

# III

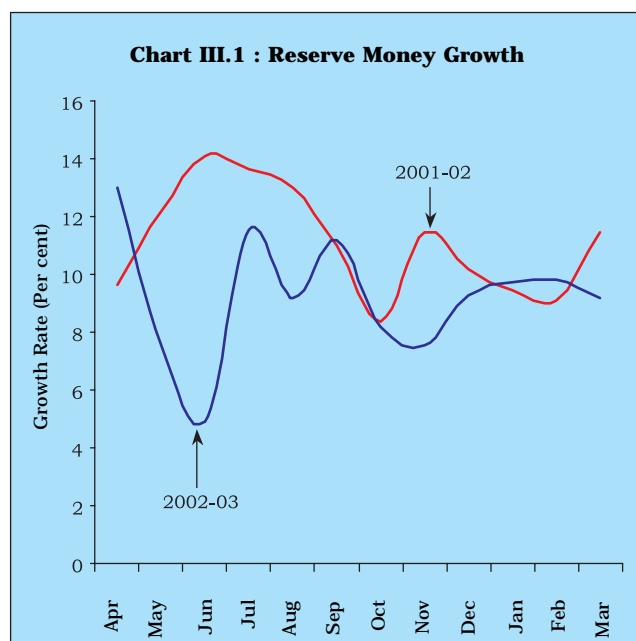
## MONEY, CREDIT AND PRICES

3.1 Monetary conditions closely tracked the evolution of real activity during 2002-03. The growth of non-food bank credit, inclusive of banks' investments in non-Statutory Liquidity Ratio (non-SLR) instruments, was in consonance with the recovery of industrial output. Credit expansion was facilitated by conditions of ample liquidity in financial markets, engendered by massive capital inflows. Interest rates declined across the spectrum in response to the easy liquidity conditions, and to monetary policy signals for softening that were transmitted through cuts in the Bank Rate, the repo rate and the cash reserve ratio (CRR). The lowering of interest rates was made possible by a benign inflation environment except for a spurt in the last quarter due to the hardening of international oil prices and of some drought related price hike for items such as oilseeds and edible oils. On the other hand, currency and deposit growth slowed down moderately reflecting the adverse impact of the drought on rural incomes and the lowering of deposit rates by banks. Broad money growth reflected these diverse impulses from real activity. Reserve money growth was moderated by the deployment of policy instruments to counter the expansionary effects of large external flows.

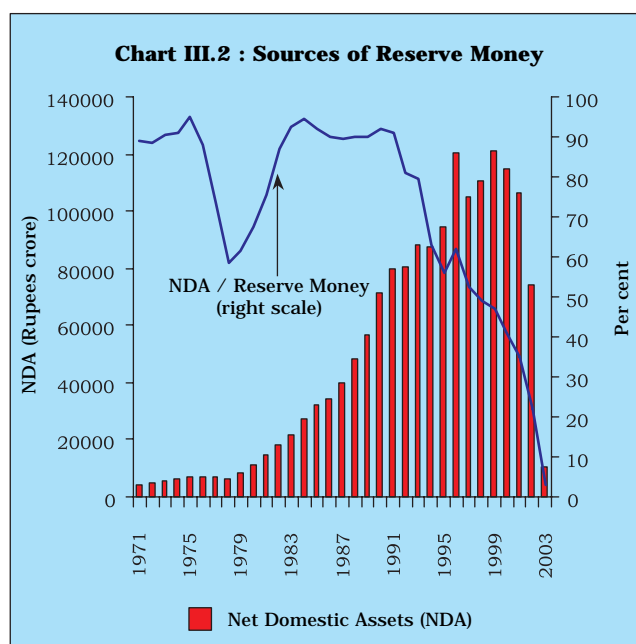
### RESERVE MONEY

3.2 In recent years, reserve money has become the operating target of monetary policy in the endeavour to stabilise the demand for bank reserves and, thereby, to create conditions conducive for adequate credit growth in support of industrial activity. Consequently, the behaviour of reserve money increasingly reflects the impact of active liquidity management as the Reserve Bank alters its own balance sheet in response to market conditions. For most of 2002-03, excess liquidity in the market was absorbed through policy operations which impacted on the monetary base (Chart III.1).

3.3 The behaviour of reserve money in 2002-03 was predominantly influenced by the large inflows from abroad. Excess supply conditions in the foreign exchange market were reflected in continuous purchases of foreign exchange by the Reserve Bank and accretions to the Reserve Bank's foreign currency assets (Appendix Table III.1). The primary liquidity generated by this substantial accretion to the net



foreign assets (NFA) was sterilised through active recourse to open market sales and repos under the liquidity adjustment facility (LAF). As a result, the net domestic assets (NDA) of the Reserve Bank declined to barely 2.9 per cent of reserve money at end-March 2003 (Chart III.2 and Table 3.1).



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Table 3.1 : Variations in Major Components and Sources of Reserve Money

(Rupees crore)

1	2002-03	2001-02	2002-03			
	2	3	Q1	Q2	Q3	Q4
			4	5	6	7
<b>Reserve Money</b>	<b>31,091</b> (9.2)	<b>34,659</b> (11.4)	<b>-8,850</b>	<b>6,791</b>	<b>7,917</b>	<b>25,233</b>
<b>Components</b>						
1. Currency in Circulation	31,499 (12.6)	32,769 (15.0)	14,633	-5,901	11,206	11,561
2. Bankers' Deposits with RBI	-801	2,670	-23,873	12,451	-2,427	13,048
3. Other Deposits with RBI	393	-780	389	241	-861	624
<b>Sources</b>						
1. RBI's Net Credit to Government Sector of which : to Central Government	-31,499 -28,399 (-20.1)	-1,699 -5,150 (-3.5)	-4,212 1,455	-19,779 -19,555	-17,427 -17,882	9,919 7,583
2. RBI's Credit to Banks and Commercial Sector	-6,468	-9,575	-6,537	-784	8	844
3. Net Foreign Exchange Assets (NFEA) of RBI	94,275 (35.7)	66,794 (33.9)	19,279	19,619	34,766	20,611
4. Government's Currency Liabilities to the Public	705	1,013	168	256	157	124
5. Net Non-Monetary Liabilities of RBI	25,922	21,875	17,548	-7,479	9,587	6,265
<b>Memo:</b>						
Net Domestic Assets	-63,184	-32,135	-28,130	-12,828	-26,849	4,623
Net Foreign Currency Assets, adjusted for revaluation	82,090	55,836	8,145	22,881	31,060	20,004
Net Purchases from Authorised Dealers	75,661	34,000	3,929	18,958	25,165	27,608
NFEA/Reserve Money (per cent) (end-period)	97.1	78.1	86.1	90.2	98.2	97.1
<b>Note :</b>						
1. Data based on March 31 for Q <sub>1</sub> and last reporting Friday for all other quarters.						
2. Figures in brackets are percentage variations during the year.						

3.4 Given the stock of marketable instruments in the Reserve Bank's portfolio, the decline in the NDA to near-zero levels as a proportion to reserve money focuses attention on the limits being approached to full sterilisation and, therefore, on the future conduct of monetary policy in the context of large and sustained capital inflows (Box III.1).

3.5 The Reserve Bank's net credit to the Government – the major constituent of the NDA – contracted over the year with the divestment of government securities from its holdings through open market sales. With the growing market orientation of monetary policy, the Reserve Bank's net credit to the Centre no longer reflects its financial support to

## Box III.1

## Managing Capital Flows: Constraints on Discretionary Monetary Policy

In the aftermath of the institution of structural reforms and external liberalisation in the early 1990s, the Indian economy has experienced surges of capital flows on a hitherto unprecedented scale. Net capital flows increased from an average of US \$ 5.8 billion (Rs.8,225 crore) per annum during the second half of the 1980s to US \$ 9.1 billion (Rs.35,354 crore) per annum in the second half of the 1990s and to US \$ 12.6 billion in 2002-03 alone. While the capital flows brought about an easing of the external financing constraint, they have also posed dilemmas for the conduct of monetary policy. With overall surpluses in the balance of payments emerging as the dominant factor driving money supply, this has necessitated rearguard monetary policy action to ensure that this exogenous monetary expansion does not endanger the pursuit of the final targets of growth with price stability.

A number of steps have been taken to manage the excess supplies in the foreign exchange market such as phased

liberalisation of international transactions and prepayment of multilateral debt. Furthermore, in 2002-03, the exchange rate of the rupee vis-a-vis the US dollar appreciated, an event unprecedented in the recent monetary history of India. The principal instrument for managing capital flows in India has been sterilisation, i.e., heading off the expansionary impact of rising NFA by open market sales of government securities by the Reserve Bank from its portfolio. As a result, domestic money supply has been unaffected by the external inflows. These operations could have several implications like quasi-fiscal costs, bidding up of interest rates domestically and possibly depriving the economy of the benefits of capital inflows. Therefore, sterilisation is essentially a means of buying time until macroeconomic policies can be put in place to nurture a durable absorption of the capital flows

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into productive investments and augmentation of capacity in the economy.

