

## III - Money, Credit and Prices

[Reserve Money](#)

[Monetary Survey](#)

[Commercial Bank Survey](#)

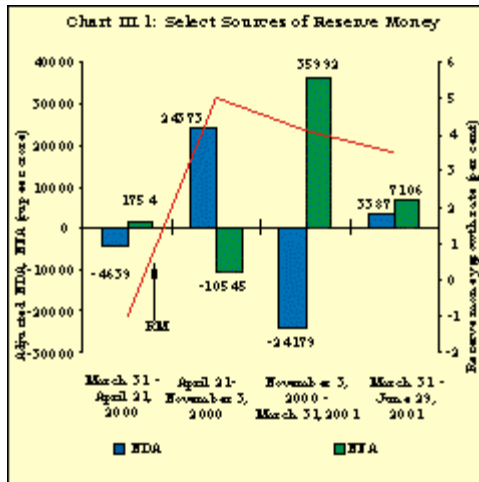
[Price Situation](#)

3.1 Reserve money expansion during 2000-01 was broadly in alignment with that recorded in the preceding year. Broad money (M3) growth, net of inflows under the India Millennium Deposits (IMDs), worked out to 14.4 per cent in 2000-01 as against 14.6 per cent in 1999-2000. The growth of aggregate deposits of scheduled commercial banks accelerated to 18.4 per cent (15.2 per cent excluding IMDs) in 2000-01 from 13.9 per cent in 1999-2000. The growth of non-food credit (adjusted for non-SLR investments) of scheduled commercial banks was significantly high at 20.9 per cent in the first three quarters of 2000-01 but decelerated towards the end of the year, reflecting the slowdown in overall economic activity. These movements were reflected in the behaviour of assets and liabilities of scheduled commercial banks. Inflation moderated to 4.9 per cent by the end of the year after the adjustments to upward revision in the administered prices of petroleum products were completed.

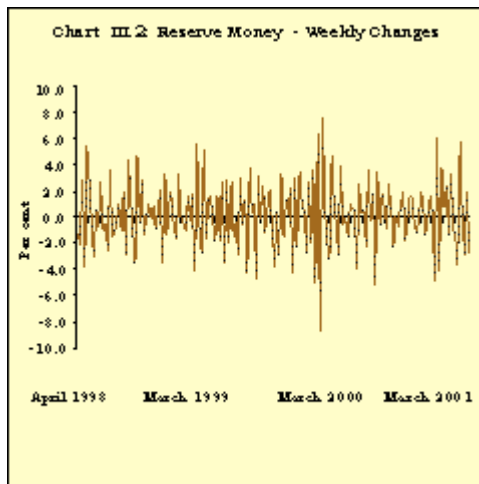
### RESERVE MONEY

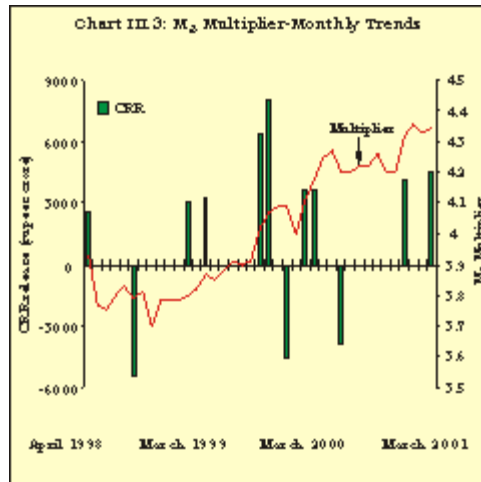
3.2 During 2000-01, reserve money grew by 8.1 per cent as compared with 8.2 per cent during 1999-2000 ([Appendix Table III.1](#)). Primary liquidity flows during the past two years need to be viewed in the context of changes in reserve requirements. The approximate cumulative net first round release of resources on account of CRR changes, at Rs.7,500 crore, during the year was much lower than that of Rs.13,000 crore during 1999-2000. Adjusted for the impact of CRR changes, reserve money growth worked out to about 11.0 per cent in 2000-01 as against about 13.0 per cent in 1999-2000.

3.3 The increase in reserve money during 2000-01 essentially emanated from an accretion to the Reserve Bank's foreign currency assets (Rs.27,463 crore, adjusted for revaluation, as against an increase of Rs.27,382 crore adjusted for revaluation during 1999-2000), which occurred mainly in the period November 2000-March 2001. The net domestic assets (NDA) of the Reserve Bank underwent a compensating decline of Rs.4,444 crore (adjusted for revaluation) in 2000-01 as compared with a decline of Rs.6,528 crore (adjusted for revaluation) in 1999-2000 ([Chart III.1](#)).

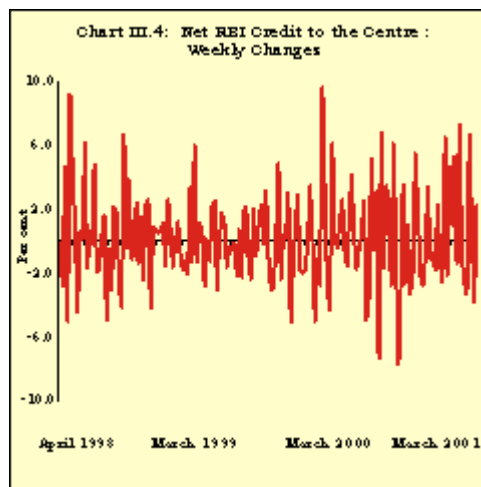


3.4 In recent years, reserve money has exhibited considerable oscillations from week to week, often of sizeable amplitudes, reflecting the growing market orientation of monetary policy and, in particular, the active management of liquidity in the money, government securities and foreign exchange segments of the financial markets (Chart III.2). Progressively market determined interest rates, financial innovations and the frequent adjustments of reserve requirements as part of the flexible deployment of monetary policy in the context of market developments, have imparted volatility to the money multiplier (Chart III.3). Accordingly, the conventional role of reserve money in the determination of money supply has become blurred under the impact of the Reserve Bank's liquidity operations. In the process, reserve money changes have emerged as the principal operating target of monetary policy, with liquidity adjustments setting up corridors for the money market rates, enabling a gradual softening of yields in the gilt markets and ensuring orderly conditions in the foreign exchange market.





3.5 The weekly movements in reserve money are being largely driven by the fluctuations of the net Reserve Bank credit to the Centre around its trend ([Chart III.4](#)). The latter is increasingly reflecting the Reserve Bank's assessment of market liquidity and absorptive capacity rather than being passively determined by the budgetary gap, as in previous years. Movements in the Reserve Bank's net credit to the Centre are, thus, a combination of the direct monetisation of the fiscal deficit embodied in primary operations -ways and means advances (WMA) netted for changes in the Centre's balances with the Reserve Bank, the Reserve Bank's flow holdings of rupee coins and private placements/ devolvments - and strategic open market (including repo) operations, introducing a new dimension to monetary-fiscal co-ordination in which adjustments between the two policy stances occur in the market.



3.6 The net Reserve Bank credit to the Centre increased by 4.8 per cent (Rs.6,705 crore) during 2000-01 in contrast to a decline of 3.8 per cent (Rs.5,587 crore) during 1999-2000. Although the Reserve Bank's subscription to the Centre's dated securities was large at Rs.31,151 crore (at face value), the monetary impact was partly offset by net open market sales (Rs.19,218 crore). Cumulative primary operations of the Reserve Bank amounted to Rs.34,943 crore during 2000-01 as compared with Rs.25,682 crore during 1999-2000 ([Table 3.1](#)).

3.7 Commercial bank draws from the Reserve Bank declined by Rs.4,471 crore in contrast to the increase of Rs.3,256 crore during 1999-2000, partly reflecting the reduction in refinance limits. The Reserve Bank's credit to the commercial sector declined by Rs.1,983 crore in contrast to the increase of Rs.3,044 crore in 1999-2000, essentially on account of the decline in availment of liquidity support by primary dealers (Rs.1,962 crore).

**Table 3.1: Net Reserve Bank Credit to the Central Government**

Variable	(Rupees crore)				
	2000-01	1999-2000	1998-99	First Quarter	
				2001-02	2000-01
1	2	3	4	5	6
<b>Net Reserve Bank Credit to the Centre (1+2+3+4-5)</b>	<b>6,705 (4.8)</b>	<b>-5,587 (-3.8)</b>	<b>11,800 (8.8)</b>	<b>19,523 (13.3)</b>	<b>14,393 (10.3)</b>
1. Loans and Advances	4,413	-2,060	1,042	3,619	4,316
2. Treasury Bills held by Reserve Bank	-1,388	1,107	148	-3	5
3. Reserve Bank's holdings of Dated Securities	4,301	-5,376	10,817	13,150	7,936
3.1 Central Government Securities	4,065	-5,358	10,817	13,150	7,700
4. Reserve Bank 's holdings of Rupee Coins	-25	38	42	39	13
5. Central Government Deposits	596	-704	248	-2,718	-2,123
<b>Memo Items *</b>					
1. Market Borrowings of Dated Securities by the Centre #	1,00,183	86,630	83,753	46,000	33,683
2. Reserve Bank's Primary Subscription to Dated Securities	31,151	27,000	38,205	21,000	6,961
3. Repos (-) / Reverse Repos (+), net	-1,355 @	1,021	-827	1,355	-1,006
4. Open Market Net Sales #	19,218	35,369	26,348	10,929	1,528
5. Primary Operations #	34,943	25,682	39,041	27,376	13,412

\* At face value.

# Excludes Treasury Bills.

@ Pertains to LAF.

Parenthetic figures constitute percentage variations over previous year.

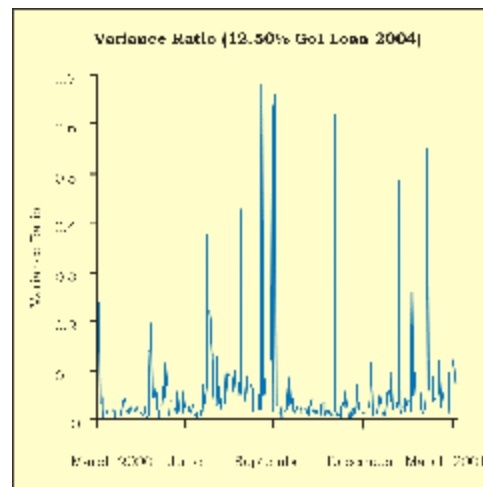
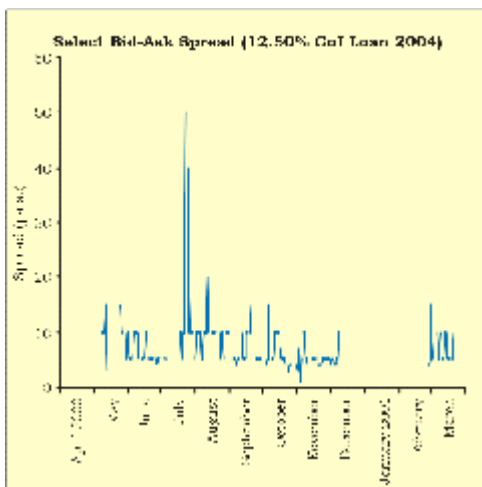
3.8 The Reserve Bank's claims on the Central Government and banks are affected by seasonal shifts in banking activity. First, banks often arbitrage between their balances with the Reserve Bank, standing refinance facilities and net repos from week to week in view of the differential reserve requirements on reporting and non-reporting Fridays. Secondly, cash demand typically picks up at the beginning of the month - on account of salary disbursements by the

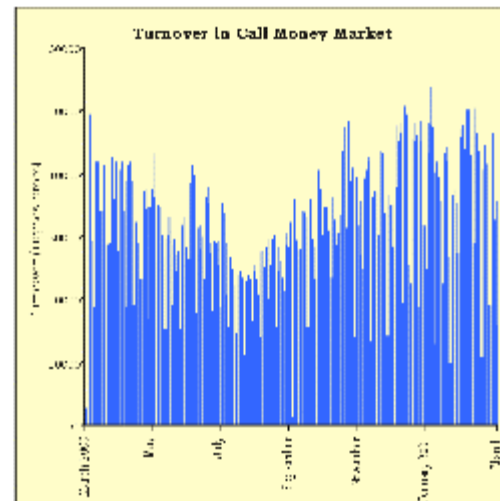
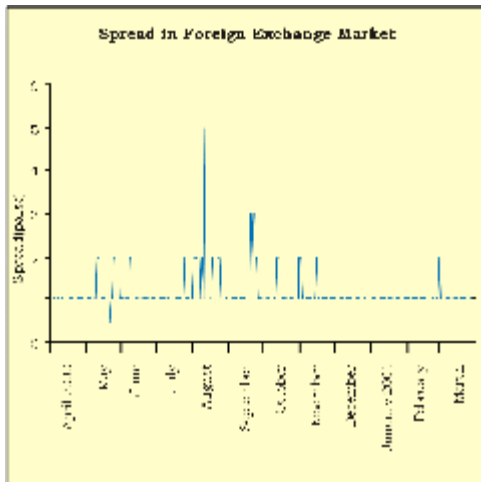
Government (often funded through the WMA) and individuals' salary encashments from the banking system (sometimes funded through recourse to net reverse repos) - and declines at the month-end when the resultant spending finds its way back into business accounts, bolstering bank liquidity. Thirdly, banks often fund advance tax payments - which is a temporary leakage from the banking system -by recourse to the Reserve Bank. Finally, cash-surplus banks park funds (otherwise lent on call) with the Reserve Bank at the year-end on balance sheet considerations so that cash-deficit banks typically have to fund their reserve requirements through refinance/ reverse repos. These changes in banks' liquidity requirements and the Reserve Bank's market operations can change the size and composition of the Reserve Bank's accommodation to the Centre without any relation to fiscal operations.

