

PART ONE: THE ECONOMY – REVIEW AND PROSPECTS

II

ECONOMIC REVIEW

The Indian economy exhibited broad based recovery in the second half of 2009-10 from the slowdown that had started in the second half of 2008-09. Despite deficient monsoon and the fragile global recovery, India achieved 7.4 per cent growth in GDP in 2009-10, one of the highest in the world. The focus of macroeconomic policies was on management of the recovery. The expansionary fiscal stance helped offset the impact of sluggish private consumption and investment demand on economic growth. The accommodative monetary policy stance of the Reserve Bank, besides ensuring non-disruptive financing of the fiscal plans, created an overall liquidity and interest rate condition that was conducive for growth. The stable financial system of India continued to have a favourable impact on the overall business confidence, while also ensuring availability of resources from banks, non-banks and markets to meet the financing needs of the recovery. However, inflationary conditions changed significantly during the course of the year. After remaining subdued during the first half of the year, headline inflation spiked in the second half, initially driven by high food prices, but turning more generalised thereafter over successive months. The policy dilemma of containing inflation while supporting growth warranted reprioritisation of the policy goals. Stronger and broad-based recovery in growth provided necessary headroom for the gradual unwinding of monetary policy stimulus. In the second half, the need for faster return to the path of fiscal consolidation was generally recognised in view of the potential adverse implications of high fiscal deficit for medium-term growth, inflation and financial market conditions. The Union Budget for 2010-11, accordingly, announced plans for the beginning of the process of gradual fiscal exit. By the end of the year, developments in the Euro area following the sovereign debt crisis in Greece underscored the need for and significance of timely fiscal exit, with an emphasis on the quality of adjustment, for ensuring sustainable robust growth in the medium-run.

II.1.1 The Indian economy exhibited acceleration in the momentum of recovery during the course of the year and registered a growth of 7.4 per cent in 2009-10. The expansionary monetary and fiscal stance adopted in response to the global crisis contributed to the recovery. With the pickup in private investment demand, particularly by the last quarter of 2009-10, the recovery gradually became self-sustaining. This created the precondition for beginning of the policy exit. Moreover, the headline inflation path changed course significantly in the second half of the year, spurting to 11 per cent

towards the end of the year, from near zero or negative in most of the months in the first half of the year. The changing output-inflation path, thus, warranted withdrawal of monetary policy stimulus. Accordingly, the focus of policy attention shifted gradually from “responding to the crisis” to “management of recovery”.

II.1.2 The timing and stance of monetary policy actions had to be calibrated carefully during the year because of the uncertainty about the strength of the recovery in domestic private consumption

demand as well as the global economic and financial conditions. While by the first quarter of 2010-11, clearer information on robust revival in private investment demand started to emerge, sovereign debt concerns in the Euro area added to the uncertainty about the durability of the global recovery. The underlying momentum of recovery in growth, however, continues. The Reserve Bank ensured that monetary and financial conditions remain supportive of the recovery, while containing inflation.

I. THE REAL ECONOMY

II.1.3 Real GDP growth showed a turnaround from 6.7 per cent in 2008-09 to 7.4 per cent in 2009-10. In relation to the pre-global crisis high growth phase of 8.9 per cent recorded during 2003-08, however, it suggests the scope for further acceleration. A strong recovery in industrial sector combined with a resilient services sector muted the impact of a deficient South-West monsoon on overall output. The contribution of the industrial sector to the overall growth increased sharply from 9.5 per cent in 2008-09 to 28 per cent in 2009-10 (Chart II.1a and b).

II.1.4 The services sector witnessed growth moderation from 9.3 per cent in 2008-09 to 8.3 per cent in 2009-10, essentially due to the “Community, Social and Personal Services” on partial withdrawal of fiscal stimulus and the base effect

attributed to large disbursements of arrears under the Sixth Pay Commission Award in 2008-09.

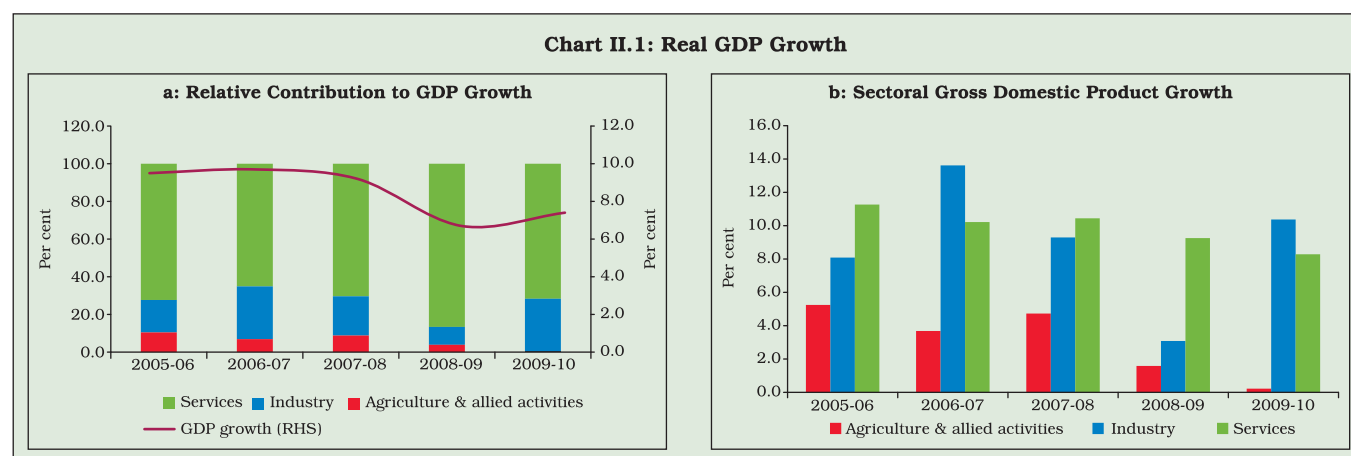
II.1.5 In the context of the build-up of generalised inflation in the second half of the year, for meaningful assessment of the demand pressures in relation to the capacity constraints at the macro level, potential output after the global crisis emerged as a key variable for a decision on policy exit. Although past experience in crisis affected countries suggests that many of them tend to undergo a loss in potential output, since India avoided a financial crisis at home, the risk of a potential output shock was remote (Box II.1).

AGGREGATE SUPPLY

Agriculture

II.1.6 In spite of 22 per cent deficiency in the South-West Monsoon, agricultural GDP registered an increase of 0.2 per cent in 2009-10. The overall impact of the deficient rainfall on the recovery was modest, which partly reflects the weakening inter-sectoral linkages, particularly in relation to the agriculture sector (Box II.2).

II.1.7 Despite a steady decline in the share of agriculture and allied activities in GDP to about 14.6 per cent, it continues to be the mainstay of majority of the population, of about 52 per cent of the work force, and remains critical from the point of view of achieving the objectives of food security and price stability.



**Box II.1
Potential Output Path for India, after the Global Crisis**

The potential output is defined as the maximum level of output that an economy can sustain without creating macroeconomic imbalances. Deviation of actual output from the potential level, *i.e.*, the “output gap” is a key variable in the information set used for the conduct of monetary policy. The contemporary empirical literature finds it difficult to define potential output through a deterministic rule and considers it to be a time varying variable. Major international financial crises during the past 140 years were typically followed by persistent output losses relative to pre-crisis trend (IMF 2009).

The impact of a crisis on potential output and its persistence may not be the same across countries due to asymmetry in the nature and severity of the crises faced and manner of the policy responses, which may differ significantly. For example, Japan had suffered persistent output losses following the banking crisis in the 1990s. On the other hand, Mexico and Norway recorded faster recovery and higher post-crisis output (Haugh, *et al.*, 2009). It is estimated that the cumulative output loss in the Asian crisis for the period 1997–1999 was only 1.5 per cent in the Philippines as compared to 22.3 per cent in Indonesia, 10.3 per cent in Korea and 19.0 per cent in Malaysia. Furceri and Mourougane (2009) estimated that financial crises lowered potential output by 1.5-2.4 percentage points, on an average, in the OECD economies. If potential output loss is permanent, the appropriate policy response is to address structural constraints.

A recent study examining the impact of the global crisis shows that there was no or negligible potential growth reductions in the case of China, Indonesia, and India. In the case of India, it is due to its lower level of export dependency compared to the East Asian economies. Simple HP filtered estimates, however, suggest a drop in potential output growth in most of the emerging East Asian economies, *albeit*, marginally in the case of India (*i.e.*, by 0.4 percentage points) (Park C.Y. *et al*, 2010).

The Indian economy grew at a rate close to 9.0 per cent during 2003-04 to 2007-08, which decelerated to around 7 per cent during 2008-10. Although a part of the growth difference is certainly cyclical, different estimation methods such as filtering of the trend component and smoothed incremental capital output ratio (ICOR) on the existing capital stock, suggest a potential output growth estimate of about 8 per cent for the post- global crisis period. The pre-crisis level was about 8.5 per cent, implying modest moderation after the global crisis (Chart A).

The loss in potential output could be due to a sharp temporary slowdown in investment growth, besides investment relocation from the more efficient private to public sector and tradable to non-tradable sectors of the economy. This output loss could also be viewed as temporary. India’s growth trajectory is mostly domestic demand driven and even in the absence of the global crisis, India might have still experienced some moderation due to cyclical factors. The cyclical factors revert to their underlying trend in due course of time, as the GDP series in India essentially follows a trend stationary process. In fact during Q4: 2009-10, fixed capital formation growth exhibited significant acceleration. With fiscal consolidation, favourable demography, and further structural reforms, the potential growth path could be raised to double-digit level.

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2. Furceri, D. and A. Mourougane (2009), “The Effect of Financial Crises on Potential Output: New Empirical Evidence from OECD Countries”, *OECD Economics Department Working Papers No. 699*.
3. IMF (2009), *World Economic Outlook, October 2009*.

Chart A: GDP and Fixed Investment Growth



Box II.2 Economic Growth and Inter-Sectoral Linkages

The linkages between agriculture and other sectors of the economy have been extensively investigated in the development literature. In the early analysis, agriculture was assumed to play the role of providing food, fibre, labour and raw material for the development of industry and services (Rosenstein-Rodan, 1943). It was also held that surplus resources available in the agriculture sector could be transferred for rapid industrialisation as well as for tertiary sector growth. In the subsequent analysis, the inter-sectoral linkages, both from the demand and supply sides, gained prominence. In India, it was earlier viewed that the supply side linkages of the agriculture sector had weakened, while the demand side linkages remained strong (Sastry, *et al*, 2003).

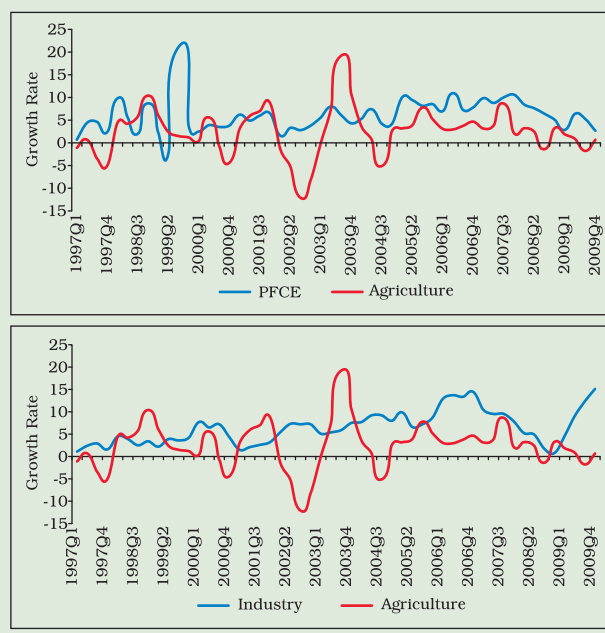
There could be a number of developments contributing to the gradual weakening of the relationship between the performance of the agriculture sector with the rest of the economy:

- Services sector has increasingly driven the growth of the economy backed by the services exports;
- The consumption of services by the manufacturing sector is on the rise; similar linkages are yet to be observed for the agriculture sector;
- The manufacturing sector is moving away from traditionally agro-based industries towards the machinery, consumer goods and construction based activities, which cater to the market segments characterised by high income elasticity;
- Supply side linkages are also weakening due to increasing linkages of industrial sector with the rest of the world;
- Given the surplus labour in the agriculture sector and low agricultural productivity, demand linkages are getting muted;
- The share of 'food and beverages' in private consumption expenditure has been declining.

Any sustained fall in the growth of agriculture for more than four to six quarters tends to affect the performance of the industrial sector as well as the growth of overall private consumption. The poor South-West monsoon led to a decline in the production of *kharif* crops during 2009-10, even though industry recorded a strong recovery from the impact of global financial crisis. The growth pattern between the two was significantly divergent by the end of the year. However, from the demand side, weak agriculture growth affected the private consumption demand (PFCE) on account of fall in income in the rural areas (Chart A).

Empirical estimates indicate that there is a weakening of inter-sectoral linkages in the post-reform period in India (Table A). Major dilution in the strength of the relationship has occurred in the case of linkages between: (a) industry

Chart A: Demand and Supply Side Linkages of Agriculture Sector Growth



and services sector and (b) industry and agriculture sector. As per the latest input-output matrices, the share of agro inputs in manufacturing has declined from 20 per cent in 1993-94 to 5 per cent in 2006-07. At the same time, the services sector linkages have increased relatively more with the rest of the world than the domestic economy as

Table A: Inter-Sectoral Linkages

	Correlation Matrix			Input-Output Table - Leontief Inverse**			Inter-Sectoral Elasticities@		
	Agr	Ind	Serv	Agr	Ind	Serv	Agr	Ind	Serv
Period I									
Agriculture	-	0.27	0.42	-	0.20	0.06	-	0.41	#
Industry	0.27	-	0.54	0.13	-	0.27	0.23	-	0.80
Services	0.42	0.54	-	0.15	0.52	-	0.25	0.88	-
Period II									
Agriculture	-	0.07	0.05	-	0.05	0.02	-	0.29	#
Industry	0.07	-	0.38	0.07	-	0.15	0.23	-	0.23^
Services	0.05	0.38	-	0.08	0.16	-	0.21	0.56	-

Agr: Agriculture, Ind: Industry, Serv: Services

Period I: correlation matrix (1966-90), I-O Table (1993-94) and elasticity (1951-90); Period II: correlation matrix (1991-2008), I-O Table (2006-07) and elasticity (1991-2008).

** : Coefficient represents requirement of row variable for producing one unit of column variable.

@ : Represents percentage change in column variable with one per cent change in row variable.

: Statistically insignificant; ^: Lagged impact.

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evident from an increase in the proportion of services exported to total output of the services sector by nearly four-fold from about 3.2 per cent in 1990-91 to more than 12.0 per cent in 2009-10.

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2. Sastry D.V.S, Balwant Singh, Kaushik Bhattacharya and N. K. Unnikrishnan (2003), "Sectoral Linkages and Growth Prospects: Reflections on the Indian Economy", *Economic and Political Weekly*, 38, 2390–2397.

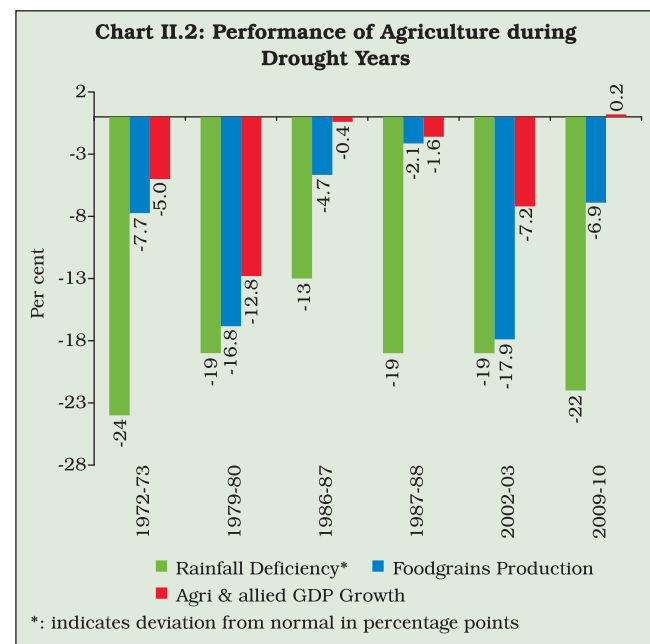
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Drought Mitigation

II.1.8 The performance of the South-West monsoon in 2009, with a shortfall of 22 per cent in precipitation, was the weakest since 1972. Of the 36 meteorological sub-divisions, the cumulative rainfall was excess/normal in 14 sub-divisions and deficient/scanty/no rain in 22 sub-divisions. Overall, a drought situation was declared in 352 districts by 15 State Governments. Drought episodes in the past have always adversely affected the agriculture sector performance. The magnitude of decline in production has varied depending upon the severity of the drought. During 2009-10, foodgrains production at 218.2 million tonnes declined only by 6.9 per cent as compared with a decline of around 18 per cent in 2002-03 - the previous drought year. Moreover, GDP emanating from agriculture sector increased by 0.2 per cent during 2009-10, despite the decline in agricultural production (Chart II.2).

II.1.9 In order to mitigate the impact of drought during 2009, several measures were initiated by the Government. These include, (a) adoption of an area-specific strategy to achieve higher production through improved provision of inputs, viz., fertilisers, credit and pest control measures in areas with higher rainfall, (b) advising the States to prepare alternate plans for unsown/germination-failed areas with short duration/alternate crops, (c) holding of zonal conferences and a Rabi Campaign Programme with the State Governments to enable formulation of an appropriate action plan for the rabi season, (d) media telecasting/broadcasting of agricultural advisories for

appropriate crop programmes for the benefit of farmers, (e) relaxing restrictions on seeds and distribution of seed mini-kits under the National Food Security Mission (NFSM) and Rashtriya Krishi Vikas Yojana (RKVY), (f) making available funds under Centrally sponsored programmes like the NFSM, RKVY, Macro Management of Agriculture Scheme (MMA) and Integrated Scheme of Oilseeds, Pulses, Oil palm and Maize (ISOPOM) to enable taking up of an agricultural reconstruction programme, and (g) launching of Diesel Subsidy Scheme to provide supplementary protective irrigation to save the standing crops (50 per cent of the cost of the subsidy with a cap of ₹7.50/litre given by the States was borne by the Central Government).



II.1.10 The positive contribution of the agriculture sector to overall GDP during 2009-10 could partly be ascribed to the structural changes, *viz.*, declining share of foodgrains and commercial crops in total agricultural GDP, with a corresponding rise in the share of horticulture, livestock, forestry and logging, and fisheries. Moreover, rainfall in the month of July 2009, which is crucial for sowing of crops, was more than normal. There was also an improvement in soil moisture conditions, following satisfactory performance of North-East monsoon season (8 per cent above normal). Going forward, the long range forecast for South-West monsoon season (June to September 2010) released by the India Meteorological Department indicates that the rainfall for the country as a whole is likely to be normal. Quantitatively, monsoon season rainfall is likely to be 102 per cent of the long period average (LPA) with a model error of ± 4 per cent. Although cumulative rainfall during the season so far (up to August 11, 2010) has been 4 per cent below the LPA, the monsoon has been better than the last year (-29 per cent). Area sown during *kharif* 2010 so far (as on August 13, 2010) has been higher than in the corresponding period of previous year for all crop categories. Thus, with higher *kharif* output, the prospects for agricultural growth during 2010-11 would improve.

II.1.11 While the performance of agriculture sector in 2009-10 in the face of a deficient monsoon has been better than in previous drought episodes, concerns still remain over the ability to withstand successive years of drought. This underscores the need to harness a second green revolution that is also environmentally sustainable, with the focus shifting from resource rich regions to those with unfavourable agro-climatic conditions, so as to bring about more inclusive growth. The Union Budget for 2010-11, in this context, has announced a strategy towards extending the green revolution to the Eastern region.

II.1.12 Furthermore, heavy dependence on the monsoon has resulted in a high degree of variability in agriculture production leading to demand-supply

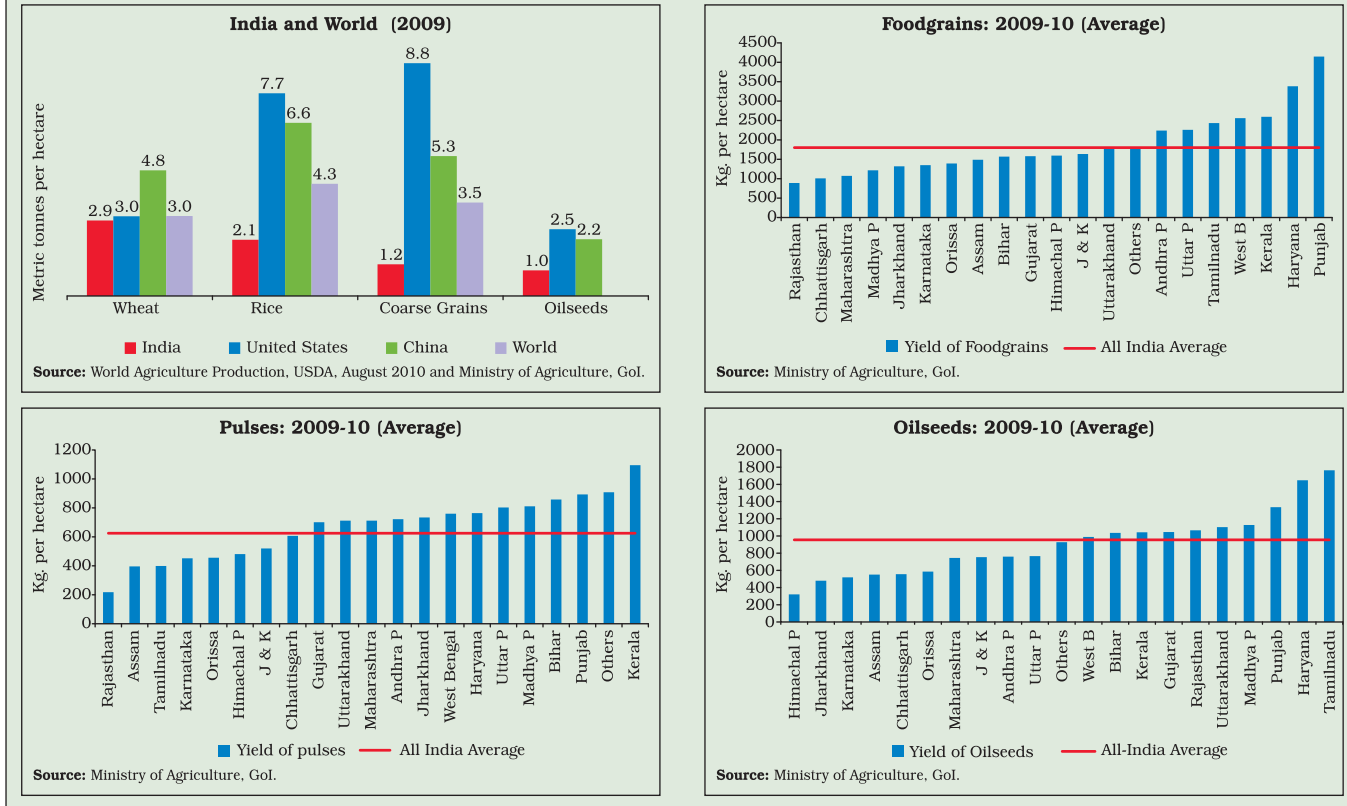
mismatches that exert pressure on commodity prices, particularly food prices. The year 2009-10 witnessed sharp increases in food prices, particularly in pulses and sugar where demand-supply imbalances at the margin led to a spurt in prices. Farmers, however, often do not realise the benefit of price hikes as there exist wide disparities between farm gate and market prices. India, despite being amongst the largest producers of several agricultural commodities, lags in yields. Inter-State and inter-crop yield differentials are also large (Chart II.3). Consequently, demand-supply imbalances have persisted, particularly in the case of pulses and oilseeds. Although the shortfall in domestic production has been met through imports to an extent, this option at times is constrained by the high international prices. As a result, whenever there is a shortfall in domestic production, food prices tend to come under pressure, leading subsequently to a situation of generalised inflation.

Food Management

II.1.13 Reflecting the high levels of procurement in 2008-09 and 2009-10, total food stocks increased from 35.6 million tonnes at end-March 2009 to 43.4 million tonnes at end-March 2010 and further to 55.4 million tonnes as on August 1, 2010, *i.e.*, significantly higher than the buffer stock norm of 31.9 million tonnes for the quarter beginning July 1 (inclusive of food security reserves of 5 million tonnes). The rise in food stocks in the drought year is in sharp contrast to what was observed in 2002-03 - the previous drought year (Chart II.4). The high level of food stocks and resilient production conditions suggest that with better supply management, the pressure on food inflation could have been moderated. Moreover, maintaining high food stocks involves significant carry costs.

II.1.14 The average growth rate of foodgrains production at 1.6 per cent during 1990-2010 trailed behind the average population growth of 1.9 per cent. This has been reflected in the decline in the per capita daily net availability of foodgrains from 472.6 grams per day in 1990 to 436.0 grams per

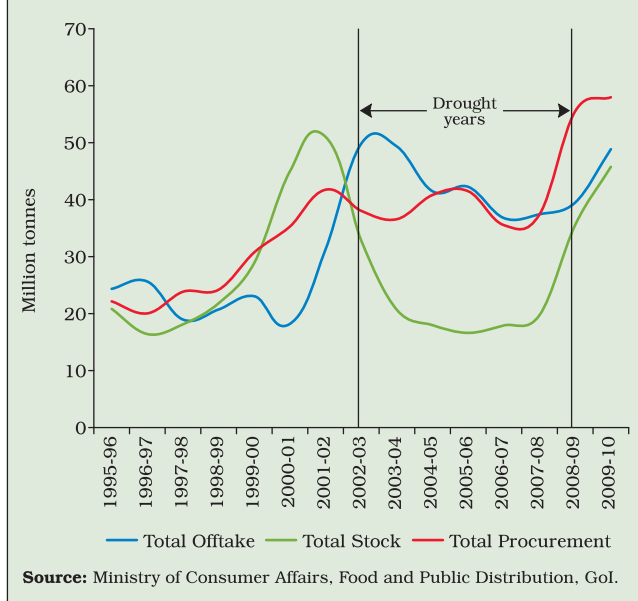
Chart II.3: Comparative Yield Levels



day in 2008. There is clearly a need for a renewed focus on improving agricultural productivity. Higher investment backed by sustained research and

extension activities could be critical for augmenting yield. Greater focus needs to be placed on agricultural research in the coming years as the success so far has been restricted to select crops. Moreover, the consumption basket is getting diversified more in favour of milk, vegetables, fruits, meat, poultry, fish and the like, which are important from the nutritional angle. Hence, it is also equally important to gradually move away from the cereal-centric policy towards these items, with supportive policy framework and the required infrastructure. Market infrastructure is important for the performance of various marketing functions and for transmitting price signals for efficient resource allocation. The policy efforts need to be geared towards a reduction in wastage of produce that occurs during storage and management of supply chains. Public policies have so far, focused more on price interventions in the form of minimum support prices for the producers and public distribution system for the

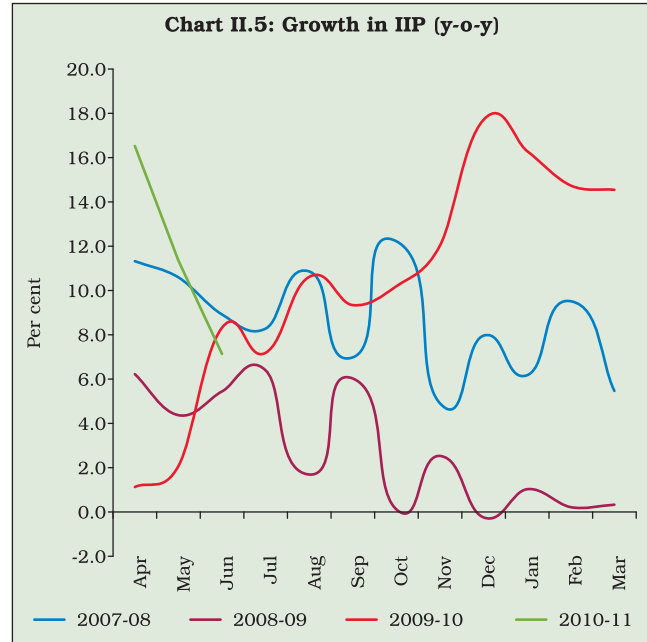
Chart II.4: Total Procurement, Offtake and Food Stocks



consumers. There is need for reorientation of public expenditure towards building capital infrastructure for agriculture, which in turn, would crowd-in private investment and help realise the full potential of agriculture growth. The growth strategy, to be effective and inclusive, has to necessarily focus on stabilising the agricultural production by achieving improved efficiency and accelerated productivity levels in the farm sector.

Industrial Performance

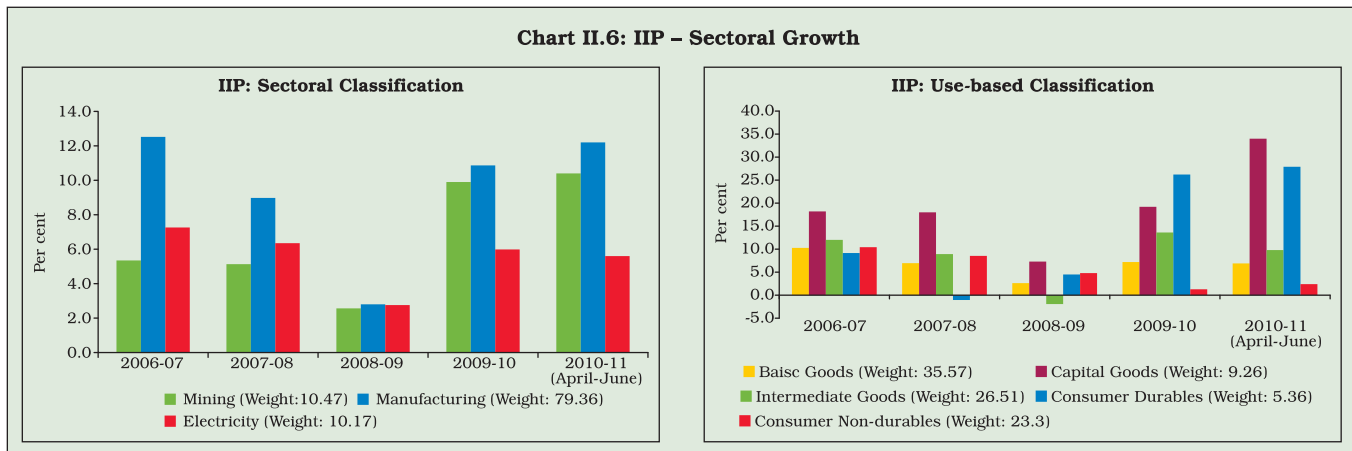
II.1.15 The Index of Industrial Production (IIP) clocked a growth of 10.5 per cent during 2009-10 (2.8 per cent in 2008-09), bolstered by the double digit growth since October 2009 (Chart II.5). The recovery was broad-based with high growth in manufacturing industries (10.9 per cent), followed by mining (9.9 per cent) and electricity (6.0 per cent) (Chart II.6). The manufacturing output growth rate was supported by increases in consumer durables, capital goods and intermediate goods production. The strong performance of the manufacturing sector during the second half of 2009-10 could partly be attributed to the base effect. Despite the large increase in the production of natural gas, iron ore and other minerals, growth in the mining sector remained at less than 10 per cent due to continued slack in crude oil and coal output. The electricity sector also lagged behind, owing to lower hydel power generation in view of weak monsoon conditions and the low level of reservoir capacity.



Similarly, inadequate coal production and delayed imports adversely affected the coal availability, leading to lower thermal generation.

II.1.16 The pace of recovery in industrial production during 2009-10 is evident from the fact that the IIP almost reached the level, which would have been achieved had the high growth phase of 2005-07 not been interrupted in the subsequent two years, on account of the global crisis (Chart II.7).

II.1.17 Besides the pace, the recovery was relatively broad-based. The fastest growing five industries with a combined weight of 24.6 per cent



accounted for 63.5 per cent of overall manufacturing growth in 2009-10 as compared with 134.6 per cent (weight 35.9 per cent) in 2008-09. Similarly, the bottom 12 industries also contributed to a substantially higher 36.5 per cent (weight 54.7 per cent) of the manufacturing growth in 2009-10 as compared with (-) 34.6 per cent (weight 43.4 per cent) in 2008-09.