The conduct of discretionary monetary policy in the face of surges in capital flows has engaged considerable attention in the literature. A key issue is whether or not monetary policy is held hostage to the capital flows. Does the monetary stance, say, a tightening effected through reduction of NDA get completely offset by the expansion of NFA on account of capital inflows? The alternate hypothesis is whether or not the monetary authority is able to sterilise the increase in NFA by a compensating reduction of NDA so that it retains control over money supply and is able to pursue its stated objectives. In other words, does the change in NFA cause NDA to change or does NFA respond to changes in NDA? For most countries, both lines of causality could be at play depending upon the degree of capital account liberalisation and sensitivity of foreign flows to interest rate differentials. An examination of the offset coefficient - the response of net foreign assets to net domestic assets - provides some clues. An offset coefficient close to unity would imply that the efforts to tighten monetary policy would induce equal offsetting foreign inflows leaving no scope of independent monetary policy. In contrast, an offset coefficient of zero would provide the monetary authority with complete control over money supply and, therefore, discretion in the conduct of monetary policy. For five out of six emerging market economies examined under pre-Asian crisis conditions, the offset coefficient lay in a range of (-)0.1 to (-)0.5 indicating scope for independent monetary policy; for Thailand, the offset coefficient was close to unity suggesting little scope of pursuing an independent monetary policy.

For India, the offset coefficient was estimated to be (-) 0.3 over the period April 1993 to March 1997, suggesting that sterilisation operations conducted during this period enabled

sufficient independence for monetary policy to pursue domestic goals. In the subsequent period, net foreign assets have increased rapidly. Over the sample period April 1994 to March 2003, Granger causality tests indicate a uni-directional causality from changes in NFA to NDA. Thus, over the period 1994-2003, capital inflows were not induced by domestic monetary conditions. Moreover, the sterilisation coefficient - the response of change in NDA to that in NFA - was (-) 0.83, *i.e.*, an increase of Rs.100 in NFA attracted a policy response of sterilisation that drained away NDA worth Rs.83 from the system. As a result, the Reserve Bank was able to offset the expansionary effect of foreign capital flows on domestic money supply, consistent with its macroeconomic objectives.

A critical issue in the sustainability of sterilisation operations is the stock of the Government of India securities with the Reserve Bank - Rs.83,131 crore as on August 15, 2003. Of this stock around 47 per cent is marketable. The rest are special securities and funding operations have been carried out at discrete intervals to convert these into marketable instruments and these have quasi-fiscal implications. In the ultimate analysis, it is durable and consistent policies that expand the country's absorptive capacity which will ensure a natural habitat for capital inflows in India without threat to macro-economic stability. This, in fact, is the thrust of the growth strategy of the Tenth Five Year Plan.

#### References

1. Pattanaik, S. (1997), "Target and Instruments for the External Sector with an Open Capital Account", *Economic and Political Weekly*, Vol.32, No.40.
2. Schadler, Susan, Maria Carkovic, Adam Bennett and Robert Kahn (1993), "Recent Experiences with Surges in Capital Inflows." *Occasional Paper*, 108, International Monetary Fund.

the Centre's borrowing programme but rather the impact of secondary market operations which cause changes in the ownership of the underlying securities. The Reserve Bank's primary subscriptions to the Centre's fresh dated securities during the year were concentrated in the first and the fourth quarters. The fourth quarter primary subscriptions, however, were entirely the counterpart of the pre-payment of external loans owed to multilateral agencies. On the other hand, the Reserve Bank's secondary operations in the form of open market sales (alongwith repo operations) were carried out throughout the year, intensifying from the second quarter onwards. The higher order of open market operations relative to primary placement is an indication of the pressures imposed by the need to sterilise capital inflows, since the Reserve Bank has

been consistently pursuing the strategy of taking primary issuances of government securities on to its own books when market considerations are not favourable and subsequently off-loading them with a view to ensuring the successful completion of the borrowing programme at lower costs and higher maturities. Repo operations under the LAF balanced out over the year (Table 3.2).

3.6 The Centre's comfortable liquidity position was reflected in lower recourse to loans and advances from the Reserve Bank during 2002-03 (Chart III.3). The loans and advances generally remained well within the stipulated limits (Rs.10,000 crore and Rs.6,000 crore for the first and the second halves of the year, respectively). The second half of the year, in fact, witnessed only a few incidents of

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Table 3.2 : Variation in Net Reserve Bank Credit to the Centre

(Rupees crore)

Variable	2003-04	2002-03					2002-03	2001-02
	Q1	Q4	Q3	Q2	Q1			
1	2	3	4	5	6	7	8	
<b>Net Reserve Bank Credit to the Centre (1+2+3+4-5)</b>	<b>435</b>	<b>7,582</b>	<b>-17,882</b>	<b>-19,555</b>	<b>1,455</b>	<b>-28,400</b>	<b>-5,150</b>	
1. Loans and Advances to the Centre	8,145	0	0	-7,648	2,472	-5,176	-219	
2. Treasury Bills held by the Reserve Bank	-3	3	0	0	-18	-15	-464	
3. Reserve Bank's Holdings of Dated Securities	-11,300	11,116	-17,979	-11,761	-6,107	-24,731	-2,223	
4. Reserve Bank's Holdings of Rupee Coins	163	-106	97	-146	64	-92	82	
5. Central Government Deposits	-3,430	3,431	0	0	-5,044	-1,614	2,326	
<i>Memo Items*</i>								
1. Market Borrowings of Dated Securities by the Centre #	44,000	18,000	23,000	35,000	49,000	1,25,000	1,14,213	
2. Reserve Bank's Primary Subscription to Dated Securities	5,000	13,000	0	1,157	22,018	36,175	28,892	
3. Repos (-) / Reverse Repos (+) (LAF), net position £	-19,040	3,079	10,371	8,845	-20,355	1,940	-3000	
4. Net Open Market Sales #	5,620	11,150	15,693	19,918	7,020	53,781	30,335	
5. Primary Operations \$	25,643	15,187	-12,527	-8,642	29,598	23,616	24,649	

\* At face value. # Excludes Treasury Bills. £ Includes fortnightly repos.  
\$ Adjusted for Centre's surplus investment.  
Quarterly variations are based on March 31 for Q<sub>4</sub> and last reporting Fridays for other quarters.

recourse to loans and advances as the Centre often had sizeable surplus balances which were invested in its own securities. The comfortable market liquidity conditions also resulted in a reduction in the Reserve Bank's credit to banks and primary dealers (PDs) during the year (Appendix Table III.2).

### Developments during 2003-04

3.7 Reserve money recorded a higher order of year-on-year expansion during 2003-04 so far (as

on August 15, 2003) (Table 3.3). The growth in reserve money was entirely on account of sustained external flows driving up the NFA of the Reserve Bank. As a result, the NFA-currency ratio reached the level of 131.7 per cent as on August 15, 2003. The increase in NFA was partly offset by a further decline in the Reserve Bank's net credit to the Centre. Recourse of commercial banks and PDs to credit from the Reserve Bank also fell reflecting easy liquidity conditions.

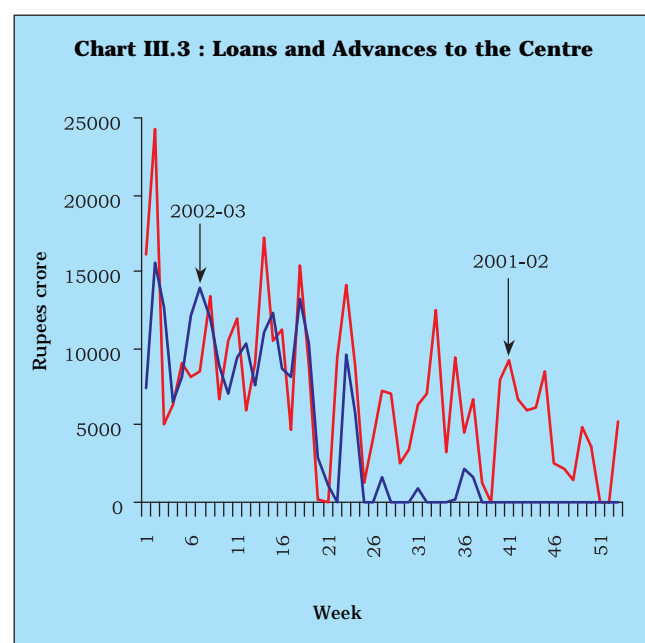


Table 3.3 : Reserve Money

(Rupees crore)

1	Year-on-year Variations			
	As on August 15, 2003		As on August 16, 2002	
	Absolute	Percent	Absolute	Percent
2	3	4	5	
<b>Reserve Money</b>	<b>47,017</b>	<b>14.0</b>	<b>31,231</b>	<b>10.2</b>
<i>Major Components</i>				
1. Currency in Circulation	35,024	13.3	32,049	13.9
2. Bankers' Deposits with RBI	11,106	15.8	-1,030	-1.4
<i>Major Sources</i>				
1. Net Reserve Bank Credit to Government	-49,880	-36.4	-19,842	-12.7
<i>of which: to Centre</i>	<i>-50,820</i>	<i>-37.9</i>	<i>-18,436</i>	<i>-12.1</i>
2. Net Foreign Exchange Assets (NFEA) of RBI	97,642 (1,04,484)	33.1	84,429 (69,291)	40.2

**Note :** Figures in brackets are foreign currency assets net of revaluation.

### MONETARY SURVEY

3.8 Broad money ( $M_3$ ) slowed down in consonance with real GDP growth during 2002-03, remaining within the indicative projection of the Monetary and Credit Policy announcement of April 2002. Slower growth of currency as well as aggregate deposits restrained monetary expansion, as deposits turned relatively unattractive at the margin in comparison with competing instruments of financial saving (Chart III.4 and Appendix Table III.3). This switch in preference away from bank deposits for alternative avenues of asset formation was also evident in a robust growth of postal deposits which drove up the principal liquidity measure *i.e.*,  $L_1$  relative to  $M_3$ .