3.9 In view of the growing market orientation of base money changes, an accurate assessment of market liquidity and shifts therein assumes critical importance. Financial sector reforms have brought about a freeing of interest rates from administrative setting. Accordingly, movements in key market interest rates have emerged as the principal gauge of liquidity conditions. Fundamental changes in the financial system have necessitated the monitoring of a panel of indicators in conjunction with interest rate movements to obtain a 'fix' on market liquidity (Box III.1).

**Box III.1**  
**Measures of Market Liquidity**

Liquidity in a market at any point of time essentially depends on the funds available and the associated transaction costs. The rate of interest, or the price of a financial product in more generic terms, is the first and foremost indicator of market liquidity. The nominal rate of interest, however, reflects not only the demand-supply position, *per se*, but also the liquidity premium arising out of prevailing structural illiquidities which inhibit easy transactions of large volumes and produce distortions in prices. These include factors like the trading technology, payment and settlement system, transaction cost, systemic risk, availability of risk-hedging alternatives, the monetary policy stance reflected in changes in the cost and quantum of discretionary liquidity and the supervisory and regulatory framework. The information content of the interest rate has, therefore, to be buttressed by measures of structural illiquidity and the resultant liquidity premium.





Market liquidity is accordingly being assessed in terms of several attributes like the size, transaction immediacy, depth, width, market impact and resilience of the market. A threshold size of the market and concentration on specific issues through maintaining gross issuance is often critical in order to boost the secondary market and to reduce structural illiquidity. The turnover ratio, *i.e.*, the turnover as a percentage of total outstanding stock, provides a measure of the vibrancy of the market. The larger the stock of debt outstanding in the market, generally, the higher is the turnover and the thinner is the bid-ask spread. Immediacy refers to the speed with which a trade can be executed in the market. Depth is reflected by the maximum size of a trade for any given bid-ask spread. Width or tightness is the cost of providing liquidity and is typically measured by the bid-ask spread. The bid-ask spread, *i.e.*, the differential between the lowest bid quote (the price at which an agent is willing to buy a bond) and the highest ask quote (at which the agent is willing to sell the bond), or the cost of a round trip, is a component of the transactions cost of a trader who seeks immediacy in the execution of buy or sell orders. In case there are no other transaction costs (except order processing), the spread represents an operational measure of the price of the dealers' services and provides an estimate of the security's marketability. If dealers seek to maintain an optimal inventory with a view to maximising expected average profit per unit time, the bid-ask spread would essentially be an increasing function of the price and risk of the security and a decreasing function of the volume of trading and the number of market makers. Alternately, the bid-ask spreads could reflect the adverse information costs faced by the dealer. Market impact, judged by the strength of a buy order to drive the ask rate up or by that of a sell order to push the bid rate down, increases with higher illiquidity of the market. Market resiliency is a dynamic concept depicting stability, *i.e.*, how quickly prices revert to their "normal" level after large transaction flows. The liquidity ratio, *i.e.*, the proportion of the number or value of shares traded during a brief time interval to the absolute value of the percentage price change over the same time period, should be positively related to market liquidity under normal circumstances. The variance ratio, *i.e.*, the volatility of short-term price movements to the volatility of longer-term price movements, has also been used as a proxy for market liquidity. A relatively more liquid market, *ceteris paribus*, requires less time to execute a trade, operates on a narrower bid-ask spread, supports higher volumes for a given spread and requires relatively less time for the restoration of the "normal" bid-ask spread following a big transaction.

The deregulation of the interest rates and the introduction of the money market and gilt instruments in the 1990s have resulted in the progressive evolution of the financial markets in India in terms of both depth and integration. Indicators of market activity such as bid-ask spreads, variance ratios and turnovers are providing important information, supplementary to the interest rate, to assess market liquidity conditions.

## References

1. Amihud, Y. and H. Mendelson, (1986), "Asset pricing and the bid-ask spread", *Journal of Financial Economics*, 17(2).
2. Committee on the Global Financial System, (1999), 'Market Liquidity: Research Findings and Selected Policy

Implications', *BIS-CGFS Study No. 11*, Bank for International Settlements.

3. Schwartz, Robert A., (1991), "Market Liquidity", *Palgrave Dictionary of Money and Finance*.

3.10 Reserve money increased by 3.5 per cent during the first quarter (up to June 29) of 2001-02, in contrast to a decline of 2.0 per cent in the corresponding period of the previous year. The net first round release due to CRR cuts amounted to Rs.4,500 crore (Rs.7,200 crore last year). The net Reserve Bank credit to the Centre accelerated to 13.3 per cent (Rs.19,523 crore) from 10.3 per cent (Rs.14,393 crore) during the first quarter of 1999-2000. The Reserve Bank's primary subscription to the Centre's dated securities amounted to Rs.21,000 crore (at face value) while net open market sales amounted to Rs.10,929 crore. The Reserve Bank's credit to commercial banks and PDs declined by Rs.4,375 crore. The Reserve Bank's net foreign currency assets increased by Rs.6,585 crore (adjusted for revaluation) in sharp contrast to a decline of Rs.4,683 crore (adjusted for revaluation) during the corresponding period of the previous year. Reserve money increased by 0.1 per cent up to August 10, 2001 as compared with a decline of 1.2 per cent during April-August 11, 2000.

### **Impact of Liquidity Operations on Reserve Money**

3.11 Monetary conditions eased in April 2000 with ample liquidity in the financial markets. The subsequent tightening of market conditions due to net foreign currency sales by the Reserve Bank created gaps which were filled by higher-cost liquidity generated by combining private placements/devolvments and open market (including repo) operations. The foreign currency assets declined by Rs.10,676 crore (adjusted for revaluation) reflecting the Reserve Bank's operations in the foreign exchange market during April 21-November 3, 2000. The Reserve Bank's net credit to the Centre increased sharply during this period with the expansion over the March, 2000 level reaching a historic peak of Rs.29,568 crore on November 3, 2000. Liquidity was generated by the increase in net foreign assets of the Reserve Bank through absorption of IMD proceeds and the subsequent revival of capital inflows. Furthermore, commercial bank time deposit growth outstripped non-food credit off-take by Rs.15,738 crore during the last quarter of 2000-01 in sharp contrast to the shortfalls of Rs.9,108 crore and Rs.6,803 crore during the final quarters of 1999-2000 and 1998-99, respectively. This renewed interest in government paper, reducing the net Reserve Bank credit to the Centre by Rs.22,863 crore between March 31 and November 3, 2000 ([Table 3.2](#)). Continuing capital flows resulted in an accretion of Rs.7,544 crore (adjusted for revaluation) to the Reserve Bank's foreign currency assets during 2001-02 (up to August 10, 2001). Monetary policy operations combining CRR changes and OMO (including LAF repo operations) were continued in order to modulate domestic liquidity. The net Reserve Bank credit to the Centre increased by Rs.22,423 crore up to June 15, 2001 on account of a temporary tightness in the money markets as the Centre's borrowing programme commenced; however, by August 10, 2001 this expansion moderated to Rs.14,497 crore following the revival of demand for gilts with the return of easy liquidity conditions. Adjusted for net repos, the Reserve Bank's net accommodation to the Centre worked out to about Rs.13,000 crore. This was partly neutralised by redemption of refinance by banks and PDs.

**Table 3.2 : Sources of Reserve Money**

Variable	(Rupees crore)				
	Out	June 29	March 31,	November 3	April 21

	standing as on June 29,2001	2001 over March 31,2001	2001 over November 3,2000	over April 21,2000	over March 31,2000	standing as on March 31,2000
1	2	3	4	5	6	7
Reserve Money	3,13,805	10,494	11,813	13,828	-2,885	2,80,555

*Select Sources of Reserve Money*

1. Net RBI credit to the Centre	1,66,057	19,523	-22,863	16,061	13,507	1,39,829
1.1 Ways and Means Advances	9,014	3,619	-2,545	-4,217	11,175	982
1.2 Primary Subscription to Dated Securities		21,000	1,000	30,151	0	
1.3 Net LAF Repos		1,355	-1,355	0		
1.4 Net Open Market Sales*		10,929	13,362	5,815	41	
2. RBI's claims on banks and commercial sector	20,901	-5,350	1,102	4,991	-11,896	32,055
2.1 Commercial Banks	3,616	-1,426	-846	820	-4,445	9,513
2.2 Primary Dealers	2,061	-2,949	610	4,155	-6,727	6,972
3. RBIs Net Foreign Assets	2,04,362	7,187	35,013	-4,581	863	1,65,880
3.1 RBI's Foreign Currency Assets \$		6,585	36,386	-10,676	1,754	

**Memo Item**

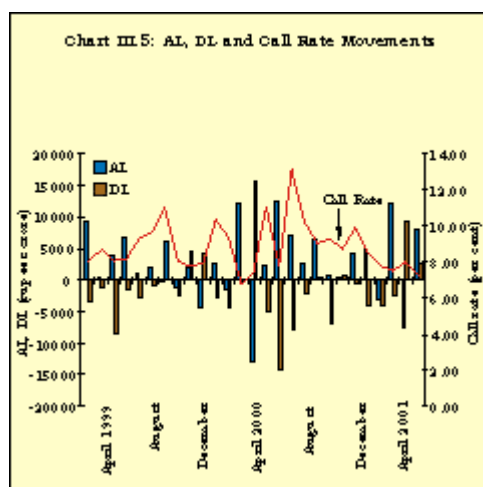
1. Release of Resources on account of changes in Cash Reserve Ratio (approximate)		4,500	4,100	-3,800	7,200	
2. Net Central Government Borrowing #		44,850	23,761	45,418	4,608	

\$ Net of revaluation.

\* Dated Securities only.

# Includes 364-day Treasury Bills.

3.12 The Reserve Bank continued to counterbalance autonomous liquidity (AL) flows with changes in the quantum as well as the price of discretionary liquidity (DL) with a view to balancing the market for bank reserves and ensuring orderly money market conditions ([Chart III.5](#)).



