Financial Globalisation and India: Internal and External Dimensions

Azad, Rohit and Bose, Prasenjit and Dasgupta, Zico

Jawaharlal Nehru University, Research Associate, Jawaharlal Nehru University

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Report

ICSSR Sponsored Project

Financial Globalisation and India
Internal and External Dimensions

Dr. Rohit
Project Director
Centre for Economic Studies and Planning,
JNU

Dr. Prasenjit Bose
Senior Research Associate

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Council for Social Development

Southern Regional Centre, Hyderabad

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Kalpana Kannabiran

Professor & Regional Director

Foreword

I am happy to present the final report summarising the work performed under the sponsored research project awarded by the Indian Council of Social Science Research (ICSSR) entitled, *"Financial Globalisation and India: Internal and External Dimensions"* to Dr. Rohit, Assistant Professor, Centre for Economic Studies and Planning, JNU, Project Director and Dr. Prasenjit Bose, Senior Research Associate. The project, which commenced in December 2013 and concluded successfully on 31 May 2016, was based at Council for Social Development, Hyderabad.

The aim of this research project was to study the implications of financial liberalisation, global financial integration and cross-border capital flows for the Indian economy, which is considered as an "emerging economy" among the developing countries. The global economic crisis following the financial meltdown in the US and the Eurozone has spread to the developing countries too. It is a widely held view in the policy as well as academic circles that India escaped the worst fallout of the financial crisis because of its regulatory framework and relative insulation from global finance. However, the direction of policy change, the report argues, has been towards greater liberalisation of bank finance, international capital flows and global financial integration, which have collectively made the growth process unstable.

The key findings of the research project were discussed at a national workshop in CSD, Hyderabad on 28 May 2016, at which members of the advisory committee, the research team, and renowned experts in the field – Professor Prabhat Patnaik and Professor Abhijit Sen were present.

We look forward to a wideranging debate on the findings of this extremely significant study and hope it will contribute to a more nuanced understanding of financial globalisation in India.

Kalpana Kannabiran
07 June 2016

Preface

The Research Project seeks to study the implications of financial liberalisation, global financial integration and cross-border capital flows for the Indian economy. The direction of policy change in India over the past two decades and a half has been in this direction. The domestic financial sector has grown significantly in the past decade, which has impacted the trajectory of real sector growth and economic development.

The report contains four chapters. The first one introduces the readers to the Indian macroeconomic scene over the past two decades and the financial aspects of the growth process. The second chapter focuses on the internal dimensions of the growth process and the recent developments in the financial sector, especially the bad loans crisis. The third chapter looks at financial globalisation and its impact on India's external vulnerability. The concluding chapter presents a theoretical model which seeks to explain the nature and consequences of financial liberalisation and the integration of the Indian economy into the globalised economy.

We would like to thank the ICSSR for funding this research project without which this study would not have been possible. We are grateful to Prof. Kalpana Kannabiran for housing the project at the CSD, Hyderabad. We are indebted to Profs. Jayati Ghosh, C. P. Chandrasekhar and Pulin Nayak, who were the expert members of the review committee for this project. Profs. Prabhat Patnaik, Robert Pollin, Gerald Epstein and Abhijit Sen have made critical observations and suggestions throughout the evolution of the work, which has helped us immensely.

Our colleagues Dr. Jyotirmoy Bhattacharya and Dr. Subhanil Chowdhury have followed this work closely and provided valuable feedback. Dr. Sougata Kerr and Dr. Shouvik Chakraborty took the time out to attend the first workshop and made interesting observations. We would like to thank all the participants in the three workshops we held during the tenure of this project. We have also

Chapter 1
Introduction

The post-reform growth process in India, which occurred alongside an increasing integration with the global economy, can be seen in terms of three phases. The first phase roughly coincides with the first decade after the reforms were initiated, in which the growth rate remained almost similar to the decade of the 1980s. The second phase starts from 2003, when a visible acceleration of the real GDP growth rate was witnessed. While the high growth phase continued despite the setback of the global financial crisis in 2008, the economy started slowing down considerably from 2011. Official estimates claim that the Indian economy has already recovered from the slowdown and emerged as the fastest growing major economy in the world in 2015, overtaking China (See Table 1.1 & Chart 1.1 below). Whether such a turnaround has been achieved since 2013 as suggested by the new GDP series, however, remains questionable.[1]

Table 1.1: Average Annual Growth Rates of Real GDP (%)

Period	World	Advanced Economies	Emerging Economies	China	India
1981-1990	3.4	3.3	3.5	9.3	5.6
1991-2000	3.3	2.8	3.9	10.4	5.6
2001-2010	3.9	1.7	6.3	10.5	7.6
2011-2015	3.5	1.6	5	7.8	6.6
2015	3.1	2	4	6.8	7.3

Source: IMF, World Economic Outlook Database

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[1] The Central Statistical Organization released a new series of national accounts in January 2015, revising the base year from 2004-05 to 2011-12. The new series used a different corporate sector database which led to the increase in the size of the private corporate sector in aggregate GDP in 2011-12 from 23.7% in the old series to 34.7%, much of it because of an abnormal 309% increase in the GDP estimates for the private financial corporate sector. Such revisions have showed up in a higher GDP growth rate of 6.6% in 2013-14 as per the new series, compared to 4.7% in the earlier series (Nagraj, 2015). The new series has also come under criticism for the use of WPI as a deflator for sectors like manufacturing, trade and finance, resulting in over-estimations of the GDP growth rate (Sengupta, 2016).

Chart 1.1: Annual Growth Rates of Real GDP (%)
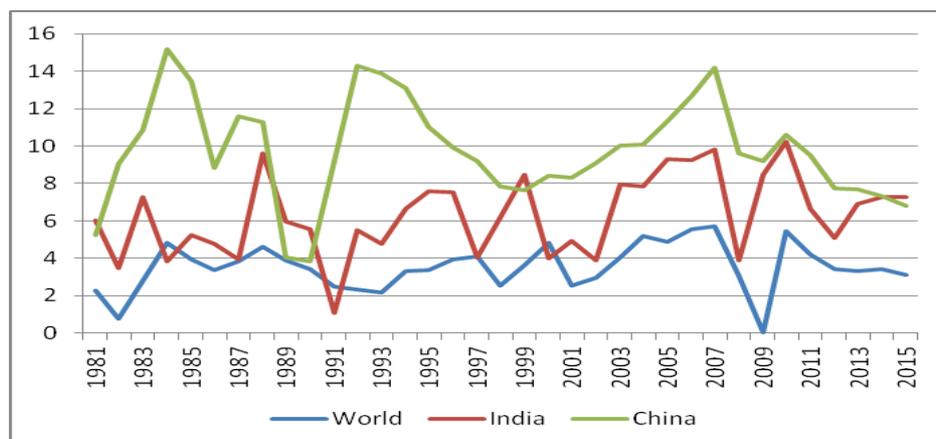
Source: IMF, World Economic Outlook Database

The fact that the growth performance of the Indian economy in the 1990s - the first post-reform decade - was by and large similar to the 1980s, has been widely noted and commented upon. De Long (2003) suggested that the 'structural break' in India's growth had occured in the mid-1980s and the rather limited measures of trade liberalization of the 1980s had a stronger growth impact compared to the more sweeping policy changes brought in 1991. Chandrasekhar and Ghosh (2002) emphasised the role played by a widening fiscal deficit (centre and states combined) in providing stimulus to growth in the 1980s and highlighted the absence of any significant increase in the average rate of economic growth, investment and savings in the 1990s, compared to the earlier decade. Ahluwalia (2002), while admitting the absence of any acceleration in the growth rate pointed to the 'remarkable external stability' of the 1990s growth in contrast to the unsustainable external debt build up of the 1980s, and argued that gradualist reforms of the 1990s had laid the basis for a higher growth trajectory in future.

High growth experienced in the last decade has renewed the debate on the impact of reforms on economic growth, with some proponents of reforms arguing that liberalization of external trade and investment has resulted in economic growth taking off 'dramatically' which in turn has led to significant declines in poverty (Bhagwati and Panagariya, 2013). Others, while lauding the impact of reforms on economic growth as a 'significant achievement', have pointed out the lopsided nature of the growth process, which has led to widely different speeds at which living standards have improved for the upper income groups and the rest of the population, as well as the

continuing lag in India's human development indicators, even in comparison to poorer developing countries (Drèze and Sen, 2013). These appraisals, while contending with each other on the socio-economic impact of growth, however, converge on attributing faster economic growth to market oriented reforms.

The present study takes a different view regarding India's integration with the global economy by focussing on the financial aspects of the growth process. Our findings suggest that while trade and financial opening may have triggered faster growth almost a decade after the initiation of reforms, a crucial role was played by the state in sustaining and prolonging the boom beyond the 2007-08 global financial crisis. A credit bubble was generated through the public sector banking system, complemented by external debt finance, particularly in the infrastructure sector. This has resulted in increased financial fragility, manifested in an unprecedented rise in corporate indebtedness and mirrored in the accumulation of bad debts in the banking system, alongside enhanced external vulnerability. The study concludes with an analytical exposition depicting the faultlines of such a growth trajectory.

Growth and Investment since 2000

The world economy had slowed down in the late 1990s following the financial crisis in East Asia, which had later spread to Russia, Argentina, Brazil and Turkey. The advanced economies also went into a recession in the early 2000s following the collapse of the dotcom bubble in the US. The global economic recovery started in 2002 and led to a boom between 2003 and 2008, with world GDP and world trade (in value) growing at an average annual rate of 4.7% and 15%, respectively.

Export 'Induced' Growth

The acceleration of India's economic growth since 2003 coincided with the global economic boom, with India's share in world merchandise and services exports growing from 0.6% and 1% respectively in 1999 to 0.8% and 1.4% in 2003, and went on to peak at 1.7% and 3.3% respectively, in 2011 (Chart 1.2).

Chart 1.2: India's Share in World Merchandise and Commercial Services Exports (%)
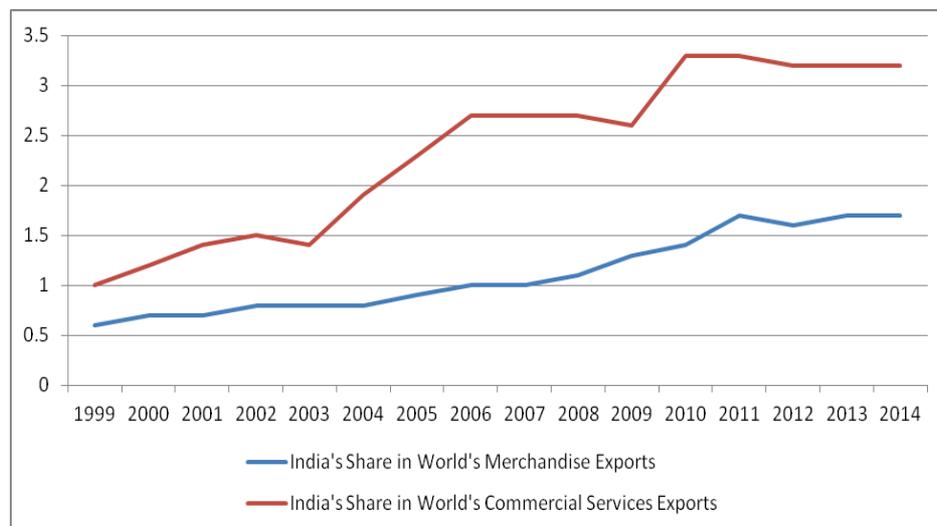
Source: WTO, International Trade Statistics, Various Issues

India's merchandise exports-GDP ratio, which had risen from the 1980s average of 4.4% to 7.6% in the 1990s, witnessed a sharp rise to 9.3% in 2000-01 and continued to rise to almost 15% in 2008-09 and peaked at 16.8% in 2013-14 (Table 1.2). While this points towards an important role played by export markets in stimulating the economic boom in the 2000s, it is noteworthy that imports have grown much faster than exports in the 2000s unlike in the 1990s, which reflect a net dampening effect of trade openness on aggregate demand. The import-GDP ratio had also risen sharply from an average of 9% in the 1990s to 10.6% in 2000-01, further to 24.4% in 2008-09 and peaked at 26.4% in 2012-13. The merchandise trade balance, which had remained consistently negative for India through the 1980s and 1990s, rose to historically high levels in the 2000s, reaching -9.5% of GDP in 2008-09, subsequently peaking at over -10% in 2012-13.

India's oil trade has been in deficit since the 1970s. The non-oil trade balance, however, turned positive on average in the 1990s and improved further in the first four years of the 2000s decade, despite the oil trade balance deteriorating during this period. Additionally, the net invisibles to GDP ratio increased significantly from 2000-01, reflecting the rise in India's services exports during this period driven by software services, coupled with substantial net private transfers in the form of remittances. The overall result was reflected in a positive current account balance for the Indian economy for three consecutive

years starting from 2001-02, with the current account surplus reaching 2.3% of GDP in 2003-04 (Chart 1.3).

Table 1.2: Merchandise Exports, Imports and Trade Balance (% of GDP)

	Exports/GDP	Imports/GDP	Oil Trade Balance/GDP	Non-Oil Trade Balance/GDP	Trade Balance/GDP
1980-81 to 1989-90	4.4	7.0	-1.7	-0.9	-2.5
1990-91 to 1999-00	7.6	9.0	-1.9	0.6	-1.4
2000-01	9.3	10.6	-2.9	1.6	-1.3
2001-02	8.9	10.4	-2.4	0.9	-1.5
2002-03	10.1	11.7	-2.9	1.2	-1.7
2003-04	10.3	12.6	-2.7	0.4	-2.3
2004-05	11.6	15.5	-3.2	-0.7	-3.9
2005-06	12.4	17.9	-3.9	-1.6	-5.5
2006-07	13.3	19.6	-4.1	-2.2	-6.3
2007-08	13.2	20.3	-4.1	-3.0	-7.1
2008-09	14.9	24.4	-5.3	-4.2	-9.5
2009-10	13.1	21.1	-4.3	-3.7	-8.0
2010-11	14.7	21.6	-3.8	-3.2	-6.9
2011-12	16.3	26.0	-5.3	-4.5	-9.8
2012-13	16.2	26.4	-5.5	-4.7	-10.2
2013-14	16.8	23.9	-5.4	-1.7	-7.1
2014-15	15.1	21.8	-4.0	-2.7	-6.7

Source: Calculated from RBI's Database on Indian Economy (DGCIS data)

India's oil trade has been in deficit since the 1970s. The non-oil trade balance, however, turned positive on average in the 1990s and improved further in the first four years of the 2000s decade, despite the oil trade balance deteriorating during this period. Additionally, the net invisibles to GDP ratio increased significantly from 2000-01, reflecting the rise in India's services exports during this period driven by software services, coupled with substantial net private transfers in

the form of remittances. The overall result was reflected in a positive current account balance for the Indian economy for three consecutive years starting from 2001-02, with the current account surplus reaching 2.3% of GDP in 2003-04 (Chart 1.3). This indicates the stimulus from external markets that contributed to the growth acceleration, with the GDP growth rate rising from around 4% in 2002-03 to 8% in 2003-04.

Chart 1.3: Current Account Balance (% of GDP)
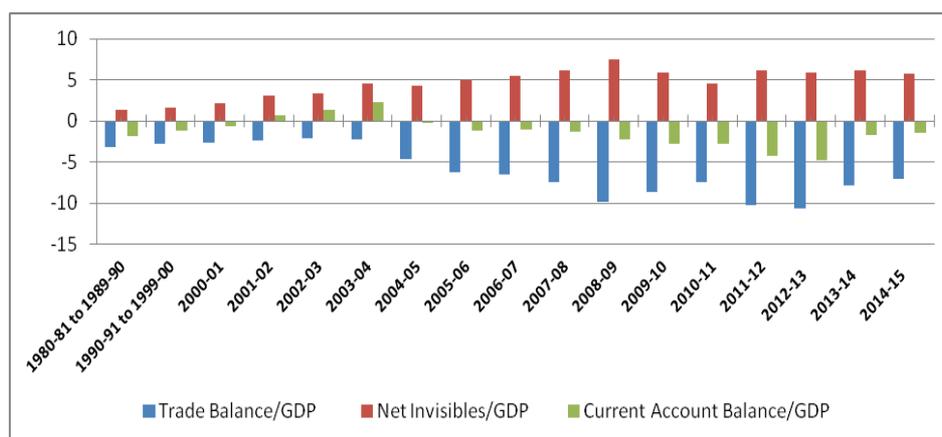
Source: Calculated from RBI, Database on Indian Economy (BoP data)

By 2004-05 though, the current account balance had once again turned negative. It is important to note that throughout the boom period, from 2003-04 to 2007-08, when the Indian economy experienced an average annual GDP growth rate of around 8.7%, the merchandise trade and current account deficit continued to rise. The non-oil trade balance also turned negative from 2004-05 and worsened in tandem with the oil trade deficit. Thus, while the stimulus from external markets played a role in setting off the growth acceleration, the sustenance of the boom cannot be attributed to export surpluses.[2]

Unlike China, India's growth in the 2000s was accompanied by a marked deterioration of its trade and current account balance as a share of GDP. The rising external deficit was not only on account of

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[2] Ghosh Dastidar (2015) argues on the basis of a survey of empirical evidence that India's growth can be better characterised as export 'induced', where favourable conditions in the world market have caused an increase in exports, rather than being export 'led', as has been experienced by the East Asian economies, which resulted from state-directed export promotion strategies.

increasing international prices and volumes of oil imports, but for rising imports of a range of non-oil commodities including capital goods, coal and gold, signifying an increase in the import intensity of the economy. The current account deficit reached a record -4.8% of GDP in 2012-13, which led to an episode of capital flight and currency depreciation in the next financial year.[3] We shall return to the implications of this when we discuss the external vulnerability of the growth process in the third chapter.

Private Corporate Investment

The economic boom since 2003-04 saw a significant rise in the investment and savings rate of the economy. While gross domestic capital formation and gross domestic savings as a share of GDP had seen minor increases from 20.4% and 18.6% respectively on average in the 1980s to 24.3% and 23% in the 1990s, the investment and savings rates started climbing from 2003-04 to peak at 38.1% and 36.8% in 2007-08, before declining to 34.8% and 30.1% in 2012-13 (Table 1.3). A notable aspect in this is the sharp rise in private corporate investment. The private corporate sector's gross capital formation as a share of GDP remained well below that of the public sector in the 1980s and 1990s. This got reversed in the 2000s with the private corporate sector's investment rate surpassing that of the public sector by 2004-05 and peaking at 17.3% in 2007-08, after which it has declined to 9.2% in 2012-13. The public sector's investment rate fell considerably till 2002-03, but rose consistently thereafter to above 9% between 2008-10, reflecting the fiscal expansion in the aftermath of the global financial crisis.

The estimation of private corporate investment which showed up in the sharp rise in the investment rate since 2003-04 has been questioned on methodological grounds.[4] While it is quite likely that the CSO estimates have exaggerated the gross capital formation in the private corporate sector in the 2000s, other evidence does point towards a faster expansion of private investment compared to public

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[3] Bose (2013) discusses the currency depreciation episode in May 2013 in relation to the growing current account deficit and external indebtedness.

[4] Nagraj (2008) pointed out that the methodology of 'blowing up' up the investment and savings data from RBI's limited sample of around 2000 companies over the paid up capital of all companies registered with the Registrar of Companies led to serious overestimations, since a very large proportion of such registered companies are economically inactive, shell companies.

investment during this period. CMIE's Capex database captures investment projects involving capital expenditure over Rs. 1 crore since 1995-96. The data on the stock of investment projects under implementation show a trend similar to the one suggested by the CSO estimates.

Table 1.3: Rates of Savings and Investment (% of GDP)
(Base Year: 2004-05)

	Gross Domestic Savings/ GDP	Gross Domestic Capital Formation/ GDP	Gross Capital Formation/GDP		
			Public Sector	Private Corporate Sector	Household Sector
1980-81 to 1989-90	18.6	20.4	11.1	4.3	6.7
1990-91 to 1999-00	23	24.3	8.8	7	8
2000-01	23.7	24.3	7.1	4.9	11.4
2001-02	24.8	24.2	7.2	5.1	12.6
2002-03	25.9	24.8	6.4	5.7	12.3
2003-04	29.0	26.8	6.6	6.5	12.1
2004-05	32.4	32.8	7.4	10.3	13.4
2005-06	33.4	34.7	7.9	13.6	11.7
2006-07	34.6	35.7	8.3	14.5	11.9
2007-08	36.8	38.1	8.9	17.3	10.8
2008-09	32.0	34.3	9.4	11.3	13.5
2009-10	33.7	36.5	9.2	12.1	13.2
2010-11	33.7	36.5	8.4	12.8	13.2
2011-12	31.3	35.5	7.7	10.1	15.8
2012-13	30.1	34.8	8.1	9.2	14.8

Source: Calculated from RBI's Database on Indian Economy (CSO data)

The nominal value of the stock of investment projects being implemented in the private sector surpassed that of government investment projects by end March 2007, and maintained the upward trend till end-March 2012, stagnating thereafter (Chart 1.4.a). The share of private investment projects in total investment projects under implementation rose from 38% in 2005-06 to 52% in 2006-07, peaked at 61% in 2010-11 and subsequently dropped to 47% by 2015-16 (Chart 1.4.b).

