II ECONOMIC REVIEW

The year 2012-13 was marked by slowing growth, lingering inflation pressures and risks from persisting twin deficits. Policy efforts helped contain fiscal deficits and moderate inflation towards the later part of the year. However, significant challenges remain ahead for reviving growth while maintaining macro-financial stability. In this context, it becomes important to address structural constraints to growth, improve governance, address asset quality concerns and correct external imbalances.

II.1 THE REAL ECONOMY

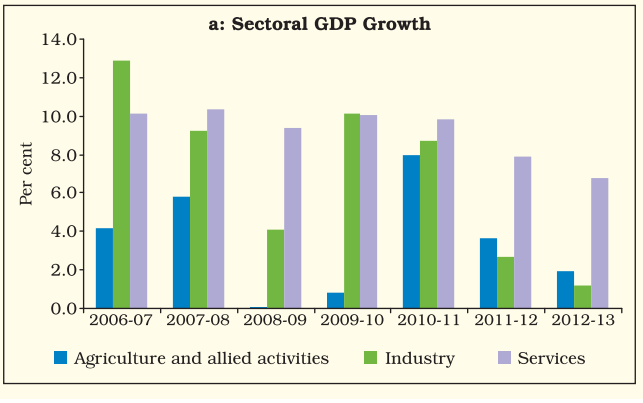
Growth slows further, revival contingent on addressing structural issues

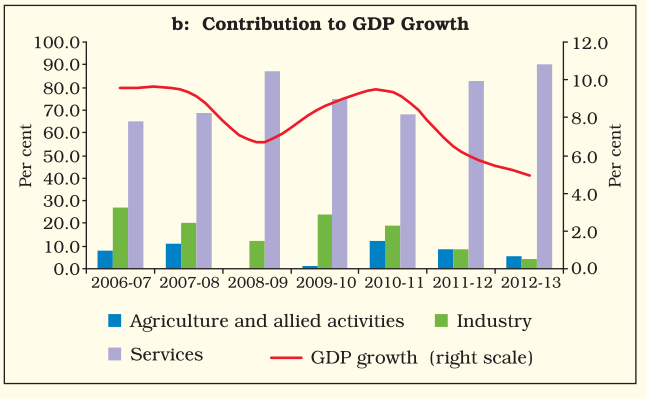
II.1.1 India's real GDP growth continued to moderate for the second successive year in 2012-13 and dropped to 5.0 per cent, the lowest in the past 10 years (Appendix Table 1). A combination of factors has contributed to growth moderation over past two years. These include structural impediments, high inflation for three years and cyclical slowdown in both global and domestic economies. Consequently, activity in all major sectors of the economy decelerated during the year, with the industrial sector suffering the most (Appendix Table 2 and Chart II.1a). While the agriculture sector slowed for the second consecutive year in 2012-13 due to the weak monsoon, industrial and services sector growth decelerated for the third consecutive year after the recovery from the global crisis in 2009-10. Nevertheless, India's growth continued to remain service-led with the highest contribution (90.0 per cent) to GDP growth during the year (Chart II.1b).

II.1.2 Contraction in the mining sector, slack in manufacturing activity due to slowing external and domestic demand and deceleration in electricity generation on the back of coal shortages compounded to result in stagnating industrial activity. Domestic policy uncertainties, governance concerns and earlier monetary tightening adversely impacted growth in the industrial and services sectors.

II.1.3 Multi-faceted problems that have emerged in the infrastructure sectors have dampened "animal spirits" and impacted the investment climate. Shortages in coal supply, slack in capacity addition and the delayed and skewed distribution of the monsoon led to slower growth in 'electricity, gas and water supply'. Legal, regulatory and environment issues also adversely impacted the

Chart II.1: Real GDP Growth





output growth of the mining sector. On the other hand, a slowdown in the services sector during 2012-13 was visible in all sub-sectors except 'community, social and personal services'.

Sluggish consumption and investment demand for the second consecutive year

II.1.4 The growth rate of GDP at market prices nearly halved during 2012-13 due to a reduction of growth in consumption (both private and government) and fixed investment (Chart II.2). Private consumption expenditure, which accounts for around 60 per cent of real GDP at market prices, continued to decelerate for the second consecutive year due to the persistence of high consumer price inflation. Supply bottlenecks and weak demand further dragged fixed investment growth for the second consecutive year.

Decline in savings and investment rates is a major concern

II.1.5 Amid high inflation, the problem of the falling savings rate due to low or negative real returns and disintermediation emerged as an important contributor to growing macro-economic imbalances in the Indian economy. The domestic savings rate declined sharply to 30.8 per cent in 2011-12 from 34.0 per cent in the previous year (Appendix Table 3 and Chart II.3). All three sectors registered a decline in the savings rate, with the public sector accounting for the largest share of the decline. The household sector savings rate declined for the second consecutive year in 2011-12, after touching a record high in 2009-10. Within household savings, while the financial savings rate declined, the physical savings rate increased in 2011-12 because of households' preference for the latter in the high inflationary environment.

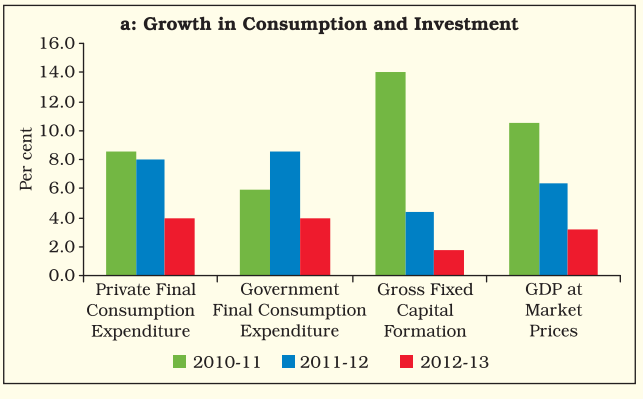
II.1.6 There was a decline in the rate of investment (GDCF) during 2011-12 in respect of the private and public sectors, even as the household investment rate improved over the previous year. Investment in valuables, such as gold and precious stones, continued to remain high at 2.4 per cent of GDP during 2011-12. This largely reflects households' preference for valuables, especially gold, during the recent period due to relatively low real interest rates on deposits and financial instruments such as small savings and uncertain stock market conditions.

II.1.7 Given the huge resource requirements for infrastructure development, one of the basic prerequisites for growth is to increase the rate of capital formation in the economy, especially in construction and machinery & equipment.

Household financial savings rate increased marginally during 2012-13

II.1.8 Preliminary estimates indicate that there has been a marginal increase in the household financial savings rate to 7.7 per cent of GDP in

Chart II.2: Expenditure Side of GDP



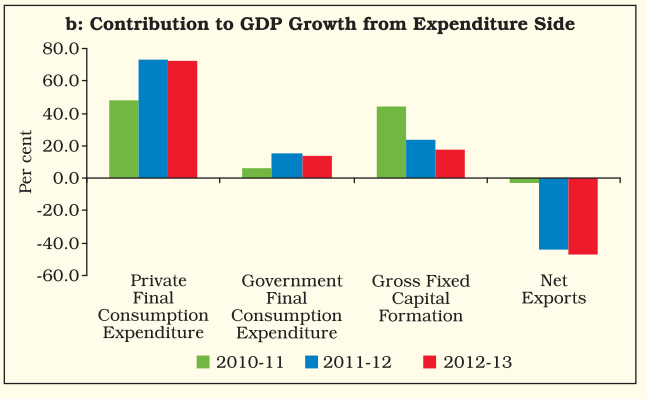
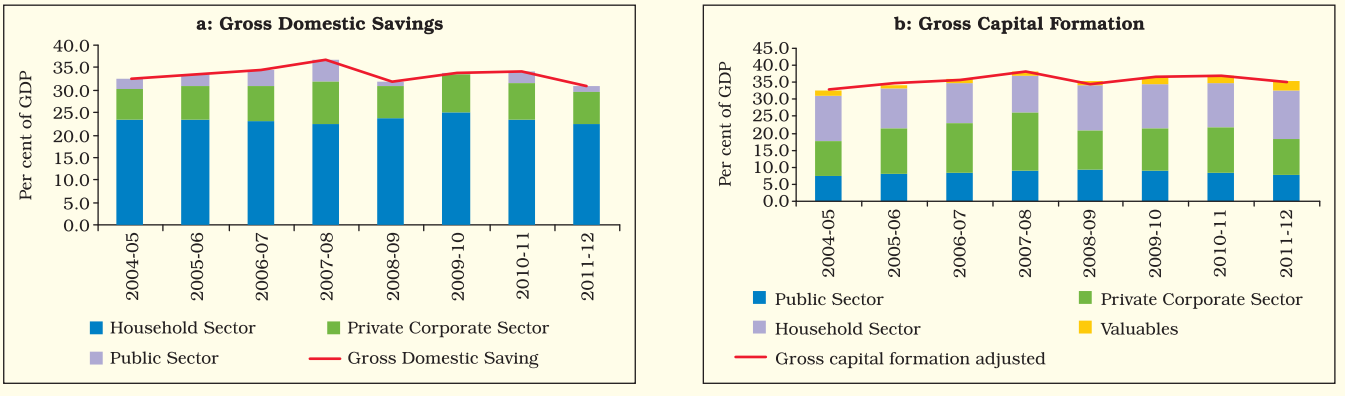


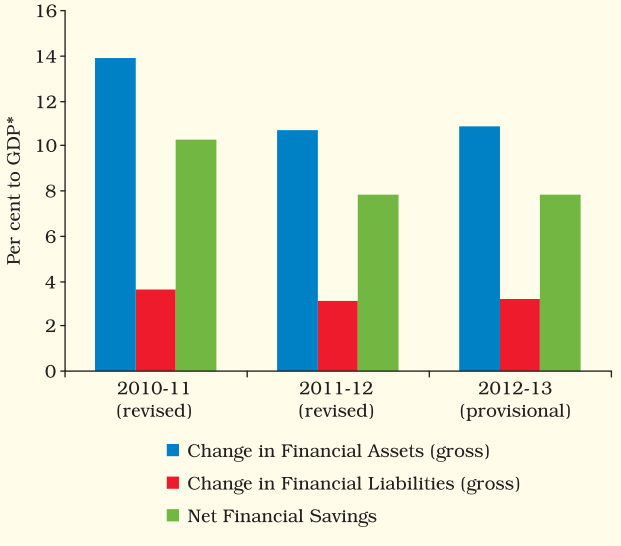
Chart II.3: Rate of Saving and Investment



2012-13 from 7.5 per cent of GDP in the revised estimates of the previous year, although it was lower than 10.3 per cent of GDP in 2010-11 (Appendix Table 4 and Chart II.4).

II.1.9 The marginal increase in the household financial savings rate during 2012-13 emanated from the higher growth in savings under bank deposits and mutual funds even as life insurance funds remained sluggish and outflows under small savings persisted. Moreover, investment in valuables, essentially gold, declined to 2.0 per cent of GDP in 2012-13 from 2.4 per cent in 2011-12. This could have helped somewhat to buttress household financial savings in 2012-13 and may even show up in an increase in household physical savings. At the same time, the financial liabilities of households increased, largely driven by acceleration in personal loans and retail credit, which dampened household financial savings on a net basis but may get reflected in higher household physical savings during 2012-13.

Chart II.4: Household Financial Savings



* At current market prices

Weak south-west monsoon affected agriculture output

II.1.10 The south-west monsoon, the major source of rainfall in the country, was 8 per cent below the Long Period Average (LPA) in 2012, while the north-east monsoon during the year was 21 per cent below the LPA. The delayed onset of the south-west monsoon, coupled with its uneven progress and distribution, especially during the *kharif* sowing months of June and July, dented *kharif* production significantly. The impact of the deficient north-east monsoon on *rabi* crops was relatively mild. As a result, most *kharif* crops witnessed a decline in production, while *rabi* pulses, oilseeds and coarse cereals registered a significant increase in production over the previous *rabi* season. *Rabi* pulses achieved record production during 2012-13, although the production of wheat, which is the main *rabi* foodgrain, has declined during 2012-13 mainly due to lower area coverage. As per the Fourth Advance Estimates, foodgrains production during

2012-13 is placed at 255.4 million tonnes, which is 1.5 per cent lower than in the previous year (Appendix Table 5). However, as on July 31, 2013 foodgrain stocks in India are at a comfortable level (69.65 million tonnes) (Appendix Table 6).

II.1.11 The performance of agriculture during 2012-13 showed that even though the sector in recent years has become more resilient, the whimsical monsoon still affects its output. Only 45.0 per cent (2009-10) of the total cropped area is under irrigation, while around 16 per cent of the country's geographic area, mostly arid, semi-arid and sub-humid, is drought-prone. Rain-fed agriculture accounts for around 56 per cent of the total cropped area, with 77 per cent of pulses, 66 per cent of oilseeds and 45 per cent of cereals grown under rain-fed conditions. Consequently, if there is a shortfall in rainfall, crop production is adversely affected (Chart II.5).

II.1.12 While agriculture output is still subject to vagaries of monsoon, it has become more drought resistant than in earlier decades. This has partly been the result of improved technology and irrigation and partly due to diversification of rural economic activities away from pure farm activity. Livestock, forestry and logging and fishery are important sub-sectors of the agriculture economy. Livestock contributes over one-fourth to the agricultural gross domestic product and engage about 9 per cent of the agricultural labour force. Forestry and logging contributed around 1.5 per cent of the total GDP and around 10 per cent of agricultural GDP, while fishery output was around 0.8 per cent of the GDP and 5.5 per cent of agricultural GDP.

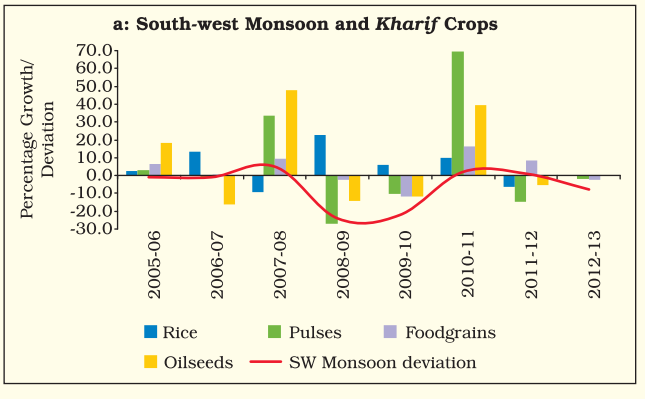
Supply chain and marketing inefficiencies are affecting food availability

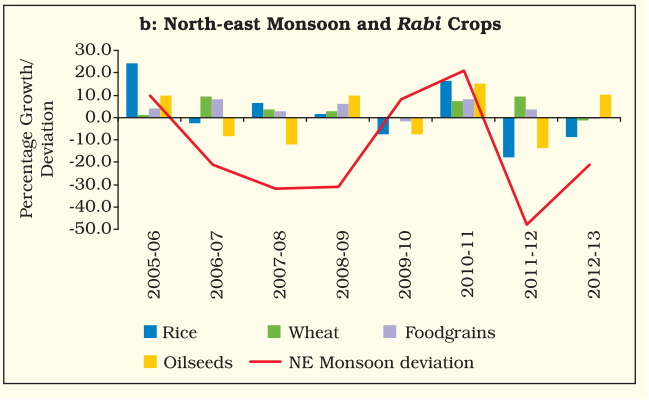
II.1.13 With the diversification in agricultural activity, as also the continued pressure on food prices, there is an urgent need to address supply chain and marketing inefficiencies. A substantial portion of the cereals and horticulture produce is lost every year due to inadequate post-harvest facilities. Losses with respect to dairy and other animal husbandry and fish products are also substantial. These losses could be reduced along with intermediary costs by creating market at the doorstep of the farmers, both for input supplies and marketing of the product.

II.1.14 With growing demand and the consumption pattern changing from cereal-based food to protein-based products, it is important to provide cold storage facilities for these products. At the same time, inadequate storage facilities for foodgrains continues to be a challenge.

II.1.15 The Report of the Working Group on Warehousing Development and Regulation for the

Chart II.5: Rainfall Deficiency and Agricultural Production



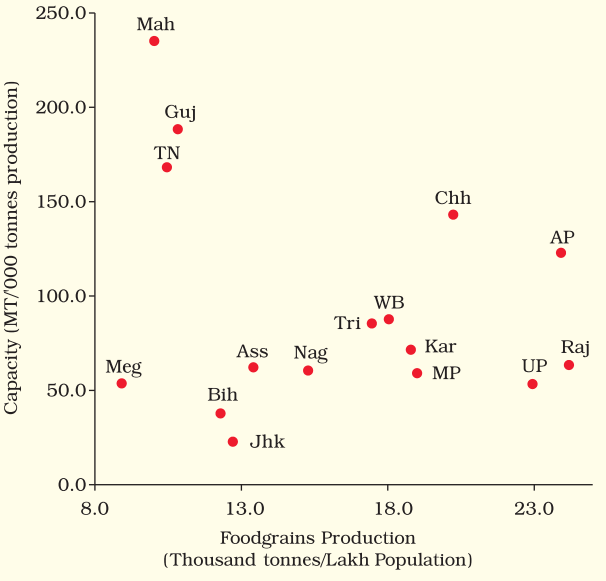


Twelfth Plan Period (2012-17) estimated that while the warehousing capacity available in India in the public, co-operative and private sectors is about 109 million tonnes; an additional 35 million tonnes of warehousing capacity needs to be created during the Twelfth Plan period for the storage of major crops.

II.1.16 A recent Reserve Bank study shows that the distribution of warehouses and storage capacity relative to the population[1] as well as the volume of foodgrains production[2] is uneven across states. Kerala has the highest storage capacity (10.2 MT per lakh tonne of foodgrains production), but ranks 21st among 28 states in terms of foodgrains production, contributing only 0.3 per cent of all-India production. Tripura with relatively thin population tops the list in warehouse availability (3.2 warehouses per lakh population). The major foodgrains-producing states, which are highly populated, have very low warehousing availability (one warehouse serves nearly 10 lakh population). The percentage of storage capacity for foodgrains production across the states is significantly low, particularly for the high foodgrains-producing states (Chart II.6). The inter-state disparities in warehousing availability is largely attributed to the variations in the availability of state warehousing corporations (SWCs), while the availability of the Central Warehousing Corporation (CWC) and the FCI appear to be uniformly distributed across states.

II.1.17 In view of the need for impetus to warehousing, the government, NABARD and the Reserve Bank have taken steps to promote its financing. Out of the RIDF XVIII (2012-13) of ₹200 billion, an amount of ₹50 billion was earmarked for creation of warehousing infrastructure. The Union Budget 2013-14 has proposed a separate fund for financing warehouse infrastructure with a corpus of ₹50 billion.

Chart II.6: Storage Capacity *Vs.* Foodgrains Production



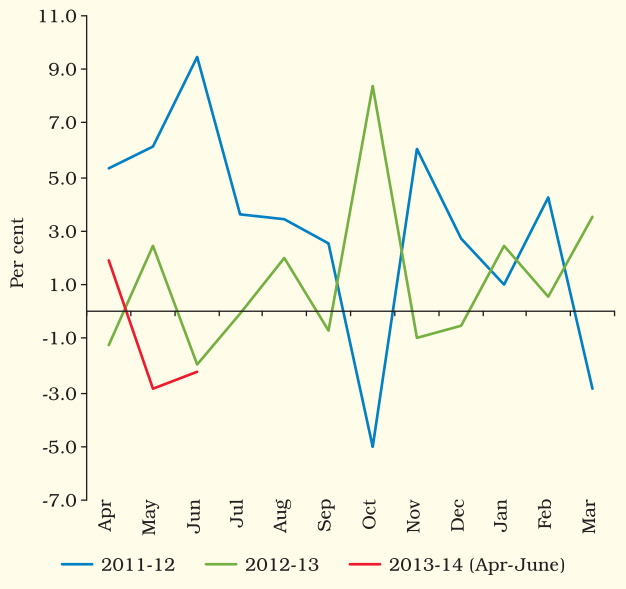
Industrial growth witnessed sharp moderation

II.1.18 Industrial growth faced near-stagnation in the past two years due to a combination of factors (Appendix Table 7). The current phase of industrial slowdown started in July 2011, coinciding with the period of high inflation. Part of the slowdown has been due to global factors, with weak external demand impacting activity levels, especially in the manufacturing sector. Industrial growth was further weakened by poor domestic infrastructure, input bottlenecks and moderation in demand. Index of industrial production (IIP) witnessed further decline in the first quarter of 2013-14 (Chart II.7).

II.1.19 The overall slowdown in industrial growth was reflected across all sub-sectors. The mining sector witnessed contraction during the year due to regulatory impediments and environment issues. This, in turn, affected the supply of crucial industrial inputs such as coal, iron ore and natural gas. Shortage of power also emerged as a major constraining factor for the growth of the industrial

[1] Census 2011.
[2] Data pertains to 2008-09.

Chart II.7: Growth in IIP (Y-o-Y)



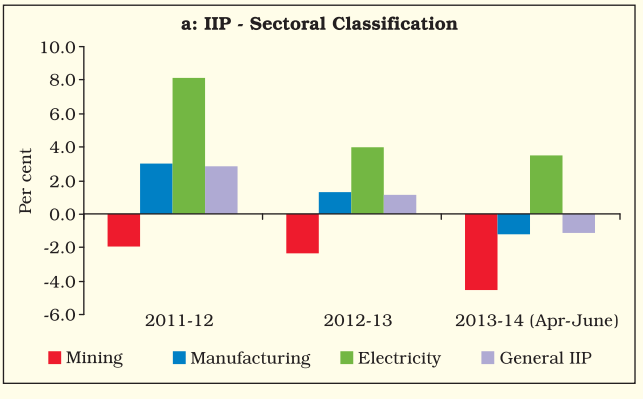
sector. Both thermal and hydel power generation decelerated during 2012-13 due to shortages in coal supply, under-utilisation of existing capacity and the weak monsoon.

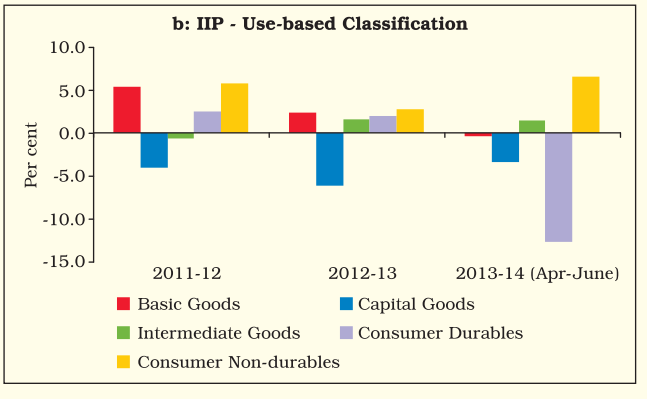
II.1.20 The performance of the manufacturing sector has been severely affected by both the global slowdown as well as domestic infrastructure bottlenecks, including shortage of energy and short supply of raw material. The manufacturing sector grew by only 1.3 per cent during 2012-13. Among manufacturing sector industries, capital goods industries such as machinery & equipment, electrical machinery, computing machinery and motor vehicles were affected the most during the year.

II.1.21 At the core of the waning performance of the industrial sector is the sharp decline in investment activity. This is reflected in the decline in the production of capital goods by 6.0 per cent during 2012-13. Several factors have contributed to the slowdown in investment activity. Rising costs and falling demand led to reduction in corporate profitability, which, in turn, affected the investment decisions of firms. Delays in land acquisitions and environment clearances also contributed to the slowdown in investment activity. A number of central sector infrastructure projects costing ₹150 crore and above have been delayed for the reasons stated above in addition to financial constraints and contract issues.

II.1.22 Use-based classification of the Index of Industrial Production (IIP) also reveals widespread slowdown in the industrial sector. The consumer goods sector moderated, reflecting weakening consumer demand. The lower growth in basic goods was mainly due to the contraction of the mining sector and the poor performance of electricity and basic metals. However, the intermediate goods segment registered marginal improvement (Chart II.8).

Chart II.8: Industrial Growth





II.1.23 Going forward, industrial growth will largely be determined by a combination of factors, *viz.*, the unfolding of the global economic situation, moderation in domestic inflation and recovery in core industrial sector growth (Box II.1).

Revival of core industries and exports are essential to support industrial growth

II.1.24 The core industries that provide crucial inputs to the industrial sector faced major supply bottlenecks, resulting in sharp deceleration in the

Box II.1
Industrial Slowdown: Causes and Remedies

The sharp slowdown in industrial growth in recent years has been attributed to factors such as the global slowdown, infrastructure bottlenecks, delays in environment clearances and land acquisition for projects, constraints on the availability of core inputs such as power, coal and iron ore, high inflation and interest rates.

In general, empirical studies on India have suggested a range of factors such as demand and supply as well as macroeconomic, financial and trade factors, to explain industrial growth. Some of the earlier works found that in the pre-liberalisation as well as the post-liberalisation periods, output growth in manufacturing industry was mainly driven by domestic demand expansion followed by the contribution of export expansion.

Using the data from Annual Survey of Industries (ASI) from 1973 to 2003, Gupta et al (2008) found that industries dependent on infrastructure or external finance, and labour-intensive industries have not been able to reap the maximum benefits of reforms. According to them, weak provision of infrastructure and finance has constrained the growth of the Indian manufacturing sector.

Gupta (2011), using an unbalanced panel of 15 Indian states and 22 industries for the period 1992-2002, found that while financial depth eased working capital constraints, it did not directly benefit industries that were dependent on external source of finances or ease investment constraints. Using the instrumental variables method for a panel of Indian states for 1965–1984, Rud (2012) found that electrification had a significant effect on manufacturing output.

The present analysis revisits the issue of eliciting the determinants of industrial growth in the context of the ongoing concern about deceleration in industrial growth that is perceived as being, *inter alia*, due to structural bottlenecks, the global slowdown, high inflation and interest rates.

The study analyses both long-term and short-term determinants of industrial growth. Controlling for outliers, the de-seasonalised monthly data for IIP, the index of eight core industries, global IIP, real call rate, 36-country trade weighted real effective exchange rate and WPI for the period January 2006 to February 2013 have been used to identify the long-term equilibrium relationship based on Johansen's cointegration methodology.[1] The lag selection criteria based on AIC and SBC inferred that only one lag was sufficient for estimating the VECM. Empirical evidence suggests that a one per cent increase in core output leads to an increase of 1.96 per cent in IIP, while a similar increase in global IIP output increases domestic IIP by 0.61 per cent in the long run. On the other hand, a one per cent increase in WPI causes the IIP to contract by 1.10 per cent in the long run. The long run elasticities of the real interest rate and the real exchange rate at 0.03 and 0.13, respectively, are both negative and have a relatively smaller impact on the IIP. It is, therefore, evident that domestic factors, namely, core industrial output and inflation, play key roles in determining industrial growth in the long run, while global industrial growth is also important.