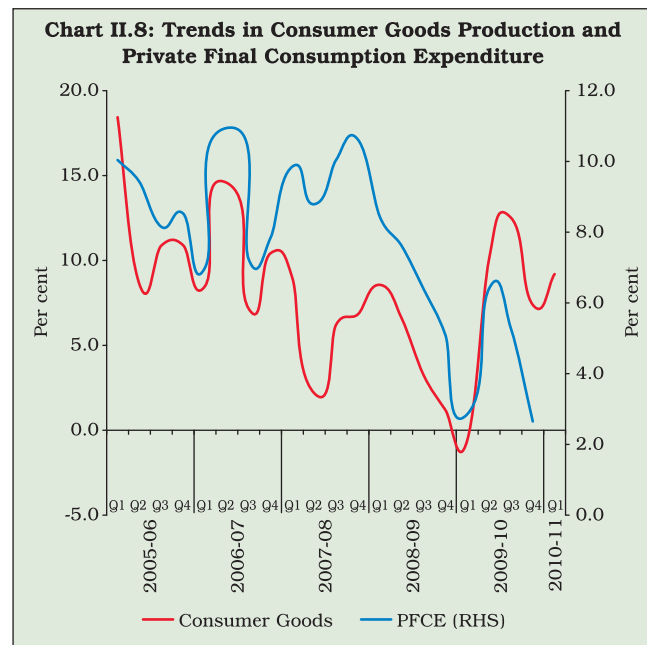
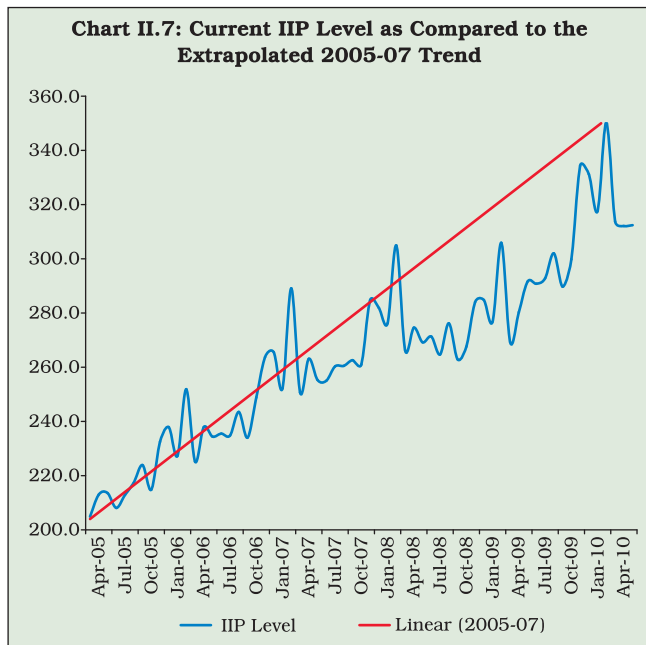
II.1.18 While the output of consumer durables (26.2 per cent) and capital goods industries (19.2 per cent) gained strength during 2009-10, recovery in the growth of non-durables (1.3 per cent) was held back due to sluggishness in private consumption demand (Chart II.8). The growth of basic goods industries (7.2 per cent) supported the recovery momentum, despite some concerns that it may be difficult to sustain the growth in the wake of capacity constraints in some industries. The recovery in the intermediates goods segment (13.6 per cent) was initially driven by the turnaround in inventory cycle, followed by a strong recovery in investment demand.

II.1.19 During 2010-11 (up to June 2010), consumer durables continued to record high growth at 27.9 per cent. Basic goods (6.9 per cent),

intermediate goods (9.8 per cent) and capital goods industries (34.0 per cent) supported the buoyancy in industrial growth. The growth in the capital goods segment was aided by the rapid rise in output of several industries like broad gauge covered wagons, commercial vehicles, printing machinery and air and gas compressors. This can be attributed to the higher allocation for the infrastructure sector by the Government, thereby facilitating crowding-in of private investment in machinery and construction sectors and contributing to higher gross fixed capital formation in the economy (Chart II.9).

II.1.20 During the current financial year 2010-11 (up to June 2010), industrial sector maintained double digit growth at 11.6 per cent. Though the industrial output showed deceleration in the months of May and June 2010, the pace of increase is still robust. Notwithstanding some moderation in the pace of industrial growth due to base effect and possible subdued global demand, the industrial activity is expected to remain buoyant.

II.1.21 The continuation of growth momentum in the industrial sector in April-June 2010 suggests stronger outlook for growth. However, concerns



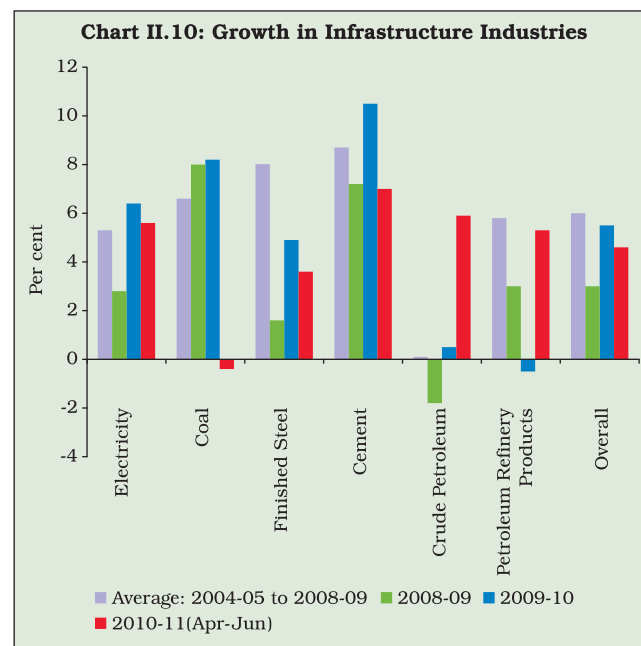
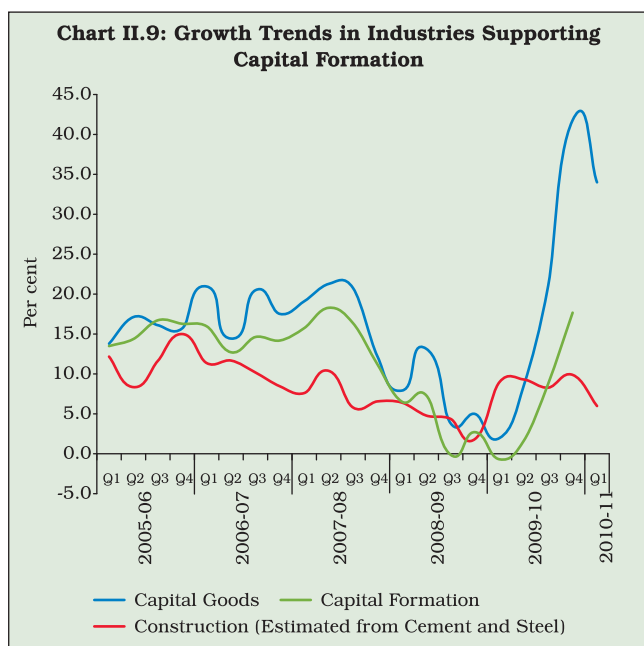
about the sustainability of high industrial growth at the same pace during 2010-11 need to be recognised. Weak external demand, notwithstanding the pick-up in exports and moderation in government expenditure on account of the fiscal exit could moderate industrial growth. Revival in private consumption demand, therefore, would be critical for sustaining the recent performance of the industrial sector. Improvement in the South-West monsoon performance during June-July 2010, better agricultural production prospects, change in income tax slabs in 2010-11 and the permanent effect of the implementation of the Sixth Pay Commission recommendations on income should be supportive of consumption demand.

Infrastructure

II.1.22 During 2009-10, the six core infrastructure industries posted an improved performance over the previous year. During 2010-11 (up to April-June 2010), the infrastructure industries recorded a growth of 4.6 per cent, marginally higher than that in the corresponding period last year (4.3 per cent) (Chart II.10).

II.1.23 Infrastructure remains a key constraint to growth in India. In several infrastructure projects, significant time overruns and the resultant cost overruns have delayed the actual realisation of benefits of capacity addition. Capacity expansion in critical sectors like crude oil and petroleum refining remained weak and demand supply gap in power sector also persisted. Both power generation/transmission and distribution continue to be the areas of concern. Power capacity addition during 2009-10 was 9,585 MW as against the target of 14,507 MW for the year. There are significant capacity constraints in coal, ports and railways, which may restrain high growth.

II.1.24 There are, however, fresh investments taking place in power sector. The capacity constraint in the crude oil sector is being addressed through New Exploration Licensing Policy initiative of the Government. Gas production from KG-basin shows signs of optimism. Some external acquisitions, particularly in steel, oil, gas and coal too could support the domestic capacity gaps. The public-private partnership mode is being given new thrust with the help of multilateral institutions to enhance availability of resources for infrastructure investment. Recognising the challenge, the Union



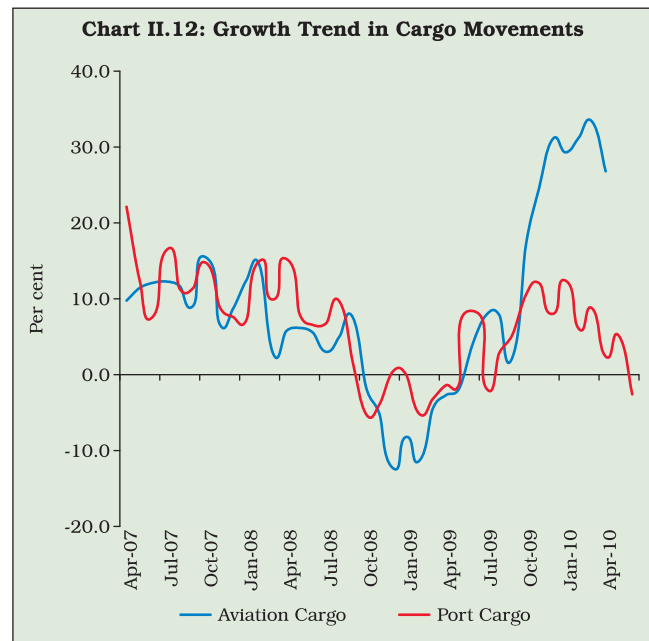
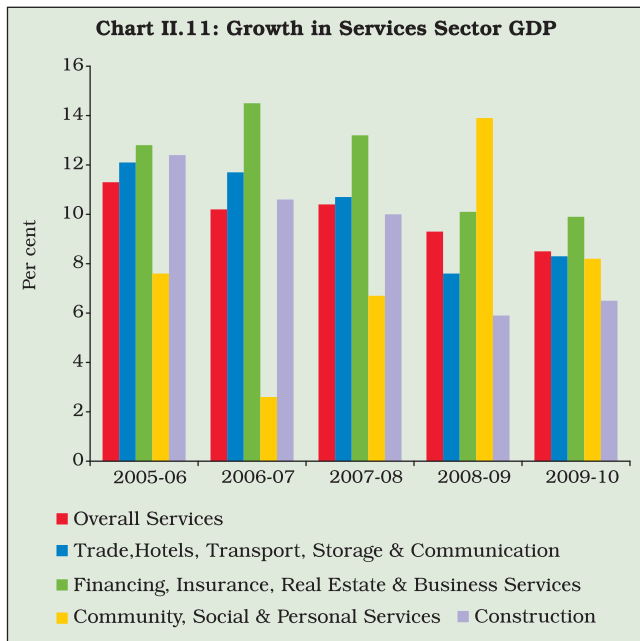
Budget for 2010-11 has allocated 46 per cent of plan expenditure of the Central Government to infrastructure. Overall, under the current assessment, the Indian infrastructure industry is expected to see significant increase in capacity additions during 2010-11. This is also reflected in the double-digit growth in capital goods production during September 2009-June 2010.

Services Sector

II.1.25 The services sector had exhibited significant resilience to the contagion from the global crisis (Chart II.11). Services dependent on external demand such as tourist arrivals, cargo handled at major ports and passengers handled at international terminals recovered during 2009-10, although remained below the pre-crisis levels. Domestic demand driven services such as commercial vehicle sales, cell-phone connections, railway traffic and construction activity showed high growth, particularly during the second half of the year. While production of commercial vehicles is reflected under manufacturing activities, sales of commercial vehicles provide lead information about transportation services. Although the overall services sector growth moderated in 2009-10, the

services sector excluding “Community, Social and Personal Services” showed a higher growth of about 10 per cent in Q4:2009-10, which is higher than average services sector growth rate recorded during the high growth phase of 2003-08.

II.1.26 Total automobile production recovered in 2009-10, partly reflecting the lower production base. Domestic sales rose substantially in 2009-10 (26.4 per cent) as compared to the preceding year (0.7 per cent), while exports moderated (17.9 per cent) from the level a year ago (23.6 per cent). In the road sector, construction and widening of national highways continued at a fast pace during 2009-10, while freight traffic carried by the railways also increased. Cell-phone connections, both public and private, continued to register a high growth (49.8 per cent), with the public sector connections growing significantly (62.8 per cent). This segment was not affected by the crisis induced slowdown in 2008-09. Aviation cargo movements, which had declined since the onset of industrial slowdown in 2008-09, recovered sharply during 2009-10 (Chart II.12). During April-July 2010, total automobile production increased on the back of significant increase in domestic sales (29.6 per cent) and substantially high growth in exports (54.5 per cent).



II.1.27 Going forward, the services sector is likely to pick up further momentum from the growth in the manufacturing sector. Retail trade and construction are already showing signs of buoyancy. The IT-BPO sector has also seen a turnaround in terms of revenue and value creation from the recessionary headwind of 2008-09. In addition to the traditional business verticals, the emerging verticals, viz., computing systems, energy, infrastructure, industrial automation and medical devices would assume significance. In the domestic market, ICT enabled solutions will play a greater role in healthcare, education, financial and public services. In the case of a number of services like hotels, communication, information and

financial services, domestic demand continues to be the major driver of growth.

II.1.28 With concerns about industrial recovery receding by the end of the year, the issue of productivity resurfaced in policy debates for sustaining the high growth in the medium-term. In this context, the Reserve Bank has taken a major initiative to study industrial productivity at disaggregated levels under India-KLEMS research project. The project is a part of the larger Global KLEMS initiative, which aims at an effective cross-country comparison of productivity at industry level for understanding the competitiveness of economies (Box II.3).

Box II.3

India KLEMS: An RBI Initiative to Measure Industrial Productivity in India

India KLEMS project is an extension of the existing productivity research in India to identify growth drivers. The project was commenced in September 2009, funded by the Reserve Bank of India (RBI) as a research co-ordination initiative between RBI and ICRIER.

The project is a part of the global initiative already undertaken in many countries like Australia, Canada, European Union (25 countries), USA, Latin America (4 countries), Russia, Japan, Korea, India and China to estimate productivity in the Capital, Labour, Energy, Material and Services (KLEMS) framework developed in the European Union. The final objective of World KLEMS project is to create an internationally comparable database for estimating productivity at the sectoral levels to enable cross-country comparisons of productivity.

KLEMS framework of productivity estimates differs from the traditional approach in a number of ways. *First*, it intends to measure sector-wise productivity differential explicitly. *Second*, it takes into account the heterogeneity in inputs by creating explicit account for factor services. To identify factor quality, it uses market price data, assuming a competitive market. *Third*, in view of its emphasis on disaggregated measurement, it attempts to create KLEMS database meticulously without losing comparability with the published and widely used National Accounts data series. As the National Accounts data series published by statistical agencies are hardly available at such disaggregated details, generating KLEMS database necessitates the use of extended sector-wise information or related surveys. *Fourth*, comparisons of KLEMS data over time and across countries could easily reveal structural change and evolving input-output relations between

industries, input usage intensity (such as investment in human and physical capital) and productivity growth (technological change, terms of trade, etc.). *Finally*, it can link the proximate sources of growth to policy initiatives like market reforms, sector specific regulations, trade/external policies and regional policies.

India-KLEMS is a three year project. In the first phase, preliminary estimates of productivity of 31 sectors covering the entire economy using value added growth accounting model with labour hours and capital stock as factor inputs have been worked out (Table A). This exercise would be extended to compute productivity estimates in gross output based accounting framework by developing material, energy and services (MES) data series in the next two years of the project.

The overall GDP growth during 1992-97 at 6.2 per cent was accompanied by a sizeable TFP growth across sectors. Deceleration in overall growth during 1997-2005 is partly attributable to the deceleration in productivity growth to 1.7 per cent from 2.6 per cent during 1992-97, notwithstanding a rise in TFP growth in services sector.

For the entire period (1980-2005), the TFP growth in services sector (2.1 per cent) is higher than both in agriculture (1.6 per cent) as well as in industries (1.4 per cent). Productivity growth in industry improved considerably after 1986 compensating for the slowdown in the contribution of inputs to the overall growth. The higher TFP growth in agriculture during 1980-97 offsets a somewhat lower contribution of inputs during this period. While the productivity in agriculture fell during 1997-2005, its impact on growth was muted due to enhanced contribution of inputs.

(Contd...)

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Table A: Total Factor Productivity (TFP) and GDP Growth

(Per cent)

Sectors	1980-1986		1986-1991		1992-1997		1997-2005		1980-2005	
	TFP	GDP	TFP	GDP	TFP	GDP	TFP	GDP	TFP	GDP
Total Economy	2.2	5.3 (3.1)	1.6	5.9 (4.3)	2.6	6.5 (3.9)	1.7	5.7 (4.0)	1.9	5.7 (3.8)
Agriculture	2.5	3.7 (1.2)	2.4	3.8 (1.4)	3.0	4.8 (1.8)	-0.2	2.2 (2.4)	1.6	3.4 (1.8)
Industry	-0.3	6.2 (6.5)	1.6	7.2 (5.6)	3.1	7.3 (4.2)	1.4	5.1 (3.7)	1.4	6.0 (4.6)
Services	3.4	5.8 (2.4)	1.0	6.9 (5.9)	2.0	7.3 (5.3)	2.2	7.9 (5.7)	2.1	7.0 (4.9)

Note: Figures in parentheses represent overall growth explained by inputs alone.

Source: CSO (NAS) and India KLEMS estimation of sectoral TFPS. Construction is considered as part of services as per NAS. Weights are given as share of value added of 31 sectors.

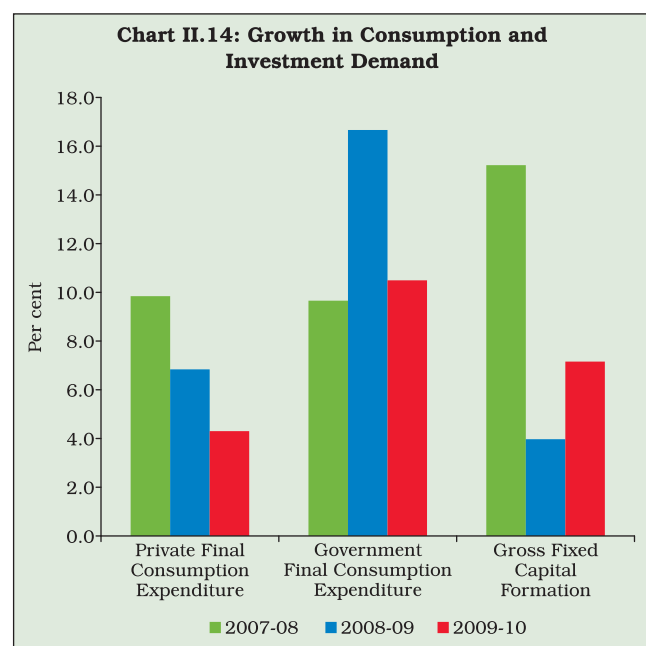
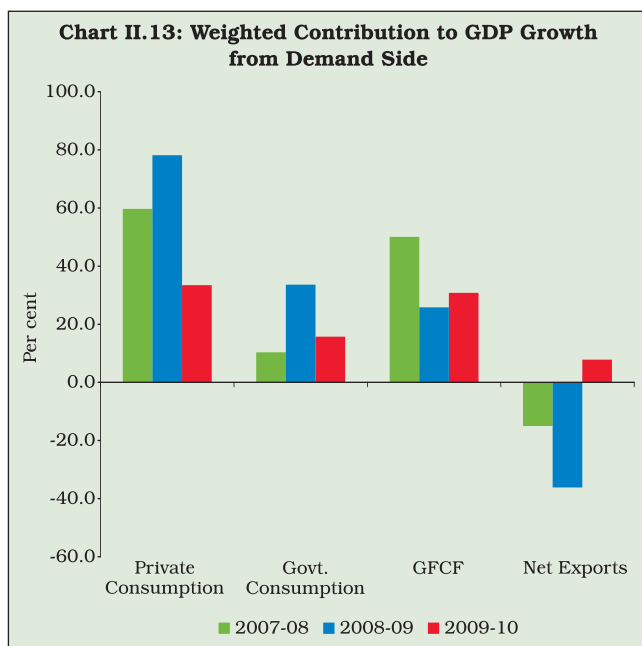
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AGGREGATE DEMAND

II.1.29 The drivers of aggregate demand changed significantly during 2008-09 and 2009-10 (Chart II.13 and II.14). The growth in private final consumption expenditure moderated from 8.0 per cent in the first half of 2008-09 to 5.8 per cent in the second half and further to 4.6 per cent in the first half of 2009-10, reflecting economic slowdown,

poor agriculture production and high food prices. Fiscal measures were initiated (for details see Section II.5) to offset the slack in private demand. Consequently, the growth in government final consumption expenditure increased significantly from 5.5 per cent in the first half of 2008-09 to 25.7 per cent in the second half of 2008-09 and 22.5 per cent in first half of 2009-10, reflecting the expansionary fiscal response to the crisis. The rate



of increase in gross fixed capital formation (GFCF) fell from 6.9 per cent in the first half of 2008-09 to 1.3 per cent in second half and further to 0.5 per cent in the first half of 2009-10.

II.1.30 In the second half of 2009-10, private consumption demand continued to remain sluggish, while the government consumption expenditure moderated substantially due to the base effect. The gross fixed capital formation emerged as the major driver of growth during the second half of 2009-10, exhibiting a growth of 13.4 per cent and contributing around 46.3 per cent to the overall GDP growth. Another notable shift in contribution to growth emerged from net exports, as exports recovered in the second half, ahead of imports. This was more due to declining imports than growing exports. As a result, the contribution of net exports to GDP growth improved from a negative 17.9 per cent in the first half to a positive 22.2 per cent in the second half of 2009-10.

II.1.31 The assessment of drivers of growth from the supply side and demand side suggests that due to lower contribution of agriculture to the strong recovery and subdued consumption demand, in which rural demand has a large share, the distribution of benefits of growth would have possibly changed. The expansionary fiscal stance that was adopted to stimulate the recovery, however, had a major component in the form of higher expenditure under NREGA. Thus, the policy stimulus contributed to a faster recovery, while also

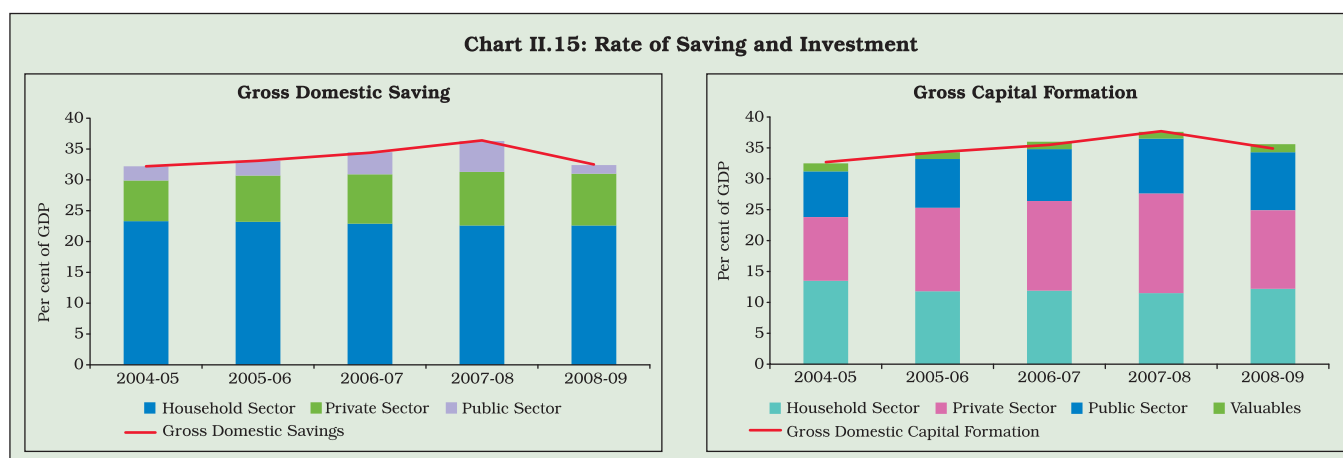
aiming at improving the distribution of the benefits of growth.

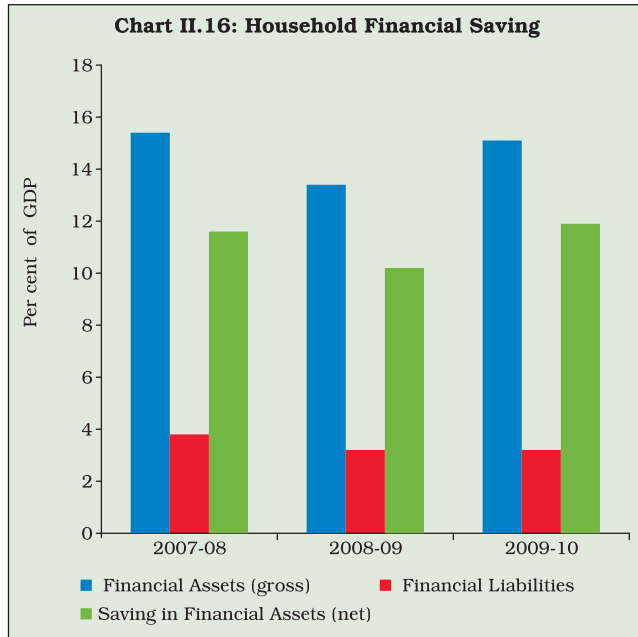
II.1.32 Going forward in 2010-11, with fiscal consolidation plans already outlined in the Budget and contribution of net exports to overall growth expected to reverse, the key drivers of growth would be private consumption and investment demand. The revival in private investment demand has been strong in recent quarters. Production trends in capital goods suggest that this pattern may continue. Industrial recovery, significant increase in government spending on infrastructure projects, improved business sentiments and capacity expansion plans in the pipeline for many industries suggest that the investment demand would provide momentum to growth in 2010-11.

Saving and Capital Formation

II.1.33 The aggregate savings rate moderated from 36.4 per cent in 2007-08 to 32.5 per cent of GDP in 2008-09, reflecting a sharp fall in public sector savings on account of the impact of the fiscal stimulus measures. The investment rate moderated from 37.7 per cent in 2007-08 to 34.9 per cent in 2008-09, mainly on account of a decline in the investment of private corporate sector (Chart II.15).

II.1.34 During 2009-10, the public sector savings are likely to remain subdued on account of higher revenue deficit of the Government. The private corporate savings are expected to increase due to improved profitability.





II.1.35 Preliminary estimates, based on the latest available information, place financial savings (net) of the household sector in 2009-10 at 11.9 per cent of GDP at current market prices, which is higher than the estimates for 2008-09 at 10.2 per cent (Chart II.16). Despite a slower growth in bank deposits partly due to lower deposit interest rates, a turnaround in the household financial savings in 2009-10 was made possible by a revival in almost all other components. Sharp recovery was noted in the household savings in life insurance, public provident funds, small savings, senior citizen deposit schemes and mutual funds. Moreover, recovery in economic growth contributed to a pick-up in household financial savings.

II. PRICE SITUATION

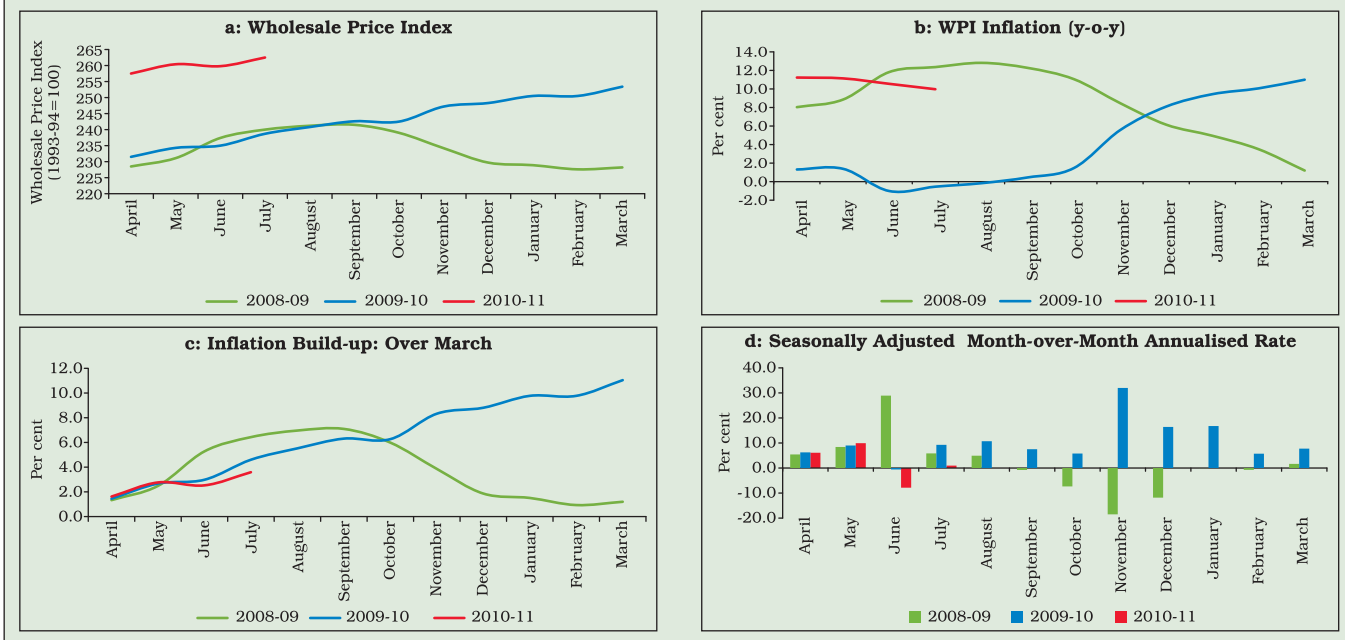
II.2.1 The inflation path changed course significantly over two distinct phases during 2009-10. The subdued headline inflation in the first half provided the necessary preconditions for sustaining the recovery supporting monetary policy stance. In the second half, increasing generalisation of the inflation process necessitated a gradual shift in the balance of policy focus to containment of inflation expectations while still remaining supportive of

recovery. A stronger and broad-based recovery also facilitated gradual unwinding of the accommodative monetary policy stance. On account of the persisting uncertainties about the nature of the global recovery and strength of domestic private demand, the overall policy stance had to remain sensitive to the growth objective while increasing the weight of policy focus on management of inflation.

II.2.2 Year-on-year wholesale price index (WPI) inflation remained low during the first half of the year (negative during June-August 2009) and increased faster in the second half to reach 11.0 per cent by March 2010. The base effect of high prices in the first half of 2008-09 contributed to the low inflation during the first half of 2009-10. The waning of base effect along with sharp increase in food and oil prices on account of lower agricultural production and increase in international commodity prices, especially oil, contributed to the faster increase in inflation during the second half (Chart II.17). The build-up of inflationary pressures, however, was visible throughout the year as WPI exhibited strong uptrend over successive months during the year. Inflationary pressures, which remained concentrated on a few commodities during the major part of the year, became increasingly generalised during the last quarter of 2009-10, as more number of commodities exhibited increase in prices.

II.2.3 The contribution of different items/groups in the WPI basket to overall headline inflation during 2009-10 changed significantly (Chart II.18a). Food inflation remained high throughout 2009-10, showing some moderation since December 2009, particularly in manufactured food products (Chart II.18b). The decline in manufactured food price inflation was led by sugar prices, which fell by 16.0 per cent during January-July 2010 after increasing by 53.6 per cent during March 2009-January 2010. Reflecting this decline as also the increase in non-food inflation, the contribution of food items to overall inflation declined from over 100 per cent in November 2009 to about 23 per cent by July 2010.