Chart 1.4.a: Investment Projects Outstanding
(Under Implementation)(in Rs. Billion)
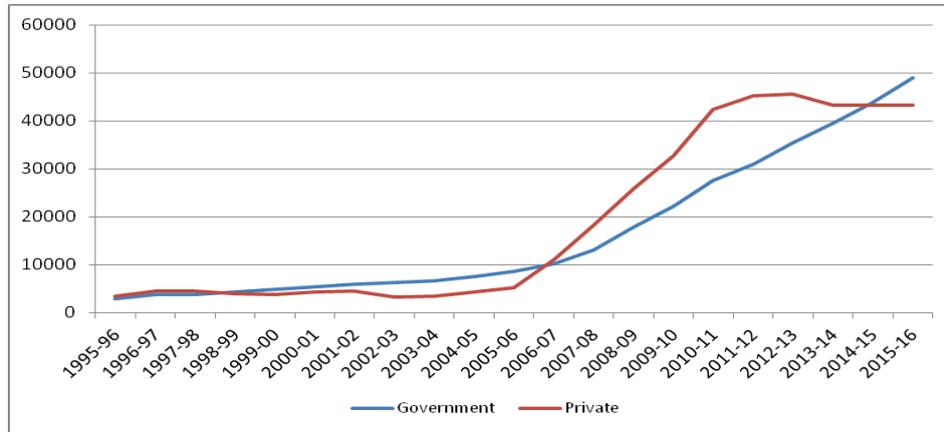
Source: CMIE, CapEx Database

Chart 1.4.b: Investment Projects Outstanding
(Under Implementation)
(% Shares of Government and Private Projects by Nominal Value)
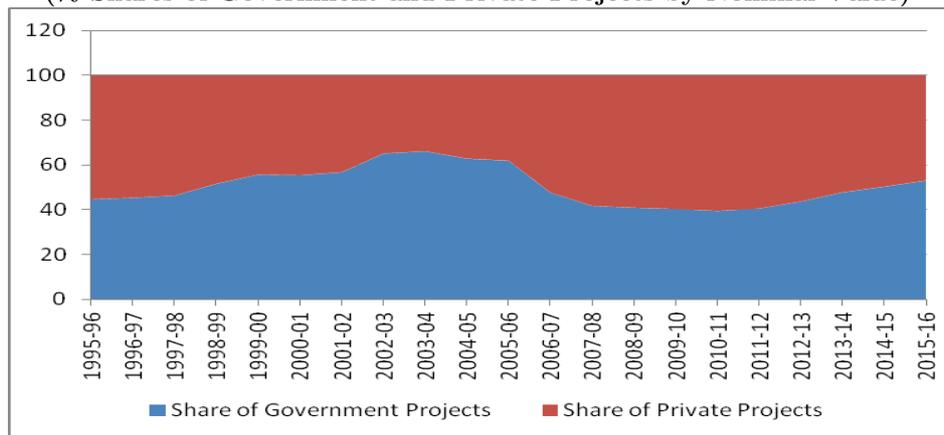
Source: CMIE, CapEx Database

The fiscal indicators of the centre and states combined provide further confirmation of the trends. The gross fiscal deficit which averaged around 7.7% of GDP in the 1980s and 7.5% in the 1990s had reached 9.3% of GDP in 2002-03 (Chart 1.5.a). With the inception of the boom phase, the gross fiscal deficit to GDP fell continuously from 2003-04 to reach 4% in 2007-08. Total government expenditure to GDP declined from 28% in 2003-04 to 26.4% in 2007-08 and total receipts rose from 19.8% to 22.4% in the same period. Gross capital formation from the central budgetary resources to GDP, which averaged around 6.7% in the 1980s, fell to 4.5% in the 1980s and further to 2.7% of GDP in the 2000s.

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Chart 1.5.a: Government Expenditure, Receipts & Gross Fiscal Deficit of Centre & States Combined (% of GDP)
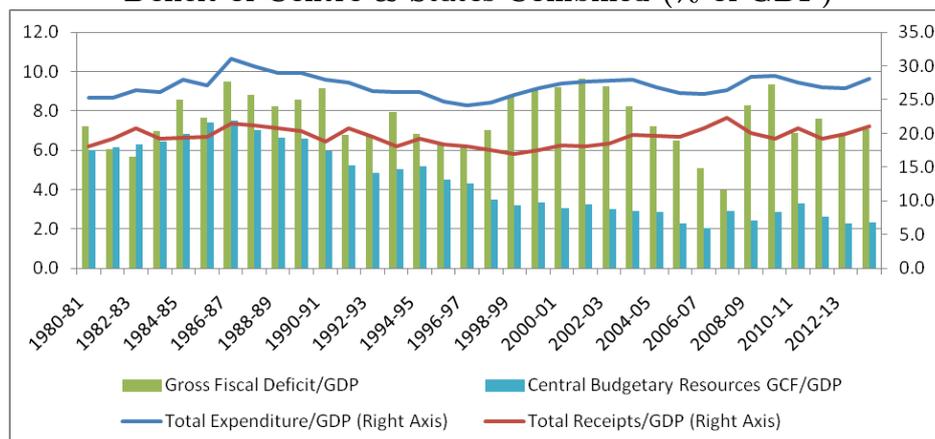
Source: Calculated from RBI, Database on Indian Economy (Handbook)

Chart 1.5.b: Tax Revenues, Direct Taxes and Revenue Deficit of Centre & States Combined (% of GDP)
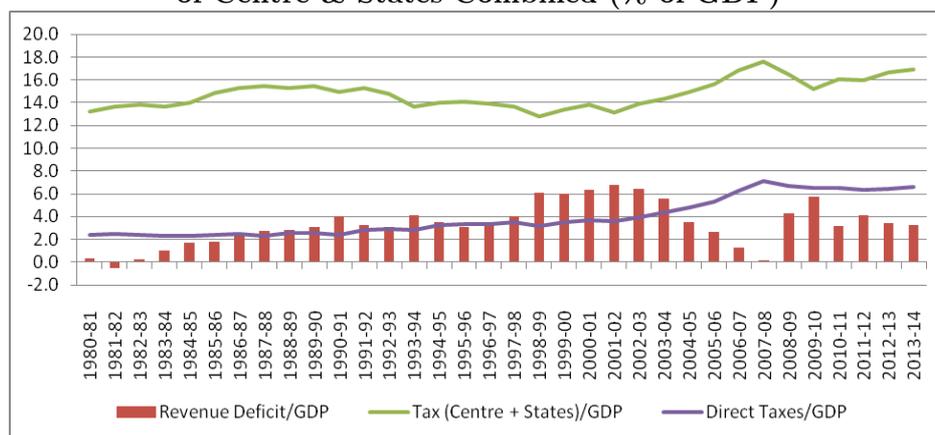
Source: Calculated from RBI, Database on Indian Economy (Handbook)

The combined gross fiscal deficit rose sharply to 8.3% of GDP in 2008-09, reflecting the fiscal stimulus of the government provided in the wake of the global financial crisis and recession. Since the crisis, total expenditures have increased and receipts declined, with the fiscal deficit averaging around 7.5% of GDP. The revenue deficit, which had declined to almost zero by 2007-08 increased sharply to 5.7% of GDP by 2009-10 (Chart 1.5.b). This was because of a significant fall in the tax-GDP ratio between 2008 and 2010, because the post-crisis fiscal stimulus had come more in the form of tax breaks (2.4% of GDP) than in terms of rising government expenditures (2.2% of GDP). The direct taxes to GDP ratio, which had peaked at 7% of GDP in 2007-08 has averaged around 6.5% in the post-crisis period.

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Thus, the boom of the 2000s was accompanied by a decline in public expenditure to GDP and a steeper decline of the gross fiscal deficit to GDP, which confirms the larger role of private investment during the expansionary phase. Moreover, the contribution of budgetary resources of the central government in gross capital formation has also shown a long-term declining trend.

Investment in Infrastructure

The faster expansion of private investment in the 2000s occured not only in those sectors of manufacturing and services where the private corporate sector had a traditional presence, but also in the infrastructure sector, where private investment was practically absent till in the 1990s. As per Planning Commission estimates, total investment in the infrastructure sector — defined as electricity, roads & bridges, telecommunications, railways, irrigation, water supply & sanitation, ports, airports, storage and oil & gas pipelines — increased from 5% of GDP during the Tenth Plan period (2002-03 to 2005-06) to 7.2% of GDP during the Eleventh Plan (2007-08 to 2011-12), with the share of private investment in total infrastructure investment rising from around 22% to 36% (Table 1.4). It is noteworthy that the share of private investment in infrastructure overshot the target of 30% set in the Eleventh Plan, mainly on account of enhanced levels of investments in sectors like power, telecommunications and gas pipelines.

Table 1.4: Investment in Infrastructure (% of GDP)

	10th Plan Total (2002-03 to 2006-07) (Actual)	11th Plan (2007-08 to 2011-12) (Actual)	12th Plan (2012-13 to 2016-17) (Initial Projection)	12th Plan (2012-13 to 2016-17) (Revised Projection)
Total	5.04 (100)	7.21 (100)	8.18 (100)	5.71 (100)
Public	3.92 (77)	4.57 (64)	4.24 (52)	3.47 (60)
Private	1.12 (22)	2.64 (36)	3.94 (48)	2.23 (40)

Source: Planning Commission, Twelfth Plan Document &
High Level Committee on Financing Infrastructure

The emphasis on encouraging private investments in the infrastructure sector in the Eleventh Plan was also reflected in a shift

to PPPs (Public-Private Partnerships) in infrastructure development. Data on infratructure projects from the DEA database show the rise in the number and value of PPP projects (above Rs. 5 crore) from 2002-03 (Charts 1.6.a & b). The total number of PPP projects peaked at 89 in 2010-11 and 2011-12, while in terms of total project cost it peaked at Rs. 786 billion in 2007-08. Since 2012-13 there has been a gradual decline in the PPP projects. Private sector projects in infrastructure kickstarted in 2006-07 and peaked in 2014-15 at 106 projects with total project cost of Rs. 314 billion. Traditional government projects also saw an increase from 11 projects with total project cost of Rs. 264 billion in 2003-04 to 110 projects with total cost of Rs. 1.1 trillion in 2008-09. Government projects peaked in 2013-14 both in terms of numbers at 315 projects as well as in terms of project cost at Rs. 1.4 trillion.

Chart 1.6.a: Number of Infrastructure Projects Awarded
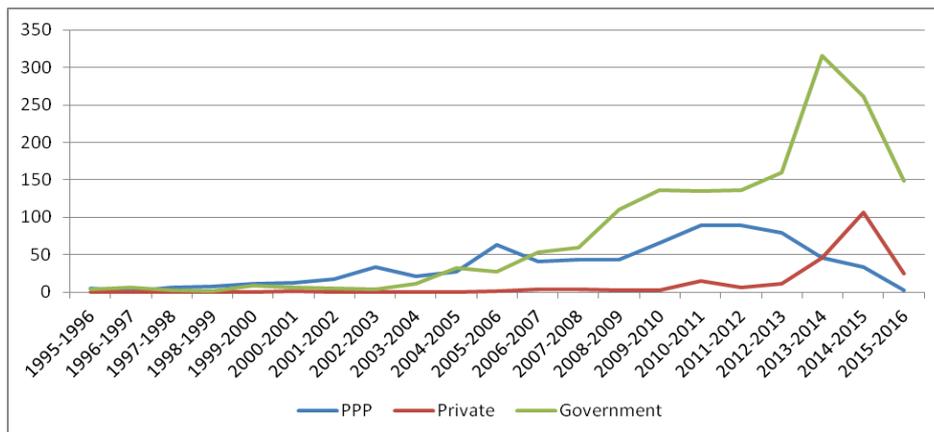
Chart 1.6.b: Total Project Cost of Infrastructure Project Awarded (Rs. Billion)
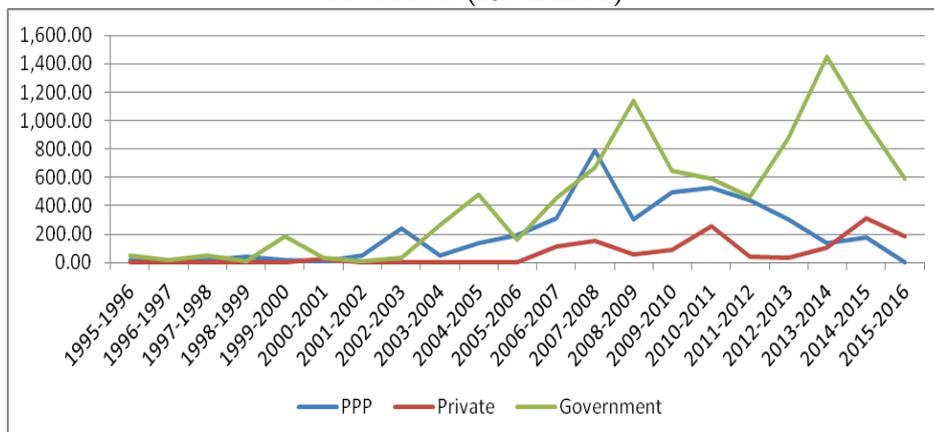
Source: Database of Infrastructure Projects in India, Department of Economic Affairs, GoI

Investment in infrastructure, both public and private, played an important role in prolonging the economic boom of the 2000s, especially during the period of the Eleventh Plan (2006-07 to 2011-12). This role became particularly crucial in sustaining growth in India after the 2007-08 global crisis. However, this high rate of investment in infrastructure could not be sustained in the Twelfth Plan (2012-13 to 2016-17). The Planning Commission's (2014) High Level Committee on Financing Infrastructure noted that anticipated investment in infrastructure in 2012-13, the first year of the Twelfth Plan, was only 66% of what was targeted and had fallen below what was actually realised in 2008-09. The Committee revised the projections for infrastructure investment in the Twelfth Plan from 8.2% of GDP to 5.7% of GDP, with both public and private investment projected to drop sharply. This clearly signalled the end of the expansionary phase of the economy.

The following points emerge from our discussion on the Indian growth experience of the 2000s. First, there was a boom which started in 2003-04, continued even after 2007-08 global crisis with minor disruptions, but came to an end in 2011-12. Second, while export markets played a role in causing the growth acceleration in the early years of the last decade, the rising trade and current account deficits have acted as a dampener on aggregate demand. India's growth story was therefore different from the export-led growth stories of China or the ASEAN. Third, private corporate investment expanded more rapidly than public investment for most of the high growth phase but have fallen to equivalent levels since the end of the boom. The fiscal deficit contracted during the boom phase but has expanded since the global recession. Fourth, both public and private investment in infrastructure had risen significantly during the boom, with a proliferation of PPP projects, but it turned out to be an unsustainable expansion with such investments falling from 2012-13. We now proceed to study the financial aspects of this growth phase to better understand its relationship with economic reforms.

Financial Aspects of Growth

Financial reforms initiated since 1991, involving the removal of controls and regulations on financial markets and capital flows, were expected to lead to financial 'deepening' through a transformation of

the financial structures. Standard indicators of financial depth are stock market capitalisation to GDP and bank credit to GDP.[5] Stock market capitalisation to GDP, which had initially risen from below 20% of GDP in the 1980s to almost 50% in the immediate aftermath of financial opening in 1991-92, had fallen sharply since 1999-2000 and had reached to around 22% of GDP in 2002-03 (Chart 1.7.a). The boom period since 2003-04 saw a reversal of this trend and stock market capitalisation rose continuously to cross 100% of GDP in 2007-08. After a correction in 2008-09 it rose in 2009-10 but fell again in 2011-12 and was around 65% of GDP in 2013-14. Much of these movements in stock market valuation have been driven by flows of foreign portfolio capital (FPIs), which have been progressively liberalized since 1991.

Financing the Boom

While the average annual stock market capitalisation roughly followed the pattern of growth of the real economy, its role in terms of financing the economic boom has, however, been miniscule (Chart 1.7.b). New public issues of equity and debt by private companies taken together reached around 2.5% of GDP in 1992-93 and have not crossed that level ever since. It is noteworthy that even though the boom since 2003-04 was led by private corporate investment, the amount of capital mobilised from the primary equity market touched merely 1% of GDP at its peak in 2007-08. In the debt market, while public issues of bonds fell after 2004-05 and remained muted throughout the boom period, private placement of corporate debt increased since 2005-06 and reached 3% of GDP in 2008-09 (Chart 1.7.c).

Private placement of corporate debt has continued to rise even in the aftermath of the boom period. There has been a policy thrust on deepening the market for corporate bonds and securitised debt since the mid-2000s (GoI, 2005).[6] It can be seen though that during the boom period, resource mobilisation from the equity and debt markets by the private corporate sector never crossed 4% of GDP.

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[5] See World Bank and IMF (2005).

[6] A High Level Expert Committee on Corporate Bonds and Securitisation formed after announcement in Budget 2005-06 submitted its report in December 2005, making several recommendations to develop the primary and secondary market for corporate debt (GoI 2005). The Government accepted its recommendations and initiated implementation from 2006-07.

Chart 1.7.a: Average Annual Market Capitalisation of BSE (% of GDP)
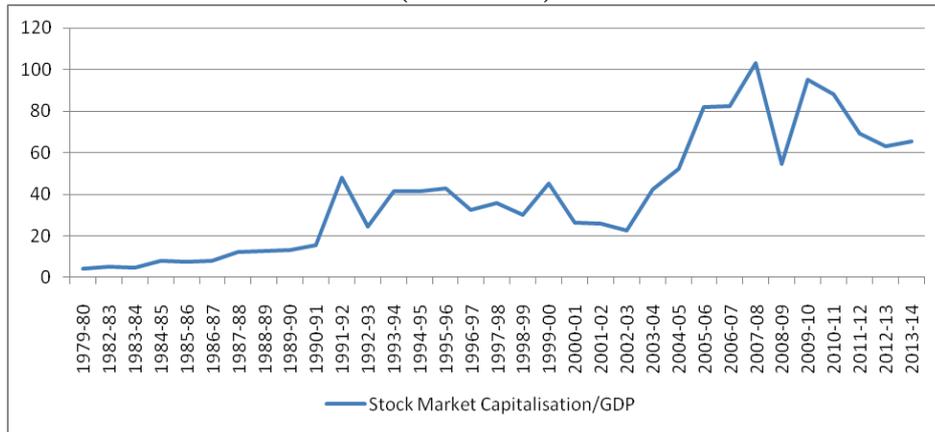
Chart 1.7.b: New Capital Issues By Non-Government Public Limited Companies (% of GDP)
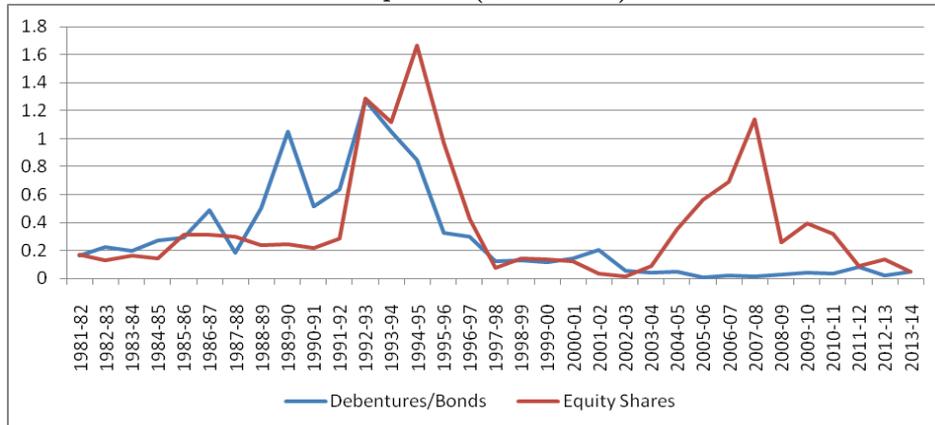
Chart 1.7.c: Private Placement of Corporate Debt (% of GDP)
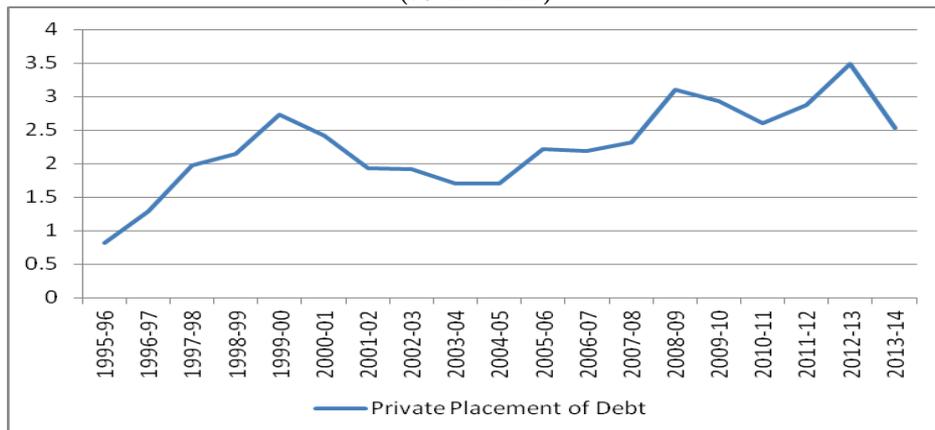
Source: (a, b) Source: RBI, Database on Indian Economy

(c) PRIME Database

The most crucial role in financing the boom in the real economy was played by the scheduled commercial banks. The banking sector reforms initiated in the early 1990s following the recommendations of the Narasimham Committee-I sought to deregulate interest rates, reduce the statutory liquidity ratio (SLR) and cash reserve ratio (CRR) and also dilute the norms of priority sector lending. All this was meant to reduce the share of the government and sectors like agriculture and small scale industries in bank credit and enhance the share of the private corporate sector. However, despite the reduction of the SLR from 38.5% in 1992 to 25% in 1997 and the CRR from 15% in 1992 to 4.5% by 2003, the scheduled commercial banks raised their holding of government securities throughout the late 1990s even with growing deposits, leading to a fall in the credit-deposit ratio from an annual average of 65% in the 1980s to 55% in the 1990s (Charts 1.8.a & b). This was attributed to risk aversion on the part of the banks in lending to the private commercial sector as well as the relative attractiveness of government securities in terms of returns (Chandrasekhar and Pal, 2006).

This trend reversed with the commencement of the economic boom with the the credit-deposit ratio rising and investments in government securities falling from 2004-05. The credit-deposit ratio maintained an annual average of around 74% since 2004-05, with the credit-GDP ratio rising from around 30% in 2003-04 to almost 53% in 2013-14.