3.9 Currency demand was affected by the contraction of rural activity on account of the drought and remained below its trend growth. There was a generalised slackening of the appetite for deposits. Aggregate deposit growth dropped, driven down by the lagged response of time deposits to the moderation in deposit rates by banks, which also resulted in lower accruals of interest (included under time deposits). Non-resident foreign currency deposit growth fell sharply *vis-a-vis* domestic deposits, indicative of a shift in favour of relatively high interest bearing non-resident rupee deposits as well as positive exchange rate expectations. As a consequence, money supply excluding foreign currency liabilities *i.e.*,  $NM_3$  recorded a higher order of expansion relative to  $M_3$  (Appendix Table III.4). Deposits placed with non-bank financial companies were almost unchanged affecting the expansion of the widest measure of liquidity *i.e.*,  $L_3$  (Table 3.4 and Appendix Table III.5).

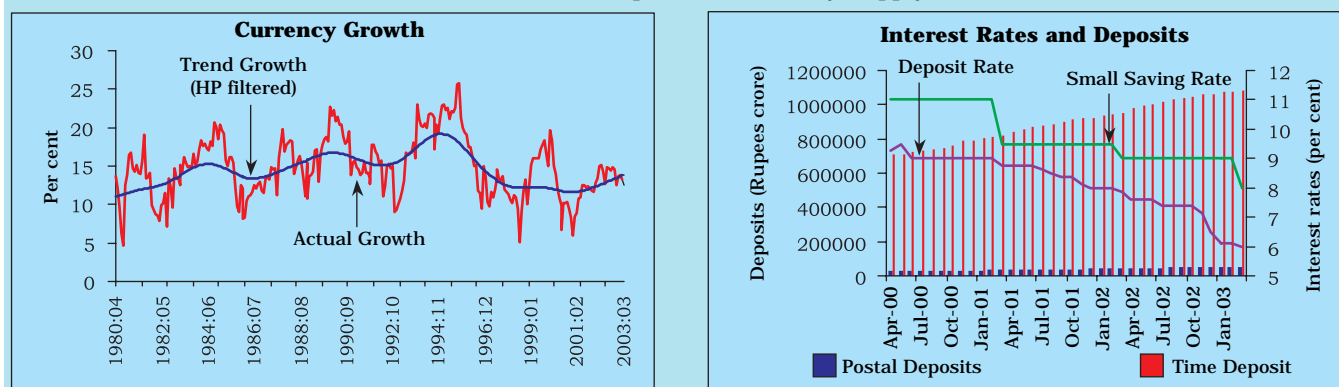
3.10 In order to ensure consistency with conceptual and definitional principles adopted in India as in the

majority of countries the world over, analysis of monetary aggregates during 2002-03 excludes the effects of mergers which resulted in the integration of non-monetary liabilities in the form of bonds and debentures with the balance sheet of the banking system. While the mergers resulted in 're-intermediation' and an expansion of the banking system's assets and liabilities, it is important to extract only the monetary liabilities therefrom for the purpose of compilation and analysis of money supply as conventionally understood (Box III.2).

#### Sources of Money Supply

3.11 Variations in monetary aggregates were driven in 2002-03 by shifts in the asset portfolios of banks in response to movements in relative rates of return as well as a generalised risk sensitivity in an environment characterised by depressed equity markets, an uncertain monsoon outlook and hesitant recovery of aggregate demand. The pick-up in domestic credit during 2002-03 was absorbed by the government and the commercial sectors. Net bank credit to the Government was maintained at around 41.0 per cent of domestic credit, reflecting the persistent appetite for government securities in the banking system. Scheduled commercial banks' holding of Government securities was around 39.0 per cent of their net demand and time liabilities (NDTL); at end-March 2003, they were higher by Rs.1,95,974 crore than the statutory minimum requirement of 25.0 per cent required for the maintenance of the SLR. In recent years, the progressive market orientation of the Centre's borrowing programme has minimised the recourse to automatic monetisation and captive financing. Since the 1990s, government securities have emerged as an attractive avenue for investments by banks, particularly in the context of prudential norms imposed under financial sector reforms.

Chart III.4 : Components of Money Supply





## MONEY, CREDIT AND PRICES

Table 3.4 : Monetary Indicators

Variable	Outstanding as on March 31, 2003 (Rupees crore)	(Variation in per cent)			
		Point to point Basis		Monthly Average Basis	
		2002-03	2001-02	2002-03	2001-02
1	2	3	4	5	6
I. Reserve Money	3,69,061	9.2	11.4	9.3	11.1
II. Broad Money (M <sub>3</sub> )	16,95,551	13.2	14.1	14.0	16.1
a) Currency with the Public	2,70,983	12.5	14.9	13.8	12.7
b) Aggregate Deposits	14,21,326	13.3	14.1	14.1	16.9
i) Demand Deposits	1,98,602	10.8	7.8	9.9	10.3
ii) Time Deposits	12,22,725	13.7	15.2	14.8	18.0
of which: Non-Resident Foreign Currency Deposits	92,240	1.5	5.5	4.3	37.0@
III. NM <sub>3</sub>	16,15,236	13.8	15.7	14.8	15.5
IV. a) L <sub>1</sub>	16,70,283	14.1	16.0	15.1	15.8
of which: Postal Deposits	55,047	25.3	27.6	25.6	26.6
b) L <sub>2</sub>	16,76,490	14.1	15.2	14.8	15.5
of which: FI Deposits	6,207	20.7	-60.2	-36.7	-15.0
c) L <sub>3</sub>	16,96,063	14.0	15.2	14.5	15.2
of which: NBFC Deposits	19,573	0.8	10.8	6.0	0.8
V. Major Sources of Broad Money					
a) Net Bank Credit to Government (i+ii)	6,78,059	15.0	15.2	13.7	16.7
i) Net Reserve Bank Credit to Government	1,20,679	-20.7	-1.1	-17.4	1.5
of which: to the Centre	1,12,985	-20.1	-3.5	-17.9	0.6
ii) Other Banks' Credit to Government	5,57,379	27.4	22.1	25.5	23.9
b) Bank Credit to Commercial Sector	8,62,068	13.5	11.8	12.6	12.8
of which: Scheduled Commercial Banks' Non-food Credit	6,35,192	18.6	13.6	16.5	11.8
c) Net Foreign Exchange Assets of Banking Sector	3,93,715	26.6	24.5	31.4	24.5

Data provisional.

@ Reflects the Indian Millennium Deposits (IMDs) effect.

**Note** : 1. M<sub>3</sub>, NM<sub>3</sub>, L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub> and deposits are adjusted for the full impact of mergers while credit is adjusted for the initial impact of mergers since May 3, 2002.

2. Sharp variations in FI deposits reflect the impact of the mergers.

Contemporaneously, the Reserve Bank has had to adjust monetary policy to sterilise large inflows of capital. Consequently, the share of the Reserve Bank in outstanding net bank credit to the Government sector which was over 62 per cent in 1990-91 declined to around 20 per cent in 2002-03 (Chart III.5).

3.12 Food credit declined in 2002-03 due to a significant fall in procurement operations. This added to liquidity in the system. Non-food credit extended by scheduled commercial banks accelerated to accommodate the revival of industrial activity (Chart III.6 and Appendix Table III.6).

## Box III.2

## Mergers in the Banking System : Impact on Monetary Aggregates

In line with the rapidly expanding phenomenon of mergers and acquisitions the world over, Indian banking has experienced restructuring in the form of mergers of banks with other banks. Reverse mergers *i.e.*, mergers of non-banking institutions with banks are a relatively new phenomenon in India, the first one having occurred in March 2002. A merger of one bank with another bank leaves the aggregate assets and liabilities of the banking system unaffected. Accordingly, money supply, which involves a lateral aggregation of the balance sheets of all banking entities constituting the banking system, remains unaffected by the merger. In contrast, merger of a bank with a non-bank immediately results in an expansion in the balance sheet of the banking system since the assets and liabilities of a hitherto non-bank are taken over by the merged entity which is a bank. The key issue is the impact of the merger on money supply.

Money supply is conventionally defined to comprise currency and deposits *i.e.*, those liabilities of the banking

system which perform the functions of money in terms of being a medium of exchange, a store of value, a unit of account and a standard for deferred payments. The key issue is moneyness: zero or near-zero transformation cost of an instrument to money, a criterion amply satisfied by bank deposits. A reverse merger results in the inclusion of the liabilities such as bonds and debentures of the erstwhile non-bank in the aggregate liabilities of the banking system. The crucial question that arises is: should these liabilities (bonds and debentures) be included in money *i.e.*, do they satisfy the criterion of moneyness?

In India, monetary statistics have undergone refinements from the time they were first disseminated in 1935 by the Reserve Bank. The rationale and analytical foundations underlying the definition of money to include currency and deposits only were first set out in 1961 by a Working Group appointed by the Reserve Bank. The Second Working Group,

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set up in 1977, endorsed this definition of money. The Third Working Group on Money Supply (1998) excluded bonds issued by financial institutions not only from the monetary aggregates but also from broader measures of liquidity. The Third Working Group surveyed as many as 38 countries in search of international best practices and did not find a single country practice of inclusion of bonds and debentures in the components of money supply.