3.13 The conduct of monetary policy is being increasingly characterised by constrained



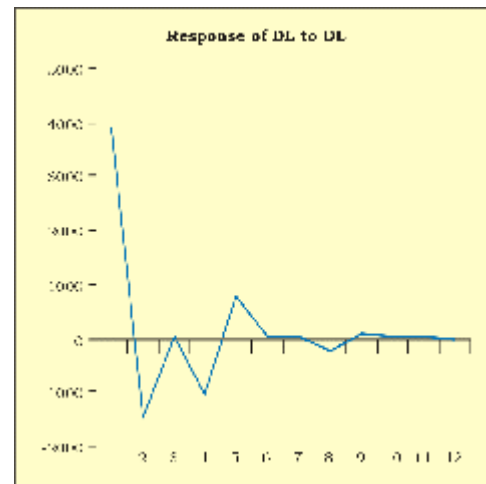
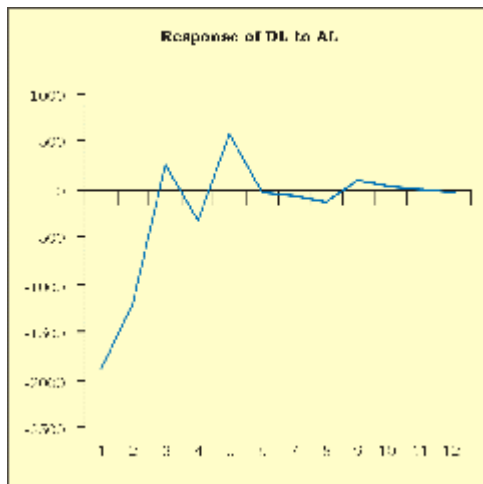
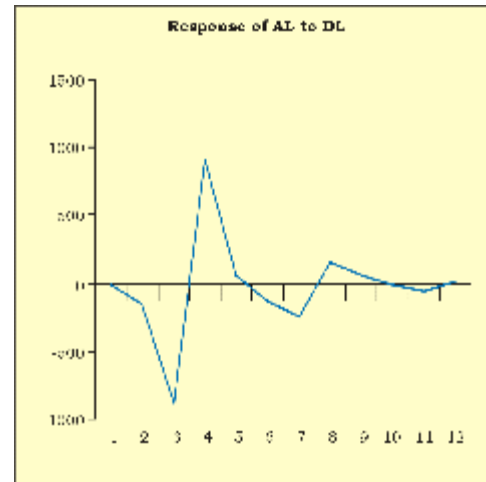
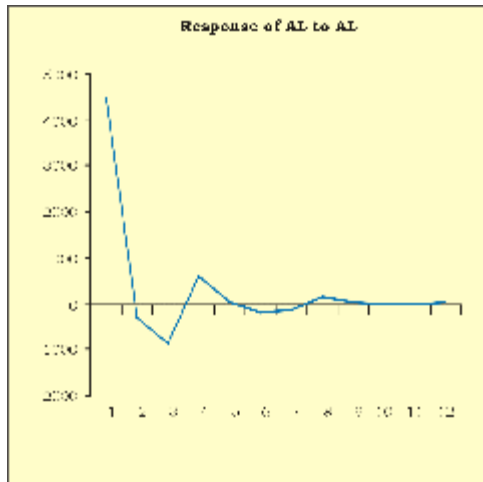
discretion. Typically monetary authorities operating in the short run are faced with the dilemma of the growth-inflation trade-off despite a conviction in the neutrality of money in the long run. Accordingly, they are confronted with the need to take a position on the growth-inflation curve which maximises welfare, thereby setting the overarching objectives of discretionary monetary policy in terms of the appropriate combination of growth and inflation. Within this assignment, central banks react to immediate concerns arising out of their responsibility for financial stability by modulating liquidity in tune with or counter to financial market developments. In India, in recent years, DL has offset AL in a fairly predictable manner (Box III.2).

### **Box III.2** **Identifying a Monetary Policy Reaction Function for India**

The conduct of monetary policy imposes upon the central bank the difficult choice of an optimal combination of targets - for instance, growth and inflation - determined by minimising the discounted future loss of economic welfare on account of deviations from the targets. The central bank's task is then to set its instruments such as key interest rates, base money, *etc.*, so as to best minimise these inter-temporal losses. This involves evolving some type of a rule, referred to in the literature as a monetary policy reaction function, which prescribes the path of the central bank's instruments in terms of its relationship with a particular set of variables which are observable by the central bank, typically indicators of financial market activity. The optimal reaction function is complex since it would normally be a function of all the relevant variables, which describe the state of the economy and financial conditions, and is difficult to verify. Accordingly, practitioner requirements involved in the day-to-day conduct of monetary policy warrant identifying a relatively simple reaction function with a few directly observable and verifiable variables reflecting market conditions, which respond to deviations from the targets.

In the literature, several formulations of monetary policy reaction functions have been suggested including databased indices depicting central bank operating procedures, Taylor-type instrument rules and various variants thereof as well as narrative approaches based on 'reading' monetary and financial information which is employed to effect off-model corrections to technical formulations. The operating target variables in central bank reaction functions have been monetary aggregates and short-term interest rates or both. Where a monetary aggregate in some formulation of bank reserves/base money is targeted, it is useful to partition bank reserves into autonomous (AL) and discretionary liquidity (DL) components, since central banks are seldom able to gear their entire balance sheet for the purpose of liquidity management on account of other objectives of monetary policy.

The Reserve Bank, like most central banks in developing countries, modulates liquidity conditions in the money markets by adjusting liquidity through a combination of CRR changes, open market (including repo) operations and standing refinance facilities as well as interest rate signals through changes in the Bank Rate and the repo rate. AL, the summary measure of the primary liquidity that flows to the banking system without monetary policy action, could be defined as the sum of the Reserve Bank's claims on Government (net of open market (including repo) operations), banks (net of credit to commercial banks), the commercial sector (net of credit to primary dealers) and the external sector, netted for currency (which is a leakage from the banking system), non-bank deposits with the RBI and net non-monetary liabilities. DL, which comprises CRR changes, open market (including repo) operations and credit to commercial banks and primary dealers, captures changes in the primary liquidity by monetary policy initiatives. Intuitively, if DL does not fully offset AL, then *ceteris paribus*, interest rates change to clear the market for bank reserves. In addition to the quantum of liquidity, short-term interest rates also react speedily to changes in the price of DL, such as changes in the Bank Rate and the repo/reverse repo rate.



Monthly data on AL and DL for the period 1995-2001 indicate strong negative correlation between them, suggesting that DL has consistently counter-balanced AL in a period marked by growing market orientation of monetary policy. Preliminary empirical evidence that suggests that AL 'Granger' causes DL within a vector autoregression (VAR) framework, with no evidence of significant reverse causation. In terms of forecast error variance decomposition, as much as a third of total variation in DL within a period of three months seems to be explained by AL. In terms of impulse response functions, the response of DL to AL is immediate and pronounced in the first and second months, although the tendency to react continues up to 7-8 months.

Given the stability in the response of DL to AL, it is possible to specify a monetary policy reaction function calibrating the policy response to autonomous changes in market liquidity.

### Impulse Response to One Standard Deviation Shock

#### References

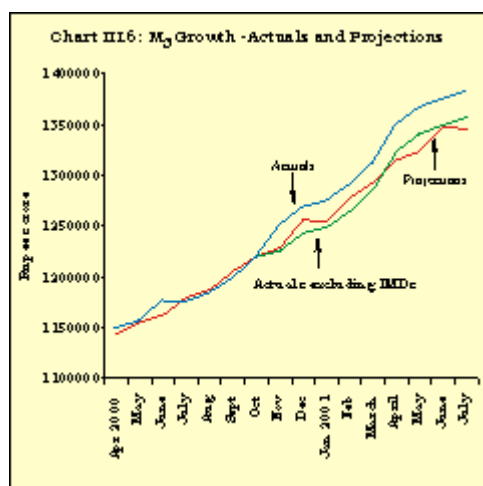
1. Bernanke Ben S. and Ilian Mihov, (1995), "Measuring Monetary Policy", *NBER Working Paper*, No.5145.
2. Borio, Claudio E.V., (1997), "The Implementation of Monetary Policy in Industrialised Countries", *BIS Economic Papers*, No.47, July.
3. Clarida, Richard, Jordi Gali and Mark Gertler, (1999), "The Science of Monetary Policy: A New Keynesian

Perspective, *NBER Working Paper*, No.7147.

4. International Monetary Fund (1999), *Seminar on Implementing Inflation Targets*, Washington DC.
5. Reserve Bank of India, (2000), *Annual Report, 1999-2000*, August.

## MONETARY SURVEY

3.14 Broad money ( $M_3$ ) increased by 16.7 per cent during 2000-01 as compared with an expansion of 14.6 per cent during the previous year. The  $M_3$  growth rate, net of India Millennium Deposits (IMDs), at 14.4 per cent, however, remained broadly within the 15.0 per cent projection announced in the April 2000 monetary and credit policy statement ([Chart III.6](#)): On a monthly average basis, the  $M_3$  growth rate (net of RIBs/IMDs) decelerated to 15.0 per cent during 2000-01 from 16.7 per cent during 1999-2000 and 18.2 per cent during 1998-99 ([Table 3.3](#) and [Appendix Table III.3](#)).



3.15 The comparison of monetary flows between 2000-01 and the preceding year needs to be qualified by few caveats, *viz.*, i) the effect of IMD flows in November 2000 and ii) the lower commercial bank deposit and credit growth during 1999-2000 as the gap between the last reporting Friday of 1999-2000 (*i.e.*, March 24) and the balance sheet date (*i.e.*, March 31) widened to a complete week, muting the impact of the year-end bulge on the end-March 2000 position.

**Table 3.3 : Monetary Indicators**

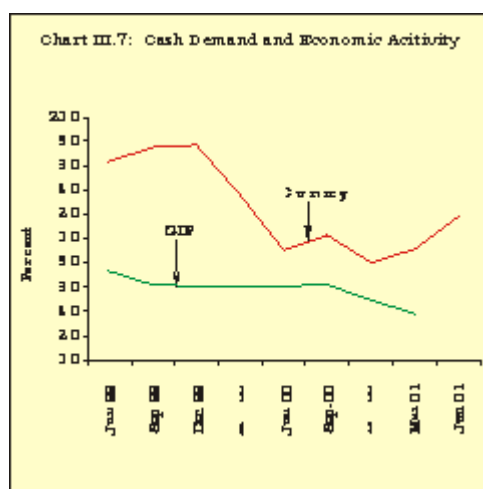
Variable	(Per cent)					
	Point-to-point basis			Monthly Average basis		
	2000-2001	1999-2000	Average During 1990s	2000-2001	1999-2000	Average During 1990s
1	2	3	4	5	6	7
I. Reserve Money	8.1	8.2	13.9	7.8	12.0	14.4
II. Narrow Money ( $M_1$ )	11.1	10.6	15.6	11.2	14.7	15.9
III. Broad Money ( $M_3$ )	16.7	14.6	17.3	15.7	17.2	17.4
III.1 $M_3$ , net of RIBs					16.7	
III.2 $M_3$ , net of IMDs	14.4			14.8		

III.3 NM <sub>3</sub>	14.3	15.3	16.6*	15.0	17.5	16.7*
IV. Components of Broad Money						
a) Currency with the Public	10.8	11.9	15.2	9.1	16.3	15.9
b) Aggregate Deposits	17.8	15.3	17.6	17.2	17.5	17.7
<i>Of which:</i> Scheduled Commercial Banks: (SCBs)	18.4	13.9	17.1	16.6	16.7	17.2
i) SCBs' Demand Deposits	11.9	8.5	16.5	14.5	12.8	16.0
ii) SCBs' Time Deposits	19.5	15.0	17.5	17.0	17.5	17.5
V. Sources of Broad Money						
a) Net Bank Credit to the Government	16.1	14.1	14.2	13.8	15.1	14.6
i) Net Reserve Bank Credit to the Government	3.8	-2.8	7.5	0.9	5.3	8.9
<i>Of which:</i> to the Centre	4.8	-3.8	7.1	0.3	4.3	8.8
ii) Other Banks' Credit to the Government	22.3	25.2	21.2	21.1	21.7	21.1
b) Bank Credit to Commercial Sector	14.8	18.3	14.6	19.7	16.4	14.4
<i>Of which:</i>						
Scheduled Commercial Banks' Non-food Credit	14.9	16.5	15.4	15.4	15.5	15.3
c) Net Foreign Exchange Assets of the Banking Sector	21.5	15.6	44.7	17.9	21.1	46.4

Data are provisional.