Chart 1.8.a: Scheduled Commercial Banks: Credit-Deposit Ratio

Source: RBI, Database on Indian Economy

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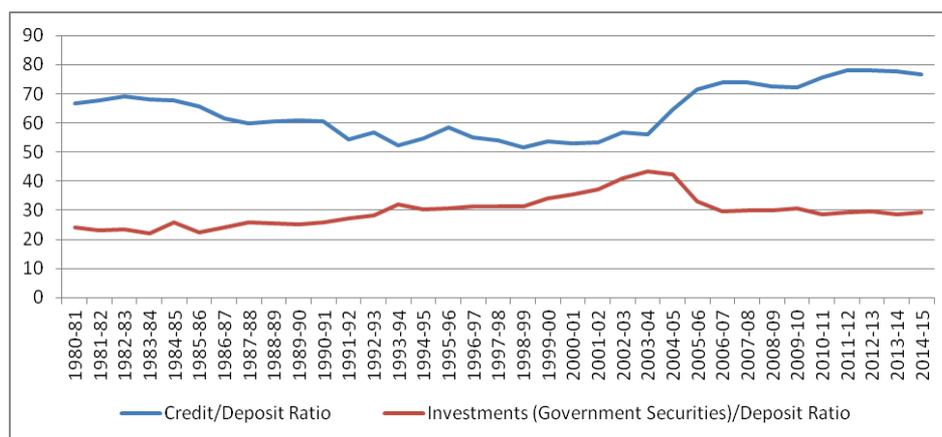
Chart 1.8.b: Scheduled Commercial Banks: Deposits, Credit and Investment (% of GDP)
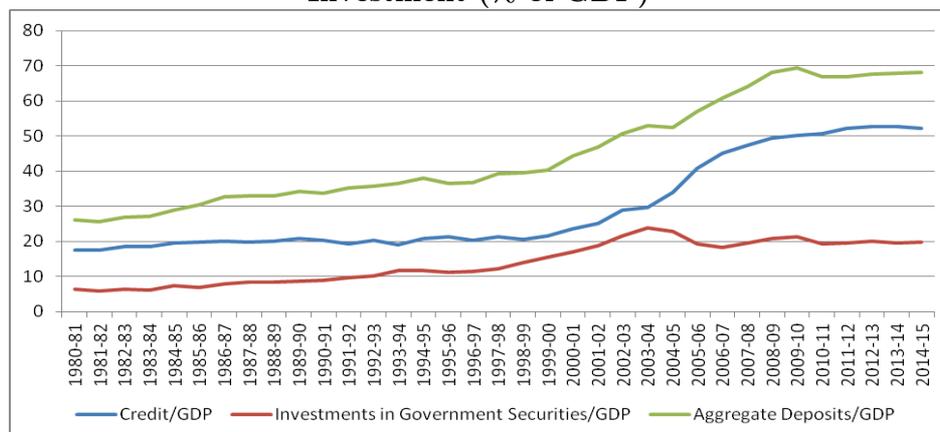
Source: RBI, Database on Indian Economy

The sharp and unprecedented rise in bank credit in the 2000s occured alongside a gradual decline in the lending rates of the commercial banks. The weighted average lending rates of all scheduled commercial banks declined gradually from around 17% in 1995-96 to 13% in 2003-04. Due to a larger fall in the inflation rates in the late 1990s, however, the real interst rates rose during this period and remained over 10% between 1999-2002 (Charts 1.9.a & b). With inflation rising from 2003-04 and lending rates continuing its declining trend, real interest rates fell significantly and reached around 2.5% in 2010-11. With the inflation rate touching almost double digits by 2010-11, the declining trend of nominal lending rates was reversed also leading to a rise in the real lending rates.

A broadly similar movement can be seen in the benchmark prime lending rate of the State Bank of India (SBI), the largest commercial bank in India. SBI's nominal PLR had fallen from 15.8% in 1995-96 to 12% in 1999-00, and further to 10.3% in 2004-05, driving down the real lending rate from around 9% in 1999-00 to 4.5% in 2004-05 (Chart 1.9.c). This decline in the nominal and real lending rates in the early 2000s resulted from the accommodative policy stance of the monetary authorities during this period, with the policy rate cut from 8% in March 2002 to 6.25% by October 2005. Another phase of monetary easing was witnessed during the post-crisis period, with the policy rate being cut from 9% in July 2008 to 4.75% in April 2009, which found reflection in the decline of nominal and real lending rates between 2008-2011.

Chart 1.9.a: Sectorwise Weighted Average Lending Rates of Scheduled Commercial Banks and Average Inflation Rate (%)
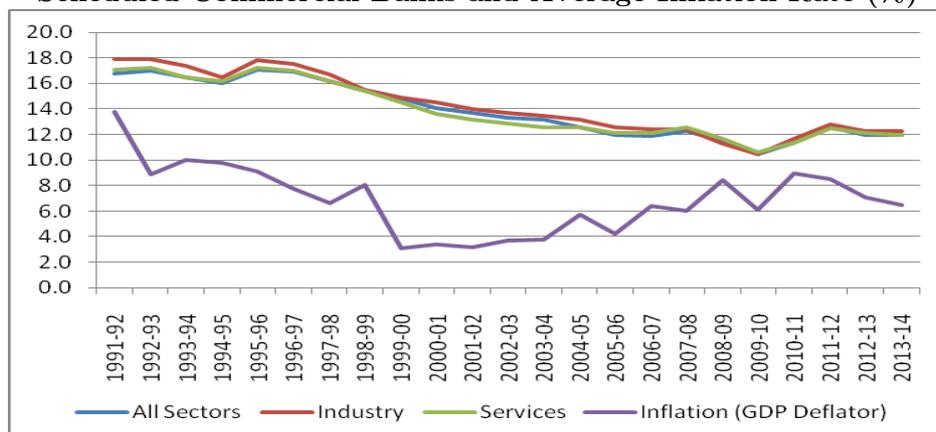
Chart 1.9.b: Weighted Average Real Lending Rates of Scheduled Commercial Banks (%)
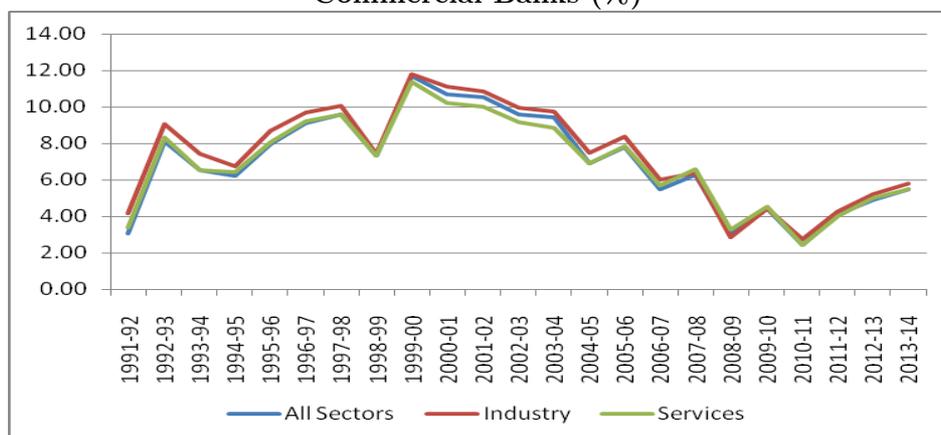
Chart 1.9.c: Benchmark Prime Lending Rate of the SBI – Nominal and Real (%)
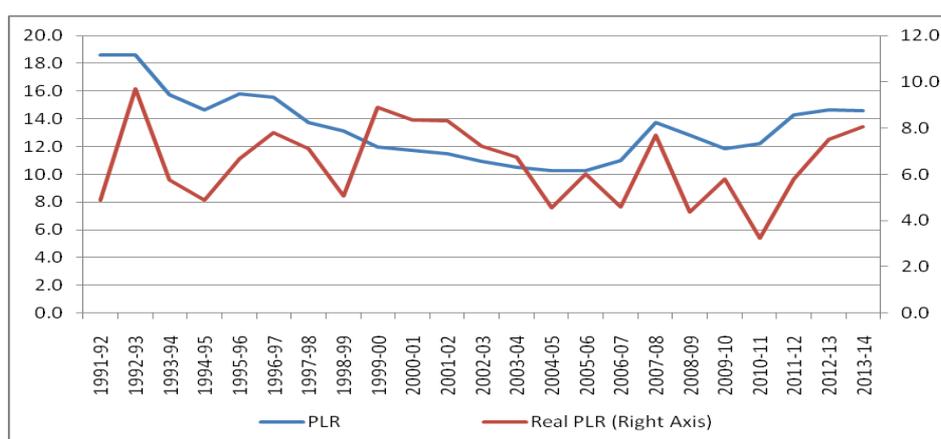
Source: (a, b) RBI, Database on Indian Economy; (c) SBI Benchmark Prime Lending Rate (Historical Data), SBI Corporate Website

Note: GDP Deflator calculated from GDP data on current and constant prices

Flow of Bank Credit

In examining the contribution of bank credit in the economic boom of the 2000s, we have estimated the bank group wise and sector wise annual flow of credit in the post-reform period. The annual flow of credit was estimated as the change in annual stocks of outstanding credit from the data on occupation-wise classification of outstanding credit published by the RBI in Basic Statistical Returns of Scheduled Commercial Banks in India. The credit flow data reflects the injection of new credit in the economy.

Chart 1.10.a: Annual Credit Flow of Scheduled Commercial Banks & GDPmp
(in Rs. Billion)
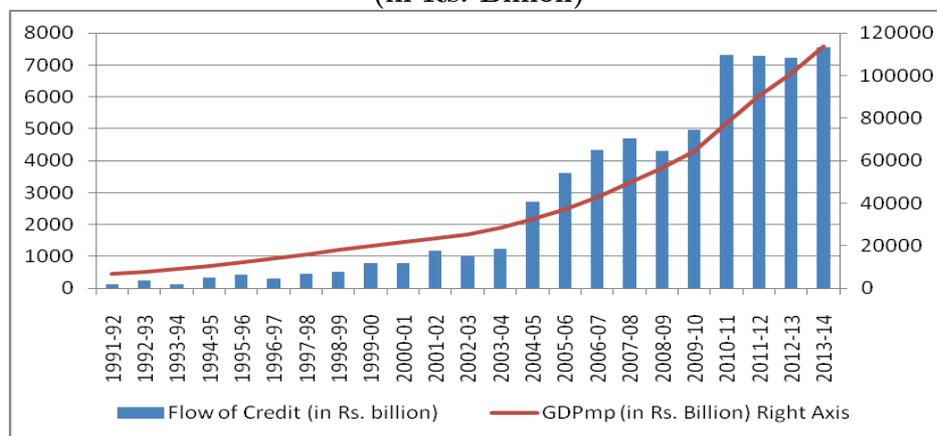
Source: Calculated from RBI, Basic Statistical Returns of Scheduled Commercial Banks in India & Database on Indian Economy

Chart 1.10.b: Annual Credit Flow of Scheduled Commercial Banks (% of GDP)
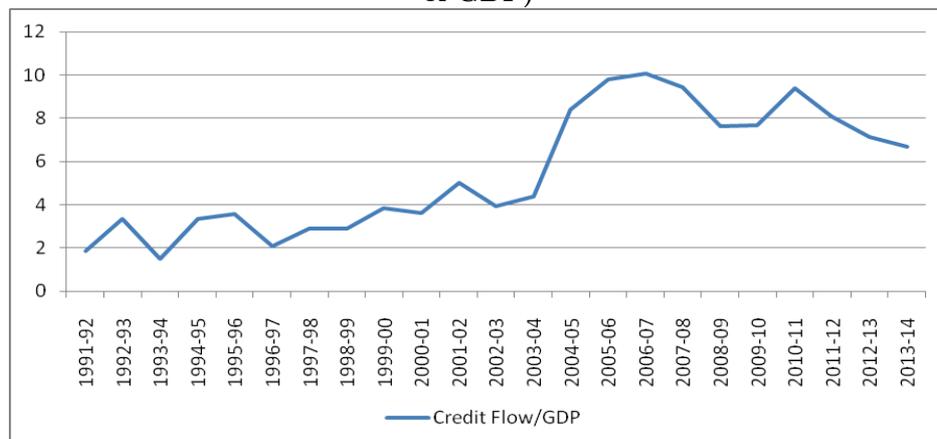
Source: Calculated from RBI, Basic Statistical Returns of Scheduled Commercial Banks in India & Database on Indian Economy

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Annual flow of bank credit jumped from Rs. 1.2 trillion in 2003-04 to Rs. 2.7 trillion in 2004-05, i.e. from around 4.4% to 8.4% of nominal GDP (Charts 1.10.a & b). This significant injection of new credit coincided with the growth acceleration witnessed from 2003-04. During the phase of accelerated growth between 2005-2008, annual credit flow averaged at over 9.7% of GDP. The rate of credit flow came down from 2008-09 but have averaged at around 7.7% annually since then till 2013-14. The share of industry in new credit had a declining trend in the 1990s, with the services sector enhancing its share significantly in the late 1990s (Chart 1.11). There was also a spurt in personal loans between 2002-2006, with over 50% of new credit in 2003-04 going into personal loans.

Chart 1.11: Sectoral Share in Annual Credit Flow of Scheduled Commercial Banks (%)
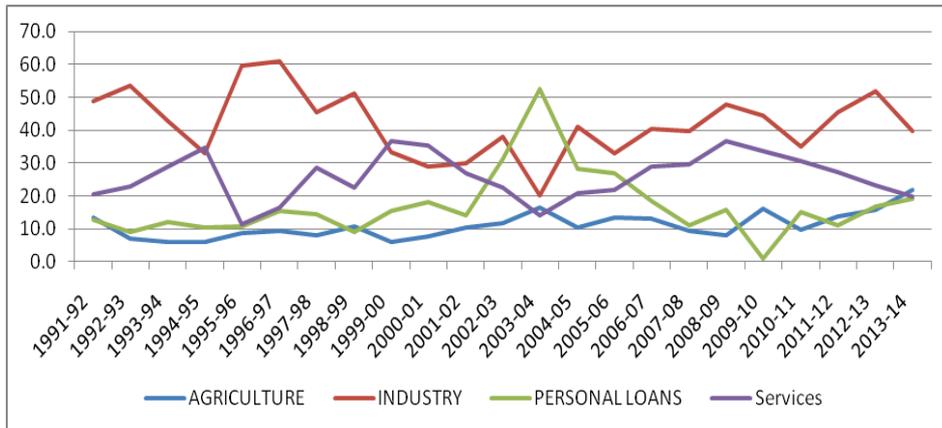
Source: Calculated from RBI, Basic Statistical Returns of Scheduled Commercial Banks in India

Chart 1.12: Sectoral Share in Annual Credit Flow of Scheduled Commercial Banks (% of GDP)
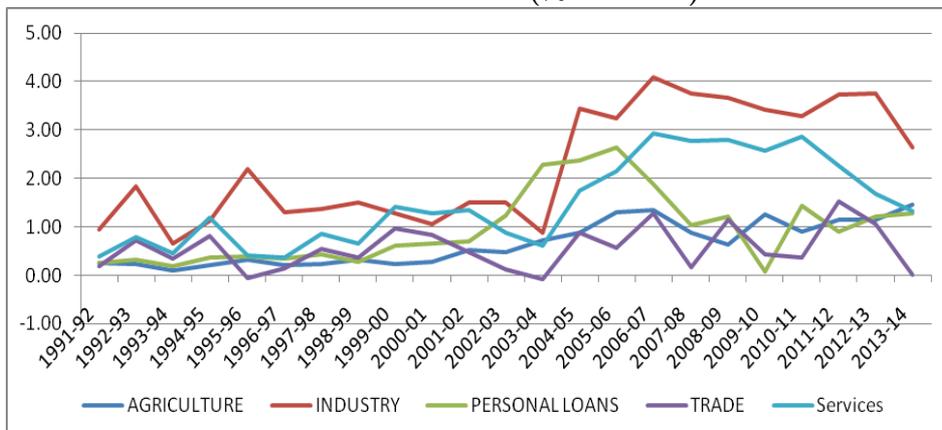
Source: Calculated from RBI, Basic Statistical Returns of Scheduled Commercial Banks in India & Database on Indian Economy

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From 2004-05, however, the share of the industrial sector in new credit has been the highest among all sectors, averaging around 42% (the 1990s average was 47%), followed by services averaging around 27%. The share of personal loans in new credit has averaged around 13% since 2006-07. The share of agriculture in new credit, increased from an average of 8% in the 1990s to 12% in the 2000s. The jump in credit flow witnessed in 2004-05 was led by new credit to industry increasing from less than 1% of GDP in 2003-04 to almost 3.5% of GDP in 2004-05 (Chart 1.12). Since 2004-05, new credit to industry and services have averaged at around 3.5% and 2.4% of GDP respectively, while personal loans which rose to above 2% of GDP between 2002-06 averaged around 1% since 2006-07.

Chart 1.13: Bankgroupwise Annual Credit Flow
(% of GDP)
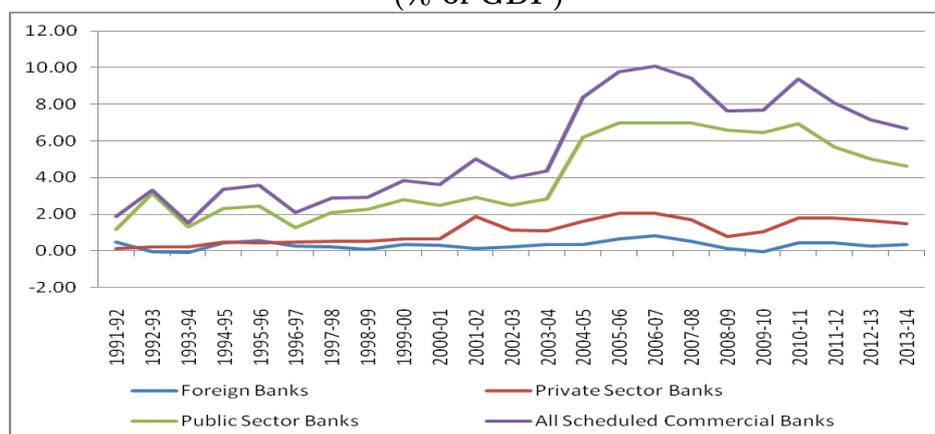
Source: Calculated from RBI, Basic Statistical Returns of Scheduled Commercial Banks in India & Database on Indian Economy

Among bankgroups, the public sector banks (PSBs) have clearly led the surge in credit since 2004-05, with new credit from PSBs averaging around 6.7% of GDP between 2004-2011 (Chart 1.13). It is noteworthy that while new credit from the private sector banks and foreign banks fell in the immediate aftermath of the global financial crisis in 2007-08, the PSBs in India had continued to lend at a frenetic pace. For both the industrial and services sectors, the public sector banks were the providers of the bulk of new credit since 2004-05 (Charts 1.14.a & b).

Chart 1.14.a: Bankgroupwise Annual Credit Flow to Industry (% of GDP)
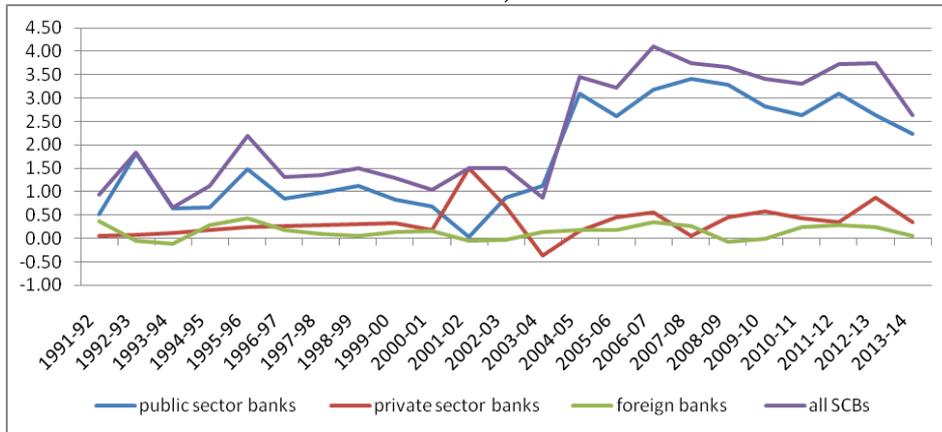
Chart 1.14.b: Bankgroupwise Annual Credit Flow to Servies (% of GDP)
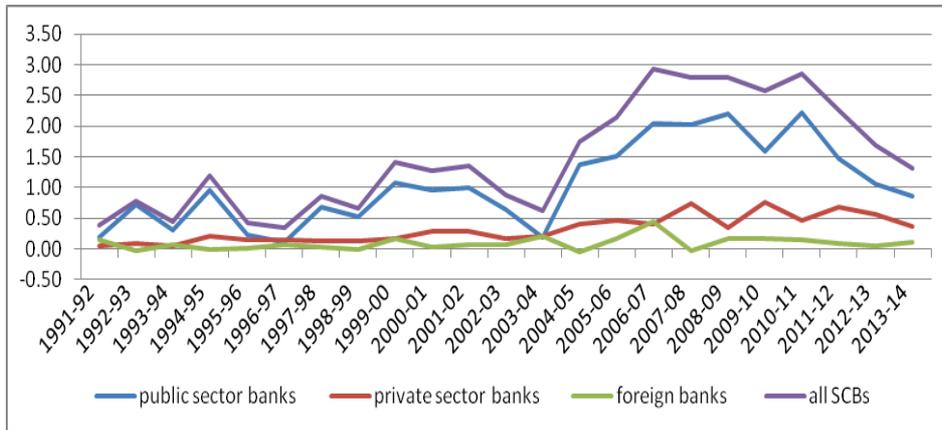
Chart 1.14.c: Bankgroupwise Annual Flow of Personal Loans (% of GDP)
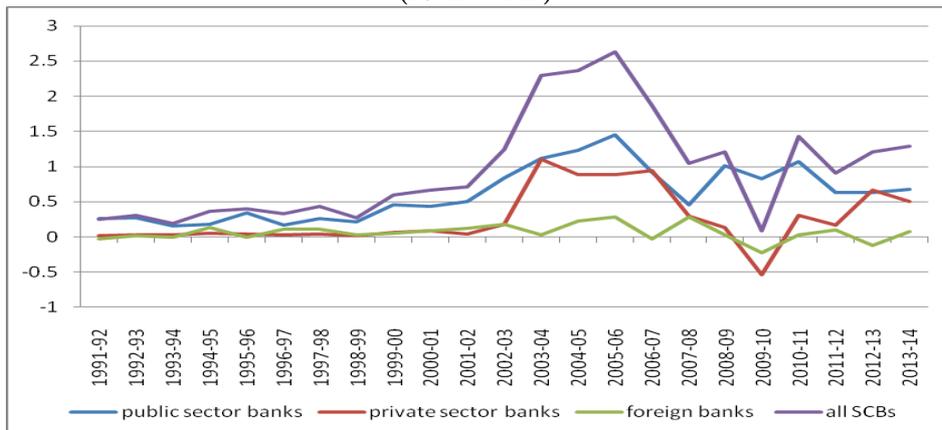
Source: (a, b, c) Calculated from RBI, Basic Statistical Returns of Scheduled Commercial Banks in India & Database on Indian Economy

The PSBs also had the dominant share in personal loans (new credit), but the share of private sector banks in personal loans was much higher than their share in credit to industry and services (Chart 1.14.c). The rise in peronal loans from 2002-03 was on account of lending by both the PSBs and private sector banks.