The error correction model (ECM) with errors conditional on the long-term cointegrating vector is presented below:

$$\Delta \log IIP = -0.20 + 0.59\ \Delta \log Core - 0.15\ EC_{t-1}$$
$$(-3.57^*)\quad (3.75^*)\qquad (-3.61^*)$$

$\bar{R}^2 = 0.31$; *SEE = 0.02; DW = 2.18*

* : Statistically significant at 1%

where,

Δ log IIP = *M-o-M per cent change in the log of general IIP*

Δ log Core = M-*o-M per cent change in the log of Index of Eight Core Industries*

EC = *Error Correction Term conditional on long-term cointegrating vector*

The estimates from the ECM suggest that short-run IIP growth is significantly dependent on the performance of the core industries. In particular, a 1.0 percentage point increase in core industry growth results in the acceleration of IIP

(Contd...)

[1] The core index is a composite of output of eight core industries that comprise the supply side of the economy. Core industries are coal, crude oil, natural gas, petroleum refinery products, fertilisers, steel, cement and electricity. The data for the empirical analysis has been taken from the Ministry of Statistics and Programme Implementation, Ministry of Commerce & Industry, CPB World Trade Monitor and Reserve Bank of India. The standard Johansen's VECM was estimated using I(1) variables.

growth by about 0.59 percentage points. Further, inflation, real interest rate and real exchange rate do not significantly influence IIP growth in the short term. A 'financial access' variable that captures the extent of the access to credit in relation to output growth, proxied by the stationary gap between the monthly growth rate of IIP and real non-food credit, was also introduced in the ECM. This variable, however, also turned out to be statistically insignificant in the short run. As is the standard practice, all variables not significant at 1% level were dropped while reporting the ECM to maintain parsimony.

The short-run ECM is observed to correct the disequilibrium at the rate of 0.15 basis points per month. Thus, from the policy perspective, a turnaround in overall industrial growth can be achieved by improving the performance of core industries.

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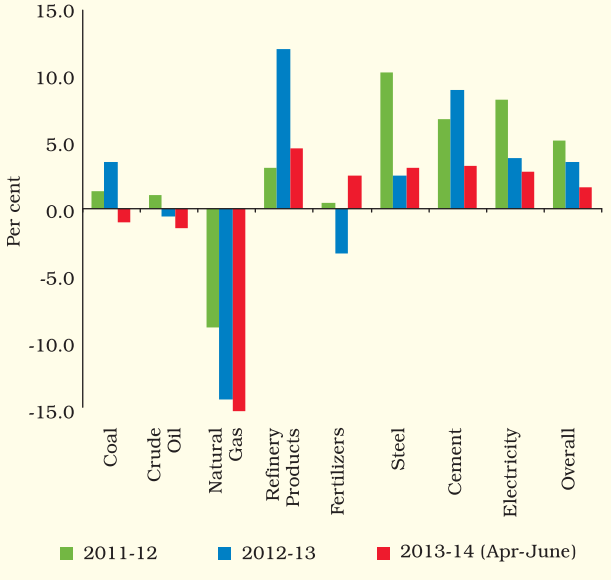
Gupta P., Hasan R., and Kumar U., 2008. What Constrains Indian Manufacturing? ERD Working Paper No. 119, Asian Development Bank.

Rud, J.B. 2012. Electricity provision and industrial development: Evidence from India, *Journal of Development Economics,* 97(2), 352–367.

growth of the index of eight core industries during 2012-13 (Chart II.9). A contraction in the output of natural gas and fertilisers and deceleration in the production of steel and electricity led to overall lower growth of the core industries.

II.1.25 The production of coal in the country has fallen short of demand due to issues relating to coal block allocations, as also regulatory and environmental factors. During 2012-13, 138 million tonnes of coal was imported, of which 62.5 million tonnes was used for power generation. The coal shortage reduced the plant load factor (PLF) of thermal power plants to 69.9 per cent during 2012-13 from 73.5 per cent in the previous year. Decline in the production of natural gas has affected the performance of gas based thermal power plants. Stoppage of iron ore mining in some states reduced the availability of iron ore for steel plants. Unless these supply constraints are addressed, core industries will continue to underperform, thereby adversely affecting overall industrial growth.

Chart II.9: Growth in the Index of Eight Core Industries



II.1.26 Recent reform measures by the government are expected to help reduce supply constraints, encourage fresh investment and put the industry back on a high growth trajectory. The formation of the Cabinet Committee on Investment (CCI) is intended to expedite investment clearances of large projects. The CCI has already cleared 157 projects with investments worth ₹1,609 billion. The investment allowance of 15 per cent over and above depreciation for investments exceeding ₹1 billion in plant and machinery in the Union Budget 2013-14 is also expected to improve the investment climate. Significant tax incentives for investments in infrastructure bonds have made such bonds popular vehicles and helped in easing financing constraints for infrastructure firms. Consequent upon the National Manufacturing Policy (NMP) in 2011, eight National Investment and Manufacturing Zones (NIMZs) have been announced along the Delhi Mumbai Industrial Corridor (DMIC) and four

more NIMZs outside the DMIC have been granted 'in-principle' approval. In addition, steps to expedite the implementation of the Delhi-Mumbai Industrial Corridor (DMIC) are expected to provide a major fillip to investment activity.

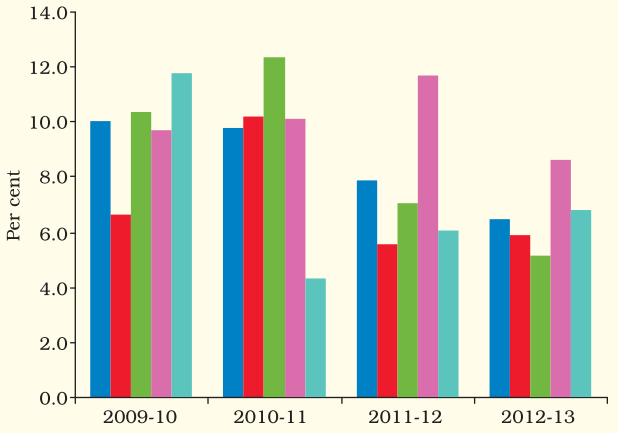
Longer-term paradigm shift in policy needed for a more competitive industrial sector

II.1.27 While the above initiatives are expected to shore up industrial output, a paradigm shift in overall industrial policy is needed to not only push growth, but to make India's industrial sector more competitive. The reform process will need to be carried forward and enlarged to enable a gradual return to the high growth path. As part of this, focus is needed on reforming the labour market rigidities in India which are affecting growth in organised manufacturing. There is a need to consolidate and rationalise the multiple labour laws at the national and sub-national levels to bring about a more comprehensive legislation. This would enable a transparent legal framework that is easy to regulate, provides sufficient flexibility to producers and reasonable protection and compensation to workers.

II.1.28 Industrial reforms can not only improve growth but also create employment opportunities. This is necessary in order to realise the demographic dividend of the increasingly young population. The manufacturing sector employed only 12.6 per cent of the total workers in the country during 2011-12.

II.1.29 Apart from the structural impediments in the core infrastructure sector, the recent lacklustre growth of the manufacturing sector has been also attributed to low technological depth, lack of a supportive environment for R&D and lack of institutional measures, such as skill development, regulation and standardisation. Apart from improving the state of physical infrastructure, particularly power and transport, there is a need to improve the business regulatory environment and to incentivise technological upgrading in the manufacturing sector.

Chart II.10: Growth in Services Sector GDP



Services sector exhibits moderation in growth

II.1.30 The services sector remains the major contributor to the overall economic growth of the Indian economy, although it recorded the lowest growth in 11 years at 6.5 per cent during 2012-13 (Chart II.10). Among the sub-sectors, 'financing, insurance, real estate & business services' and 'trade, hotels, restaurant, transport & communications' were the worst performers during the year, reflecting weak business sentiments, both domestically and globally. The slowdown in services associated with trading activity reflects the sluggish domestic industrial scenario. The export performance of business services was affected by weak global demand conditions.

II.1.31 The sluggish growth in lead indicators of the services sector, such as automobile sales, cargo movement and foreign tourist arrivals, signals further slowdown in the sector. The Reserve Bank's Services Sector Composite Indicator dipped in April-May 2013. However, the recent reform measure to allow FDI in multi-brand retail, aviation, cellular services and other sectors is likely to provide a boost to the sector in the medium to long

term. Any improvement in global economic conditions will have a favourable impact on the growth prospects of the services sector.

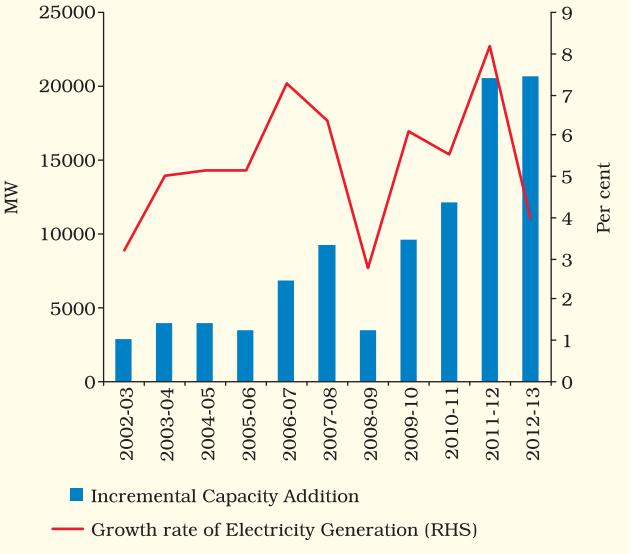
Need to address infrastructure bottlenecks in various sectors to revive growth

II.1.32 Over the past couple of years, India's infrastructure sector has been facing a series of problems that need to be addressed immediately to revive growth. The major factors that constrain timely implementation of projects are delays in regulatory approvals/land acquisition/site handover, lack of strong rehabilitation and resettlement policies, weak project planning and monitoring, pre-commissioning teething troubles, geological surprises and contractual disputes.

II.1.33 As on June 1, 2013, of the 569 central sector projects (₹1.5 billion and above), delays in implementation were reported for nearly half (277) of these projects, resulting in cost overruns of about 18.8 per cent. This marks a slight increase in the number of delayed projects when compared with the corresponding period last year. While cost overruns have been high in sectors, such as railways (135 per cent), water resources (119 per cent) and petro chemicals (63 per cent), time overruns have been high in road transport and highways (90 projects), power (51 projects) and railways (35 projects). Measures to reduce time overruns include rigorous project appraisal, setting up Standing Committees in the ministries to fix responsibility for time and cost overruns, regular review of the infrastructure projects by the concerned administrative ministries and setting up Central Sector Project Co-ordination Committees in the states under the Chief Secretaries to remove bottlenecks and to facilitate the speedy implementation of major projects.

II.1.34 In order to put infra-projects on a fast track, in addition to the CCI, the PMO has set up a Project Monitoring Group to track stalled mega projects. There is an urgent need for all these committees/ groups to work in co-ordination so that clearance of the different stalled projects is expedited.

Chart II.11: Incremental Capacity Addition and Growth Rate of Electricity Generation



II.1.35 Currently, the power sector seems to be in crisis with the solution remaining elusive. There has been a persistent, huge gap between power demand and supply, which is associated with constraints in the availability of natural gas and coal. Although there has been a continuous increase in installed capacity of electricity generation over the years, the growth rate of electricity generation has not been encouraging (Chart II.11). Despite government initiatives, the coal sector has been facing numerous problems for quite some time (Box II.2). The poor financial health of distribution companies (discoms) is another major issue to be resolved in the power sector. In this context, the recent decision by the Central Electricity Regulatory Commission (CERC) to allow several private power sector producers to raise tariffs needs to be appreciated. Overall, it is essential to adopt a multi-pronged strategy to resolve issues in the power sector.

II.1.36 In the roads sector, concerted efforts by the government after the recession led to an increase in the number of awards of road projects by National Highway Authority of India (NHAI) from 639 km in 2008-09 to 6,491 km in 2011-12. However, in 2012-13 there was a significant drop

Box II.2
Indian Coal Sector: Issues & Strategies

Coal shortages in India are likely to remain at elevated levels in the medium term due to following factors. First, the current coal production level falls short of the requirements for coal. The total production of raw coal in the country during 2012-13 was 558 million tonnes (MT). As per the 12th Plan document, this gap is projected to increase to 185 million tonnes by 2016-17. To meet the gap between overall demand and domestic availability of coal, 138 million tonnes of coal was imported during 2012-13. Many coal-based thermal plants are running much below the installed capacity due to fuel shortages and transmission constraints. Further, shortage of domestic natural gas supplies and lower appetite for expensive imports has compounded the problem. Second, regulatory hurdles linked to land acquisition problems and environment and forest clearances have led to inordinate delays in coal mining projects. Third, although coal block allocations for captive mining by the private sector was started in 1992, not many of the 195 coal blocks allocated have started production. Several of these allocations are now being de-allocated. Constraints on rail infrastructure have further impacted coal production. As a result of all these factors, captive coal miners have failed to live up to their commitment of production of coal from blocks allocated to them.

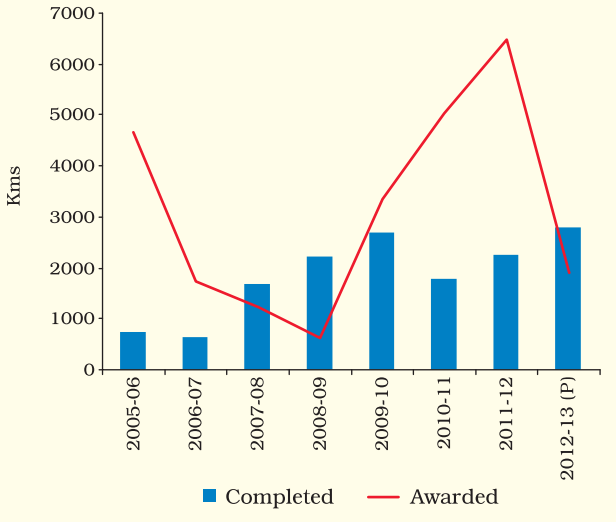
To reduce the dependence on imports and to step up domestic production, the government has taken several steps, including setting up a committee to devise a PPP policy framework with Coal India Limited (CIL), periodic review of the development of coal blocks as well as ongoing projects and plans, expeditious implementation of critical rail lines and improved supply of rakes. Regular interactions are held by the Ministry of Coal (MoC) with the Ministry of Environment and Forests (MoEF) to address pending issues concerning environment and forest clearances. The Cabinet Committee on Investment, set up by the government to expedite the decision-making process for clearance of projects in the infrastructure sector, has given environment clearance for 14 projects and Stage 1 forest clearance for 4 projects of CIL as on May 1, 2013. The MoC holds interactions with the concerned state governments to sort out issues related to land acquisition and the rehabilitation and resettlement of project-affected persons.

Pressure on coal demand has come from large capacity additions in the power sector, especially from independent power producers (IPPs). The Fuel Supply Agreements (FSAs) signed with IPPs and state power utilities since April 2012 aim to mitigate the problem of coal supplies. The FSAs also provide for payment of penalty by the supplying coal company in the event of shortfall in supply. However, given the chronic shortage of coal supplies in relation to demand, only limited comfort can be drawn from these FSAs. Substantial dependence on imports to meet the coal demand in the country has emerged, but imported coal is much more expensive notwithstanding a decline in global prices in the recent period.

The option of price pooling between domestic and imported coal was considered, but is likely to have gainers and losers with attendant legal issues. As such, the option to adopt marginal cost pricing and price coal at import-parity emerged, although it has inflationary implications, as it requires regulatory increases in power tariffs. The Cabinet Committee on Economic Affairs (CCEA) in June 2013 approved a mechanism for supply of coal to power producers. It was decided that CIL would sign FSAs with the Thermal Power Plants (TPPs) for a total capacity of 78GW, by which the CIL will supply 65 per cent of the Assured Coal Quantity (ACQ) from domestic production for the next two years, later to be increased to 75 per cent by the terminal year of the Twelfth Plan. It also provides for coal imports through CIL or directly by willing TPPs with pass-through in the form of increased power tariffs as per the modalities suggested by the Central Electricity Regulatory Commission (CERC). The Union Cabinet has also announced in June 2013 the setting up of an independent regulatory authority for the coal sector that would go a long way in ensuring better regulation and conservation of coal resources.

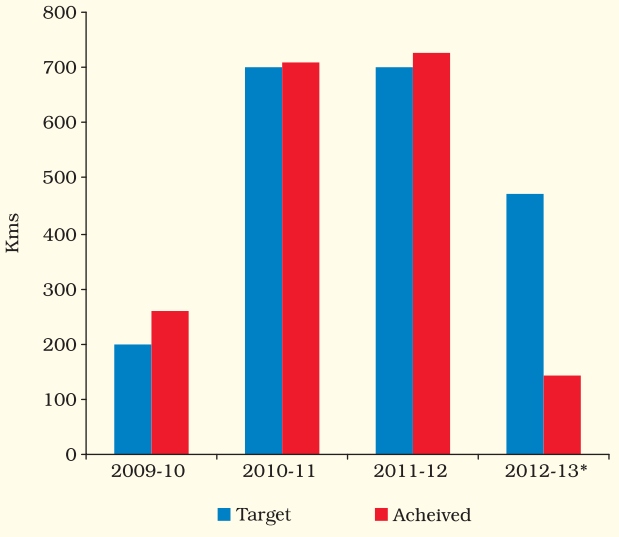
in the number of awards of road projects to 1,933 km (Chart II.12). The underachievement has been largely due to environmental clearance issues. The rising leverage of firms engaged in the road sector added to the constraints. These two factors have affected their financing as well. Despite this dip, the government's concerted focus on the construction of previously awarded highway projects resulted in the completion of about 2,800 km of highways in 2012-13. However, the dip in the award of new projects in the year 2012-13 is likely to have an impact on construction of highways in the medium term. This apart, a large number of projects in this sector are also affected by time over-runs, mainly due to delays in land acquisition, shifting of utilities, obtaining environment and forest clearances and railway approvals and the poor performance of contractors in several cases.

Chart II.12: Road Projects Awarded/Completed by NHAI



P: Provisional.
Source: National Highway Authority of India (NHAI), Government of India.

Chart II.13: Target Achieved for New Railway Lines



* Achievement figure is upto January 2013.

II.1.37 The government has taken several reform measures recently to address these issues, *viz.*, adopting the Engineering, Procurement and Construction (EPC) mode for building roads; delinking environmental and forest clearance for road projects and exempting linear str*etc*hes from requirement of NOC from *Gram Sabhas*. With these measures, the government has set a target of awarding 7,300 km of National Highway projects in 2013-14.

II.1.38 Railway projects are handicapped by the limited availability of resources, huge throw-forward of ongoing projects, delay in meeting land acquisition and forest clearance, law and order problems and contract failures, due to which achievement was much below the target set for new railway lines in 2012-13 (Chart II.13). The Kakodkar committee to review the safety of Indian Railways (2012) and the Sam Pitroda committee on modernisation of Indian Railways (2012) have underscored the significance of PPP models for the expansion and growth of this sector. The Indian Railways has identified PPP investment in railways in the 12th Five-Year Plan in several areas that include an elevated rail corridor, high-speed corridors, re-development of stations, logistics parks, private freight terminals and dedicated freight corridors (DFCs). The commissioning of DFC projects by the government is expected to provide opportunities for industrial development and employment generation. The first major civil contract covering a length of about 343 km has recently been awarded and the authorities are in an advanced stage of awarding another contract for about 650 km. It is estimated that contracts will be awarded to cover over 1,500 km by the end of 2013-14. Land acquisition for these DFCs is almost complete.

II.1.39 Private investment in the seaport sector has not picked up in a significant manner. In recent times, growing resource requirements and the concern for managerial efficiency and consumer responsiveness have led to the active involvement of the private sector in Indian ports. In 2012-13, 32 projects with an estimated investment of around ₹67 billion were awarded in this sector, which is much higher than in 2011-12. The Committee set up by the Government of India to increase private investment in the inland waterways sector is expected to undertake a systematic effort to identify new areas for private investment, in both infrastructure and transportation. To avoid delays

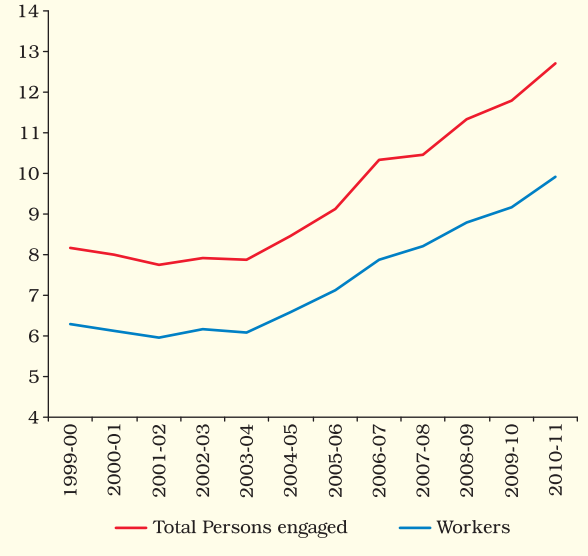
in the award of PPP projects, the CCI recently approved a proposal to delegate enhanced financial powers to the Ministry of Shipping for Port Projects in the PPP mode in line with NHDP in the roads sector. The enhanced delegation of financial powers to the Ministry of Shipping for clearing PPP projects up to ₹5 billion (from ₹3 billion) is expected to accelerate investment approvals and facilitate speedy development of port capacity.

Job creating growth in organised industrial sector in the 2000s

II.1.40 As per the Annual Survey of Industries (ASI) data, during the 2000s about 4.7 million jobs were created in the organised industrial sector, with more than 75 per cent of these being created in the second half of the decade (Chart II.14). This reflects a pick-up in growth in organised employment in relation to the past two decades.

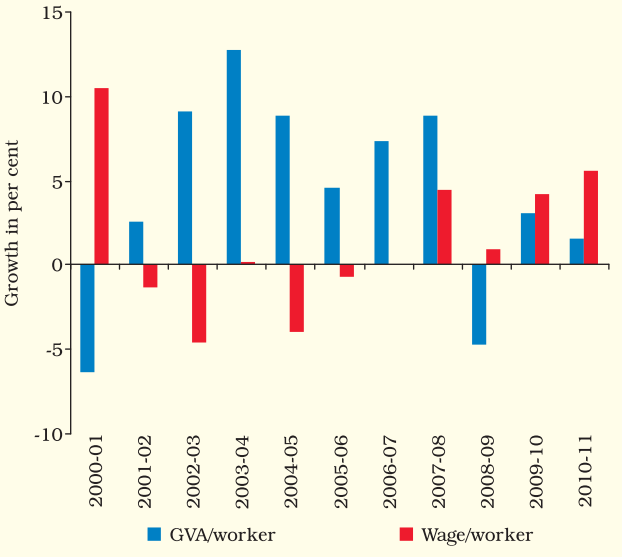
II.1.41 Employment elasticity, which reflects the change in employment growth for a percentage change in growth of output, was observed to be reasonable for the organised industrial sector at 0.2 during this period as per the ASI data. Even during the global financial crisis, the Indian organised industrial sector witnessed positive employment elasticity, *albeit* with some moderation. However, there was variation across industries in employment generation during the decade.

Chart II.14: Total Employment and Workers (in millions)



Source: ASI, MOSPI, GoI.

Chart II.15: Gross Value Added per Worker and Wages per Worker at Constant Prices



II.1.42 In tandem with employment growth in the organised sector, wages also went up at a higher rate particularly in the second half of the 2000s. Wage growth surpassed labour productivity growth during 2008-09 to 2010-11, possibly adding to inflationary pressures (Chart II.15).

Employment generation remained weak in 2012-13

II.1.43 According to the periodic quick employment surveys conducted by the Labour Bureau for select export-oriented industries, employment generation that remained robust during 2010-11 and 2011-12 has moderated since Q4 of 2011-12. This trend continued during 2012-13, resulting in a significant decline in employment generation in the organised sector in 2012-13 compared with the previous year (Table II.1). Except for textiles and leather, all sectors recorded a moderation in employment generation during 2012-13 *vis-à-vis* the previous year. Among industries, the IT/BPO sector witnessed the maximum moderation in employment growth.

Table II.1: Changes in Employment

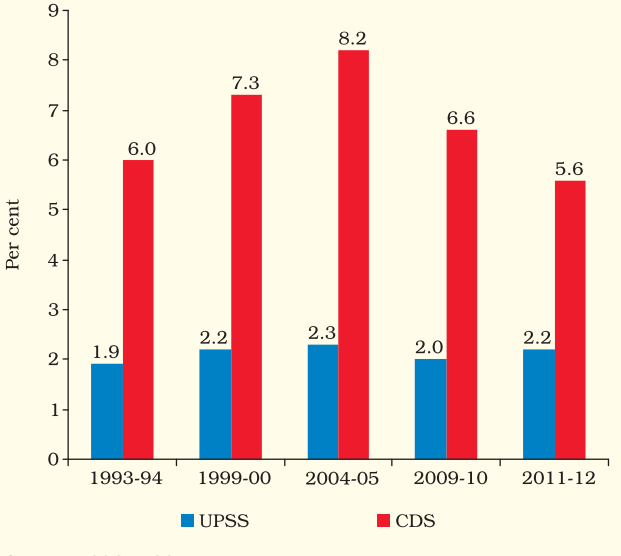
(in million)

Industry	2009-10	2010-11	2011-12	2012-13
1	2	3	4	5
Textiles	0.06	0.10	0.09	0.14
Leather	0.01	0.03	-0.02	0.01
Metals	0.09	0.09	0.08	0.04
Automobiles	0.08	0.11	0.03	0.02
Gems & Jewellery	0.07	0.00	0.03	0.02
Transport	-0.01	0.00	0.04	0.00
IT-BPO	0.69	0.67	0.58	0.12
Handloom-Power loom	0.07	-0.01	0.00	0.00
Overall	**1.07**	**0.98**	**0.83**	**0.35**

Source: Labour Bureau.