\* Average for 1994-95 to 1999-2000, *i.e.*, for 6 years.

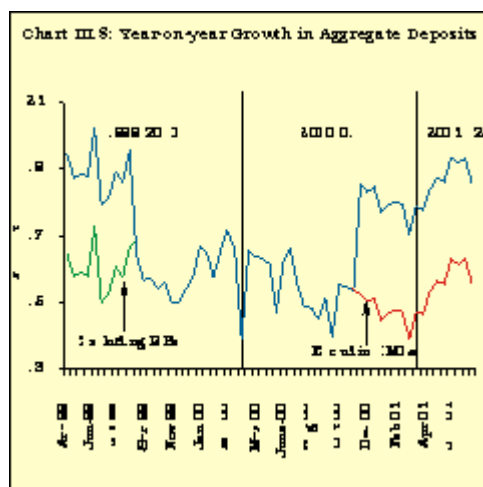
3.16 Currency with the public registered a growth of 10.8 per cent during 2000-01 as compared with 11.9 per cent during the previous year. The year-on-year monthly average cash demand dwindled to a single digit (9.1 per cent from 16.3 per cent in the previous year) - the first time since 1975-76 - largely reflecting the deceleration in economic activity ([Chart III.7](#)).



3.17 Aggregate deposits of scheduled commercial banks accelerated to 18.4 per cent in 2000-01 from 13.9 per cent in 1999-2000 ([Appendix Table III.6](#)). The total deposit mobilisation during 2000-01, at Rs.1,49,273 crore, stood much higher than the projected increase of Rs.1,25,000 crore, mainly on account of IMDs (Rs.25,662 crore). The monthly growth profile of commercial bank deposits, excluding the amounts raised through Resurgent India Bonds (RIBs) for 1999-2000 and IMDs for 2000-01, was, however, stable at around 15.5 per cent ([Chart III.8](#)).

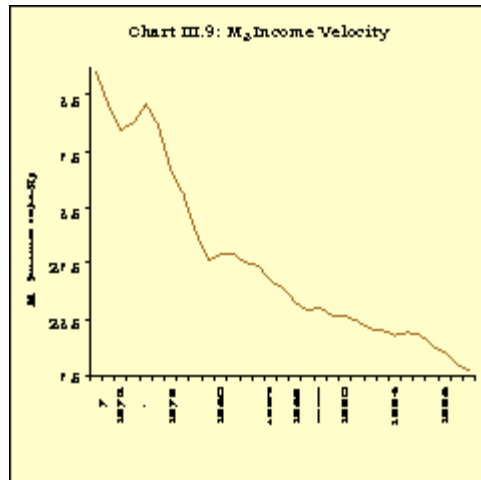
3.18 Time deposits grew by 19.5 per cent for 2000-01 as compared with 15.0 per cent during 1999-2000. The fortnightly average year-on-year increase in time deposits, however, worked out

lower at 16.9 per cent during 2000-01 than 17.8 per cent during 1999-2000. The intra-year variations in time deposits showed some deviation from the normal seasonal pattern of a peak in September and a trough in December, on account of IMD inflows in November 2000. The fortnightly year-on-year growth rates of time deposits, excluding IMDs and RIBs, were lower for most part of 2000-01 than the corresponding growth rates recorded during the preceeding year. The deceleration in domestic time deposits reflected, *inter alia*, an increasing preference by the households for contractual financial saving instruments as well as investments in physical assets on account of lowering of rates of return on deposits. Demand deposits grew by 11.9 per cent during 2000-01 as compared to 8.5 per cent during 1999-2000 with the intra-year variations following the usual pattern of quarter-end and year-end bulges reflecting the coupling of demand deposits and non-food credit followed by beginning-of-the quarter unwinding.



3.19 The income velocity of broad money declined to 1.8 during 2000-01 from an average of 2.0 during the latter half of the 1990s in line with long-term trends ([Chart III.9](#)).

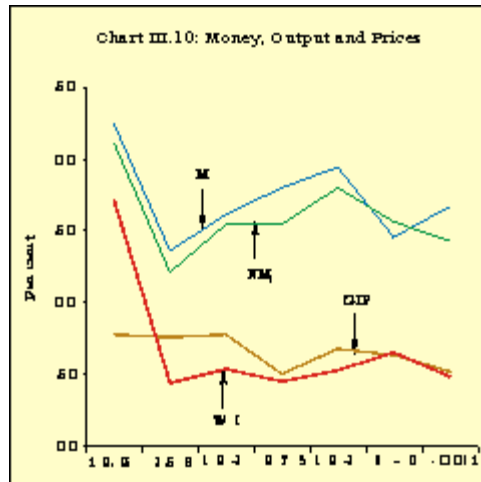
3.20 The  $M_3$  growth rate, at 4.8 per cent, during the first quarter of 2001-02, was comparable to 4.7 per cent during the corresponding period of the previous year. The  $M_3$  growth rate, on a year-on-year basis, worked out to 16.8 per cent as on June 29, 2001 as compared with 16.0 per cent as on June 30, 2000. The annual  $M_3$  growth, net of IMDs, was, however, lower at 14.6 per cent. It needs to be recognised that the monetary data as on June 29, 2001 and June 30, 2000 are not strictly comparable as the latter was also the last working day of the quarter and, therefore, includes the full impact of the usual quarter-end bulge in deposits and credit. On a more comparable basis, inclusive of June-end balance sheet adjustments, the  $M_3$  growth rate, net of IMD effects, was higher at 15.4 per cent as on July 27, 2001 than 14.6 per cent as on July 28, 2000, driven by stronger commercial bank time deposit growth (16.7 per cent, net of IMDs, than 15.4 per cent recorded a year ago). Cash demand increased by 4.3 per cent during 2001-02 (up to July 27) as compared with 3.2 per cent during the corresponding period of the previous year.



### New Monetary and Liquidity Aggregates

3.21 During the year, the Reserve Bank introduced the new monetary, credit and liquidity aggregates compiled on the basis of the recommendations of the Working Group on Money Supply: Analytics and Methodology of Compilation (Chairman: Dr. Y.V. Reddy) alongside the existing monetary aggregates. The Working Group recommended the compilation of money supply on a residency basis, in line with the international best practices, by not directly reckoning banks' nonresident repatriable foreign currency fixed deposits such as the balances under the FCNR(B) scheme, RIBs and IMDs in the monetary aggregates. The monetary impact of such capital flows would depend on their net effect on the monetary base ([Table 3.4](#), [Chart III.10](#) and [Appendix Tables III.2, 4, 5 and 7](#)).

3.22 The monthly average growth rate of the new broad money aggregate ( $NM_3$ ), at 16.6 per cent over the period of 1994-95 to 1999-2000, is about a percentage point lower than that of the existing monetary aggregate ( $M_3$ ) essentially on account of the treatment of capital flows.  $NM_3$  decelerated to 14.3 per cent during 2000-01 as compared with 15.3 per cent during 1999-2000 ([Table 3.4](#)).  $NM_3$  increased by 5.4 per cent during 2001-02 (up to June 29) as compared with 4.6 per cent during the corresponding quarter of the previous year. Preliminary empirical evidence suggests that  $NM_3$  outperforms the conventional monetary aggregates in terms of information efficiency and explanatory power.



3.23 The domestic credit aggregate has been enlarged to include banks' money and equity market investments and net credit to primary dealers. Domestic credit decelerated to 15.2 per cent during 2000-01 from 17.6 per cent during 1999-2000. Domestic credit increased by 3.8 per cent during 2001-02 (up to June 29) as compared with 4.3 per cent during the corresponding period of the previous year. Net foreign assets (NFA) of the banking system are computed by netting banks' overseas foreign currency borrowings and non-resident repatriable foreign currency fixed liabilities from their foreign currency assets. Net foreign assets of the banking system recorded a debit of Rs.35,929 crore as at end-March 2001 reflecting swaps with the Reserve Bank out of RIB and IMD funds. Three liquidity aggregates (L<sub>1</sub>, L<sub>2</sub> and L<sub>3</sub>) encompassing select liabilities of the postal saving bank, financial institutions and NBFCs, on aggregation basis, were introduced besides the new monetary aggregates.

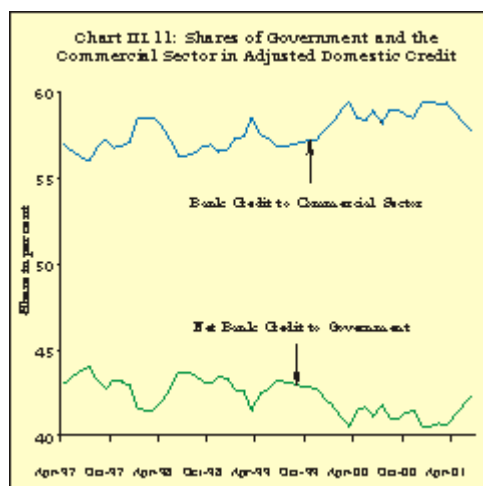
**Table 3.4: Select New Monetary and Liquidity Aggregates**

Aggregate	Definitional changes	Outstanding as at end- March,2001	Variations (per cent)	
			2000-01	1999-2000
1	2	3	4	5
NM3	M3 - Non-resident repatriable foreign currency fixed deposits + Non-bank call/term borrowings	12,26,514	14.3	15.3
L1 \$	NM3 + Post Office deposits (excluding National Savings Certificates)	12,59,679	14.4	15.3
L2 \$	L1 + Term deposits with term-lending and refinancing institutions (FIs) + Term borrowing by FIs + Certificates of deposit issued by FIs	12,72,590	14.6	15.4
L3 \$	L2 + Public deposits of NBFCs	12,92,724	14.5	14.9
Domestic Credit	Domestic credit (existing) + RBI's credit to NABARD + Banks' investments in all securities other than approved securities + Banks' net credit to primary dealers (PDs)	13,11,156	15.2	17.6
NFA of	Net foreign assets (NFA) of the banking sector (existing) -			

the Banking Sector	Non-resident repatriable foreign currency fixed deposits - Banks' overseas foreign currency borrowing	1,61,246	13.2	14.1
Capital Account \$	Capital + Reserves	1,54,240	13.9	10.4
Data are provisional.		\$ New measure.		

## Credit Aggregates

3.24 Domestic credit (adjusted for scheduled commercial banks' investments in non-SLR securities) decelerated to 15.8 per cent during 2000-01 from 17.0 per cent during 1999-2000 ([Appendix Table III.3](#)). The share of the Government in adjusted domestic credit declined to 40.6 per cent at end-March 2001 but continues to remain substantial ([Chart III.11](#)). As at end-March 2001, commercial banks held SLR securities amounting to 35.1 per cent of their net demand and time liabilities as compared with the statutory SLR requirement of 25.0 per cent. Banks' holding of SLR paper, amounting to about Rs.1,06,000 crore over and above the SLR requirement, was substantially higher than the net annual borrowings of the Central Government. The ratio of incremental non-food credit (adjusted) in incremental domestic credit (adjusted), at 43.8 per cent during 2000-01, was comparable with 45.0 per cent during 1999-2000.



3.25 The net bank credit to the Government accelerated to 16.1 per cent in 2000-01 from 14.1 per cent recorded in the previous year. Scheduled commercial banks' investments in government securities, however, decelerated to 22.1 per cent from 24.7 per cent during 1999-2000. The share of the Reserve Bank in net bank credit to the Government, nevertheless, fell to a historic end-March low of 30.0 per cent as at end-March 2001 from the average of 40.8 per cent during the second half and 54.6 per cent during the first half of the 1990s, reflecting the increasing market orientation of internal debt management in recent years.