The Monetary and Financial Statistics Manual (IMF, 2000) is ambivalent on the issue, preferring to defer to country specific circumstances. It notes that securities with maturities of up to two years may be included in broad money while securities with maturities of more than two years are usually excluded from money as the specific nature of contracts renders them illiquid. The European Central Bank considers bonds of maturity beyond three years as not 'adequately liquid' to be a part of money.

Liabilities of a non-bank are non-monetary in character prior to the merger and, in fact, represent some part of dis-intermediation from the banking system. The merger of the non-bank with a bank does not impart any monetary character (*i.e.*, of providing a base for credit creation or of being a medium of exchange) to them. Furthermore, when the public subscribes to the bonds of a non-bank, there is a simultaneous transfer of ownership of deposits held in the banking system from the public to the non-bank entity with no impact on money. Thus, the issue of bonds and debentures by a non-bank has already been recorded in the

banking system. The inclusion would, therefore, lead to double counting.

Accordingly, liabilities in the form of bonds and debentures, which were of average maturity of nearly six years and entered the balance sheet of the banking system consequent upon the reverse merger, are excluded from analysis of monetary aggregates in India and are treated as net non-monetary liabilities of the banking system. This methodology has the advantage of recording the specific effects of re-intermediation when the merged entity converts the non-monetary bonds and debentures into deposits. From the point of view of the conduct of monetary policy, this helps to keep the monetary authority on guard against an exogenous source of monetary expansion. During 2002-03, available information indicates that bonds and debentures of about Rs.13,000 crore were liquidated and flowed back into the banking system, contributing nearly a percentage point of  $M_3$  growth. Analogous treatment is accorded to bank credit; however, in view of the fact that the assets of the merged entities are well integrated into a single portfolio, only the initial impact of the merger is excluded.

References

1. *Monetary and Financial Statistics Manual (2000)*, International Monetary Fund, Washington D.C.
2. *Report of the Working Group on Money Supply: Analytics and Methodology of Compilation (1998)*, Reserve Bank of India.

3.13 The increase in non-food credit demand was well distributed across industries such as infrastructure, housing, cement, cotton textiles, gems and jewellery, iron and steel, electricity, computer

software, automobiles, petroleum and fertilisers (Appendix Tables III.8 and III.9). Growth of credit to the housing industry continued to remain high, benefiting from tax incentives as well as the softening

Chart III.5 : Net Bank Credit to Government

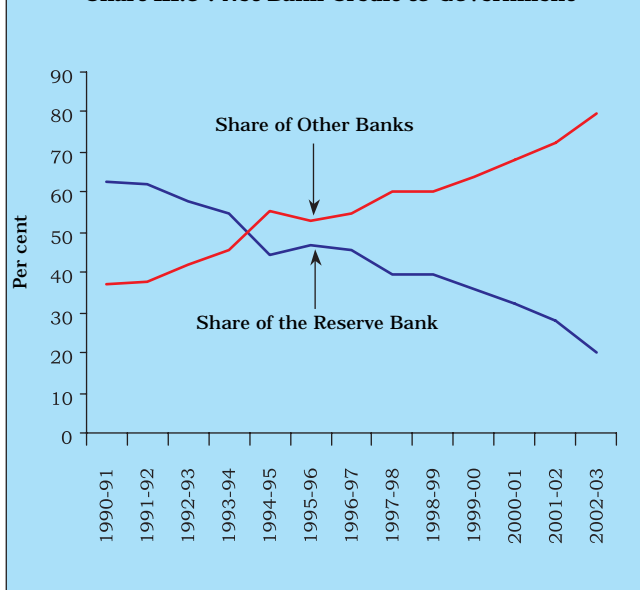
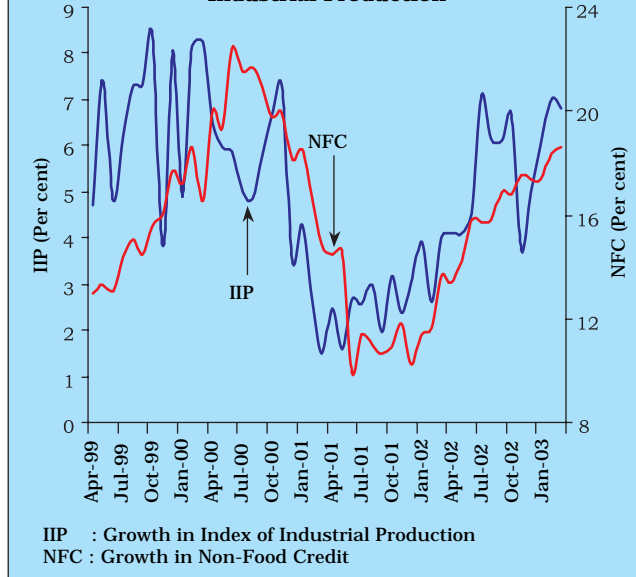


Chart III.6 : Non-food Credit and Industrial Production



## MONEY, CREDIT AND PRICES

**Table 3.5 : Sectoral Deployment of Gross Bank Credit**  
(Variation over the year)

Sector	(Rupees crore)			
	2002-03		2001-02	
	Absolute	Per cent	Absolute	Per cent
1	2	3	4	5
1. Priority sector	28,540	16.3	20,845	13.5
2. Industry (Medium & Large)	28,011	16.3	9,487	5.8
3. Housing	12,308	55.1	6,203	38.4
4. Non-banking financial companies	4,399	45.6	1,843	23.6
5. Wholesale trade	1,939	9.5	2,614	14.6
6. Other sectors	9,481	11.5	12,595	18.0
<b>7. Total (1 to 6)</b>	<b>84,678</b>	<b>17.5</b>	<b>53,587</b>	<b>12.5</b>
<i>of which:</i>				
8. Export Credit	6,424	14.9	-343	-0.8

**Note :** Data are provisional and relate to select scheduled commercial banks which account for about 90 per cent of bank credit of all scheduled commercial banks.

of interest rates (Table 3.5). The recovery in export credit reflected high export growth (Appendix Table III.10). Engineering, coal and tobacco industries, however, recorded declines in credit off-take.

3.14 Bank credit flows to the commercial sector include their investments in commercial paper, shares, bonds and debentures, units of mutual funds and other instruments which fall outside the purview of eligible instruments for the purpose of maintaining the SLR. Since 1997-98, the share of such investments in commercial sector credit has doubled, indicative

**Table 3.6 : Scheduled Commercial Banks' Non-SLR Investments**

Variable	(Rupees crore)		
	As at end-March		
	2003	2002	1997
1	2	3	4
1. Commercial Paper	4,258	8,497	685
2. Shares issued by	9,017	5,914	1,252
2.1 PSUs	1,431	1,586	348
2.2 Private Corporate Sector	7,586	4,327	904
3. Bonds/Debentures issued by	79,760	66,589	16,631
3.1 PSUs	46,633	39,520	14,277
3.2 Private Corporate Sector	33,127	27,069	2,354
Total Non-SLR Investments (1+2+3)	93,036	81,000	18,568
<b>Memo Items</b>			
Conventional Bank Credit	7,29,216	5,89,723	2,78,401
Bank Credit including non-SLR Investments	8,22,252 (64.2)	6,70,723 (60.8)	2,96,969 (59.4)

**Note :** Figures in parentheses indicate the ratio of bank credit (including non-SLR investments) to aggregate deposits.

of a shift in portfolio choice for tradable assets as against traditional loans and advances (Table 3.6).

3.15 Bank portfolio shifts between credit and investments reflect the liberalisation of various segments of the financial market spectrum. They also indicate a diversification of core banking competencies with the objective of diffusing credit risk along with improved capabilities to manage market risk. Similar forces are at work driving banks to seek higher profits from treasury operations (Box III.3).

**Box III.3****Determinants of Bank Credit and Investment**

The portfolio allocation of banks between credit and investments assumes crucial importance on account of two reasons. First, in the tradition of the "credit view", the existence of market imperfections and information asymmetries make credit and investments in bonds imperfect substitutes. Accordingly, interest rates work through a menu of rates of returns on a host of financial assets and responses of bank portfolios to monetary policy impulses tend to be magnified through a financial accelerator framework. Second, the portfolio choice of banks is strongly influenced by cyclical effects. Typically during an economic slowdown, banks exhibit a pro-cyclical flight to safety preferring risk-free government securities to loans. This is further re-inforced by risk-based capital requirements. In the upturn, banks' portfolio preference shifts to high-returns credit. Underlying these overarching behavioural characteristics are the fundamental determinants of bank credit and investments which play a decisive role in banks' portfolio selection.

Portfolio management approaches study the allocation of available funds to the banks (deposits and capital,

adjusted for required reserves) across 'liquid assets', 'investment assets' and 'loans'. The desired size of liquid assets typically varies directly but less than proportionately with the size of deposits. A bank's holdings in investment assets are determined by the expected rate of return and its variability. Loans are assets with highest risk and least liquidity, with expected return and risk determined in negotiations between borrower and lender. The combined effect of all the elements in the "loan terms" vector would determine the expected rate of return and risk on loans. An impulse in the form of deposit inflows would result in portfolio adjustment with immediate expansion of liquid assets like short-term investments and cash in hand, followed by movements towards long-term securities. The movement of funds towards loans is rather slow on account of both lender and borrower inertia.

The US experience suggests that shortly after the introduction of Basel I risk-based capital requirements, banks decreased the share of commercial and industrial

(Contd....)