The significant difference in the rates of new credit flow to industry and services between the PSBs and private sector banks from 2004-05 is quite striking. Industrial financing in India till the 1990s used to be dominated by the Development Financial Institutions (DFIs), which specialised in long-term project financing. The Narasimham Committee-II set up to further the banking sector reforms agenda, called for a phasing out of the DFIs in its report submitted in 1998. ICICI was the first DFI to convert into an universal bank in 2002. Upholding the 'successful' transformation of the ICICI, RBI's Working Group on DFIs set up in 2004, made the following observations (RBI, 2004):

> In view of the banking system having acquired the skills of managing risks in extending finance to different sectors of the economy including long term finance and the capital market (both equity and debt taken together) providing significantly larger resources to the corporate sector, the need for DFIs as the exclusive providers of development finance has diminished. *The banks may be encouraged to extend high risk project finance with suitable Government support with a view to distributing risks and funding sources as also developing appropriate credit appraisals and monitoring skills across the financial system.* (emphasis added)

RBI (2004) further argued that the business model of the DFIs have become unviable in a context where interest rates have been deregulated. The rising cost of funds and the very long-term maturity of their loans was seen to be exposing the DFIs to high credit risks and leading to accumulation of NPAs, which made them crucially dependent on the government's financial support. It was thus prescribed that only a handful of DFIs should be continued with central government support and the rest of the DFIs converted to either banks or NBFCs, as per the recommendations of the Narasimham Committee-II. Subsequently, most DFIs were gradually eliminated and the larger ones like the IDBI and UTI converted into commercial banks, following the ICICI.

Chart 1.15: DFIs Annual Disbursements and PSBs Annual Credit Flow to Industry & Services (% of GDP)
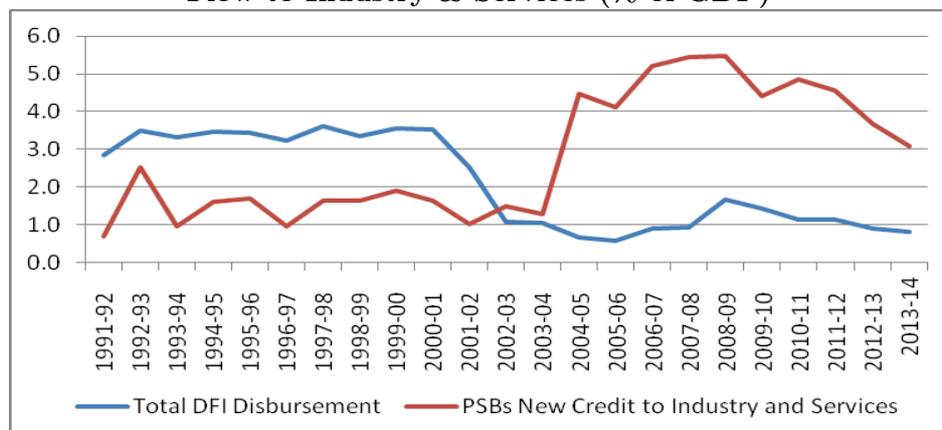
The demise of the DFIs since the early 2000s, which resulted from a such a policy shift, created a void in financing the private corporate sector, which the PSBs were 'encouraged' to fill through syndicated lending. As annual disbursements from DFIs fell from 3.5% of GDP in 2000-01 to 0.66% of GDP in 2004-05, new credit from PSBs increased from 1.6% of GDP to 4.5% during the same period (Chart 1.15). The residual DFI disbursements that have continued after 2003-04 are almost entirely accounted for by LIC and SIDBI.[7] The dismantling of development finance and the reliance on the public sector banking system to fuel credit growth in industry and services during the boom in the 2000s had perverse implications in the medium-term. We shall turn to those consequences in the following chapter.

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[7] See Nayyar (2015) for a more detailed analysis of DFI disbursements in India.

Chapter 2
Internal Dimension: Bad Loans Crisis

In a speech made in November 2014 the RBI Governor rang the alarm bells on the growing corporate debt defaults afflicting the banking system and resources being frittered away through debt write-offs. The Governor identified the problem in what he characterised as 'riskless capitalism' being enjoyed by large promoters of businesses in India (Rajan 2004):

> ...the sanctity of the debt contract has been continuously eroded in India in recent years, not by small borrower but by the large borrower. And this has to change if we are to get banks to finance the enormous infrastructure needs and industrial growth that this country aims to attain. The reality is that too many large borrowers see the lender, typically a bank, as holding not a senior debt claim that overrides all other claims when the borrower gets into trouble, but a claim junior to his equity claim.

> ...Risk taking inevitably means the possibility of default. An economy where there is no default is an economy where promoters and banks are taking too little risk. What I am warning against is the uneven sharing of risk and returns in enterprise, against all contractual norms established the world over – where promoters have a class of 'super' equity which retains all the upside in good times and very little of the downside in bad times, while creditors, typically public sector banks, hold 'junior' debt and get none of the fat returns in good times while absorbing much of the losses in bad times.

> ...Faced with this asymmetry of power, banks are tempted to cave in and take the unfair deal the

borrower offers. The bank's debt becomes junior debt and the promoter's equity becomes super equity. The promoter enjoys riskless capitalism – even in these times of very slow growth, how many large promoters have lost their homes or have had to curb their lifestyles despite offering personal guarantees to lenders?

...Who pays for this one way bet large promoters enjoy? Clearly, the hard working savers and taxpayers of this country! As just one measure, the total write-offs of loans made by the commercial banks in the last five years is 161018 crore, which is 1.27% of GDP.

Stressed Loans

Such admission of a systemic malaise came from the higher echelons of the policy establishment amidst a sharp decline in bank profitability in 2013-14, which led to a slowdown credit growth (Table 2.1). Annual growth of bank credit, which had risen from an annual average of around 15% in the 1990s to above 22% in the 2000s — crossing 30% between 2004-2007 — nosedived to around 9.7% in 2014-15 and further down to 9.4% in the first half of 2015-16.

Table 2.1: Annual Growth in Credit and Profits of SCBs (%)

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16: H1 (Sept. 2015)
Credit Growth	22.9	18.1	15.9	14.5	9.7	9.4
Profit (after Tax) Growth	23.6	14.6	12.9	-14.1	10.1	-4.4

Source: RBI, Statistical Tables Relating to Banks in India & Financial Stability Report, December 2015

Table 2.2: Bankgroupwise Return on Assets (RoA) (%)

	2010-11	2011-12	2012-13	2013-14	2014-15
All SCBs	1.1	1.1	1	0.8	0.8
Nationalised Banks (Including IDBI)	-	-	0.80	0.45	0.37
SBI Group	-	-		0.63	0.66
Private Banks	-	-	1.63	1.65	1.68
Foreign Banks	-	-	1.92	1.54	1.87

The fall in overall bank credit growth occurred despite private and foreign banks maintaining a much higher credit growth rate, because credit growth for the PSBs fell very sharply to around 7.3% by end-March 2015. PSBs excluding the SBI Group witnessed a significant fall in their RoA from 0.45% in 2013-14 to 0.37% in 2014-15, although the SBI Group, the private sector banks and foreign banks witnessed increases in their RoAs in 2014-15 (Table 2.2). Higher provisions for non-performing loans (NPAs) and write-offs of bad loans have been the main reason behind the falling profitability of the PSBs, besides slower earnings growth owing to the economic slowdown. Given the enhanced share of PSBs in credit growth during the boom, they have been saddled with a much higher share of NPAs within the banking system.

Chart 2.1: SCBs Gross Advances & Stressed Advances (left axis) (in Rs. Billion)
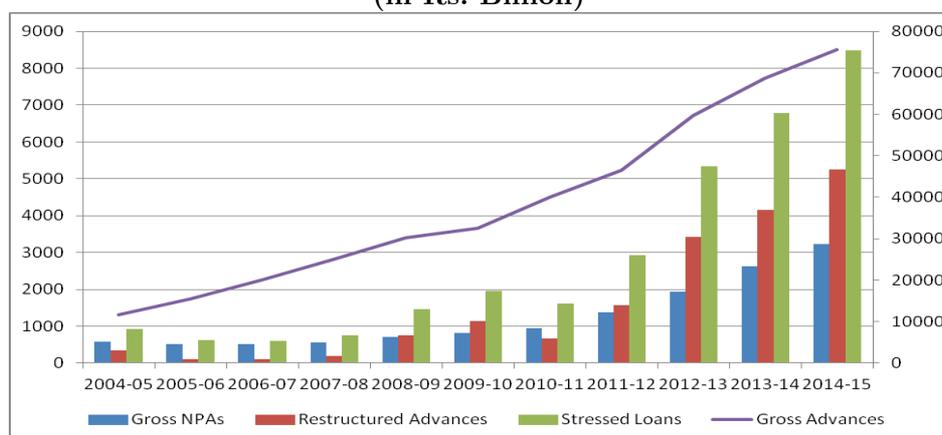
Source: RBI, Statistical Tables Relating to Banks in India

Chart 2.2: Bankgroupwise Ratio of Stressed Advances in Gross Advances (%)
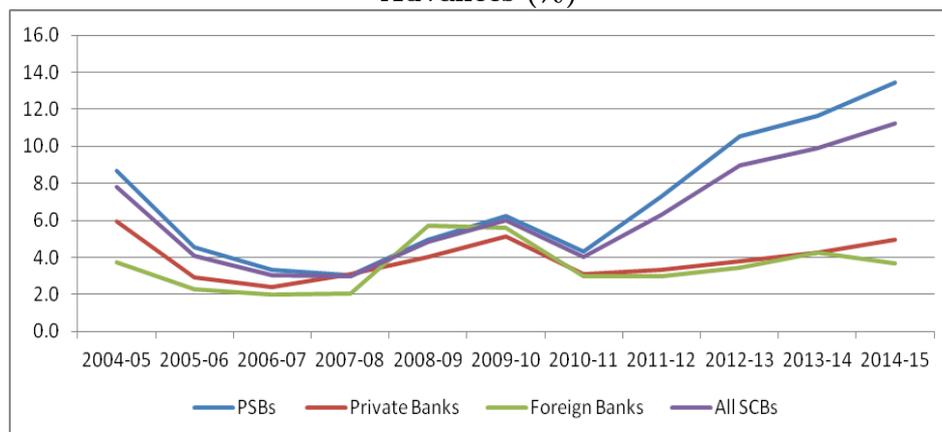
The accumulation of bad debts in the banking system accelerated from 2011-12, with the end of the boom period (Charts 2.1 & 2.2). In order to keep their NPA ratios down, banks started restructuring massive amounts of corporate debt, with the stock of restructured advances surpassing that of the NPAs. The overall stressed advances to gross advances ratio for all banks, including declared NPAs and restructured advances, rose from around 4% in 2010-11 to above 11% in 2014-15. With the banking system's gross advances amounting to Rs. 75 trillion in 2014-15, stressed advances stood at Rs. 8.4 trillion in March 2015, of which Rs. 7.55 trillion were with the PSBs. While PSBs accounted for around 74% of all SCBs' gross advances, they had a share of almost 90% of the total stressed advances of the banking system. Among the PSBs, the SBI group's ratio of stressed advances to gross advances was at 10.5% in 2014-15 while that of other nationalised banks at a much higher level of 14.8% (Chart 2.3).

Chart 2.3: PSBs Stressed Advances in Gross Advances (%) SBI & Nationalised Banks

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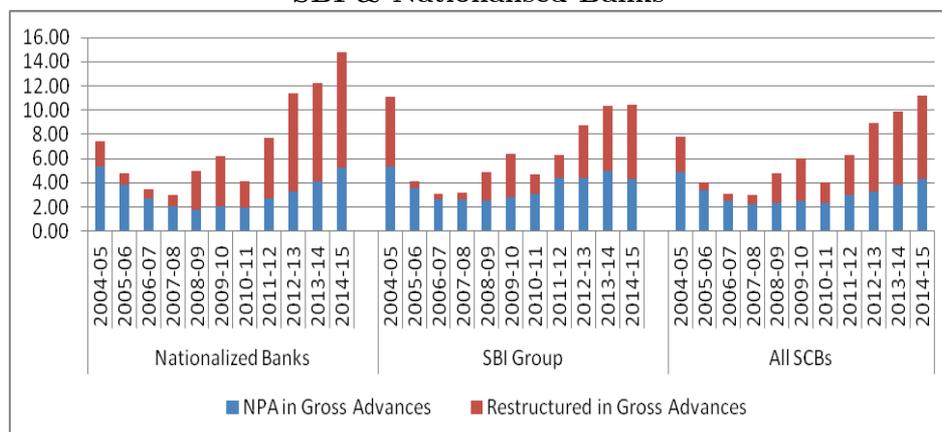
The increase in stressed loans of the PSBs from 2011-12 have been driven by increases in the NPAs from the non-priority sector and the restructured advances (Chart 2.4). The priority sector and public sector units (PSUs) have not witnessed any rise in their NPA ratios. Thus, almost the entire bad loans crisis faced by the PSBs can be attributed to credit extended to the private corporate sector. This explains the RBI Governor's castigation of 'riskless capitalism', whereby the losses made by the private corporate sector after the end of the boom period have been offloaded on to the public sector banks.

Chart 2.4: PSBs Stressed Advances in Gross Advances: Priority & Non-Priority Sectors(%)
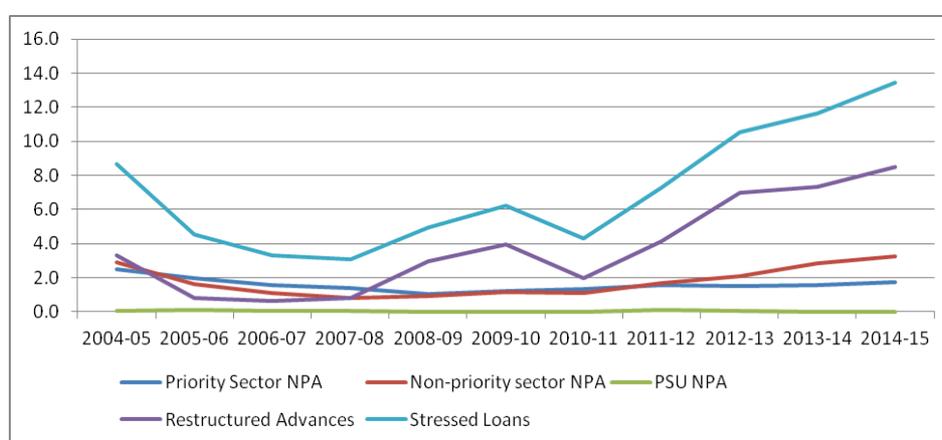
Source: RBI, Statistical Tables Relating to Banks in India

Debt Stress: Sectoral Decomposition

RBI's (2015) Financial Stability Report provided information on the sectoral composition of the stressed loans (Table 2.3). Five sectors, namely mining, iron & steel, textiles, infrastructure and aviation, which accounted for almost 25% of gross advances of the banking system, contributed over 51% of the stressed advances. Infrastructure with a 15% share in gross advances contributed almost 30% of stressed advances while iron & steel with 4.5% share in gross advances contributed 10.2% of stressed advances. Within the infrastructure sector, power and telecom were the major absorbers of credit as well as contributors to debt stress.

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Table 2.3: Sectoral Composition of Stressed Advances (%)
(December 2014)

Sub-Sector		PSBs	Private Banks	Foreign Banks	All SCBs
1. Mining	Share in Advances	1.7	0.4	0.4	1.3
	Share in Stressed Advances	1.4	1.1	0.3	1.4
2. Iron & Steel	Share in Advances	5.2	2.5	2.7	4.5
	Share in Stressed Advances	10.5	7.9	3.6	10.2
3. Textiles	Share in Advances	3.9	2.4	1.2	3.4
	Share in Stressed Advances	7.5	6.4	3.4	7.3
4. Infrastructure	Share in Advances	17.6	8.4	6.4	15
(of which)	Share in Stressed Advances	30.9	18.2	32.8	29.8
Power Generation	Share in Advances	10.1	3.8	1.1	8.3
	Share in Stressed Advances	17.3	7.3	0	16.1
Telecom	Share in Advances	1.7	0.9	3.2	1.6
	Share in Stressed Advances	1.8	3.1	19.7	2.2
5. Aviation	Share in Advances	0.6	0.1	0.6	0.5
	Share in Stressed Advances	2.7	0.4	0	2.4
Total of these five sub-sectors (1 to 5)	Share in Advances	29	13.9	11.3	24.8
	Share in Stressed Advances	53.1	34.1	40	51.1

Source: RBI, Financial Stability Report, June 2015

The high contribution of the infrastructure and iron & steel sectors to the stressed advances of the banking system point towards excessive bank lending to these sectors during the period of the boom. It is also noteworthy that while infrastructure and iron & steel comprised of almost 23% of gross advances of the PSBs, their share in gross advances of the private banks and foreign banks were 11% and 9% respectively.

Outstanding credit to the infrastructure sector was Rs. 31.6 billion in March 1998, from when data for this sector has been made available by the RBI. This had risen to over Rs. 241 billion in March 2002, by the end of the Ninth Plan period. By the end of the Tenth Plan period in March 2007, this stood at around Rs. 1.4 trillion. At the

end of the Eleventh Plan period in March 2012, outstanding credit to infrastructure was at Rs. 6.2 trillion, which further increased to Rs. 8.3 trillion by March 2014. This substantial increase in infrastructure credit was mainly on account of credit to the power sector, followed by roads & ports and telecommunications (Chart 2.5).

Chart 2.5: Gross Credit Outstanding in Infrastructure (in Rs. Billion)
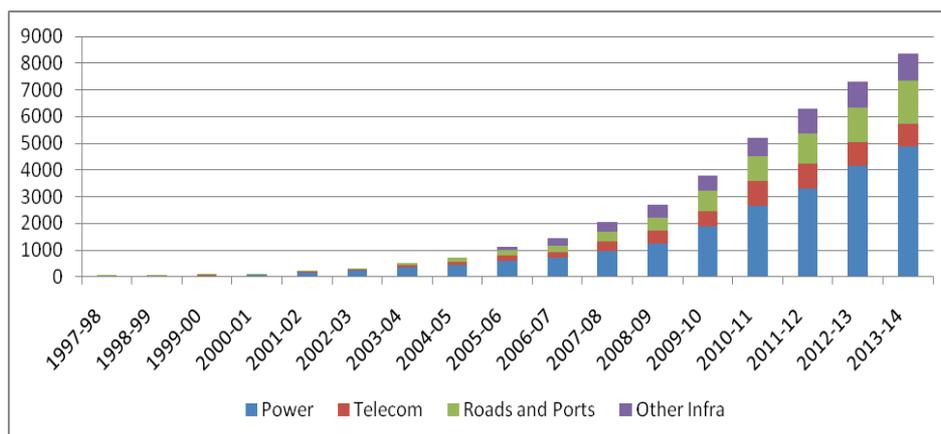
Source: RBI, Handbook of Statistics on the Indian Economy

Chart 2.6: Flow of Credit to Infrastructure (% of GDP)
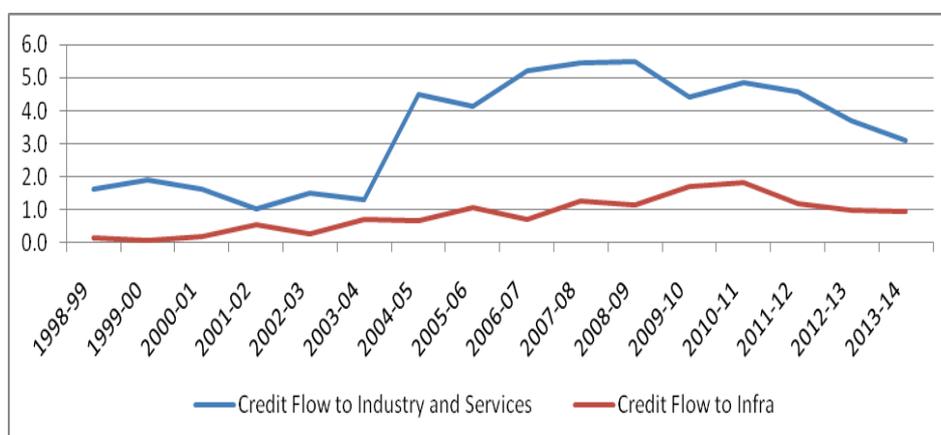
Source: Calculated from RBI, Basic Statistical Returns of Scheduled Commercial Banks in India & Handbook of Statistics on the Indian Economy

Annual flow of credit to the infrastructure sector rose from around 0.3% of GDP in 2002-03 to 1.1% of GDP in 2005-06 and peaked at 1.8% of GDP in 2010-11 (Chart 2.6). Average annual flow of infrastructure credit was 1.4% of GDP between 2007-08 and 2011-12, i.e. the period of the Eleventh Plan. This needs to be seen in the

context of the thrust given to investment in infrastructure and PPPs in the Eleventh Plan, which we noted in the preceding chapter while discussing the enhanced role of private investment in the growth process during the 2000s.

The Eleventh Five-year Plan projected an increase in infrastructure investment from around 5% of GDP in the Tenth Plan period to 7.6% of GDP in the Eleventh Plan period, with the share of private investment in total infrastructure investment projected to rise from 20% to 30% (Planning Commission, 2008). 48% of financing for the investment in infrastructure was expected to flow from debt sources, with the rest being financed from the budgetary resources of the central and state governments, IEBR's of public enterprises and through equity and internal accruals of the private corporate sector. Around 51% of debt was expected to be contributed by the commercial banking sector with the rest of debt finance coming from NBFCs, Insurance Companies, Pension funds and ECBs, with a likely "funding gap" of Rs. 16.2 billion (2006-07 prices) for the entire plan period.