Chart II.17: Trends in Wholesale Price Inflation

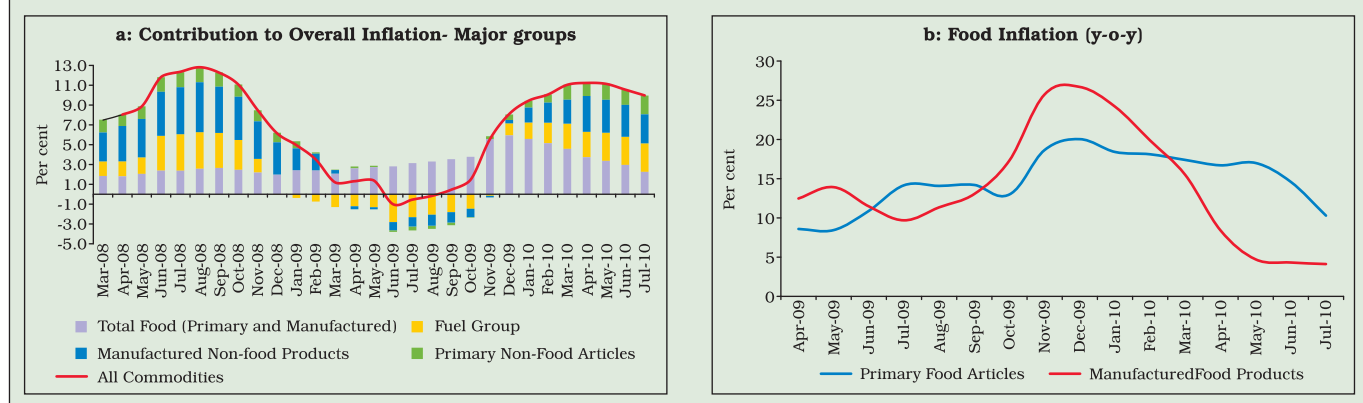


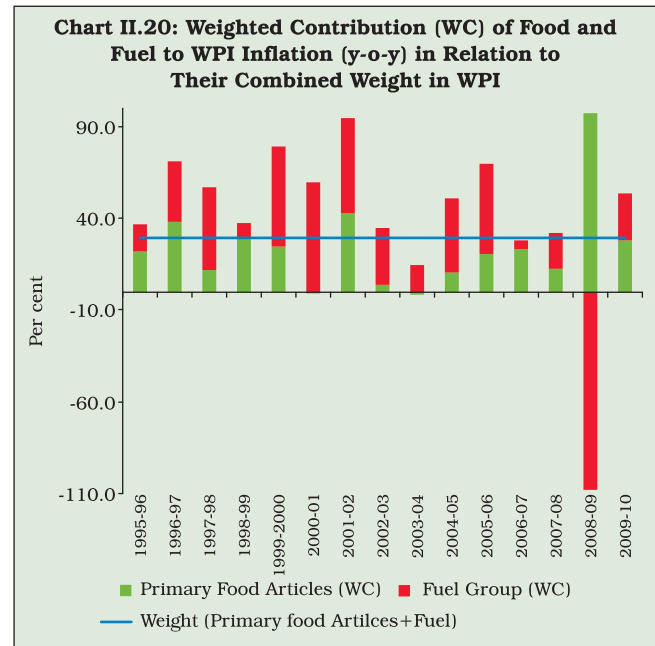
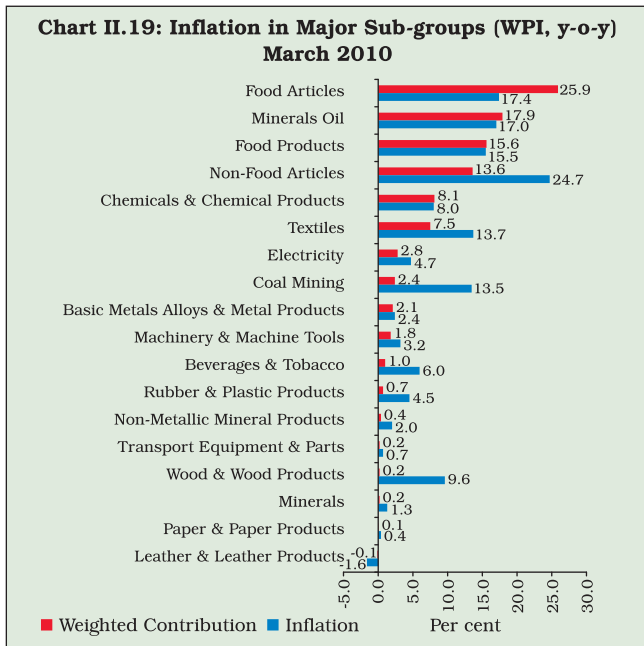
II.2.4 Fuel group which contributed negatively to overall inflation since January 2009 showed a reversal of trend in the last four months of the year. The contribution of the non-food manufactured products group, which remained negative during April-November 2009, turned around and increased significantly thereafter, indicating generalisation of inflationary pressures. The year-on-year increase in WPI, however, was dominated by increase in prices of food and oil, with a combined weighted contribution of 59.4 per cent (Chart II.19). The weighted contribution of these two groups to the WPI inflation has generally been higher than their

combined weight in the WPI (Chart II.20). This reflects persistent supply side pressures on the inflation path.

II.2.5 Significant increases in international commodity prices, particularly oil, during 2009-10 added further pressures on domestic prices (Chart II.21a). The increase in key international commodity prices during 2009-10 was significantly higher than the domestic inflation, thereby limiting import as an option for price control (Chart II.21b). Since April 2010, however, some decline in commodity prices has been observed, as greater

Chart II.18: Sources of WPI Inflation

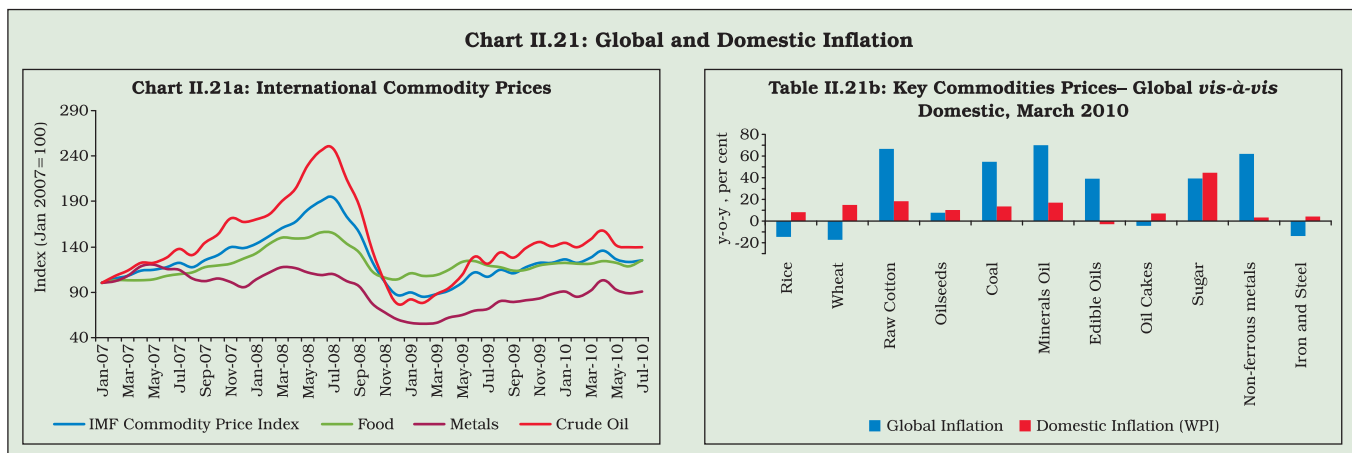




uncertainty relating to recovery in advanced economies following the developments in Euro zone spilled over to commodity markets.

II.2.6 Speculation in commodity futures was seen in some quarters as a factor behind the high food inflation during 2009-10. Whether activities in commodity futures market reflect genuine needs of hedging or speculation, and whether such activities systematically influence the commodity prices and lead to increased price volatility, are questions that largely remain unsettled in academic and policy discussions (Box II.4). In India, several commodities which are not traded in the

commodities exchange, such as fruits and milk, exhibited price increases during the year. Moreover, certain commodities that were banned for trading in 2007, such as rice, wheat, *tur* and *urad*, also exhibited price increases subsequently. Even after the ban imposed on trading of sugar in 2009, sugar prices continued to increase. On the other hand, prices of certain essential commodities that are being traded in the futures market, such as gram, chillies, rapeseed oil and coconut oil, either remained moderate or declined during 2009-10. Despite the persisting ambiguity about the relationship between futures market activities and spot prices of commodities, activities in the futures

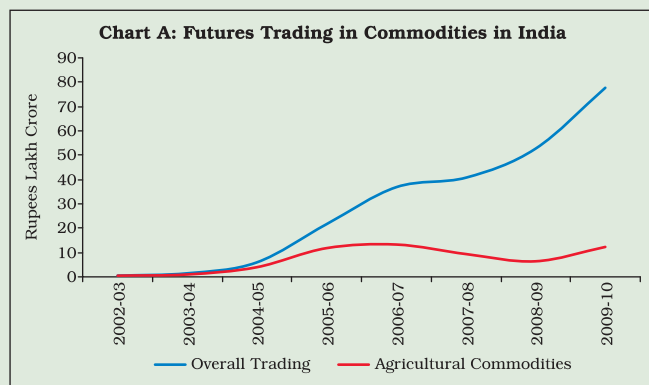


Box II.4

Impact of Trading in the Commodity Futures Market on Inflation

With growing financialisation of commodities, the role of speculative activities in commodity exchanges as a determinant of inflation has often been highlighted as an issue of policy relevance, particularly during episodes of high inflation driven by supply shocks involving commodities such as oil and metals as well as agricultural output. The financialisation channel is often perceived to have magnified the impact of disequilibrium between demand and supply in specific commodities on prices, weakening thereby the role of fundamentals in the price formation process. More importantly, speculation that affects futures prices has been argued to affect spot prices through the channel of arbitrage. The sharp volatility in international commodity prices since 2008 has increased the analytical focus on studying the interactions between prices in spot and futures markets for commodities. According to the UNCTAD (2010) "...extraordinary increases in the volume of commodity derivatives as asset classes attracted swings of short-term portfolio investments, causing prices to deviate further from their trend levels. This increasing interest in commodities as an asset class has been termed the financialisation of commodity markets, which is a relatively new factor in price formation in commodity futures markets...". According to the IMF (2006), perceptions are often driven by observation of correlation rather than assessment of causality. The IMF's assessment based on causality suggested "...little support for the hypothesis that speculative activity (as measured by net long non-commercial positions) affects either price levels over the long run or price swings in the short run. In contrast, there is evidence (both across commodities and over time) that speculative positions follow price movements."

Increases in food and essential commodity prices in India in 2009-10 brought to the fore the debate on the role of commodity futures market in influencing price trends. The share of agricultural commodities in overall futures trading has declined in recent years reflecting imposition of bans on trading of several commodities (Chart A). Against the backdrop of growing perception that manipulative activity was causing distortions in the futures market and stoking inflation, the Government of India had constituted an Expert Committee on Futures Trading (ECFT) in 2007 with Prof. Abhijit Sen as the Chairman to study the effects of futures trading on prices of agricultural commodities in the country.



The Committee viewed that no strong conclusion can be drawn on whether introduction of futures trade is associated with decrease or increase in spot price volatility. While many other studies have examined the relationship between spot and futures prices, empirical evidence remains mixed.

The standard approach to study the impact of futures trading in commodities on their spot prices is through Granger causality tests. The empirical analysis for India is often constrained by the breaks in data on account of imposition of frequent bans and subsequent permission for relisting of certain essential commodities in the commodities exchange. Causality test results relating to the sample period for which data are available indicate that futures prices have causal impact on spot prices in the case of sugar and *urad* (Table A). It is also observed that spot prices Granger cause futures prices in case of *urad*, *chana*, wheat and sugar. Sugar and *urad* seem to exhibit two-way causality between the spot and futures prices.

Table A: Granger Causality Tests of the Relationship Between Spot and Futures Prices of Agricultural Commodities

Commodity	Hypothesis on the Direction of Causality			
	Futures Prices do not cause Spot Prices		Spot Prices do not cause Futures Prices	
	Significant*	P Value	Significant*	P Value
	2	3	4	5
Sugar	Yes	0.00	Yes	0.00
Urad	Yes	0.00	Yes	0.00
Tur	No	0.21	No	0.42
Wheat	No	0.42	Yes	0.04
Chana	No	0.74	Yes	0.07
Potatoes	No	0.14	No	0.81

* If significant, the null hypothesis is rejected.

Note: The tests relate to monthly data for the period 2004 to 2009. For commodities on which ban was imposed, data for the period 2004-2007 were used.

The empirical analysis, thus, does not provide any conclusive evidence in support of the relationship between spot and future prices. Commodity prices in India seem to be influenced more by other drivers of price changes, particularly demand-supply gap in specific commodities, the degree of dependence on imports and international price movements in these commodities.

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market need to be better monitored, given the possible role this market may have for the overall inflation conditions.

II.2.7 Demand-supply imbalances in certain commodities seem to be widening in recent years, causing significant swings in their prices. Barring a few edible oils and pulses, India has so far met the bulk of its food demand through domestic production. For wheat and sugar, India has occasionally resorted to imports, though generally it is an exporter of these commodities. In the case of edible oils, the demand has far outstripped the domestic supply and the deficit is met through imports, the share of imports being around 35 per cent of the total consumption. Pulses production has also lagged behind the demand resulting in dependence on imports to the extent of 14-15 per cent. There is a risk of Indian imports inflating international prices, and in that process, at times, the import option to contain inflationary pressures at home may not be there. In the case of commodities like crude oil, where the import dependence is more than 80 per cent, while full pass through of international prices to domestic prices has implications for inflation in the short-run, it will contribute to price stability by alleviating the pressure on the fiscal situation. The deregulation, besides contributing to improve the fiscal situation, could also promote energy efficiency and conservation.

II.2.8 The increase in inflation in certain commodities could also be on account of structural factors, which could create long-term supply bottlenecks. As the growth in food production has been lower than the overall growth in population, the net availability of food has come down, which gets partly reflected in sustained increase in prices. Moreover, as the economy exhibits stronger inclusive growth, the resultant increase in income of the population at large would lead to shift in the pattern of demand, and consumption of food items like pulses, milk and sugar could increase, which would exert pressure on prices of those products for which supply response may lag behind the growing demand.

II.2.9 In recent months, much of the pressure on the headline inflation has emanated from either upward revisions in administered prices (such as coal, fertiliser, electricity and petroleum products) or lagged reporting of inflation that gets reflected in the revised WPI data. Lower administered prices represent suppressed inflation and when their prices are revised upwards, the actual inflation path moves up. The increase in prices of petroleum products in June 2010 alone entailed an immediate increase in headline inflation by about one percentage points and the expected overall impact (including full pass-through across sectors in the second round, through higher input costs) could be about 2.9 percentage points.

II.2.10 The identification of sources of inflation is important for the conduct of monetary policy. Tightening of monetary policy in the face of demand pressures could yield desirable results by containing monetary policy sensitive part of the demand. However, when the inflationary pressures are dominated by adverse supply shocks, monetary policy could be less effective in containing price pressures. Supply shocks, however, generally tend to alter relative prices, and in certain conditions, relative price trends could necessitate monetary policy actions, as has been the case for India in the last quarter of 2009-10 (Box II.5).

II.2.11 Since the inflationary situation during 2009-10 largely emerged from the supply side constraints, the government took a number of short and medium-term fiscal and administrative measures to improve domestic availability of essential commodities and thereby moderate the pressure on inflation. These included, reduction of import duty to zero for select food items like rice, wheat, pulses, edible oils (crude), sugar and maize; additional allocation of foodgrains for sale through public distribution system (PDS) and allocation of wheat for release by the Food Corporation of India (FCI) in the open market; ban on export of non-basmati rice, edible oils and pulses; distribution of imported pulses and edible oils through PDS at subsidised rates and increase in Minimum Support Price of key agricultural commodities to augment production.

Box II.5 Supply Shocks, Relative Price Changes and the Role of Monetary Policy

Inflation refers to general increase in the price level, which is conventionally measured as the growth rate of a price index. Such a measure of inflation could be seen as a proper representative of the underlying inflationary pressures only when relative prices of commodities within the basket of the selected overall index remain constant. A measure of headline inflation rarely reflects the movements in prices of all the commodities in the basket in the same direction and by the same magnitude. Divergent trends in movements of prices across commodities within the basket and the resultant changes in relative prices could make the average inflation less representative, particularly for the purpose of conduct of monetary policy.

Changes in relative prices have been significant for India in recent years, particularly because of the dominance of supply shocks in conditioning the overall inflation path. In this context, four specific issues are important for the conduct of monetary policy: (a) possible misleading information from the headline inflation in the presence of divergent trends in inflation across commodities, (b) the risk of higher relative price variability in itself causing higher headline inflation, (c) the challenge of segregating supply side triggers for relative price changes from demand side factors, and most importantly (d) what monetary policy could do to contain inflationary pressures emanating from shifts in relative prices.

In India, the dominance of supply shocks in affecting the underlying trend inflation is borne out by the Granger causality tests (Table A). The test results suggest the presence of unidirectional causality with 'food and fuel inflation', reflecting the supply shocks, Granger causing the changes in core inflation. The "non-oil non-food component" is used as a measure of core inflation for this test. Although the results are significant only at 10 per cent level, the results indicate supply shocks contributing to possible second round effects.

Table A: Causal Relationship between Supply Shocks and Underlying Inflation

(Sample April 1994 to March 2010)

Null Hypothesis:	F-Statistic	Prob.
Core Inflation does not Granger cause food and fuel inflation	1.09	0.34
Food and fuel inflation does not Granger cause core Inflation	2.73	0.07

The second round effects represent the risks to overall inflation from shifts in relative prices that originate through supply shocks. The second round impact often materialises with a lag and operates through inflation expectations, wage settlements and price setting behaviour of firms. In

practice, however, it is hard to distinguish first and second round impact. It may also be not correct to ascribe any change in relative prices to supply shocks. The variance decomposition analysis based on a structural VAR framework sheds light on the impact of supply shocks on India's headline inflation. About one-third of the variation in the headline inflation over the horizon of two years seems to have been explained by the supply shocks (food and oil). It is also to be noted that the impact of oil shocks has a relatively greater impact (about 20 per cent) on variation in headline inflation as compared to food shocks (about 14 per cent). The empirical results also indicate that about 54 per cent of the variation in the headline inflation is caused by the residual shocks to the headline inflation itself, which is suggestive of the role of inflation persistence and inflation expectations in explaining the inflation process.

As regards monetary policy response to relative price developments, it has been generally argued that monetary policy actions may not be effective in controlling relative price movements resulting from supply shocks. For temporary increases in prices of certain items, on account of supply shocks, monetary policy need not respond. In turn, if the changes in relative prices are permanent (*i.e.*, the changes in relative price persists), and lead to higher general inflation, through second round impact and adverse inflation expectations, monetary policy will have a role for anchoring inflationary expectations. As emphasised by Mishkin (2007), higher inflation resulting from adverse supply shocks may not merit monetary tightening "... as long as the permanent changes in relative energy price do not lead to a change in the underlying trend rate in inflation". Given the possibility of the short-term trade-off between inflation and growth, however, monetary policy actions aimed at containing inflation may induce some sacrifice of growth. In this context, Feldstein (2009) noted that an appropriate strategy for a central bank could be to recognise "...that a tight monetary policy will slow growth in the short-term... (but) produce stronger growth and lower risks for the longer term".

Relative price changes can be identified by looking at the variability in inflation across commodities within the general price index. The index of relative price variability (RPV) is measured as the weighted sum of deviations in commodities inflation from overall inflation:

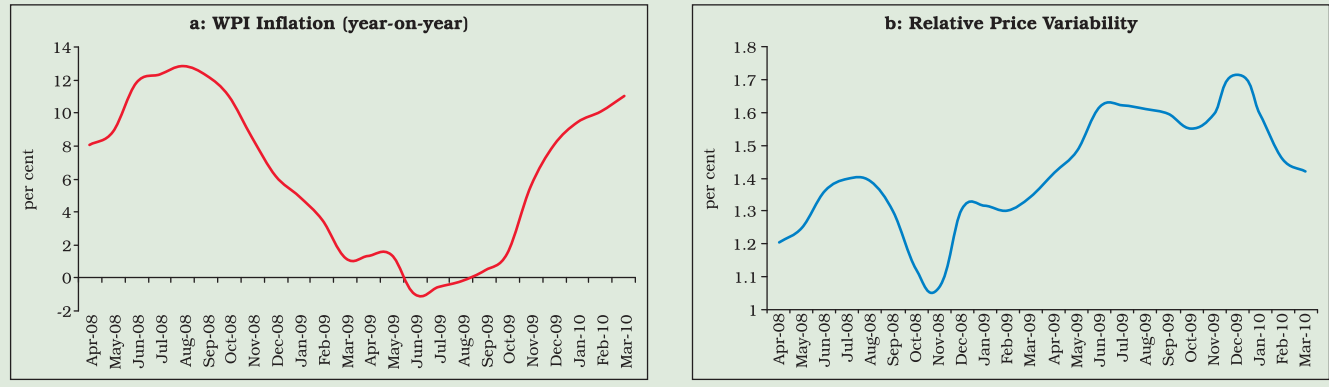
$$RPV_t = \sqrt{\sum_{i=1}^n w_{it} (\pi_{it} - \pi_t)^2}$$

(where, π_{it} is the inflation in commodity i at period t , π_t is the average rate of inflation at period t and w_{it} is the weight of commodity i in price index.)

(Contd...)

(...Concl.)

Chart A: Inflation and Relative Price variability



In India, during the first half of 2009-10, despite inflation remaining low, relative price variability increased substantially indicating the presence of supply shocks (Chart A). Since November 2009, the relative price variability has declined, despite inflation remaining high, indicating that the inflation has become increasingly generalised, and hence, requiring appropriate monetary policy actions to anchor inflation expectations.

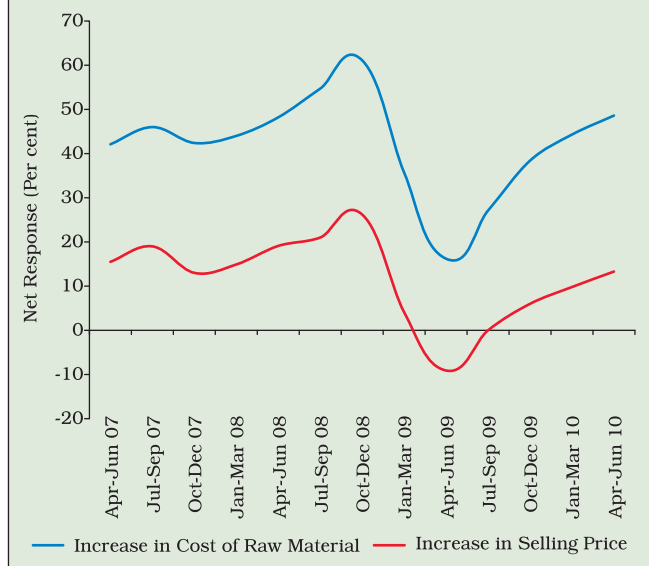
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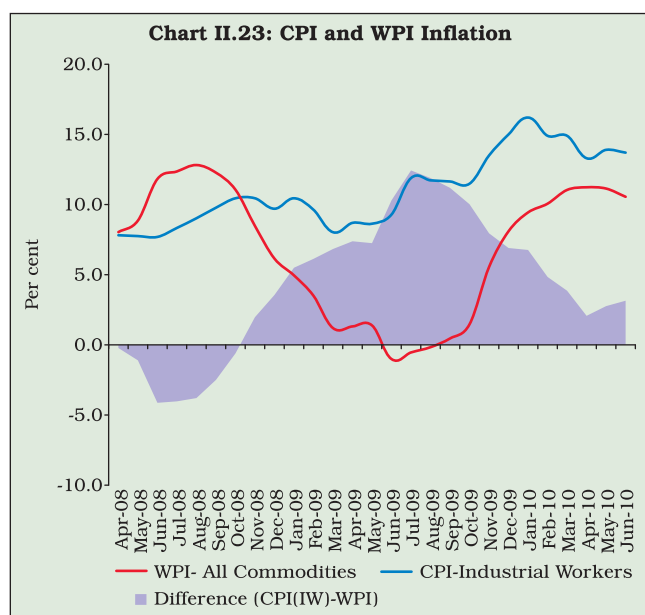
II.2.12 The emergence of demand pressure on prices in India during the last quarter of 2009-10 was visible from a number of indicators, such as strong revival in import growth, major turnaround in corporate sales, increases in capacity utilisation and revival in credit demand from the private sector. Apart from this, the pricing power of corporates also seemed to improve with recovering private demand, which is evident from the trends in net response reported in the Reserve Bank's Industrial Outlook Survey (Chart II.22). While the corporates expected in larger numbers to be able to raise output prices, they also expected input costs to increase, indicating the cost-push effects of supply shocks on general inflation.

WPI. During the second half of 2009-10, some decline in the degree of divergence was witnessed as a result of increase in WPI inflation and moderation in CPI inflation.

Chart II.22: Expectations for Cost of Raw Material and Selling Price: Reserve Bank's Industrial Outlook Survey

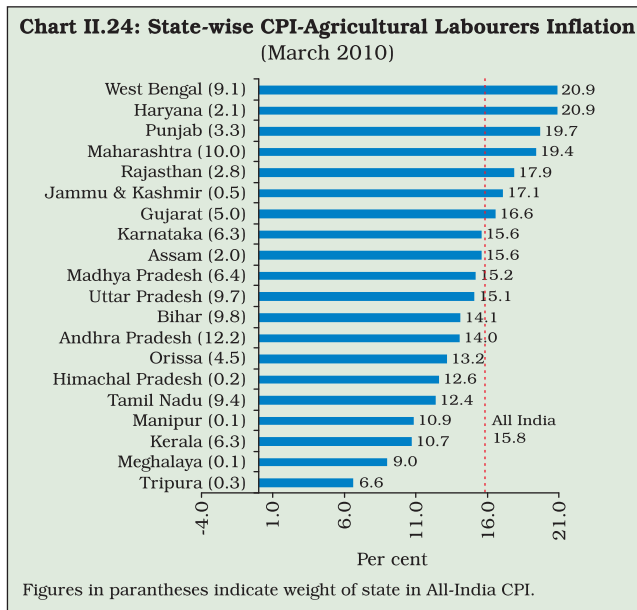


II.2.13 Persisting divergence between inflation as measured by wholesale and consumer price indices was another major feature of inflation trends in India during 2009-10 (Chart II.23). The divergence was partly the result of high inflation in food, which has relatively higher weight in CPIs as compared to



II.2.14 Besides divergence in inflation across commodities and price indices, the differences in inflation across states has also been significant (Chart II.24).

II.2.15 High inflation, when persists, could not only dampen overall growth prospects of the economy but also hamper the progress on inclusive growth. The adverse impact on growth could potentially result from inflation induced distortion in resource allocation and possible decline in domestic savings. Uncertainty associated with inflation could complicate investment and consumption planning, affecting capital accumulation and savings. Inflation at times, could also shift the focus from production activities and productivity enhancing investment to speculation and hoarding.



II.2.16 The risk to inclusive growth may result from the asymmetric impact of inflation on different sections of the population. A large section of the population may not be able to increase their nominal income matching inflation and in that process may suffer a decline in real income. The impact of high food inflation could be even more asymmetric, because of the large proportion of income of the poor that is allocated to consumption of food items. In view of the possibility that those who experience maximum loss of real income because of high inflation also do not benefit much from high growth, containment of inflation becomes the overriding objective for monetary policy in the eventuality of inflation persistence (Box II.6). The evidence of inflation persistence in India in the

Box II.6 Inflation Persistence in India

Inflation is said to be persistent if, in the absence of any disturbance, it shows a tendency to stay closer to its past levels. Inflation persistence implies the time taken by inflation to return to the underlying trend after a shock. If inflation exhibits a sudden spike on account of supply shocks and does not moderate thereafter, the resultant inflation persistence could raise its long-run average value. Hence, higher the persistence of inflation, stronger monetary policy actions may be required to bring inflation down to the long-term trend, following a supply shock.

Though inflation persistence is often viewed as an important information, which should feed into the monetary policy making process, there is little agreement in the literature on how best to measure inflation persistence. The nature of inflation persistence could vary both across time and across different supply shocks. Two distinct approaches are seen in the literature to measure inflation persistence: one defines and evaluates inflation

(Contd...)

(...Concl.)

persistence in the context of a simple univariate time-series representation of inflation, while the other uses a structural econometric model that aims at explaining the inflation behaviour. Under the univariate approach (also called reduced-form approach), a simple autoregressive model for inflation is used and the shocks are measured in the white noise component of the autoregressive process. The multivariate approach implicitly or explicitly assumes a causal economic relationship between inflation and its determinants (usually through a structural VAR model) and sees inflation persistence as referring to the duration of the effects of various shocks on inflation. While in the univariate approach shocks to inflation are not identified, under the multivariate approach attempts are made to identify different shocks to facilitate shock-specific persistence analysis.

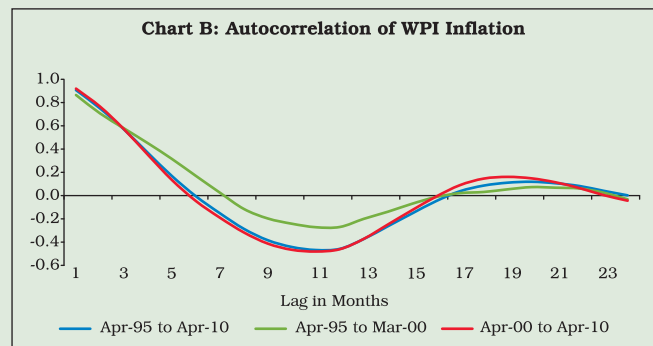
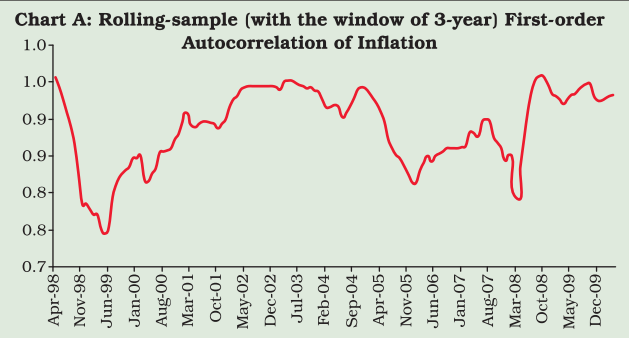
Empirical studies on inflation persistence in India give contrasting results. Khundrakpam (2009) found that irrespective of the alternative inflation measures, the level of inflation persistence in India is relatively on the lower side, although among the components of WPI, 'manufacturing' inflation is the most persistent.

Different approaches used to understand the nature of inflation persistence in India indicate almost similar results. These include: (a) conventional unit root tests: a series with a unit root has infinite memory in the sense that a shock in period t has influence on all periods $t + k$; $k > 0$. Thus, any shock to a series with a unit root persists forever; (b) the first order autocorrelation of the inflation series; (c) the autocorrelation function of the inflation series and (d) the sum of the autoregressive coefficients for inflation. Empirically, these measures are examined using WPI (base: 1993-94=100) data from April 1995 to April 2010. Since 2000, monetary policy operates under the LAF framework. Thus, in order to assess this shift on inflation persistence, the sample period is split into two sub-periods: April 1995 to March 2000 and April 2000 to April 2010. The conventional unit root tests suggests that for split-sample and the whole sample, WPI-based inflation does not contain a unit root, more so in the later half of the sample (Table A). That means inflation process has been less persistent during post-2000 period.

Table A: Unit Root Tests for Inflation

	P-Value (Null hypothesis: Series has unit root)		
	Apr-95 to Apr-10	Apr-95 to Mar-00	Apr-00 to Apr-10
ADF test	0.0154	0.0437	0.0000
Phillips-Perron	0.0019	0.0453	0.0332

Secondly, the first order autocorrelation coefficient, a simple measure of persistence, showed the time varying nature of persistence (Chart A). Inflation persistence



seems more pronounced in the recent period. The autocorrelation structure does not rule out persistence, but only suggests low persistence (Chart B). Finally, a persistence test based on AR model suggests that WPI inflation exhibits persistence (Table B).

Table B: Persistence Test Based on AR(k) Process

	Apr-95 to Apr-10	Apr-95 to Mar-00	Apr-00 to Apr-10
Sum of the AR coefficients	0.8431(AR(3))	0.8416(AR(1))	0.8380(AR(3))
P-value	<.0001	<.0001	<.0001

Different estimates, thus, suggest that inflation persistence has been a reality. Highlighting empirical evidence on the high degree of inflation persistence in India in the recent period, especially in the case of food and edible oil groups, Mohanty (2010) emphasised that "... extent of inflation persistence is important in the determination of the pace of monetary policy adjustment to achieve the desired target".

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2. Mohanty, Deepak (2010), "Inflation Dynamics in India: Issues and Concerns" Speech delivered at the Bombay Chamber of Commerce and Industry, March 4, 2010.

recent period suggests that despite the risk of possible trade off between growth and inflation in the short-run, inflation containment may have to receive precedence over other policy objectives in India for the Reserve Bank.

Developments in 2010-11 so far:

II.2.17 In the first quarter of 2010-11, the headline inflation remained close to double digits (9.97 per cent, y-o-y, provisional in July 2010), despite some moderation in prices of food products. WPI inflation based on revised data for first three months of 2010-11 was higher by over one percentage point in each month as compared with the provisional figures. Manufactured non-food products inflation further accelerated, and remains elevated indicating the strengthening of demand side pressures on inflation. Changes in administered prices as well as upward revisions in price indices that reflected lagged reporting of past price increases, contributed significantly to the increase in WPI in recent months. Notwithstanding some moderation, consumer price inflation, measured by various indices, remains high in the range of 13.0-14.1 per cent during May/June 2010.

II.2.18 High and persistent inflation at the current juncture poses a number of challenges. The increasing generalisation of inflation indicates emergence of inflationary pressures from the demand side, which will require active demand management policies in the near-term. The focus of medium-term inflation management, however, must be to ease supply constraints in key sectors where demand will continue to grow. This is particularly important for agricultural products. It also needs to be recognised that high and generalised inflation, if persists, in itself is a risk to growth through its unfavourable effects on resource allocation as well as unfavourable redistributive effects on the poor. Large dispersion in inflation, across commodities, across regions and across different indices also necessitate the use of multiple indicators of inflation for the assessment of overall inflationary conditions.