II.1.44 The latest round of the NSSO Survey (68th Round) on employment and unemployment for 2011-12 shows that the unemployment rate that fell in 2009-10 in terms of usual principal and subsidiary status (UPSS) has risen in 2011-12 to 2.2 per cent from 2.0 per cent in 2009-10 (Chart II.16). In terms of current daily status (CDS), the unemployment rate continued its fall from 6.6 per cent in 2009-10 to 5.6 per cent in 2011-12, which implies a decline in unemployed person days. Labour force participation rates declined in 2011-12 *vis-à-vis* previous rounds, particularly for females.

Chart II.16: Unemployment Rate



Source: NSSO, MOSPI.

Poverty Ratio marks a decline in 2011-12

II.1.45 As per the Planning Commission estimates based on the 68th Round Household Consumption Expenditure Survey conducted by NSSO, there has been a significant decline in the poverty ratio from 37.2 per cent in 2004-05 to 21.9 per cent in 2011-12. During the seven-year period, the number of people below the poverty line came down by 137 million persons, from 407 million in 2004-05 to 270 million in 2011-12.[3] While the rural poverty ratio declined to 25.7 per cent in 2011-12 from 41.8 per cent in 2004-05, the urban poverty ratio has gone down to 13.7 per cent from 25.7 per cent. In fact, the average rate of decline during most recent seven year period is much higher (2.2 percentage points per year) than during the11-year period of 1993-94 to 2004-05 (0.74 percentage points per year). The poverty estimates could undergo revisions once the Rangarajan Committee completes its review of the existing methodology, but the Planning Commission expects the broad trend of declining poverty to be maintained.

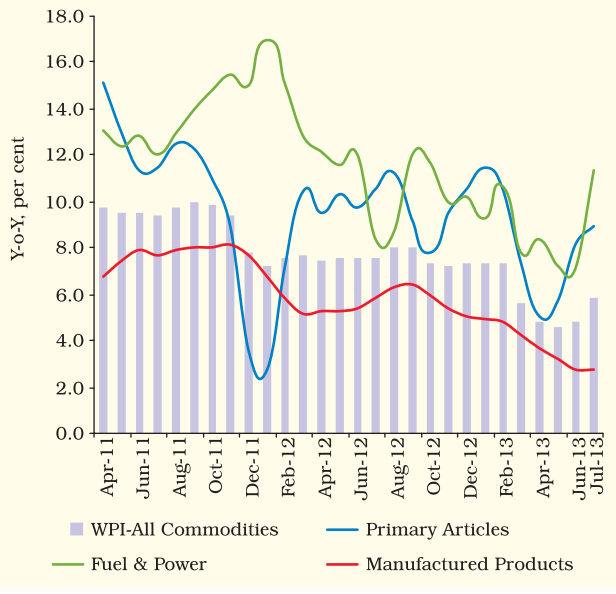
II.2 PRICE SITUATION

Headline inflation moderated to below 6 per cent towards the end of 2012-13

II.2.1 After remaining persistently high for three consecutive years (2010-13), headline wholesale price index (WPI) inflation (y-o-y) came down to 5.7 per cent in March 2013. During Q1 of 2013-14 WPI inflation came down further to an average of 4.7 per cent before firming up to 5.8 per cent in July 2013. For most part of 2012-13 headline inflation remained above the threshold level at which it becomes inimical to growth. During H1 of 2012-13, it averaged 7.7 per cent and peaked at 8.1 per cent

[3] For 2011-12, the national poverty line using the Tendulkar methodology is estimated at ₹816 per capita per month for rural areas and ₹1,000 per capita per month in urban areas.

Chart II.17: Trends in Inflation: Wholesale Price Index



in September 2012. From October, inflation remained around 7.3 per cent for five consecutive months before declining to 5.7 per cent in March 2013 (Chart II.17).

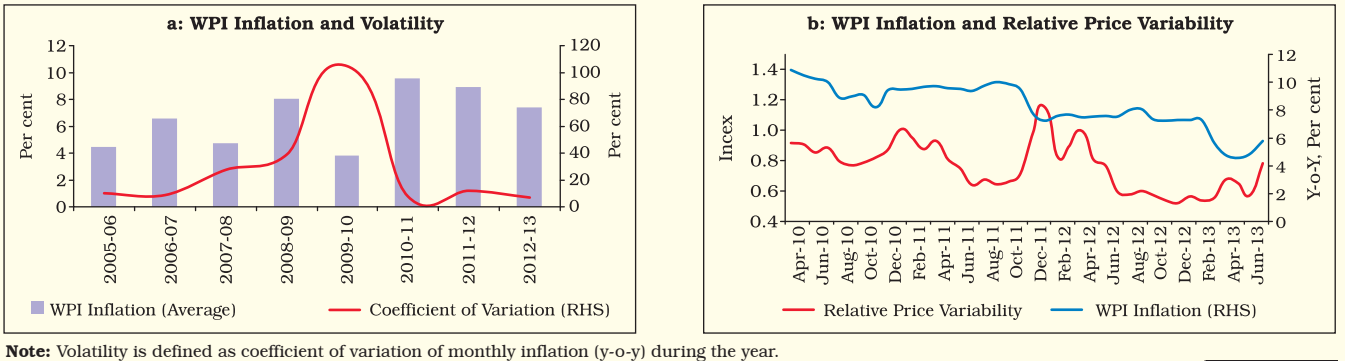
II.2.2 The persistence of inflation was due to factors that included administered price revisions in fuel products, sustained pressure on food prices from the delayed and uneven monsoon and pass-through from global commodity prices and exchange rate changes. The decline in inflation in March 2013 was driven by softening global commodity prices and fall in food inflation. Non-food manufactured products inflation came down from 5.8 per cent in August 2012 to 2.0 per cent by June 2013 before edging up to 2.4 per cent in July 2013. The decline in inflation in this segment reflects the impact of growth moderation and the weak pricing power of firms as well as past monetary policy actions aimed at containing inflation and anchoring inflation expectations.

II.2.3 The headline inflation exhibited low levels of volatility, which indicates its persistence (Chart II.18a). There has also been a gradual decline in the variability of inflation across major groups, which indicates that the moderation of inflation became generalised in the recent period (Chart II.18b).

Relative price changes added persistence to inflation

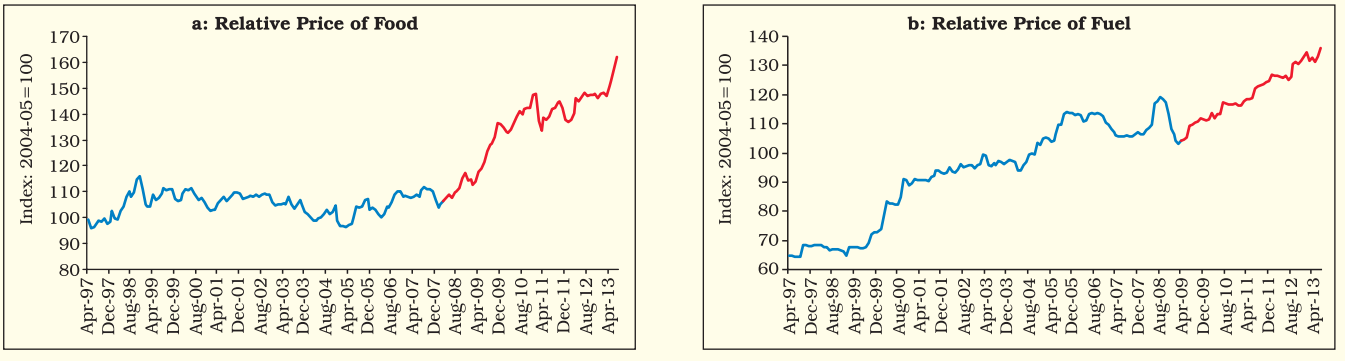
II.2.4 The nature of inflation can also be gauged by looking at trends in the relative prices of major supply-driven items, such as food and fuel. If commodity price increases are driven by supply shocks that are temporary, the impact on inflation could be short-lived and monetary policy can discount such one-off shocks. However, if the supply shock is persistent, the impact on inflation could be more prolonged and difficult to control until the relative price changes bring out the desired supply response or the resource re-allocation. Trending relative prices could, therefore, limit the efficacy of monetary policy, as they indicate the persistent

Chart II.18: Inflation Volatility and Variability



Note: Volatility is defined as coefficient of variation of monthly inflation (y-o-y) during the year.
The index of relative price variability (RPV) is measured as the weighted sum of deviations in commodity group 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 sub-group i at period t, π_t is the average rate of inflation at period t and w_{it} is the weight of commodity sub-group i in price index).

Chart II.19: Relative Price of Food and Fuel (WPI)



Note: Relative price of food and fuel is defined as Index of food/fuel group divided by index of non-food manufactured products.

contribution of supply-side factors to overall inflation.

II.2.5 Recent trends in the relative prices of food and fuel indicate that the relative price of food remained stable up to the beginning of 2008 and then exhibited a significant upward trend (Chart II.19a). This has contributed to the persistence of inflation and also a divergence between food and non-food inflation. The trend in the relative price of fuel also shows a secular upward trend, particularly in the recent period (Chart II.19b). While the upward trending relative price of food could reflect the role of both domestic demand and supply factors in keeping food inflation persistent, the relative price of fuel has trended upwards in line with rising global crude prices and the gradual adjustment of administered prices.

Slowdown in growth also contributed to inflation moderation

II.2.6 The trajectory of inflation seen along with the trends in overall economic activity indicate that the moderation in inflation in the recent period has been associated with below-potential growth as indicated by the persistent negative output gap for more than a year (Chart II.20). The shift in monetary policy stance towards calibrated easing during 2012-13 also factored in this major development, as with a persistent negative output gap the demand pressures remained muted, which provided the space for monetary policy to support growth.

Food inflation remains high, but the drivers have changed

II.2.7 Despite the moderation in overall inflation, food inflation continued to remain a source of concern during 2012-13, as the average food articles inflation increased to 9.9 per cent from 7.3 per cent in the previous year (Appendix Table 8). The drivers of food inflation also changed significantly during the year. In the initial months of the year, food inflation was driven by vegetables and edible oils, besides protein-based items. Subsequently, the delayed and skewed south-west monsoon had a significant impact on food prices. This was reflected

Chart II.20: Trends in Inflation and Output Gap

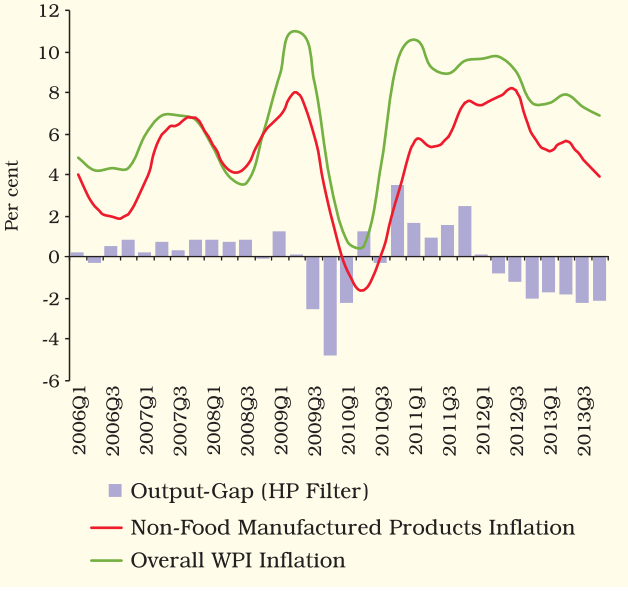
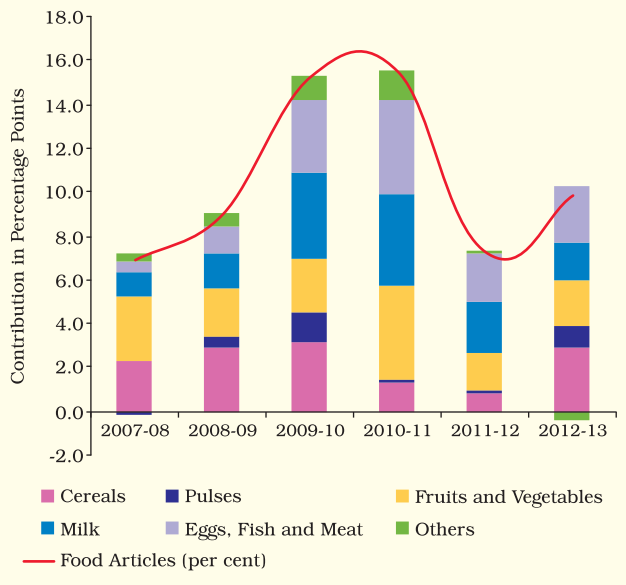


Chart II.21: Drivers of Food Inflation



in double-digit inflation in cereals and pulses, which became a major pressure point (Chart II.21). Despite the presence of large stocks that were much above buffer norms, inflation in cereal prices remained persistent. Protein-based food inflation saw some moderation towards the end of the year, largely driven by a decline in inflation in milk. Inflation in manufactured food products also moderated towards the end of the year, driven by dairy products, edible oils and sugar. However, inflation in grain mill products tracked the trends in cereal prices and increased in the latter months.

II.2.8 The persistence of food inflation reflects a combination of demand, supply and structural factors. Increasing demand with rising income and changes in dietary patterns towards protein-rich items could explain part of the persistence of food inflation. The results of the NSSO household consumption expenditure survey indicate that, in rural areas, the share of protein-rich items in overall food consumption has increased from 27.1 per cent in 2004-05 to 32.5 per cent in 2011-12. In urban areas, it increased from 29.9 per cent to 33.0 per cent during the same period.

II.2.9 On the supply side, there has been a significant increase in input costs as also a substantial rise in farm wages in recent years (Table II.2). This has also resulted in increases in Minimum Support Prices (MSPs) for most crops as MSP calculation follows a cost-plus approach, further fuelling food inflation. The dominant contributor to the increase in agricultural cost of production in recent years has been rising wages. The increase in wages has been much higher than the increase in prices, leading to increases in real wages. Further, with the increase in income, real consumption expenditure has grown significantly, particularly in rural areas. The NSSO 68th Round Survey (2011-12) on household consumption expenditure indicates that real per capita consumption expenditure in rural areas increased at an average rate of 8.4 per cent during 2009-10 to 2011-12 compared with 1.4 per cent during 2004-05 to 2009-10. Similarly, urban real per capita consumption expenditure growth increased to 6.2 per cent from 2.7 per cent during the same period.

Releasing suppressed inflation kept fuel inflation firm during the year

II.2.10 During 2012-13, crude oil prices (Indian basket) marginally eased to US$108.0 per barrel from US$111.9 per barrel in 2011-12. This led to some moderation in inflation in freely priced mineral oil products. However, with the revision in administered prices being lower than international oil price increases in the recent past, significant

Table II.2: Increases in Select Farm Input Prices

(Annual average, per cent)

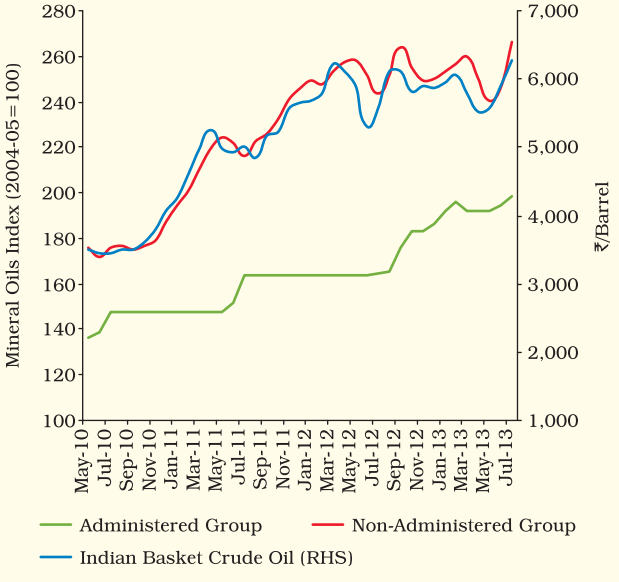
	2004-05 to 2007-08	2008-09 to 2012-13
1	2	3
Food Articles	**7.3**	**11.4**
Fertilisers and Pesticides	1.7	7.8
Fodder	1.3	19.5
Gola (Cattle Feed)	12.2	10.2
High-speed Diesel	4.5	8.0
Electricity (Agricultural)	2.3	8.7
Tractors	3.6	5.4
Wages (Average)	6.2	17.3

Source: Ministry of Commerce and Ministry of Labour.

under-recoveries had accumulated. To overcome the fiscal burden of unsustainable under-recoveries, diesel prices were revised upwards by ₹5 per litre in September 2012. Further, on January 17, 2013, Oil Market Companies (OMCs) were allowed to charge bulk consumers of diesel non-subsidised prices and raise the retail price of diesel in a staggered manner. The government also decided to cap the number of subsidised LPG cylinders (of 14.2 kg) per consumer to six in a financial year, which was later raised to nine. Despite these measures, some moderation in oil prices and a stable exchange rate for most of the year, the total reported under-recoveries for OMCs remained large at ₹1.61 trillion. The revisions in administered fuel prices have led to some decline in suppressed inflation and narrowed the gap between administered and non-administered fuel prices (Chart II.22). While the increase in diesel prices could lead to higher price levels in the near term, the reduction in fiscal burden as prices get adjusted would help price stability in the medium term.

II.2.11 The gradual revision of diesel prices as well as decline in global crude oil prices led to significant reduction in under-recoveries during April-May 2013. Since June 2013, exchange rate depreciation and increases in global crude prices have led to increase in both prices of freely priced products and increase in under-recoveries for administered price products.

Chart II.22: Global and Domestic Fuel Prices



II.2.12 Shortages in domestic coal production in recent years has led to significant reliance on imports for meeting the growing demand (see Box II.2). The international price of coal remains significantly higher than the domestic prices, though the gap has come down of late on account of falling global prices. To meet the Fuel Supply Agreement (FSA) obligations, the Government has allowed the Coal India Limited (CIL) to import coal and supply the same to the Thermal Power Plants (TPPs) on a cost plus basis. This could lead to increase in input cost for power generation leading to pressure on electricity prices. Also, CIL revised upwards the coal prices in the last week of May 2013 which could add further pressure.

II.2.13 Several states have already implemented power tariff hikes, which was reflected in a 13 per cent increase in the electricity price index in May 2013. The debt restructuring of state electricity boards to facilitate a turnaround of the state distribution companies (discoms) would lead to better financial positions and, thereby, improve their sustainability. However, as the debt restructuring is also conditional on significant increases in prices to make them financially viable, there could be further pressure on consumer tariffs. Since 57 per cent of the electricity is produced by coal-based thermal power plants, electricity prices are significantly conditioned by the price of coal.

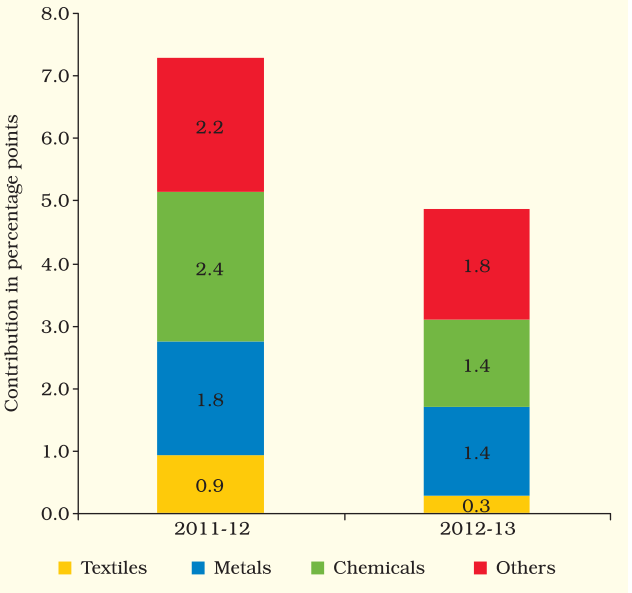
Generalised inflationary pressures moderated significantly

II.2.14 Inflation in non-food manufactured products, which is seen as an indicator of generalised inflationary pressures, eased considerably during the second half of the year and reached 3.6 per cent by March 2013. It further moderated to 2.0 per cent by June 2013 before increasing to 2.4 per cent in July 2013. The decline in inflation in this group

has been due to a significant decline in the contribution of metals, textiles and chemicals, whose prices moderated in line with declining global prices (Chart II.23). The moderation in inflation in this segment also indicates the weakening of pricing power of firms, as the significant decline in growth has led to a slowdown in demand. Empirical estimates on pricing power and its impact on inflation in India indicate that pricing power significantly impacts inflation in the case of intermediate goods (Box II.3).

II.2.15 A major challenge for monetary policy is to identify the appropriate price index that could be targeted in pursuing its objective of price stability. Overall inflation includes several items that are significantly volatile and driven by short-term supply

Chart II.23: Inflation in Non-food Manufactured Products



Box.II.3
Pricing Power and Inflation

Pricing power, at a micro level, can be regarded as the extent to which the price of a commodity can be raised without significantly affecting its demand. Thus, for a given level of demand, pricing power measures the degree to which a business can pass on increase in the input costs to consumers through increase in the prices of finished goods. From this perspective, profit margin of a single or a group of firms could be considered as a proxy measure of pricing power. Empirical estimates indicate that the degree to which firms pass-through both price increases at competing firms and cost increases due to exchange rate movements or other factors also depend upon the level of inflation (Taylor, 2000). Lower and more stable inflation could lead to lower perceived persistence of cost changes and therefore lead to lower pass-through. Thus, in a declining pricing power scenario, it is expected that inflation will follow the trend in pricing power as pass through of increase moderates.

Output is also likely to get impacted by the movements in pricing power. Widening of profit margins during an expansionary phase could be caused by a fall in input cost, a rise in output prices, or both and vice versa. Further, market structure affects pricing behaviour. The research, however, does not offer a clear conclusion whether higher market concentration always enhances the ability to freely set higher prices and, thereby, render inflation sticky (Asplund and Nocke, 2006). Standard economic theory suggests that in an expansionary phase when firms use labour, capital and other inputs intensively, production costs tend to rise and firms have greater scope to pass along those cost increases in the form of higher product prices due to rising demand conditions. In contrast, when that level of intensity is relatively low, production costs tend to rise more slowly (or even fall) and firms have less scope for raising prices. This suggests that market power as well as the level of economic activity impacts pricing power and has relationship with inflation and output.

In India, there has been a reduction in the operating profit margin *viz.*, 'Earnings Before Interest Tax Depreciation and Appropriation' (EBITDA) margin since 2009. The data of 995 listed non-food manufacturing companies shows that from a peak of 17.4 per cent in 2009-10:Q1 the EBITDA margin declined to 11.1 per cent in Q1 of 2012-13. The decline in pricing power, measured by EBIDTA margin, is broad based, though is not of similar magnitude across industries. Monetary policy remained contractionary during this period in the form of repeated interest rate hikes. However, the wholesale price index (WPI) inflation for non-food manufacture products (NFMP) had not shown a similar downward shift and was rather sticky until the recent period. On the other hand, manufacturing industrial growth rate started moderating since Q3 of 2010-11.

The relationship among pricing power (measured by EBITDA margin), inflation and manufacturing output (measured by IIP growth) was studied in an econometric framework using a structural vector auto regression (SVAR)

(Contd....)

methodology and controlling the effects of market power (measured by Herfindahl - Hirschman Index calculated as the sum of square of the share of firms' sales) and level of economic activity (measured by OECD Composite Leading Indicator for India). The analyses were done for NFMP group of companies as well as separately for the use-based categories *viz*., basic goods, capital goods, intermediate goods, consumer durables and consumer non-durables.

Empirical results indicate that pricing power has statistically significant, positive and lagged impact on output growth for the NFMP group of companies at the aggregate level. The impact of declining pricing power on inflation is also found to be positive but relatively subdued. Further, the fall in pricing power was reflected sooner in the moderation of output growth than on inflation. Among the use-based groups, however, the impact of pricing power on inflation and output growth is significant and positive only in the case of intermediate goods.

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disturbances, which makes it difficult to distinguish underlying price trends from short-term volatility. Usually a measure of core inflation (which excludes such volatile items) is used by many central banks to assess the underlying price trends. In the Indian case, recent experiences indicate that the alternate measures of core inflation have generally been as volatile as headline inflation and, therefore, the use of any particular measure could, at best, be context-specific (Box II.4).

Box II.4
Core Inflation: Alternate Methodologies

Usually, a measure of core inflation that can be effectively monitored and controlled using various monetary instruments is identified for policy purposes. The persistent component of inflation is termed 'core inflation', which exhibits long-run properties and has the predictive power of future inflation. As noted by Mishkin (2007), "core measures often are much better than headline indexes at providing a first approximation of the permanent changes to inflation". It also attempts to measure the component of inflation determined by demand conditions (Mohanty *et al*., 2000).

Despite wide-spread use of the term 'core inflation', there is no unanimity among researchers about its definition. The literature suggest that core inflation ideally should be (a) a good indicator of long-term trends in inflation, b) a good measure of inflation for empirical work and (c) a viable target for monetary policy (Silver, 2006). For computation of core inflation, various methodologies have been proposed. Some methods are based on the nature of commodities, while others are based on price volatility as set out below:

Exclusion-based core inflation

A simple way to estimate core inflation is to exclude items like food and energy which show volatile price movement mainly due to supply shocks. These measures are easily understood and timely. However, the choice of excluded components is arbitrary and fails to address relative price shocks within included components. Also, the excluded components may not be more volatile than the included ones and some of them may contribute to long-run effects on inflation. In countries like India, where food and fuel are a major part of the consumption basket, these exclusion-based measures may lead to the core inflation not being a good representative of changes in the cost of living.

Median-based core inflation

Median-based core inflation has the advantage that it does not require the arbitrary selection or de-selection of commodities in advance. It is also insensitive to large shocks in individual commodities; its use can, therefore, be statistically more robust. Its use can also be justified by the economic argument of sticky prices and presence of menu costs. However, the median excludes components that experience relatively large price changes and, when used as a measure of core inflation, may miss price changes that provide useful information on trend inflation.

Trimmed mean-based core inflation

Closely related to median-based measures are trimmed mean measures, which are the means of the ordered, weighted component inflation rates with the upper and lower tails excluded. The trimmed mean has the potential to eliminate the most volatile items and gives the persistent

(Contd....)