A crucial element in the financing plan for infrastructure investments in the Eleventh Plan was that while 40% of public investment was to be financed with debt, for private investment the debt/non-debt finance ratio was almost 7:3. This had in fact been the typical gearing ratio for PPP infrastructure projects in India. A study conducted by the Pricewaterhouse Coopers for the World Bank (PwC, 2007) on PPP Infrastructure Projects in India, covering the detailed financials of 104 projects worth $11.48 billion, came out with the following findings:

- ❖ 68% of the project cost is usually financed by debt, 26% percent by promoter's equity while only 2% comes from sub-debt; Remaining 4% comes from Government grants of different kinds.

- ❖ Out of the debt financing of $ 7.7 billion, 72% can be attributed to term loans from commercial banks; Players like IIFCL (34.4%), IDFC (22%) and IDBI (17.3%) dominate in the funding from non-bank sources of debt.[8]

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[8] IDBI was considered as a financial institution in the report and not as a bank.

❖ Within bank lending, public sector banks dominate with a share of 82%, while the share of private sector banks and foreign banks are only 13% and 5% respectively.

Given such funding pattern for PPP projects, the projection of bank credit requirements made in the Eleventh Plan, amounting to 51% of total debt finance requirements, were under-estimates. Restrictions on insurance companies and pension funds like the EPFO prevented them from lending to infrastructure projects, which do not have high credit ratings. RBI norms set limits on raising ECBs for financing or refinancing infrastructure projects. The IIFCL, an infrastructure finance company set up by the government in 2006 to provide long-term finance to infrastructure projects, had till December 2015 made cumulative disbursements of Rs. 47000 crore only, under direct lending, takeout finance and refinance schemes taken together, which is a miniscule fraction of the Rs. 9.2 trillion outstanding bank credit to the infrastructure sector in March 2015. The bulk of the burden of financing infrastructure investments, especially private investments, therefore had to be borne by the commercial banks, particularly the PSBs.

Table 2.4: Infrastructure: Private Investment and Credit Flow in X & XI Plan (% of GDP)

(% of GDP)	X Plan (2002-03 to 2006-07)			XI Plan (2007-08 to 2011-12)		
	Total Investment	Private Investment	Credit Flow	Total Investment	Private Investment	Credit Flow
Power	1.51	0.38	0.34	2.40	1.13	0.74
Telecom	0.79	0.52	0.10	1.15	0.89	0.24
Roads, Bridges & Ports	0.96	0.17	0.12	1.48	0.38	0.26
Total Infrastructure	5.02	1.11	0.68	7.18	2.61	1.42
(%)		Private Investment/ Total Investment	Credit Flow/ Total Investment		Private Investment/ Total Investment	Credit Flow/ Total Investment
Power		25.2	22.6		47.0	30.9
Telecom		65.0	12.6		77.8	20.9
Roads, Bridges & Ports		18.1	12.5		25.5	17.6
Total Infrastructure		22.0	13.5		36.3	19.8

Source: Calculated from Planning Commission, Twelfth Plan Document & Handbook of Statistics on the Indian Economy

While preparing the Twelfth Plan, the Planning Commission (2013) estimated that the share of private investment in total investment turned out to be 36% by the end of the Eleventh Plan period, overshooting the projected share of 30% (noted in Table 1.4 in the previous chapter). With private investment in infrastructure rising from 1.1% of GDP in the Tenth Plan to 2.6% of GDP in the Eleventh Plan period, credit flow to infrastructure also rose from 0.7% of GDP to 1.4% of GDP.[9] Such increases in private investment and credit flow can be seen in the sub-sectors like power, telecom, roads & bridges and ports. This debt-financed expansion of private investment in infrastructure from 2007-08 coincided with the global slowdown following the financial crisis, and prolonged the expansionary phase in India till 2011-12.

We have already noted that such high levels of private investments could not be sustained in the Twelfth Plan, with actual investment in infrastructure in 2012-13 falling short of projected estimates by 66%. The shortfall in private investment in infrastructure in 2012-13 was by a much higher level of 74%. The fall of total infrastructure investment to GDP, from 7.2% between 2007-12 to 5.1% in 2012-13 and 5.3% in 2013-14 prompted the High Level Committee on Financing Infrastructure to revise the total projection for infrastructure investment to GDP during the Twelfth Plan period from 8.2% to 5.7%. The following observation was made by the Committee (Planning Commission, 2014):

> ...the policy environment has become increasingly difficult on account of various factors such as inadequate allocation of fuel to power stations, delays in environment and forest clearances, issues in land acquisition, constraints in bank lending, economic slowdown and delays in decision-making, which are the principal causes of decline in investment in infrastructure, especially during the last two years. The

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[9] Planning Commission (2013) did not provide data on the financing of realized infrastructure investment during the Eleventh Plan, including bank credit. The data on credit to infrastructure have been obtained from the RBI database. The definitions of the Infrastructure sector and its sub-sectors are different for the RBI and the Planning Commission. We have compared the investment and credit data only where the definitions match closely. Given the scale of private investments made during the Eleventh Plan period, the infrastructure credit data provided by the RBI appear to be under-estimates.

Committee noted that if the above constraints are not addressed urgently, they would lead to a widening of the infrastructure deficit with serious repercussions for the economy in the years to come.

Thus, two sets of issues were flagged by the High Level Committee in explaining the slowdown in infrastructure investments: (i) delays in policy level decision-making and regulatory clearances (ii) constraints on bank lending and the economic slowdown. Estimates made from the CMIE Capex database, however, shows that the 'dropping rate' of investment projects in the private sector has grown much more sharply than that of projects in the public sector during the recent slowdown (Chart 2.7).

Chart 2.7: Dropping Rate of Investment Projects (%)
(Dropped Projects as a share of Projects Under Implementation)
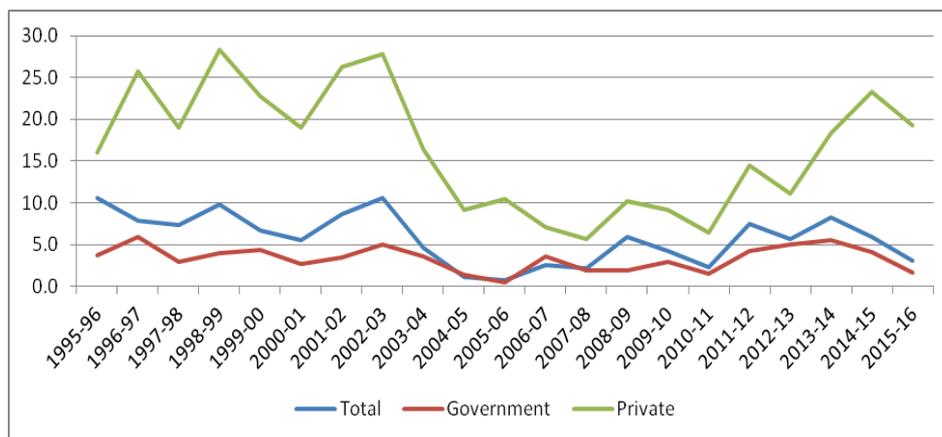
Source: CMIE, CapEx Database

While the private sector always had a much higher rate of dropped projects than the public sector, the difference had narrowed during the boom period, reflecting conducive market and credit conditions. With an overhang of corporate debt and bad loans accumulating in bank balance sheets since 2011-12, the rate of dropped projects have increased much more sharply in the private sector. The highest rates of dropped projects are to be seen in sectors like manufacturing, IT and power (Chart 2.8).

Chart 2.8: Selected Sectors: Dropping Rate of Investment Projects (%)

(Dropped Projects as a share of Projects Under Implementation)
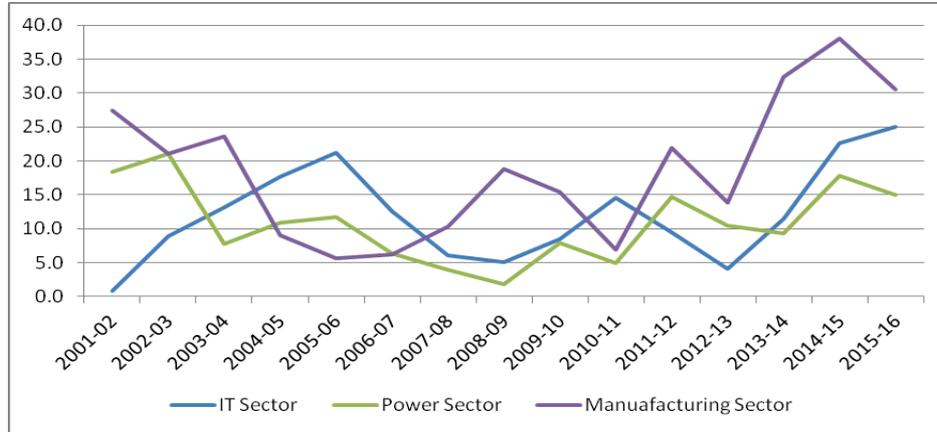
Source: CMIE, CapEx Database

The Economic Survey (GoI, 2015a) carried out an elaborate study of stalled projects and noted that most of the stalled private projects were in manufacturing and infrastructure, while the stalled government projects were predominantly in infrastructure. The Survey made the following relevant observation:

> Perhaps contrary to popular belief, the evidence points towards over exuberance and a credit bubble as primary reasons (rather than lack of regulatory clearances) for stalled projects in the private sector. On the flipside, government projects were the most severely affected by 'policy paralysis' of regulatory clearances. There are of course interdependencies, but a private sector 'project bubble' is not inconsistent with the data.

Noting that the stock market has not been much affected by such stalling of projects, the Survey showed through an event study that the stalling of projects did not have any significant impact on firm equity, which may be because 'the market is internalising the expectations of bailouts'.

Credit Bubble

In order to further examine the quality of credit to the non-financial corporate sector during the boom phase of the 2000s, we have conducted analysis based on non-financial companies' data from the CMIE Prowess Database. The debt-equity ratio (DER) and the

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interest coverage ratio (ICR) are standard indicators of corporate leverage, with the former indicating the proportion of the aggregate debt stock in companies' net worth and the latter indicating solvency status. The time-series of the average interest coverage ratio (EBITDA/interest payments) and the average debt-equity ratio for the entire database of non-financial companies are given below (Chart 2.9 & 2.10).

Chart 2.9: Average Interest Coverage Ratio of Non-Financial Companies
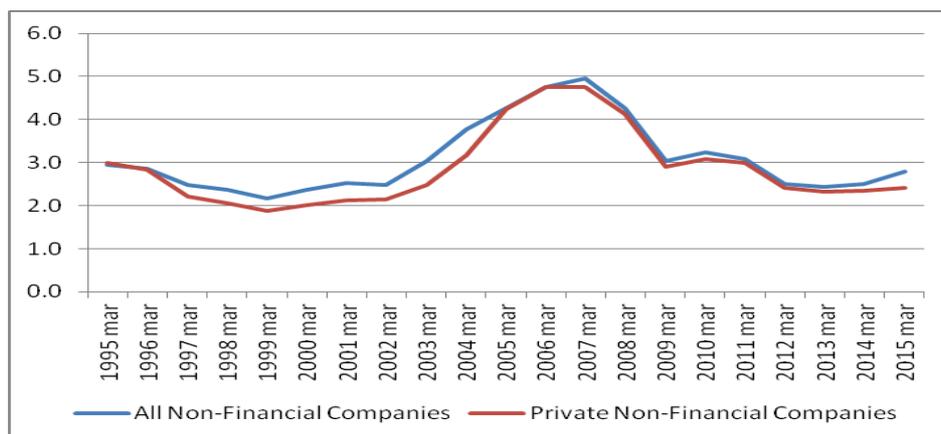
Source: Calculated from CMIE, Prowess Database

Chart 2.10: Average Debt Equity Ratio of Non-Financial Companies
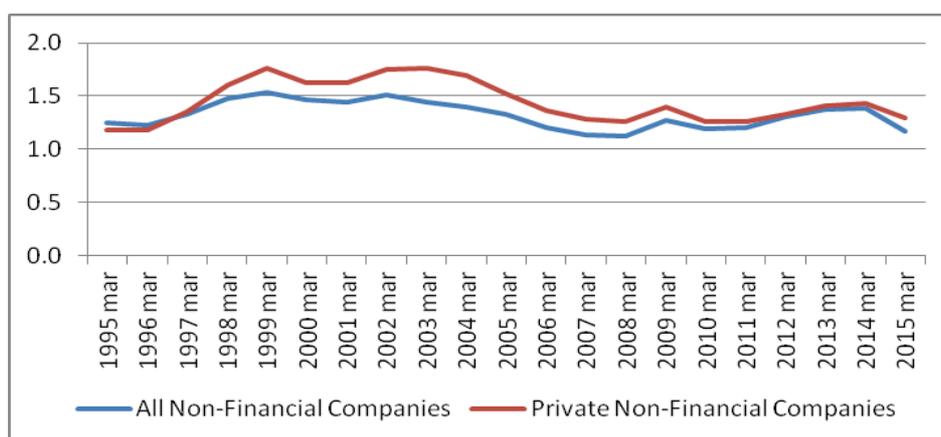
Source: Calculated from CMIE, Prowess Database

The average ICR of the non-financial sector improved considerably from March-1999 till end-March 2008 and started declining thereafter, reflecting the worsening financial and economic conditions after the global financial crisis. The average DE ratio rose during the late-1990s, then fell from 2003 to 2008 and showed an upward trend

since 2009. The average DE ratio has fallen from 1.4 in end-March 2014 to 1.2 in end-March 2015. The average ICR and DER of the private non-financial companies are higher than that of the public sector and other companies.

Chart 2.11: DER>5 Companies Debt in Total Debt (%)
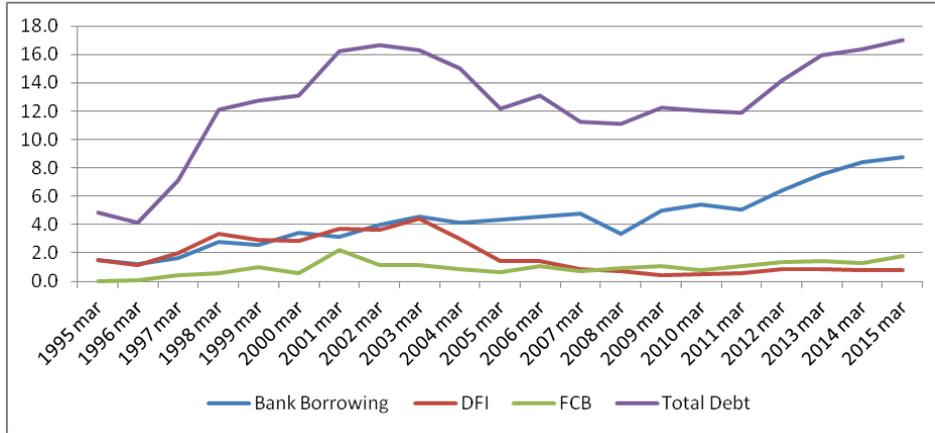
Source: Calculated from CMIE, Prowess Database

Chart 2.12: DER>5 Companies Borrowings in Total Bank Borrowings (%)
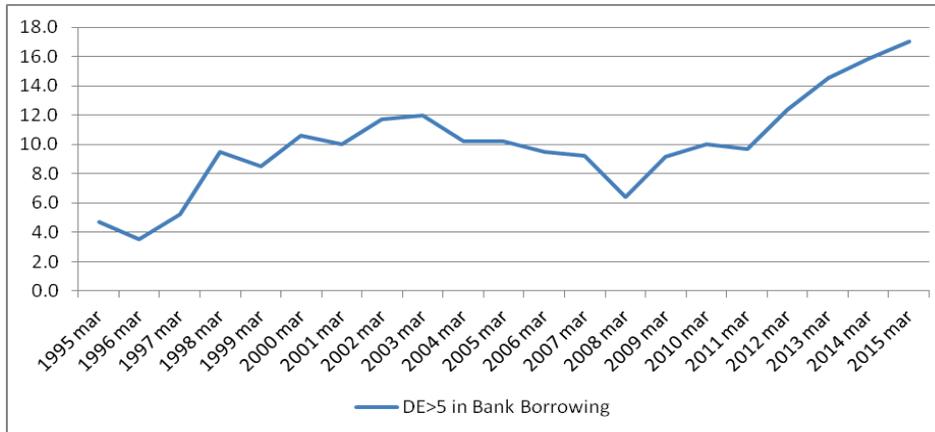
Source: Calculated from CMIE, Prowess Database

Chart 2.11 plots over time the annual share of the outstanding debt of private non-financial companies with high debt-equity ratio (DER>5) in total outstanding debt of all non-financial companies. The share of DER>5 debt rose continuously from the end-1990s till 2001-02. With the boom in the 2000s, the share of high DER companies in total debt fell between 2003 and 2008. The share started rising again from 2009 and has reached a peak of 17% by end-March 2015. The decline of DFI debt and rise in bank debt from 2003-04 can within the total debt of high debt companies can also be

seen. Chart 2.12 shows that the share of DER>5 companies bank borrowings in total bank borrowings (of all non-financial companies) rising from 6.4% in 2007-08 to 17% in 2014-2015. This clearly shows that banks were lending more to high debt companies since the global financial crisis.

A similar trend can be seen vis-a-vis the share of bank borrowings by private non-financial companies with ICR<1 in total bank borrowings. For a company with ICR<1 in a period implies that its net earnings (EBITDA) are less than interest payments, signifying negative cash flow. The share of bank borrowings by such companies in total bank borrowings fell from 6.7% in 2001-02 to 3.7% in 2006-07, then rose again to 7.7% in 2008-09, fell to 4.7% in 2010-11 and rose again to peak at 12.2% in 2012-13. Stock of bank credit with ICR<1 companies was at the highest levels between end-March 2012 to 2014.

Chart 2.13: ICR<1 Companies' Borrowings in Total Bank Borrowings (%)
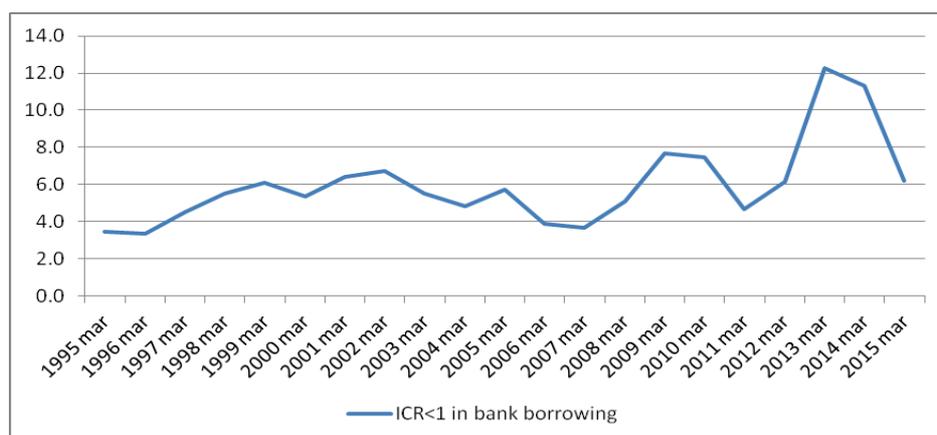
Source: Calculated from CMIE, Prowess Database

The sectoral shares of companies with DER>5 and ICR<1 are provided in Table 2.5 with a ranking based on their share of total DER>5 and ICR<1 borrowings in end-March 2015. The iron & steel sector had the highest share of debt among the outstanding bank borrowings of all DER>5 companies, followed by the power and civil engineering sector (which fall under infrastructure) and warehousing. Among ICR<1 companies, the largest share was of the power sector, followed by warehousing, civil engineering and textiles. These broadly follow the pattern of sectors with high NPAs and stressed loans, as reported by the RBI.

Table 2.5: Sectoral Shares of DER> 5 and ICR<1 Companies (%) End-March 2015

Sectors	% Share in DER>5 Bank Borrowing	Sectors	% Share in ICR<1 Bank Borrowing
Iron and steel	28.7	Electricity (infrastructure)	21.6
Electricity (infrastructure)	21.6	Warehousing and support activities for transportation	11.7
Civil engineering (infrastructure)	12.6	Civil engineering (infrastructure)	10.9
Warehousing and support activities for transportation	5.1	Textiles	8.6
Transport equipment	3.1	Motor vehicles	6.7
Machinery and equipment	3.1	Iron and steel	5.0
Electrical equipment	2.8	Non-metallic mineral products	3.8
Non-metallic mineral products	2.5	Telecommunications (infrastructure)	3.3
Telecommunications (infrastructure)	2.4	Pharmaceuticals	3.1
Chemicals and chemical products	2.1	Basic metals	2.7
Total	83.9	Total	77.4

Source: Calculated from CMIE, Prowess Database

In order to take a closer look at the deterioration of the quality of credit, we examine the share of companies with ICR<1 at the end of the previous year in the annual flow of bank credit. An increasing share implies a worsening of credit quality. For this we identify a sample of 1445 companies from the Prowess database, which have provided complete data on bank borrowings, EBITDA and interest payments for the time-period 2001-02 to 2014-15. Chart 2.14 below shows the share of ICR<1 companies in the sample within the annual flow of credit to all the companies in the sample.

There were sharp deteriorations in the quality of credit to the non-financial sector in two phases, when the share of ICR<1 companies in total credit flow increased sharply. The first phase was between

2001-02 and 2004-05 when the share rose from 1% to 15.2%. This was when the 2000s boom had commenced. The share came down significantly in 2005-06 and remained below 5% till 2008-09 and turned negative in 2009-10, signifying deleveraging. There was a reversal in 2010-11, when the share of ICR<1 companies in credit flow jumped to 16% and then, after falling in 2011-12, had once again risen from 2012-13 to peak at 27% in 2013-14. The period between 2011-14 was therefore another phase when credit quality deteriorated significantly, and certainly experienced a credit bubble.