III. MONEY AND CREDIT

II.3.1 Monetary and credit conditions remained supportive of recovery during 2009-10, largely reflecting the accommodative monetary policy stance of the Reserve Bank. Easy access to liquidity at low cost was a critical component of the overall policy response in the management of recovery. The Reserve Bank, like most other central banks, adopted a number of conventional and unconventional measures in the second half of 2008-09 to augment domestic and foreign exchange liquidity. In a span of seven months between October 2008 and April 2009, there was unprecedented policy activism, as the repo rate was reduced by 425 basis points to 4.75 per cent, the reverse repo rate was reduced by 275 basis points to 3.25 per cent and the CRR was reduced by 400 basis points to 5.0 per cent. The actual/potential provision of primary liquidity was of the order of ₹5,60,000 crore (9.0 per cent of GDP).

II.3.2 Accommodative monetary policy stance continued through the first half of 2009-10. As the recovery process gained momentum and in response to the emerging inflationary pressures, calibrated monetary unwinding started in the second half of the year. Notwithstanding the easy monetary policy, on account of the significant deceleration in private consumption and investment demand, particularly in the first half of the year, growth in monetary and credit aggregates decelerated. In the second half of the year, pick-up in the momentum of recovery led by industrial growth was not reflected as much in the trends for money growth, though credit growth recovered from November 2009. In 2010-11 so far, credit growth continued to accelerate during the first quarter and showed some moderation in July 2010, while money growth has continued to decelerate.

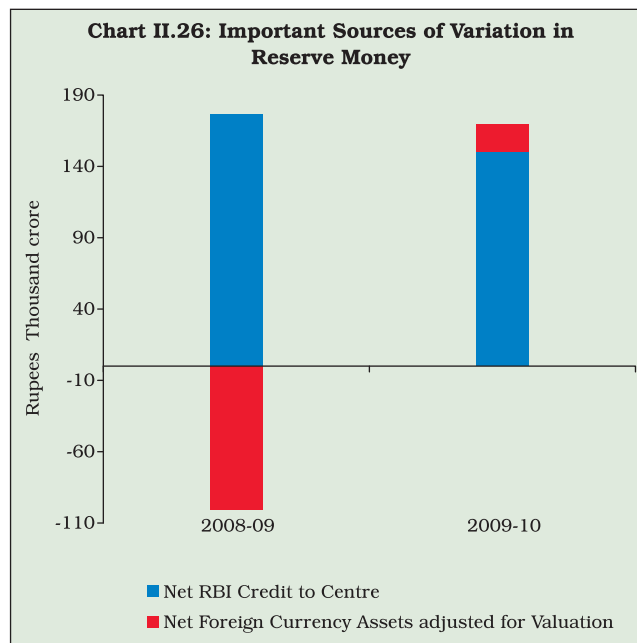
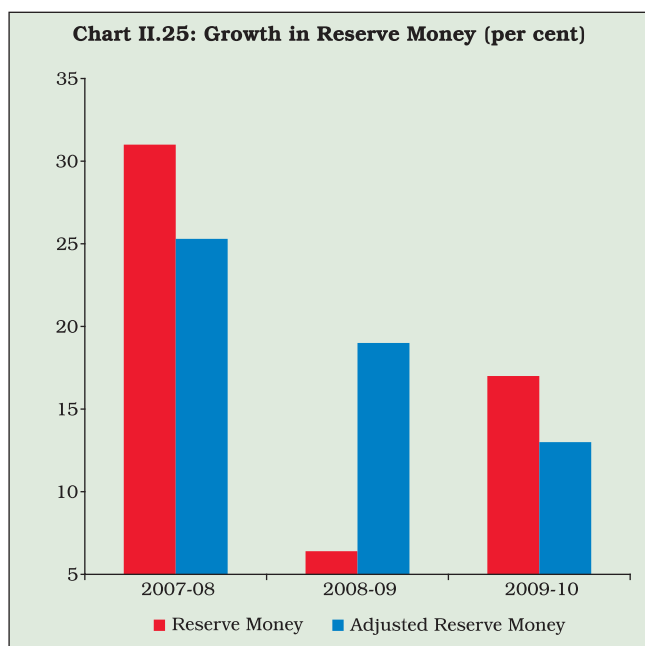
Reserve Money

II.3.3 Trends in reserve money reflected largely the impact of the monetary policy changes and

liquidity management operations, both on the components and sources side. Reflecting the policy-induced changes in the cash reserve ratio (CRR), reserve money growth decelerated in 2008-09, but increased in 2009-10. Keeping in view the sharp changes in CRR, analytically, it is important to look at reserve money adjusted for CRR changes. Adjusted reserve money growth decelerated in 2009-10 as compared with the previous year (Chart II.25).

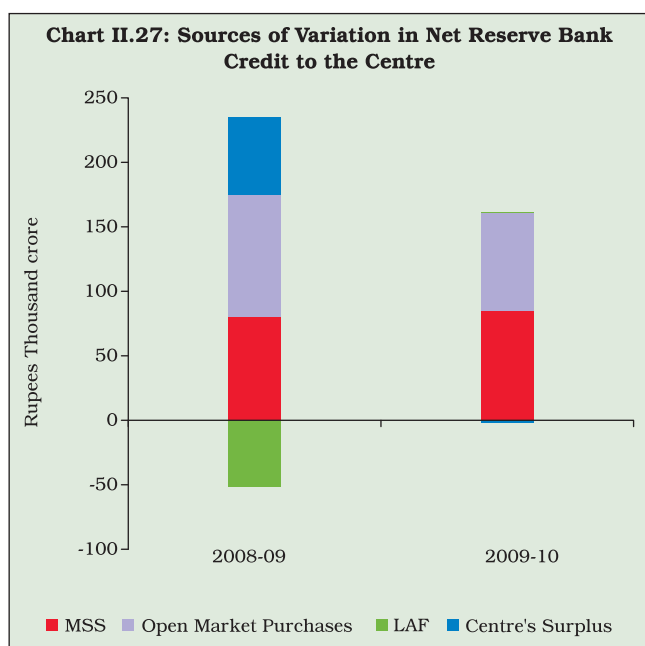
II.3.4 Bankers' deposits with the Reserve Bank increased during 2009-10, with the bulk of the increase occurring during the fourth quarter as a result of the hike in CRR effected in February 2010. In 2008-09, bankers' deposits had declined because of a net reduction in CRR by 250 basis points during the year. Currency in circulation constitutes the major component of reserve money, which is largely determined by demand conditions. Currency growth exhibited moderate deceleration during 2009-10, consistent with the weakness in economic activities in the first half of the year.

II.3.5 On the sources side of reserve money, continuing the trend of the previous year, net



Reserve Bank credit to the Centre was the predominant source of increase in reserve money in 2009-10 (Chart II.26). Net foreign currency assets (adjusted for valuation) increased modestly during the year. Changes in foreign currency assets occur on account of three reasons – purchases/sales from authorised dealers, aid receipts by the government and earnings on foreign currency assets. The latter two factors do not have an impact on reserve money. Thus, even though there was an increase in net foreign currency assets (adjusted for valuation) in 2009-10, it did not contribute to the increase in reserve money during the year as foreign currency assets increased primarily on account of net interest/discount earned and aid receipts.

II.3.6 The expansion in net Reserve Bank credit to the Centre in 2009-10 reflects the combined effects of monetary operations conducted through open market operations (OMO), including liquidity adjustment facility (LAF) operations, and market stabilisation scheme (MSS), besides the changes in government's cash balances with the Reserve Bank. During 2009-10, about 57 per cent of the increase in net Reserve Bank credit to the Centre was on account of unwinding/de-sequestering of



balances held under the MSS (Chart II.27)¹. The bulk of the decline in MSS balances occurred during the first quarter of the year. Since April 2004, MSS has been a key sterilisation instrument for dealing with the liquidity impact of surges in capital inflows, leading to accumulation of government deposits which remained sterilised with the Reserve Bank. In the liquidity augmenting response to the global crisis, these MSS balances were released through unwinding and de-sequestering.

II.3.7 The other major driver of net Reserve Bank credit to the Centre in 2009-10 was the open market operations of the Bank, which accounted for 50 per cent of the increase. The open market purchases were mainly confined to the first half of the year, which along with MSS unwinding, facilitated the smooth conduct of the front-loaded government borrowing programme for 2009-10. Even though MSS unwinding and open market purchases explain almost the entire annual variation in net Reserve Bank credit to the Centre, other liquidity impacting factors such as operations in the LAF

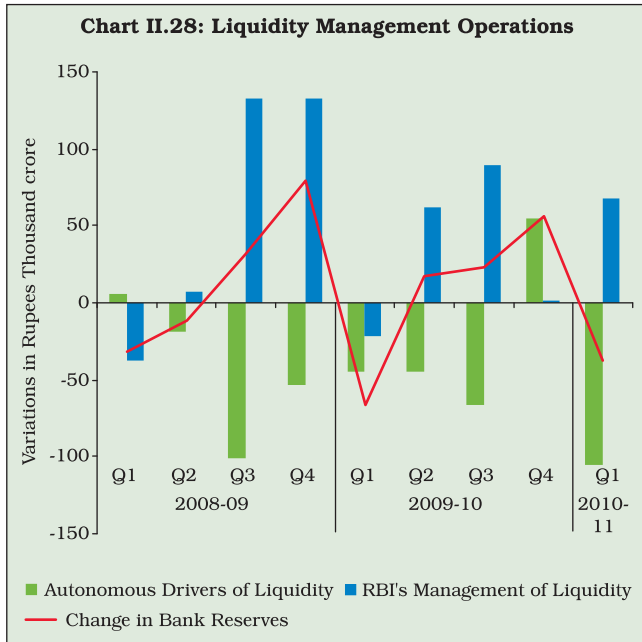
market and changes in Centre's cash surplus with the Reserve Bank, were important drivers of quarterly variations in liquidity in the system during 2009-10. Since July 28, 2010, there are no MSS balances with the Reserve Bank; thus, the option of liquidating the MSS balances to expand liquidity and thereby to influence the growth in reserve money has been exhausted.

II.3.8 The overall monetary conditions reflected significant changes in the autonomous drivers of liquidity as well as discretionary liquidity operations of the Reserve Bank consistent with its monetary policy stance. Notwithstanding differences in country practices in interpreting autonomous drivers of liquidity, in India, an appropriate indicator could include the combined effects of: (i) Reserve Bank's net purchase of foreign exchange from authorised dealers, (ii) currency with the public, (iii) government's surplus cash balances with the Reserve Bank, besides WMA and overdrafts, and (iv) others. In turn, the management of liquidity by the Reserve Bank, which could be viewed as the discretionary component of the system level liquidity, include the liquidity impact of: (i) LAF operations, (ii) net OMO, (iii) MSS, and (iv) the first round impact of changes in CRR. The aggregate outcome of variations in autonomous and discretionary components of liquidity match with the change in banks' reserves (Chart II.28). Detailed discussions on liquidity management operations of the Reserve Bank are presented in Chapter III.

Developments in 2010-11 so far

II.3.9 Reserve money continues to grow at an accelerated pace in 2010-11 so far (August 13, 2010). The main component of increase in reserve money is currency in circulation. The high growth in currency (year-on-year growth of 20.1 per cent)

¹ Increase in repo/OMO purchases and decline in reverse repo/MSS balances/government's surplus balances with Reserve Bank lead to increase in net Reserve Bank credit to the Centre, and *vice versa*.

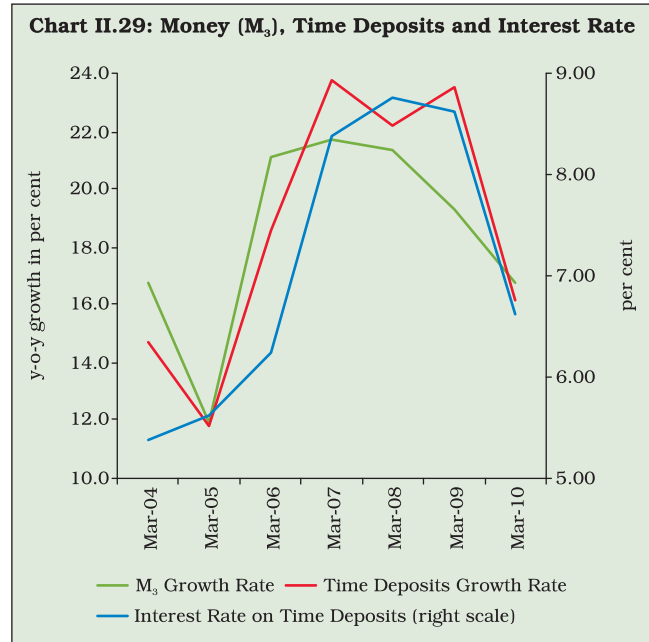


is mainly on account of the spurt in inflation, low deposit interest rates and also increase in vault cash with banks.

Money Supply

II.3.10 Broad money (M_3) growth decelerated for the second successive year in 2009-10, reflecting the moderation in demand associated with deceleration in economic growth in relation to the high growth achieved during 2003-08. On the components side, the deceleration was mainly led by slowdown in the growth of time deposits, partly in response to softening of interest rates observed during the year (Chart II.29). Accordingly, the share of time deposits in the annual increment in M_3 also declined (Chart II.30). In 2008-09, however, time deposits exhibited stronger growth due to depressed equity markets, increase in risk perceptions and risk-free high interest rates still available then on time deposits. The expectation of subsequent decline in time deposit rates had also motivated some shift from demand deposits.

II.3.11 On the sources side, the share of banking system's credit to the government in the annual



increase in M_3 in 2008-09 and 2009-10 has been one of the highest in recent years (Chart II.31). Net foreign assets had a negative contribution to annual variation in M_3 in 2009-10 (Chart II.32).

II.3.12 During 2009-10, the share of bank credit to the commercial sector in the total net domestic assets declined, as in the previous year. This was mainly on account of the deceleration in the flow of

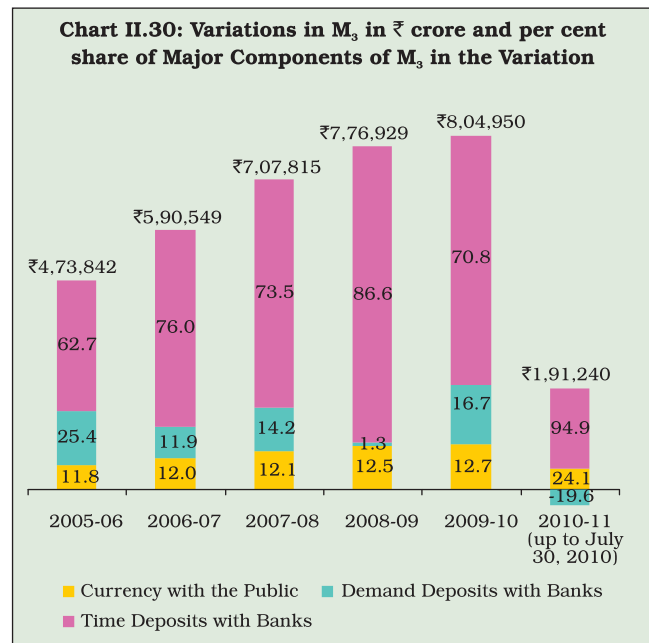


Chart II.31: Share of Credit to the Government from the Banking System in the Variation in M₃ (per cent)

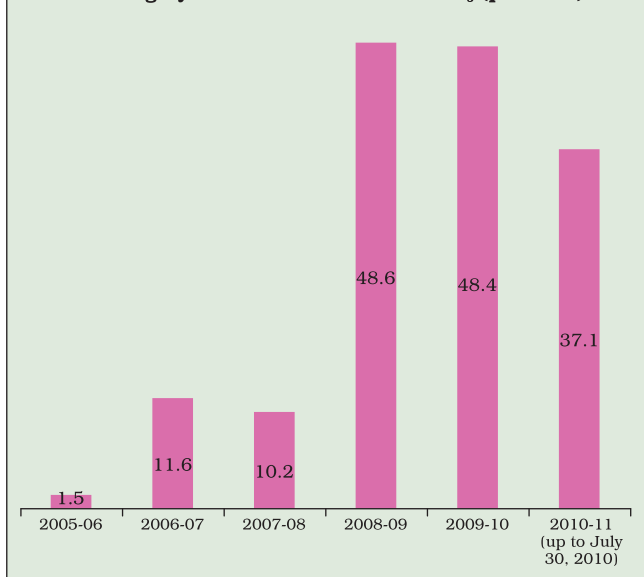
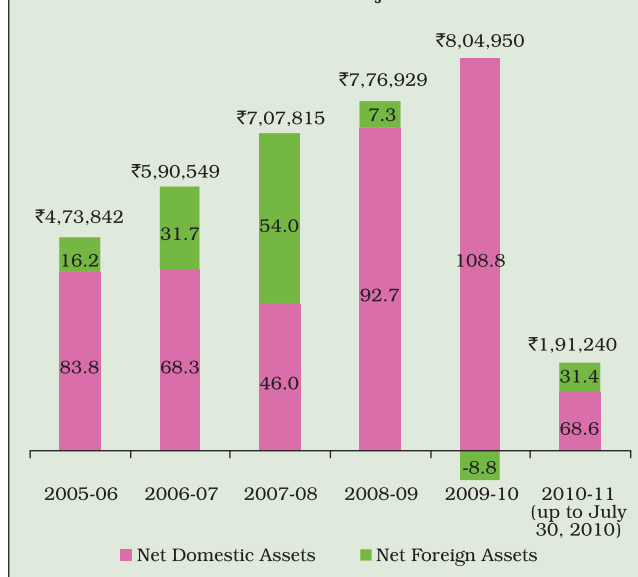


Chart II.32: Variations in M₃ in ₹ crore and per cent share of the Sources of M₃ in the Variation



non-food credit from November 2008 to October 2009 (Chart II.33). Non-food credit growth exhibited deceleration till November 2009 and has steadily increased thereafter, reflecting the improving demand associated with a stronger industrial recovery. The highest quarterly incremental flow of non-food credit in two years was observed during

the fourth quarter of 2009-10, reflecting the robust increase in growth led by industrial production (Chart II.34). Along with enhanced access to alternative financing, monetary policy actions of the Reserve Bank contributed to the recovery through the normal transmission process in the credit market, though with a lag (Box II.7).

Chart II.33: Non-food Credit Growth (y-o-y, per cent)

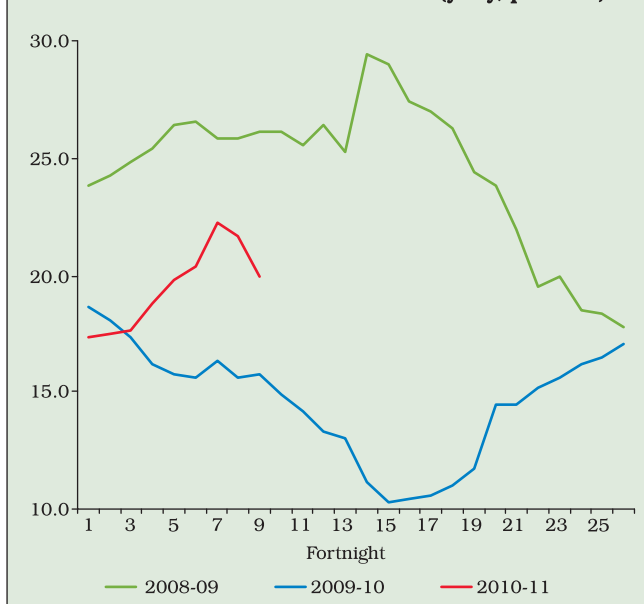
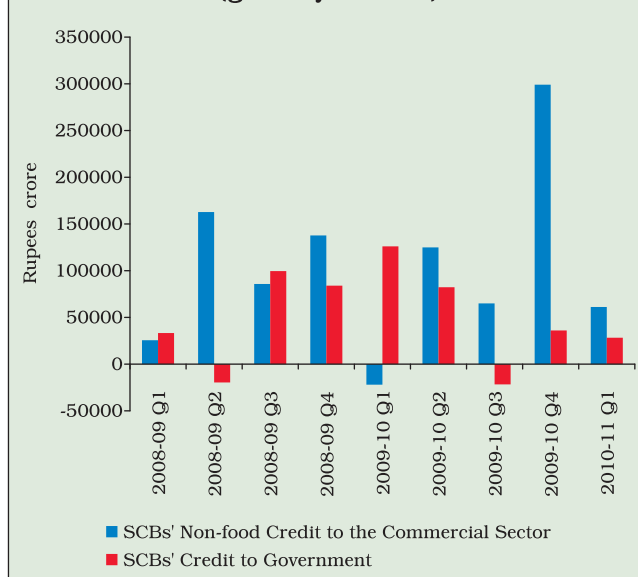


Chart II.34: Scheduled Commercial Bank's Credit (Quarterly Variation)



Box II.7

The Credit Channel of Monetary Policy during the Recovery

The credit channel of monetary policy transmission received significant attention in monetary policy debates during 2008-10, as many advanced economies had to conduct policies in the face of significant stress in credit markets. Monetary policy transmission may completely break down in an environment of “credit freeze”, since the liquidity injected by a central bank at the lowest possible cost may not even reach the rest of the economy. Even during normal market conditions, assessment of the effectiveness of monetary policy could be a complex issue, as monetary policy transmission mechanism can be equated to a “black box” (Bernanke and Gertler, 1995). Central banks can generally anchor the overnight interest rate around the policy rates, but the transmission thereafter to real goal variables is often uncertain and hazy. As noted by Blinder (1998), “...Central banks generally control only the overnight interest rate, an interest rate that is relevant to virtually no economically interesting transaction. Monetary policy has important macroeconomic effects only to the extent that it moves financial market prices that really matter – like long-term interest rates, stock market values and exchange rates”. Aggregate demand, thus, could be influenced by changes in cost of capital, exchange rate and asset prices, all of which could respond to changes in the policy rates. Thus, by leveraging policy rate instrument, demand associated with consumption of goods and services, housing, inventories and investment could be influenced, though interest rate sensitivity of demand may not be significant, particularly during a recession or slowdown in economic activities. In such an eventuality, assessment of the credit channel of transmission mechanism could provide complementary information about the effectiveness of monetary policy actions.

According to Bernanke and Gertler (1995), the two components of the credit channel are the balance sheet channel and the bank-lending channel. Borrowers often have the option to choose between internal financing and external financing, and between banks and non-banks with regard to external financing. Monetary policy actions could alter the “external finance premium”, *i.e.*, the difference between the cost of external funds and the opportunity cost of internal funds. The external finance premium exhibits an inverse relationship with the financial condition of borrowers. The external finance premium gets influenced by monetary policy actions through both balance sheet and bank lending channels. Changes to cash flows and balance sheets could have significant real effects. This became evident in developed economies during the global crisis when not only the balance sheets of banks contracted, but households and corporates also experienced significant erosion in net worth and faced uncertainty about cash flows. These developments altered the financial conditions of borrowers, *i.e.*, their creditworthiness, which, in turn, would have affected their external finance premium. The bank lending channel of monetary policy, which operates through the supply of credit by deposit institutions (*i.e.*, banks) to bank-dependent borrowers, was also disrupted significantly in these economies by the erosion in the capacity of banks to lend due to pressure on their capital, besides reflecting significant increase in risk aversion on the part of banks.

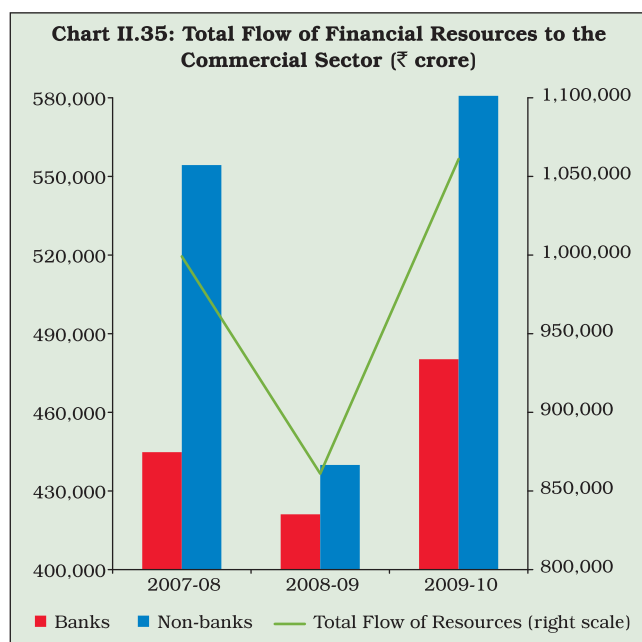
In India, unlike in advanced economies, the credit market functioned normally and remained supportive of the recovery in growth during 2009-10, notwithstanding the deceleration in the

growth of non-food credit. The assessment of the bank credit channel often encounters the challenge of disentangling the demand side effects from the supply side effects. In India, neither the banks’ capacity to lend was affected because of any pressure on their capital, nor was there any intense deleveraging pressure on the corporates and households that could have lowered the demand for credit in a major way. The economic slowdown and the associated deceleration in private consumption and investment demand, however, led to moderation in demand for non-food credit. Because of the monetary policy actions of the Reserve Bank, primarily in the form of lower policy rates and ample liquidity conditions, however, the constraint from the supply side in the credit market was largely avoided. The bank lending channel from the supply side may not be visible in broad trends in the growth of non-food credit because of the simultaneous and dominating influence of private consumption and investment demand in depressing the demand for credit. Pandit *et al.* (2006) found evidence of existence of bank lending channel for India, even though several factors, including monetary policy shocks, seemed to influence the lending behaviour of banks.

A standard four variable VAR (growth in GDP, growth in non-food credit, average lending rate and call rate), with necessary diagnostic checks, validate the presence of conventional monetary policy transmission in India for recent data, though with larger error bands around the estimates. Increase in call rates (induced by policy rate changes) lead to higher average lending rates, with about two quarters lag, which in turn lower the growth in non-food credit in the fifth quarter and the GDP growth in the seventh quarter. This implies the sensitivity of demand for credit to changes in lending rates. The moderation in credit growth leads to lower growth in output. The estimated impact, though, seems to be modest and tapers off gradually. More importantly, the causality running from GDP growth to credit growth turns out to be statistically significant, suggesting credit following, rather than leading the pick-up in growth momentum. This pattern needs to be seen in relation to increasing availability of non-banking sources of funds, and their trends during the recovery in 2009-10. Indian corporates have much greater flexibility now in choosing between internal financing and financing from banks and non-banks, which is evident from significant year on year variations in the composition of their liabilities. Aggregate level data also suggest that total financing from non-banking sources were of a higher order than the flow of credit from banks. Thus, trends in credit alone need not explain the role of financial and liquidity conditions ensured by the Reserve Bank in contributing to the recovery.

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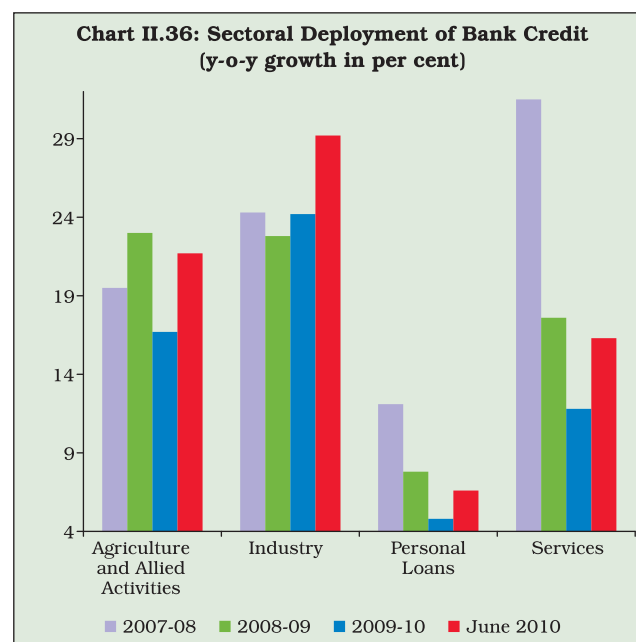
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II.3.13 During the twelve month period beginning November 2008 when bank credit, as conventionally measured, was decelerating, the other investments of banks (*i.e.*, investment in shares/bonds/debentures of corporates, commercial paper and mutual funds) showed acceleration in the rate of growth. As a result, indirect financing from banks increased. The non-banking sources, both domestic as well as foreign, meet a higher proportion of funding needs of the commercial sector (Chart II.35). The main sources of non-bank finance during the period of deceleration in non-food credit were initial public offers, private placements, issuance of commercial papers, foreign direct investment and American/Global depository receipts. While the total flow of resources from banks and non-banks increased during 2009-10, the flow of bank credit to industry remained strong (Chart II.36).

Developments in 2010-11 so far

II.3.14 Money growth continued to decelerate during 2010-11 so far owing to slowdown in the growth rate of deposits. Banks have begun to mobilise deposits by announcing hike in rates for term deposits since end-July 2010. This has become essential in order to meet the increased



demand for credit from the commercial sector. Though increased credit flow is yet to get broad-based, there has been an improvement in credit growth to personal loans and services in the recent months. The flow of financial resources from the non-banking sector also recorded a significant increase during the first four months of 2010-11.

IV. FINANCIAL MARKETS

II.4.1 Financial markets functioned in an orderly manner through 2009-10. As the overall liquidity conditions remained in surplus, money market interest rates generally stayed close to the lower bound of the LAF rate corridor. The large market borrowing by the Government put upward pressure on the yields on government securities during 2009-10. However, this was contained by active liquidity management by the Reserve Bank. Lower credit demand by the private sector also helped in containing the upward pressure on yield. Equity markets generally remained firm during the year with intermittent corrections in line with the global pattern. Resource mobilisation through public issues increased. Housing prices rebounded during 2009-10. According to the Reserve Bank's survey, they surpassed their pre-crisis peak levels in Mumbai. The exchange rate exhibited greater flexibility.

II.4.2 Financial markets represent the medium through which the impact of adverse global shocks manifests first. The impact of the global crisis on India was also visible first in the financial markets. Thus, restoring normal conditions in the markets became the key policy challenge to contain the adverse impact on the real economy. The Reserve Bank operated simultaneously in money, forex and government securities markets, resorting to both conventional and non-conventional measures, which helped in restoring normalcy to market. This in turn was critical for other macroeconomic policies to be effective in managing the recovery in 2009-10. Since India avoided a financial crisis at home, the risk of stress in the financial system constraining the recovery was also largely avoided. As the financial institutions in India remained well capitalised, it helped money and credit markets to return to the pre-crisis trajectory at a faster pace. However, in view of the significant uncertainties prevailing in the global markets and the flow of both positive and negative news at different points of time during the course of the year, ensuring normal functioning of market to support recovery was critical.

II.4.3 Financial market developments tend to pose two way complex and persistent challenges to policy making: first, the uncertainty about how adverse shocks transmit through the financial markets to the real economy; second, how monetary policy measures transmit through the financial markets to attain the ultimate objectives relating to the real economy. While Indian markets, in particular the equity and forex markets, exhibited volatility in response to adverse external news relating to the developments in Dubai World and Greece, the market trends were conditioned by the domestic macroeconomic developments as well as the policy stance of the Government and the Reserve Bank.

International Financial Markets

II.4.4 Global financial market conditions improved during 2009 despite the drag from the

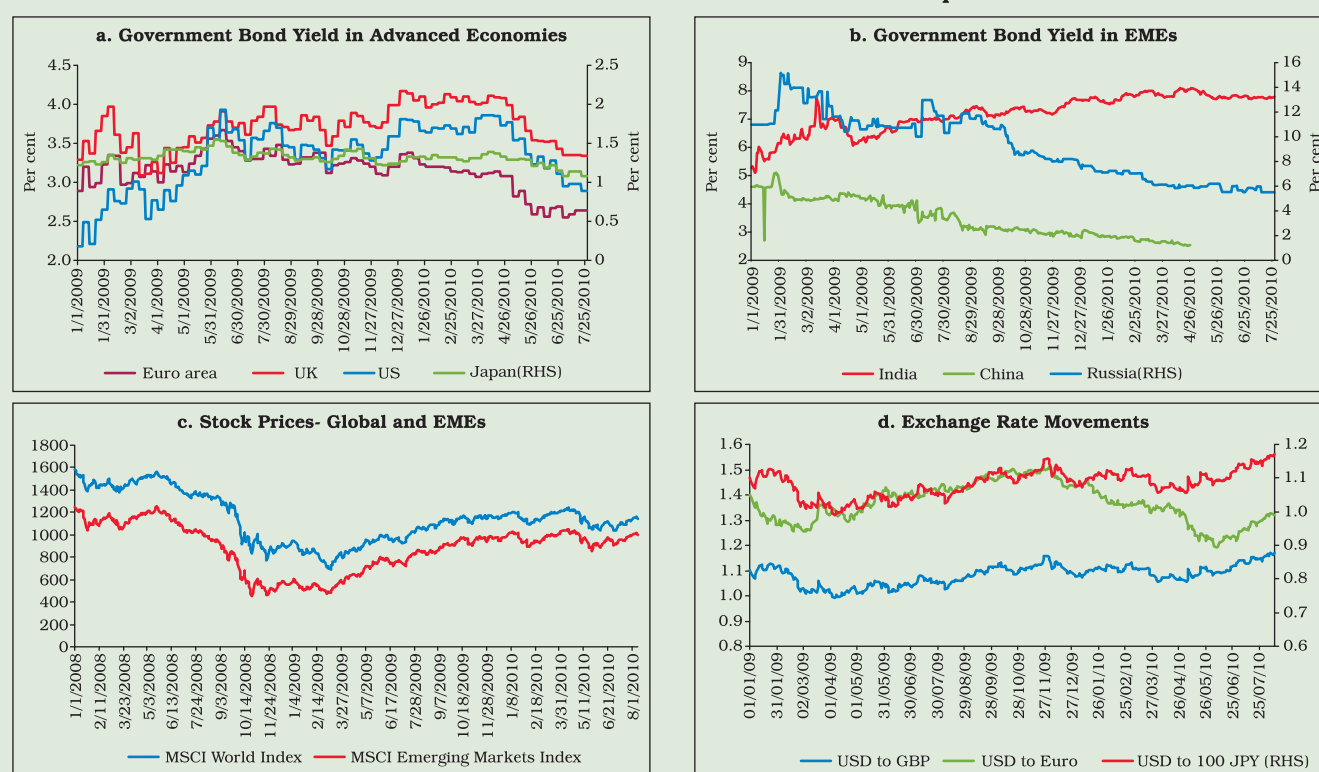
global financial crisis; although there were phases of intermittent excess volatility. The sovereign risk concerns, however, dominated the financial markets towards the end of 2009 and beginning of 2010, with the Dubai World debt standstill and the sovereign debt problem of Greece posing bouts of additional uncertainty to the financial system. Beginning April 2010, another shock to the global financial markets emanated from the concerns of sovereign debt problem spreading from Greece to other Euro zone countries, that not only led to significant depreciation of the euro and decline in stock prices in the Euro zone but also transmitted volatility to other financial markets across the world (Chart II.37a to d). Reflecting flight to safety, yields on government papers of the advanced countries moderated. Credit Default Swap (CDS) spreads of European countries with fiscal imbalances rose, indicating the market assessment regarding risks in these countries.