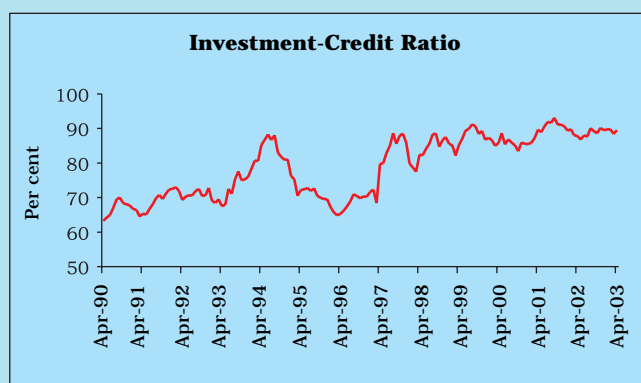


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loans in total bank credit. The introduction of risk-based capital requirements and greater regulatory scrutiny of business loans encouraged banks to hold safer assets such as government securities and disfavoured commercial lending. The downturn in activity and secular shifts towards off-balance sheet items like letters of credit and loan commitments exacerbated the decline in commercial lending due to enforcement of regulatory standards.

The Indian experience shows that banks' investment-credit ratio has shown a steady upward movement over the 1990s (Chart). Empirical investigation suggests that both credit and investment are integrated of the same order *i.e.*, they exhibit strong co-movement in the long-run. Accordingly, if



cyclical influences are cleaned out, expansion in bank credit tends to crowd in investment. It is only in phases of overall slowdown that risk aversion produces divergencies.

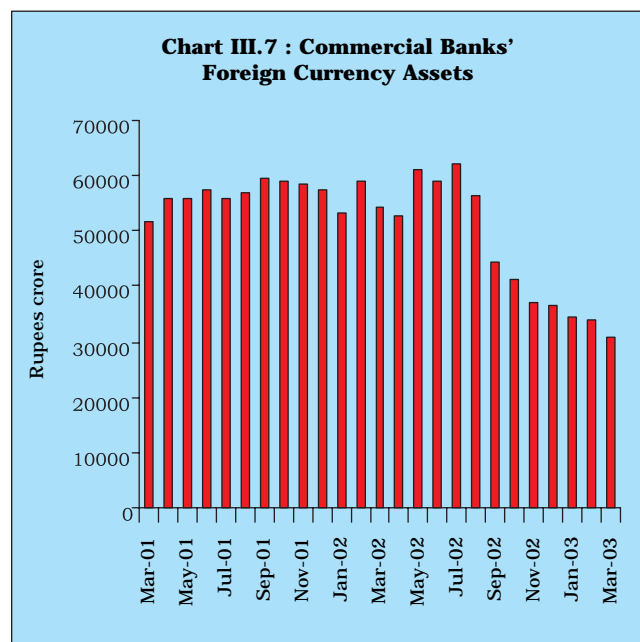
An empirical investigation of the credit dynamics of banks in India showed that the demand for non-food credit is predominantly influenced by the behaviour of industrial activity and is inversely related to the bank lending rate. Supply of bank credit is found to be positively influenced by the lending rate and its past behaviour, indicative of rigidities in the interest structure in India. Banks' investment in government securities is primarily influenced by the state of development of the gilt market and the application of prudential norms. A cross sectional analysis shows that public sector banks tend to be relatively more risk-averse with high share of deposits in their liabilities and higher share of gilt investments in assets. Contrasting behaviour is revealed by foreign banks and new private sector banks.

References

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2. Furfine, Craig (2001), "Bank Portfolio Allocation: The Impact of Capital Requirements, Regulatory Monitoring and Economic Conditions", *Journal of Financial Services Research*, 20:1.
3. Reserve Bank of India (2002), *Report on Currency and Finance 2001-02*.

3.16 As in the past, net foreign assets of the banking system continued to be dominated by large accretions to the Reserve Bank's foreign currency assets on account of purchases of foreign currency from banks. Scheduled commercial banks' foreign currency assets declined (Chart III.7). Expectations of a strengthening domestic currency combined with positive differentials between domestic and international interest rates seem to have produced a distinct home bias. This resulted in substantial net inflows of banking capital in the form of reduction in investments in foreign paper, substitution of foreign currency deposits by non-resident rupee deposits and higher overseas borrowings.

3.17 Banks have been steadily building up their capital accounts in the form of statutory capital, investment fluctuation and revaluation reserves, with a relatively small component of fresh equity issuances. During 2002-03, scheduled commercial banks' capital and reserves increased further, in consonance with their rising investments in government securities and greater freedom in respect of managing foreign assets. New issues of



subordinated debt for Tier II capital during the year also augmented the banking system's capital account.

## MONEY, CREDIT AND PRICES

**Table 3.7 : Variations in Money Supply**

(Rupees crore)

1	Year-on-year Variation			
	As on August 8, 2003		As on August 9, 2002	
	Absolute	Per cent	Absolute	Per cent
2	3	4	5	
<b>Broad Money (M<sub>3</sub>)</b>	<b>1,86,673</b>	<b>11.4</b>	<b>1,99,334</b>	<b>14.3</b>
<i>Major Components</i>				
Currency with Public	31,717	12.5	30,910	13.8
Aggregate Deposits	1,54,071	11.2	1,68,320	14.4
<i>Major Sources</i>				
Net Bank Credit to Government	68,822	10.6	84,465	15.0
<i>of which:</i> by Reserve Bank	-68,421	-44.4	-11,921	-7.2
Bank Credit to Commercial Sector	87,306	10.6	86,723	12.5
<i>of which:</i> Scheduled Commercial Banks non-food Credit	90,717	15.3	73,230	15.4
Net Foreign Exchange Assets (NFEA) of the Banking Sector	83,426	24.3	88,514	34.7

**Developments during 2003-04**

3.18 Year-on-year broad money (M<sub>3</sub>) expansion decelerated during 2003-04 (as on August 8, 2003) mainly on account of slowdown in aggregate deposits. Deceleration in time deposits growth continued in response to lower interest rates and the continuing impact of last year's drought. Among the sources, growth in net bank credit to the Government decelerated. Bank credit to commercial sector slowed down primarily on account of decline in food credit which, in turn, was due to lower procurement and higher off-take. Commercial banks' non-food credit remained more or less steady in consonance with industrial growth (Table 3.7). Non-SLR investments declined mainly on account of a decline in banks' investments in bonds/debentures.

*Commercial Banking Survey*

3.19 Commercial banks continue to be the dominant financial intermediaries in India, especially with the slackening of activity in other segments of the financial system in the downswing of the business cycle. Consequently, movements in the assets and liabilities of the commercial banks have a determining influence on the behaviour of monetary and credit aggregates. The commercial

banking survey provides a bird's eye view of the flow of funds within the financial system between sources and uses during the year which needs to be superimposed upon the annual variations.

3.20 Liquidity in the banking system expanded on the back of the usual first quarter upturn in domestic deposits tapering off over the remaining quarters. The release of resources through the reduction in the CRR helped to augment the liquidity generated in the banking system. Call/term borrowings from financial institutions decelerated sharply up to the third quarter due to ample liquidity conditions. In the fourth quarter, however, banks' call borrowings spurted due to relatively tight money market conditions.

3.21 As regards the uses of funds, the off-take of bank credit by the Government was heaviest in the first quarter, reflecting the launch of the market borrowing programme of the Centre. Growth in bank credit to the government dipped in the subsequent quarters. The pick-up in non-food credit occurred steadily from the second quarter of 2002-03. Banks' investments in non-SLR investments declined sharply in the fourth quarter following reduction in their investments in commercial papers and units of mutual funds. Net foreign assets of banks were drawn down from the second quarter onwards. Foreign currency repatriable deposits declined from the third quarter; overseas borrowings of banks rose, particularly during the second half of the year. With the prevailing easy liquidity conditions and phasing out of the collateralised lending facility (CLF), net bank reserves started increasingly reflecting the movements in the CRR requirements and LAF operations. A large build-up in the capital account occurred in the first quarter of the year reflecting mergers in the banking system and reserve accumulation by the banks (Table 3.8).

3.22 The flow of resources from non-banks by way of capital issues, GDRs/ADRs/FCCBs, CPs and credit from financial institutions (FIs) to the commercial sector continued to be subdued. Credit from FIs shrank for the second consecutive year due to slowdown in their new business while loans extended by them in the past were repaid. Capital issues dwindled under depressed conditions in the primary market and waning of corporates' interest due mainly to sluggish investment activity (Table 3.9).