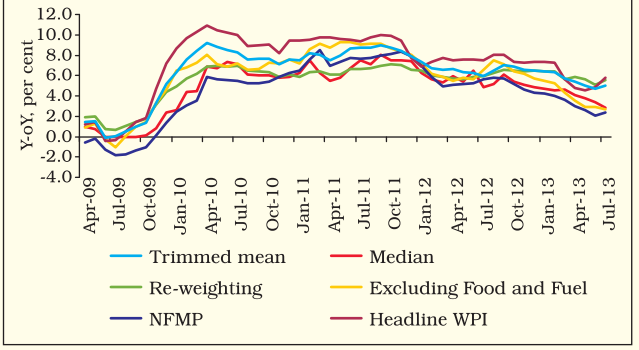
inflation. However, trimmed measures suffer from the same problems as the median.

Historical standard deviation-based core inflation

Another method relates to measuring core inflation by re-weighting according to historical variability rather than excluding the current volatile components.

Finding the ideal measure of core inflation is not straightforward and empirical research in India shows that different measures of core inflation yield different results (Chart). Hence, the choice of a core inflation measure should, in principle, be data-driven, based on appropriate criteria selected to suit the situation (Das *et al.*, 2009).

Chart: Alternate Measures of WPI Core Inflation in India



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II.2.16 There have been improvements in price statistics in terms of the availability of a nation-wide consumer price index, which has significantly increased the information set that is available for monetary policy. Most central banks in the advanced as well as the emerging economies use CPI inflation as the target for their monetary policy even though some central banks do monitor other price indices, *viz.*, producer price index (PPI) and GDP deflator. The development of a producer price index (both for inputs and output) could further strengthen the statistical base for price analysis (Box II.5).

Box II.5
Producer Price Index: The Concept and Measurement

The Producer Price Index (PPI) is designed to measure the average change in the price of goods and services as they leave the place of production or as they enter the production process. In other words, the PPI measures the rate of change in the prices of goods and services bought and sold by producers. Thus, there are two types of PPIs. An output PPI measures the rate of change in the prices of products sold as they leave the producer, and an input PPI measures the rate of change in the prices of the inputs of goods and services purchased by the producer. More generally, PPI may be considered a family of Stage of Processing (SOP) price indices (IMF, 2004).

The PPI differs from the Consumer Price Index (CPI) on account of the following factors: (1) the composition of the set of goods and services and (2) the types of prices collected for the included goods and services. While the PPI includes all marketed output of producers, the CPI includes the set of goods and services purchased for consumption by households. The price collected for an item included in the PPIs is the revenue received by its producer, which does not include sales tax, excise duties and transportation costs. The price collected for an item included in the CPI is the expenditure by a consumer for the item, which include the taxes and transportation costs. The PPI also differs from the Wholesale Price Index (WPI), because the WPI measures price changes of domestically consumed products at one stage prior to final demand, *i.e.*, the wholesale level, whereas the PPI measures the price changes for all domestically produced products for both domestic consumption and export. In addition, the WPI measures transactions at purchasers' prices, which include delivery charges, transportation costs and taxes on products.

(Contd....)

Being a SOP index, the PPI can provide insights into the links between different price measures and, by allowing analysts to track price build up through the economy and acts as a short-term indicator of inflationary trends. Further, PPIs can play a major role in preparing the national account, as it can be the appropriate deflator of nominal values of output for the compilation of production volumes and for the deflation of nominal values of capital expenditure and inventory data. In addition, the overall PPI and PPIs for specific products are often used to adjust the prices of inputs in long-term purchase and sales contracts. The export and import prices, which are an important extension of domestic PPIs, can also be used in the deflation to obtain the volumes of external trade.

As of now, India does not have a PPI. However, India's WPI is partly a hybrid of consumer and producer price quotes. Apart from theoretical differences in the sellers' and purchasers' prices due to taxes and distribution costs, in the Indian case these prices could be very divergent due to government subsidies for certain commodities. For these reasons, it is desirable to develop a PPI that measures the average change over time in the sale prices of domestic goods and services (Subbarao, 2012). However, several issues need to be addressed in compiling a PPI for India. The main issue is to obtain the pricing methodology, which comprises identification of commodities and specifications and their availability for repeat pricing. In specifying the products, care should be taken to ensure that they are fully defined in terms of all the characteristics that influence their transaction prices (Kolli, 2007). Designing a weighting diagram for the PPI is also more difficult than for other price indices. For the CPI, the weights (for consumption) are obtained from the consumer expenditure surveys, while WPI weights are based on the gross value of output of various groups/sub-groups/items. In the case of the PPI, it is necessary to construct detailed input-output tables based on the national accounts data in order to construct the net sector weights.

While the issue of constructing a PPI for India is being dealt with at the conceptual level, considerable work remains to be done on its compilation. In particular, an appropriate price collection system needs to be put in place. In this context, the WPI for manufactured products resembles a type of output PPI, so the existing system can be augmented and fine-tuned instead of developing an entirely new data collection system. Also, the National Sample Survey Office (NSSO) surveys collect the first-point transaction price of several basic commodities. These systems need to be examined and integrated with the existing price collection mechanism. Therefore, a holistic view of all price collection mechanisms across offices such as the Office of the Economic Adviser (OEA), Central Statistics Office (CSO), NSSO and the Labour Bureau may help rationalise the price collection mechanism of the PPI (Chakraborty *et al*., 2013).

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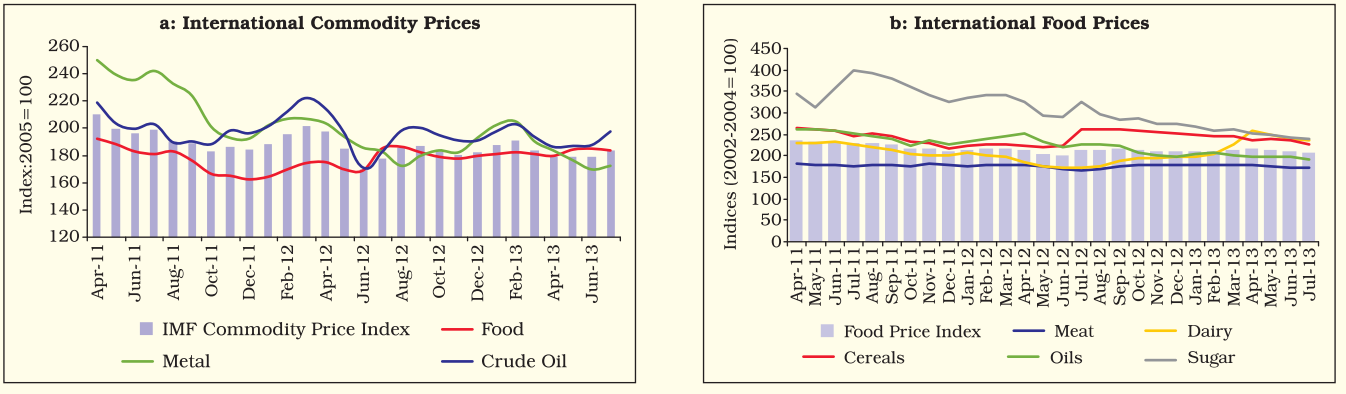
Global commodity prices moderated in 2012-13

II.2.17 There was significant moderation in global commodity prices during Q1 of 2012-13 on account of sovereign debt concerns in the euro area weighing on demand prospects, but witnessed some recovery during Q2 of 2012-13 (Chart II.24). Global commodity prices generally eased during the year driven by a slow recovery and the easing of geo-political tensions. The extent of correction, however, was partly constrained by easy monetary policy of near-zero nominal interest rates and the liquidity impact of quantitative easing. In most advanced economies, inflation remained below the tolerable level and allowed central banks to continue with accommodative monetary policy to support economic recovery. Crude oil prices moderated in 2012-13, as supply prospects improved and geo-political tensions eased in the Middle East, although some upward pressure was visible due to lower production by the Organisation of the Petroleum Exporting Countries (OPEC) and some pick-up in demand from emerging markets. Metal prices continued to show signs of weakening, as demand

Chart II.24: Trends in Global Commodity Prices



had slowed significantly in advanced and emerging market economies, especially from China. Since H2 of 2012-13, the FAO's Food Price Index largely remained stable due to improved supply prospects, although the moderation was somewhat constrained by input price pressures exerted by fuel and fertilisers.

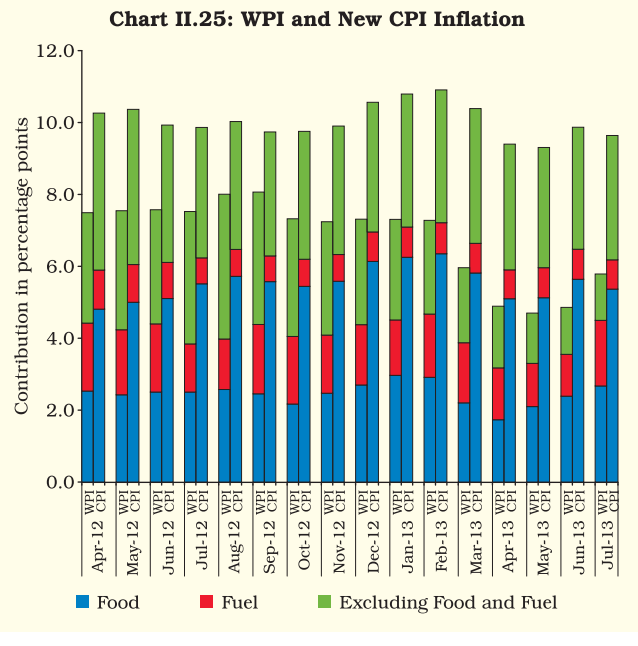
II.2.18 Commodity prices, except crude oil, have generally softened during 2013-14 so far, reflecting improved supply prospects in most commodities and weak demand on account of slowing growth, especially in emerging economies. Crude oil prices increased during June-July 2013 driven by political uncertainties in Middle East and expectation of stronger demand from the US. Global commodity prices continue to remain vulnerable to supply disturbances.

The divergence between WPI and CPI continues to remain significant

II.2.19 Even as WPI inflation moderated significantly, inflation based on the all-India new Consumer Price Index (CPI-combined: rural + urban) remained elevated, widening the gap between the two during 2012-13 (Chart II.25). Since the weights assigned to food items are much higher in the CPI than in the WPI, food inflation has a larger impact on the CPI. Besides, inflation in housing, which is included in the CPI but not in the WPI, has consistently remained above 10 per cent since January 2013. The impact of increases in transportation costs on the CPI is also expected to be greater than that on the WPI. Also trends in retail margins as well as tax changes in the chain between wholesale and retail level could influence consumer price inflation.

II.2.20 By construct, the CPI and the WPI differ on several counts, such as purpose and use, coverage of commodity/service, weighting diagram, the stage at which price quotations are collected, associated market (*i.e.*, wholesale market, retail market) and base year. However, as consumption is the end-use, price changes in wholesale markets

Chart II.25: WPI and New CPI Inflation



represented by the WPI are expected to be reflected in price changes in retail markets (CPI). In that sense, one expects some congruence between them with some lead-lag relationships. Empirical evidence indicates that for a longer period, the divergence between the CPI-IW and the WPI is a stationary series (*i.e.*, deviations are around the mean), with zero mean implying that there is no secular upward or downward movement in the difference between the CPI and the WPI.

Consumer price inflation diverges between rural and urban areas

II.2.21 Inflation based on CPI-Rural and CPI-Urban largely moved in tandem; however, large divergences in inflation continued to persist at the commodity group level during 2012-13. The fuel & light group witnessed higher inflation in urban areas. Inflation in clothing, bedding and footwear was higher in urban areas during H1 of 2012-13, but the trend was reversed in the second half of the year. Although food inflation was at almost similar levels across rural and urban areas, within food groups there was significant divergence in inflation trends. Inflation was higher in cereals, pulses, 'eggs, fish and meat' and prepared meals in urban areas, while 'milk & milk products', 'condiments & spices', sugar and edible oils recorded higher inflation in rural areas. Inflation in the miscellaneous group, which represents various products and services, displayed large volatility across rural and urban areas. Supply-chain inefficiencies and problems in intermediation may be major factors in these divergences, which needs further examination.

II.2.22 The Reserve Bank also monitors trends in wholesale and retail prices of select food items through its price monitoring survey at various regional offices on a fortnightly basis. This helps in obtaining quicker information about the movement of prices in the wholesale and retail markets. The selected commodities include cereals, pulses, vegetables, fruits, condiments & spices, fish, meat, non-alcoholic beverages and edible oils. The evidence from the surveys indicates that both wholesale and retail prices usually move in the same direction, though with occasional divergence. The mark-up analysis suggests a lower mark-up for non-perishable commodities than for perishable commodities.

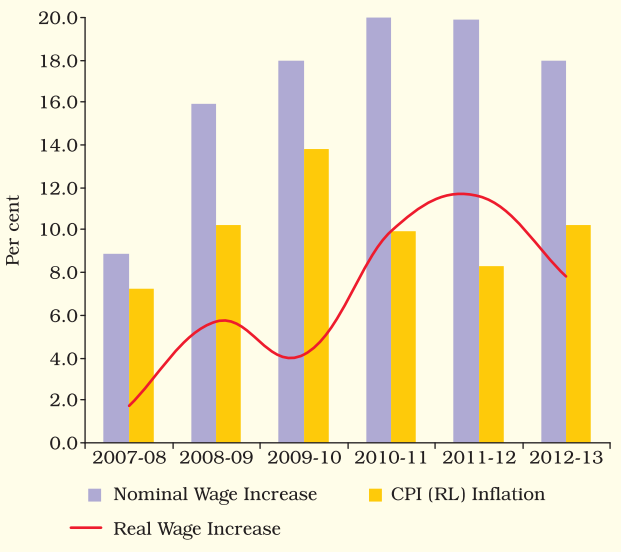
Need for improvements in supply chain management – warehousing and others

II.2.23 Apart from high and persistent food inflation, large inter-regional differences in prices also exist. This could be on account of a host of factors that include inefficiencies in the supply chain and state-specific policies such as taxes and restrictions on supply/movement of goods. The competiveness of agriculture producers and the pricing of their products depend on efficient storage and processing capabilities along with effective market institutions. However, the infrastructure for post-harvest management of farm products to ensure proper storage and smooth supply to market is fairly weak in India. India is the world's largest producer of fruit and vegetables, but storage and transportation losses for several crops are estimated to be about 30–40 per cent. There is also considerable scope to improve the information system to provide multiple choices and efficient market channels for farmers. At the micro-level, small farmers could be linked with the value chain so that they can be integrated with the entire supply chain. Going forward, efficient market infrastructures, improved storage capacity and faster transportation from producers to customers are vital areas that need greater attention.

Real wage growth moderates in rural areas, driven by higher inflation

II.2.24 Significant increases in rural wages have been a critical factor influencing the inflation trajectory in the recent period. During 2012-13, while nominal wage growth in rural areas exhibited some moderation, increasing inflation in rural areas led to significant moderation in real wage growth (Chart II.26).

Chart II.26: Wages* and Inflation in Rural Areas



* Daily Wage Rate for Rural Unskilled Labourer (Male)

II.2.25 Information from the Annual Survey of Industries (up to 2010-11) indicates that for organised manufacturing, the pace of increase in nominal wages remained in the double digits. Rising wages in a period of slowing growth and high inflation could indicate that the increases in wages are unmatched by productivity growth, leading to a potential wage–price spiral.

Inflation expectations remain high with some moderation

II.2.26 Forward-looking monetary policy would have to take into account the trends in agents' inflation expectations, which is a major determinant of future inflation (Box III.2). In recent years, the Reserve Bank has been assessing the state of inflation expectations in the Indian economy, both through household inflation expectation surveys and the survey of professional forecasters. The household survey results indicate that households' mean inflation expectations for three months ahead remained higher than the current WPI inflation since September 2008. Notably, households' expectations of inflation three months ahead have been tracking WPI turning points (*ex post*) quite closely. There is a dominance of food inflation in shaping overall household inflation expectations. The professional forecasters surveys suggest that long-term WPI inflation expectations have always been lower than the medium-term expectations, except during Q2 of 2011-12 (Table II.3).

Inflation to remain low in 2013-14, but risks remain

II.2.27 Although headline inflation moderated to an average of 4.7 per cent during Q1 of 2013-14, it rebounded to 5.8 per cent in July 2013 driven by pressures from spike in food prices and pass-through of exchange rate depreciation, especially in fuel product prices. With the progress of the monsoon so far remaining satisfactory the pressure on food inflation is expected to be transitory. However, the persistent rise in rural wages and food inflation with feedback effects witnessed during the recent period could impart rigidity in consumer price inflation. High consumer price inflation has several adverse macroeconomic dynamics and so remains a concern. In the medium term, augmenting supply through farm productivity-enhancing measures and strengthening the supply chain by removing

Table II.3: Professional Forecasters' WPI and CPI Inflation Median Forecast for 5 and 10 Years Ahead

Quarter		Actual in the quarter		Inflation in next 5 & 10 years			
		WPI	CPI-IW	Next 5 years		Next 10 years	
				WPI	CPI-IW	WPI	CPI-IW
1		2	3	4	5	6	7
2010-11	Q1	10.5	13.7	6.0	7.0	5.0	6.5
	Q2	9.3	10.3	6.0	7.0	5.5	6.5
	Q3	8.9	9.2	6.0	7.0	5.3	6.5
	Q4	9.6	9.0	6.4	7.0	5.4	6.3
2011-12	Q1	9.6	8.9	6.3	7.0	5.7	6.5
	Q2	9.7	9.2	6.0	7.0	6.0	6.2
	Q3	9.0	8.4	6.0	7.0	5.9	6.5
	Q4	7.5	7.2	6.1	7.0	5.8	6.3
2012-13	Q1	7.5	10.1	6.2	7.3	6.0	6.8
	Q2	7.9	9.8	6.5	7.3	6.0	6.5
	Q3	7.3	10.1	6.5	7.8	6.0	6.5
	Q4	6.7	11.7	6.3	7.3	6.0	6.8
2013-14	Q1	4.7	10.7	6.2	7.5	5.9	6.5

inefficiencies and facilitating better logistics could be critical in achieving the goal of stable food prices. Non-food manufactured products inflation moderated in tandem with the negative output gap with some lag and past monetary policy actions. Despite the latest marginal increase, it remained within the comfort zone. However, some risks could be expected from the lagged pass-through of rupee depreciation.

II.2.28 Given the present cycle of commodity prices, risks from global inflation remain muted, except in the case of crude oil. The pass-through effects of rupee depreciation could offset the favourable impact of a fall in global non-oil commodity prices. Developments in the domestic economy indicate that the risks from demand pressures to inflation remain benign. As such, the inflation path is likely to be shaped by the evolving trend in food prices, implementation of administered price changes during the year and global commodity price and exchange rate movements. Policy efforts to unlock supply constraints and bring enduring improvements in productivity and competitiveness are needed to accelerate growth with low and stable inflation.

II.3 MONEY AND CREDIT

The Reserve Bank used a slew of measures to address macroeconomic concerns

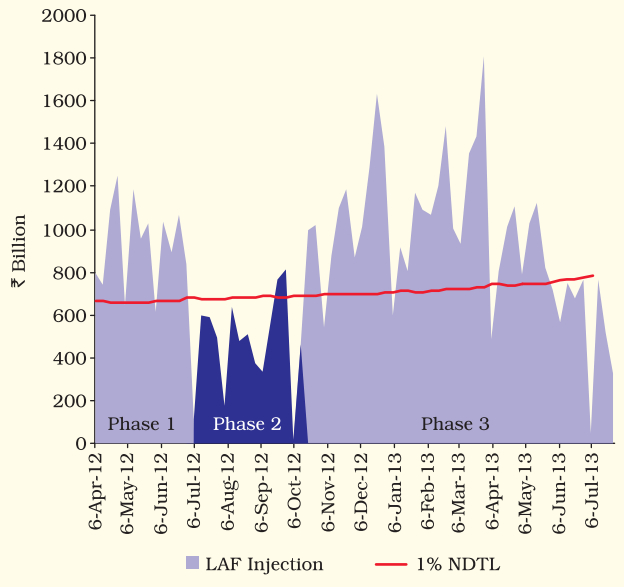
II.3.1 Monetary and liquidity conditions during 2012-13 can be divided into three broad phases. In the first phase until June 2012, although the liquidity deficit gradually declined, it remained above the Reserve Bank's comfort zone. Despite a widening gap between deposit growth and credit growth during Q1 of 2012-13, the liquidity situation improved compared with the severe pressure observed during Q4 of 2011-12 mainly due to OMO purchases, reduction in the government cash balances and the lagged effect of reduction in the CRR. The enhancement of the export credit refinance limit by the Reserve Bank from 15 per cent of eligible outstanding export credit of banks to 50 per cent in order to increase credit flow to the export sector also provided additional liquidity support to banks and helped easing liquidity pressure.

II.3.2 With a significant reduction in government cash balances with the Reserve Bank, a decline in currency in circulation and the impact of policy measures taken by the Reserve Bank, liquidity conditions improved and the deficit moved within the Reserve Bank's comfort zone of (±)1 percent of NDTL of SCBs by July 2012, which marked the beginning of the second phase. The reduction in the Statutory Liquidity Ratio (SLR) by 100 bps with effect from August 11, 2012 also helped improve liquidity conditions. Anticipating possible pressure on liquidity in the subsequent period on account of advance tax payments, seasonal pick-up in credit demand and transitory pressure from increased currency demand during the festive season, the Reserve Bank in September 2012 reduced the CRR by 25 bps, injecting primary liquidity of ₹170 billion into the banking system. The phase of comfortable liquidity lasted until mid-October 2012.

II.3.3 The third phase began in mid-October 2012 when, despite the easing measures taken by the Reserve Bank, persistently high government cash balances, a widening gap between credit and deposit growth and strong currency demand kept the inter-bank liquidity deficit above the Reserve Bank's comfort zone. To alleviate the liquidity pressure, the Reserve Bank reduced the CRR in November 2012, and resumed outright OMOs on December 4, 2012 after a gap of more than five months. The average daily liquidity injection under the LAF increased substantially from mid-October 2012 and the liquidity pressure continued until end-March 2013 (Chart II.27).

II.3.4 During Q4 of 2012-13, the Reserve Bank proactively lowered the CRR by 25 bps effective from the fortnight beginning February 9, 2013 in order to manage liquidity pressures. Additionally, the Reserve Bank conducted four OMO purchase

Chart II.27: Liquidity Conditions



auctions during the quarter, taking the total amount of liquidity injection through this instrument to ₹1.5 trillion in 2012-13. In view of the anticipated large volume of banking transactions during the annual closing of accounts of banks for 2012-13, the Reserve Bank conducted additional liquidity operations at end-March 2013, which facilitated the smooth conduct of banking operations.

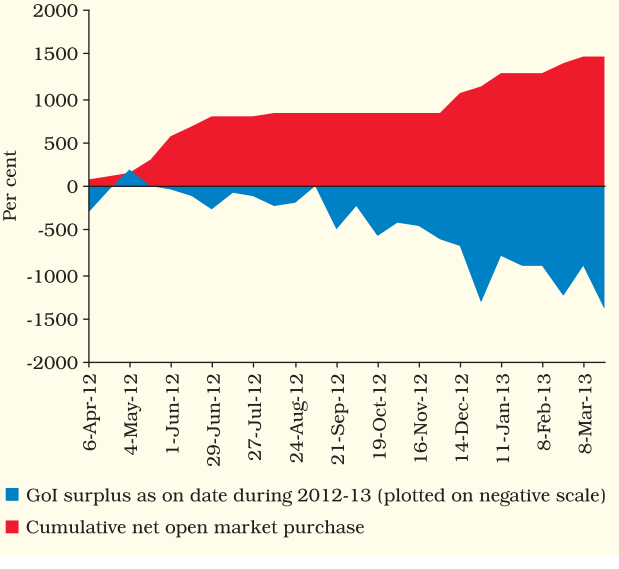
II.3.5 During the current financial year 2013-14 so far, liquidity conditions have generally improved, especially since June 2013, mainly because of drawdown of government cash balances and the narrowing of the wedge between deposit and credit growth. To manage liquidity pressure, the Reserve Bank conducted two OMO purchase auctions and one OMO sale auction, which resulted in net injection of liquidity of around ₹139.3 billion during the current financial year so far.

II.3.6 In view of the increased exchange rate volatility in the domestic forex market in the recent period, the Reserve Bank announced a number of policy measures since mid-July 2013. These measures, though intended to stem the volatility in the forex market, primarily operate through their effect on liquidity in the banking system by making it relatively scarce and increasing its cost, thereby reducing the demand for foreign currency. As a contingency measure, the Reserve Bank decided on July 17, 2013 to open a special 3-day repo window at an interest rate of 10.25 per cent for a notified amount up to ₹250 billion with a view to enabling banks to meet the liquidity requirements of mutual funds. Such a window will be in operation until further notice. No bids have been received so far in the auctions under the facility.

Reserve money adjusted for CRR recorded stable growth

II.3.7 Large primary liquidity injections generally lead to expansion in reserve money. During 2012-13, however, reserve money growth decelerated despite large liquidity injections. Two major factors dampened the growth of reserve money. First, the increase in OMO purchases during the year was matched by a similar and persistent increase in government cash balances with the Reserve Bank, which neutralised the increase in credit to the centre and, thereby, somewhat arrested reserve money expansion (Chart II.28). The net credit to the centre during 2012-13 increased by around ₹560 billion compared with an increase of around ₹1,400 billion during 2011-12.

Chart II.28: Increase (+) / Decrease (-) in Liquidity through OMO/GoI Balance



II.3.8 Second, during 2012-13 there was a reduction in the CRR by 75 basis points, which also contributed to the deceleration in reserve money expansion. Adjusted for the first-round effect of the CRR change, reserve money during the year grew at a stable pace of 9.5 per cent. Currency in circulation, which is the largest component of reserve money, recorded growth deceleration; there was a decline in the growth of bankers' deposits with the Reserve Bank, mainly due to CRR reductions during 2012-13 (Chart II.29, Appendix Table 9).