II.4.5 Reduction in risk perception towards EMEs along with continuance of low policy rates in the advanced economies for extended periods, led to revival in capital flows, which in turn contributed to increase in asset prices and also kept appreciation pressures on the exchange rates of EMEs. In India, both equity and foreign exchange markets exhibited volatility in response to developments in the global markets. Overall, the transmission of global shocks to the real economy remained contained. Stronger recovery in growth also contributed to the improved confidence and perceptions in the markets.

Domestic Financial Markets

II.4.6 The immediate response of the Reserve Bank to the shocks from the financial crisis in the advanced economies was in the form of provision of ample domestic rupee liquidity and comfortable forex liquidity. These were aimed at reducing uncertainties stemming from perceptions of liquidity scarcity and thereby restoring confidence in the domestic money and forex markets. The direct

Chart II.37: Indicators of Global Financial Market Developments



Source: The IMF, the Federal Reserve of St. Louis, Bloomberg and Datastream.

transmission of shocks to India was through capital outflows and excessive volatility in the exchange rate, which warranted intervention by the Reserve Bank to restore orderly conditions in the foreign exchange market. Besides the actual intervention sales in the foreign exchange market, the Reserve Bank introduced the forex swap facility for the banks and also took measures to improve specific inflows. In order to address the apprehension of scarcity of rupee liquidity in the banking system, the Reserve Bank reduced CRR, unwound the MSS balance and also deployed several other conventional and unconventional measures. Within a short span between October 2008 and April 2009, the repo rate was lowered by 425 basis points which reduced the cost of liquidity. As a result of these measures, financial market conditions in India had recovered quickly, after the initial impact of global shocks in the second half of 2008-09.

II.4.7 Swift and timely policy measures undertaken by the Reserve Bank largely ensured

faster normalisation of financial market conditions, even though in the advanced economies prolonged stress of financial systems affected the real economy significantly in terms of lost output and employment. Reserve Bank's policy measures were critical for two reasons. First, monetary policy had to ensure that the various segments of financial markets affected by the external shocks returned to normalcy at the earliest so that the process of financial intermediation could take place in a non-disruptive manner to support the real sector. The provision of ample liquidity along with a sound banking system helped in faster normalisation in various segments of domestic financial market. Second, monetary policy had to take recourse to various measures in order to mitigate the adverse effects of the global shocks on the real sector. Normalisation of financial market conditions were also essential for monetary policy transmission to yield the intended results in terms of averting a major slowdown in economic activities and contributing to a faster recovery thereafter. Despite considerable stability, the

domestic financial markets faced the concerns emerging from large fiscal deficit and the inflationary expectations stemming from high headline inflation in the second half of 2009-10.

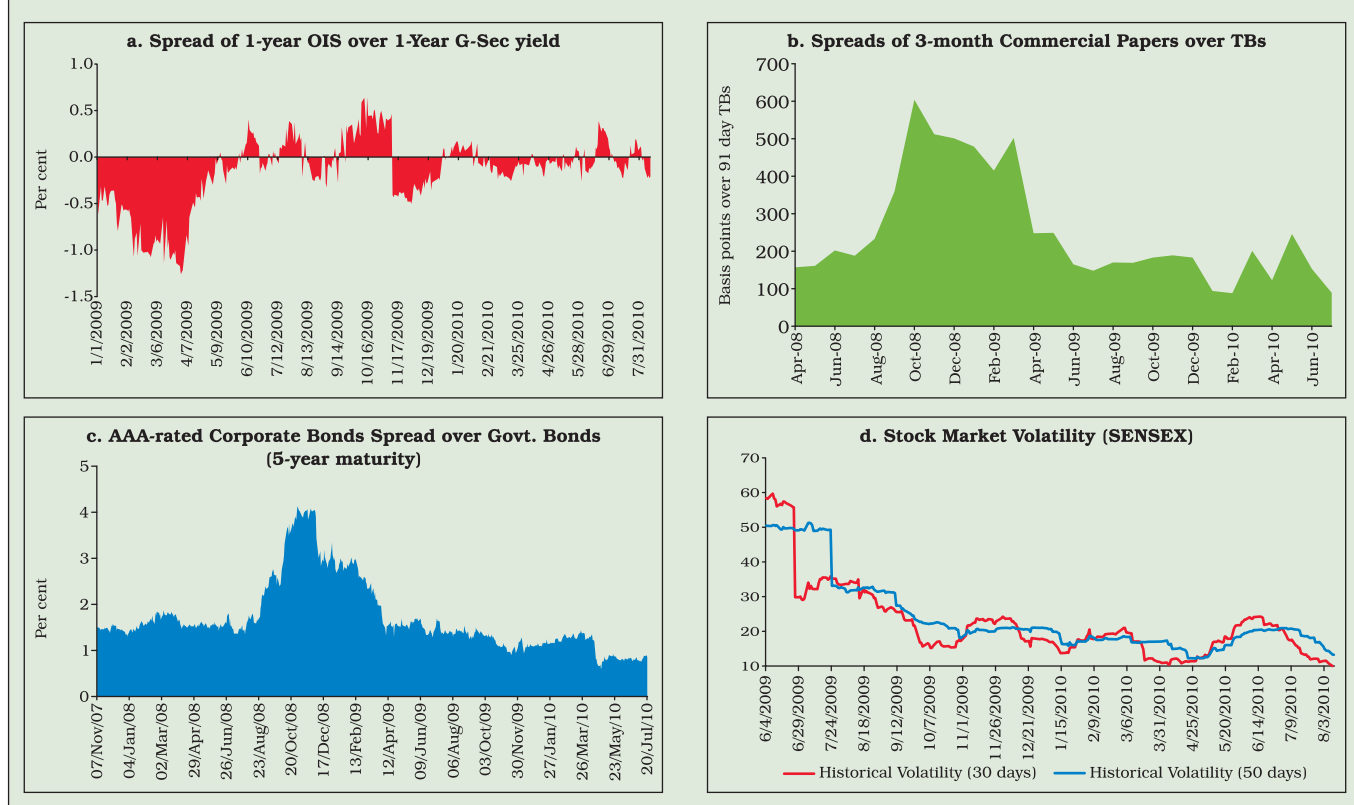
Market Activities

II.4.8 The signs of improvement in financial markets were reflected in reduction of risk perception to pre-September 2008 level and return of normal level of market activity in various segments of the market. Ensuring adequate market liquidity all through 2009-10 was considered imperative to avoid pressure on short-term interest rates and thereby facilitate recovery in growth. Towards long end of the markets as well, risks receded significantly as indicated by narrowing spreads for 5-year AAA-rated corporate bonds. In the equity market, the price volatility which had declined in the earlier part of the year, increased after the sovereign debt related concerns affected the global markets (Chart II.38).

II.4.9 With the risk perception receding significantly and market sentiments improving, all segments of money markets bounced back to the normal level of activity and even exceeded the pre-crisis levels of turnover in some of the market segments, which helped the financial entities and corporates to raise resources for their working capital requirements. The money market conditions further improved during 2009-10. This was reflected in the daily volumes in the money market, which increased by 49 per cent. In the collateralised segment, which continues to be the predominant segment of the money market, over 75 per cent of the lending was from mutual funds (MFs).

II.4.10 In the backdrop of persistent surplus liquidity conditions, the average fortnightly issuances of certificates of deposit (CD) increased significantly and the liquidity in the market ensured stable interest rates, with some uptick in the last quarter of 2009-10. Issuance of commercial paper (CP) also increased significantly. Despite significant

Chart II.38: Indicators of Risk in Domestic Financial Markets



pick up in issuances, interest rates on CPs moderated, which helped corporates to finance their working capital requirements during the recovery. Turnover in government securities market, which remained buoyant during 2009-10, declined in the last quarter. Equity markets witnessed a substantial rebound in activity due to strong domestic recovery and improved external conditions, with the turnover exceeding the pre-crisis level. This helped corporates to raise resources from capital markets through IPOs and

private placements, which partly moderated the demand for credit from the banking sources. Activity in the foreign exchange markets, particularly the merchant segment, was modulated by the pace of recovery in capital flows and the subdued level of foreign trade (Chart II.39).

Financial Derivatives

II.4.11 Activity in financial derivatives, which was adversely affected by the financial crisis, saw

Chart II.39: Activities in Domestic Financial Markets

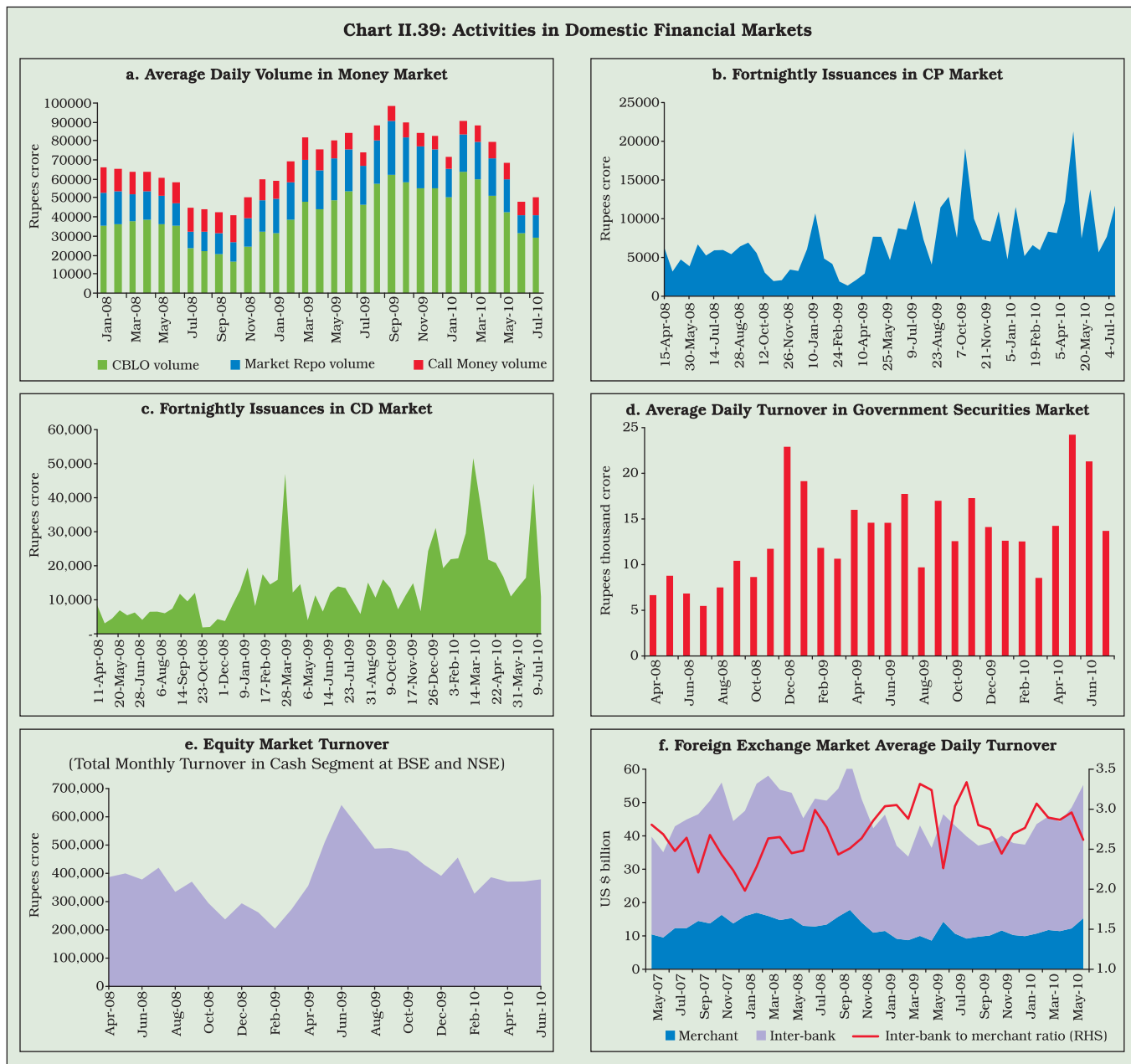
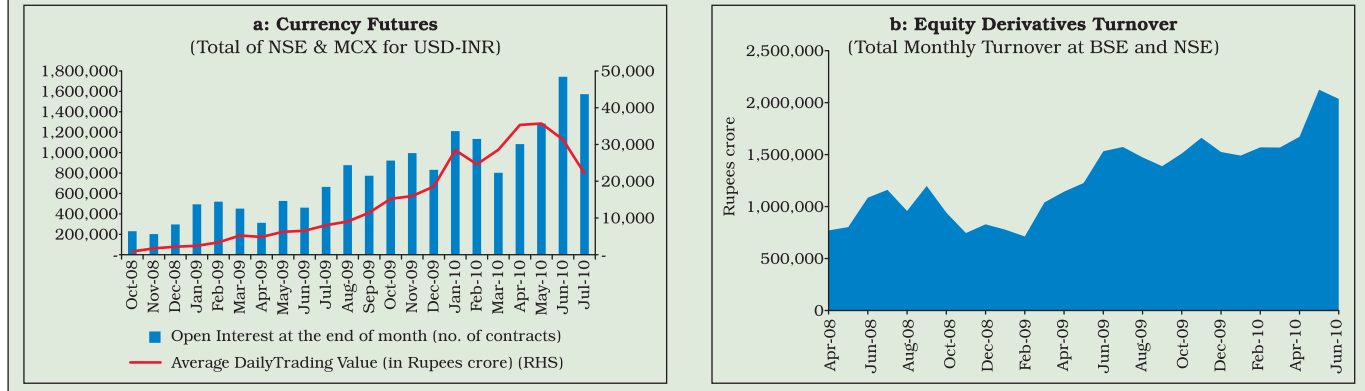


Chart II.40: Activity in Financial Derivative Markets



significant improvement in 2009-10, led by adequate liquidity in the system and return of stability in the domestic markets (Chart II.40). Interest rate futures contracts on 10-year notional coupon bearing government bond were introduced on the National Stock Exchange on August 31, 2009. The market has, however, been unable to sustain the liquidity and the open interest and trading volumes have remained low. In the Monetary Policy Statement for 2010-11, it has been proposed to introduce interest rate futures on 5-year and 2-year notional coupon bearing securities and 91-day treasury bills. The product design and operational modalities for introduction of these products are being worked out by the RBI-SEBI Standing Technical Committee.

II.4.12 Interest rate swaps (IRS) were introduced in July 1999 to allow banks, primary dealers and all India financial institutions as well as corporates to manage their interest rate risks in an environment of deregulated interest rates. In the Indian market, swaps are traded on four benchmarks viz., MIBOR (Mumbai Inter-Bank Offer Rate), MIFOR (Mumbai Inter-Bank Forward Offer Rate), INBMK and MISOIS, though the first two benchmarks i.e., MIBOR and MIFOR account for most of the trades. The market has grown significantly over the years; the gross notional principal outstanding reached ₹80,18,647 crore²

in March 2008 and stood at ₹42,82,452 crore as at the end of April 2010.

II.4.13 The crisis seems to have somewhat changed the perception towards financial innovations. In India, comprehensive guidelines were issued on derivatives in April 2007, intended to safeguard the interests of the systems as well as players in the market (Box II.8). The activity in the derivative segment of equity market also increased substantially during 2009-10, led by the gains in stock prices and liquidity created by FII inflows.

Monetary Policy Transmission through Financial Markets

II.4.14 The transmission mechanism of monetary policy to financial markets, which became a matter of concern during the global financial crisis, improved during 2009-10. Changes in policy rates should normally translate into roughly similar movements in market interest rates, particularly at the short end. During the global financial crisis, the repo rate in India were lowered by 425 basis points between October 2008 and April 2009, along with provision of ample liquidity. The rapid transmission of lower policy rates to call rates was evident in the decline in call money rates by about 700 basis points between October 2008 and April

² Report of the Committee on Financial Sector Assessment (CFSA) 2009, Volume 2, Page 282.

Box II.8**Financial Innovations in India: Balancing the Goals of Growth and Stability**

The global financial crisis of 2008 revealed that financial innovations, though meant to hedge risks and help in efficient price discovery, may be used for leverage and speculation, thereby creating distorted incentives and exposing the financial system to instability. While it may be difficult to judge whether all financial innovations are good or bad, it is now widely recognised that financial innovations should be pursued in the broader context of financial stability and necessarily correspond to the level of maturity of the financial system and the needs of the real economy.

Balancing the need for innovations to spur economic growth and avoiding innovations that could expose the financial systems to systemic risks is a challenge on which no text book solution is available as yet or even looks feasible. The available analysis on the international experience relating to the causal influence of financial innovations on economic growth remains inconclusive. According to Turner (2010), "...there does not appear to be any compelling proof that increased financial innovation over the last 30 years in the developed world has had a beneficial effect on output growth...beyond some point, increased financial intensity, may cease to deliver positive benefits or indeed have negative effects". There need not be anything wrong with financial innovations *per se*; the risks ascribed to innovations may actually be the result of inappropriate regulation, weak information disclosure, or neglect of risk management. For the EMEs, it is often suggested that they could introduce products that are relatively simple, standardised, that offer clear value addition and are easily understood by regulators, buyers and sellers. In this context, Lipsky (2010) had viewed that "...despite the current difficulties and challenges, financial innovation will continue to play an important role in raising growth globally, but especially in emerging markets and developing countries. The current crisis can provide important lessons as we move forward."

The regulatory framework in India has always been alive to the need for ensuring financial stability on an ongoing basis while fostering growth supporting financial market developments. One of the key factors that helped India to counter the impact of the crisis was the counter-cyclical regulatory environment and micro and macro prudential measures. The banking regulation took due cognizance of both the benefits and the complexity of the financial

innovations. The extent of the adequacy of skill sets in the financial system, both in the markets and institutions, was also taken into consideration while evaluating the implications of introducing new financial instruments. The regulatory framework was extended to all the systemically important financial institutions and a policy of identifying and regulating conglomerates was adopted during recent years.

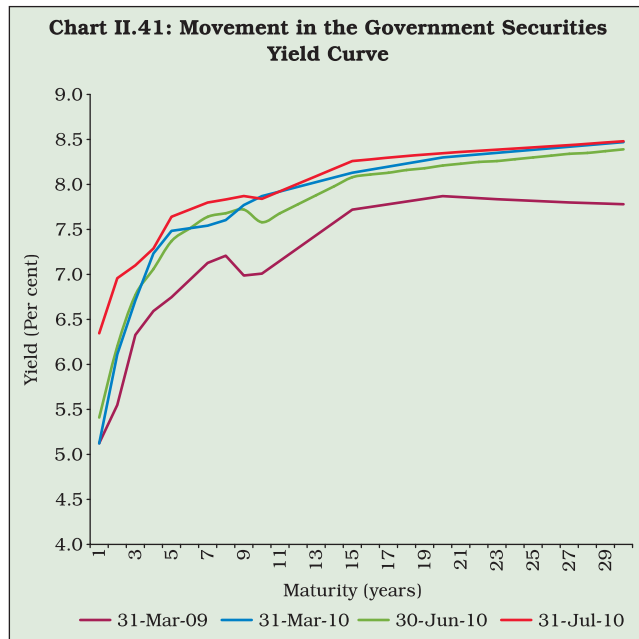
In India, in the last decade, apart from process innovations that increased both the outreach and efficiency of the financial sector, a series of financial innovations were introduced in a phased manner. In the recent period, Reserve Bank has introduced repo in corporate bonds and exchange settled interest rate futures and currency futures/options in various currencies. The Reserve Bank guidelines, however, prohibit trading in structured synthetic derivative products that may have another derivative as an underlying. Introduction of credit derivatives in India was actively examined in the past to provide the participants tools to manage credit risk. An Internal Group was set up by the Reserve Bank to finalise the operational framework for introduction of CDS in India. The Group has noted that the CDS market should be developed in a calibrated and orderly fashion with focus on real sector linkages and emphasis on creation of robust risk management architecture to deal with various risks as have been evident in the recent financial crisis. The Group has, *inter alia*, recommended that CDS shall be permitted only on corporate bonds as reference obligations, the reference entities shall be single legal resident entities, users cannot purchase CDS without having the underlying exposure and the protection can be bought only to the extent of such underlying risk.

References

1. Lipsky, John (2010), "Managing Financial Innovation in Emerging Markets," Remarks at the Reserve Bank of India First International Research Conference at Mumbai, February 12.
2. Turner, Adair (2010), "After the Crises: Assessing the Costs and Benefits of Financial Liberalisation", Fourteenth C. D. Deshmukh Memorial Lecture, Reserve Bank of India, Mumbai, February 15.

2009, which also partly reflected shift in the LAF mode to reverse repo, given the 150 basis points width of the LAF corridor. During the same period, the yield on 91-day TBs and CPs of same maturity also declined more than the decline in key policy

rates. Transmission of lower policy rates to even long-term government bonds was significant, with 10-year bond yield declining by about 200 basis points during the same period; however, subsequently yields increased due to the concerns



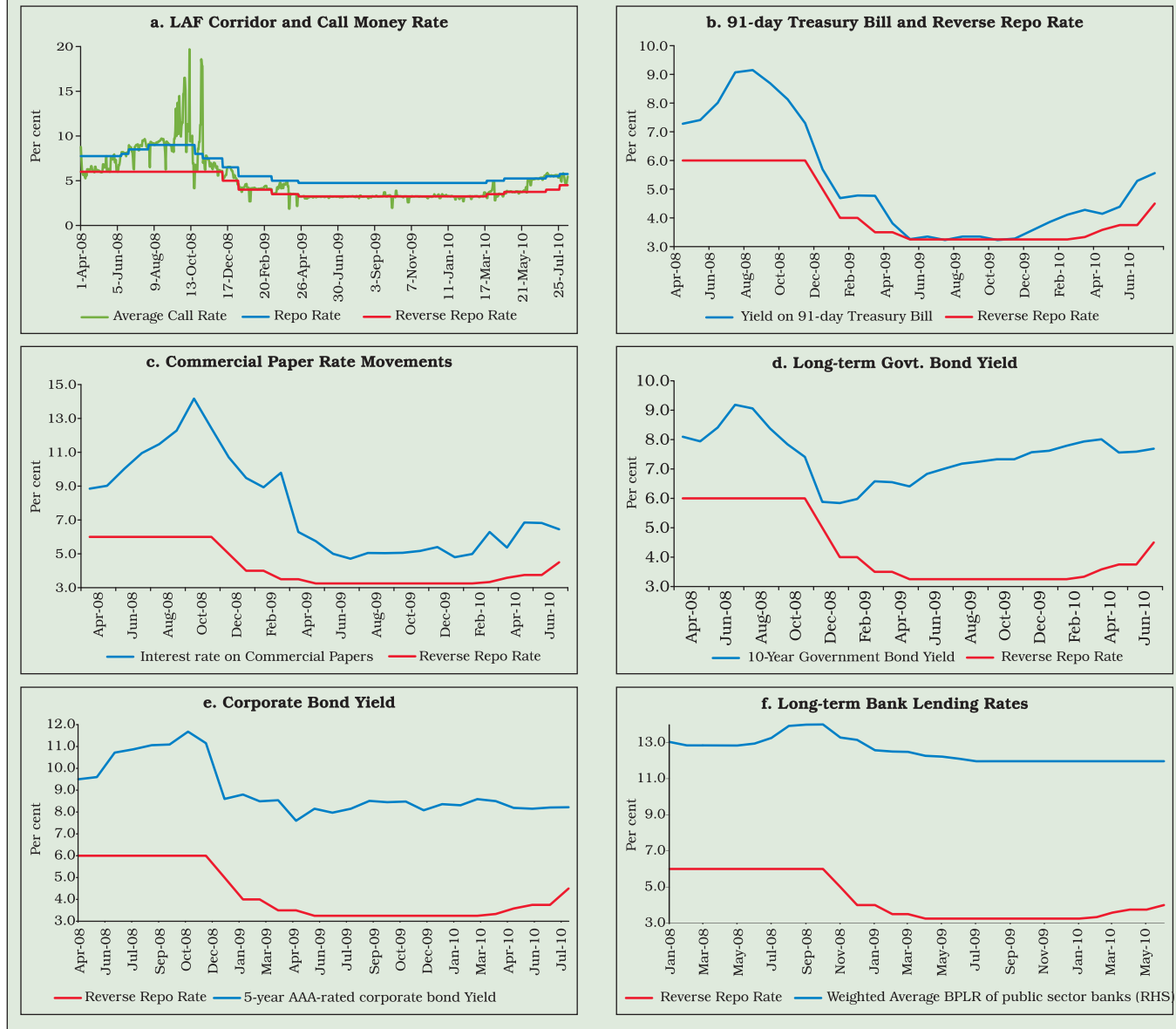
emanating from high government deficits and rising inflation expectations.

II.4.15 From the viewpoint of stability in interest rates, fiscal consolidation became a major concern for financial markets during 2009-10. While the medium to long-term bond yields continuously moved up during 2009-10, reflecting inflation and fiscal deficit concerns, the short-term yield, reflecting the surplus liquidity conditions, softened till Q3 of 2009-10, followed by a hardening trend in Q4 as the surplus liquidity moderated and there was a reversal in the policy interest rate cycle (Chart II.41). Lower fiscal deficit targets for 2010-11 in the Union Budget, however, paved the way for stability to the medium to long-term yield and to some extent also alleviated the concerns of spillover of fiscal deficits to general interest rate environment. During Q1 of 2010-11, the 10-year yield again hardened on higher inflation data but declined subsequently reflecting the higher-than-budgeted inflows from the 3G/BWA spectrum auctions. Market expectations of inflation moderating from the peak, expectations of an increase in FII investment ceiling on government debt, announcement of issue of short-term cash management bills also contributed to the moderation in yield.

II.4.16 The most important concerns that dominated the credit markets were weak transmission of policy rates to lending rates and deceleration in the pace of credit growth. While the credit growth continued to remain sluggish during the first half of 2009-10, the stronger recovery in GDP growth in the second half led to pick up in demand for credit, indicating mainly the weakness in demand rather than the supply constraint from the banking system. Transmission of policy rates to long-term lending rates of banks, however, was relatively slow as compared with that in other segments of the financial markets (Chart II.42).

II.4.17 A slower transmission to the credit market is mainly suggestive of structural rigidities rather than any crisis related impediments in the financial markets. First, while headline inflation in terms of wholesale price index (WPI) was lower, various measures of consumer price inflation remained elevated, which did not let inflation expectations to moderate. Second, banks are typically cautious about reducing deposit rates in response to the central bank's policy rate signals due to apprehension of losing their deposit base to small savings. The rates on small savings have not been adjusted on a regular basis, particularly in response to changes in the Reserve Bank's policy rates. Third, depositors enjoy an asymmetric contractual relationship with banks. When interest rates are rising, depositors have the option of withdrawing their deposits prematurely and redepositing at the going higher rate. On the contrary, when deposit rates are falling, depositors would have incentive to continue with the old deposits at a higher rate. This structural rigidity clogs monetary transmission. Banks are typically unable to adjust their lending rates swiftly in response to policy signals until they are able to adjust on the cost side by repricing the deposits. Fourth, monetary transmission is also impeded because of large government borrowings. Thus, reflecting the structural character, bank lending rates exhibited only gradual softening, thereby slowing down the speed of transmission to credit markets. The introduction of the base rate system for fixation of lending rates by banks, which has come into effect

Chart II.42: Transmission of Policy Rates to Financial Markets



from July 1, 2010, is expected to improve the assessment of monetary policy transmission.

II.4.18 The base rate system gives complete freedom to banks in their loan pricing decisions while ensuring transparency. The base rates will mirror the relative efficiency and cost structure. While lending rates tend to be sticky, it is expected that the base rate system will bring about greater flexibility and strengthen both the interest rate and credit channels of monetary transmission. It is

expected to enhance the allocative efficiency of the financial intermediation process by banks. Deregulation of lending rates for loans up to ₹2 lakh would enhance credit flow to agriculture and small businesses.

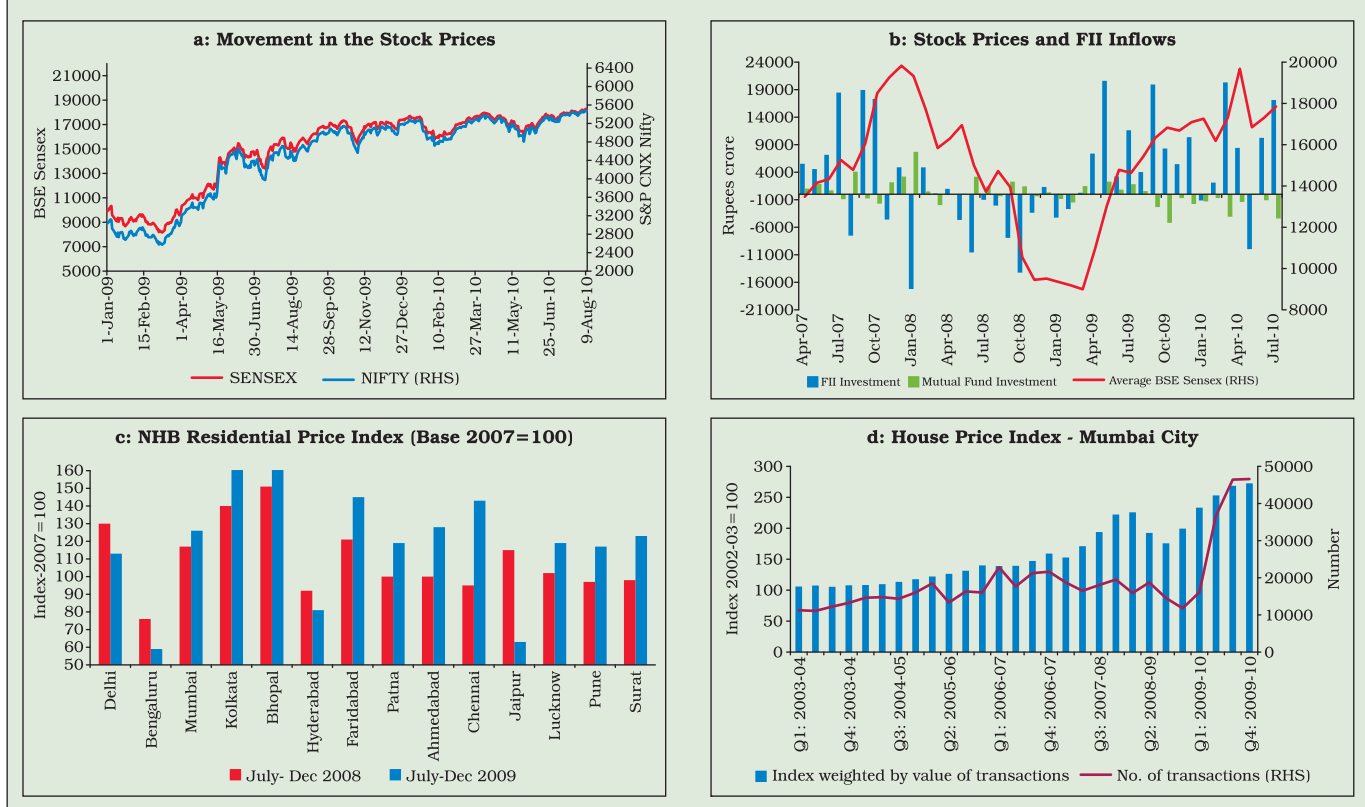
II.4.19 While microfinance institutions (MFIs) have been contributing to financial inclusion, the interest rates charged by them on loans remain high. The high interest rates essentially reflect their high costs of borrowing and operational costs. There are 12

systemically important non-deposit NBFCs (NBFCs-ND-SI) (with asset size over ₹100 crore) classified as loan companies and registered with the Reserve Bank, which are also engaged in lending to the micro finance sector. Interest rates levied by them on loans range from 23.6 per cent to 30 per cent. Many of the scheduled commercial banks, especially new private banks and foreign banks have entered into arrangements with NBFCs for outright buyouts and assignments of loans for meeting their priority sector targets. However, the ultimate beneficiary does not get the benefit of their low rates of interest as these NBFCs are assigned the responsibility of managing the loans by the banks. Consequently, the borrower continues to pay at the same rate. The main sources of funds for these NBFCs are borrowings from banks and financial institutions (including foreign financial institutions). Most of them have received large amounts as foreign direct investment and many of them are now largely foreign owned.