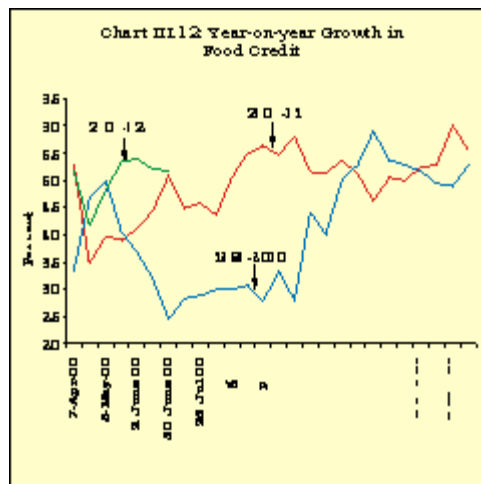
3.26 Bank credit (adjusted for scheduled commercial banks' non-SLR investments) to the commercial sector decelerated to 15.6 per cent in 2000-01 from 19.0 per cent in the previous year. The year-on-year commercial credit growth rate shot up to an average of 20.7 per cent during the first three quarters of 2000-01 (as compared with 17.5 per cent during the

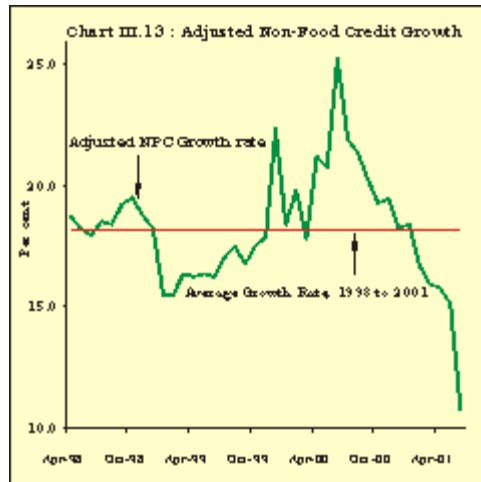


corresponding period of 1999-2000) but dipped to an average of 17.2 per cent in the final quarter (as compared with 19.2 per cent during the corresponding quarter of 1999-2000). This deceleration was essentially driven by lower commercial bank non-food credit off-take during the last quarter of 2000-01, which, at Rs.11,190 crore, worked out to be almost half the off-take of Rs.20,688 crore in the corresponding quarter of 1999-2000.

3.27 Commercial bank credit decelerated to 17.3 per cent during 2000-01 from 18.2 per cent recorded during 1999-2000. The food credit extended by scheduled commercial banks showed a substantial increase of Rs.14,300 crore (55.7 per cent) during 2000-01 as compared with a rise of Rs.8,875 crore (52.8 per cent) during 1999-2000, reflecting a peaking of food procurement and a decrease in food off-take during 2000-01 ([Chart III.12](#)).

3.28 Non-food credit decelerated to 14.9 per cent during 2000-01 from 16.5 per cent registered during 1999-2000. However, the monthly dynamics of non-food credit showed that the above-average growth rates were sustained for around three quarters of 2000-01 in a *contra*-seasonal pattern. The *contra*-seasonal pick-up was, *inter alia*, on account of accumulation of stocks of fertilisers, sugar, petroleum and automobiles. The deceleration, thereafter, seemed to reflect an unwinding of oil credit off-take, repayment of working capital and subdued industrial activity ([Chart III.13](#)).





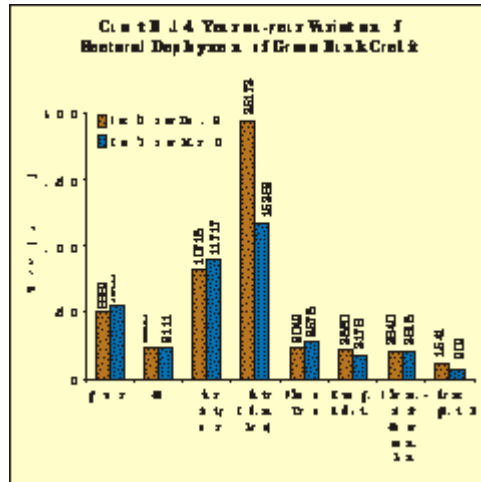
3.29 Scheduled commercial banks' investments in non-SLR instruments increased by Rs.14,138 crore as compared with Rs.13,102 crore recorded during 1999-2000. The total flow of non-food resources from scheduled commercial banks to the commercial sector (*i.e.*, non-food bank credit, together with investments in non-SLR securities) increased by 16.0 per cent as compared with 17.8 per cent in the previous year. Thus, the order of growth in adjusted non-food credit (non-food credit *plus* non-SLR investments) turned out to be similar to the projected increase of about 16.0 per cent set in the monetary and credit policy statement of April 2000.

3.30 Domestic credit (adjusted for the non-SLR investments of the scheduled commercial banks) increased by 3.6 per cent during the first quarter of 2001-02 as against 5.0 per cent during the corresponding quarter of the previous year. Net bank credit to the Government accelerated to 7.8 per cent during 2001-02 (up to June 29) from 6.6 per cent during the corresponding quarter of 2000-01, partly reflecting a sharp increase in the Centre's fiscal deficit. Scheduled commercial banks' incremental investments in government securities worked out to Rs.23,426 crore. Bank credit to the commercial sector decelerated to 0.6 per cent from 3.7 per cent during the corresponding period of the previous year, mainly on account of a decline in commercial bank non-food credit by Rs.3,126 crore in sharp contrast to the increase of Rs.16,485 crore in the previous year. The usual quarter-end bulge in non-food credit was reflected in an increase of Rs.3,952 crore during the fortnight ended July 13, 2001. On a year-on-year basis, adjusted domestic credit worked out to 15.1 per cent as on July 27, 2001 as compared with 18.2 per cent as on July 28, 2000 as non-food credit decelerated to 11.4 per cent as on July 27, 2001 from 21.5 per cent as on July 28, 2000, reflecting the lower off-take since January 2001.

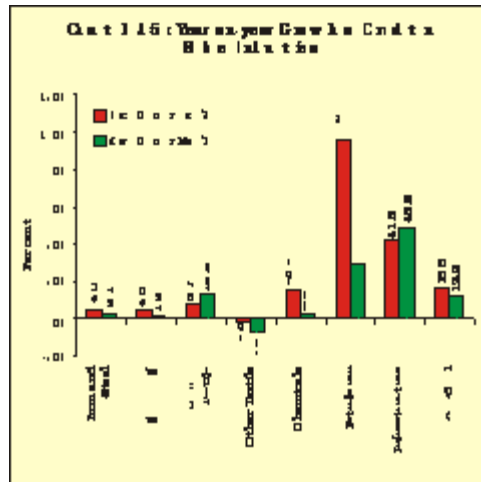
#### *Sectoral Deployment of Gross Bank Credit*

3.31 An analysis of the behaviour of non-food gross bank credit of select scheduled commercial banks during 2000-01 suggests that the priority sector credit off-take accelerated to 16.7 per cent (from 15.0 per cent last year) predominantly due to the acceleration in the credit off-take in agriculture (16.2 per cent from 12.0 per cent a year ago) and other priority sectors (33.8 per cent from 30.7 per cent last year) which was partly offset by the deceleration in credit to small-scale industries (5.9 per cent from 8.9 per cent a year ago). The credit off-take in wholesale trade (other than food procurement) accelerated to 21.3 per cent (20.4 per cent last

year) while that to the medium- and large-scale industry, other non-priority sector personal loans, advances against fixed deposits and housing decelerated to 10.4 per cent (from 12.9 per cent), 17.0 per cent (from 25.4 per cent), 4.8 per cent (from 25.0 per cent) and 14.4 per cent (from 23.6 per cent), respectively ([Appendix Table III.8](#)). An intra-year sectoral analysis shows that industry (medium and large) was the main driver of both the credit off-take pick-up in the first three quarters of 2000-01 as well as the deceleration thereafter ([Chart III.14](#)).



3.32 The industry-wise deployment of gross bank credit shows that amongst the principal industries, credit to iron and steel (3.1 per cent growth as against 2.8 per cent last year), infrastructure (48.9 per cent growth as against 21.8 per cent), cotton textiles (13.2 per cent growth as against 12.0 per cent) and residual (12.3 per cent growth as against 4.3 per cent) registered acceleration during 2000-01. Industries such as engineering (1.3 per cent as against 7.2 per cent), other textiles (-7.8 per cent as against 8.4 per cent), chemicals, dyes, paints, *etc.*, (2.0 per cent as against 17.6 per cent) and petroleum (29.0 per cent as against 62.6 per cent), on the other hand, exhibited deceleration/decline in terms of credit off-take ([Appendix Table III.9](#)). The intra-year behaviour of credit off-take by industries shows that the credit spurt up to December 2000, as well as deceleration thereafter, was to a large extent, on account of the petroleum industry. Apart from cotton textiles and infrastructure, all other major industries exhibited a deceleration in credit off-take in the fourth quarter of 2000-01 ([Chart III.15](#)).



## Trends in Utilisation of Refinance

### *Export Credit Refinance*

3.33 During 2000-01, the aggregate outstanding export credit of scheduled commercial banks increased from Rs.40,460 crore as on March 24, 2000 to Rs.45,387 crore as on March 23, 2001 ([Appendix Table III.10](#)) before declining to Rs. 44,053 crore as on July 27, 2001. As a percentage of net bank credit, it declined from 9.3 per cent to 8.9 per cent as on March 23, 2001 and further to 7.7 per cent as at July 27, 2001. The export credit refinance limits of banks declined from Rs.10,579 crore (30.6 per cent of outstanding export credit eligible for refinance at Rs.34,576 crore) as on March 24, 2000 to Rs.7,192 crore (18.6 per cent of outstanding export credit eligible for refinance at Rs.38,765 crore) as on March 23, 2001, partly reflecting the reduction in refinance limits but increased to Rs. 9,256 crore as on July 27, 2001 (25.0 per cent of outstanding export credit eligible for refinance) at Rs. 37,080 crore. With call rates hovering over the Bank Rate of 8.0 percent during most part of 2000-01, utilisation of export credit refinance was quite substantial, except in December 2000 and January 2001. Analysis of export credit refinance availed by banks showed that a daily average utilisation of export credit refinance by banks on fortnightly basis, ranged between Rs.4,695 crore (41.6 per cent of limits) and Rs.6,144 crore (95.5 per cent of limits) during 2000-01. It ruled in the range of Rs. 2,268 crore to Rs. 5,740 crore during the period April 5-July 27, 2001.

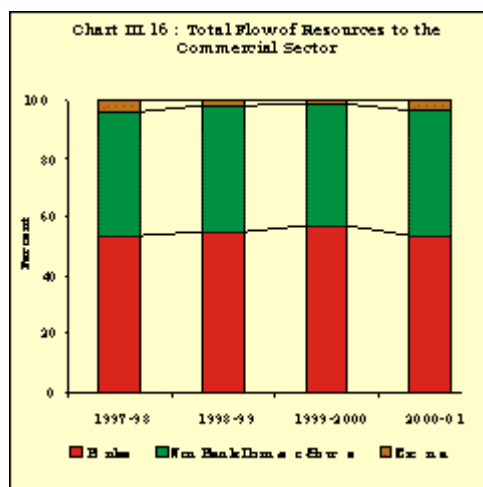
### *Collateralised Lending Facility*

3.34 During 2000-01, daily average utilisation of the Collateralised Lending Facility (CLF) ranged between Rs.171 crore (13.0 per cent of limit) and Rs.487 crore (74.1 per cent of limit). The daily average utilisation of CLF during the fortnight ended March 23, 2001 was Rs.304 crore (46.3 per cent of limit) which declined to Rs. 146 crore (22.2 per cent of limit) during the fortnight ended July 27, 2001.

### *Aggregate Resource Flow to Commercial Sector*

3.35 The resource flow from bank and non-bank sources, inclusive of capital issues,

GDRs/ADRs/ FCCBs, CPs subscribed by non-banks and borrowings as well as bills rediscounted with FIs, to the commercial sector increased by Rs.1,65,056 crore during 2000-01 as compared with Rs.1,60,381 crore during the preceding year (Table 3.5). The share of the banking system in resource flows to the commercial sector, at 53.5 per cent during 2000-01, was comparable to the average during the previous three years (Chart III.16).