Chart 2.14: Share of ICR<1 Companies in Annual Flow of Credit (%)
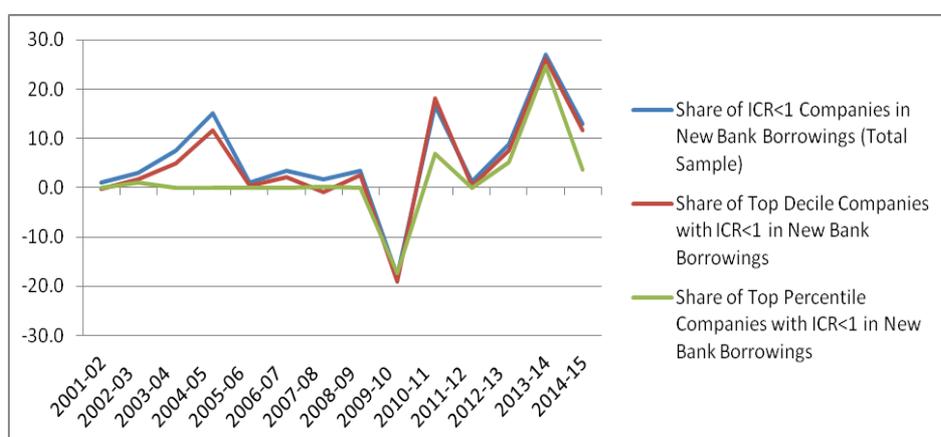
It is noteworthy that while ICR<1 companies in the first decile of our sample explain most of the credit flow till 2008-09, the spikes after 2008-09 are on account of credit flow to ICR<1 companies in the first percentile. This reflects the concentration of credit within the ICR<1 companies.

Table 2.6 provides the list of the first percentile companies in our sample and ranks them in terms of their net bank borrowings in 2013-14, the year with the highest share of net bank borrowings to ICR<1 companies. Out of the 14 companies, numbers 1 and 4 had ICR<1 at the end of 2012-13 and yet they could borrow Rs. 168.5 billion and Rs. 49.5 billion respectively from the banks in 2013-14, accounting for almost 25% of net credit flow to all companies in our sample. Such large flows of bank credit to private companies already burdened with debt have aggravated the bad loans crisis.

Table 2.6: Net Bank Borrowings of Top Percentile Companies in 2013-14 (in Rs. Millions)

	Company	Net bank Borrowings in 2013-14
1.	Reliance Industries Ltd.	168500.0
2.	Bhushan Steel Ltd.	68775.7
3.	Jindal Steel & Power Ltd.	49488.6
4.	Jaiprakash Associates Ltd.	49488.6
5.	Essar Steel India Ltd.	34813.6
6.	Tata Steel Ltd.	31649.3
7.	Hindalco Industries Ltd.	31050.8
8.	Larsen & Toubro Ltd.	23288.5
9.	Reliance Infrastructure Ltd.	12762.3
10.	Tata Motors Ltd.	11639.2
11.	J S W Steel Ltd.	-241.9
12.	Wipro Ltd.	-4828.0
13.	Essar Oil Ltd.	-9000.3
14.	Bharti Airtel Ltd.	-12078.0

Source: Calculated from CMIE, Prowess Database

Chapter 3
External Dimension: Financial Globalisation and Vulnerability

This chapter examines the outcome of India's integration with the global economy in the context of financial globalisation, in terms of some standard metrics. Financial globalisation has broadly involved two inter-related processes. One is of 'financial deepening' in countries across the world with a rapid growth of financial assets indicated by a rise in the proportion of financial assets to GDP. The other is a significant increase in the quantum of cross border financial flows.

International Balance Sheets

According to an estimate (Mckinsey, 2013), the market value of the global stock of financial assets – equities, bonds and bank assets – which was around $12 trillion or 120% of world GDP at the end of 1980 increased to $206 trillion by end-2007, amounting to 355% of world GDP. Cross-border capital flows increased from $0.5 trillion in 1980 to reach $11.8 trillion in 2007. The pace of growth of financial assets and cross border flows had slowed down considerably in the immediate aftermath of the global financial crisis in 2008. However, the financial crisis and the subsequent recession did not lead to a reversal of the globalisation process. Rather, there was a surge in capital inflows to the so-called 'emerging economies' in the post-crisis period, leading to further financial deepening. The Indian economy has also been a recipient of significant capital inflows, both before and after the crisis.

Table 3.1 provides a sectoral breakdown of the debt ratios (debt to GDP) of selected economies for end-2014, which indicates the financial depth of these economies. The data for total and sectoral credit to GDP have been extracted from the BIS database on credit to the non-financial sector. Net external debt assets and net foreign assets to GDP have been calculated from the updated External Wealth of Nations Mark II database. Developed economies include the US, Eurozone and Japan. We have ranked developing economies by their share in the global stock of foreign assets and liabilities and

selected the top fourteen developing economies which also report data to the BIS. This emerging economies group include China, Brazil, Russia, S.Korea, Saudi Arabia, Mexico, India, Turkey, Malaysia, South Africa, Poland, Indonesia, Thailand and Hungary. Data on India and China have been examined separately while the other emerging economies have been considered as a single group.

Table 3.1: Sectoral Debt Ratios: Selected Economies (end-2014)(% of GDP)

	Developed Economies	Euro Area	Japan	United States of America
Total Credit	275.1	271.2	393.2	250.1
Credit to Government	117.5	106.1	222.3	100.9
Credit to Non-Financial Private Sector	157.6	165.1	170.9	149.2
of which Non-Financial Corporations	85.9	103.3	104.9	69.2
Net External Debt Assets	-26.2	-13.3	22.3	-48.9
Net Foreign Assets	-15.5	-8.5	65.7	-42.3

	Emerging Economies	China	India	Emerging Economies (excluding India and China)
Total Credit	172.8	234.2	126.2	118.7
Credit to Government	41.9	41.2	66.6	37.7
Credit to Non-Financial Private Sector	130.9	193.0	59.6	81.0
of which Non-Financial Corporations	100.2	156.9	50.3	51.7
Net External Debt Assets	-3.6	0.2	-20.4	-3.9
Net Foreign Assets	10.0	14.4	-28.1	12.3

Source: BIS, Total Credit to the Non-financial Sector & External Wealth of Nations Mark II Database[10]

Among the developed economies, Japan has the highest total debt as well as the highest public and private sector debt ratios. The US and Eurozone have broadly similar debt ratios, with the public and private sector debt to GDP being somewhat higher in the Euro area compared to the US. China's total debt-GDP in 2014 has reached levels comparable to the developed economies, mainly on account of its high private non-financial corporate debt-GDP, which is now the

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[10] See Lane and Milesi-Ferretti (2007). We are grateful to the authors for sharing their dataset (updated till 2014) with our project.

highest in the world. China's public debt-GDP, however, remains moderate. Excluding China and India, the rest of the emerging economies in our sample, taken together, have a significantly lower total debt-GDP ratio compared to the developed economies. India's public-debt to GDP ratio is higher while its corporate debt-GDP ratio is almost the same as that of other emerging economies. India's private sector debt-GDP ratio, however, is at a much lower level compared to the other emerging economies because of the its low household debt-GDP ratio (difference between total private debt and corporate debt).[11]

The US is the most financially integrated economy in the world with the largest share of foreign assets and liabilities in the global stock of foreign assets and liabilities. The net foreign assets position of the US is negative, reflecting its net debtor status. The Eurozone also has a net debtor status, while Japan has a positive net foreign assets position. China and the other emerging economies too have positive net foreign assets positions.[12] India's net foreign asset position is negative, mainly due to its negative external debt assets-GDP. India's net external debt assets (negative) as a proportion of its total debt is also high, compared to the other emerging economies.

Chart 3.1 plots the time-series of the net foreign assets positions for the selected economies. With financial globalisation, the stock of foreign assets and liabilities have grown over time, reflected in the growth of net foreign assets (NFA) to GDP ratio for all countries, either in the positive or negative direction. Japan has been the foremost international creditor for over three decades, while the US has been a net debtor since the late-1980s. The Eurozone has also been a net debtor but its NFA position has improved since the global financial crisis.

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[11] The household debt-GDP ratio for India, as reported by the BIS, includes only the personal loan component. RBI's Basic Statistical Returns of Scheduled Commercial Banks in India provides organisational classification of outstanding SCB loans. The latest data for end-March 2015 shows total household sector outstanding bank credit at over 22% of GDP, while private corporate sector bank credit-GDP stood at around 20%. The discrepancy between BIS and RBI data arises out of the different definitions of the household and the private corporate sector.

[12] A few other emerging economies have negative net foreign asset positions, but here we consider the other emerging economies as a single group.

Chart 3.1: Net Foreign Assets Position – Selected Economies(% of GDP)
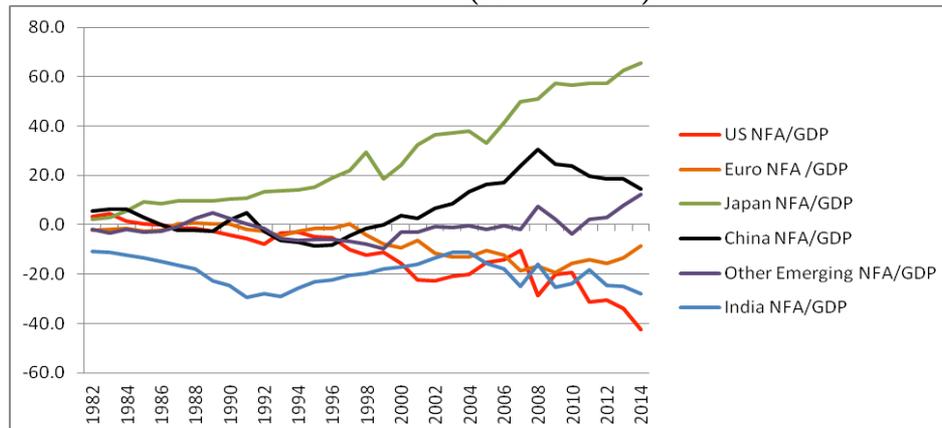
Source: Calculated from External Wealth of Nations Mark II Database

The emerging economies had experienced an improvement in their NFA positions from the late 1990s, with China's positive NFA position peaking in 2008. While China's NFA position has deteriorated since the outbreak of the global crisis, the other emerging economies group has improved its NFA position since 2011. India's NFA position has always remained in negative territory since the 1980s, showing its net debtor status. However, there was an improvement in India's NFA position between 1994 and 2004. Since then India's NFA position has deteriorated again, especially since 2011.

Net foreign assets is the sum of net equity assets, net debt assets and foreign exchange reserve assets. Despite its overall net debtor status, the US is a net investor of equities, as can be seen from its positive net equity assets position (Chart 3.2). Japan too is a net equity investor. The Eurozone was a net recepient of equity assets till 2009, after which it has also turned into a net investor. The net equity asset positions of emerging economies, including India and China are negative, since they are all net recipients of equity investments. India and China are the most significant recipients of foreign equity investments among the emerging economies.

Chart 3.2: Net Equity Assets Position – Selected Economies (% of GDP)
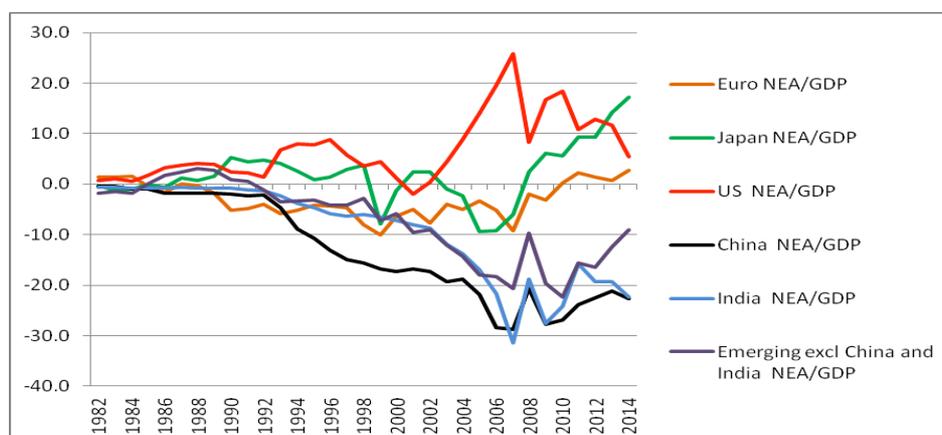
Source: Calculated from External Wealth of Nations Mark II Database

Chart 3.3: Net Debt Assets Position – Selected Economies (% of GDP)
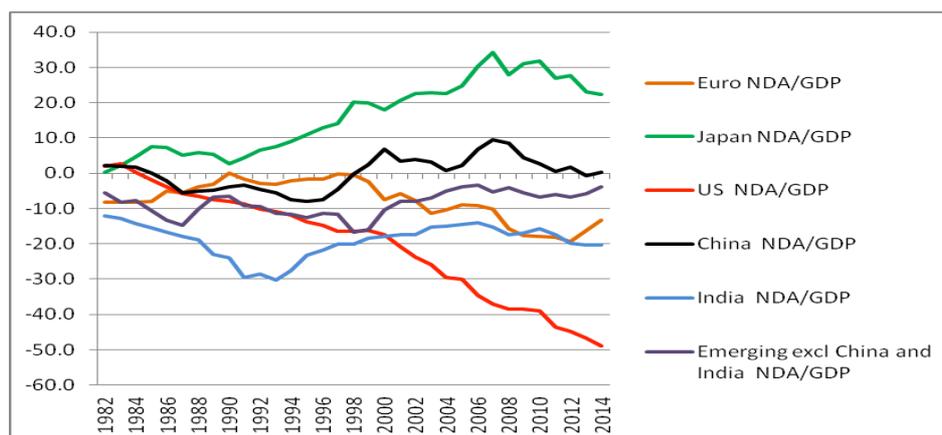
Source: Calculated from External Wealth of Nations Mark II Database

The net debt asset positions of the selected economies is similar to the trends of their net foreign assets positions (Chart 3.3). The US is the largest net debtor, while Japan the largest creditor. China has a positive net debt status implying that it is also a net creditor, although its net debt balance has deteriorated in the post-crisis period. The Eurozone, other emerging economies and India have been net debtors throughout the past three decades. However, while the net debt position of the Eurozone and other emerging economies have improved in recent times, India's net debt position has deteriorated.

Emerging Economies

Lane and Milesi-Ferretti (2007) had observed a gradual improvement in the NFA positions of the emerging economies till the mid-2000s accompanied by a change in the structure of liabilities of the emerging economies, with the proportion of equity liabilities in total liabilities rising at the cost of debt liabilities over time. The increase in the share of equity liabilities was noted to have improved the risk profile of the emerging economies' external balances. Sen Gupta and Sengupta (2016) makes a similar observation, commending the success of Indian policymakers in altering the composition of its external liabilities in favour of higher equity liabilities, by maintaining a hierarchy in the liberalisation of capital flows, according preference to non-debt creating inflows over debt inflows. This trend has, however, got reversed for India and China in the post-crisis period. The other emerging economies as a group has shown an improving trend, but individual countries within that group have also witnessed a deterioration of their NFA positions.

Chart 3.4: India, China & Other Emerging Economies: External Debt & Equity Liabilities(% of GDP)
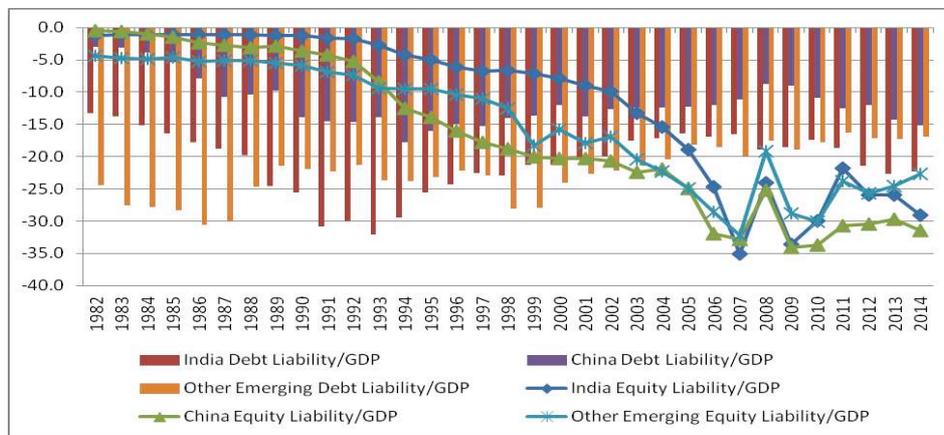
Source: Calculated from External Wealth of Nations Mark II Database

Chart 3.4 compares the movement of gross debt and equity liabilities of India, China and other emerging economies over time. There is a significant and continuous rise in the equity liabilities-GDP ratio for all emerging economies till 2007, accompanied by a fall in the external debt liabilities-GDP ratio, particularly in the early half of the 2000s. This has changed after the 2008 crisis. The sharp dip in equity liabilities in 2008 got reversed next year, but the stable rising trend of the pre-crisis phase did not resume. Rather, debt liabilities

have shown a rising trend in the post-crisis period, particularly for India and China. India's debt-equity ratio of external liabilities has also been higher than the other emerging economies group since 2011 (Chart 3.5).

Chart 3.5: India, China & Other Emerging Economies: Debt to Equity Ratio of External Liabilities
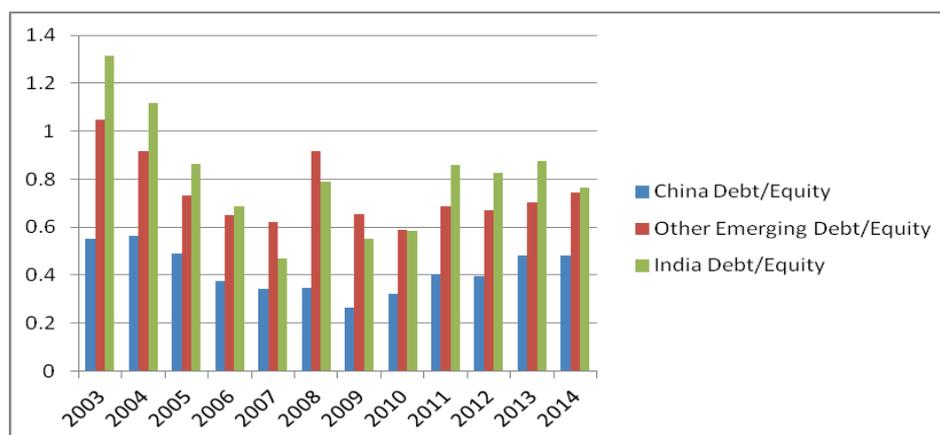
Source: Calculated from External Wealth of Nations Mark II Database

Another noteworthy aspect is the difference in the composition of equity liabilities between India and other emerging economies as well as China (Charts 3.6.a, b & c). India's equity liabilities have been dominated by foreign portfolio liabilities, which have overshadowed FDI liabilities since the early 2000s. Moreover, India's FDI liabilities stock can be an overstimate, since definitional ambiguities regarding FDI in India has led to FPI inflows being considered as FDI (Rao and Dhar, 2011). China's equity liabilities in contrast are dominated by FDI liabilities. For other emerging economies too, the share of FDI liabilities is higher than that of FPI liabilities.

While the other emerging economies group has increased its outward investment significantly, as can be seen in the rise in their FDI and FPI assets especially in the 2000s, China and India have not seen an increase of foreign equity assets of a similar magnitude. China has been able to accumulate a huge amount of foreign exchange reserve assets, which despite its decline since 2010 remained around 37% of its GDP in 2014. India's forex reserve assets peaked at 21% of GDP in 2007 and has fallen since then to around 15% of GDP in 2014.

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Chart 3.6.a: India: Equity Assets, Liabilities & Forex Reserves (% of GDP)
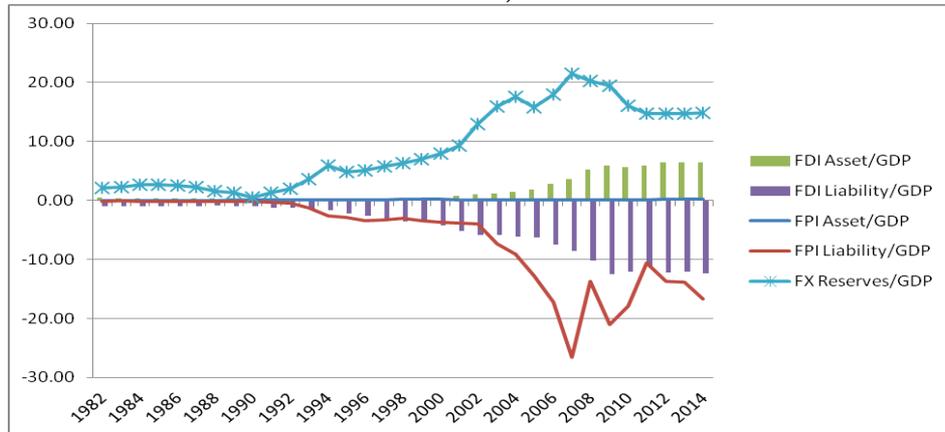
Chart 3.6.b: China: Equity Assets, Liabilities & Forex Reserves (% of GDP)
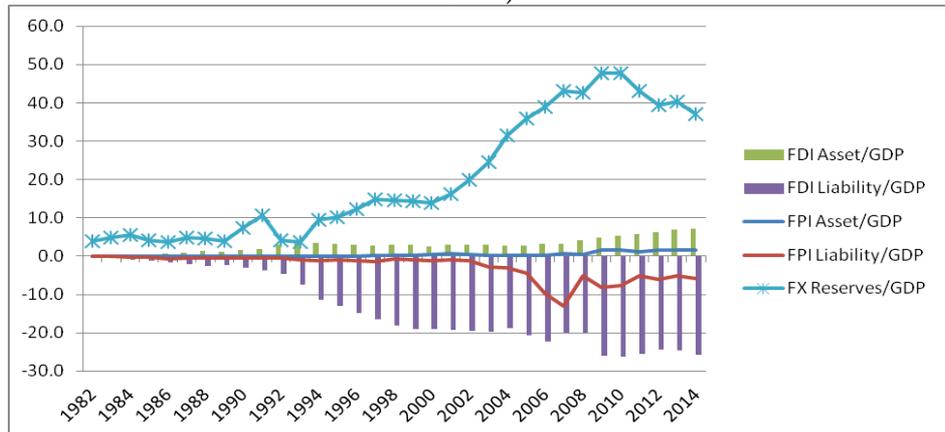
Chart 3.6.c: Other Emerging Economies: Equity Assets, Liabilities & Forex Reserves (% of GDP)
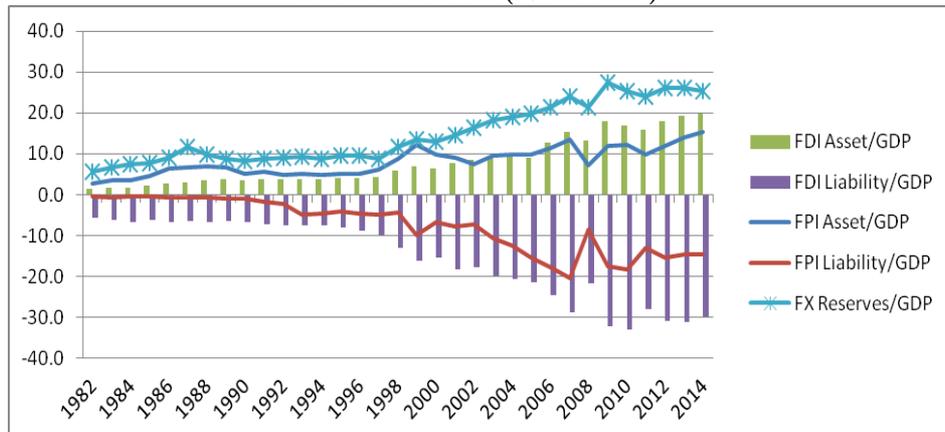
In sum, our examination of the international balance sheets shows that India and China have experienced a deterioration of their net foreign assets position and draw-down of foreign exchange reserves in the period since the global financial crisis. The trend of an increasing share of equity liabilities in total liabilities witnessed in the two decades before the crisis have also got reversed in the post-crisis phase, with a higher accumulation of debt liabilities by the emerging economies group as a whole. For India, not only is the external debt accumulation on the higher side among the emerging economies, but its equity liabilities are also dominated by FPI rather than FDI liabilities.