Equity and Housing Prices

II.4.20 Aided by strong domestic recovery along with resumption of FII inflows and ample market liquidity, there was sharp increase in asset prices in India, particularly equity prices. Stock prices displayed a continuous upward momentum throughout the year, except for some occasional corrections caused by global financial market shocks stemming from Dubai World default and the Greek sovereign debt crisis (Chart II.43a and b). During the phase of economic recovery, a sharp increase in equity prices helped in improving the investment climate and enabled corporates to raise funds through IPOs and private placements. Although housing prices witnessed correction during the global financial crisis, there was a sharp rebound in the subsequent period, broadly coinciding with the rise in stock prices (Chart II.43c and d). Greater pace of rise in asset prices continued to remain a concern from the standpoint

Chart II.43: Movement in Equity and Housing Prices



of macroeconomic management, notwithstanding some moderation in Q4 of 2009-10. The higher asset prices generally tend to fuel the demand pressure in the economy and thus, contribute to inflationary pressures. Their implications for the inflationary process have, however, remained contained.

Exchange Rate

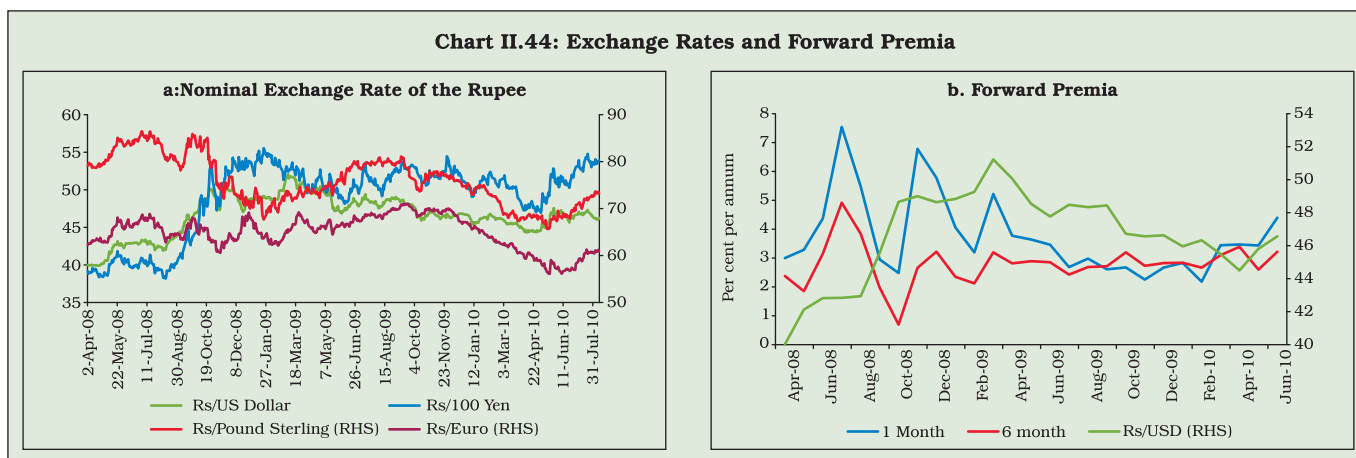
II.4.21 The importance of capital flows in determining exchange rate movements leaves the domestic foreign exchange markets susceptible to international capital flows. In India, capital flows have been a dominant source of volatility for not only the exchange rate but also other market segments. When FII investors exit from equity and securities market abruptly in a herd, stock and bond prices get affected, and when investors take the redemption proceeds out of the country, the exchange rate is affected. Reserve Bank's foreign exchange market operations to contain exchange rate volatility, in turn, could tighten domestic liquidity and thereby affect money market. Since capital flows are sensitive to both global developments as well as domestic fundamentals, at times the domestic financial markets may be solely driven by capital flows. Thus, the risk of adverse external shock transmitting through financial markets will have to be recognised and managed timely.

II.4.22 During 2009-10, on the back of short-term capital inflows and positive growth outlook, rupee generally appreciated against the US dollar, though

marked by intermittent depreciation pressures. An easy supply situation in the market on the back of revival in capital flows also led to moderation in forward premia. Importantly, even though capital inflows were not excessive in relation to the financing gap in the current account, the exchange rate appreciated, reflecting the flexibility of the exchange rate. With the onset of the Greek debt crisis and the associated flight from euro to dollar assets, the rupee depreciated against the US dollar and the forex market witnessed increased volatility (Chart II.44).

II.4.23 Despite increasing global market uncertainties emanating from the Euro zone fiscal sustainability concerns, domestic markets functioned normally in 2010-11 so far, though with higher volatility in some segments. Domestic equity prices witnessed correction, albeit with some gains in July 2010. The exchange rate depreciated due to rising pressure on the euro and volatility in FII flows. Domestic money markets faced liquidity pressures, leading to hardening of short-term money market rates. Responding to these developments, the Reserve Bank initiated temporary liquidity facilities that helped contain inter-bank call rate around the ceiling of the LAF corridor. Medium to long-term interest rates, however, moderated on expectations of lower fiscal deficit of the Government and general safe haven appeal of government bonds. The primary segment of the domestic capital market exhibited larger mobilisation of resources in Q1 of 2010-11.

Chart II.44: Exchange Rates and Forward Premia



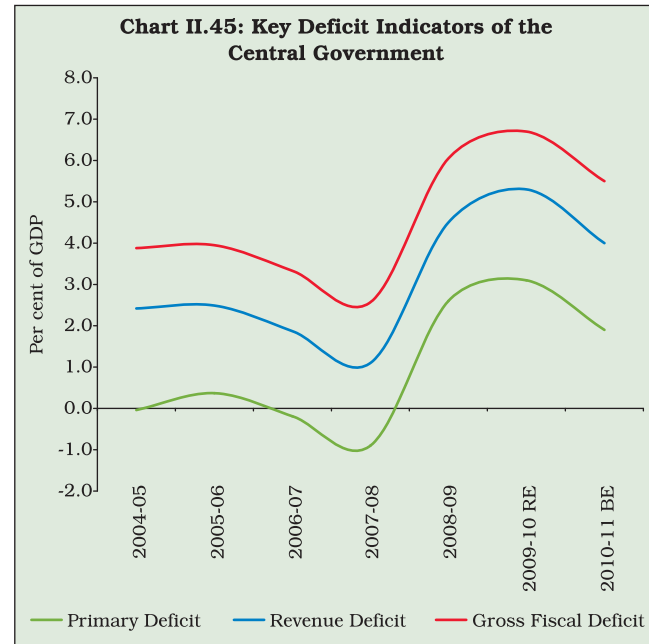
V. GOVERNMENT FINANCES

II.5.1 The extraordinary fiscal stance adopted during 2008-09 by the government in response to the global crisis had to be sustained during 2009-10 in order to support the recovery in growth. As a result, the revenue deficit (RD) and gross fiscal deficit (GFD) as percentage of GDP were budgeted to increase further from the already high levels in 2008-09. In the revised estimates for 2009-10, RD and GFD turned out to be even higher than the budget estimates due to shortfall in revenues and increase in non-plan expenditure in relation to budget estimates. Provisional data for 2009-10 available subsequently also corroborate the similar trend.

II.5.2 Sluggish growth in revenue receipts resulted from the discretionary stimulus measures by way of cuts in indirect tax rates as well as the negative impact of economic slowdown on revenue. Some of the fiscal measures aimed at containing inflation also contributed to expansion in the size of deficits. Even though growth in total expenditure decelerated markedly due to lower growth of revenue expenditure, capital expenditure was stepped up significantly. For the deficit levels to return to the pre-crisis zone of consolidation, and thereby contribute to the high and sustainable growth in the medium-term, credible action plans on fiscal exit had become critical by the end of the year. Accordingly, the Union Budget for 2010-11 outlined the steps towards the beginning of fiscal exit (Chart II.45).

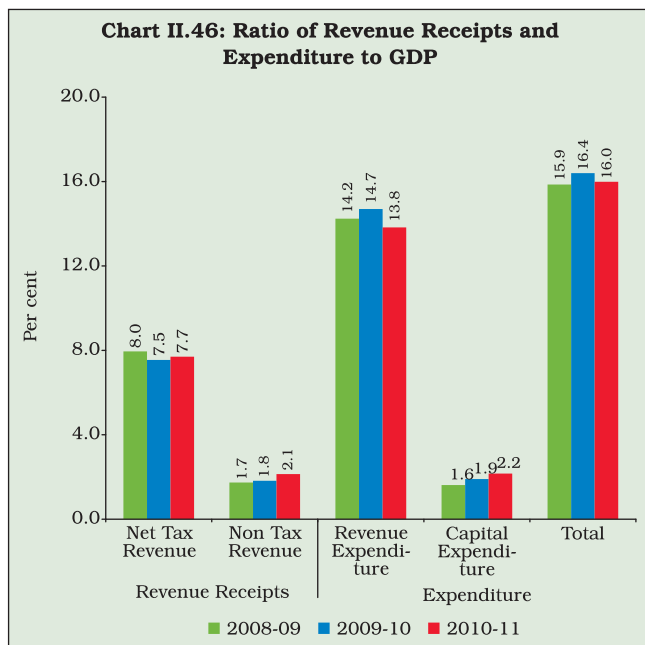
Fiscal Stance During 2009-10

II.5.3 In sustaining the expansionary stance to stimulate the economy, while expenditure measures continued to dominate, stimulus through tax cuts increased during 2009-10. Expenditure on various social sector projects such as under the National Rural Employment Guarantee Act (NREGA) increased significantly and the permanent impact of the Sixth Pay Commission award on income also helped in containing the rate of deceleration in private consumption demand.



Accordingly, total expenditure as percentage of GDP increased by 0.5 percentage point during 2009-10 over the previous year. The government also extended the reduction in excise duty rates by 4 percentage point effective from December 7, 2008 to the fiscal 2009-10, besides further reducing the general rate of central excise duty from 10 per cent to 8 per cent and services tax rate from 12 per cent to 10 per cent. These steps were taken despite further widening of RD and GFD to alleviate the inflationary impact of global price rise as well as to boost aggregate demand. Reflecting these measures, as percentage of GDP, net tax revenue declined by 0.5 percentage point (Chart II.46).

II.5.4 During 2009-10, fiscal stimulus measures as per cent of GDP moderated to 1.8 per cent from 2.4 per cent in 2008-09. Moreover, qualitative improvement in the composition of fiscal stimulus was also evident during 2009-10. Expenditure was better targeted to spur aggregate demand and to add to the capacity creation through increased focus on social and physical infrastructure. Hence, capital expenditure increased by about 28 per cent *vis-a-vis* 14 per cent rise in revenue expenditure during 2009-10. In adopting an expansionary stance on the expenditure side, the allocation between revenue and capital expenditure has to



be seen in relation to the choice between what type of expenditure would spur growth with limited lag and what type of expenditure may involve a larger lag but exert less pressure on medium-term fiscal sustainability. Capital expenditure, unlike revenue expenditure, is expected to create cash flows in future, which in turn, would service the debt that would have financed the capital expenditure.

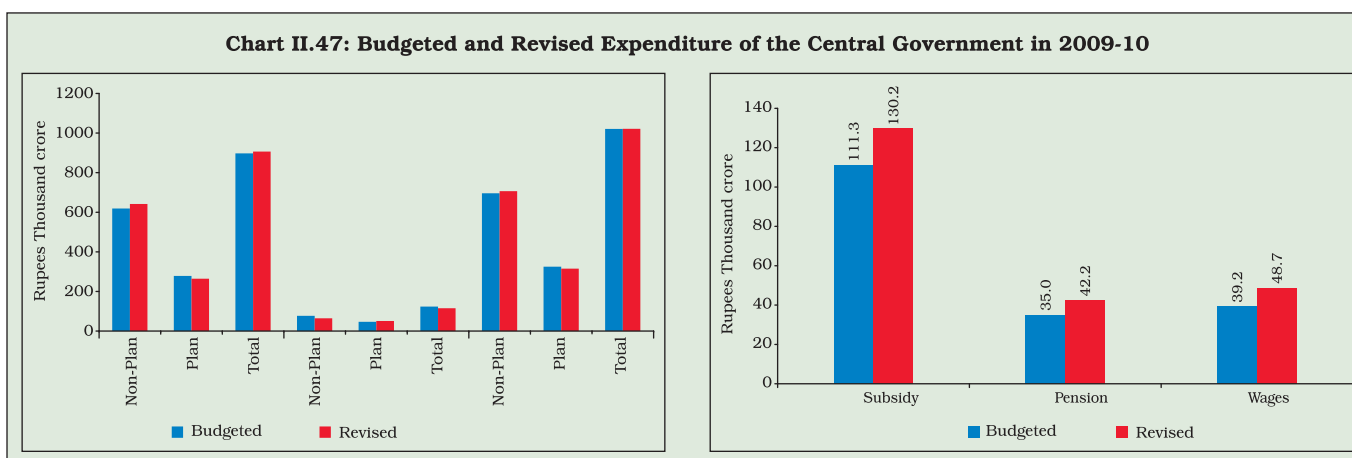
II.5.5 Capital expenditure in the revised estimates of 2009-10 fell short of the envisaged level by 6.8 per cent, due to the non-plan component, which fell short by 16.2 per cent. There was a corresponding revenue expenditure

overrun by 1.0 per cent, as revenue expenditure was higher by 3.7 per cent than the budget estimates, owing to overruns in salary, pension and subsidies (Chart II.47).

II.5.6 The increase in salary expenditure was over and above the payment of arrears from Sixth Pay Commission awards, which were part of the budget estimates. Though these additional expenditures were not strictly a part of deliberate steps taken to spur recovery in growth, given the timing and quantum, they effectively worked as stimulus to the economy during 2009-10. On the non-plan expenditure side, higher interest payments were primarily a reflection of the higher borrowings in the previous year, and not necessarily part of stimulus measures. Such expenditure may have to be seen as the cost of past stimulus rather than stimulus in itself.

Fiscal Correction and Consolidation

II.5.7 The extraordinary fiscal stance adopted during 2008-09 and 2009-10, to a large extent, achieved the short-term objective of containing the economic slowdown and stimulating the economy thereafter. As the prospects of sustained economic recovery became increasingly evident during the course of 2009-10, the central government announced a gradual fiscal exit plan in the Union Budget for 2010-11. It aimed to bring down RD and GFD during 2010-11 through a combination of substantial increase in revenue receipts by 18.1 per

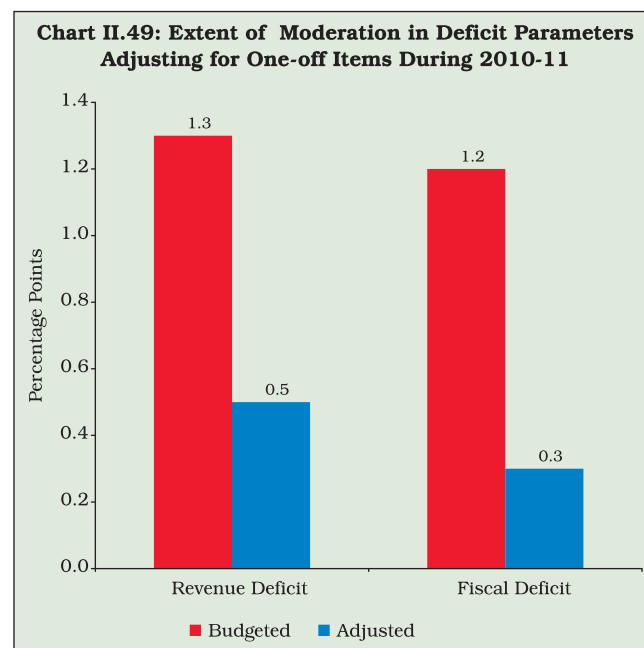
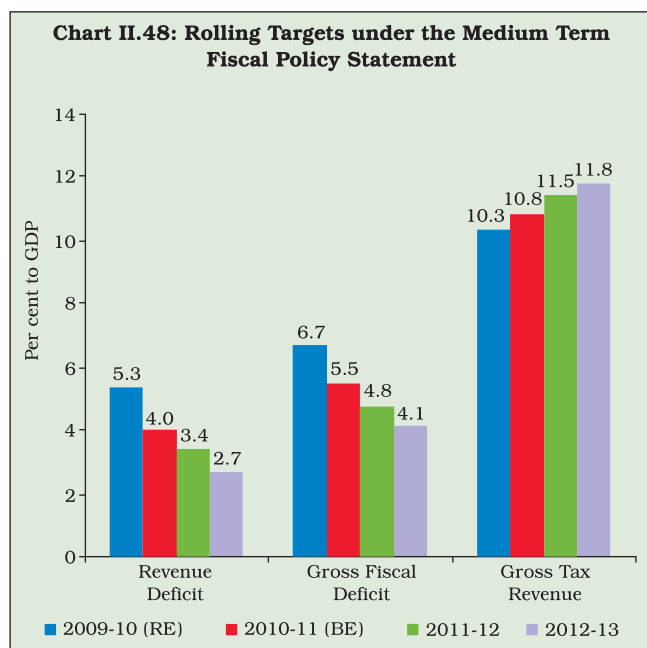


cent and non-debt capital receipts by 54.0 per cent, while containing the growth in revenue expenditure to 5.8 per cent (Chart II.48). The robust growth in revenue receipts is premised on partial rollback of indirect taxes, anticipated revenue buoyancy from stronger growth and 3G/BWA spectrum auction proceeds. Revenue expenditure is expected to moderate on account of freezing the non-plan component almost to the level of the previous year, while capital expenditure has been budgeted to grow at 30.2 per cent during 2010-11. These measures planned for 2010-11 indicate both beginning of fiscal exit as well as emphasis on the quality of fiscal adjustment. Along with these, the Medium Term Fiscal Policy Statement (MTFPS) also offers a medium term fiscal consolidation path, in terms of rolling targets for key parameters of fiscal consolidation. RD and GFD have been planned to be brought down to 2.7 per cent and 4.1 per cent of GDP, respectively, by 2012-13.

II.5.8 The quality of fiscal adjustment and the possibility of attaining the extent of consolidation as per the envisaged plan in the short to medium-term will be critically important to contain the fiscal risks to the medium-term macroeconomic outlook. The fiscal correction envisaged during 2010-11 seems to rely significantly on one-off items of

expenditures and receipts. Excluding one-off items such as arrears payments and farm debt waiver from the expenditure side, and disinvestment and 3G/BWA spectrum auction proceeds from the receipts side, RD and GFD will show a correction of 0.5 and 0.3 percentage points of GDP over the previous year, respectively, as against 1.3 and 1.2 percentage points reduction envisaged in the Budget (Chart II.49). A substantial portion of the higher collections under 3G/BWA auctions would be preempted by the net cash outgo of around ₹54,589 crore on account of the first batch of Supplementary Demands for grants for 2010-11 that were recently tabled in Parliament. Durable fiscal consolidation, however, would require correction on the recurring components of expenditure and receipts, and less reliance on one-off items, as these options may not be available every year.

II.5.9 The adjustment in RD as indicated in MTFPS also falls far short of the Thirteenth Finance Commission's (ThFC) recommendation to remove revenue deficit by 2013-14, which the government has accepted in principle. Going forward, it is amply evident that all the required adjustments in revenue/fiscal deficit over the next three to four years cannot be achieved through tax reforms envisaged under



the Direct Tax Code (DTC) and the Goods and Services Tax (GST). In the MTFPS, the incremental gross tax revenue to GDP ratio resulting from these tax reform measures is estimated to be 0.7 percentage points of GDP during 2011-12 and 0.3 percentage points during 2012-13. This is much lower than the minimum corrections required to bring down the revenue deficit to zero. Therefore, besides tax reforms, expenditure reforms in terms of prioritisation and rationalisation would be crucial.

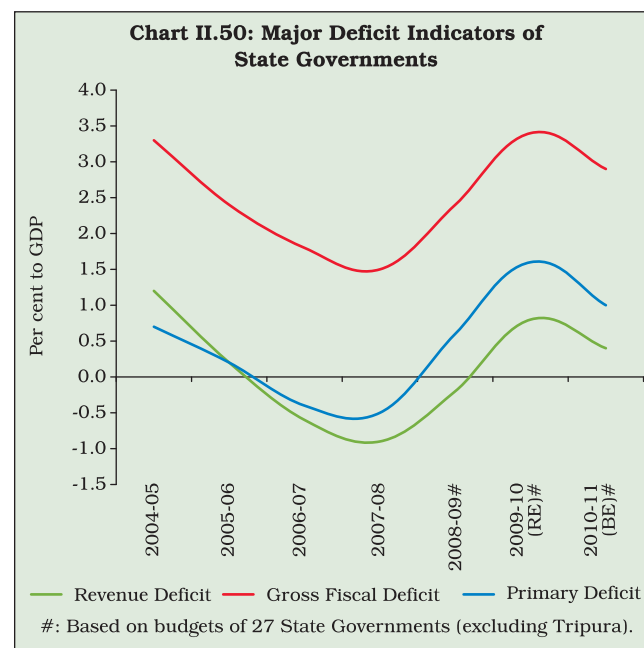
II.5.10 On expenditure reforms, the Budget for 2010-11 attempted to curtail the growth of non-plan expenditure, primarily through cuts in explicit subsidies, particularly petroleum and fertiliser subsidy, while no liabilities (through the issue of bonds) will be created *in lieu* of these subsidies. However, the quantum of these two subsidies will depend upon the movement in international prices of these two commodities. Reflecting partial acceptance of the recommendations of the “Expert Group on a Viable and Sustainable System of Pricing of Petroleum Products” (Chairman: Prof. Kirit Parikh), price of petrol was deregulated and other products were revised upwards in June 2010, which will contain the fiscal pressure arising from the under recoveries by the public sector oil companies. While in the near term the inflationary pressures could increase, improved fiscal position will generally help in the management of inflation. The revisions effected in June 2010, however, would only reduce the size of the expected under-recoveries during 2010-11 by one third.

II.5.11 On the revenue side, given the projected gross tax revenue growth of 17.9 per cent and nominal GDP growth of 12.5 per cent during 2010-11 in the Budget, the implied tax buoyancy is estimated to be 1.43. This is lower than the average buoyancy of 1.60 observed during the high growth phase of 2003-2008. Direct tax collections, which generally exhibit a pro-cyclical pattern, should improve once the growth momentum picks up. Furthermore, the implementation of new Direct Tax Code is expected to boost the direct tax collections. As for indirect taxes, the likely implementation of goods and services taxes is expected to revert the

effect of tax rate cuts. It will also bring into the tax net the untapped segments of the service sector, which is growing rapidly. As a consequence, the MTFPS 2010-11 projects the tax-GDP ratio to increase to 11.5 per cent and 11.8 per cent in 2011-12 and 2012-13, respectively.

State Finances

II.5.12 During the period before the crisis, there was considerable improvement in consolidated fiscal position of the state governments as reflected in major deficit indicators, *viz.*, revenue deficit (RD), gross fiscal deficit (GFD) and primary deficit (PD) as percentage of GDP (Chart II.50). Improved revenue receipts during the high growth phase and the responses of states to the incentives given by the Twelfth Finance Commission (TwFC) to implement their own fiscal responsibility legislations (FRLs) in the form of conditional debt restructuring and interest rate relief largely contributed to this progress. Since 2008-09, progress on fiscal consolidation has been interrupted because of the impact of the slowdown in growth on revenues and the implementation of the Sixth Central/State Pay Commissions on expenditures. All major deficit indicators exhibited some increase during 2008-09 and 2009-10, reflecting the combined effects of



lower revenue realisation and higher expenditure commitments.

II.5.13 The impact of the slowdown in growth on state finances was much more visible in 2009-10 (RE) over 2009-10 (BE) mainly on account of lower growth in revenue receipts. Both own tax revenue as well as states' share in central taxes were lower than budget estimates for 2009-10. Revenue expenditure, however, recorded a marginal increase over budget estimates in 2009-10. In addition to deterioration in the revenue account, decline in non-debt capital receipts also contributed to higher GFD-GDP ratio in 2009-10 (RE) over 2009-10 (BE), even though capital outlay by state governments declined.

II.5.14 The overall fiscal position of states is budgeted to improve during 2010-11. Consolidated revenue deficit to GDP ratio of 27 states has been budgeted to decline from 0.8 per cent in 2009-10 (RE) to 0.4 per cent in 2010-11, while GFD-GDP ratio is budgeted lower at 2.9 per cent in 2010-11 as compared with 3.4 per cent in 2009-10 (RE). Besides improvement in revenue account, lower GFD-GDP ratio is expected to be mainly on account of lower growth in capital outlay in 2010-11 (BE). It is also expected that the larger devolution to the states due to the recommendations of the Thirteenth Finance Commission would aid the states to consolidate their finances further and move to the fiscal reform path as envisaged by the Commission (Box II.9).

Box II.9

Major Recommendations of the Thirteenth Finance Commission

A major factor which would shape finances of the states in the medium-term is the implementation of the recommendations of the Thirteenth Finance Commission (ThFC). Major recommendations of the ThFC are:

Devolution

- The share of states in net proceeds of shareable Central taxes is recommended at 32 per cent for 2010-11 to 2014-15 compared to the existing level of 30.5 per cent.
- The share of grants in the total transfer has come down from 18.9 per cent as recommended by Twelfth Finance Commission (TwFC) to 15.1 per cent (excluding state specific grants) in the case of ThFC.
- The indicative ceiling on overall transfers to states on the revenue account is set at 39.5 per cent of gross revenue receipts of the centre as compared to 38 per cent by the TwFC.
- On the implementation of GST, the ThFC recommended that the centre and the states should conclude a 'Grand Bargain' of Rs.50,000 crore to implement the Model GST.
- The Commission has recommended total grant for the local bodies of Rs. 87,519 crore over the award period. The Commission has also recommended distribution of the grants between urban and rural areas and the *inter se* distribution between states.

Fiscal Roadmap

- Revenue deficit (RD) to be eliminated by 2011-12 for those states that attained revenue surplus in 2007-08.

Other states should eliminate revenue deficit by 2014-15. States should accordingly modify/enact their respective Fiscal Responsibility Legislations.

- The general category states that attained a zero revenue deficit or a revenue surplus in 2007-08 should achieve a fiscal deficit of 3 per cent of GSDP by 2011-12 and maintain it thereafter. Other general category states need to achieve gross fiscal deficit of 3 per cent by 2013-14.
- All special category states with base fiscal deficit of less than 3 per cent of GSDP in 2007-08 could incur a fiscal deficit of 3 per cent in 2011-12 and maintain it thereafter. For Jammu & Kashmir and Mizoram, however, the terminal year would be 2014-15 and for other special category states, the terminal year is 2013-14.
- Combined debt of centre and states to decline to 68 per cent of GDP by 2014-15 (45 per cent for centre and less than 25 per cent for States) from 82 per cent in 2009-10.
- The Ministry of Finance (GoI) should work out the borrowing limits for prescribed fiscal reform path.
- The FRBM Act needs to specify the nature of shocks that would require a relaxation of FRBM targets.
- An independent review mechanism to be set up by the centre to evaluate its fiscal reform path which should evolve into a fiscal council with legislative backing over time.
- Apart from the above, ThFC also recommended a Debt Relief Scheme for the states including NSSF in its ambit.

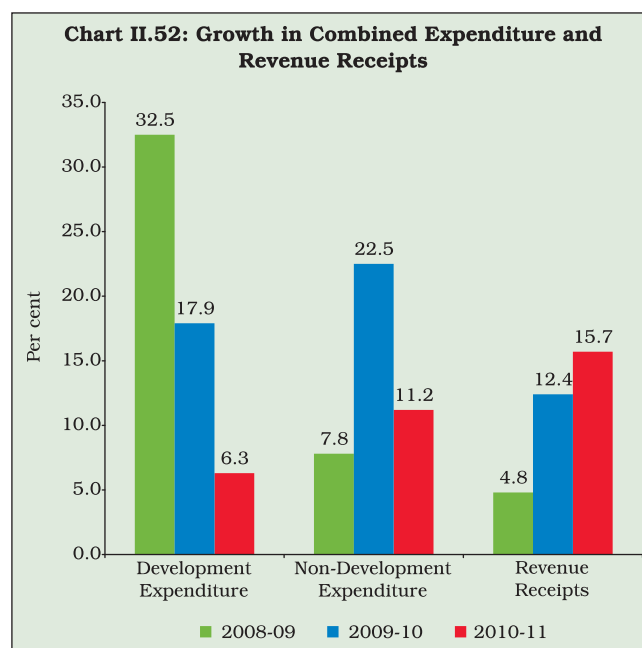
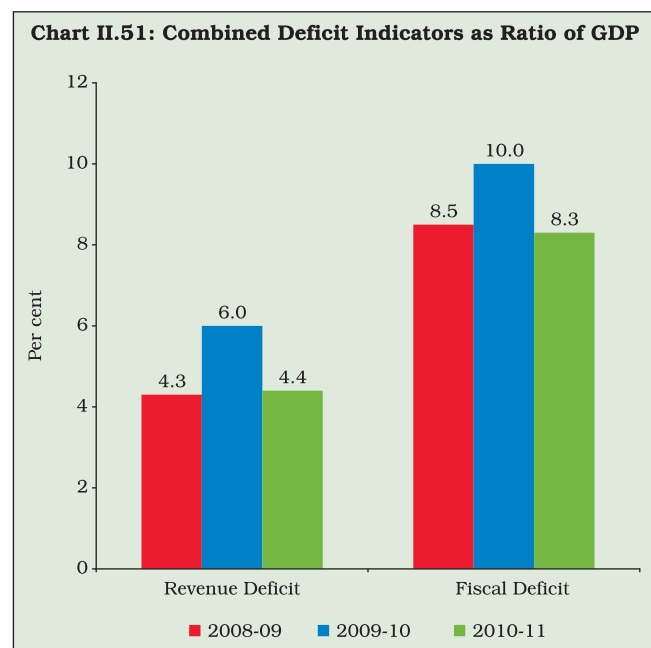
Combined Finances

II.5.15 Reflecting the expansionary fiscal stance of the central and state governments, their combined RD and GFD as percentage of GDP increased further during 2009-10 (Chart II.51). The growth in total expenditure decelerated sharply due to containment of revenue expenditure. The total combined expenditure to GDP ratio, however, increased from the previous year, while the revenue receipts to GDP ratio remained more or less unchanged, resulting in further enlargement of all the key deficit indicators.

II.5.16 With the envisaged fiscal consolidation by the central and the state governments during 2010-11, there could be substantial improvement in the combined finances. The combined RD and GFD as percentage of GDP are budgeted to decline during 2010-11 (Chart II.52). The envisaged fiscal consolidation has been planned to be driven by significant increase in revenue receipts while curtailing the growth of expenditure.

Fiscal Dominance and Macroeconomic Conditions

II.5.17 Persistent large fiscal deficit has several adverse macroeconomic risks ranging from higher



inflation, to lower savings, crowding-out pressures on private investment, decline in potential output, and worsening of external imbalances. While these concerns may be absent in the short-term in a phase of economic slowdown that requires the use of fiscal stimulus, in the medium-term these risks may materialise if the fiscal deficit is not brought down significantly under a credible fiscal consolidation strategy.

II.5.18 Risks to inflation from the higher levels of fiscal deficit in India resulting from fiscal stimulus measures during 2008-09 and 2009-10 remained contained till the first half of 2009-10, due to the following reasons: (i) the fiscal stimulus, rather than creating any excess demand, partially offset the deceleration in private consumption and investment demand, (ii) the fiscal stance and resultant financing of large borrowing programme did not cause any overshooting of money growth since private sector demand for credit remained subdued, and (iii) certain indirect tax rate cut measures led to lowering the prices of goods and services to some extent even though these measures yielded higher deficits. Rising and generalised inflation with increasing demand side pressures in the second half of 2009-10 suggested the need for timely fiscal exit to contain any fiscal risks to inflation.

II.5.19 Notwithstanding the absence of near-term risks to inflation from the fiscal conditions, however, there could be medium-term inflationary implications in the absence of a well designed fiscal exit in terms of timing and pace. Empirical evidence shows that even after the complete phasing out of automatic monetisation of government deficit in 1997, fiscal deficit still entails risks to the inflation

path in India, in the medium to long-run. These risks to inflation from large fiscal deficit arise either through direct impact on aggregate demand or monetary expansion or a combination of both (Box II.10).

II.5.20 A fiscal deficit that emerges on account of revenue imbalance directly lowers the savings rate in the economy, as revenue imbalance amounts to

Box II.10

Fiscal Dominance and Risks to Inflation in India

In the developing countries context, inflation, at times, may become effectively a fiscal phenomenon, since the fiscal stance could significantly influence the overall monetary conditions due to fiscal dominance. Sargent and Wallace (1981) viewed that fiscally dominant governments running persistent deficits would sooner or later finance those deficits through creation of money, which will have inflationary consequences. Fischer and Easterly (1990) argued that rapid monetary growth may often be driven by underlying fiscal imbalances, implying that rapid inflation is almost always a fiscal phenomenon.