**Table 3.5 : Total Flow of Resources to Commercial Sector (excluding Food Procurement Credit)**

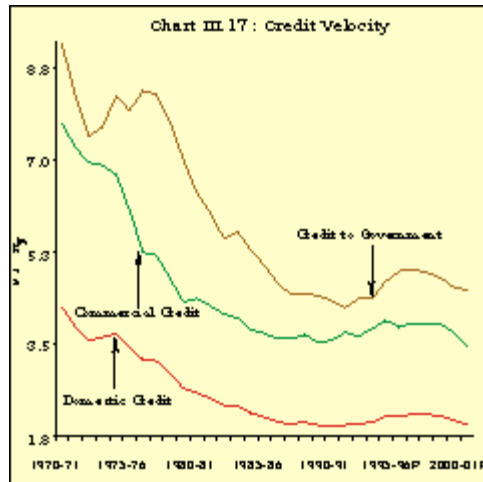
Variable	(Rupees crore)			
	2000-01	1999-2000	First Quarter 2001-02	2000-01
1	2	3	4	5
I. Scheduled Commercial Banks (I.1+I.2)	75,313	71,348	-1,606	19,957
I.1. Non-food credit	61,176	58,246	-3,126	16,485
I.2. Other Investments (2.1+2.2+2.3)	14,138	13,102	1,520	3,472
2.1. Commercial Paper (CP)	1,948	1,030	475	1,733
2.2. Bonds/Debentures/Preference Shares issued by	11,852	11,582	1,042	1,657
2.2.1 Public Sector Undertakings (PSU)	7,834	6,451	718	1,963
2.2.2 Private Corporate Sector	4,018	5,131	324	-306
2.3 Equity Shares issued by PSUs and Private Corporate Sector	338	490	3	82
II. Other Banks	13,003 @	20,395	-504 @	418
III. Other Sources (III.1+III.2+III.3+III.4+III.5)	76,739	68,638	18,373	17,656
III.1 Bills rediscounted with Financial Institutions (FIs) 575		-35	-313	6
III.2 Capital Issues \$ (2.1+2.2)	705	-536	229	813
2.1 Non-Government Public Companies	705	-536	229	813
2.1.1 Debentures and Preference Shares	-1,736	-2,730	148	427
2.1.2 Equity shares	2,441	2,194	81	386
2.2 PSU and Government Companies	0	0	0	0

III.3 Global Depository Receipts (GDRs) and Foreign Currency Convertible Bonds (FCCBs)	5,611	1,721	361 (up to May 2001)	1,029 (up to May 2000)
III.4 Issue of CPs #	-1,764	-137	2,245	231
III.5 Borrowings from FIs ##	71,613	67,626	15,852	15,577
<b>Total Flow of Non-food Resources (I+II+III)</b>	<b>1,65,056</b>	<b>1,60,381</b>	<b>16,263</b>	<b>38,031</b>
<b>Memo Items</b>				
1. Loans to corporates against shares held by them to enable them to meet the promoters' contribution to equity of new companies in anticipation of raising resources	-5	-44	0	-20
2. Private Placements	67,500	61,259	-	-
Data are provisional.	\$	Adjusted for banks' investments in shares and debentures.		
# Excluding CPs issued to banks.	##	Excludes bills rediscounted with FIs.		
@ Preliminary Estimate.				

The resource flow to the commercial sector, at Rs.16,263 crore during the first quarter of 2001-02, was much lower than that of Rs. 38,031 crore in the corresponding period of 2000-01, mainly on account of the decline in non-food credit off-take.

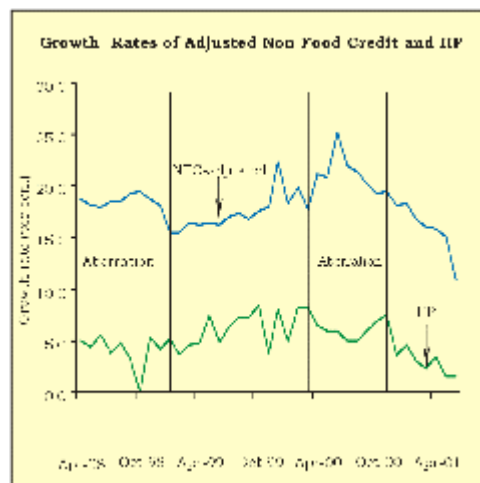
3.36 Banks continue to remain 'special' in the financial system as the primary financial intermediary, especially in view of the wide branch network. Bank finance continues to account for more than half the resources raised by the commercial sector. Small-scale industries accounted for as much as 40.0 per cent of industrial output and around 14.1 per cent of non-food gross bank credit as at end-March 2000. The correlation between the deviation from trend in respect of aggregate non-food credit and credit to small-scale industries was higher than that for large-scale industries over the period 1990-2000. This is borne out by data in respect of public limited companies for 1997-98 through 1999-2000 in which there is no systematic relationship between the size of the paid-up capital and the ratio of short-term bank borrowing to inventories. Thirdly, the velocity of credit in the Indian economy has remained reasonably stable, implying a close link between domestic (and commercial) credit and output ([Chart III.17](#)).

3.37 Non-food credit is generally regarded as providing early indications of underlying industrial activity on the assumption that production entities seek their working capital requirements to finance production. The aberrational behaviour of non-food credit during the greater part of 2000-01 even while industrial production was decelerating has raised questions about the information contained in movements of non-food credit in relation to industrial activity (Box III.3).



### Box III.3 Inter Linkages Between Non-food Credit and Industrial Activity

In a developing economy with emerging financial markets, the financing of industrial activity is heavily bank-based relative to capital market-based financing found in more developed economies. Accordingly in India, movements in bank credit tend to be assessed in terms of their information content in respect of the underlying performance of the industrial sector. During the phase of liberalisation and structural reform in the 1990s especially since 1993-94, a close co-movement was observed between the acceleration in industrial growth and a surge in credit off-take. Monthly growth rates of non-food credit off-take and industrial production moved in tandem throughout the second half of the decade. During January 1997-October 1998 and again in the first three quarters of 2000-01, a distinct aberration in this co-movement was, however, evident even when non-food credit is augmented to include non-SLR investments (Chart). In the latter period, fairly high rates of growth of non-food bank credit co-existed with sluggish or declining rates of growth of industrial production. This has warranted a need for a critical re-examination of the inter-linkages between bank credit and output growth. Of particular interest, given these contrasting movements, is the 'lead indicator' characteristics ascribed to non-food credit in the context of industrial activity in India.



The inter-linkages between bank credit and output growth has been the subject of considerable debate in the literature on the credit and balance sheet (net worth) channels of transmission of monetary policy. Empirical evidence tends to favour the operation of the credit channel in emerging economies and even in economies with developed financial markets, particularly in the context of small businesses. Empirical studies of the credit-output relationships in the Indian economy are at variance with each other. Industry-level studies generally confirm the

positive impact of unanticipated credit changes on the level of output and inventories. On the other hand, it has been shown that under the assumption of rational expectations, credit shocks do not have any significant impact on firm level output in India because monetary policy is predictable and, moreover, firms tend to hold excess inventory. The demand for bank credit for inventory management tends to support the use of bank credit as a lagged indicator of real activity.

The correlation between the cyclical components of quarterly non-food credit extended by scheduled commercial banks (adjusted for their non-SLR investments) and industrial production, based on monetary data, turns out to be statistically significant over the period 1981-82 to 2000-01 in both contemporaneous and lagged terms. Causality analysis reveals bi-directional causality in the "Granger" sense between cyclical movement of non-food credit and overall industrial production as well as with the latter's components, *i.e.*, basic goods, capital goods and consumer goods production. Bi-directional causality between non-food credit and intermediate goods production is relatively weak. The statistically significant evidence of bi-directional causality considerably reduces the usefulness of non-food credit as a leading indicator of industrial activity. Viewed in the context of a generalised impulse response function, the impulse impact of a shock to overall industrial production on non-food credit is found to be smaller than the effect of a credit shock on industrial production, indicating some 'leading' properties in non-food credit in relation to industrial production. Decomposition of the forecast error variance, on the other hand, suggests that variations in overall industrial production account for a larger share of total variation in non-food credit than *vice versa*. Thus, the lead information content of non-food credit *vis-a-vis* industrial activity can get vitiated in periods of volatile credit market activity.

The generalised impulse impact of a unit standard deviation shock to non-food credit within a five-variable Vector Auto Regression (VAR) model involving used-based industries is found to be strongest on capital goods, followed by intermediate goods, consumer goods, and basic goods. The forecast error variance indicates that a shock to non-food credit accounts for a larger share of the variations in basic goods and intermediate goods reflecting the significance of credit availability, whereas shock to capital goods and consumer goods accounts for a larger share of the movements in non-food credit, reflecting the significance of demand conditions for credit off-take.

The analysis of the inter-linkages between non-food credit and industrial production needs to be qualified by some caveats. First, the strong seasonality in industrial production and bank non-food credit data with a peak observed in March is perhaps indicative of reporting biases that tend to be reflected in a significant contemporaneous correlation between bank credit and industrial production. Secondly, data on non-food bank credit include credit to the services sector while the index of industrial production does not include the services sector. This can be a source of statistical bias. This reflects the need for refinements in information availability and further investigation into the dynamic and complex relationship between bank credit and industrial output in India, before ascribing leading, coincident or lagging information content to non-food credit in relation to real activity.

## References

1. Bernanke, Ben S. and Mark Gertler, (1995), "Inside the Black Box: The Credit Channel of Monetary Policy Transmission", *Journal of Economic Perspectives*, Vol. 9.
2. Darbha, G., (1999), "Financial Factors, Inventory Investment and Economic Activity - Some Empirical Evidence for India" *Journal of Quantitative Economics*, Vol.15.
3. Rao, T.V.S.R., and A. Singh, (2000), "Credit Constraints, Rational Expectations and Inventory Investment", *3rd Conference on Money and Finance*, IGIDR, Mumbai.
4. Reserve Bank of India, (1999), *Report on Currency and Finance*, 1998-99, Mumbai.

## *Bank Credit to Priority Sector*

3.38 The scope of priority sector lending was expanded during the year to include (i) bank finance to agriculture through NBFCs and (ii) finance for distribution of inputs for activities



allied to agriculture up to Rs.15 lakh (raised from Rs.5 lakh). The aggregate outstanding priority sector advances of the public sector banks increased by Rs.18,739 crore (14.7 per cent), from Rs.1,27,807 crore as on the last reporting Friday of March 2000 to Rs.1,46,546 crore as on the last reporting Friday of March 2001. The priority sector advances formed 43.0 per cent of the net bank credit (NBC) as on March 2001 as against 43.6 per cent as on March 2000. Total agricultural advances of public sector banks as a share of net bank credit stood at 15.7 per cent, 2.3 percentage points lower than the sub-target of 18.0 per cent of the net bank credit as on March 2001. Total advances to weaker sections provided by public sector banks, at 7.3 per cent of net bank credit as at March 2001, was below the stipulated target of 10.0 per cent for this sub-group. Private sector banks' lending to the priority sector, at 38.7 per cent of net bank credit as on last reporting Friday of March 2001, fell marginally short of the stipulated target of 40.0 per cent. Their lending to agriculture, at 9.6 per cent of the net bank credit, showed a substantial shortfall from the target of 18.0 per cent. The advances of the foreign banks to the priority sector as a percentage of net bank credit came down from 35.0 per cent as on the last reporting Friday of March 2000 to 31.0 per cent as on the last reporting Friday of March 2001. Credit from the foreign banks to SSI and export sector accounted for 10.0 per cent and 19.0 per cent of the net bank credit as against sub-sectoral targets of 10.0 per cent and 12.0 per cent of net bank credit, respectively. While 60.8 per cent of the priority sector advances of the foreign banks were directed towards export credit, the bulk of the public sector banks' advances to the priority sector were accounted for by their advances to agriculture and small-scale industries.

