a survey of the Reserve Bank Balance Sheet raises several issues, with which we conclude our paper. To begin at the very beginning, there is the issue of adoption of international best practices in central bank accounting. It is recognised that the Reserve Bank already fulfils most of the material international accounting standards; there is, in fact, a tendency to err on the side of the caution - investments are marked at the least market valuation rather than the more conventional lower of market value and purchase price, which incidentally already applies for commercial banks.

A key point of the contemporary debate in accounting standards is the treatment of the “hidden” reserves in the central bank balance sheet. While income recognition of unrealised gains is useful for quantifying such reserves - and it is necessary to note that the Reserve Bank already discloses unrealised gains in foreign securities - it is not easy to discount central bank fears of fiscal pressures of sharing such resources with the Government as old women’s tales. It is, therefore, necessary to simultaneously promulgate restrictions on fiscal access to such reserves along with their valuation.

There is very little disagreement that greater transparency in monetary operations, in itself, strengthens the credibility of the monetary authority. Although the Reserve Bank's balance sheet is relatively opaque - the bulk of contingency reserves are parked under the head of other liabilities than reserves - transparency in terms of supplementary balance sheet disclosures, buttressed by the allied release of data on monetary operations and the capital account released at various frequencies, is now, more or less, in alignment with international best practices. At the same time, transparency is an on-going process - certain central banks already provide much more information regarding risk management (such as the BoE or the RBNZ which publishes value at risk data) and cost of operations by function (such as the Bank of Canada, BoE and RBNZ).

A final issue in this regard is the merger of the issue and banking departments into a single balance sheet, as is the case of practically every central bank, except for stray cases such as the Bank of England - the original model.²⁴ While there is some merit in the argument that delineation of the issue function as a separate balance sheet does impart a greater solidity to the Rupee, such restrictions could be very well imposed in a consolidated balance sheet as well (and are imposed in case of certain central banks). There is, thus, at the end of the day, very little material difference between the choices of carrying on with the weight of tradition or modernising to contemporary cross-central bank practices. It is interesting to note that for the Indian national accounting, while the Issue department is classified under 'public administration', the Banking department is taken under 'financing and insurance'.

The second set of issues revolve around the fiscal dominance of monetary policy, especially as the yardstick over the functional autonomy of the central bank in the Indian context is essentially measured in terms of its control over the balance sheet. The quest for limiting the automatic monetisation of the fiscal deficit is reaching its logical conclusion with the

²⁴ Even in this case, the Bank of England Act 1988 now allows for a single balance sheet as at the last day of the year.

Fiscal Responsibility and Budget Management Act, 2003 which prohibits the Reserve Bank from primary subscription to government paper after March 2006. While there is little doubt that the Reserve Bank is already able to control the form and timing of its accommodation to the Central Government, the critical question is whether monetary policy can ever really be independent of either the fiscal impact on liquidity conditions or for that matter, the liquidity impact on the interest cost of public debt. It needs to be emphasised that monetary management, however adroit, and monetary-fiscal co-ordination, however seamless, is no substitute for fiscal discipline at the end of the day. This is all the more important as the upward drift in the money multiplier, as a result of the sustained reduction in reserve requirements in the late 1990s, implies that the monetary impact of every unit of high-powered money is all the more higher.

A related issue is the claim of the Government on the Reserve Bank's net disposable income as its sole owner, which was so far overshadowed by the money financing of the fiscal deficit. Although the Reserve Bank of India Act, 1934, unlike most central bank legislation, does not mandate central bank reserves, the Reserve Bank has prudently built up a *corpus* to meet unforeseen contingencies. In view of the emerging consensus regarding the need to build up central bank reserves, there is a need to ensure that the Reserve Bank balance sheet remains sufficiently strong to enable it to undertake monetary policy action without being hamstrung by balance sheet concerns. There is, therefore, a need to work out a medium-term rule of apportionment of the Reserve Bank's surplus between its own reserves and the Government - if possible with a statutory backing.

The monetary management of the sustained capital flows since November 2000 pose a challenge, especially as the Reserve Bank is beginning to run out of government paper for countervailing open market operations. The choice between the three standard solutions, *viz.*, raising reserve requirements, issuing central bank securities or assuming the central bank is credible enough, conducting uncollateralised repo operations, is often critical, especially as the

degree of market orientation and the associated incidence of the dead-weight loss of sterilisation on the monetary authority and the banking system varies a great deal. An intermediate solution between central bank bills (which concentrate the cost on the former) and reserve requirements (which impose a tax on the latter) is to conduct a continuum of relatively short-term uncollateralised repo operations. While the Market Stabilisation Scheme provides the Reserve Bank the headroom for maneuver, it is necessary to implement the proposal of the Reserve Bank's Internal Group on Liquidity Adjustment Facility in amending the Reserve Bank of India Act, 1934 in order to enable uncollateralised repo operations through the institution of a standing deposit facility.

Development central banking remains another contentious point of debate. Although most central banks, including the Reserve Bank, did monetise public investment in the 1950s and 1960s, in the hope of stepping up the process of economic development - the lack of a matching supply response in most cases, resulted in the excessive monetary expansion in feeding inflation. It is in this context that the Reserve Bank, like many other central banks, are gradually withdrawing from directly funding development activities or supporting financial institutions which provide development finance. This not only helps to focus monetary authorities on their primary objective of managing monetary conditions but is also in line with the ethics of corporate governance which requires a firewall between the interests of the regulator and the regulated. This is not to say that the Reserve Bank has abandoned its role in economic development. It is necessary to appreciate that the concept of development central banking itself shifts, as financial systems mature, to introducing financial innovations, building markets, improving payment and settlement systems and providing the appropriate safeguards. There is no gainsaying that the Reserve Bank stands at the very vanguard of the thrust towards financial development. A related issue is the use of foreign exchange reserves. It is sometimes argued that the Reserve Bank could use its large foreign exchange reserves for social development instead of investing it

abroad. It is necessary to understand that the accumulation of foreign exchange reserves is itself a reflection of the excess supply in the foreign exchange market relative to the absorptive capacity of the economy. Besides, the Reserve Bank puts out domestic liquidity when it buys foreign currencies, which would be channeled to fund investment - if indeed there is such credit demand.

A final issue is the provision of lender of last resort function, for which the Reserve Bank has a very broad mandate under Section 18 of the Reserve Bank of India Act. The Reserve Bank, like most central banks, already recognises the importance of enhancing financial stability, which in the broadest sense of the term, is now elevated from a “policy concern” to a third objective of monetary policy. Unlike some central banks, especially the Banks of China and Japan and in Latin America, which have had to fund bank restructuring, it is a proud record that the Reserve Bank has so far been able to eschew any major direct financial involvement, save isolated incidents such as offering a line of credit to the government-owned Unit Trust of India at a time it faced cash flow problems in the late 1990s. It is desirable that the central bank should use the lender of last resort function very sparingly truly as the very last resort.

In sum, we find that the report card of the Reserve Bank as a monetary authority for the past 70 years is reasonably strong. There is very little doubt that the central bank has been able to secure the integrity of its balance sheet, in line with the international best practices, through the many vicissitudes of monetary conditions. Going forward, this past experience itself provides the central bank an added instrument of high public credibility and goodwill, for which, again in conservative central bank accounting, there is no reflection in the balance sheet.

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