Although broad money growth remained in line with the indicative trajectory, sluggish credit off-take remains a concern

II.3.9 By reducing the reserve-deposit ratio, CRR cuts generally lead to an increase in the value of money multiplier since banks use the surplus funds for credit creation, which in turn leads to broad money expansion. Broad money growth was at 13.8 per cent during 2012-13, which was higher than the Reserve Bank's indicative trajectory. Credit growth, however, decelerated significantly during 2012-13, mainly because of dampened demand emanating from decelerated domestic growth and macroeconomic uncertainties. The lack of credit demand to some extent arrested the increase in multiplier that generally boosts M3 growth subsequent to CRR cuts. On the component side, the y-o-y growth rate for aggregate deposit was marginally higher in 2012-13 compared with the previous year. Despite low off-take, credit growth remained above deposit growth for most of 2012-13. However, the divergence between credit growth and deposit growth has tapered since the end of the financial year (Chart II.30, Appendix Table 10).

II.3.10 The sectoral deployment of credit based on data from select banks (which covers 95 per cent of total non-food credit extended by all SCBs) reveals that the slowdown in growth witnessed in the economy was manifested in the deceleration of non-food credit during 2012-13, with the deceleration being spread over all major sectors except personal loans (Appendix Table 11). The y-o-y growth of bank credit to industry moderated considerably, declining to 14.9 per cent in March 2013 from 20.3 per cent in March 2012. Deceleration in credit growth to industry was observed in all the major sub-sectors, barring leather, chemicals, wood products, food processing, textiles, glass and vehicles.

Chart II.29: Money Supply, Reserve Money Growth (y-o-y) and Money Multiplier

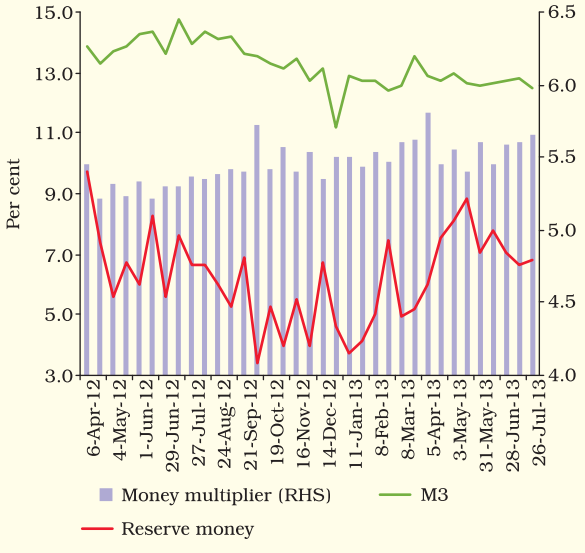


Chart II.30: Wedge between Credit and Deposit Growth

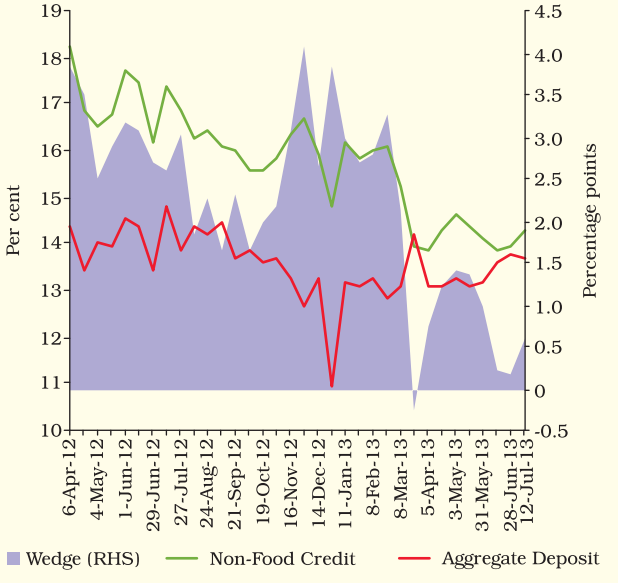


Table II.4: Bank Group-Wise Asset Quality Indicators

	End-March	All Banks	Foreign Banks	New Private Sector Banks	Old Private Sector Banks	Public Sector Banks
1	2	3	4	5	6	7
Gross NPAs to Gross Advances (%)	2012	2.94	2.68	2.18	1.80	3.17
	2013	3.42	2.97	1.91	1.91	3.84
Net NPAs to Net Advances (%)	2012	1.24	0.61	0.44	0.59	1.47
	2013	1.68	1.00	0.44	0.74	2.02
Restructured Std. Asset to Gross Advances (%)	2012	4.69	0.10	1.06	3.54	5.74
	2013	5.83	0.16	1.20	4.00	7.21
CRAR	2012	14.24	16.75	16.66	14.12	13.23
	2013	13.84	17.49	17.52	13.72	12.38
Slippage Ratio %	2012	2.55	2.31	1.17	1.12	2.95
	2013	2.79	1.60	1.24	1.45	3.24

Source: Latest updated off-site returns, domestic operations. Slippage Ratio based on the data collected from banks for special analysis.

Deteriorating asset quality and consequent risk aversion remain as major concerns

II.3.11 Besides sluggish demand, a major factor that led to the low credit growth of the banking sector over the past year is the deterioration in its asset quality. Asset quality indicators of the banking sector, which had suffered significantly during 2011-12, have worsened further in 2012-13. Although data indicate worsening asset quality across bank groups during 2012-13, it continued to be led by public sector banks (PSBs), which account for the major portion of bank advances (Table II.4). Against the backdrop of growth deceleration, deterioration in banks' asset quality increased risk aversion, which supplemented demand-side factors and augmented deceleration in credit growth across bank groups (refer to Chapter VI).

II.3.12 Taking cognisance of the decelerating growth, the Reserve Bank lowered policy interest rates and the SLR by 100 bps each, and the CRR by 75 bps in 2012-13. It also undertook durable liquidity injections through outright purchases of G-secs as part of open market operations (OMOs). During 2013-14, carrying forward the measures put in place since January 2012 to support growth in the face of gradual moderation in headline inflation, the Reserve Bank reduced policy rates by another 25 bps in May 2013, using the space generated by lower headline inflation and a modest decline in inflation expectations as revealed by Reserve Bank surveys (Box II.6).

Box II.6
Role of Forward-looking Surveys in Monetary Policy Formulation

Over the past few years, the Reserve Bank has instituted several statistical surveys to aid monetary policy formulation. The surveys used in monetary policy formulation are the following: (i) Industrial Outlook Survey, (ii) Order Books, Inventories, Capacity Utilisation Survey, (iii) Consumer Confidence Survey, (iv) Survey of Professional Forecasters and (v) Inflation Expectations Survey of Households. The survey results are disseminated every quarter on the Reserve Bank's website under the broad head of publications.

The importance of these surveys for monetary policy is mainly in terms of the forward-looking information that they provide. The primary objective of monetary policy is to maintain price stability. Because of lags in the effects of monetary policy on aggregate demand and inflation, monetary policy actions are often forward-looking. As observed long ago by Keynes (1923), "If we wait until a price movement is actually afoot before applying remedial measures, we may be too late". This warrants the need for forward-looking information for the

(Contd....)

conduct of monetary policy. Reserve Bank, therefore, conducts three broad types of surveys to obtain forward-looking information: a) Surveys of consumers/households, b) Business outlook surveys and c) Surveys of economic forecasts.

As household/consumer are the eventual private-sector drivers of market economies, proper understanding of their behaviour and expectations is an important input to the policy makers. The Reserve Bank collects information on household sentiments with respect to inflation expectations and consumer confidence. These provide insights into the expected path of inflation and other important macroeconomic variables, help gauge consumer confidence and provide insights into specific policy and operational issues. The Inflation Expectations Survey provides households' expectations of future inflation over a spectrum of horizons and, hence, is crucial for the conduct of monetary policy. The Consumer Confidence Survey measures the current and expected confidence based on their perceptions of general economic conditions and personal financial situation, employments, income and spending, and thus helps gauge overall household confidence, which can, in turn, affect real activities.

Business surveys provide an insight into the nature of market disequilibria and capture the formation of expectations in the private corporate sector. This information provides up-to date quantitative and qualitative indicators and can be used to gain forward looking insights into the economic activities.

The Industrial Outlook Survey obtains qualitative information for use in monitoring the current business situation and forecasting short-term developments. It collects information from company managers on the status of business and on their plans and expectations for the near future. Although respondents are not required to provide precise information on the levels of output, sales, investment or employment, the information can be used to predict changes in these aggregates and, hence, are useful for some insights on business cycles.

Expectations about the development of macroeconomic variables play a fundamental role in the consumption and investment decisions of economic agents and in the handling of monetary policy by central banks. Since expectations are not directly observable, they are determined through surveys directed at economists and investors, among others (Gismondi, 2009). The Survey of Professional Forecasters gives an idea of select forecasters' views on economic agents' perceptions of growth, inflation, fiscal sector, financial markets and external sector indicators with annual and quarterly frequency.

While surveys conducted by the Reserve Bank provide quick and useful information, such survey results are only indicative. The survey results are based on responses from respondents who have willingly participated and provided their views without committing any obligations; to that extent, these views may not be entirely accurate reflections of their rational actions leading to economic transactions. The surveys also suffer from a small sample bias, since they cover a fraction of the economic agents spread across the country. Hence, the survey data merely fill data gaps and cannot substitute for relevant macroeconomic aggregate. Moreover, the problem of naturally skewed distribution of economic aspects makes it difficult to aggregate the survey responses, particularly in stressed situations such as an economic slowdown. To examine these issues on a regular basis, the Reserve Bank has constituted a Technical Advisory Committee on Surveys.

It is clear that economic agents' beliefs about the future economic outlook is an important factor in shaping monetary policy. However, it is not clear how these expectations are formed—whether purely on the basis of past experience, or in a forward-looking manner after processing all information, or as a combination of both (Mohanty, 2012). Various surveys conducted by the Reserve Bank suggest that expectations are formed adaptively with learning, and such behaviour underscores the need for the Reserve Bank to continue to monitor an array of measures, both overall and disaggregated components, to assess the underlying economic outlook.

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II.3.13 Since April 2013, liquidity conditions have improved considerably and broad money growth has broadly remained in line with the indicative trajectory. Credit growth decelerated with the slack in economic activity and deterioration in asset quality. Beginning in late May, following comments by the US Fed, apprehensions of likely tapering of QE in the US triggered outflows of investment from EMDEs. Faced with exchange rate volatility, the Reserve Bank instituted measures to stabilise the currency market. These measures included: (i) a hike in the Marginal Standing Facility rate/Bank Rate; (ii) restriction on banks' access to funds under LAF repo; (iii) OMO sales; (iv) maintenance of

minimum daily CRR balances by SCBs at 99 per cent of the requirement; (v) capping of Primary Dealers' (PD) access to LAF at 100 per cent of their individual net owned funds; (vi) restrictions on gold imports; and (vii) auctions of cash management bills (refer to Chapter III). These measures were taken with a view to providing a window of opportunity to put in place policies to bring the CAD down to sustainable levels. The recent liquidity tightening measures are intended to be rolled back in a calibrated manner as stability is restored to the foreign exchange market, enabling monetary policy to revert to supporting growth while continuing vigil on inflation.

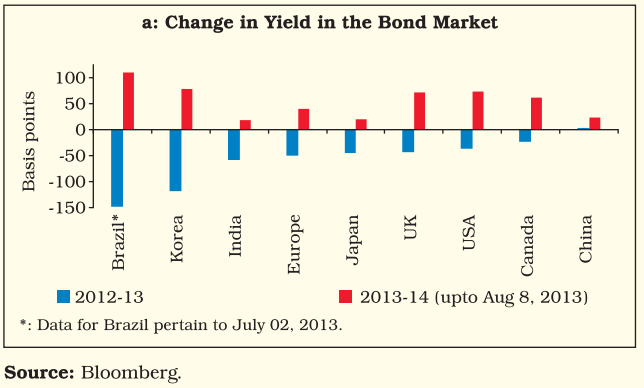
II.4 FINANCIAL MARKETS

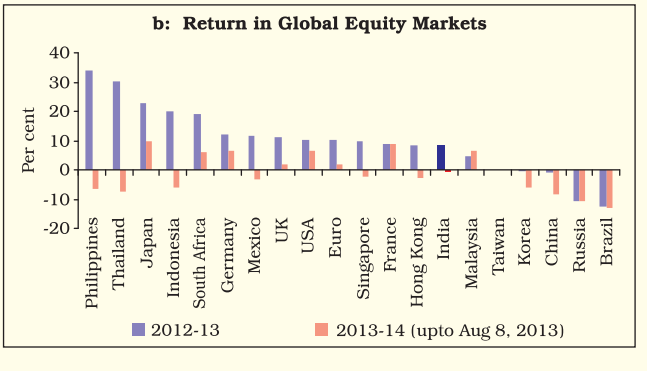
Global financial market volatility returns with spillovers from exit

II.4.1 Volatility has returned to the global financial markets since May 2013 after receding in H2 of 2012 and in Q1 of 2013. The return of volatility was sparked by spillovers from the US Fed Chairman's communications on May 22, 2013 indicating the intention to taper off bond purchases that are being currently undertaken at a monthly rate of US$ 85 billion. After the June FOMC meeting, the Fed indicated a plan to wind down the bond purchase starting later in 2013 and ending in mid-2014. Despite the projections by majority of FOMC members suggesting that the first increase in the target Federal Funds rate could occur not before 2015, the Fed communications triggered massive bond sell-offs across emerging market and developing economies (EMDEs) leading to increase in yields (Chart II.31a). It also led to a sharp fall in gold prices, as also global equities after the June FOMC meeting. EMDEs currencies witnessed sharp exchange rate depreciation on both occasions. Consequently, financial vulnerabilities have increased in EMDEs. The subsequent testimony by the Fed in July appears to have calmed the markets to some extent. As such, financial market participants need to be prepared for the possibility of further volatility ahead with future announcements in this regard.

II.4.2 Earlier, global financial market conditions improved in H2 of 2012-13 following significant policy actions in troubled geographies which reduced acute risks of full-scale financial crises. Following the statement by the ECB President on July 26, 2012 that within its mandate, the ECB was ready to do "whatever it takes" to preserve the euro, stress in the financial markets in Q3 of 2012 considerably declined, especially since end-July. Significant monetary easing measures by advanced economies (AEs) such as "sterilised" outright monetary transactions (OMT) by the ECB and "open-ended" quantitative easing (QE-3) by the US Fed as well as the European Union measures such

Chart II.31: Movements in the International Financial Markets





Source: Bloomberg.

as European Stability Mechanism (ESM) launched on October 8, 2012 provided a fillip to market sentiments.

Risky assets buoyed by global liquidity glut

II.4.3 Unconventional monetary policies and perceived reduction in tail risks to the global economy led to rally in riskier assets such as corporate bonds and equities (Chart II.31b). Yields on safe assets such as government bonds declined to historical lows, forcing investors to search for yield elsewhere for further investments (Box II.7)

II.4.4 The *Global Financial Stability Report* (GSFR) of April 2013 noted that the euro area funding conditions for sovereigns, banks and corporate debt have improved as acute near-term stability risks have significantly reduced. With the reduction in tail risk perception, CDS spreads and government securities (G-secs) yields came down for affected countries in the euro area. The equity markets performed well during 2012-13 as search for yield resulted in substantial rebalancing of private investor portfolios towards riskier assets. The US stock markets reached all-time highs on

Box II.7
Unconventional Monetary Policy by Central Banks in Developed Economies: Impact on Financial Markets

Central banks in the developed world have engaged in unconventional policy measures to counter the crisis. The basic aim of these unconventional measures has been to restore growth and ensure job creation. Several studies have examined the impact of these measures and their possible consequences.

One of the earliest studies by Gagnon *et al.* (2011) observed that the Fed's large-scale asset purchases (LSAP) between December 2008 and March 2010 exerted a statistically significant impact on long-term interest rates of securities, including treasuries and corporate bonds. Subsequent studies (D'Amico and King, 2010) found that US LSAP also had substantial effects on international long-term interest rates. Event study by Swanson (2011) on Operation Twist during the 1960s found that it was qualitatively similar to the current QE2 and detected effects on Treasury rates in the range of 10-17 basis points, for maturities from 5-30 years.

For the UK, it has been found that the first-round impact of Bank of England's asset purchases had economically significant impact on gilt yields. According to estimates, the initial Impact of Quantitative Easing (QE) announcements lowered gilt yields by 35-60 basis points. Others estimated that medium-to long-term gilt yields declined by 100 basis points; similar falls were also registered in corporate bond yields.

Although the magnitude of the estimates differ, most studies veer around the conclusion that central bank asset purchases had economically significant effects, at least on government bond yields. There is however, limited consensus on the transmission channel linking asset purchases with asset prices and on the persistence of reduction in yields. Some authors have emphasised the role of risk premia, whereas others infer that it was the signalling channel that was more important.

Most empirical studies suggest that unconventional monetary policy was somewhat effective as asset purchases lowered yields and long-term interest rates. This, in turn, exerted a positive impact on financial markets. However, its impact on growth is yet to be convincingly established. There is much less consensus on the size and duration of the effect and the channels of influence. The recent BIS Annual Report notes that despite all the monetary accommodation by leading central banks, economic growth has remained sluggish. Additionally, the low interest rates create spillovers, including capital flows to fast growing emerging economies and even several advanced economies, hampering their domestic stabilisation efforts. It appears that the cost-benefit calculus is reaching a tipping point wherein further gains from pursuing such policy appear less convincing.

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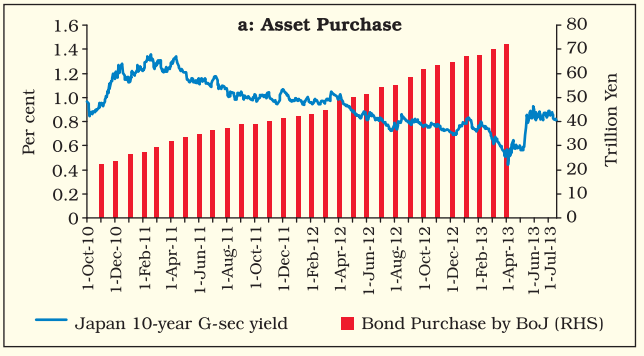
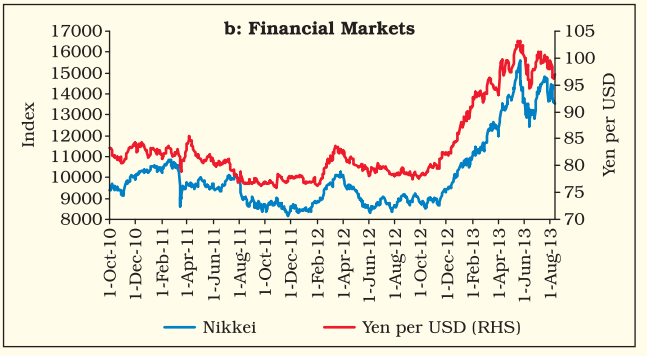
Chart II.32: Bank of Japan Asset Purchase and Japanese Financial Markets





Source: Bloomberg.

the back of better payroll report, better positive earnings per share of companies and the US Fed's open-ended asset purchase programme amid strong positive sentiments.

II.4.5 Asset purchase programme of even larger size is in place in Japan. In January 2013, the Bank of Japan (BoJ) decided to achieve the price stability target of 2 per cent (CPI-inflation). In order to pursue quantitative monetary easing, the BoJ in April 2013 decided to change the main operating target for money market operations from the uncollateralised overnight call rate (*i.e.*, interest rates) to the monetary base (*i.e.*, quantity) and conduct money market operations aimed to double the monetary base in two years.

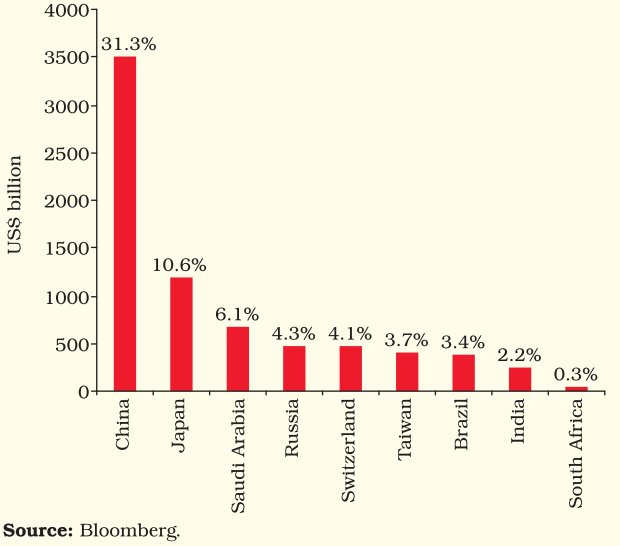
II.4.6 Following the aggressive monetary easing by the BoJ, the yen has depreciated substantially against both the US dollar and the euro, aided by news that many Japanese investors have become net buyers of foreign assets for the first time in a long time (Chart II.32).

Rise in forex reserves with EMDEs expected to provide added buffers against spillovers from exit

II.4.7 The sheer size of balance sheet expansions by AE central banks has led to a surfeit of global liquidity, at times causing surges in capital flows to EMDEs. This has prompted some EMDEs to employ soft capital controls or even reduce their policy rates. However, given the safe haven status of the US dollar, the net effects of QE can at times work in the reverse as investors take flight to dollar assets on safety considerations, which could exert downward pressure on EMDEs currencies.

II.4.8 Despite volatile capital flows, EMDEs have become net buyers of foreign currencies in recent years. Data on international reserve assets shows an increase of 6.2 per cent (year-on-year) as on August 9, 2013. China accounted for 31.3 per cent (around US$ 3.5 trillion) of the stock of international reserve assets (Chart II.33).

Chart II.33: Total international reserve assets – Amount and Per cent share



Source: Bloomberg.

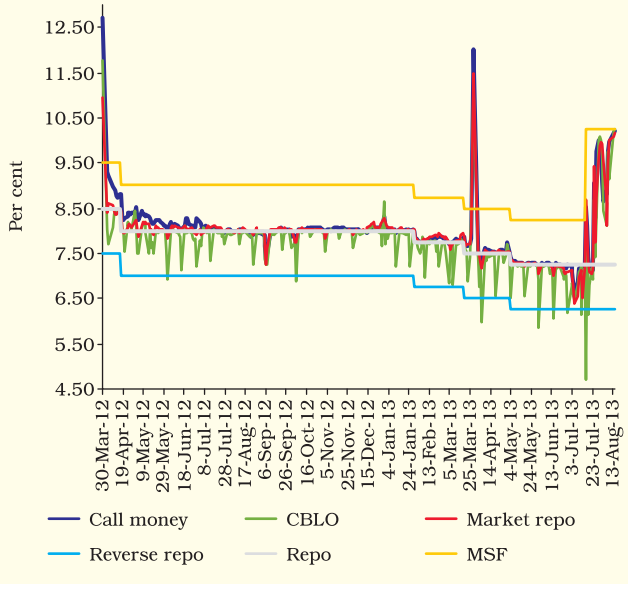
Global markets sell-off following Fed exit comments impacted Indian markets

II.4.9 Spillovers from the US Fed's communication on May 22, 2013 and thereafter on June 19, 2013 had substantial impact on Indian financial markets. The Sensex and Nifty declined by 2.7 per cent and by 2.9 per cent, respectively on June 20, 2013 over the previous close. Other Asian equity markets, such as China, Hong Kong, Indonesia and Philippines also declined. The prospective change in the US monetary policy also put the currency under pressure, with the rupee depreciating by nearly 1.6 per cent in a single day. Over the period beginning May 22 to August 14, rupee depreciated by as much as 9.7 per cent in nominal terms. In the bond market, the difference between the 10-year US and GoI bonds narrowed from over 600 bps at the beginning of May 2013 to around 500 basis points (on July 15, 2013).

Developments in money market segment

II.4.10 The money markets remained orderly during 2012-13 with the money market rates (call, CBLO and market repo rate) hovering within the LAF corridor set by the reverse repo and MSF rate, and call rate remaining close to the repo rate (Chart II.34). The call rate generally exhibited declining trend during the year with the average call rate declining to 7.91 per cent during Q4 from 8.40 per cent during Q1 of 2012-13.

Chart II.34: Money Market Rates



II.4.11 During Q1 of 2013-14, the call money rate remained largely around the policy repo rate. The measures taken by the Reserve Bank in July 2013 to contain exchange rate volatility impacted the money market. The call rate, which stood at 7.21 per cent before the Reserve Bank's policy measure on July 15, 2013, initially increased to 8.53 per cent, although it receded subsequently. The additional measures announced on July 23 and August 8, 2013 led to the hardening of call rates to 10.21 per cent on August 13, 2013.

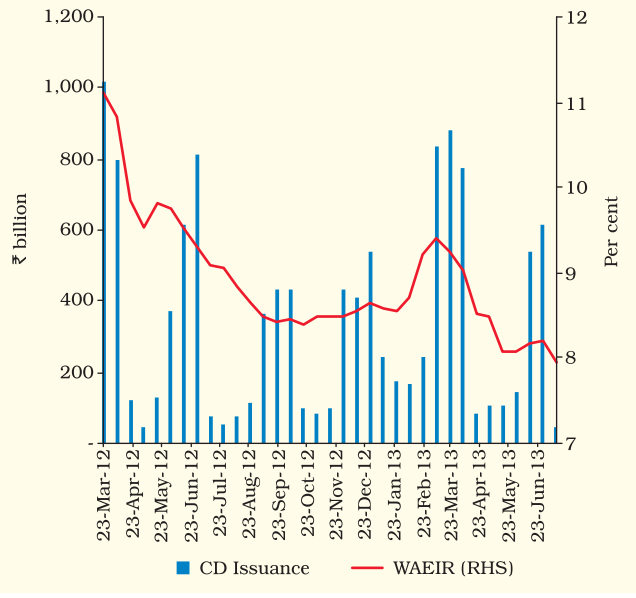
II.4.12 The rates in the collateralised segment (*i.e.*, CBLO and market repo) also hardened, with the CBLO rate increasing from 7.18 per cent on July 15, 2013 to 10.23 per cent on August 13, 2013. Banks continued to be the major group of borrowers in the collateralised segments. Mutual funds (MFs) continued to be the major group of lenders in the CBLO segment and banks were the major group of lenders in the market repo segment during 2012-13. The collateralised segment continued to remain the predominant part of the overnight money market; and its share was around 80 per cent during 2012-13 and 84 per cent during Q1 of 2013-14.