### COMMERCIAL BANK SURVEY

**Table 3.6 : Quarterly Variations in Select Liabilities and Assets of Scheduled Commercial Banks\***

1	Out- standing as on June 29,2001	2001-02		2000-01		1999-2000				Out- standing as on March 26, 1999	12	
		Q <sub>1</sub>	Q <sub>4</sub>	Q <sub>3</sub>	Q <sub>2</sub>	Q <sub>1</sub>	Q <sub>4</sub>	Q <sub>3</sub>	Q <sub>2</sub>			
<b>Liabilities</b>												
L.1. Demand Deposits	1,46,279	3,727	2,521	13,600	-3,807	2,872	10,259	4,129	4,888	-9,333	1,17,423	
L.2. Time Deposits	8,66,796	46,730	26,928	43,627	25,843	37,689	11,580	21,672	31,621	24,503	5,96,602	
L.3. Other Borrowings	2,217	-349	294	-30	-153	-279	142	634	694	123	1,140	
L4. Other Demand and Time Liabilities	93,635	2,427	3,328	9,936	992	-1,491	4,478	12,487	-513	1,917	60,073	
L5. Net Inter-Bank Liabilities	12,906	-1,828	666	-2,798	-218	6,693	-733	1,679	635	-1,608	10,418	
<b>Assets</b>												
A1. Food Credit	50,340	10,349	2,541	5,360	-1,092	7,491	93	5,066	-1,458	5,174	16,816	
A2. Non-Food Credit	4,68,317	-3,126	11,190	24,891	8,609	16,485	20,688	29,454	11,624	-3,520	3,52,021	
A3. Investments	3,94,126	23,967	14,209	21,933	6,143	18,930	7,727	11,184	13,572	21,866	2,54,595	

<i>o/w</i> Govt. Securities	3,63,461	23,426	14,403	22,345	5,991	18,839	8,068	11,405	13,866	21,899	2,23,217
A4. Net Bank Reserves	77,232	15,926	-5,998	3,915	5,420	1,710	-6,508	-2,980	303	428	65,016
<b>Memo Items</b>											
Non-SLR Investments	77,149	1,519	5,768	5,724	-812	3,453	2,727	3,614	3,978	2,739	48,440
Authorised Dealers' Balances	-	-	5,046	454	4,627	2,751	3,346	1,483	-5,891	930	39,900
Resource Release through CRR variations	-	4,500	4,100	0	-3,800	7,200	-4,570	14,426	0	3,250	-

\* Relate to last reporting Friday for each quarter except in case of Q1 of 1999-2000 in which July 2 has been considered instead of June 18 with the view to better comparability.

3.39 An inter-quarter analysis of select liabilities and assets of the scheduled commercial banks during 2000-01 in relation to 1999-2000 and during the first quarter of 2001-02 as against the corresponding quarter of 2000-01 brings to the fore certain important developments ([Table 3.6](#)). Aggregate deposits showed a much higher increase of Rs.40,561 crore during the first quarter of 2000-01 as against Rs.15,170 crore witnessed a year ago. The rise in aggregate deposits was even higher at Rs.50,456 crore during the first quarter of 2001-02. The non-food credit exhibited a substantial *contra*-seasonal increase of Rs.16,485 crore during the first quarter of 2000-01 in contrast to declines of Rs.3,520 crore and Rs.3,126 crore during the corresponding quarter of 1999-2000 and 2001-02, respectively. A comparison of the first quarters of 1999-2000 and 2000-01 must, however, account for the fact that the gap between the last reporting Friday of 1999-2000 and the balance sheet date widened to a full week, inflating the deposit and credit growth during the first fortnight of April 2000. Between March 24 and March 31, 2000, demand deposits and non-food credit increased by Rs.9,093 crore and Rs.14,372 crore, respectively as compared with Rs.5,929 crore and Rs.6,387 crore respectively during the corresponding period of the previous year. As discussed earlier, in case of the first quarter of 2001-02, the last reporting Friday happened to be one day before the last working day of the quarter. Thus, the usual quarter-end bulge in non-food credit got reflected in the fortnight ended July 13, 2001. During the first quarter of 2001-02, the non-food credit experienced a persistent decline up to June 1 even after the usual unwinding of the year-end bulge. On the other hand, despite lower first quarter-end bulge in aggregate deposits in 2001-02 in relation to preceding year, the increase in aggregate deposits in 2001-02 worked out much higher than that of the corresponding quarter of 2000-01 on account of substantial accretion in time deposits of Rs.24,634 crore during April 20- June 29, 2001 (as against Rs.17,171 crore during April 21-June 30, 2000). The usual year-beginning bulge in investments in government securities of (Rs.18,839 crore) was somewhat lower during the first quarter of 2000-01 as against an increase of Rs.21,899 crore during the first quarter of 1999-2000. The deceleration in investment in Government securities and the CRR cut at the commencement of the year, facilitated, to a large extent, the *contra*-seasonal expansion in non-food credit and the normal expansion in food credit during the first quarter of 2000-01. During the first quarter of 2001-02, on the other hand, the CRR cut and an appreciable expansion in deposits with no commensurate non-food credit off-take, led to a bulge in banks' investments in Government securities as well as a strong accretion in net bank reserves.

3.40 As the financial markets turned uncertain and monetary conditions tightened during the second quarter of 2000-01 some deceleration was observed in credit and investments. Thus, the net bank reserves moved up by Rs.5,420 crore during this quarter. As the financial markets

stabilised and liquidity conditions improved with a growth in time deposits (Rs.43,627 crore) largely driven by IMDs during the third quarter, the non-food credit off-take increased appreciably (Rs.24,891 crore) along with a jump in investments in Government securities (Rs.22,345 crore). During the fourth quarter of 2000-01, the CRR cut as well as some *contra*-seasonal dampening of non-food credit growth led to a higher investment in Government securities than witnessed in the last quarter of 1999-2000.

## PRICE SITUATION

3.41 The annual rate of inflation, measured by the year-on-year variations in the wholesale price index (WPI), was predominantly influenced by revisions of administered fuel prices in February, March and September 2000. The year began with an inflation at 6.8 per cent. The impact of the February and March 2000 adjustments in administered prices persisted over the first half of the year, with inflation easing below 6.0 per cent only in the third week of August 2000. As a result of continuous hardening of international crude oil prices, the administered prices of petroleum products were revised upward again in September 2000. The consequent upward drift imparted to inflation took it to a peak of 8.8 per cent by January 13, 2001 (the highest in 2000-01). The pressures from administered price changes ebbed in March 2001 resulting in a significant drop in the inflation rate to 4.9 per cent at the end of the year (the lowest level in 2000-01) ([Chart III.18](#)). This sudden fall in inflation in the last week of March 2001 was mainly on account of the base effect correction. The inflation outcome was characterised by an absence of demand induced pressures. Excluding the price increases of the administered items, the inflation rate worked out to 2.6 per cent during 2000-01.

3.42 Average WPI inflation, an indicator of underlying inflation, persistently trended upwards to a high of 7.2 per cent in 2000-01 as against 3.3 per cent in 1999-2000 and the average of 8.1 per cent during the 1990s ([Table 3.7](#) and [Chart III.18](#)).

3.43 A disaggregated analysis of WPI indicates that, on an average basis, 'fuel, power, light and lubricants' recorded the highest price increase of 28.5 per cent (9.0 per cent in 1999-2000) reflecting the upward revision in the administered prices of diesel, petrol, kerosene, LPG and ATF prices in September 2000, and also the effect of earlier two rounds of fuel price revisions in February and March 2000. Within the fuel group, the inflation rates of mineral oils and electricity accelerated to 41.4 per cent and 18.6 per cent, respectively, in 2000-01 from those of 11.8 per cent and 7.5 per cent in 1999-2000.

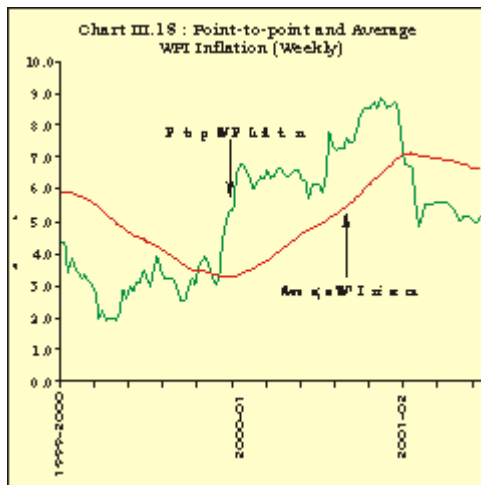
**Table 3.7 : Inflation Indicators**

Item	2000-01	1999-00	(Per cent)	
			1990-91 to 1999-00	1980-81 to 1989-90
1	2	3	4	5
1. WPI - All Commodities				
a) Point-to-point basis	4.9	6.5	8.7	7.5
b) Average basis	7.2	3.3	8.1	8.0

## 2. CPI - Industrial Workers

a) Point-to-point basis	2.5	4.8	9.4	8.9
b) Average basis	3.8	3.4	9.5	9.1

Note : WPI data is based on the new base (1993-94 = 100) from 1994-95 onwards.



3.44 Primary articles inflation inched up moderately to 2.9 per cent from 1.1 per cent in 1999-2000. Within the primary articles group, items like fruits and vegetables and fibres experienced the maximum price rise of 3.8 per cent and 8.1 per cent, respectively, from a significant price decline of 16.9 per cent and 10.4 per cent and eggs, fish and meat, pulses and milk to 6.9 per cent, 8.1 per cent, and 10.6 per cent, respectively, from 2.7 per cent, 3.7 per cent and 8.5 per cent in 1999-2000. On the other hand, cereals which had recorded a double digit rate of inflation at 17.8 per cent in 1999-2000 experienced a negative rate of inflation of 2.6 per cent in 2000-01. The other items recording price declines are 'other food articles' (15.3 per cent on top of a decline of 7.4 per cent in 1999-2000) and 'condiment and spices' (10.7 per cent as against an increase of 2.9 per cent in 1999-2000).

3.45 Manufacturing inflation was moderate during 2000-01 showing considerable co-movement with the global decline in the prices of manufactures. The sluggishness in investment demand and the presence of excess capacity in various industries dampened manufacturing inflation pressures. The manufacturing inflation was 3.3 per cent in 2000-01 as against 2.7 per cent in 1999-2000, on an average basis. The moderate acceleration in the inflation rate, on an average basis, in the case of manufactured products was contributed by the increase in the prices of cement, electrical machinery, and cotton textiles to 6.5 per cent, 7.5 per cent and 4.7 per cent, respectively, in 2000-01 as against decreases of 1.9 per cent, 1.4 per cent and 0.3 per cent in 1999-2000, and a double digit rate of increase in fertiliser prices at 10.7 per cent. Besides, 'machinery and tools', and 'transport equipments and parts' exhibited a higher inflation rate of 5.9 per cent each in 2000-01 as compared with the increases of 0.1 per cent and 3.0 per cent, respectively in 1999-2000 ([Appendix Table III.11](#)).

3.46 The major groups' weighted contributions to the WPI inflation indicate that the fuel group contributed the maximum at 63.1 per cent to the overall inflation rate in 2000-01 as compared

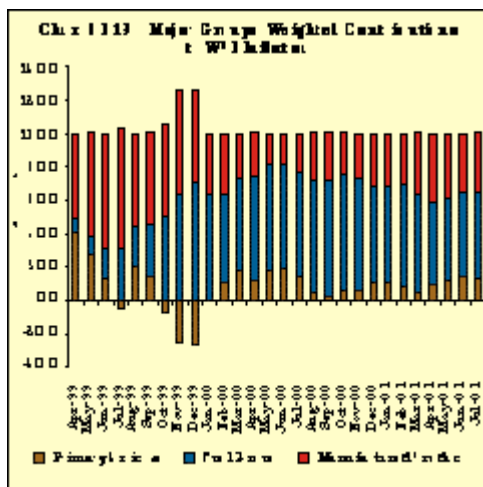
with 41.4 per cent in 1999-2000. The share of primary articles in the overall WPI inflation rose marginally to 9.7 per cent from 8.1 per cent, while that of manufactured products declined to 27.6 per cent from 49.9 per cent over the same period ([Table 3.8](#), [Chart III.19](#), and [Appendix Table III.12](#)).