Capital Flows and External Vulnerability

Financial globalisation has been accompanied by accumulation of debt, both domestically and internationally, by all the major economies. While the pace of debt accumulation has slowed down to an extent in the developed economies following the global financial crisis, the emerging economies have witnessed a rise in the pace of debt accumulation in the post-crisis period (Buttiglione et. al., 2014). BIS (2014) noted that monetary easing in the US and other advanced economies after the crisis have driven capital flows into the emerging economies, fuelling domestic credit expansion and property price bubbles. The private corporate sector of the emerging economies has been the largest recipient of this surge in debt inflows, with an increasing share of foreign currency debt being raised through bond issuance (IMF, 2015). In this section, we examine the quantum and composition of debt inflows to India and compare them with other emerging economies, using World Bank's International Debt Statistics database. We also assess the impact of debt inflows on external vulnerability.

Charts 3.7 (a, b & c) plots the quantum of net debt inflows, portfolio equity and FDI inflows (as % of GNI) to India, China and other emerging economies respectively, over time. Debt inflows were the most dominant form of capital inflows to the emerging economies in the 1980s. With financial opening, foreign equity inflows started rising in India and China from the early 1990s, dwarfing net debt inflows. Debt inflows to other emerging economies peaked in the mid-1990s, on the eve of the South East Asian crisis and experienced a sharp downslide since then, with equity flows dominating capital inflows into the emerging economies till the mid-2000s.

Chart 3.7.a: India: Net Debt, FDI and FPI Inflows (% of GNI)
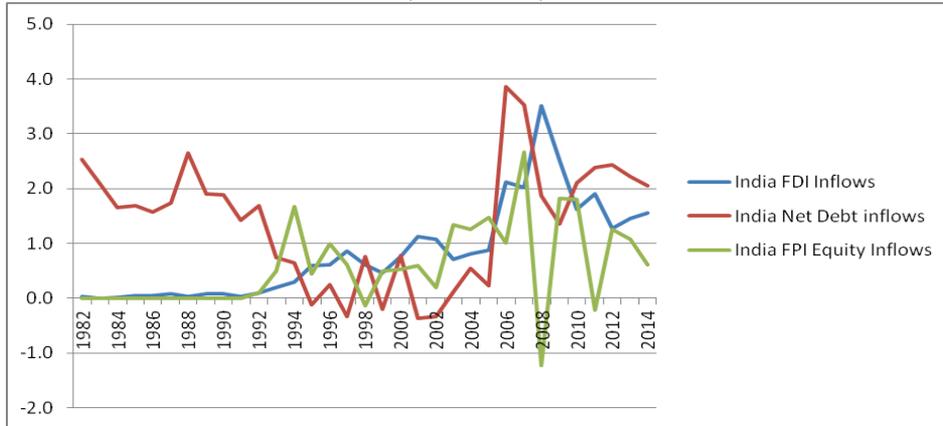
Chart 3.7.b: China: Net Debt, FDI and FPI Inflows (% of GNI)
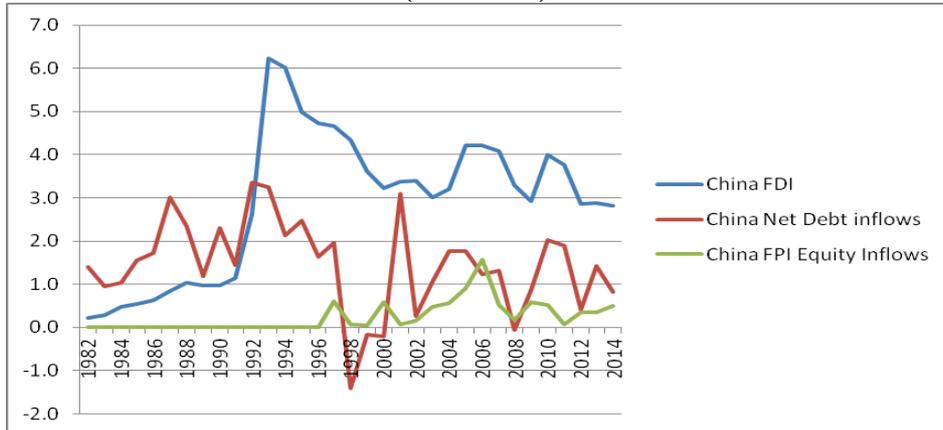
Chart 3.7.c: Other Emerging Economies: Net Debt, FDI and FPI Inflows (% of GNI)
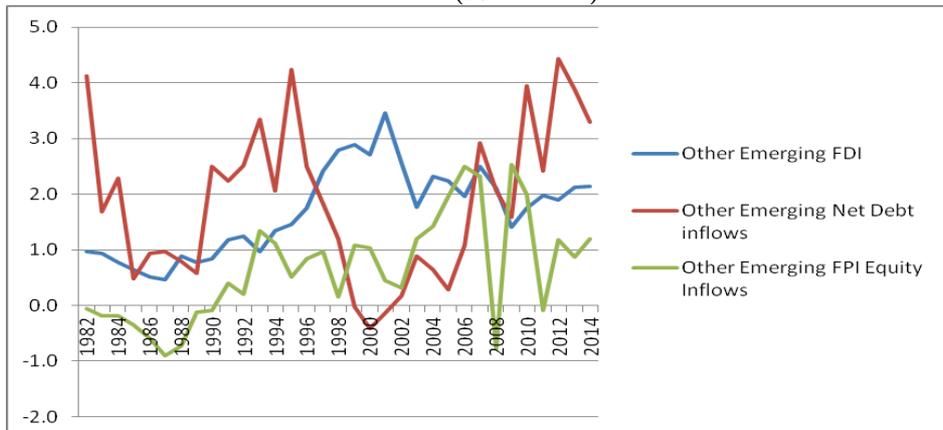
The resurgence of debt inflows into emerging economies occured in 2006, much before the global financial crisis. India also witnessed a sudden surge in debt inflows in 2006. The spike in debt inflows to China occured much earlier in 2001, but debt inflows have been dwarfed by FDI inflows to China, both before and after the global financial crisis.

It can be clearly seen that the surge in debt inflows to the emerging economies predates the 2008 financial crisis and the subsequent monetary easing in the developed economies. However, the impact of the post-crisis monetary easing can be seen in the sharp rise of debt inflows to the other emerging economies since 2010, crossing the mid-1990s peak in 2012. While debt inflows have also increased for both India and China in the post-crisis period, the extent of the debt surge appears to be moderate compared to the other emerging economies.

Chart 3.8.a: India: Decomposition of Net Debt InFlows (% of GNI)
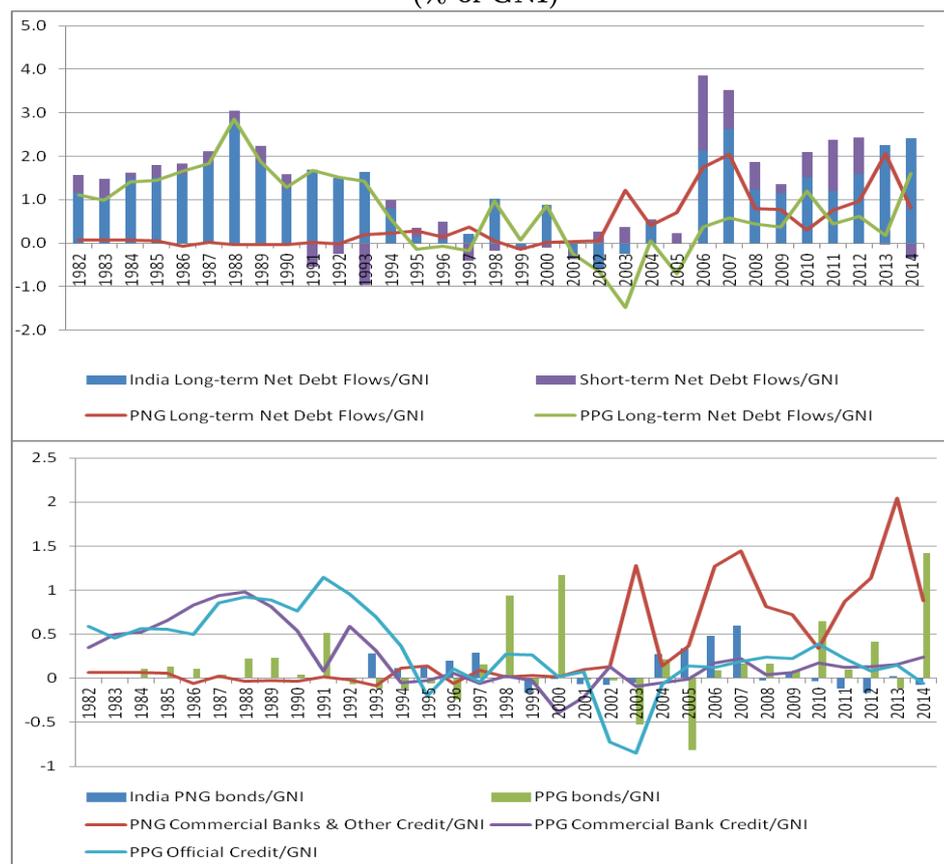
Source: Calculated from International Debt Statistics Database, World Bank

A decomposition of debt inflows to the emerging economies reveal the crucial changes that have occured with the progress of financial globalisation (Charts 3.8.a, b & c). In the 1980s, public and publicly guaranteed (PPG) long-term debt inflows were the dominant form of debt inflows to emerging economies, with the predominance of PPG borrowings from commercial banks and multilateral institutions. From the 1990s, there was a rise in the inflows of private non-guaranteed (PNG) long-term debt inflows as well as short-term borrowings for the other emerging economies, overshadowing PPG borrowings.

Two cycles of private debt inflows to the emerging economies can be discerned in the 1990s, the first one between 1989 to 1993 and the second one between 1994 to 1998. The period between 1999 and 2002 witnessed deleveraging of private debt (both short and long-term), in the aftermath of the South East Asian crisis. It is noteworthy that both India and China did not witness any significant degree of private debt inflows till 2002 and debt inflows for these countries till then were primarily PPG debt. Private debt inflows to India and China took off only from 2003, along with the commencement of a third cycle of debt inflows to the other emerging economies. This cycle which lasted till the global financial crisis in 2008 witnessed an unprecedented surge of private debt inflows to India and China. While debt inflows to India was mainly in the form of long-term private commercial bank borrowings and bond issuance, China's private debt inflows was led by short-term debt inflows.[13]

The post-crisis surge in debt inflows into emerging economies have been in the form of private commercial borrowings coupled with PNG bond issuance.[14] China has also witnessed a rise in PNG bond

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[13] The surge in short-term debt inflows to China in the 2000s can be partially explained by a rise in trade credits (Prasad and Wei, 2007). Rong (2015) reports that short-term debt accounted for 76.3% China's foreign currency debt at end-2014, nearly half of which was trade credit.

[14] According to IIF (2015) outstanding debt of the emerging economies' non-financial corporate sector went up from about 60% in 2008 to over 80% of GDP by end-2014, with around 25-30% of this debt denominated in US dollars. There has also been a notable shift towards bond financing by the non-financial corporate sector in most emerging economies, with the share of bond financing in total non-financial corporate debt financing increasing by more than 20% in S. Korea and Mexico. Other countries that have also witnessed a marked shift towards bond financing include Hungary, South Africa, Indonesia and Brazil. The share of bond

inflows during this period, while PNG commercial bank borrowings have turned negative. In India's case, however, the post-crisis surge in debt inflows has been entirely led by PNG borrowings from commercial banks and other financial institutions. Like their emerging market economy peers, the Indian private corporates have also taken advantage of the easy liquidity conditions prevailing in the international debt markets by increasing their external borrowings. However, the trend towards international bond issuance witnessed in India before the crisis was absent in the post-crisis period.

Chart 3.8.b: China: Decomposition of Net Debt InFlows (% of GNI)
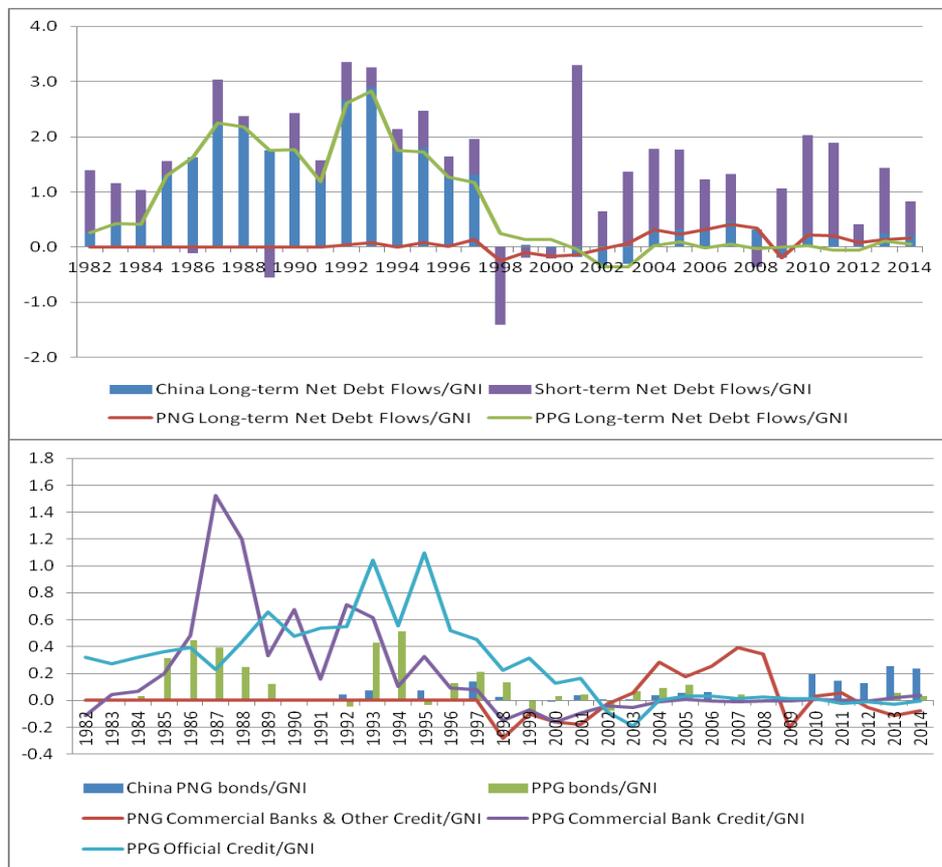
Source: Calculated from International Debt Statistics Database, World Bank

issuance in foreign currency (mostly dollar denominated) was over 50% in the first five months of 2015.

Chart 3.8.c: Other Emerging Economies:
Decomposition of Net Debt InFlows (% of GNI)
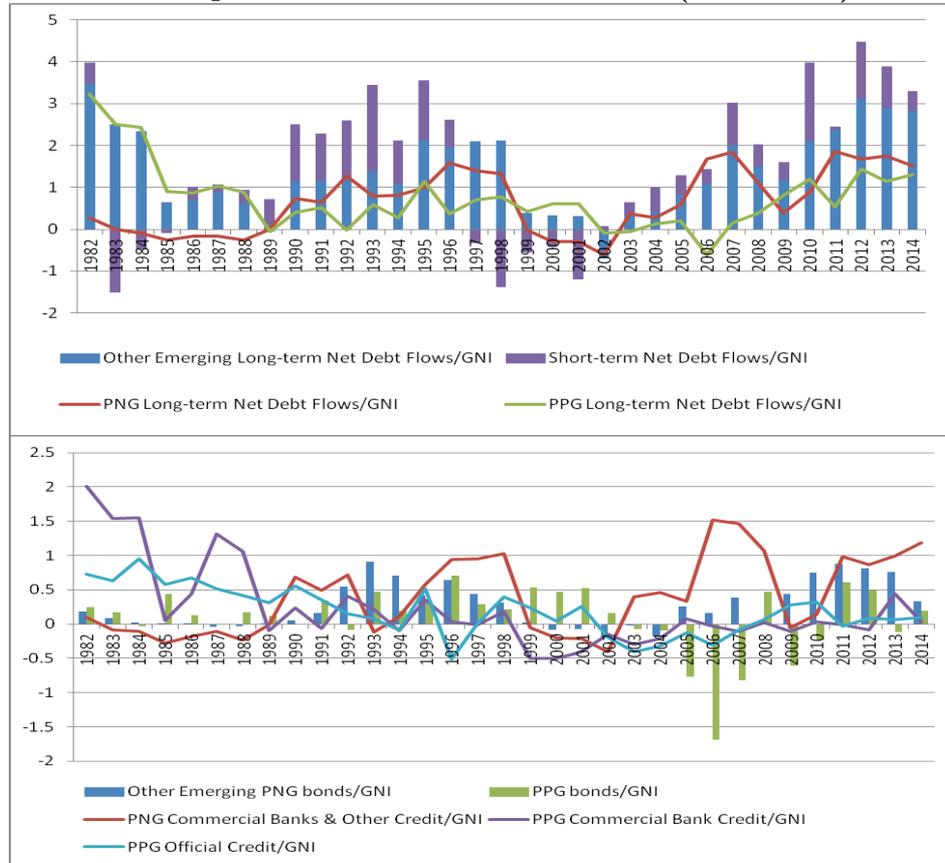
Source: Calculated from International Debt Statistics Database, World
Bank

The impact of the surge in debt inflows into emerging economies on
their external balance is also dependent on the overall current
account balance. For countries with persistent current account
deficits, a growing dependence on debt inflows to finance such deficits
increase their external vulnerability. The gross external financing
requirement (GEFR) in a period — defined as the sum of the current
account balance (negative), debt servicing on external debt in that
period and the short-term debt stock at the end of the previous
period — is a useful indicator of external vulnerability. Chart 3.9 and
3.10 maps over time, the gross external financing requirement and its
components to GNI, for India, China and the other emerging
economies group.

Chart 3.9: India: Gross External Financing Requirement (% of GNI)
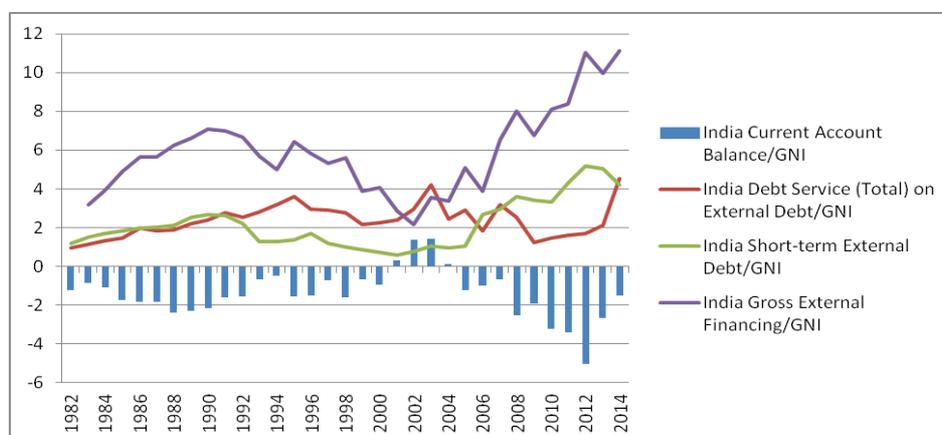
Chart 3.10: India, China & Other Emerging Economies: Gross External Financing Requirement (% of GNI)
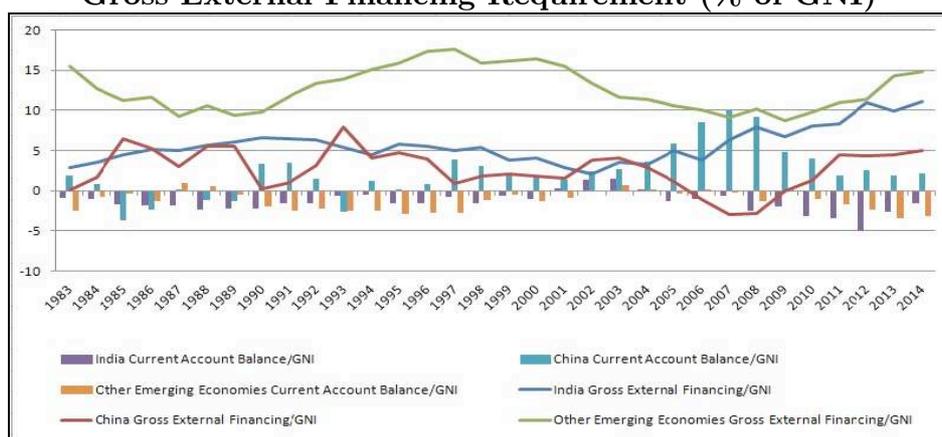
As discussed in Chapter 1, the period between 2003 and 2008 was also a phase of domestic growth acceleration in India. Unlike China or the other emerging economies group, India's high growth phase in the 2000s was accompanied by a deterioration of its external balance. Since the 2008 financial crisis and subsequent global recession, all the emerging economies have witnessed sharp deterioration in their current account balances and GEFR-GNI ratios. India witnessed a sharper deterioration of its GEFR-GNI ratio post-2008 because of an unprecedented increase in India's current account deficit from 2010, reaching a record 5% of GNI in 2012. With rising short-term debt and debt servicing on past borrowings, India's GEFR-GNI ratio reached 11% of GDP in 2012. This had set the stage for capital flight from India and sharp currency depreciation during the 'taper

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tantrum' of May 2013, along with Brazil, Indonesia, Turkey and South Africa (collectively categorised as the 'Fragile Five' in the financial press).