In the Indian context also, several studies have shown that due to fiscal dominance there exists a nexus between government deficits, money supply and inflation, which may lead to a self-perpetuating process of deficit-induced inflation and inflation-induced deficit (Sarma, 1982, Jadhav, 1994 and Rangarajan and Mohanty, 1998). Even after the complete phasing out of automatic monetisation of deficit in 1997, government deficit continued to be a key factor causing incremental growth in reserve money on the sources side, and overall expansion in money supply and inflation (Khundrakpam and Goyal, 2009).

The long-term inflationary potential of fiscal deficit could be analysed by hypothesising that either: (i) there can be a direct impact on inflation through increase in aggregate demand; or (ii) indirectly through money creation or seigniorage; or (iii) a combination of both. The cointegrating long-run relationships estimated through ARDL approach during 1952 to 2009 reveals the following: (i) government resorts to seigniorage to finance its deficit in the long-run; (ii) resorting to seigniorage by the government influences the price level; (iii) government deficit also has direct causal impact on the price level. In other words, *ceteris paribus*, price level in the economy in India, in the long-run, is influenced either directly by deficit itself or through the creation of money via deficit financing, or a combination of both.

One per cent change in fiscal deficit is estimated to cause half a per cent change in seigniorage 'S', defined as change in real reserve money:

$$\text{Log S} = -3.19 + 0.51 \text{ Log GFD} - \text{Dummy}_{1975-76} \\ -(10.7) \quad (16.6) \quad (-2.8)$$

One per cent change in seigniorage is estimated to cause about one-third of a per cent change in the price level:

$$\text{Log WPI} = 4.53 + 0.32 \text{ Log S} + 0.05 \text{ Trend} \\ (17.6) \quad (1.7) \quad (4.0)$$

One per cent change in fiscal deficit is estimated to cause about one-quarter of a per cent change in the price level:

$$\text{Log WPI} = 3.0 + 0.25 \text{ Log GFD} + 0.044 \text{ Trend} + \text{Dummy}_{1974-75} \\ (5.1) \quad (2.1) \quad (2.9) \quad (2.6)$$

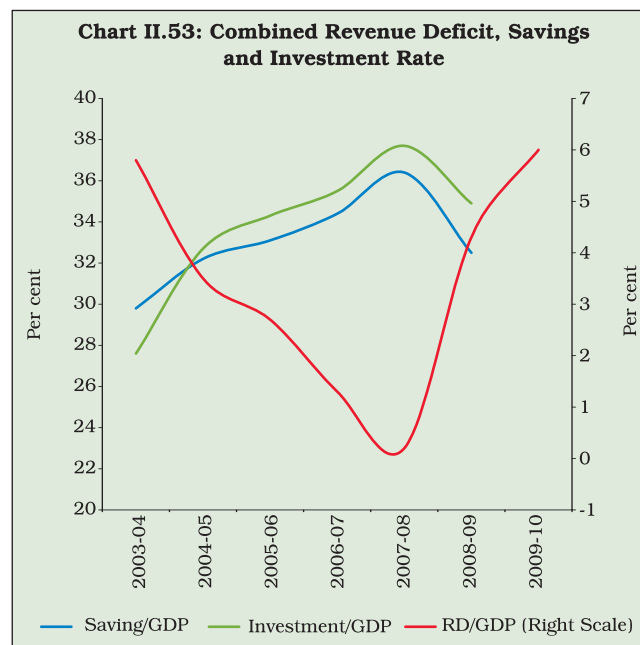
In the short-run, the inflationary impact of seigniorage is found to be negligible, though one per cent increase in fiscal deficit still shows positive impact of about 0.04 percentage point on the price level. The risks to inflation path should be an important driving motivation behind early fiscal exit.

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dis-savings of the government. There is no automatic mechanism that can raise the savings of households and corporates when dis-savings of the government rise. As a result, the overall saving rate of the economy may decline, which was evident in 2008-09 in the savings data. With the decline in combined revenue and fiscal deficit during 2003-04 to 2007-08 under the FRBM/FRLs, public sector saving had improved, which was an important contributing factor behind the increase in overall saving and investment rate that propelled the high GDP growth, during that period. The higher GDP, in turn, facilitated reduction in revenue deficit of the government, by improving revenue buoyancy, thereby creating a virtuous cycle. But, with the significant jump in the revenue deficit of the government during 2008-09 and 2009-10, the overall savings and consequently investment rates have also dipped correspondingly (Chart II.53).

II.5.21 A lower savings rate can affect the potential output path not only by depressing the investment rate but also through altered resource allocation because of the competition for resources between public sector and the private sector. The crowding-out possibilities could arise because of direct pre-emption of loanable funds in the economy by the



government for financing deficit or, indirectly, through rise in real interest rates, or a combination of both. Empirical evidence on crowding-out in India, however, is ambiguous (Box II.11). Notwithstanding the contradictory evidence, the crowding-out impact generally remains moderate when fiscal policy behaves contra-cyclically. During 1991 to 2009, there is some evidence of fiscal policy stance being contra-cyclical in the sense that fiscal

Box II.11

Crowding-Out Concerns: What the Empirical Evidence Suggests?

With stronger signs of recovery by the end of the year, and gradual pick-up in demand for credit from the private sector, the usual crowding out concerns associated with sustained large fiscal deficits had to be recognised in the calibrated approach to unwinding of the monetary policy. While the inflationary conditions warranted monetary tightening, appropriate liquidity conditions had to be ensured to meet the demands of a large borrowing programme as well as recovering demand for credit from the private sector.

A review of some of the available literature in India reveals that the empirical evidence on crowding-out of the private sector by the public sector is not unambiguous. Chakraborty (2007) found no evidence of public investment crowding out private capital formation in India for the period 1971 to 2003. In fact, public infrastructure investment complemented private corporate investment. Further, there was also no evidence of fiscal deficit crowding out private

capital formation through increase in real interest rate during the same period. Three possible reasons for no crowding could be: (i) pattern of household savings shifting towards financial assets and thereby raising the available loanable funds in the economy, (ii) private corporates increasingly raising resources through capital markets, besides availing bank credit, which indicates that private sector did not face a constraint from credit being affected by crowding out pressures, and (iii) overall liquidity in the system might have increased, which has and prevented pushing up interest rates.

Mitra (2006) analysing the relationship between government investment, private investment, and gross domestic product during the period of 1969 to 2005 found that government investment crowds-out private investment. The resources consumed by the government would have been more effective in the hands of the private

(Contd...)

(...Conclud.)

sector. Thus, too much government investment obstructed the path of India's economic growth.

Crowding out impact could largely depend upon the nature of the public sector expenditure (RBI, 2002). Public sector consumption to boost aggregate demand in the economy crowds-out private consumption. Even for public sector investment, only infrastructure investment crowds-in private investment. Enlarged fiscal deficit crowds-out private investment, and therefore, the crowding in impact of public infrastructure investment will be lesser if financed by larger fiscal deficit. Thus, the government needs to restructure the composition of its expenditure towards infrastructure while containing fiscal deficit to have the maximum impact on growth.

An analysis using the trends in output gap, computed as actual minus trend growth using Hodrick-Prescott filter, and fiscal deficit (as percentage of GDP) during 1990s and 2000s reveal the following. When the output-gap was negative (*i.e.*, there was excess capacity) during 1997-2002, fiscal deficit enlarged, while it declined during 1993-97 and 2004-08 when output gap was positive (*i.e.*, there was over-utilisation of capacity). This inverse pattern observed in the past between output gap and fiscal deficit could indicate either countercyclical fiscal policy response or the result of impact of automatic stabilisers or a combination of both. VAR Granger Causality tests between output gap and fiscal deficit during 1990-91 to 2008-09 also reveal bidirectional causality between the two (Table A).

Table A: Output Gap and Gross Fiscal Deficit: VAR Granger Causality

Null Hypothesis	Chi-sq	Probability
Output-gap does not Granger Cause Δ GFD	3.43	0.06
Δ GFD does not Granger Cause output-gap	5.99	0.01

Thus, the crowding out concerns have to be seen in relation to different phases of the business cycle. During a recession or slowdown in growth, countercyclical fiscal policy and the resultant increase in fiscal deficit may contribute to recovery. In turn, during high growth, fiscal deficit may moderate through revenue buoyancy. However, if fiscal deficit remains high during a high growth phase, that could create crowding-out risks.

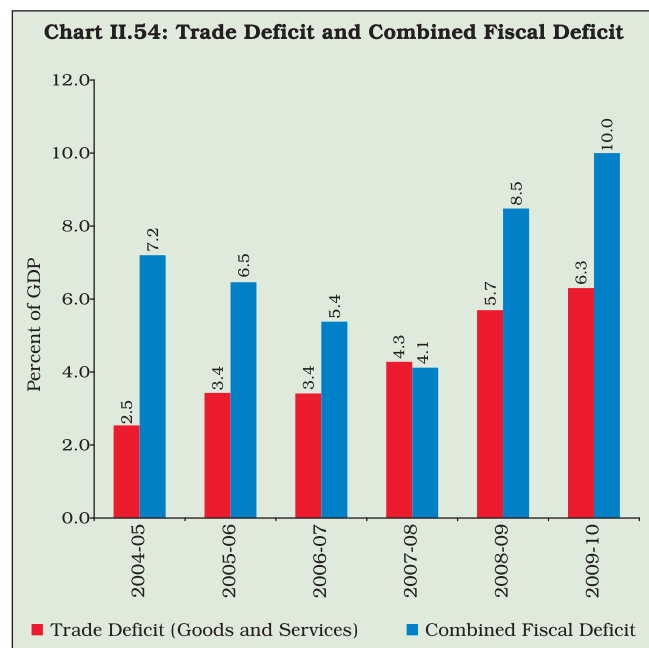
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deficit as a ratio to GDP declined during the period when output was above trend and *vice versa*. In other words, there was a negative correlation between output-gap and fiscal deficit. However, the bidirectional causality results suggest that fiscal policy not only tended to follow a countercyclical behaviour, but was also influenced by the business cycle in a fashion that could be viewed similar to activation of automatic stabilisers.

II.5.22 Besides the concerns relation to crowding-out pressures and inflation, fiscal imbalances also entails the risk of widening the current account deficit. Due to the dominant role of remittances in moderating the magnitude of current account imbalances, the twin deficit concerns often ascribed to fiscal deficit do not materialise in India. The imbalance between exports and imports (of goods and services) as percentage of GDP, however, seem to validate the pressure that fiscal situation

can exert on the country's external balance situation (Chart II.54).



VI. EXTERNAL SECTOR

II.6.1 In a globalised world, a congenial global economic environment and a sustainable balance of payments position are critical for achieving the policy goal of stable growth. The global recession in 2009 operated as a dampener on the prospects of a faster recovery. Besides the conventional channels of trade and capital flows for transmission of external shocks to the domestic real economy, the uncertainty about global recovery continued to affect business confidence and market sentiments, which indirectly affected domestic private consumption and investment demand. India's high degree of resilience and capacity to manage a severe external shock was evident from the strength and pace of recovery in GDP growth during 2009-10.

II.6.2 In 2009, the global economy not only experienced a 'great contraction', but there was also significant uncertainty about the impact of the financial crisis in the advanced economies on the real economy. The successive and large revisions to the IMF's growth outlook for 2009 indicate the extent of uncertainty that resulted from the sub-prime financial crisis (Chart II.55a). In the first quarter of 2010, stronger evidence of recovery in the global economy started to emerge, though the speed of the recovery turned increasingly divergent as the EMEs remained ahead of the advanced economies in terms of both pace and strength of the recovery. The global recovery faced a soft patch subsequently, following the concerns relating to sovereign debt in the Euro zone. (Chart II.55b).

II.6.3 Persistence of high growth in India and China largely moderated the depth of the global recession in 2009, even though these countries also experienced slowdown in growth in relation to their high growth before the onset of global crisis (Chart II.55c). World trade contracted much sharper than the contraction in GDP in 2009, and is projected to stage a stronger recovery in 2010 (Chart II.55d). Reflecting the impact of weak global demand conditions as also the protectionist measures adopted by many countries, the decline in world merchandise trade volume was as high as

11.8 per cent in 2009. According to WTO, world exports of commercial services also declined for the first time after 1983 by 13.0 per cent during 2009. The impact of recession in the advanced economies was particularly strong on the employment situation (Chart II.55e).

II.6.4 Reflecting the flight to safety response of global investors to the crisis, net capital flows to the EMEs declined, with phases of sudden stops and revival, before exhibiting a rebound (Chart II.55f). Unprecedented use of policy stimulus by countries around the world helped in averting another 'Great Depression', but the fiscal conditions of the advanced economies weakened significantly in that process (Chart II.55g and h). In managing the financial crisis, the costs of financial excesses in the private sector shifted to the public sector, creating, in turn, the risk of potential sovereign debt crises.

II.6.5 Reflecting increased openness, the global recession and the contraction in world trade in 2009 affected India's exports of both goods and services. With global recovery, however, India's exports have turned around since October 2009. Reflecting the revival in capital inflows to EMEs, and driven by India's recovery ahead of the global economy, India also experienced resumption of capital flows in 2009-10. Stronger and durable recovery in the global economy could be necessary to improve the overall business confidence as well as export prospects.

Balance of Payments

II.6.6 India's balance of payments position improved during 2009-10, with turnaround in exports in the latter part of the year and resumption in capital flows, notwithstanding the higher current account deficit that reflected stronger absorption of foreign capital. Key external sector soundness parameters in the form of current account deficit, external debt and foreign exchange reserves remained comfortable and supported the overall policy environment to spur a faster recovery in growth. The balance of payments developments during 2009-10 had contrasting ramifications for recovery in economic growth. The decline in exports

Chart II.55: Key Global Indicators

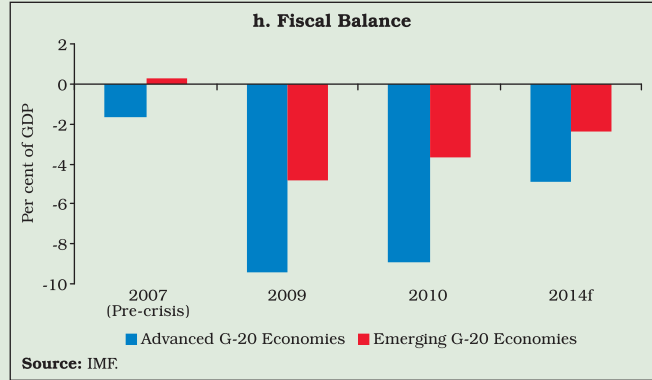
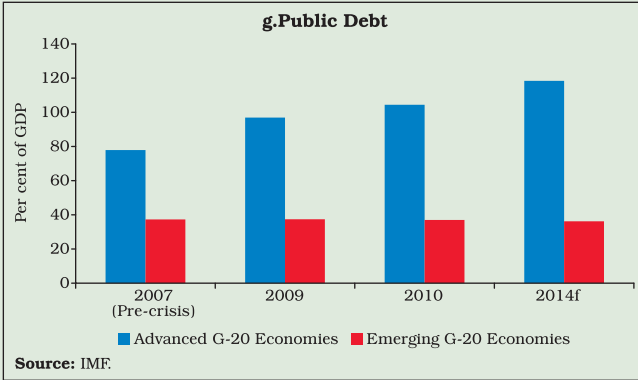
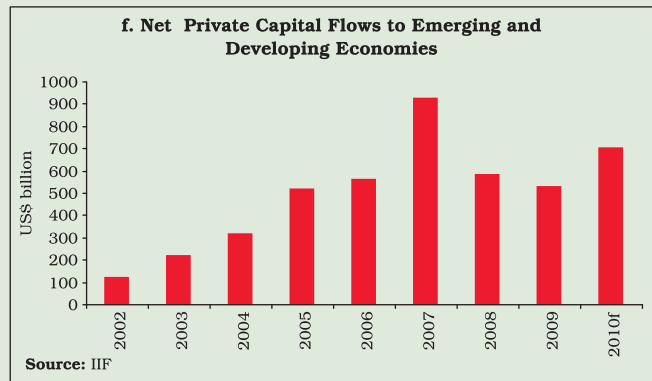
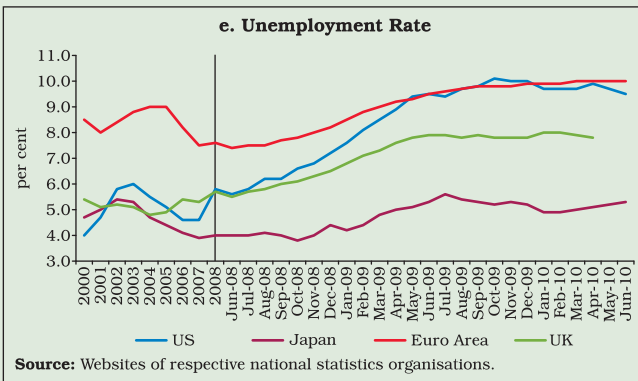
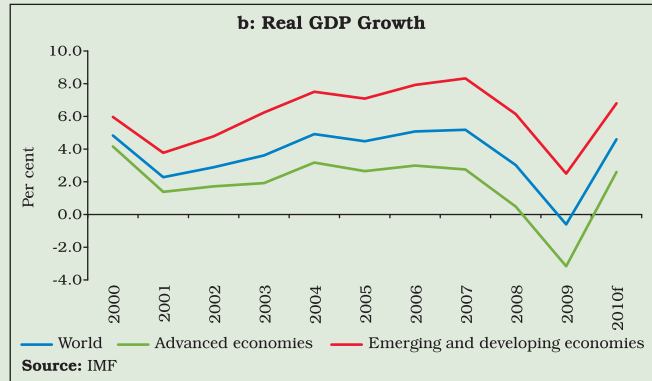
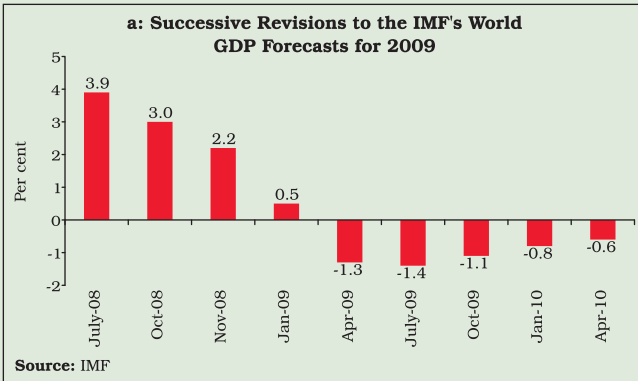
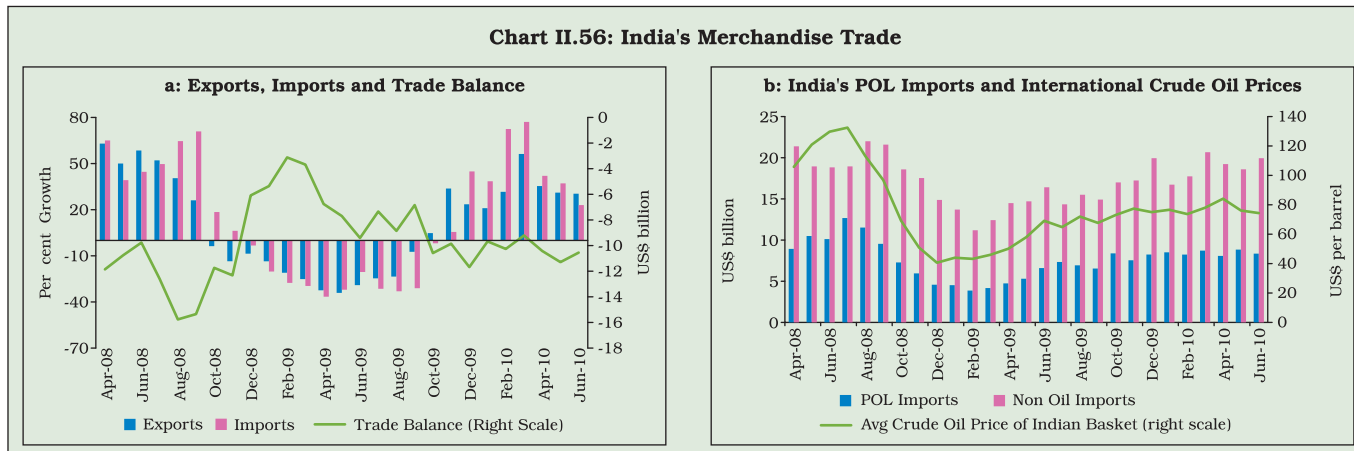


Chart II.56: India's Merchandise Trade



of goods and services in response to weak global demand had a dampening impact on overall GDP. However, a higher current account deficit led to stronger absorption of foreign capital. This, in turn, implied higher investment activities financed by foreign capital, which partly contributed to the stronger recovery in growth. Major determinants of balance of payment transactions, such as external demand, international oil and commodity prices, pattern of capital flows and the exchange rate changed significantly during the course of the year. With the turnaround in exports and revival in capital flows, external sector concerns receded gradually.

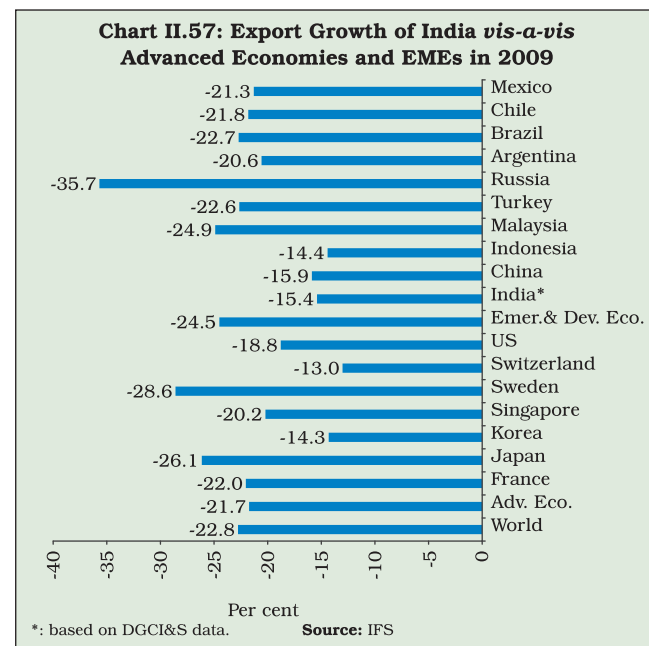
Merchandise Trade

II.6.7 Contraction in global trade volume was much sharper than the contraction in global GDP in 2009, and the impact on India's merchandise exports was visible in terms of negative growth over 12 successive months during October 2008 to September 2009. India's merchandise exports witnessed a turnaround in October 2009. A durable recovery in world demand will be critical to sustain the strong positive export growth experienced during November 2009 to June 2010, when the monthly average growth of exports was 32.9 per cent. Merchandise imports also contracted over eleven successive months; the recovery in domestic economic activity and resurgence in oil prices led to a rebound in India's imports, since November 2009. As a result, imports witnessed a robust growth at a monthly average of 47.9 per cent during

December 2009 to June 2010 (Chart II.56a and b). The impact of the global crisis on export performance of various countries in 2009 was divergent. Countries like Indonesia, India, China, Switzerland, Korea and the US recorded a relatively lower decline in exports than the world average (Chart II.57).

II.6.8 Recognising the pressure on export performance from adverse global developments, the Government of India had announced a number of incentive measures in the Union Budget 2009-10 and Foreign Trade Policy (2009-14) to promote export growth. The Union Budget for 2009-10 announced measures such as extension of period of the

Chart II.57: Export Growth of India vis-a-vis Advanced Economies and EMEs in 2009



“Adjustment Assistance Scheme” for badly hit export sectors, extension of period for interest subvention of 2 per cent on pre-shipment export credit, and extension of the period for income tax benefits to export sector, etc. In the Foreign Trade Policy (2009-14), new products and new markets were added to the Focus Market Scheme (FMS) and Focus Product Scheme (FPS). Market Linked Focus Product

Scheme (MLFPS) was expanded by inclusion of various products. To facilitate technological upgradation of the export sector and thereby enhance competitiveness of exports, Export Promotion Capital Goods (EPCG) scheme at zero duty was introduced for various export sectors. India’s comparative advantage in specific export items was affected in the wake of the global crisis (Box II.12).

Box II.12

India’s Export Basket: An Assessment of Comparative Advantage

In India, sustained growth in merchandise exports witnessed in the pre-global crisis was accompanied by structural shifts in both commodity composition as well as product and market diversification. The export growth moderated from an average of about of 25 per cent during the period 2002-03 to 2007-08 to (-)3.6 per cent in 2009-10. In the phase of economic recovery in the midst of an adverse external environment, for ensuring return to the pre-global crisis performance in the export sector, it is important to examine the comparative advantage of India in different commodities across markets.

Available empirical evidence suggests that the level of development of a country and the diversification in its export basket could be correlated. Cadot *et al.* (2007) found a hump shaped pattern of export diversification, *i.e.*, low and middle income countries diversify mostly along the extensive margin (addition of new product lines) whereas high income countries diversify along the intensive margin (diversification of export values among active product lines) and ultimately re-concentrate their exports towards fewer products.

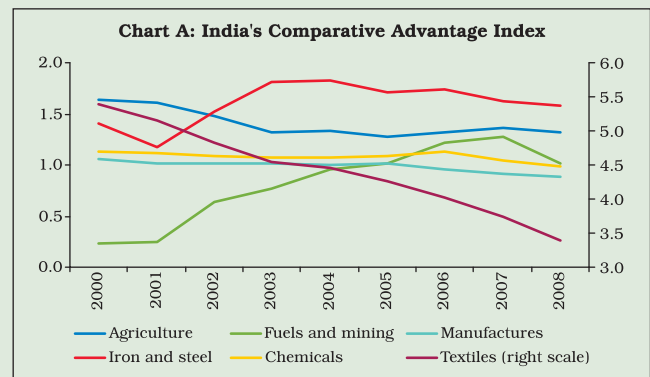
An analysis of India’s export basket in terms of revealed comparative advantage (RCA) provides some insights in to the competitiveness of India’s exports. The concept of RCA (Balassa, 1965 and 1977) pertains to the relative trade performance of individual countries in particular commodities. An economy’s comparative advantage gets influenced by various factors such as integration of the economy with the world, liberalisation policies adopted by the country for its external sector, rates of change in factor accumulation, growth and development levels of the economy and the productivity. Balassa measures the index of RCA as follows:

$$RCA_{ij} = (X_{ij}/X_{w_j})/(X_i/X_w)$$

where X_{ij} = ith country’s export of commodity j, X_{w_j} = world exports of commodity j, X_i = total exports of country i and X_w = total world exports. If this index takes a value greater than unity, then the country has a revealed comparative advantage in that particular commodity.

The analysis of commodity composition of India’s export basket unveils that India has an RCA in chemicals

agricultural products, fuels and mining products, iron and steel, textiles and clothing (Chart A). India’s RCA in most of its major exports is also borne out by the fact that India’s average shares in world exports in most of these product groups have witnessed a significant increase during the 2000s. Furthermore, the terms-of-trade effect emanating from relatively high export prices realised *vis-à-vis* import prices also helped in achieving the high export growth in recent years in value terms. Over the years, India’s exports have witnessed geographical diversification as well. There is a need to diversify India’s trade basket in favor of higher value added products and more of technology intensive products so that the economy could maximise the gains from trade and sustain the growth of exports driven by improved competitive advantage.



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II.6.9 Despite the demand induced moderation in export growth resulting from the global recession, India's exports performed relatively better as its rank among leading exporters improved from 27th in 2008 to 22nd in 2009, with the share in world exports at 1.2 per cent. India ranked 15th among leading importers in 2009, with a share of 1.9 per cent, which also represents an improvement over 16th position in 2008. Since India's GDP growth remained ahead of most countries, its import growth accordingly would have been relatively higher, leading to the higher rank among importers.

II.6.10 The disaggregated commodity and direction of trade data reveal that India's trade in all major commodity groups and with major trading partners registered a decline/deceleration during 2009-10 (Charts II.58 a to d). However, exports of primary products and petroleum products registered a positive growth in 2009-10. Also, exports of gems and jewellery have turned around since Q3 of 2009-10. Similarly, imports of crude oil started rising with the increase in its price.

II.6.11 Overall, India's exports and imports contracted by 3.6 per cent and 5.6 per cent, respectively, during 2009-10 as against a growth of 13.7 per cent in exports and 20.8 per cent in imports last year. As the decline in imports was steeper than the decline in exports, the overall trade deficit was lower during the year. On balance of payments basis, the trade deficit as a percentage of GDP reduced from 9.8 per cent in 2008-09 to 8.9 per cent in 2009-10.

Invisibles

II.6.12 Invisibles receipts and payments had witnessed deceleration in growth in 2008-09 in relation to the robust growth performance in the pre-crisis period. During 2009-10, invisible receipts declined further by 1.4 per cent mainly on account of decline in business, financial and communication services and investment income receipts. In contrast, invisible payments increased significantly by 11.8 per cent due to increase in payments under

Chart II.58: Country-wise and Commodity-wise India's Trade Performance

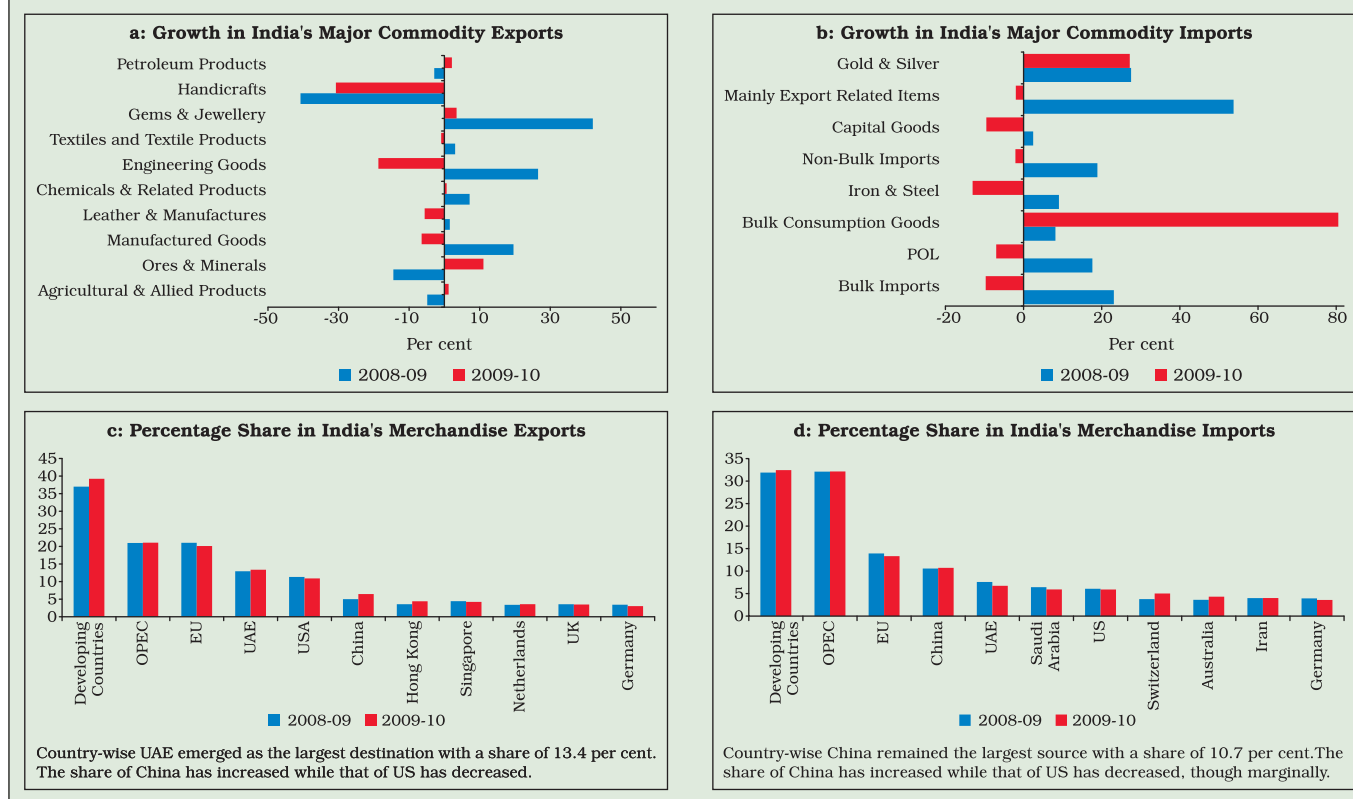
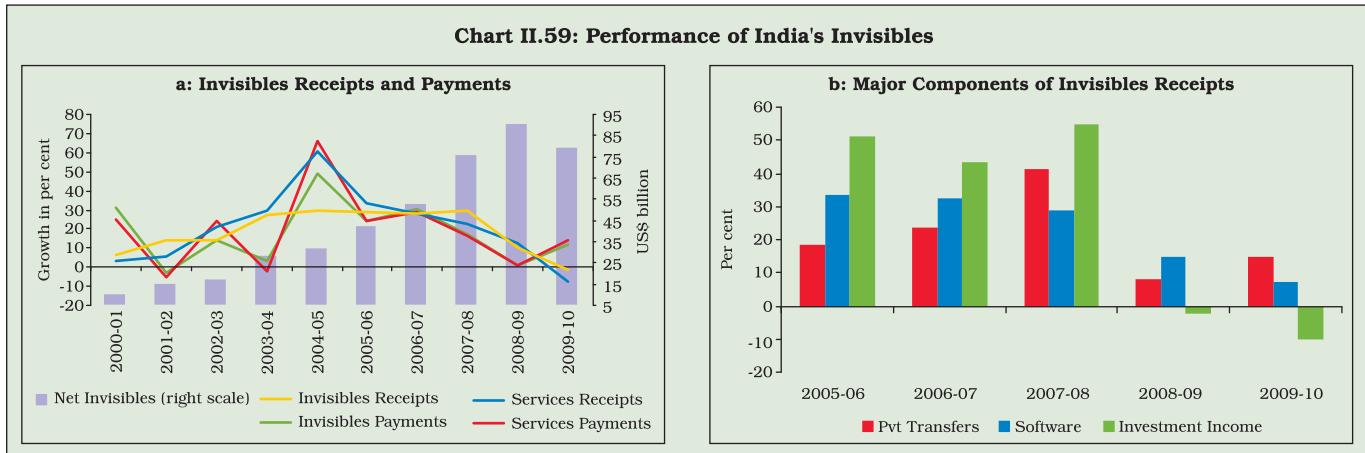


Chart II.59: Performance of India's Invisibles



investment income, financial and business services. As a result, invisibles surplus declined by 12.2 per cent to US\$ 78.9 billion during 2009-10 from US\$ 89.9 billion in the previous year (Chart II.59a).