II.4.13 The average fortnightly issuance of certificates of deposit (CDs) decreased to ₹333 billion during 2012-13 (Chart II.35). The outstanding amount of CDs stood at ₹3,896 billion at end-March 2013. During Q1 of 2013-14, the average fortnightly CD issuance increased marginally to ₹340 billion. The outstanding amount of CDs stood lower at ₹3,571 billion as on July 12, 2013.

II.4.14 In tandem with the decline in policy rates, the weighted average effective interest rate (WAEIR) of aggregate CD issuances declined to 9.24 per cent at end-March 2013 from 11.1 per cent at end-March 2012 and further to 7.96 per cent as on July 12, 2013.

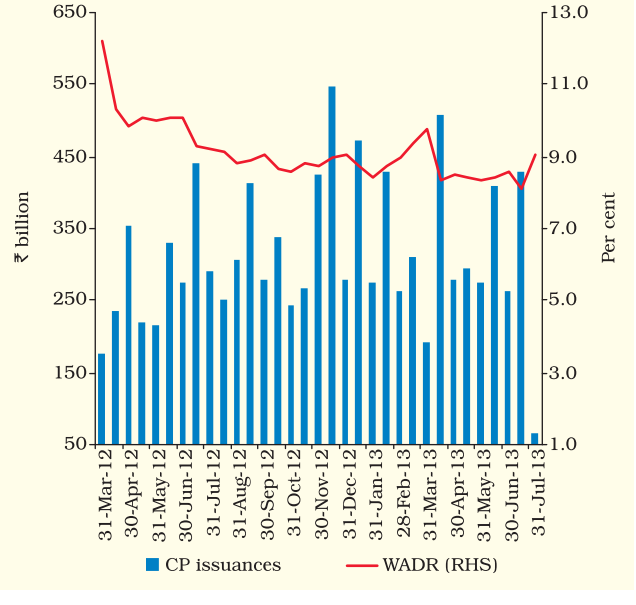
II.4.15 The average fortnightly issuance of commercial papers (CPs) increased by 31 per cent

Chart II.35: CD Issuance and WAEIR



to around ₹319 billion during 2012-13, and further to ₹338 billion during Q1 of 2013-14. Consequently, the outstanding amount of CPs, which stood at ₹1,093 billion at end-March 2013, increased to ₹1,496 billion as at end-July 2013 (Chart II.36). The weighted average discount rate (WADR) of CPs decreased to 9.77 per cent at end-March 2013 from 12.19 per cent at end-March 2012 and further to 9.03 per cent as on July 31, 2013.

Chart II.36: CP Issuance and WADR



Yield curve flattens incorporating future macroeconomic expectations

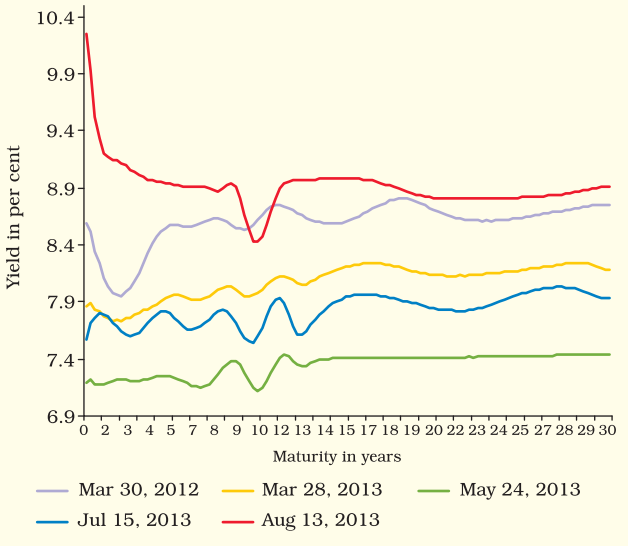
II.4.16 G-sec yields generally softened during 2012-13. While the yields eased during April to mid-June 2012 in response to the reduction in the policy rate and easing of crude oil prices, they remained range bound thereafter until mid-December 2012. Subsequently, yields fell sharply until mid-January 2013 on expectations of a reduction in policy rate, reduced primary issuances and announcement of measures to rein in fiscal deficit. Thereafter, yields remained range-bound before hardening towards end-March 2013.

II.4.17 During April-May 2013, G-sec yields softened taking cues from the lower reading of CPI and WPI numbers for March and April 2013, the softening of international commodity prices and the decision to reduce withholding tax on FII interest income on G-secs to 5 per cent from 20 per cent. However, the yield started hardening towards end-May 2013 as part of the global bond sell-off that followed the US Fed Chairman's response in May 2013 and the subsequent forward guidance in June 2013. As part of the global bond sell-off, FIIs also pulled out money from Indian government bonds, which contributed to the hardening of yields. As a result, the 10-year G-sec generic yield hardened from 7.12 per cent on May 24, 2013 to 7.45 per cent as on June 28, 2013. In response to the measures taken by the Reserve Bank since mid-July, the generic yield hardened further to 8.42 per cent on August 13, 2013 from 7.60 per cent on July 15, 2013 (Chart II.37).

II.4.18 The daily average volume in the G-sec market, which stood at ₹130 billion during 2011-12, rose to around ₹243 billion in 2012-13 and further rose to ₹570 billion during Q1 of 2013-14. The volume generally varied inversely with the movement of the 10-year yield (Chart II.38).

II.4.19 The gross market borrowings of the central government through dated securities during 2012-13 was ₹5,580 billion (net borrowings of

Chart II.37: Yield curve for Government Securities



Source: FIMMDA.

₹4,674 billion). These numbers were higher by around 9 per cent and 7 per cent, respectively, compared with the previous year. During 2013-14, the gross market borrowings of the central government (up to August 5, 2013) amounted to ₹2,400 billion (net borrowings of ₹2,272 billion). The weighted average maturity of dated securities stood at 14.49 years, while the bid-cover ratio stood in the range of 1.41-6.09.

Volume in corporate bond market witnessed an increase

II.4.20 During 2012-13, the traded value in the corporate bond market increased to ₹7,386 billion, recording an increase of 24.4 per cent. During the year, the number of trades also increased by 28.8 per cent to 66,383. The yield spread between the benchmark 5-year AAA-rated corporate bond and 5-year G-secs narrowed (Chart II.39). However, when compared to central government securities market, in 2011-12, the trading value of corporate bonds was roughly one-fifth; in 2012-13, it was even lower (Chart II.40). During 2013-14 (up to end-June), trading in central government securities at ₹36,324 billion has been more than 10-times the number obtaining for corporate bonds (₹3,200 billion).

Resource mobilisation in the domestic primary market remained lacklustre

II.4.21 The resource mobilisation in the primary market through initial public offerings (IPOs) increased marginally to ₹65 billion through 33 equity issues during 2012-13, compared with ₹59 billion mobilised through 34 issues last year. The amount raised through IPO issues is very low compared to

Chart II.38: Average daily volume and 10-year generic yield

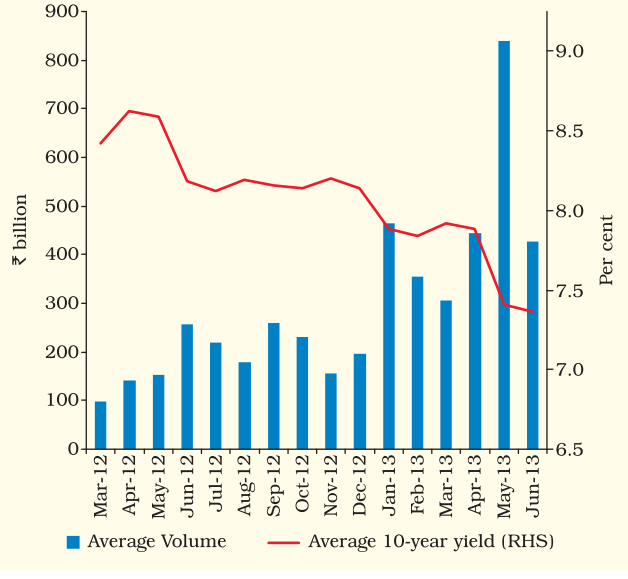
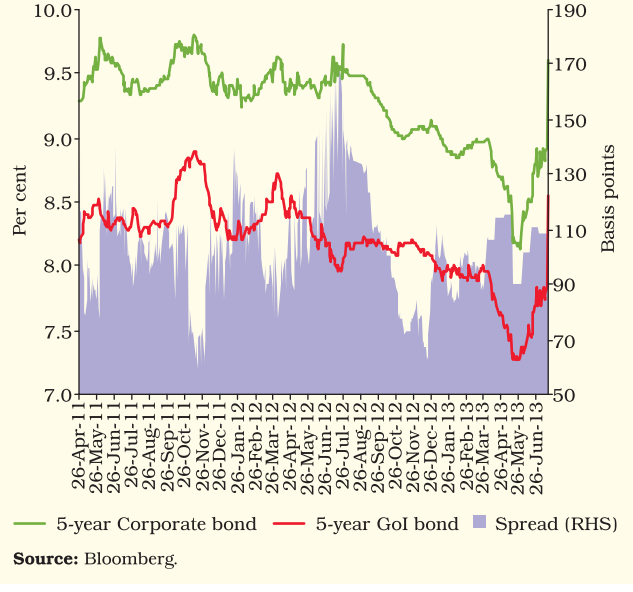
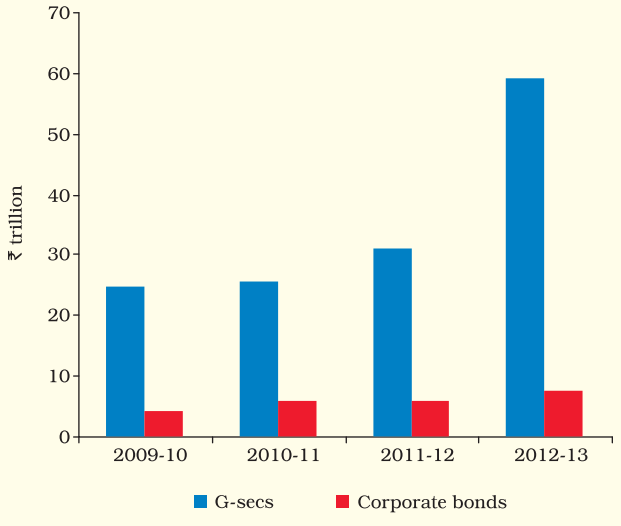


Chart II.39: Yield of 5-year Corporate Bond



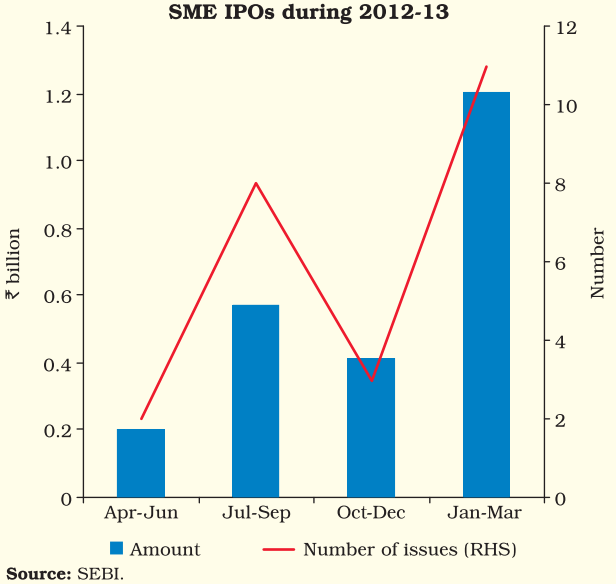
Source: Bloomberg.

Chart II.40: Trading Value of the Central Government dated Securities and Corporate Bonds



Source: CCIL and SEBI

Chart II.41: Resource Mobilisation through SME IPOs during 2012-13



Source: SEBI.

the peak resource mobilisation of ₹426 billion in 2007-08. The primary equity market remained dormant mainly because of the lower risk appetite of investors following negative returns on a number of IPOs and not-too-encouraging scenario in the secondary market (Appendix Table 12).

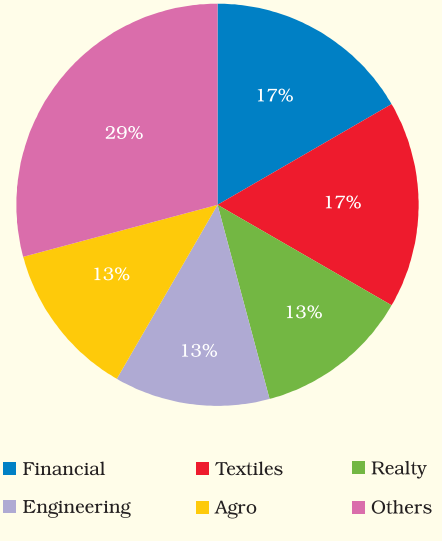
II.4.22 Taking its cue from global markets, India also paved the way for equity financing for SMEs. The BSE SME Exchange was launched on March 13, 2012 followed by NSE Emerge, in order to provide SMEs with an opportunity to raise equity capital. During 2012-13, ₹2.4 billion - which is 3.7 per cent of the total amount mobilised through IPOs - was mobilised through 24 SME IPOs (Chart II.41). The SMEs that mobilised resources through IPO issues belong to sectors such as financial services, realty, agro, textile and engineering (Chart II.42).

II.4.23 Resource mobilisation in the debt market through public issues and ADR/GDR remained muted, while mutual funds witnessed a pick-up, led by private sector mutual funds in 2012-13 (Table II.5). Resources mobilised in the corporate debt market by way of private placement for the 2012-13 were higher by 38 per cent at ₹3.6 trillion raised through 2,489 issues. After a period of lacklustre performance in 2011-12, ₹160 billion was mobilised from 45 issues through Qualified Institutional Placement (QIP) during 2012-13.

Mobilisation through disinvestment programme witnessed a revival

II.4.24 The union government embarked on its disinvestment programme with higher mobilisation of about ₹240 billion during 2012-13 as compared with ₹139 billion in the previous year. During 2013-

Chart II.42:Sectoral Pattern of SME Companies Mobilising Resources through IPOs



Source: SEBI.

Table II.5: Primary Market Trends

(₹ billion)

Category	2011-12 (Apr-Mar)	2012-13 (Apr-Mar)	2012-13 (Apr-Jun)	2013-14 (Apr-Jun)
1	2	3	4	5
a. Public Issue (i) + (ii)	461	219	5	11
i) Public Issue (Equity)	105	65	5	9
of which: IPOs	59	65	4	9
FPOs	46	0	0	0
ii) Public Issue (Debt)	356	154	0	1
b. Rights Issue	24	89	1	4
Total Equity Issues (i+b)	129	155	5	14
c. Euro Issues (ADR/ GDR)	27	10	2	1
d. Mutual Fund Mobilisation (net)	-220	765	1340	455*
1. Private Sector	-154	638	1050	258*
2. Public Sector	-66	127	290	198*
e. Private Placement in corporate debt market	2,613	3,615	738	1108
f. QIP	22	160	5	43
g. Disinvestment	139	240	N.A.	13#

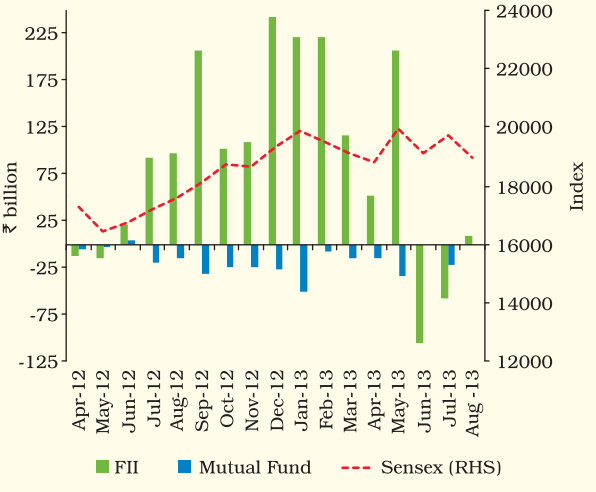
* : April-July. #: Upto August 13, 2013.
Source: SEBI and Department of Disinvestment, Ministry of Finance.

14, against a budgeted amount of ₹400 billion, an amount of ₹13 billion has been raised thus far.

Equity markets continued their uptrend

II.4.25 During 2012-13, Indian equity prices continued their rising trend. As at end-March 2013, the BSE Sensex and S&P CNX Nifty recorded a year-on-year growth of 8.2 per cent and 7.3 per cent, respectively. Strong FII inflows, reform measures relating to administered fuel prices, foreign direct investment in retail and aviation sectors as well as in infrastructure announced by the union government boosted investors' sentiments (Chart II.43). The BSE Sensex and Nifty crossed 20,000 and 6,000, respectively, in January 2013. During 2013-14 so far (up to Aug 14, 2013), the BSE Sensex and NSE Nifty have recorded increases of 2.8 per cent and 1.1 per cent, respectively.

Chart II.43: FII and Mutual Fund Investment in the Equity Market



Note: Data for Sensex up to Aug 8, 2013;
Data for FII and mutual fund up to Aug 7, 2013.
Source: SEBI and BSE.

II.4.26 An analysis of the performance of stock market during 2012-13 indicates that the benchmark index, *i.e.*, Sensex, outperformed the broader indices (Chart II.44). Among sectoral indices, FMCG and healthcare were the best performing indices, while metals and power were the worst performing. Better corporate earnings and uncertain macroeconomic environment led to increase in FMCG and healthcare sectors.

Chart II.44: Movement of Sectoral Indices of BSE

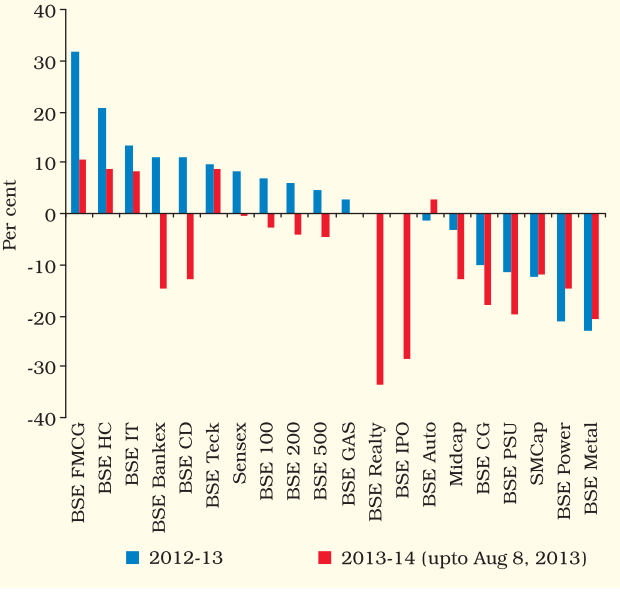


Table II.6: Key Stock Market Indicators

Indicators	BSE Sensex			NSE Nifty		
	2011-12	2012-13	2013-14 (up to Aug 14)	2011-12	2012-13	2013-14 (up to Aug 14)
1	2	3	4	5	6	7
Sensex / Nifty						
i. End Period	17404.2	18835.8	19367.6	5295.6	5682.6	5742.3
ii. Average	17422.9	18202.1	19398.7	5242.7	5520.3	5850.6
Coefficient of Variation (%)	6.2	6.4	2.9	6.3	6.4	3.1
PE ratio@	17.8	16.9	17.5*	18.7	17.6	17.0*
PB ratio@	3.5	2.9	3.0*	3.0	3.0	2.8*
Gross Turnover (₹ billion)	6,675	5,488	415#	28,109	27,083	2434 #
Market Capitalisation (₹ billion)	62,149	63,879	60959 #	60,965	62,390	60988 #

@: end period. *: As on Aug. 14,2013. #: As at end-July 2013.
Source: BSE and NSE.

Turnover in Equity Market

II.4.27 During 2012-13, turnover in the cash segment of the equity market at ₹32,571 billion recorded a decline of 6.4 per cent, while market capitalisation of the BSE increased by 2.8 per cent to ₹63,879 billion. The PE ratio of the BSE Sensex declined (Table II.6).

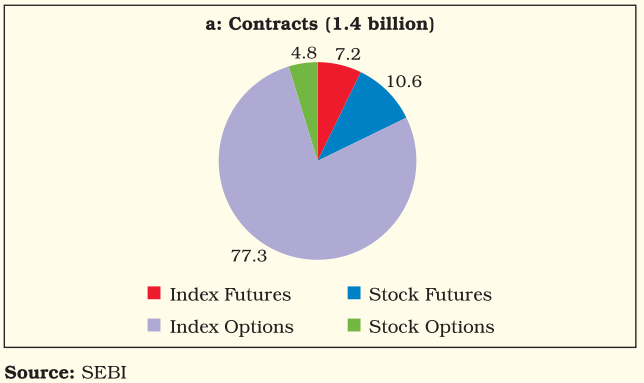
Derivative segment witnessed a surge

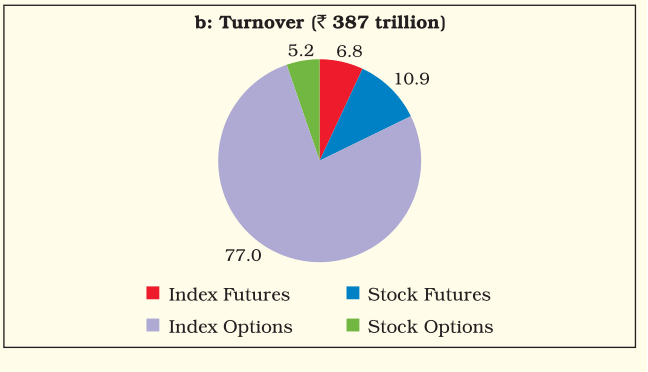
II.4.28 During 2012-13, turnover in the equity derivative segment, in value terms, increased to ₹387.0 trillion from ₹321.6 trillion in 2011-12, registering an increase of 20.4 per cent. In terms of the number of contracts, the turnover in 2012-13 increased by 12.7 per cent to 1.4 billion contracts. Further, in the derivatives, index options segment consolidated its share to 77 per cent in 2012-13 from 72.6 per cent in the previous year (Chart II.45). On the other hand, the share of futures declined to 17.8 per cent from 24.4 per cent during the same period (Appendix Table 13).

Volatile exchange rates reflect domestic and global concerns

II.4.29 The rupee exhibited volatile movements during 2012-13. At the beginning of the year, the rupee depreciated sharply amid concerns about the widening current account and fiscal deficits. Global uncertainties also added to the pressure. Accordingly, the Reserve Bank undertook several policy measures to facilitate capital flows.

Chart II.45: Turnover in Equity Derivative Segment in 2012-13





Source: SEBI

II.4.30 Given the volatility of exchange rates observed over the past year, an analysis was undertaken to examine its inter-linkage with futures trading (Box II.8).

Box II.8
Relationship between Exchange Rate Volatility and Futures Trading in India

Currency futures trading in USD-INR started on August 29, 2008. Since then, the exchange-traded currency derivatives segment in India has grown steadily in volume. The value of transactions in Rupee terms, on an average, increased from ₹2.6 billion in September 2008 to ₹234.4 billion in June 2013. This period has also shown an increase in volatility in exchange rates.

To analyse the impact of currency futures trading on exchange rate volatility, following Chatrath *et al* (1996), exchange rate volatility was examined by fitting a conditional volatility model in the daily spot exchange rate returns data (here USD-INR) from August 29, 2008 (day of introduction of currency futures in India). The volatility is obtained as the estimated variance from the GARCH (1,1) model.

To measure the extent of speculation in the futures market, daily levels of trading volume and open interest for the currency futures were obtained. Each contract was followed for the interval in which it was the most traded contract until the trading day prior to the expiration day, at which point the next contract is considered. Information about the most traded currency futures contract was collected from the 'daily activity report' of the National Stock Exchange (NSE). It was found that USD-INR currency futures were the most traded contracts in the currency derivatives segment. Daily trading volume divided by the daily open interest of the most traded currency futures contract was used as a proxy for the level of speculative trading activity (Chatrath *et al*, 1996; Robles *et al,* 2009).

A VAR model was estimated on the exchange rate volatility and the proxy for speculation to investigate the relationship of exchange rate volatility and trading activity in the currency futures market. Granger causality tests showed that there is causality running from the speculation to exchange rate volatility. However, the Granger causality from exchange rate volatility to speculation was not significant. The impulse response functions (Chart I and II) from the estimated VAR show that the response of exchange rate volatility to a one time shock in the speculation is positive and significant for first seven periods after which it dies down. However, the response of speculation to a one time shock in the exchange volatility is not significant.

While introducing currency futures, the Reserve Bank and the Securities and Exchange Board of India (SEBI) had put in place various safeguard mechanisms to monitor positions, prices and volumes in real time so as to control excessive speculation. The Reserve Bank recently banned proprietary trading by banks in the currency futures/exchange-traded currency options markets. Such trading is allowed only on behalf of clients. SEBI also tightened exposure norms for currency derivatives to check excessive speculation by increasing margin requirements and curtailing open positions on currency derivatives. The Reserve Bank remains vigilant and is committed to orderly development of different segments of the foreign exchange market in India.

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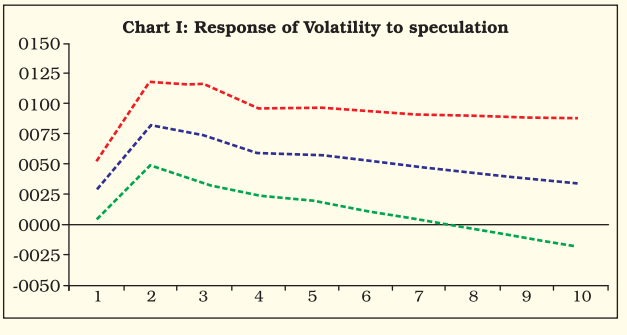
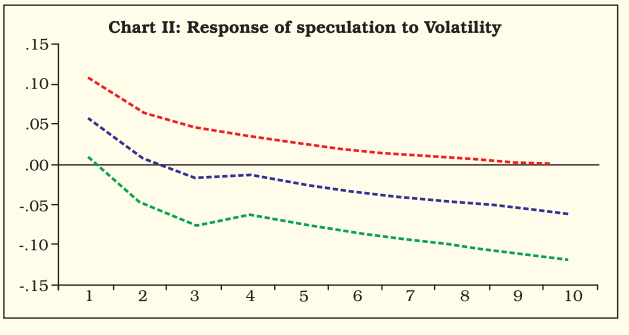
Impulse Response from VAR Estimation





II.4.31 The rupee value is at times influenced by trading in non-deliverable forwards (NDF) – foreign exchange derivative instruments that are based on non-convertible currencies such as the rupee and traded in international financial centres. Importantly, being an offshore market, the NDF market remains outside the regulatory purview of local authorities. An empirical exercise was undertaken to examine the issue (Box II.9).