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Table 3.8 : Operations of Scheduled Commercial Banks : Variations

(Rupees crore)

1	Outstanding as at end- March 2003	2002-03				2001-02			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2	3	4	5	6	7	8	9	10
<b>Components</b>									
<b>Aggregate Deposits of Residents</b>	<b>11,58,942</b>	<b>52,675</b>	<b>32,201</b>	<b>37,484</b>	<b>24,073</b>	<b>53,337</b>	<b>20,856</b>	<b>29,675</b>	<b>32,122</b>
Demand Deposits	1,70,289	4,717	-4,535	11,654	5,405	5,392	-9,382	10,074	4,412
Time Deposits of Residents	9,88,653	47,958	36,735	25,829	18,668	47,945	30,237	19,601	27,710
<b>Call/Term Funding from Financial Institutions</b>	<b>12,638</b>	<b>6,448</b>	<b>792</b>	<b>227</b>	<b>2,142</b>	<b>-341</b>	<b>1,865</b>	<b>409</b>	<b>-1,471</b>
<b>Sources</b>									
<b>Credit to the Government</b>	<b>5,23,417</b>	<b>47,047</b>	<b>18,716</b>	<b>22,680</b>	<b>23,798</b>	<b>24,213</b>	<b>21,088</b>	<b>13,791</b>	<b>12,049</b>
<b>Credit to the Commercial Sector</b>	<b>8,46,494</b>	<b>22,825</b>	<b>20,322</b>	<b>39,481</b>	<b>27,881</b>	<b>9,349</b>	<b>11,217</b>	<b>31,320</b>	<b>33,676</b>
Food Credit	49,479	7,030	-7,645	-1,415	-2,468	10,349	-2,079	4,015	1,702
Non-food Credit	6,35,192	7,522	19,945	32,541	39,439	-2,367	12,649	25,673	28,347
Net Credit to Primary Dealers	4,093	2,874	5,817	959	-5,886	221	-401	115	526
Investments in Other Approved Securities	24,129	-1,233	-459	-965	-306	-997	62	-1,452	-644
Other Investments (in non-SLR Securities)	1,33,601	6,633	2,664	8,361	-2,898	2,143	986	2,970	3,745
<b>Net Foreign Currency Assets of Commercial Banks</b>	<b>-68,366</b>	<b>2,748</b>	<b>-15,136</b>	<b>-9,027</b>	<b>-8,820</b>	<b>4,952</b>	<b>-941</b>	<b>-3,544</b>	<b>-2,670</b>
Foreign Currency Assets	31,082	4,718	-14,412	-7,955	-5,345	5,886	2,023	-1,996	-3,483
Non-resident Foreign Currency									
Repatriable Fixed Deposits	92,240	1,655	669	-230	-703	835	2,018	1,425	475
Overseas Foreign Currency Borrowings	7,208	315	55	1,302	4,178	99	946	123	-1,288
<b>Net Bank Reserves</b>	<b>65,823</b>	<b>-2,943</b>	<b>11,055</b>	<b>-1,619</b>	<b>-5,700</b>	<b>16,304</b>	<b>-7,373</b>	<b>-1,277</b>	<b>-3,929</b>
<b>Capital Account</b>	<b>86,541</b>	<b>15,152</b>	<b>-742</b>	<b>-1,815</b>	<b>1,625</b>	<b>4,403</b>	<b>2,297</b>	<b>958</b>	<b>1,150</b>
<b>Memo Items</b>									
Release of Resources through change in CRR	-	6,500	0	3,500	0	4,500	0	8,000	0
Net Open Market Sales to Commercial Banks	-	3,131	13,228	12,803	7,338	4,106	9,614	1,904	0
<b>Note</b> : Deposits have been adjusted for the full impact of the mergers while credit has been adjusted for the initial impact of the same since May 3, 2002.									

Table 3.9 : Flow of Resources from Non-Banks to Commercial Sector

(Rupees crore)

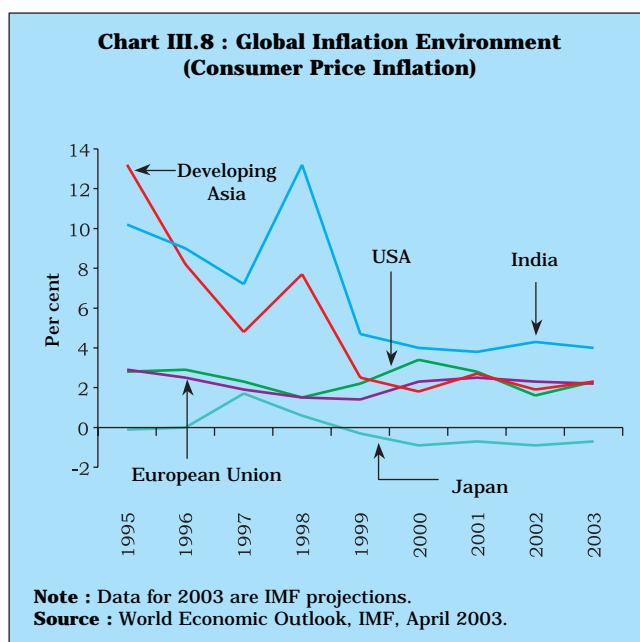
Item	2002-03	2001-02
1	2	3
1. Capital Issues \$ * (i-ii)	642	1,984
i) Non-Government Public Ltd. Companies (a+b)	642	1,634
a) Bonds/Debentures	218	774
b) Shares	424	860
ii) PSUs and Government Companies	0	350
2. Global Depository Receipts (GDRs)/American Depository Receipts (ADRs) and Foreign Currency Convertible Bonds (FCCBs) \$	3,426	1,528
3. Issue of CPs #	1,812	676
4. Financial assistance extended by Financial Institutions (net) @ +	-4,848	-3,469
<b>5. Total (1 to 4)</b>	<b>1,032</b>	<b>719</b>
Data provisional.		
\$ Gross issuances excluding issues by banks and financial institutions.		
# Excluding issuances by financial institutions and banks' investments in CPs.		
* Figures are not adjusted for banks' investments in capital issues, which are not expected to be significant.		
@ Based on annual accounts, excluding ICICI Ltd. Comprises loans and advances, equity, other investments and bills of exchange and promisory notes discounted/rediscounted.		
+ Includes IDBI, IFCI Ltd., IDFC Ltd., EXIM Bank, IIBI Ltd., SIDBI and TFCI Ltd.		

## PRICE SITUATION

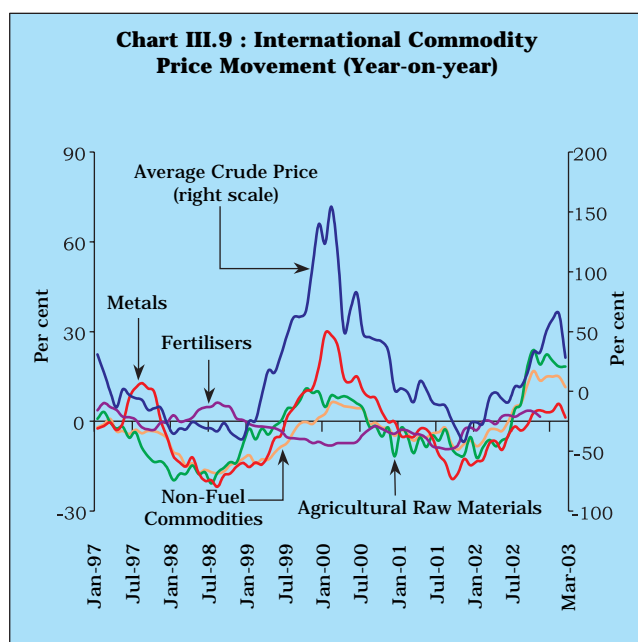
3.23 Inflation remained low in India over the first three quarters of 2002-03 in a benign international inflation environment. In the US and the Euro area, inflation was close to two per cent. Output gaps held down inflation in most of the industrial countries. Declining inflation raised the fears of deflation in several countries. The Japanese experience of prolonged decline in prices, bound in a spiral of weak activity and financial stress, is being examined afresh as several Asian countries (China, Hong Kong, Singapore, Taiwan and Thailand) joined Japan in deflation, either intermittently or persistently. Inflation continued to decline across the Commonwealth of Independent States (CIS) region and Africa, aided by progress in fiscal consolidation. Countries in Latin America and Russia faced significant inflation risk. Consumer prices are expected to increase by less than two per cent in 2003 in advanced economies and by just under six per cent in developing countries (World Economic Outlook, IMF, April 2003) (Chart III.8).

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**Chart III.8 : Global Inflation Environment (Consumer Price Inflation)**



**Chart III.9 : International Commodity Price Movement (Year-on-year)**



3.24 International commodity prices recovered in 2002 after bottoming out in late 2001. Non-fuel commodity prices, however, remained bound by weak demand and inventory drawdown. In 2002, metal prices recovered weakly with stocks of key metals at comfortable levels. International prices of food items, agricultural materials and beverages firmed up in 2002, mostly due to adverse weather conditions in a number of regions. International crude prices rose markedly from early August 2002 up to early 2003 owing to the geo-political situation in Iraq (Chart III.9).