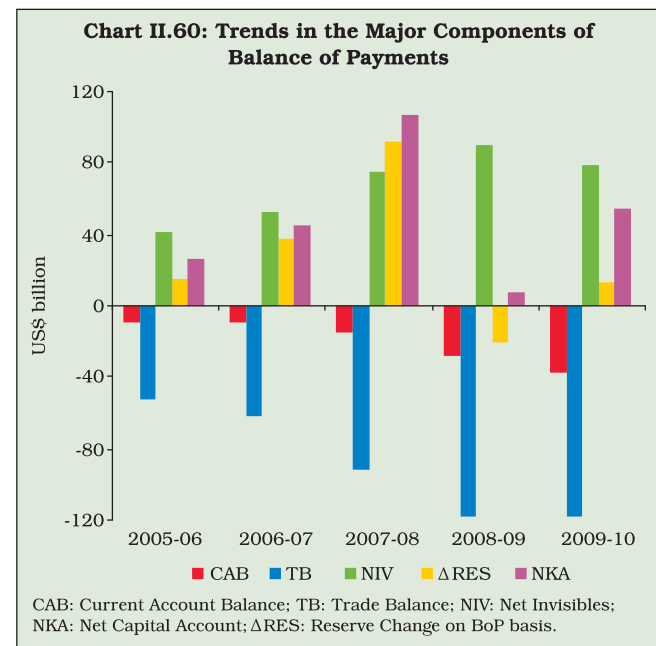
II.6.13 Net services exports of India declined by 31.1 per cent during 2009-10 as against an increase of 27.7 per cent during last year, mainly due to significant decline in services receipts coupled with an increase in services payments. Growth in services receipts turned negative for the first time after 1992-93, reflecting subdued global private demand and decline in merchandise trade. The decline in net services was spread over transportation and miscellaneous services such as business, financial and communication services. Software services exports, which had declined during the first half recovered during the second half, resulting in a growth of 7.4 per cent during 2009-10. Non-software miscellaneous services receipts, mainly on account of significant decline in communication, financial and business services, declined sharply to US\$ 19.0 billion in 2009-10 from US\$ 31.4 billion in 2008-09. Investment income receipts also declined to US\$ 12.1 billion in 2009-10 from US\$ 13.5 billion in 2008-09 on account of low interest rate environment in international markets.

II.6.14 Private transfer receipts, an important and resilient component of invisibles receipts, increased by 14.9 per cent to US\$ 53.9 billion during 2009-10 from US\$ 46.9 billion in the previous year (Chart II.59b). A Survey conducted by the

Reserve Bank in November 2009 suggested an insignificant impact of the global crisis on remittance inflows to India. The responses from different cities though varied, ranging from significant impact (such as Kochi) to no decline (such as Ahmedabad).

Current Account Balance

II.6.15 On balance of payments basis, trade deficit decreased marginally to US\$ 117.3 billion (8.9 per cent of GDP) during 2009-10 from US\$ 118.7 billion (9.8 per cent of GDP) in 2008-09 (Chart II.60). Lower net invisibles during 2009-10 financed about 67.3 per cent of trade deficit as compared with

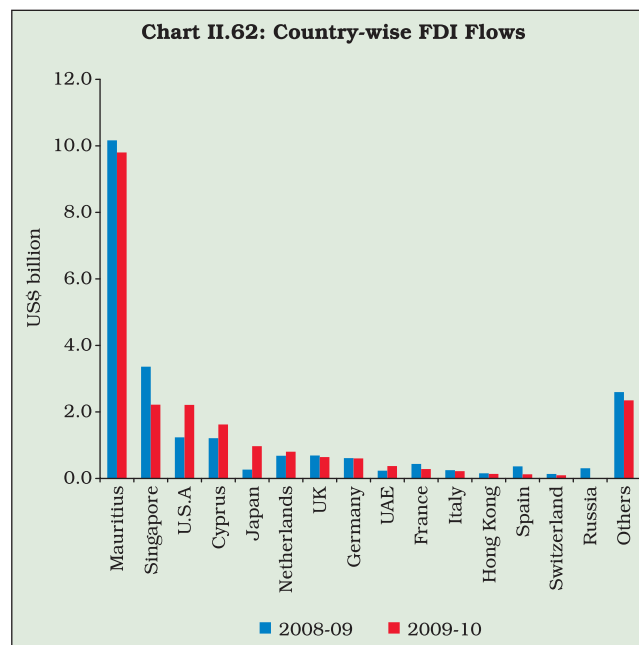


75.8 per cent in the previous year. Despite lower trade deficit, the decline in invisibles surplus led to a higher current account deficit of 2.9 per cent of GDP during 2009-10 as compared with 2.4 per cent of GDP a year ago.

Capital Account

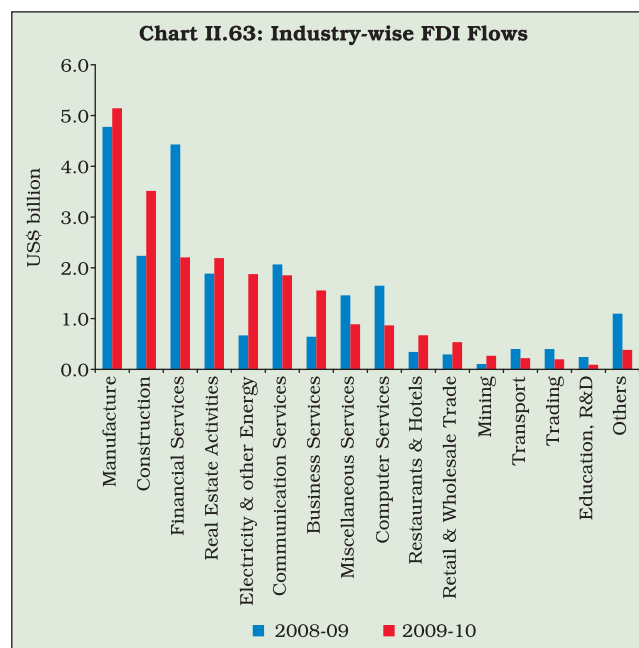
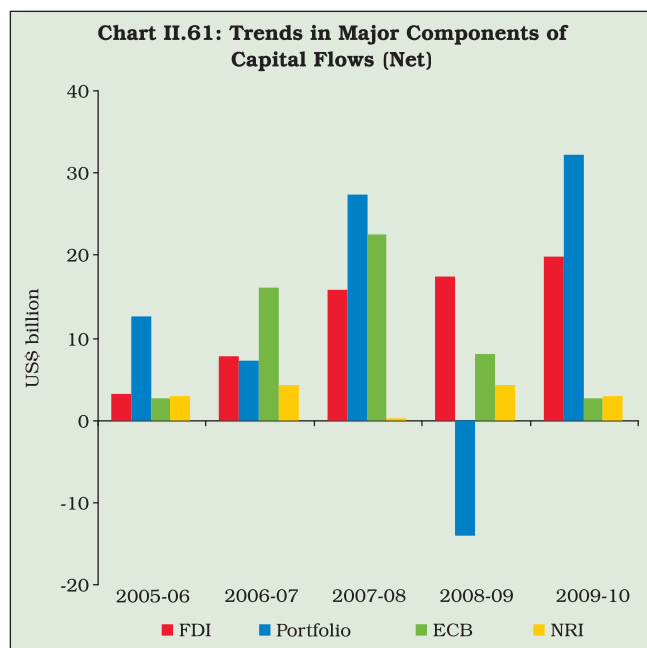
II.6.16 Stronger recovery in India ahead of the global recovery coupled with positive sentiments of global investors about India's growth prospects induced the revival in capital inflows during 2009-10. The turnaround in the capital inflows was mainly driven by large inflows under Foreign Institutional Investors' (FIIs) investments and short-term trade credits. Net FII inflows of US\$ 29.0 billion represented a major reversal from the outflow of US\$15.0 billion experienced during the previous year. Net FDI inflows were higher at US\$ 19.7 billion during 2009-10 as compared to US\$ 17.5 billion during 2008-09, reflecting steady inflows coupled with lower gross outflows (Chart II.61).

II.6.17 Country-wise, investments routed through Mauritius remained the largest component of gross FDI inflows to India during 2009-10, followed by Singapore and the USA (Chart II.62). During 2009-10, FDI was mainly channeled into



the manufacturing sector (22.9 per cent), followed by the construction sector (15.7 per cent), financial services and real estate sector (9.8 per cent each) (Chart II.63).

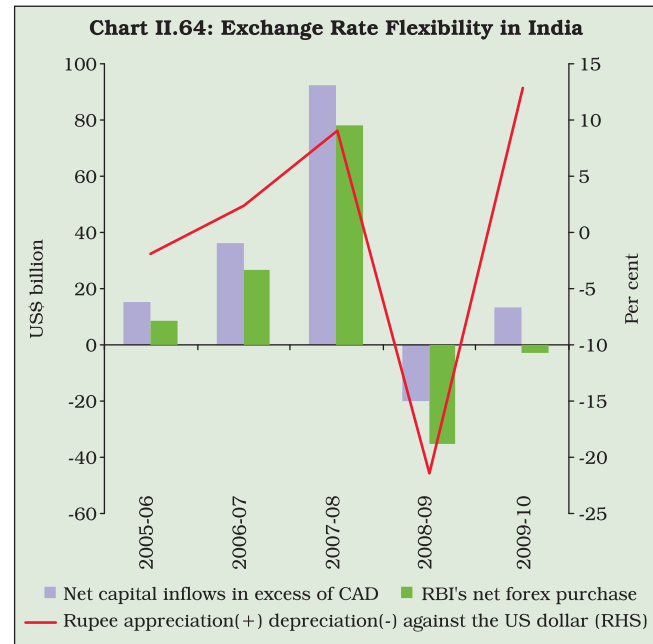
II.6.18 After recording net inflows under Non-resident deposits during the first three quarters, there were outflows during the last quarter of the 2009-10 reflecting the impact of decline in effective



interest rate on such deposits as well as appreciation of the rupee against the US dollar. Net external assistance received by India during 2009-10 was lower at US\$ 2.4 billion. Net external commercial borrowings were significantly lower during 2009-10 mainly due to lower disbursements, especially in the first quarter, coupled with higher repayments. Short term trade credit also exhibited a turnaround since the second quarter of 2009-10 and recorded net inflows of US\$ 7.7 billion during the full year. Net capital inflows during 2009-10 stood significantly higher at US\$ 53.6 billion as compared with US\$ 7.2 billion in 2008-09, mainly driven by FDI, portfolio investment and short-term trade credits.

II.6.19 During 2010-11 so far, FDI inflows have remained stable, while FII inflows have also witnessed improvement. Similarly, ECB approvals have been large during 2010 (April-July) reflecting strong domestic investment demand.

II.6.20 India experienced high volatility in capital flows in recent years. Capital flows have also been the dominant factor in inducing volatility in the exchange rate of the rupee against the US dollar. The exchange rate appreciated when there were large capital inflows and depreciated when the capital inflows ebbed or turned into outflows. Given the stated policy of the Reserve Bank to contain volatility in the exchange rate, without reference to any specific target or band, its net intervention operations have helped in absorbing significantly the pressure of capital flows on exchange rate



volatility. In recent years, however, the exchange rate has become relatively more flexible, particularly in relation to the size of net intervention operations of the Reserve Bank. In 2009-10, for example, net interventions were negligible, whereas the exchange rate appreciated by 12.9 per cent (Chart II.64). Even though it partly reflected correction for the significant depreciation witnessed in 2008-09 in the wake of the global crisis, the nominal appreciation entailed dual effects on the economy (Box II.13). During 2010-11 so far (up to August 16, 2010), the Indian rupee has generally depreciated against the US dollar by 3.5 per cent while it has appreciated against the euro.

**Box II.13
Impact of Exchange Rate Movement on the Economy**

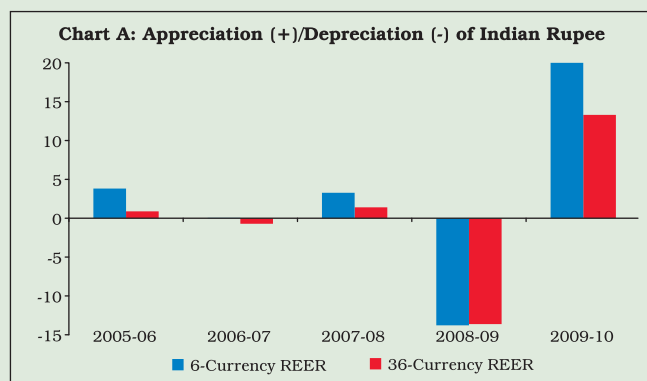
In a flexible exchange rate regime, movements in exchange rate could have dual effect on the overall macroeconomic conditions. While an exchange rate appreciation could help in moderating domestic inflation through lower cost of imports expressed in domestic currency, it could also weaken the competitive advantage of exports and thereby adversely affect growth. If a nominal appreciation coincides with higher inflation differentials, then the resultant appreciation of the Real Effective Exchange Rate (REER) could further magnify the pressure on competitiveness. In 2009-10, the 6-currency

trade based REER of the Indian rupee appreciated by 20.0 per cent (Chart A).

Available empirical findings for India on the pass-through of exchange rate changes to domestic prices provide a range of results. RBI (2004) estimated that a 10 per cent depreciation of exchange rate increased wholesale prices by 0.4 per cent during the period 1970 to 2004. About 60 per cent of pass-through was estimated to take place within one year. A study by Khundrakpam (2007) for the post-

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reform period (August 1991 to March 2005) estimated the pass-through coefficients and found that a 10 per cent change in exchange rate leads to change in final prices by about 0.6 per cent in the short-run and 0.9 per cent in the long-run. The same study suggested no decline in the degree of pass-through over time, unlike what has been found in other countries. These estimates in the range of 0.4 per cent to 0.9 per cent suggest that 12.9 per cent appreciation experienced in 2009-10, would have helped in moderating the inflation by 0.5 per cent to 1.2 per cent. This impact, though, would be over a period of time, and not entirely during the year itself.

The impact of exchange rate appreciation on trade balance could depend on the degree of pass-through of exchange rate changes to export and import prices, as well as import-intensity of exports. At times, the impact of other determinants of exports and imports, such as productivity driven comparative advantages as well as demand-supply conditions could dominate the exchange rate impact. Empirical evidence generally corroborates the perception that both exports and imports remain sensitive to exchange rates even when other determinants of trade flows change significantly (Smith, 2004; Sharma, 2000; Kandil, *et al.* 2007).

For India, the estimated impact of currency movements on trade balance for the period 1996Q2 to 2009Q4 appears to be statistically significant. A simple regression of trade balance (used in terms of the ratio of exports to imports, *i.e.* LXM) on exchange rate (6-currency trade weighted real effective exchange rate, *i.e.* LREER), seasonally adjusted domestic real GDP (LINGDP) and World GDP (proxied by the seasonally adjusted OECD GDP, *i.e.* LOECDGDP) show that growth in domestic GDP worsens trade balance (possibly through boosting import demand relative to exports from the supply side), while growth in world GDP improves India's trade balance (through the impact on exports on the demand side). The currency appreciation worsens the trade balance significantly; the estimated coefficient shows that a one per cent real appreciation would invoke almost 0.7 per cent deterioration in trade balance.

$$LXM_t = 4.28 - 0.73LREER_t - 0.99LINGDP_t + 2.56LOECDGDP_t$$

$$t\text{-stat} \quad (3.53)^* \quad (-2.34)^* \quad (-5.88)^* \quad (5.15)^*$$

$$R^2 = 0.48 \quad DW = 1.83$$

*: Significant at 5 per cent level.

All variables are in log form.

Based on the favourable impact of exchange rate appreciation on inflation, it was viewed in some quarters during 2009-10 that the exchange rate channel of monetary policy was effective in containing inflation. In India, however, other than containing excessive volatility, the Reserve Bank does not condition the path of the exchange rate. Since the Reserve Bank had to balance the dual objectives of stronger recovery and lower inflation during 2009-10, even in the use of monetary policy measures, the actions had to be calibrated carefully. In a phase of managing the recovery, particularly given the adverse external demand conditions and protectionism concerns, any exchange rate appreciation could have been expected to undermine the growth objective more than during normal times. Besides dampening export growth, even cheaper imports that compete with domestic import substitutes could substantially thwart a faster recovery. Unlike managing the inflation-growth objectives through monetary policy measures, attempting the same through exchange rate could expose the economy to external sector risks that could be difficult to manage. There have been country experiences of devaluation – hyper inflation's vicious path on the one hand, as well as dutch disease effects associated with sustained large appreciation on the other. The Reserve Bank recognises the risks of using exchange rate as an instrument for managing internal balance versus external balance objectives, and that is why it operates with a market determined exchange rate regime, where the rate itself is determined by several determinants, including inflation, trade and capital flows, and economic growth.

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Foreign Exchange Reserves

II.6.21 During 2009-10, net capital account surplus, after financing a larger current account deficit, resulted in a net accretion to foreign exchange reserves of US\$ 13.4 billion (excluding valuation effect). Including the valuation gains resulting from depreciation of the US dollar *vis-à-vis* other non-US dollar currencies in which part of the reserves are maintained and increase in price of gold, the foreign exchange reserves increased by US\$ 27.1 billion during the year. There were two transactions relating to purchase of gold from the IMF and allocation of SDRs by the IMF, which affected the level as well as composition of the reserves. The IMF made additional allocations of SDRs to India in two tranches, *viz.*, general allocation of SDR 3,082 million (equivalent to US\$ 4.82 billion) on August 28, 2009 and a special allocation of SDR 214.6 million (equivalent to US\$ 0.34 billion) on September 9, 2009. As a result, while the external liabilities of the Government

increased in the capital account of the balance of payments, equivalent increase in the foreign exchange reserves was recorded in the form of SDR holdings. Unlike the SDR allocation, the purchase of 200 metric tonnes of gold from the IMF involved only a shift in the composition of reserves, as the increase in reserves in the form of gold was offset by corresponding fall in foreign assets. Of the US\$ 27.1 billion increase in reserves (including valuation), the component-wise increases were US\$ 13.3 billion in foreign currency assets, US\$ 8.4 billion in gold, US\$ 5.0 billion in SDRs and US\$ 0.4 billion in RTP. Despite larger capital inflows than the previous year, foreign exchange reserves increased moderately during 2009-10, reflecting increased absorption through higher current account deficit. India's foreign exchange reserves stood at US\$ 287.4 billion as on August 6, 2010. During 2009-10, several initiatives at the global level were taken to supplement national safety nets for dealing with adverse global shocks in future (Box II.14)

Box II.14

Global Initiatives to Supplement National Policies in Dealing with External Shocks

The experience of the recent financial crisis has amply demonstrated that in a globalised world, despite having a sound domestic macro-financial policy environment, a country could still face a crisis because of external shocks. Many EMEs like India that did not contribute directly to the global crisis nor did they have any direct exposure to the troubled assets and financial instruments in the advanced economies, were still affected by the crisis. Hence, credible and effective global systems must be put in place to supplement national policies for dealing with external shocks which could potentially spread fast with devastating consequences for economies.

Keeping in view the global dimension of the recent financial crisis, it was felt at the outset itself that the efforts towards restoring balance needed to be exceptional transcending national boundaries. This was reflected in the provision of cross-border liquidity through swap arrangements by major central banks as well as several rounds of policy rate cuts. International institutions for policy coordination like the G-20, global financial institutions like the IMF and the World Bank as well as many regulatory institutions became active as also new institutions like Financial Stability Board (FSB) have been instituted. In the midst of the crisis, the G-20 exhibited

exceptional coordination in responding to the contagion of the crisis with swift national policy measures. With regard to regulatory reforms, the G-20 is closely coordinating the efforts of international institutions like Basel Committee on Banking Supervision (BCBS), International Organisation of Securities Commissions (IOSCO) and International Association of Insurance Supervisors (IAIS) regarding international rules on capital, leverage and liquidity, compensation reforms, OTC derivatives, prudential regulation of Systematically Important Financial Institutions (SIFIs), accounting standards and credit rating agencies.

Besides national monetary and financial stimulus measures, there was reliance on expanded financial safety nets, ranging from swap facilities from the Fed to national central banks to augmenting the financial resources of the IMF. At its London Summit in April 2009, the G-20 members expressed their joint commitment to treble the resource base of the IMF to US\$ 750 billion, apart from support for trade finance, additional lending by multilateral development banks (MDBs) and concessional finance to poorest countries from proceeds of IMF gold sales.

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Subsequently, the IMF has made efforts to improve the financial safety nets of member countries through SDR allocations. The IMF has also revamped its extant lending instruments and devised new instruments to deliver timely resources to the economies facing financial stress. In addition to the traditional credit lines, it has instituted a Flexible Credit Line (FCL) for countries with strong macro fundamentals and the High Access Precautionary Arrangements (HAPAs) for countries that may not qualify for FCL. Reflecting the change of approach at the global level, in response to the sovereign debt crisis in Greece, the IMF in coordination with the European Commission, pledged to provide a three year US\$ 40 billion Stand-by Arrangement to Greece, amounting to 32 times of its Quota in the IMF.

India's Role in the Emerging Global Initiatives

As an active member of the G-20, India stands committed to emerging global initiatives, recognising fully that global problems need global solutions. The G-20 Working Group on 'Enhancing Sound Regulation and Strengthening Transparency' was Co-chaired by India. The Government of India had constituted a High Level Committee (HLC) to follow-up on the G-20 Washington Summit Declaration and constituted four Indian/Internal Working Groups, which mirrored the G-20 Working Groups. Separately, the RBI had set up two cells on the G-20 Working Groups viz., "Strengthening Transparency and Enhancing Sound

Regulation" and "International Co-operation and Market Integrity", respectively.

In order to strengthen the IMF's lendable resources, the RBI has entered into a Note Purchase Agreement (NPA) with the IMF under which the RBI shall purchase from the IMF notes for an amount up to the equivalent of US\$ 10 billion. India has bought the IMF gold. The sale proceeds of gold are expected to boost IMF's capacity to provide concessional loans to low income countries.

With respect to prudential regulations, ten large Indian banks are participating in the current round of quantitative impact assessment (QIS) being conducted by the BCBS. The Reserve Bank is working on the FSB principles for sound compensation and accordingly, comprehensive guidelines based on FSB principles on sound compensation practices was issued on July 1, 2010. Also, setting up a Working Group to work out the modalities for an efficient, single point reporting mechanism for all OTC interest rate and forex derivative transactions was proposed.

While the emerging regulatory responses of countries and the development of new international standards would need to be examined in the context of India specific needs and relevance before application, many of the new international initiatives may not require a revision of the country's current policies on capital flows, exchange rate and foreign exchange reserves, which have helped effectively in limiting the country's vulnerability to external shocks.

Management of Foreign Exchange Reserves

II.6.22 The guiding objectives of foreign exchange reserves management in India are safety, liquidity and returns in line with the general international practices in this regard. The variations in India's foreign exchange reserves are an offshoot of its exchange rate policy, which is to intervene in the market only to smooth exchange rate volatility and prevent disruptions in macroeconomic stability. Since no deliberate strategy of reserve accumulation is pursued through a policy of sustained current account surplus, India does not contribute to global imbalances. Moreover, the reserves are built up against borrowed resources, and hence they are used during periods of sudden stops and reversal in capital flows. Variation in reserves, thus, besides the valuation effects arising from changes in international currencies in which

the reserves are held, largely reflect the result of trends in capital flows.

II.6.23 The Reserve Bank purchased 200 metric tonnes of gold from the IMF during October 19-30, 2009 under the IMF's limited gold sales programme. This was done as part of the Reserve Bank's foreign exchange reserve management operations. The foreign exchange reserves, however, remained unaffected by this transaction as it merely reflected substitution of foreign currency assets by gold. As a result, the share of gold in total reserves went up to 6.3 per cent at end-November 2009 from 3.8 per cent at end-October 2009 prior to the gold purchase.

External Debt

II.6.24 India's external debt stock increased by 16.5 per cent to US\$ 261.5 billion at the end of

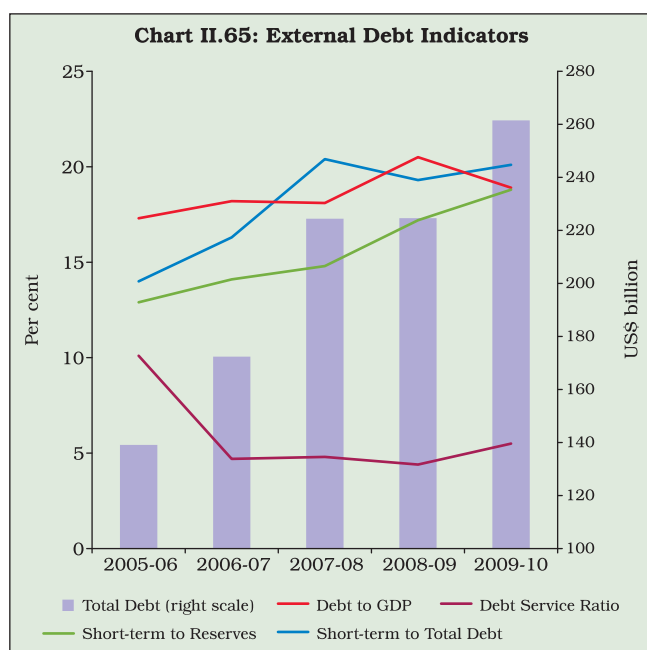
March 2010 on account of significant increase in SDR related liabilities, commercial borrowings, trade credits and NRI deposits. While long term debt increased by US\$ 27.8 billion to US\$ 209.0 billion, short-term debt increased by US\$ 9.1 billion to US\$ 52.5 billion on the basis of original maturity. Based on residual maturity, short-term debt stock stood at US\$ 107.6 billion accounting for 41.2 per cent of the total external debt at end-March 2010. In terms of currency composition, the US dollar denominated debt accounted for the major portion of total external debt at end-March 2010. Various debt sustainability indicators remained at comfortable level (Chart II.65).

II.6.25 The international assets increased from US\$ 346.2 billion at end-March 2009 to US\$ 378.8 billion at end-March 2010, mainly on account of increase in direct investment abroad and reserve assets. The increase in international liabilities from US\$ 409.0 billion as at end-March 2009 to US\$ 536.5 billion as at end-March 2010 was mainly on account of an increase in inward direct and portfolio investments and other investments. Net claim of non-residents on India reflecting the net International Investment Position (International Assets minus International Liabilities) increased from the level of US\$ 62.8 billion as at end-March 2009

to US\$157.6 billion as at end-March 2010. The build-up of foreign exchange reserves in recent years also helped in containing increase in net international liabilities. While net liabilities increased by US\$ 94.8 billion, net capital inflows were at US\$ 53.6 billion; the difference between the two largely reflects valuation effects.

II.6.26 The external sector outlook for 2010-11 suggests the persistence of large current account deficit *albeit* with some moderation. Since India's growth is expected to be stronger, resultant import growth could widen the trade deficit. Uncertainties in international oil prices could exert additional pressure. Despite diversification of the export basket and pick up in export growth in recent months, sustaining a robust export growth would be a challenge. The developments observed during 2009-10 for services exports may continue during 2010-11 if the global recovery weakens due to sovereign debt concern in the Euro zone. As projected by NASSCOM, however, software exports could recover in 2010-11 to grow by 13-15 per cent as against 5.5 per cent in 2009-10. If the crisis in the Euro zone deepens, that would impact both exports and private transfer receipts. The share of India's exports to Europe has been about 20 per cent in recent period; Europe is also one of the major regions contributing to India's private transfers.

II.6.27 The expected surge in capital flows, and the associated pressure on exchange rate and asset prices will have to be managed. A higher current account deficit, however, could absorb higher capital flows more productively. The financing needs of infrastructure as well as expected higher current account deficit suggest the importance of foreign capital for economic growth. Capital flows in the initial months of 2010-11 have moderated somewhat, reflecting the drop in risk appetite of global investors in response to the sovereign risk concerns in the Euro zone. Due to favourable market sentiments, however, capital flows to India have picked up since June 2010 as reflected in higher portfolio inflows coupled with



large ECB approvals. Given the stronger growth outlook of India and the probability of monetary exit being delayed by the advanced economies, capital inflows could be expected to accelerate, which will have to be managed, as in the past. The balance of payments outlook for 2010-11, thus, suggests that notwithstanding a higher current account deficit, higher capital flows, comfortable reserves and a flexible exchange rate will help in managing the external sector challenges.

VII. OVERALL ASSESSMENT

II.7.1 Overall, the macro-financial developments during 2009-10 indicated the resilience of the economy to shocks, both external and internal, as well as the capacity to recover fast from an economic slowdown. Domestic policy stimulus, both monetary and fiscal, contributed to spur the recovery impulses. However, timely exit from the stimulus had to be initiated in the second half of the year, recognising its importance for containing inflation in the near-term as well as supporting high sustainable growth in the medium-term. The assessment based on inter-sectoral linkages suggests that the impact of any weakness in agricultural production resulting from deficient rainfall on the growth prospects of industry and services has moderated over time. Agricultural growth, however, continues to be critical from the standpoint of its impact on inflation and rural demand conditions.

II.7.2 In managing the recovery, monetary policy measures encountered the usual transmission weaknesses, even though ample liquidity conditions created by the Reserve Bank helped in allaying any liquidity concerns in the financial system. Adequate availability of resources from both banks and non-banking sources also ensured financing of real activities during the recovery. With the usual lags in monetary policy transmission, lending rates started to moderate gradually and the demand for credit from the private sector also recovered in the second half of the year.

II.7.3 Continuation of the expansionary fiscal stance adopted in response to the contagion from the global crisis helped in partly offsetting the dampening impact of decelerating private consumption demand on the recovery. Fiscal imbalances, however, when persist, could pose risks to the inflation situation, the potential output path and the external balance conditions. In the Union Budget for 2010-11, the beginning of fiscal exit was announced along with a medium-term fiscal consolidation plan. 3G/BWA spectrum auction proceeds, which turned out to be almost three times the amount that was expected, is unlikely to contribute to a faster fiscal correction because of the additional expenditures as reflected in the first batch of Supplementary Demands for Grants for 2010-11. The deregulation of petrol prices and upward revisions to prices of other petroleum products effected in June 2010 would, however, ease the stress on the fiscal situation going forward, notwithstanding the near-term pressures on headline inflation.

II.7.4 The key macroeconomic concern in the second half of the year was the rising generalised inflation, which warranted rebalancing the weights of different objectives pursued through monetary policy, with increasing accent placed on containment of inflation. Decline in relative price variability as well as evidence of inflation persistence implied the need for use of monetary policy actions, even though the initial source of pressure on inflation started from an adverse supply shock in response to the deficient monsoon. Structural supply side constraints that impart sustained or frequent pressure on the inflation path need to be addressed so as to enhance the capacity to ensure a low inflation regime.

II.7.5 The financial markets, despite exhibiting intermittent volatility reflecting sporadic uncertain global developments, functioned normally with rising activities, which was necessary for ensuring faster recovery. Strengthening the financial stability architecture further and promoting development of deeper financial markets, however,

would have to receive sustained policy focus, going forward. The external balance situation, which had come under pressure from decline in exports and net capital outflows in the wake of the global crisis, improved during the year with the return of positive growth in exports and revival in capital flows. Higher current account deficit also contributed to the recovery through better absorption of foreign capital. Management of capital flows would continue to be a major challenge, given their dual ramifications in terms of a potential source of instability as well as a means to higher growth and productivity.

II.7.6 Thus, while at the beginning of the year the overriding macroeconomic concern was faster and stronger recovery, by the end of the year that concern had subsided significantly, but an equally discomfoting concern had surfaced in the form of high and generalised inflation. In dealing with the challenge of inflation through monetary tightening, the associated consequences in terms of attracting excessive interest rate sensitive capital inflows and also harming the recovery by raising the cost of capital had to be recognised, which was reflected in the Reserve Bank's calibrated approach to unwinding of its monetary policy stimulus to the recovery.