House prices firmed up further

II.4.32 In order to track real estate price movements, the Reserve Bank has been compiling quarterly house price indices for nine major cites (Mumbai, Delhi, Chennai, Kolkata, Bengaluru, Lucknow, Ahmedabad, Jaipur and Kanpur) as well as an aggregate all-India Index (base Q4:2008-09=100). These indices are compiled based on official data

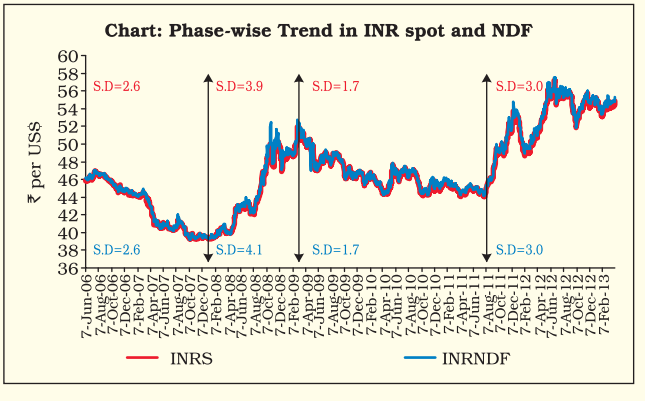
Box II. 9
Non-Deliverable Forward Market and Onshore INR Market: Evidence on Inter-linkages

Non-Deliverable Forwards (NDF) is a foreign exchange derivative instrument traded over-the-counter and is operated in currencies that are not freely convertible. NDF contracts enable hedging of exchange rate risk, irrespective of any restrictions arising in the country of origin. Even though an NDF contract is similar to a regular forward foreign exchange contract, it does not require physical delivery of currencies at maturity and is typically settled in an international financial centre in foreign currency. Importantly, being an offshore market, the NDF market remains outside the regulatory purview of local authorities.

In the Indian context, onshore financial institutions are not allowed to transact in the NDF markets. However, since domestic banking entities are allowed specific open position and gap limits for their foreign exchange exposures, there is scope for domestic entities to participate in the NDF markets to take advantage of any arbitrage. Further, foreign banks and corporate entities with an international presence can participate in NDF market.

Recognising the fact that information flows between off-shore NDF and on-shore market can affect movements in both market, a few studies have been undertaken in the case of emerging market economies. For instance, in the case of the Korean won, Park (2001) finds that the on-shore market seems to have been mainly driven by the off-shore NDF market in the more recent period. Similarly, Cadarajat and Lubis (2012) report significant volatility spillover from the NDF market to the spot market for the Indonesian rupiah for the period 2008-11. In the Indian context, Guru (2009) also argues that NDF markets for the rupee are now exerting an increased influence on domestic currency markets through spillover effects. A recent study by Behera (2011) finds that shocks and volatility in the NDF market influence onshore markets.

An attempt was made to study the information transmission between the off-shore and on-shore segment of the INR market. Daily closing data on the INR-US$ rate in the NDF and onshore markets for the period June 6, 2006 to April 3, 2013 were sourced from the Thomson Reuters datastream database. The period was divided into four sub-periods based on the trend in INR as shown in Chart.



To examine the direction of transmission between onshore and NDF markets, Vector Error Correction and augmented GARCH model were estimated. Following Park (2001), the specification for the GARCH model is as under:

$$\mu_{i,t} = a_i + b_1\mu_{j,t-1} + b_2\varepsilon_{i,t-1} + \varepsilon_{i,t}$$
$$h^2_{i,t} = \alpha_{0i} + \alpha_{1i}\varepsilon^2_{i,t-1} + \beta_{1i}h^2_{i,t-1} + \gamma_{1i}\varepsilon^2_{j,t-1}$$

where $\mu_{j,t-1}$ represents the previous period return in the counterpart market and $\varepsilon^2_{j,t-1}$ is the squared residual derived from the MA (1) - GARCH (1,1) model applied to $\mu_{j,t-1}$. Therefore, the significance of coefficients b_1 and γ_1, reflects the probable existence of any spill-over effect from one currency market to another through return and volatility spillovers.

The analysis suggests that there is a long-term relationship between the spot and NDF markets for the INR. The VEC model suggests that during the periods of rupee appreciation (sub-periods 1 and 3 in Table), the NDF market and the INR spot market exhibit a bi-directional relationship as both error correction terms (ECT) are statistically significant. However, during the period of depreciation (*i.e.*, during sub-periods 2

(Contd....)

and 4), the relationship turns unidirectional from NDF to the on-shore market. These results are corroborated by the dynamics of spill-overs between two markets studied through GARCH models. It would seem that during the period of depreciation, shocks originating in the NDF market may carry more information, which gets reflected in on-shore segments of the market through mean and volatility spillovers.

Table: Various Phases of Trend in Rupee Exchange Rate

Period 1:	June 6, 2006 to January 2008	Appreciation	Prior to Global financial crisis
Period 2:	January 2008 to March 2009	Depreciation	Global financial crisis
Period 3:	March 2009 to August 2011	Appreciation	Recovery from global crisis
Period 4:	August 2011 to April 3, 2013	Depreciation	Post US rating downgrade

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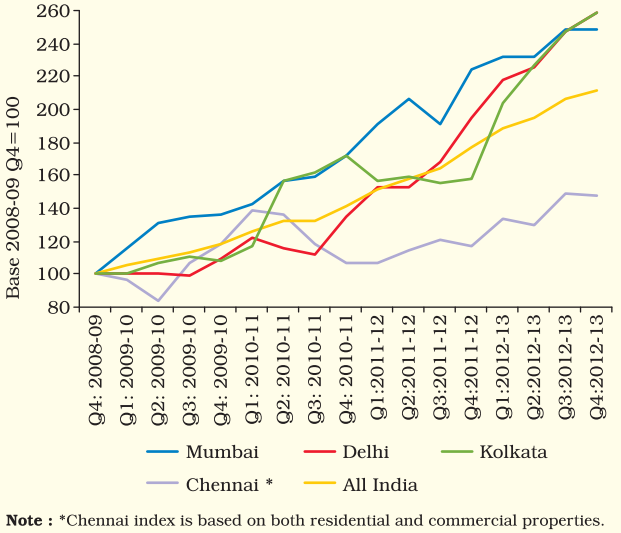
on property transactions received from registration authorities of the respective state governments.

II.4.33 Based on this, house prices increased by nearly 20 per cent year-on-year at the all-India level during Q4 of 2012-13 over Q4 of 2011-12 (Chart II.46). The increase was the highest in Kolkata (over 60 per cent) and the lowest for Mumbai (10.6 per cent). At the all-India level, the index of house prices increased annually on an average by 21 per cent during the past four years.

Chart II.46: House Price Indices



Note : *Chennai index is based on both residential and commercial properties. All-India index is a weighted average of city indices; weights based on population proportion.

II.5 GOVERNMENT FINANCES

Fiscal risks lowered as the government meets revised gross fiscal deficit target in 2012-13 despite the growth slowdown

II.5.1 Despite the slowdown in economic growth, the gross fiscal deficit (GFD) of the central government was contained at 5.2 per cent of GDP in 2012-13 (RE), which was marginally higher than the budget estimate of 5.1 per cent but lower than the revised roadmap target of 5.3 per cent (Appendix Table 15). The provisional accounts for 2012-13, released by the Controller General of Accounts, placed the GFD lower at 4.9 per cent of GDP due to lower expenditure coupled with higher non-tax revenues. Higher interest receipts and receipts from social and economic services contributed to higher non-tax revenue than in the revised estimates. The revenue deficit (RD) to GDP ratio, at 3.6 per cent (provisional accounts), was also lower than 3.9 per cent in the revised estimates, but was marginally above the budget estimate of 3.4 per cent.

II.5.2 The containment of GFD in the face of shortfall in revenues was largely brought about by scaling down plan expenditure and capital expenditure. According to the provisional accounts, gross tax revenues recorded a shortfall over the

budget estimates due to lower collections under Union excise duties, customs duties, corporation tax and wealth tax. Collections under income tax and services, tax, however, showed an improvement. Disinvestment proceeds were lower by ₹41 billion in 2012-13 than in the budget estimates for the year.

Key deficit indicators for 2013-14 broadly in line with the path envisaged by the Kelkar Committee but risk of slippage remains

II.5.3 Expansionary fiscal policy is usually advocated as a counter-cyclical measure to promote growth (Box II.10). However, macroeconomic imbalances may emanate from higher fiscal deficits due to a sustained high level of expenditure for a prolonged period, and have an adverse impact on growth. Keeping in view the rising trend in the fiscal deficit, the Government of India implemented fiscal correction measures in the second half of 2012-13, based on the recommendations of the Committee on Roadmap for Fiscal Consolidation (Chairman: Dr. Vijay L. Kelkar).

II.5.4 The government's commitment to fiscal consolidation continues in 2013-14, with the GFD-GDP ratio estimated to progressively decline to 4.8

Box II.10
Cyclicality of Fiscal Policy: The Indian Experience

Cyclicality of fiscal policy refers to the direction in which the government's revenues and expenditures move in relation to output. Fiscal policy is said to be pro-cyclical if it is expansionary during economic booms and contractionary during economic recessions. From a Keynesian perspective, public expenditure should act as a stabilising force and move in a counter-cyclical direction. This implies that ideally, fiscal policy should lower taxes and increase expenditure during a downswing in the business cycle, so as to augment aggregate demand. On the other hand, it should reduce expenditure and increase savings during an upswing of the business cycle.

Empirical studies have, in general, found evidence of variation in the cyclicality of fiscal policy, both across different instruments of fiscal policy as well as between different economies and groups of economies. There is strong evidence from the extant literature that fiscal policy among developed countries is counter-cyclical, while high pro-cyclicality is observed in the case of less developed economies.

In the empirical literature, there is no consensus on how fiscal cyclicality should be measured, with researchers having used different methods. The simplest way to measure fiscal cyclicality is to work out the correlation between the cyclical component of output and that of the relevant fiscal variable, generally extracted using the Hodrick Prescott (HP) filter method. It has been observed that HP-based measures of cyclicality may be misleading when variables have different levels of volatility. Hence, many researchers have preferred regression-based measures.

To examine the cyclicality of different components of central and general government (centre and states combined) expenditure in India, the co-movements between the relevant fiscal variables and output were estimated adopting the two-stage method employed by Akitoby *et al* (2004), which distinguishes between co-movements that are temporary in nature from the co-movements that reflect a steady-state or long-run path. All variables were found to be non-stationary and integrated of order 1. In the presence of a cointegration relation, the following linear equations would indicate the long-run and short-run relationships between fiscal and monetary variables:

Long-run relationship:

$$\text{Log } G = \alpha + \delta \log Y \text{---(1)}$$

where G represents the fiscal variable in real terms and Y represents real output. α is the constant term. δ is the long run constant elasticity of fiscal variable with respect to output.

Short-run relationship using error correction model:

$$D(\log G_t) = \mu + \beta D(\log Y_t) + \gamma [\log G_{t-1} - \delta \log Y_{t-1}] + \varepsilon_t \text{ --- (2)}$$

where β D (log Y_t) may be interpreted as the short-term impact of output on government spending and β as the short run elasticity of the relevant fiscal variable with respect to output. A positive β indicates pro-cyclicality and a negative β indicates counter-cyclicality of the fiscal variable. The error correction term, γ [log G_{t-1} - δ logY_{t-1}], captures the deviations from the long-run equilibrium, where γ is the rate at which government spending adjusts to past disequilibrium.

If γ is insignificant, there exists no steady state (long run) relationship between the fiscal variable and output. Hence, in such cases the error correction term was omitted and the short-term relationship was estimated through the equation below.

$$D(\log G_t) = \mu + \beta D(\log Y_t) + \varepsilon_t \text{ ---- (3)}$$

(Contd....)

All the fiscal variables were converted into real terms using GDP deflator. In the first stage, equation (1) was estimated using ordinary least squares (OLS) for each of the fiscal variables for the period 1970-71 to 2011-12. In the second stage, residuals of OLS estimation were included as the error correction term in equation (2) and the equation was estimated incorporating correction for first order autoregressive error term. In cases where γ was found to be insignificant, equation 3 was estimated to obtain the short-run elasticity of the relevant fiscal variable. The estimation results are presented in the table below.

Among the components of central government expenditure, capital outlay displays the highest degree of pro-cyclicality in the short run. This implies that the government cuts and expands capital expenditure more than proportionately to output during times of recession and expansion, respectively. In contrast, primary revenue expenditure is fairly inelastic in the short run, reflecting the underlying rigidity in adjusting these expenditures during expansionary and recessionary phases of growth. However, in the long run, primary revenue expenditure is more responsive to output changes compared to the short run. Government consumption, which mainly comprises wages, salaries and pensions behaves mostly in line with primary revenue expenditure, with less than proportionate increase/decrease in response to output during the expansion/ recession in the short run. Government investment, which mainly includes its expenditure on construction, machinery and capital equipments, shows a relatively higher degree of pro-cyclicality compared to government consumption. The relationship between general government expenditure variables and output is broadly similar to that of the central government.

Table: Long Run and Short Run Elasticity of Government Expenditure

Variables	Elasticity			
	Central Government		General Government	
	Short Run	Long Run	Short Run	Long Run
1	2	3	4	5
Primary Revenue Expenditure	0.66	1.11*	0.24	1.05*
Capital Outlay	2.66*	0.81*	2.02*	@
Memo Items: **Aggregate demand components**				
	Short Run		**Long Run**	
Government Consumption	0.40*		0.33	
Government Investment	0.88**		0.86*	

Note: 1. *and ** denote significant at 1% and 5% level, respectively.
2. Primary revenue expenditure indicates revenue expenditure excluding interest payments.
3. The period of analysis for general government expenditures is 1980-81 to 2011-12.
4. @: In case of capital outlay of the general government, a steady-state relation with output was not found.

These results are broadly in conformity with the evidence in the literature showing that fiscal policy in India has been procyclical over a long period. This procyclicality may have, however, reduced in more recent period, especially as the central government undertook significant counter-cyclical measures during the 2008 downturn accompanying the global financial crisis (RBI, 2013; Mukherjee, 2013).

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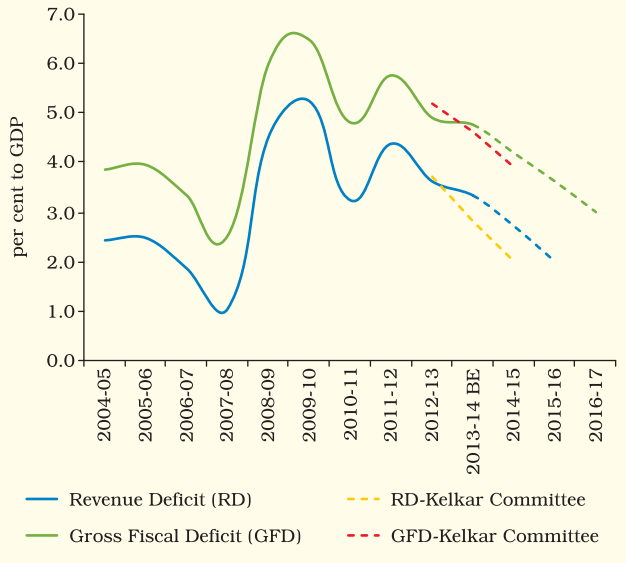
per cent in 2013-14 (BE) and reach 3.0 per cent by 2016-17 (Chart II.47). However, both the RD-GDP ratio and the GFD-GDP ratio budgeted for 2013-14 are higher than the roadmap suggested by the Kelkar Committee. The outcome of budgeted deficits for 2013-14 would largely depend on the growth performance of the economy as the budget has proposed revenue-led fiscal consolidation. The scope for expenditure reduction is limited by large interest payments, salaries and pension. Such spending is committed in nature. The revenue expenditure-GDP ratio at 12.6 per cent in 2013-14 (BE) is higher than that recommended by the Kelkar Committee (11.7 per cent).

II.5.5 The Union Budget 2013-14 has budgeted to raise ₹558 billion through disinvestment of public sector undertakings (Chart II.48). However, going by past experience and given the current macroeconomic situation, it would be challenging to meet the disinvestment target for the year.

Chart II.47: Key Deficit Indicators of the Central Government



Budget 2013-14 attempts to rebalance spending from current to capital

II.5.6 One important feature of Union Budget 2013-14 is the sharp increase in plan and capital expenditure. In 2013-14 (BE), plan expenditure and capital expenditure are budgeted to grow by 29.4 per cent and 36.6 per cent, respectively, over 2012-13 (RE). The sectors in which the budgetary support to central plan outlay would increase sharply are rural development (20.2 per cent), transport (33.1 per cent), general economic services (50.4 per cent) and social services (27.6 per cent). Non-plan expenditure as a ratio to GDP, on the other hand, is budgeted to decline by 0.2 percentage points to 9.8 per cent on account of significant decline in non-plan revenue expenditure. Within non-plan revenue expenditure, subsidy expenditure is budgeted to decline to 2.0 per cent of GDP, mainly on account of a decline in petroleum subsidy (Chart II.49). However, in view of the recent depreciation of the Indian rupee and its likely impact on the under-recoveries of the oil-marketing companies (OMCs), there is a need for further reform in subsidies to meet the budgetary targets.

II.5.7 The decline in non-plan revenue expenditure facilitated a proportionate increase in plan revenue expenditure, keeping the total revenue expenditure unchanged at 12.6 per cent of GDP in 2013-14 (BE) (Chart II.50). The shift in expenditure pattern is reflected in the higher capital outlay-GDP ratio, which is budgeted to increase to 1.8 per cent in 2013-14 from 1.5 per cent in 2012-13 (RE).

Chart II.48: Disinvestment

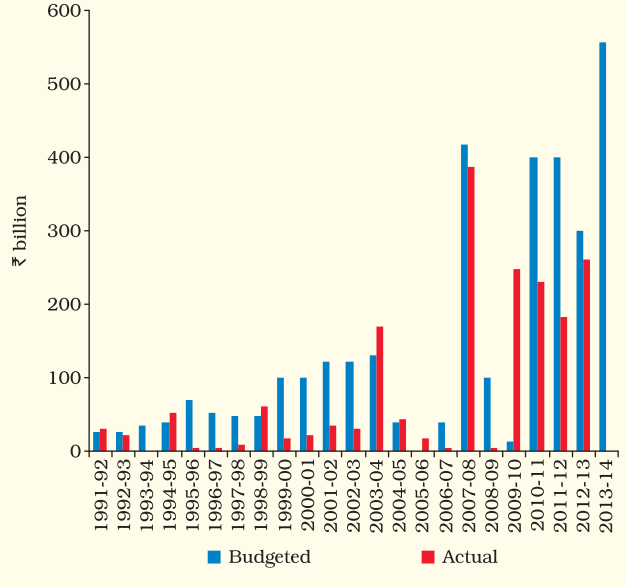


Chart II.49: Major Subsidies of Central Government

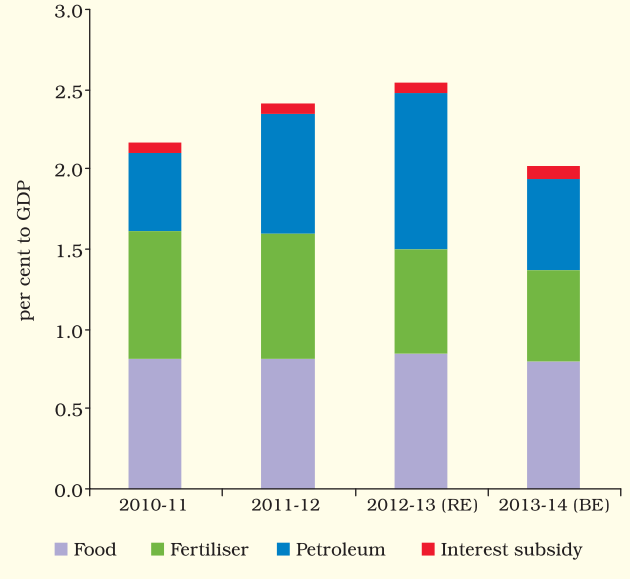
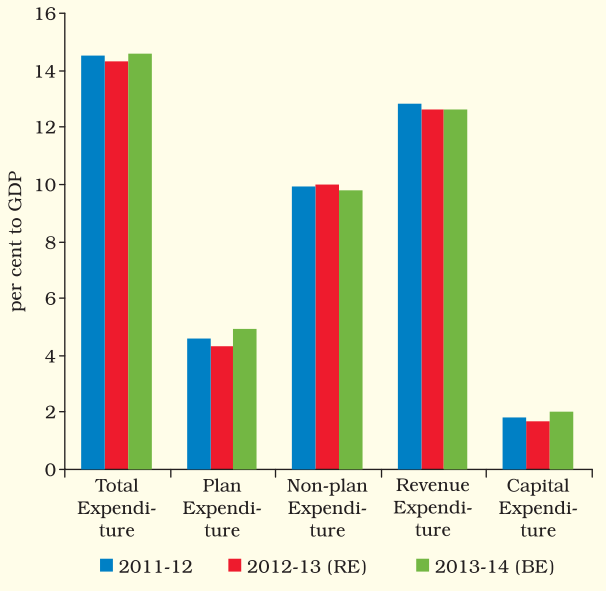


Chart II.50: Trend in Select Expenditures



Tax reforms process to move forward in 2013-14

II.5.8 The revenue receipts-GDP ratio is budgeted to increase by 0.6 percentage points to 9.3 per cent, which would be achieved largely through higher tax revenues. The gross tax revenue as a proportion of GDP is budgeted to increase by 0.5 percentage points to 10.9 per cent, mainly on account of higher revenues from corporation tax, income tax and service tax. While the revenues from corporation tax and personal income tax as ratios to GDP are budgeted to increase by 0.1 percentage points, each, service tax-GDP ratio is budgeted to increase by 0.3 percentage points during 2013-14. Improvement in tax revenues can be achieved through tax reforms. The Union Cabinet has approved the setting up of a Tax Administration Reform Commission in line with the Budget announcement, to review the application of tax policies and tax laws so as to strengthen the capacity of the tax system. The modified provisions of General Anti-Avoidance Rules (GAAR) based on the Expert Committee Report will come into effect from April 1, 2016.

State finances stay on fiscal consolidation track

II.5.9 Fiscal consolidation at the state level continued in 2012-13 (RE), with the consolidated GFD-GDP ratio remaining within the target set by the Thirteenth Finance Commission, despite a marginal increase over the previous year. The states at the consolidated level[1] continued to post surplus in the revenue account, *albeit* lower than budgeted. Notwithstanding the growth slowdown, the revenue receipts-GDP ratio has shown a marginal improvement in 2012-13 (RE) over the budget estimate, with an increase in own revenues more than offsetting the decline in current transfer from the centre.

Improvement in revenue account budgeted for 2013-14

II.5.10 The consolidated position of state governments for 2013-14 reveals an increase in the revenue surplus-GDP ratio along with a decline in the GFD-GDP ratio. Surplus in revenue account is budgeted to increase in 2013-14 (BE) primarily through reduction in revenue expenditure; revenue receipts-GDP ratio is also budgeted to be marginally higher than in 2012-13 (RE). The expenditure pattern of the states show that while development expenditure as ratio to GDP is budgeted to decline during 2013-14, the non-development expenditure-GDP ratio is budgeted to increase despite the committed expenditure-GDP ratio (comprising interest payments, administrative services and pension) remaining unchanged. The capital outlay-GDP ratio is budgeted to be higher in 2013-14 than in 2012-13 (RE), indicating efforts to improve the quality of expenditure (Appendix Table 16).

Combined fiscal deficit shows improvement on account of reduction in combined revenue deficit

II.5.11 The combined finances of the centre and states showed improvement in 2012-13 (RE) over the previous year. The combined gross fiscal deficit

[1] Based on budget documents of 27 State governments for 2013-14.

of the centre and states is placed marginally lower at 7.5 per cent of GDP in 2012-13 (RE) than 7.6 per cent in 2011-12. The correction in combined gross fiscal deficit during 2012-13 (RE) was entirely on account of a decline in the revenue deficit by 0.4 percentage points to 3.7 per cent. The decline in the fiscal deficit of the central government during 2012-13 contributed to the lower combined fiscal deficit, even though the fiscal deficit of states as a ratio to GDP increased by 0.4 percentage points to 2.3 per cent.

II.5.12 In 2013-14, the combined fiscal position is budgeted to improve further, reflecting commitment to the fiscal consolidation process both at the central as well as state government levels. The combined fiscal deficit in 2013-14 (BE) is placed lower at 6.9 per cent of GDP due to the budgeted reduction in revenue deficit to 2.9 per cent of GDP. Although the combined finances show improvement in recent years, the revenue deficit and fiscal deficit as ratios to GDP are still higher than the levels achieved in 2007-08.

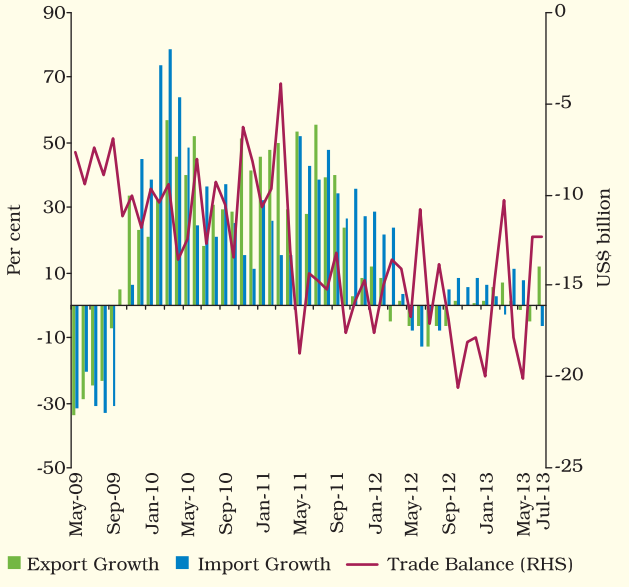
II.6 EXTERNAL SECTOR

CAD stays unsustainable though trade deficit narrowed in June and July 2013

II.6.1 The deterioration in the external sector, which began in Q3 of 2011-12, persisted throughout 2012-13. Although there was improvement in the current account deficit (CAD) in Q4 of 2012-13, it stayed above the sustainable level. Merchandise exports declined, particularly in the first half of 2012-13, mainly due to sluggish global demand conditions. Merchandise imports rose marginally in 2012-13. Increase in gold imports during H2 of 2012-13 contributed significantly to an increase in imports. This, along with a contraction in exports, led to a widening of the trade deficit at US$ 190.9 billion during 2012-13 compared with US$ 183.4 billion in 2011-12 (Chart II.51, Appendix Table 17).