**Table 3.10 : Disaggregated WPI Inflation**

(Per cent)

Groups	Inflation Rate			Weighted Variation	
	Mar. 29, 2003	Feb. 22, 2003	Dec. 14, 2002	Feb. 22, 2003 over Dec. 14, 2002	Mar. 29, 2003 over Dec. 14, 2002
1	2	3	4	5	6
Fuel Group	10.8	7.5	4.4	0.5	1.6
Primary Articles	6.1	6.3	3.3	0.3	0.4
Manufactures	5.1	4.4	2.8	0.9	1.2
Base Effect	-	-	-	0.6	0.1
<b>All Commodities</b>	<b>6.5</b>	<b>5.5</b>	<b>3.2</b>	<b>2.3</b>	<b>3.3</b>

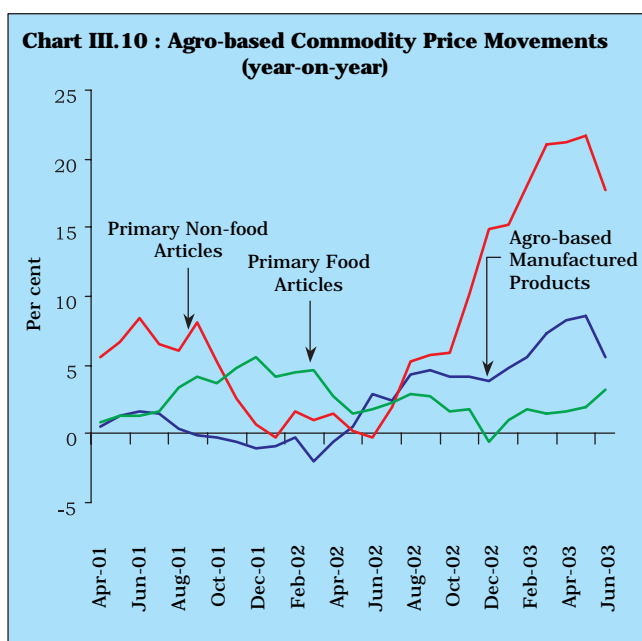
3.25 Headline inflation firmed up in June and July 2002 on the back of two rounds of increases in POL prices, and the impact of drought conditions which drove up prices of oilseeds and edible oils in the first half of the year. Inflation started easing in the second half of September 2002 as supply management strategies - step up in off-take, reduction in issue prices below economic cost, enhanced allocation for targeted employment programmes and imports - were put in place.

effects arising out of a declining price level in 2001-02 were embedded in the inflation outturn during this period, tapering off towards the end of the year (Table 3.10).

3.26 Reflecting the global situation, inflation in India firmed up in the last quarter of 2002-03, driven up by the hardening of international oil prices and supply side pressures on items like oil seeds, edible oils and oil cakes. Between December 14, 2002 and the end of March 2003 inflation rose by 3.3 percentage points, contributed mainly by prices of manufactures and POL prices. Statistical base

3.27 Within the overall variation in wholesale price inflation, disaggregated commodity price movements indicate that the inflation record of 2002-03 was dominated by the prices of non-food items; in contrast, it was primary food items which drove inflation in the preceding year. The drought conditions initially affected the prices of oil seeds and sugar cane. Eventually, the prices of primary non-food articles went up substantially in the post-*kharif* period, reflecting the visceral effects of moisture stress on the production of primary commodities. Prices of agro-based products in the manufacturing category rose contemporaneously (Chart III.10).

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3.28 Prices of manufactures rose towards the close of 2002-03 on account of firming up of prices of items like iron and steel and cotton textiles reflecting improvement in the industrial climate. Domestic prices of metals and fertilisers weathered the volatility of international price movements (Table 3.11).

3.29 Edible oils and oil cakes recorded the highest order of price rises. Shortfalls in the domestic production of oilseeds necessitated imports of edible oils which account for about one-half of domestic demand. Consequently, the domestic prices of edible oils displayed close co-movement with international prices of edible oils, indicative of the import content of domestic inflation (Chart III.11).

3.30 Underlying inflation (measured by average WPI) during 2002-03 was dominated by the behaviour of the manufactured products group (Chart III.12). Within manufactures, edible oils, oil cakes and man-made fibres were the primary sources of inflation.

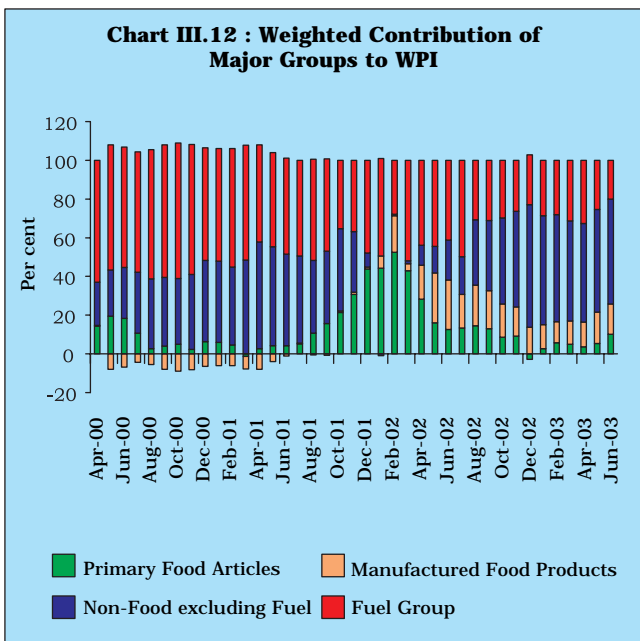
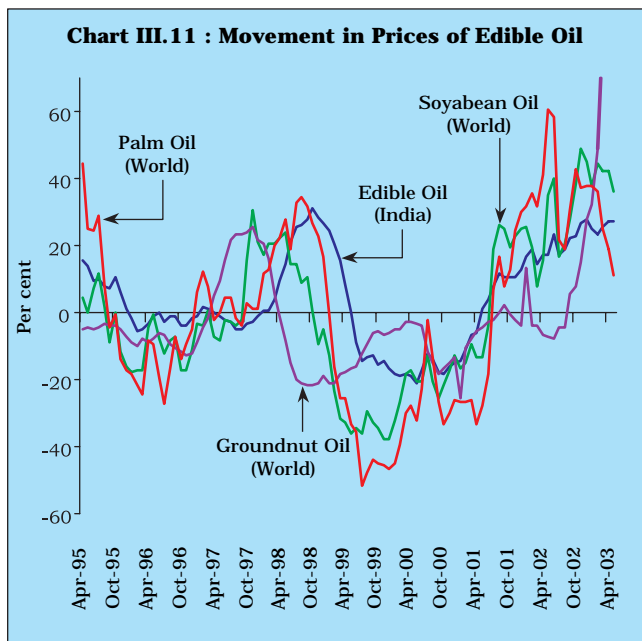
**Table 3.11 : WPI Inflation by Component (Base: 1993-94=100)**

(Per cent)

Group/Item	Weight	Weighted contribution to overall Inflation in 2002-03	Annual Point-to-Point Inflation		
			2002-03	2001-02	2000-01
1	2	3	4	5	6
<b>All Commodities</b>	<b>100.0</b>	<b>100.0</b>	<b>6.5</b>	<b>1.6</b>	<b>4.9</b>
<b>I. Primary Articles</b>	<b>22.0</b>	<b>21.6</b>	<b>6.1</b>	<b>3.9</b>	<b>-0.4</b>
a. Food Articles	15.4	2.2	0.8	5.2	-2.8
i) Cereals	4.4	2.9	4.0	0.8	-5.5
ii) Fruits and Vegetables	2.9	-0.6	-1.2	14.4	-2.9
b. Non-food Articles	6.1	19.3	22.1	0.6	6.0
i) Fibres	1.5	4.9	26.5	-17.9	7.4
ii) Oil Seeds	2.7	10.6	30.0	6.8	2.8
iii) Sugarcane	1.3	2.8	11.5	6.2	10.5
<b>II. Manufactured Products</b>	<b>63.7</b>	<b>44.3</b>	<b>5.1</b>	<b>0.0</b>	<b>3.8</b>
a. Food Products	11.5	14.0	8.7	0.3	-3.1
i) Sugar	3.6	-7.0	-15.0	-3.8	-0.9
ii) Edible Oils	2.7	8.5	27.4	12.5	-4.8
iii) Oil Cakes	1.4	8.8	40.3	15.0	0.4
b. Chemical and Chemical Products	11.9	8.2	4.2	2.5	4.0
of which: Fertilisers	3.7	1.2	2.1	3.6	3.4
c. Cement	1.7	0.3	1.1	-4.7	20.3
d. Basic Metals, Alloys and Metal Products	8.3	7.3	6.6	-0.9	3.2
of which: Iron and Steel	3.6	4.4	9.2	0.0	1.3
e. Machinery and Machine Tools	8.4	0.5	0.5	2.0	9.5
f. Transport Equipment and Parts	4.3	-0.6	-0.9	1.3	5.8
<b>III. Fuel Group</b>	<b>14.2</b>	<b>33.9</b>	<b>10.8</b>	<b>3.9</b>	<b>15.0</b>
a. Mineral Oils	7.0	29.7	18.4	1.2	17.0
b. Electricity	5.5	4.2	3.4	9.2	11.5
<b>Food Items (composite)</b>	<b>26.9</b>	<b>16.2</b>	<b>3.9</b>	<b>3.3</b>	<b>-2.9</b>
<b>Agro-based Manufactured Products #</b>	<b>28.3</b>	<b>27.4</b>	<b>7.4</b>	<b>-1.4</b>	<b>1.3</b>
<b>Non-food Items (WPI excluding Food)</b>	<b>73.1</b>	<b>83.8</b>	<b>7.5</b>	<b>1.0</b>	<b>8.0</b>
<b>WPI excluding Food Items and Mineral Oils</b>	<b>66.1</b>	<b>54.2</b>	<b>5.6</b>	<b>1.0</b>	<b>6.7</b>
<i>Memo Items</i>					
Average WPI Inflation			3.4	3.6	7.2
GDP Deflator			2.3	3.4	4.3
Services in CPI-IW @	16.4	21.5*	5.3	4.9	5.6
Housing in CPI-IW	8.7	13.2*	5.4	12.9	6.4
# Includes manufactured food products, beverages, tobacco and tobacco products, textiles, wood and wood products, paper and paper products, leather and leather products and rubber and plastic products.					
@ Miscellaneous Group in the Consumer Price Index for Industrial Workers (CPI-IW).					
* Weighted contribution to CPI-IW Inflation in 2002-03.					