**Table 3.8 : Contribution of Major Groups to Inflation (Average Basis)\*  
(Base: 1993-94 = 100)**

Item	2000-01	1999-00	(Per cent)	
			1990-91 to 1999-2000	1980-81 to 1989-90
1	2	3	4	5
Primary Articles (22.03)	9.7	8.1	29.8	33.2
Fuel Group (14.23)	63.1	41.4	19.9	12.6
Manufactured Products (63.75)	27.6	49.9	50.2	54.2
All Commodities (100.0)	100	100	100	100

\* Data is based on the new base (1993-94=100) from 1994-95 Onwards

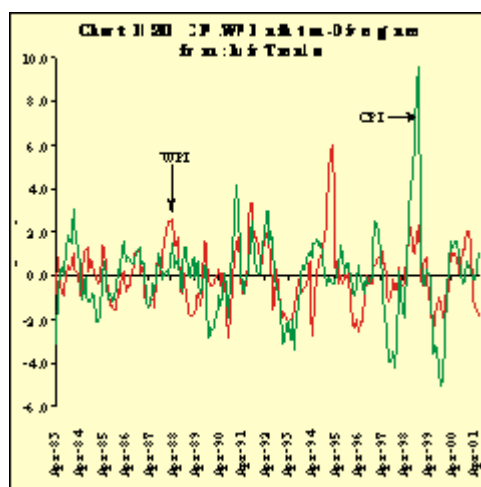
Note : Figures in parentheses indicate relative weights .



3.47 Retail price inflation, as measured by the annual variations in the Consumer Price Index for Industrial Workers (CPI-IW), on a point-to-point basis, moved within a low range of 2.5 to 5.5 per cent during 2000-01. Consumer price inflation eased during the year from 5.5 per cent at the beginning of the year to 2.5 per cent by March 2001, as compared with 4.8 per cent recorded in March 2000 ([Appendix Table III.13](#)). The generally moderate order of consumer inflation was reflected in the average (monthly) inflation rate for the year moving within a narrow range of 3.0 to 4.1 per cent in 2000-01, as compared with a higher range of 3.4 to 13.1 per cent in 1999-2000.

3.48 It may be mentioned that during the period 1995-96 to 1998-99, the CPI inflation ruled significantly higher than the WPI inflation. However, particularly since the second half of 1999-

2000 this was reversed with the CPI inflation falling below the WPI inflation. The relationship between the WPI and CPI inflation is best depicted by the behaviour of the deviations of the WPI and CPI inflation from their trend components. During the second half of the 1990s, the degree of divergence has become more pronounced ([Chart III.20](#)). This indicates persistence of inflation pressures especially in respect of food articles which have differential weights in WPI and the CPI. The divergence of the trend deviations also reflects a higher order of volatility in CPI inflation rate with respect to its trend rate.



3.49 The year-on-year rate of inflation during the first quarter of 2001-02, measured by the variations in WPI, on a point-to-point basis, eased with the pass-through of the administered price revisions into the general price level. The rate of inflation generally hovered around 5.0 per cent during the quarter. In the first week of August 2001, the inflation rate stood at 5.2 per cent as compared with 6.3 percent during the corresponding period of 1999-2000. On an average basis, the annual inflation rate consistently declined from 7.0 per cent at the beginning of April, 2001 to 6.7 per cent as on August 4, 2001. Among the major groups of WPI, on a point-to-point basis, the fuel group exhibited the maximum increase of 14.5 per cent as at end-June 2001 as compared with an increase of 26.8 per cent a year ago and the primary articles inflation decelerated to 3.1 per cent from 5.1 per cent as at end-June 2000. Manufacturing inflation increased to 3.1 per cent from 2.1 per cent a year ago. Within the primary articles group, potato, fruits and vegetables and oilseeds showed a higher order of increase. Potato prices rose by 102.1 per cent as at end-June 2001 as compared with a decline of 15.0 per cent at end-June 2000. In the case of the fuel group, the price increases of major components like mineral oils and electricity was high at 16.0 and 11.5 per cent, respectively, as at end-June 2001 as compared with increases of 41.8 and 15.1 per cent a year ago. In the case of the manufactured products group, mainly cement, edible oils, and machinery and tools showed higher order of price rises ([Appendix Table III.11](#)). The weighted contribution of the fuel group to the overall price rise as at end-June 2001 was maximum at 50.8 per cent as compared with 61.5 per cent as at end-June 2000. The shares of manufactured products and primary articles groups were 34.7 per cent and 14.2 per cent, respectively, as at end-June 2001 as compared with 19.5 per cent and 18.5 per cent a year ago ([Appendix Table III.12](#)). The CPI-IW, on a point-to-point basis, showed an increase of 3.4 per cent as at end-June 2001 as compared with 5.2 per cent as at end-June 2000.

3.50 Normally, aggregative measures of price indices such as wholesale (WPI) and consumer prices (CPI) are employed to track the inflationary process in the economy. Under flexible price setting conditions, current changes in wholesale prices are followed automatically by future changes in the consumer prices, in the presence of supply disturbances which affect wholesale prices relatively quickly and consumer prices with a lag. On the other hand, changes in aggregate demand impact first on prices at the retail level and feed through into wholesale prices over time. Current developments in the inflationary situation, particularly the divergent movement in the aggregative measures of prices like WPI and CPI, however, suggest the need for monitoring a number of indicators besides wholesale and commodity prices in order to obtain a more accurate assessment of the inflation expectations for policy purposes (Box III.4).

#### **Box III.4** **Indicators of Inflation Expectations**

Inflation expectations play an important role in the economic decision-making processes. They are usually explicitly factored into wage contracts, product price setting, investment and inventory planning, and implicitly into financial contracts through movements in yield curves, yield spreads and generally in the formation of financial prices. Accordingly, it becomes crucial for monetary authorities to obtain a reliable gauge of inflation expectations in the economy. In part, this arises on account of the compulsion for monetary policy to be forward looking; monetary operations are usually characterised by long and variable lags between the deployment of instruments and the achievement of the final target - raising interest rates can lead to a decline in inflation only after six to eight months or more - and therefore, monetary authorities can realistically hope to target future rather than current inflation. More importantly, inflation expectations shape the stance of monetary policy. In a Fisherian world, the nominal interest rate, which typically reflects the stance of monetary policy, is the sum of the real interest rate and inflation expectations. Since the real interest rate is a variable on which monetary policy cannot have a lasting impact, it is by influencing inflation expectations that monetary authorities can change nominal interest rates in a credible and consistent manner and thereby, convey their view on the real interest rate to the financial markets. In a market-oriented environment, convergence of the real interest rate view as between authorities and markets hinges upon the central bank's ability to stabilise inflation expectations. This, in turn, can lead to changes in the real interest rates and subsequently in aggregate economic activity. In this context, central banks employ a variety of methods to assess inflation expectations including expectation surveys, yield spreads between nominal and indexed bonds, output gaps, unemployment and capacity utilisation information, besides model forecasts and conventional monetary and financial analysis.

In India, price stability around a tolerable rate of inflation is an important objective of monetary policy. The Reserve Bank's monetary and credit policy statement made in the beginning of the year typically provides a view on inflation expectations for the year, consistent with and conditional upon anticipations relating to real and financial activity, the fiscal position, the balance of payments and the monsoon. Adjustments to the forecast of inflation expectations on account of changes in these conditions and/or the impact of unforeseen developments are undertaken as part of the mid-year review of monetary and credit policy. Current and past inflation behaviour, typically expressed in terms of year-on-year changes in wholesale price indices assessed in conjunction with the behaviour of consumer price indices, are used to obtain a view on inflation expectations in the year ahead. During the second half of the 1990s and particularly in 2000-01, the wholesale price and consumer price inflation have been moving divergently, making it difficult to obtain a correct assessment of future inflationary pressures. The Policy Statement announced in April, 2001 reflected these concerns, observing that while in the medium to long run, inflation is associated with monetary expansion, in the short-run, inflation could be affected by non-monetary and supply-side factors which may not warrant a monetary policy response. Recent empirical research has also tended to confirm the existence of price cycles, further complicating the task of monetary policy. Consequently, it becomes important to assess the inflation outlook with the help of several indicators, including monetary conditions, in order to build up the appropriate policy stance.

In India, empirical work on modelling inflation has proliferated in the 1990s using univariate and multivariate time series techniques as well as macroeconomic models. In general, these efforts have focused on the proximate determinants of the inflationary process in India rather than on the formation of inflation expectations. In response to

the 'Lucas critique', the effects of inflation uncertainty have been empirically investigated by augmenting the Lucas supply function with inflation expectations and inflation variability. The results suggested that while the adverse effects of anticipated inflation on growth are minimal, unanticipated inflationary shocks create a significant loss of real output. In more recent work, attempts have been made to identify growth rate cycles in the movement of wholesale prices and advance indicators of inflation, which can be combined to construct composite indicators of inflation, using principal components analysis. Preliminary empirical exploration of the formation of inflation expectations - represented by five-monthly moving averages of the WPI inflation rate - conducted on monthly data for the period April, 1997 to March, 2001 in respect of a host of macroeconomic variables indicates the statistical presence of lead information in some of these variables. The yield spread i.e., the difference between long term and short-term government bond yields contains considerable information on the path of future inflation with a two-month lead. A 3 percentage point change in the yield spread indicates a 1 percentage point change in inflation expectations in the same direction. The impact of supply shocks can be represented by the behaviour of food prices. A 7 per cent increase in food prices signals a 1 percentage point rise in inflation expectations one month ahead. The impact of external terms-of-trade shocks is captured through fuel prices. A rise of 10 per cent in fuel prices indicates a rise of 1 percentage point in future inflation with lead information content of about six months. Exchange rate movements appear to lead inflation expectations by about one month: a 5 per cent depreciation in the exchange rate could add up to 0.3 percentage point to inflation expectations, which is consistent with the findings of other studies in India. The real money gap (defined as the deviations of the current real money aggregate from its projected path indicated in monetary and credit policy statements) is found to have one-month lead information about the future path of inflation. A 10 per cent increase in the real money gap indicates a 0.6 percentage point downward shift in inflation expectations. Empirical work on real money gap in the euro area shows that it tends to move inversely with the price gap, i.e., the deviation of actual price change from its target, somewhat before the rate of inflation. Furthermore, the real money gap is found to have greater predictive power than the output gap.

The objective of the preliminary empirical exercise is to investigate the feasibility of identifying a menu of alternative indicators of inflation expectations based on which a better guide to the formation of inflation expectations could be developed, rather than relying only on changes in WPI and CPI for projecting future inflation. The variables reported from the preliminary exercise are statistically significant and testing for unit roots indicated they are stationary. The correlation matrix points to the absence of collinearity among the various indicators and a weak ordering is feasible in terms of information content as regards future inflation. These empirical results are tentative and need to be further stress tested for robustness under varying conditions. With the inclusion of higher frequency data and refinement of the methodology, research on the subject could pave the way for developing an "inflation conditions index" for India as a composite indicator for inflation expectations.

## References

1. Fama, E. F., (1990), "Term Structure Forecasts of Interest rates, Inflation and Real returns", *Journal of Monetary Economics*, 25.
2. Joshi, H. and P. Ray, (1996), "Do Inflationary Shocks Affect Growth in India?", *RBI Occasional Papers*, Vol.17(4), December.
3. Gerlach, S. and Lars E. O. Svensson, (2001), "Money and Inflation in the Euro Area: A Case for Monetary Indicators?", *BIS Working Paper*, No.98, January.
4. International Monetary Fund, (1996), *World Economic Outlook*, October.
5. \_\_\_\_\_ (2001), *World Economic Outlook*, May.
6. Reserve Bank of India, (2001), *Monetary and Credit Policy Statement*.
7. Samanta, G.P. and A. Pethe, (2001), "Construction of a Composite Leading Indicator for Tracking Inflation in India", *Economic and Political Weekly*, January 27.