II.6.2 The larger merchandise trade deficit coupled with the significant deceleration in services

Chart II.51: India's Merchandise Trade



exports and higher income payments led to a further widening of the CAD in 2012-13. Net investment income has worsened in recent past reflecting lower interest/discount earnings on foreign exchange reserves and rise in interest payments on growing foreign debt including NRI deposits, ECBs and short term trade credits. The CAD-GDP ratio reached a historical high of 6.5 per cent in Q3 of 2012-13 before moderating to 3.6 per cent in Q4. With this, the cumulative CAD rose to 4.8 per cent of GDP during 2012-13 compared with 4.2 per cent in 2011-12. The high level of CAD, which is clearly unsustainable under the present growth scenario, emerged as a key macroeconomic risk factor during 2012-13.

II.6.3 The trade deficit continued to widen in first two months of 2013-14 (April-May 2013) and reached a seven-month high of US$ 20.1 billion in May 2013 compared with US$ 16.9 billion in the previous year. However, it declined to US$ 12.2 billion and US$ 12.3 billion in June and July 2013, respectively. Contraction in trade deficit was mainly due to decline in gold imports (in June and July). Similarly, export growth turned positive in July 2013.

Need to remove structural impediments to moderate CAD

II.6.4 The widening of the CAD despite a slowdown in the domestic economy suggests that the CAD deterioration was not just on account of global cyclical slowdown but also due to structural factors. India's CAD has persisted at above 3 per cent of GDP since Q1 of 2011-12 (Appendix Table 18). Factors underlying the rising CAD seem to reflect various structural weaknesses in the economy that are reflected in the stickiness of the trade deficit on account of inelastic demand for certain imports. Foremost among these are gold and POL imports, which remained at an elevated level of around US$ 53.8 billion and US$ 169.4 billion, respectively, in 2012-13, accounting for nearly 45 per cent of India's merchandise imports and around 117 per cent of the trade deficit. Non-oil non-gold imports slowed in 2012-13 but it could not sufficiently offset the persistent demand for oil and gold imports (Chart II.52).

II.6.5 India's import of POL has grown steadily, irrespective of the trend in international crude oil prices in recent years (Chart II.53). This may have

Chart II.52: GDP Growth and Import

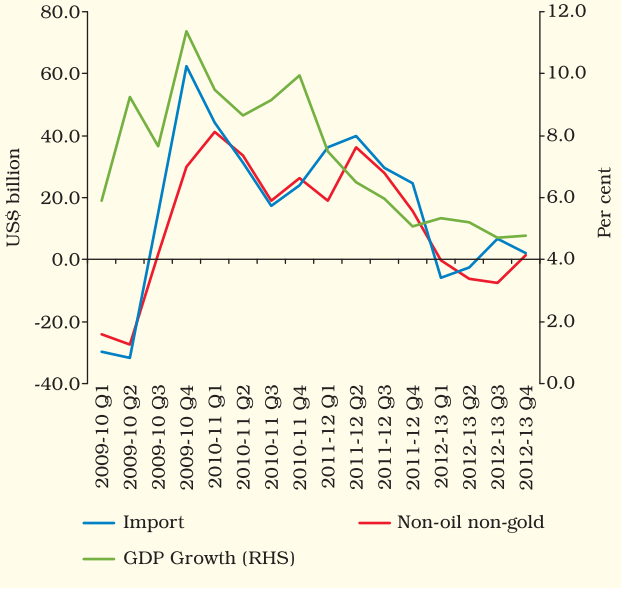
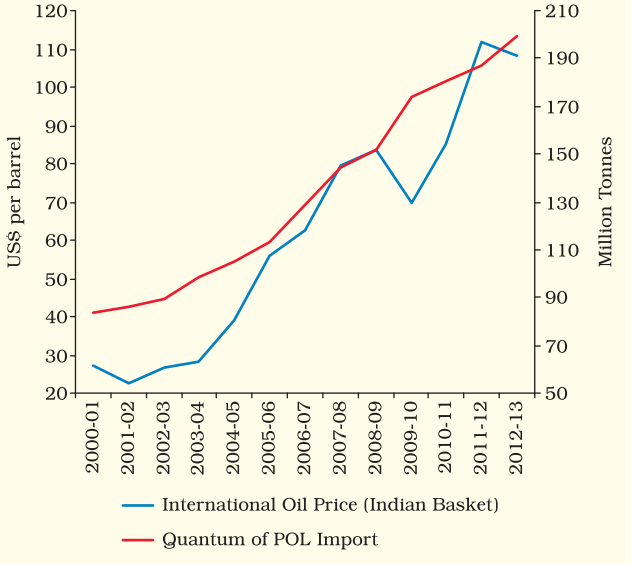


Chart II.53: Trend in International Oil Prices and Quantum of POL Imports



happened due to an incomplete pass-through of international oil prices that contributed to growing energy consumption. Gold imports showed a transitory decline up to October 2012, which was attributed to various measures by the government and the Reserve Bank. However, the resurgence in gold imports in subsequent months (except in March 2013) without a concomitant rise in exports from this sector raises concerns about the size of the CAD. Finally, even though India's exports performed better during the period of conducive global growth and demand conditions, the loss of momentum in export growth during the downturn in the global economy may partly reflect lack of competitiveness and hence, is a matter of concern.

II.6.6 To address these concerns, the government took various policy measures in 2012-13. The most important of these was the partial deregulation of diesel prices, which may gradually reduce its consumption. Recognising the implications of gold imports for external sector stability, the Reserve Bank set up a working group to study issues relating to gold imports which recommended modifications to the extant regulations (Box II.11).

Box II.11
Recommendations by the Working Group to Study the Issues relating to Gold Imports and Gold Loan NBFCs in India

In the past couple of years, despite higher prices, there was an unabated rise in gold imports leading to high CAD and posing a risk to external sector stability. Concomitantly, there has been a sharp rise in the gold loan business by the NBFCs as also a quantum jump in bank borrowings by them, which pose a risk to domestic financial stability. Against these macroeconomic concerns, a Working Group was set up to study issues related to Gold Imports and Gold Loan NBFCs in India in 2012 (Chairman: Shri K.U.B. Rao). In its terms of reference, the Committee was explicitly asked to analyse the implications of gold imports on external and financial stability and review extant regulatory norms relating to gold loans and recommend modifications, if any.

The draft report of the Working Group was placed on the Reserve Bank's website. After incorporating comments and suggestions from experts, stakeholders and the general public, the Group submitted the final report on February 6, 2013. The recommendations of the Working Group come under two heads, *viz.*, (a) macro recommendations to moderate the demand for gold imports considering its impact on the CAD, and (b) institutional and prudential issues relating to gold loan NBFCs, *etc.* To moderate the demand for gold imports, the Group proposed various measures to reduce demand, manage supply and enhance the monetisation of gold. Among the demand reduction measures, the Group, *inter alia,* suggested fiscal measures, introduction of innovative gold-backed financial products and inflation index bonds, and limiting the use of bank finance to purchase gold bullion. The Group also suggested setting up Bullion Corporation of India that would pool idle stocks of gold besides undertaking related functions.

In view of rapid growth of the gold loan NBFCs and its implication for financial stability, the Group suggested that their activities may be closely monitored through frequent collection and analysis of relevant financial data. The Group observed that high leverage of the gold loan NBFCs is a cause for concern and there is a need to monitor transactions between gold loan NBFCs and unincorporated bodies. Some measures suggested by the Group have already been implemented.

Progress on implementation of the recommendations:

- All the SCBs, RRBs, urban cooperative banks, and NBFCs have been advised not to finance purchase of gold in any form, including primary gold, gold bullion, gold jewellery, gold coins, units of gold exchange traded funds (ETFs) and units of gold mutual funds.
- With a view to moderate demand for gold, extant instructions with regard to import of gold on consignment basis, *etc.* have been withdrawn and 20/80 principle has been set for import of gold under any scheme, implying that it would be incumbent on all nominated banks/ agencies to ensure that at least one-fifth of every lot of import of gold (in any form/ purity) is exclusively made available for the purpose of export and the same is retained in the customs bonded warehouses. Nominated entities are permitted to undertake fresh imports of gold only after the exports have taken place to the extent of at least 75 per cent of gold remaining in the customs bonded warehouse. Besides, they shall make available gold in any form for domestic use only to entities engaged in jewellery business/ bullion dealers supplying gold to jewellers. Further, entities/ units in the SEZ and EoUs, Premier and Star trading houses are permitted to import gold exclusively for the purpose of exports only.
- SCBs, RRBs and the State & Central co-operative banks have been advised that while granting an advance against the security of specially minted gold coins sold by them, they should ensure that the weight of the coin(s) does not exceed 50 grams per customer and the amount of loan to any customer against gold ornaments, gold jewellery and gold coins (weighing up to 50 grams) should be within the limit approved by the bank's board.
- The Government has raised the import duty on gold in three stages during 2013 so far, from 4 per cent to 10 per cent.
- With the amendment of Sec 206C of Income Tax Act, 1961 (w.e.f June 01, 2013) the sale of coins/ articles weighing 10 grams or less is treated as the sale of bullion, which is subject to tax collected at source (TCS) of 1 per cent, in case the cash sale exceeds ₹2 lakh.
- The first tranche of Inflation-Indexed Bonds for institutional investors (including 20 per cent to retail investors) was issued in June 2013.
- SEBI has directed MFs/ AMCs to set aside funds to increase investor awareness about gold-backed financial instruments.
- Gold ETFs have also been permitted to invest in Gold Deposit Schemes (GDS) of banks to the extent of 20 per cent of total asset under management.
- The Reserve Bank has issued a revised fair practices code to gold loan NBFCs to be put in place with the approval of their respective boards.
- The extant GDS was modified and revised guidelines were issued on February 14, 2013. Under the revised guidelines, banks are required to provide details of the scheme, including the names of branches operating the same, and report the gold so mobilised on a monthly basis in the designated format to the Reserve Bank.

The available data indicate that these measures are having some impact on moderating the quantum of gold imports into the country.

II.6.7 The Reserve Bank and the government took various policy measures including, *inter alia*, (i) an increase in the customs duty on gold, (ii) instructions to all nominated banks/nominated agencies to ensure that atleast one fifth of every lot of import of gold (in any form/purity including import of gold coins/dor) is exclusively made available for the purpose of export and (iii) issuance of inflation-linked bonds to wean away investors from gold to other savings instruments. In addition, it is felt that concerted policy actions are needed to enhance domestic supply of oil, gas and coal, besides developing unconventional energy sources. Efforts are also necessary to gradually build export competitiveness. These steps would help to reduce the CAD to sustainable levels. Further, certain sector-specific structural issues need to be addressed. For instance, despite being one of the major coal producers in the world, India had to import 135 million tonnes during 2012-13, showing a rise of 29 per cent compared with 49 per cent in the previous year. The gap in domestic demand and supply of coal has widened in recent years (see Box II.3). Similarly, owing to domestic structural problems including environment concerns, iron ore exports have gradually declined from US$ 6.0 billion in 2009-10 to US$ 1.6 billion in 2012-13. Therefore, from the perspective of the CAD, specific issues in these sectors need to be addressed.

Efforts needed to raise export competitiveness

II.6.8 Indian exports have been adversely impacted by global demand conditions. In this tough climate, there is a need to enhance export competitiveness to remain resilient and gain a more durable share in global trade. Other EMDEs such as China, Korea, Mexico and Turkey have exhibited much less pro-cyclicality in exports in relation to India. In fact, China's merchandise trade surplus, which showed increase in 2012 (y-o-y), was only marginally lower in Q1 of 2013. As such, efforts are warranted to ensure that India's exports can withstand global cyclical fluctuations. As India continues to lag behind in terms of high technology intensive manufacturing exports, policy thrust is needed to incentivise R&D expenditure and reduce obstacles to the competitiveness of India's exports.

With capital flows turning volatile, financing the CAD will be a major policy challenge

II.6.9 Even though the CAD widened to unprecedented levels in 2012-13, it was fully financed through net capital inflows and there was net accretion to foreign exchange reserves of US$ 3.8 billion in 2012-13. Inflows under FII investment remained important sources of financing despite witnessing volatile trends during the year. After recording net outflows in Q1 of 2012-13, FII inflows turned positive in the next three quarters amid outflows during some intervening weeks. During December 2012 to February 2013, FII inflows surged on the back of abundant global liquidity and domestic policy measures. FII investment limits in government securities and corporate bonds were raised by US$ 5 billion each, taking the total investment limit in domestic debt (including corporate debt for infrastructure) to US$ 75 billion. On June 12, 2013, the FII limit in government dated securities was enhanced further by US$ 5 billion (for long-term investors only). With this, the present limits for investments by FIIs, QFIs and long-term investors in government securities and corporate debt stand at US$ 30 billion and US$ 51 billion, respectively.

II.6.10 In 2013-14 so far, net FII flows remained positive until the third week of May 2013 before turning negative amid concerns that the US Fed may taper off the quantitative easing by the end of the year. The withdrawal of FIIs, especially from the debt market, due to currency depreciation and narrowing yield differential, does not augur well for CAD financing.

II.6.11 After witnessing a sequential surge during Q1 and Q2 of 2012-13, FDI to India moderated during Q3 to pick-up again during Q4 on the back of improved perceptions of the domestic economy on account of the reform measures undertaken by the government (Appendix Table 19).

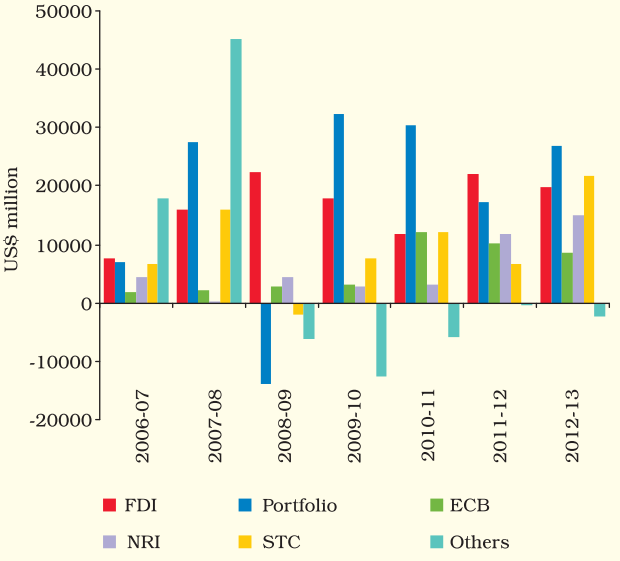
II.6.12 ECBs remained subdued during first two quarters of 2012-13 since disbursement during this period declined significantly over the same period in the previous year. However, net inflows increased during the second half, as disbursement picked up significantly in Q3 and Q4. The effects of the deregulation of interest rates on NRI deposits seem to be tapering off. Inflows under NRI deposits have been positive, but declined from US$ 6.6 billion during Q1 to average quarterly inflows of US$ 2.5 billion in the subsequent periods. Short-term trade credits have been robust throughout the year.

II.6.13 Even though in 2012-13 the capital flows were sufficient to finance the CAD, these flows have turned volatile and unpredictable in recent months, mainly reflecting the global macroeconomic environment. The current level of the CAD is much higher than the sustainable level of CAD, which is assessed to be around 2.5 per cent of GDP with slower growth (Reserve Bank Annual Report 2011-12, para II.6.2, p. 66). Going forward, the high level of CAD and its financing against the backdrop of possible reversals in capital flows has emerged as a major macroeconomic challenge.

Need to encourage stable capital flows

II.6.14 Improved global liquidity as well as various domestic policy measures taken since September 2012 boosted foreign investor confidence in the economy. This led to a rise in capital inflows in subsequent months. The domestic policy reforms included liberalised FDI norms for the retail, insurance and pension sectors, a roadmap for fiscal consolidation, increasing FII limits in debt securities (both corporate and government), postponing implementation of the General Anti-Avoidance Rule (GAAR) by two years, gradual deregulation of diesel prices, simplification of the 'Know Your Customer (KYC)' registration rules for overseas investors and removal of separate limits for FIIs on different types of corporate bonds. Moreover, owing to the deregulation of interest rates, flows in NRI deposits

Chart II.54: Trends in Major Components of Capital Flows (Net)



increased during 2012-13 compared with the previous year which were mainly evident in NRE deposits (Chart II.54).

II.6.15 These policy initiatives augured well for the pick-up in equity flows, which facilitated financing of the CAD. While net FDI inflows increased marginally in 2012-13 compared with the previous year, FII equity flows increased sharply to US$ 23.3 billion in 2012-13 from US$ 8.8 billion in 2011-12. The proportion of non-stable flows, comprising FIIs and short-term credit, to total capital flows accounted for over half of the total capital flows in 2012-13 compared with one-third in 2011-12. This reflects a continued dependence on short-term flows to meet the widening CAD, which can enhance the vulnerability of the economy in a scenario of adverse global financial conditions.

Rupee under pressures on the back of the wide CAD and volatile capital flows

II.6.16 Along with the wide CAD, financing pressures emerged intermittently, with spells of moderation in capital flows or large dollar demands by importers. Owing to weak portfolio flows, domestic policy uncertainty and apprehensions about the future of the euro area, the rupee

depreciated by 7.2 per cent against the dollar in Q1 of 2012-13 (over average of previous quarter). Between July and August 2012, the rupee continued to remain weak because of both domestic and global economic conditions. However, after the announcement of QE3 by the US Federal Reserve and the surge in capital inflows following various domestic policy measures, the rupee started showing some recovery against the dollar from September 2012. However, the appreciation was short-lived as the rupee resumed its depreciating trend in October 2012 mainly due to a demand for dollars by oil-importing firms, concerns over the widening CAD and uncertainty about domestic growth. During November 2012 to April 2013, the rupee fluctuated in the range of ₹53.3 to 55.7 against the US dollar.

II.6.17 Signs of strengthening recovery in the US economy as also on the Fed's indication that it may taper off bond purchases led to renewed pressure on rupee. The latter led to US treasury yields firming up and consequently to a decline in the interest rate differential, triggered the exit of FIIs from the domestic bond market (Chart II.55).

Chart II.55: Spread between 10-year Sovereign Yield of India and USA

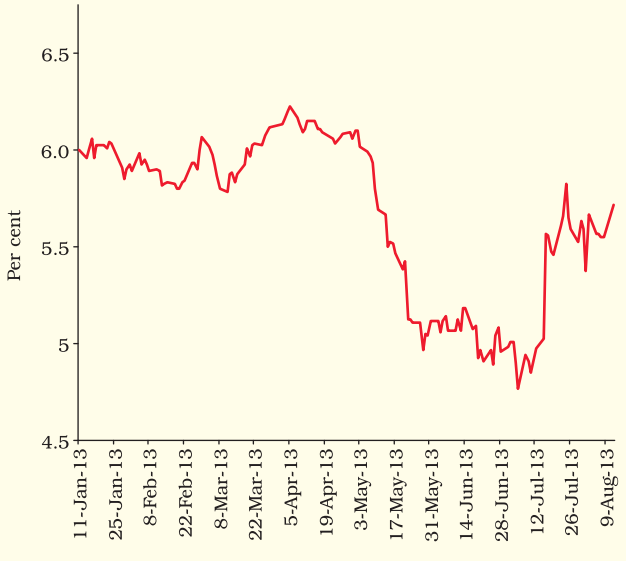
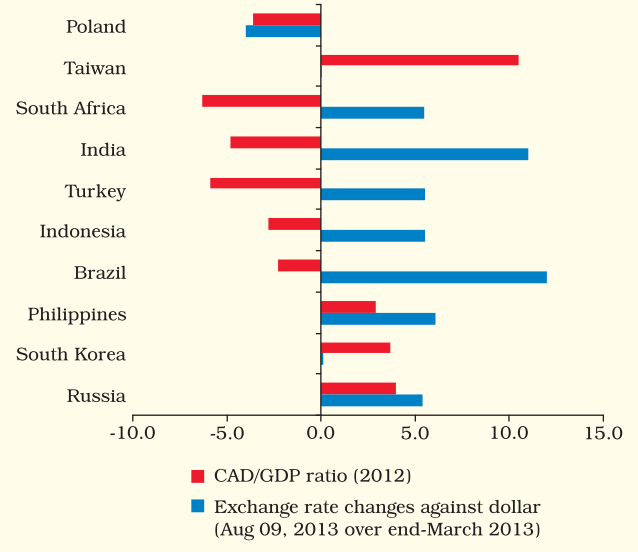


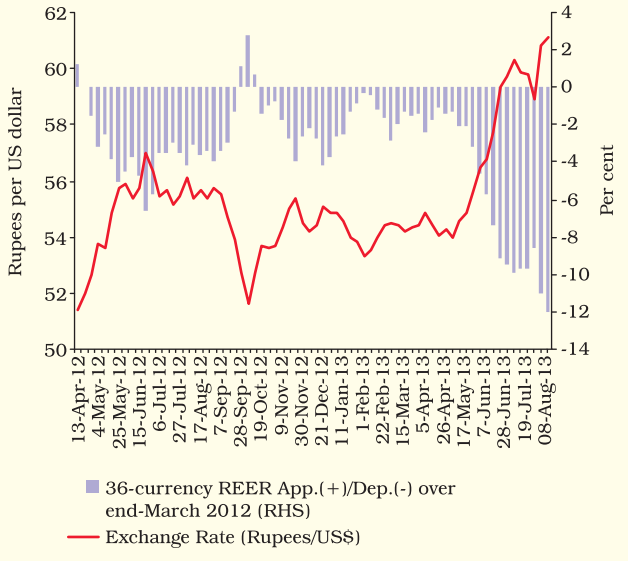
Chart II.56: Exchange Rate Movements and Current Account Deficit (Per cent)



As on August 13, 2013 the rupee showed depreciation of 10.4 per cent over May 21, 2013. Rupee touched an all-time low of 61.54 (reference rate) against the dollar on August 8, 2013. Such a currency depreciation is, however, not unique to India; other emerging market currencies have witnessed similar trends. It also includes major currencies like the euro, which has depreciated against the US dollar in this period. Even EMDEs with current account surplus have depreciated against the dollar (Chart II.56). Continuing concerns relating to the elevated level of the CAD and its financing coupled with weakness in FII flows have played a major role in weakening the rupee. In order to reduce the delays in repatriation of forex earnings, the Reserve Bank advised units located in SEZs to realise and repatriate the full value of goods/software/services to India within a period of 12 months from the date of export.

II.6.18 Partly reflecting the trend of the rupee in nominal terms, REER indices based on both 6-and 36-currency also depreciated by 5.8 per cent and 6.7 per cent, respectively, in 2012-13 over the preceding year (average basis) (Chart II.57, Appendix Table 14).

Chart II.57: Appreciation/Depreciation of Indian Rupee and Movement against US dollar



Despite significant volatility in the forex market and high CAD, forex reserves remained largely stable

II.6.19 During 2012-13, the foreign exchange market remained turbulent with a tendency for two-way movements on the back of higher demand for foreign currency emanating from the high CAD and volatile trends in FII flows. The rupee went through various phases and there was considerable volatility in some months owing to concerns about the growing trade deficit, domestic policy uncertainty and apprehensions about the euro area. To ensure orderly conditions, the Reserve Bank intervened in the foreign exchange market mainly in the months of July and August 2012 to restore stability. However, with the emergence of concerns about the high CAD and uncertainty regarding domestic growth, the rupee again showed considerable volatility during October and November 2012. India's foreign exchange reserves, although lower than in the pre-crisis period, is adequate to finance about seven months of imports (Appendix Table 20). The IMF in its recent report on India (February 2013), based on the IMF composite reserve measure and taking into account country-specific circumstances, has assessed India's reserves as adequate.

Vulnerability parameters weakened further

II.6.20 The major indicators for assessing India's external sector vulnerability continued to show deterioration through 2012-13 (Table II.7).

Table II.7: External Sector Vulnerability Indicators

(Per cent)

Indicator	End-March 2011	End-March 2012	End-March 2013
1	2	3	4
1. Ratio of Total Debt to GDP	17.5	19.7	21.2
2. Ratio of Short-term to Total Debt (Original Maturity)	21.2	22.6	24.8
3. Ratio of Short-term to Total Debt (Residual Maturity)#	42.2	42.6	44.2
4. Ratio of Concessional Debt to Total Debt	15.5	13.9	11.7
5. Ratio of Reserves to Total Debt	99.7	85.2	74.9
6. Ratio of Short-term Debt to Reserves	21.3	26.6	33.1
7. Ratio of Short-term Debt (Residual Maturity) to Reserves#	42.3	50.1	59.0
8. Reserves Cover of Imports (in months)	9.5	7.1	7.0
9. Debt Service Ratio (Debt Service Payments to Current Receipts)	4.4	6.0	5.9
10. Net International Investment Position (NIIP) (US$ billion)	-207.0	-249.5	-307.3
11. NIIP/GDP ratio	-11.9	-14.0	-16.7

#: RBI Estimate.

II.6.21 With increasing external debt and its shortening maturity, debt servicing requirements may pose a concern for the CAD (Appendix Table 21). In fact, income payments, which mainly reflect payments on account of debt servicing, have shown a significant increase in recent quarters. Reflecting the widening CAD, the net international investment position (NIIP) as a ratio to GDP increased to (–)16.7 per cent at end-March 2013 from (–)14.0 per cent at end-March 2012. Hence, deterioration in external vulnerability indicators points to the need for reducing the CAD and encouraging the non-debt creating flows to finance the CAD.

II.6.22 The CAD has remained high and above the sustainable level during 2012-13. Current indications suggest that while the CAD may be somewhat lower in 2013-14, it will continue to stay above the sustainable level. In this context, to mitigate external vulnerability, short-term debt needs to be contained, imports of oil and gold need to be moderated and structural impediments need to be removed in areas such as coal and iron ore. Improving export competitiveness is crucial to address the issue of the high CAD in the medium term. In the short term, however, it is necessary to encourage stable capital flows to finance the CAD on a durable basis.