MONEY, CREDIT AND PRICES

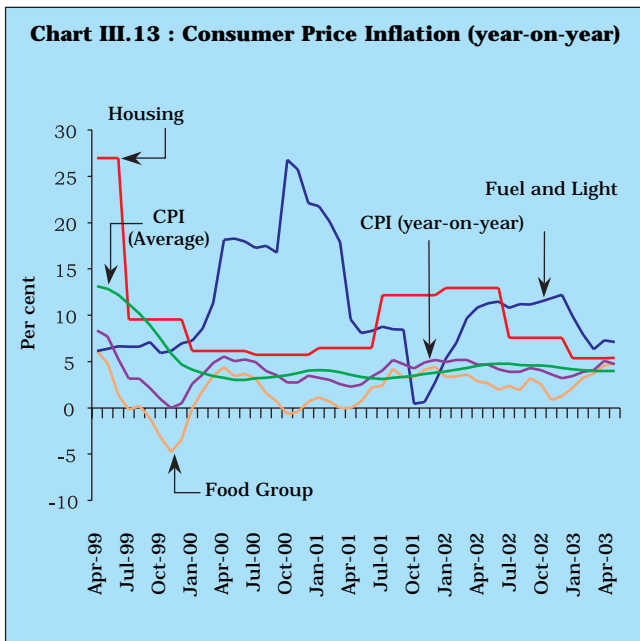


**Consumer Price Inflation**

3.31 Consumer price inflation, measured by the annual variation in the average consumer price index for industrial workers (CPI-IW) eased during the year, reflecting lagged adjustments to agricultural supply disturbances (Chart III.13 and Appendix Table III.13). Disaggregated commodity price movements within the CPI-IW basket broadly mirrored the wholesale price inflation. Food prices recorded moderate increase, primarily due to a sharp rise in the prices of oils and fats which edged up from 9.6 per cent at the beginning of the year to 34.9 per cent by March 2003. Housing inflation eased while services inflation (proxied by the broad miscellaneous group) was steady at around 5 per cent. The rise in international oil prices had a significant impact on retail inflation as the major part of domestic consumption is met through imports. During 2003-04 so far (upto June), consumer price inflation on a year-on-year basis was 4.4 per cent, marginally higher than that of 4.2 per cent a year ago.

3.32 The 1990s have been widely regarded as the era of price stability. Beginning in the early part of the decade, developed and developing countries alike experienced a distinct ebbing of inflation. The attainment of sustained price stability is attributed to structural changes in the global economy, productivity gains, favourable supply shocks as well as a credibility bonus to the institutional reform of monetary policy. More than independence, it is legitimacy and accountability that has underpinned the reputational eminence of monetary authorities.

Increasingly, monetary authorities have set up internal policy analysis procedures within a precise framework in which inflation expectations are communicated to the public, including a thorough evaluation of the adjustment paths of policy action through which deviations of actual inflation from expectations would be corrected. Understanding the formation of inflation expectations has implications for the efficiency of forward-looking monetary policy. Country practices reveal a wide diversity in the efforts to obtain a reliable gauge on inflation conditions (Box III.4).



**Box III.4****Monitoring Inflation: What are Central Banks Doing?**

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 as well as econometric models relying on state-of-the-art techniques. Typically, these efforts are reflected in their communication to the public in the form of publications dedicated to the monitoring of inflation. The objective is to sensitise the public to the complexities associated with the formulation of the monetary policy strategy and the uncertainties upon which it is contingent, the confidence intervals within which the inflation expectations have to be assessed and also to enhance the reputation of the central bank's inflation forecasts.

Following the tradition begun by the Bank of England in 1993, 12 countries produce inflation reports (IRs) while others employ established dissemination vehicles like statements on monetary policy (Australia, Canada, South Korea, South Africa, New Zealand and Chile), Bulletins (Iceland and Switzerland) and Statements to Parliament (Colombia). These reports are usually of a quarterly frequency while some central banks adopt semi-annual reporting cycles. Typically, IRs present a discussion of the objectives of policy, the decision making process and how conflicting objectives are reconciled, the analytical framework and the information set on which policy is based, the inflation forecasts and evaluation of past policy performance. In most IRs, the inflation target and the tolerance margin are explicitly set out. The Bank of England adopts a point target. Others mostly specify a range with varying degrees of precision. The standard practice is to use one or more models to generate forecasts of inflation on the basis of available information. Assumptions are usually set out clearly. Off model corrections are another typical features of IRs, undertaken to incorporate the disconnect with the reality that formal models relegate to error terms. Inflation forecasts are typically undertaken by the staff of the monitoring authorities although in some countries private sector forecasts are also used (Brazil, Czech Republic, Mexico and the Philippines).

Eclectic evaluation of IRs suggests that central banks have acquired specialised competency in analysis of inflation. The analysis of macroeconomic conditions is rated as less than adequate as is the presentation of the risks involved in the policy choices and the discussions of monetary policy committees. Several central banks adopt the use of fan

charts, among other devices, to present forecast uncertainty; however, the width of the fans is rarely adjusted to reflect time varying uncertainty (Sweden is the notable exception). Forecast horizons vary from one year to two years; New Zealand extends its forecasts to three years while Poland does not report forecasts. Almost all central banks also report forecasts of GDP growth, with only five reporting forecasts for unemployment (Iceland, Israel, New Zealand, Norway and Sweden). Central banks in Brazil and Israel forecast the current account in the balance of payments. Only Brazil and Thailand report a formal model for inflation forecasting; others present their procedures informally. Most central banks do not provide their views on interest rates and exchange rates in the future. Two countries - Chile and New Zealand - present the expected path of exchange rates while the Philippines and Thailand use explicit exchange rate equations in their forecasting models. Most IRs make a presentation of how policy is set (Australia, Norway and Sweden being exceptions). Policy decisions, however, are generally announced outside the IRs. The preferred vehicle is a press release, followed by press conferences. IRs typically fulfill an educational function.

Communication policies of monetary authorities have been transformed in recent years. IRs as a means to present relevant information are increasingly getting integrated into the authorities' 'overall communication strategy'. Their success in achieving low and stable inflation and the publication of high quality IRs seem to be linked in a virtuous circle. Considerable experience has been accumulated in the preparation of IRs and in anchoring public acceptance. The advantage of being a late entrant in the process is that, the 'best practices' are well known and that it is possible to catch up.

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**Outlook**

3.33 Upside risks from international oil prices for domestic inflation began to ebb with fortnightly downward revisions in domestic mineral oils (POL) prices beginning April 16, 2003. Point-to-point WPI inflation which had spurted to 6.9 per cent on May 3, 2003 caused by the one-time upward revision in

electricity prices and the transporters' strike edged down below 4.0 per cent by August 2, 2003. Supply side effects on prices of primary articles due to transport disruptions in April 2003 turned out to be transient and impacted mainly on prices of fruits and vegetables. Driving inflation down was the softening of POL prices and manmade fibres. POL prices fell

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by 7.5 per cent and manmade fibres by 5.2 per cent between end-March 2003 and August 2, 2003. Taken together, their weighted contribution to point-to-point inflation fell sharply from 35.5 per cent at the end of March to 15.6 per cent on August 2, 2003. More information on the progress and spread of rainfall needs to be juxtaposed with the July forecasts of a normal monsoon (98 per cent of the long period average) in the approaching season before a short-term prognosis of the effects on prices of primary articles can be made. Accordingly, prices of manufactures, which account for over two-third of inflation in terms of WPI, hold the key to the short-term inflation outcome.

3.34 International prices of vegetable oils and meals had firmed up in the first half of 2003 as global stocks of oil and fats declined for the third consecutive year on account of production shortfall caused by adverse weather. These have eased somewhat in recent weeks on expectations of higher production. Palm oil imports rose sharply following the reduction in customs duty on refined palm oil from 92 per cent to 70 per cent on April 30, 2003. These imports have restrained edible oil prices to some extent. While cotton prices have firmed up, the recent rationalisation of the duty structure and retention of excise exemptions in the Union Budget 2003-04 is expected to keep cotton textile prices range bound ahead of the dismantling of the quotas. Price competition from man-made textiles is a growing threat to low value addition cotton-based industry. Globally, the steel industry is grappling with over capacity. Nevertheless, with export demand

picking up, steel prices in India are expected to remain firm in the short term. India is a price taker in petrochemicals including manmade fibres and the domestic market is closely linked to global developments. Accordingly, petrochemical price movements in India are expected to be capped by imports. Urea, di-ammonium phosphate and single super phosphate are widely used in India as fertiliser. There is an upsurge in the international prices of phosphatic fertilisers though the outlook remains vulnerable to wide price fluctuations. Urea prices continue to be controlled. Based on the evolving international environment, the movement of key international prices and the underlying monetary conditions in India, inflation in India is expected to be in the range of 5.0 to 5.5 per cent as projected in the Monetary and Credit Policy for 2003-04.

3.35 Monetary conditions in 2003-04 are expected to be dominated by external capital flows. During 2003-04 so far (up to August 8), the net foreign assets of the banking sector rose by Rs.32,997 crore. The demand for non-food bank credit is likely to be maintained on the rising trajectory which began in early 2002, given the positive investment climate and the anticipation of a recovery in agricultural activity. Notwithstanding the projected expansion of non-food credit (15.5 to 16.0 per cent) and the size of borrowings of the Government sector, capital inflows, the release of resources through the CRR cut in June 2003 and lower order of food credit growth, monetary and liquidity conditions would facilitate a soft and flexible interest rate regime, consistent with the monetary policy stance.