India's current account balance has seen considerable improvement since 2013. Whether such improvement will sustain over time is uncertain, since much of the improvement has occured on account of a crash in international oil and commodity prices as well as a general economic slowdown squeezing import demand. India's capital goods and manufacturing sectors had witnessed a rise in import intensity in the 2000s (Chaudhuri 2013; Nagraj 2015). Unless this trend gets reversed structurally, an increase in domestic growth will once again widen India's trade and current account deficit. This was seen during the phase of high growth between 2003 and 2008, when the import/GDP ratio increased faster than the export/GDP ratio (noted in Table 1.2 in the first chapter). Moreover, India's short-term debt and external debt-servicing, remained at historically high levels in 2014, which has prevented a fall in the GEFR-GNI ratio depite the improvement of the current account balance.

The other emerging economies' group has witnessed a deterioration of the current account balance alongside increasing short-term debt, leading to a rise in the GEFR-GNI ratio. This points towards increasing external vulnerability for some of the economies included in the emerging economies group, especially Brazil, Indonesia and South Africa. China's huge foreign exchange reserves act as a buffer against BoP difficulties, but its external balance also trends towards deterioration. All these emerging economies, which were recipients of massive debt-inflows in the post-crisis period are now vulnerable, to varying extents, to another monetary shock from the US, which can reverse the direction of the debt flows altogether. Such deleveraging would affect the private corporate sector most seriously, as was witnessed during the South East Asian crisis.

Foreign Currency Borrowings by Indian Companies

The surge of external debt inflows to India in the 2000s mainly occured in the form of external commercial borrowings (ECBs). The stock of ECBs in India witnessed a steep climb from mid-2000s, rising from $25 billion in end-March 2004 to almost $150 billion in end-March 2014. ECBs account for over one-third of India's external debt, and is its largest component. Outstanding ECBs as a

proportion of GDP, rose sharply from around 4% of GDP in 2006 to 7% in 2009 (Chart 3.11). After a slump in 2010, ECBs have once again risen to around 8% of GDP by 2014.

Chart 3.11: India: ECBs and FCBs
(% of GDP)
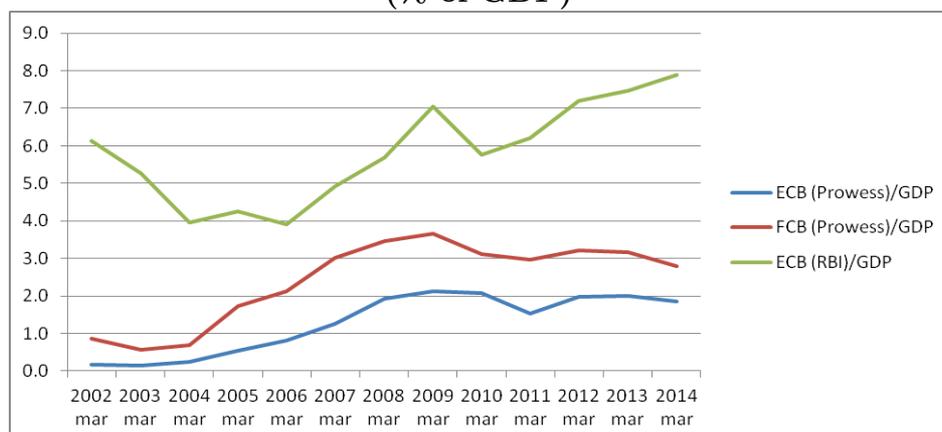
Chart 3.12 provides a time-series for the implicit interest rate on India's outstanding ECBs, estimated from the data on interest payments on ECBs provided by the Finance Ministry's status reports on external debt. It is noteworthy that the increase in ECBs from mid-2000s occured alongside a spike in the implicit interest rate on ECBs. This is possibly because ECB norms were deregulated from 2005 onwards, allowing a larger class of borrowers like NBFCs, qualified NGOs and cooperative societies access to ECBs.[15] Two factors have contributed to the growth of ECBs in India in the more recent period. First, the ECB norms for the infrastructure sector were liberalized, first in 2008 and then in 2013, by progressively widening the definition of infrastructure. Second, the decline in the interest rate on ECBs since 2008-09, which was an obvious fallout of monetary easing in the US and other advanced economies coupled with rising lending rates in India since 2010-11, widened the differential with the domestic lending rate, incentivising domestic companies to borrow from abroad.

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[15] GoI (2015b) provides an overview of how ECB regulations have evolved in India in the post-liberalization period.

Chart 3.12: India: Interest Rates on ECBs & Domestic Lending Rate (%)
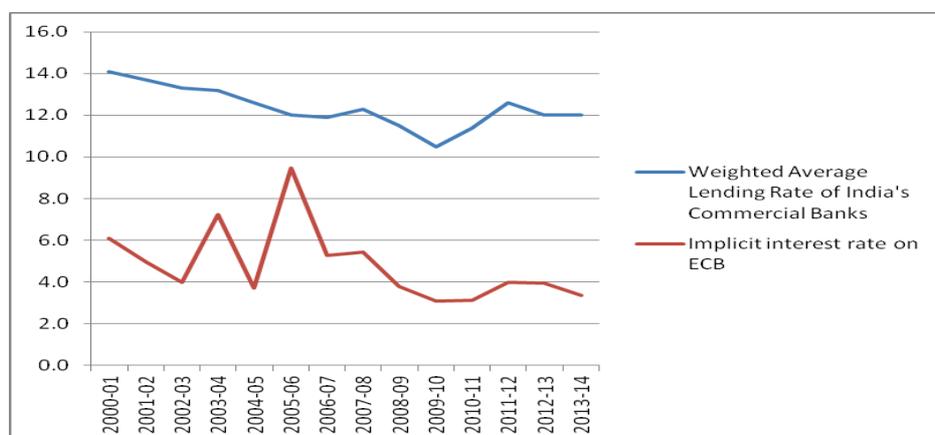
The CMIE Prowess database provides data on the ECBs as well as total foreign currency borrowings (FCBs) by the Indian non-financial companies. Besides ECBs, trade credit is the other category of FCBs. The comparison between the aggregate ECB and FCB data provided by Prowess database and the total ECB data for India, provided by the Ministry of Finance, is provided in Chart 3.11. While total ECBs stood at around 8% of GDP in end-March 2014, total FCBs and ECBs reported by Prowess were 3% and 2% of GDP, respectively.

Chart 3.13: Share of ECBs in FCBs (%)
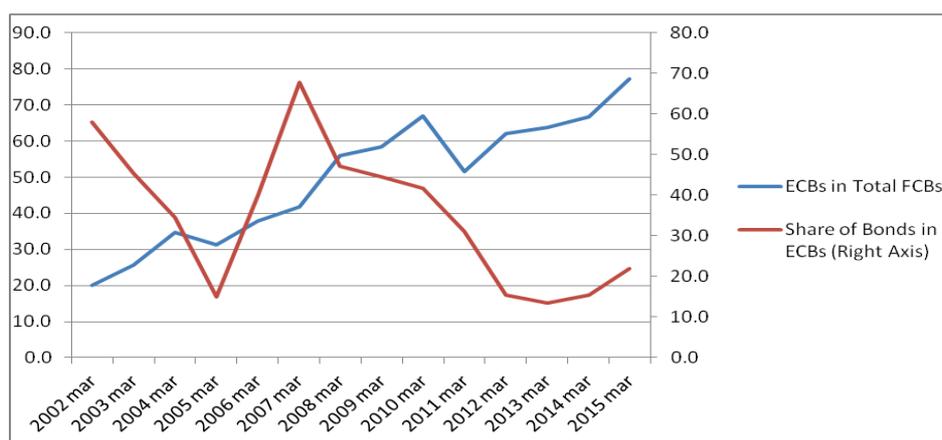
The share of ECBs in overall foreign currency borrowings of the non-financial companies have increased from around 20% in end-March 2002 to almost 80% by March-2015. Within ECBs, the share of bonds had shown a rapid rise between 2005 and 2007, but has fallen since

then. This is consistent with the decomposed international debt inflows data (reported in Chart 3.8.a).

Chart 3.14: FCBs Share in Total Debt: Trade and Non-Trade Sectors (%)
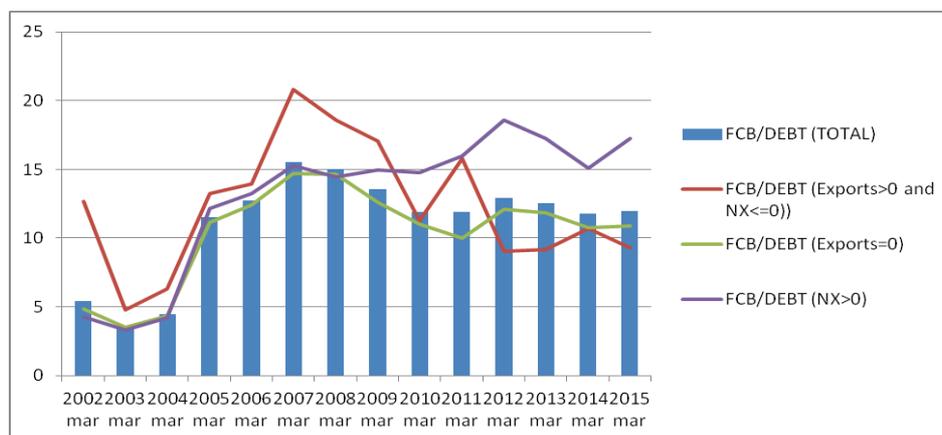
For all non-financial companies in the Prowess database, the proportion of FCBs in total debt shows a rise from 2003 to 2007, followed by a gradual decline till 2010, after which it has roughly maintained a similar level (Chart 3.14). On average, around 12% of total outstanding debt of the non-financial companies in India comprised of foreign currency borrowings. It is noteworthy that FCBs share in total debt for companies in both the trade and non-trade sectors grew in tandem from 2003 to 2007. This implied a deteriorating risk profile of the overall FCBs, since the foreign currency borrowings by the non-trade sector companies have no foreign exchange earnings and hence no natural hedge against currency risk. Since 2008, however, the shares of FCBs in total debt for the non-trade sector companies as well as net-importer companies have declined, while the net exporter companies have increased their share of FCBs in total debt.

A similar trend is reflected in the decomposition of the total FCBs by the non-financial sector into the non-trade, net importer and net exporter categories. The share of the FCBs of net exporter companies in total FCBs have risen from around 16% in end-March 2007 to over 30% in end-March 2014. However, 70% of foreign currency borrowings by the non-financial sector in 2015 are by companies who are not positive foreign exchange earners. The share of FCBs by non-

trade sector companies, which have no natural hedge against currency depreciations, still remain high at over 60%.

Chart 3.15: Share of FCBs of Trade and Non-Trade Sectors (%)
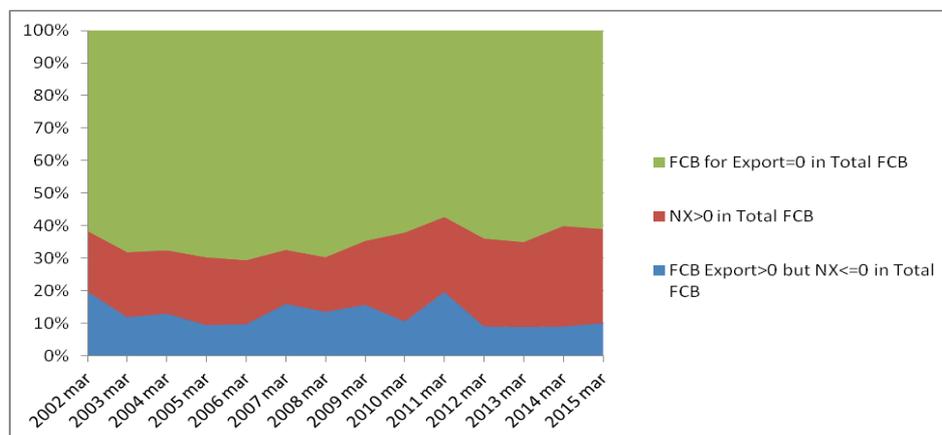
Policy Issues

GoI (2015b) has recommended an aggressive liberalization of ECBs by removing all existing regulations related to borrowers, lenders, end-use, amount, maturity, all-in-cost ceiling etc. It has advocated the removal of all restrictions on companies raising ECBs against a mandatory commitment to 'hedge a specified percentage of its currency exposure', either through natural hedge or through currency derivatives. In order to facilitate this transition to a fully liberalised ECB regime, steps to develop the currency derivatives market have been advocated. In sum, the effort is to take apart the hierarchy of capital inflows that the RBI has maintained as its policy objective till date, in terms of preferring non-debt to debt inflows. The timing of such recommendations also coincides with the bad loans crisis faced by the domestic banks, which has led to a considerable slowdown in domestic credit growth.

In our view, steps to further liberalize ECB norms would only encourage reckless borrowings by the corporate sector, already affected by a domestic debt overhang, which is an outcome of past excesses. Despite existing regulations and caps, ECBs in India have grown at a fast pace over the past decade and a half, owing to gradual liberalization on the one hand and the post-crisis debt surge towards the emerging economies on the other, facilitated by

monetary easing. As our findings in the earlier sections show, India's debt liabilities have shown a rising trend in the post-crisis period, increasing its external vulnerability. A further policy shock, deregulating access to the international debt markets would send perverse signals to the corporate sector. Rather, the policymakers need to guard against the fallout of monetary tightening in the US and other developed economies, which would inevitably reverse the direction of capital flows and create downward pressure on the currency.

The argument regarding a mandatory hedging commitment is also unsound, given the structure of India's current account and trade balance and the experience of rising import intensity of the manufacturing and capital goods sector during the 2000s. Bulk of the foreign currency borrowing by the Indian companies still remains concentrated in the non-trade and net-importing sector, which does not have any natural hedge. Several episodes of financial crises, the latest being the collapse of the housing bubble in the US, have shown how the derivatives markets far from efficiently pricing risks, themselves become conduits of speculative behaviour. For a country like India, which has a persistent trade and current account deficit, a deteriorating net financial asset position with moderate levels of foreign exchange reserves and a relatively high share of portfolio equity liabilities relative to FDI, encouraging further inflows of external debt can only be a recipe for financial disaster.

Chapter 4
'Riskless Capitalism' and External Vulnerability: A Macrotheoretic Model

This chapter seeks to theoretically analyse the change in growth patterns in post-reform India based on the empirical chapters presented earlier. While 1991 marks as a break in the Indian economy in terms of opening up, it was not the 1990s which saw spectacular rates of growth such as those seen in the 2000s. Our attempt here is to situate in a macrotheoretic model the two significant booms that this period has witnessed so far: 2003-04 to 2007-08 and 2009-10 to 2010-11.

Methodological Choice

This work belongs in the tradition of demand-driven growth models. A few words on the methodological choice we make here. While growth under capitalism has been the subject matter of enquiry since Adam Smith, modern growth theory came into existence arguably through Harrod (1939). It was an attempt to dynamise Keynes' static analysis of a capitalist economy. Harrod (1939) had argued that under capitalism, where expectations about the market drive accumulation, there will be instability in this process because the market gives the capitalists perverse signals. Also, while the decision to invest by capitalists is individual, their decisions have a collective effect *ex post* on the extent of market available. His article contained two knife-edges that the growth process under capitalism throws up – one between the actual and the warranted rate of growth and the other between the warranted and the natural rate of growth.

The first knife edge also happens to be the dividing line between two mutually exclusive camps in modern growth theory: supply-driven (Solow-

Swan, Cass-Koopmans, New Growth Theory) and demand-driven (Kaleckian, Marxian). While the former does not acknowledge the existence of the first knife-edge, for the latter it is central. So, all that the supply-driven growth models do is to solve the second knife-edge (by endogenising the capital-output and savings ratios), which Harrod himself did not pay much attention to in his celebrated article (of the 20-odd pages, he devoted just the last four on it). A defining characteristic of the tradition of supply-driven growth models is the presence of a production function as opposed to an investment function, which is a fundamental characteristic of demand-driven growth models.

That the investment function is critical in a capitalist economy can be best appreciated by looking at Sen (1970). He brings out the limitations of the supply-driven growth models by showing that introducing the role of expectations in the investment behaviour of the capitalists in a model such as Solow (1956), instead of assuming unrealistically that all savings are necessarily invested, brings back Harrodian instability *despite* assuming a neoclassical production function with perfect substitutability between labour and capital. He goes on to show that such a flexibility makes the process of accumulation even more unstable than Harrod had proposed. And Sen's critique can be seen as not just limited to Solow but the entire spectrum of supply-driven growth models.

As opposed to this, the tradition of demand-driven growth models takes the first knife edge as a point of departure and develops it. Kalecki (1962) presented a critique of Harrod (1939) from a different perspective. He argued that it is true that the warranted rate of growth is unstable (Kalecki called it 'ephemeral') in that the economy slides down or explodes in either direction. But what is more, the economy actually *stabilises* at a zero rate of growth in the absence of an exogenous stimuli. In other words, the problems of accumulation under capitalism are such that the normal state of affairs would be one of no accumulation, i.e. Marx's simple reproduction. So for there to be a positive level of accumulation, some form of exogenous stimuli (exogenous to the process of accumulation) is required. Kalecki believed that innovations play that role from within the capitalist system whereas the State could also play the role from outside the pure *Laissez Faire* system.

Let us spend some time on Kalecki's argument since the investment function used here draws from Kalecki (1962). A cornerstone of Kaleckian theory is the possibility of two steady states, one of which is stable (lower rate of growth) and the other unstable (higher rate of growth). Patnaik (1997)

takes the Kaleckian argument even further. He presents an investment function on the lines suggested by Kalecki (1962) which generates these two rates of growth. If g is the rate of growth of capital stock (which is the same as that of output if the technologically given output-capital ratio is the same throughout), u is capacity utilisation and u_0 the desired capacity utilisation of the capitalists, Patnaik (1997) presents an investment function of the following form,

$$g_t = g_{t-1} + b(u_{t-1} - u_0)g_{t-1}$$

It is easy to see that such an investment function produces two rates of growth, one associated with a zero rate of growth and another with the desired rate of capacity utilisation (Harrod's warranted rate) with the former being stable while the latter is unstable. We will be improvising on this investment function by bringing in some finance related issues raised by Steindl (1952).

Stylised Facts about the Indian Economy since 2000

Let us first look at certain stylised facts taken from the rich body of empirical evidence presented earlier, which the macrotheoretic model attempts to explain.

1. **Two Booms:** Post-2000, there were two phases of high growth in the Indian economy. The first phase saw a boom between 2003-04 and 2007-08 (5 years) and a bust in 2008-09 whereas the second had a short-lived two year boom between 2009-10 and 2010-11 followed by a decline for two years (refer to chart 1.1). Since the partial reversal after that is suspect for measurement issues, we do not comment on it. We present two distinct stories below for these two economic booms .

2. **Corporate Investment:** For both phases, it's the private corporate investment that grew the fastest with a sharp jump in the take-off year (2003-04) when private corporate gross capital formation as a percentage of GDP increased from 6.5% to 10.3% (Table 1.3).

3. **Flow of Bank Credit:** Annual flow of credit (as a percentage of GDP) from public sector banks (PSBs), as opposed to private banks,

saw a structural break in 2003-04 and witnessed high levels for both the booms with a decline in between the two booms during 2008-09 (chart 1.12).

4. **Nature of Bank Credit:** There was a fundamental difference in the nature of bank credit between the two booms:

   (a) In the first boom, the share of high debt-equity ratio (DER) companies in total debt *fell* (chart 2.12). Similarly, the share of bank borrowings by companies with ICR<1 in total bank borrowings *fell* in the first boom (chart 2.13).

   (b) In the second boom, however, the share of DER>5 companies' bank borrowings in total bank borrowings (of all non-financial companies) *rose* (chart 2.12). Similarly, the share of bank borrowings by companies with ICR<1 in total bank borrowings *rose* (chart 2.13). This clearly shows that banks were lending more to high debt companies in the second phase of the boom.

5. **Real Interest Rates:** One of the important developments for the first boom is that the real interest rates *fell* significantly from 12% in 2000-01 to 2.5% in 2008-09. This was also reflected in the fall of the prime lending rate of the SCBs. In contrast, for the second boom, however, the real rate of interest, short as well as long, *increased* (Chart 1.8.b and 1.8.c).

6. **Fiscal Policy:** The high fiscal deficits of the 1980s had fallen in the 1990s. Following the enactment of the Fiscal Responsibility and Budgetary Management (FRBM) legislation, fiscal deficit was reduced drastically in India during the period of the first boom. A "pause" button was pushed on the FRBM following the global recession and the fiscal deficit expanded from 2008-09. Chart 1.5.a

7. **Current Account:** Prior to the first boom, there was a positive current account balance for three consecutive years starting from 2001-02 that turned into a deficit again since 2004-05. In contrast, the second boom happened despite a worsening current account deficit as a result of the global crisis (chart 1.3). Import intensity of the Indian economy has been steadily rising in the high growth phase and continues to rise today.

8. **Gross External Financing Requirements (GEFR):** India's GEFR to GNI ratio had peaked at around 7% in 1990 and 1991, the time when India experienced its first BoP crisis. It fell through the 1990s, and with the current account balance turning positive between 2001-2004, it reached a low of around 2% in 2002. Since then, there has been a steady deterioration, both of the curent account balance as well as accumulation of short-term debt, taking the GEFR-GNI ratio to 8% in 2008 (chart 3.9).

A Growth Model of Neoliberalism

From these stylised facts, we develop a macrotheoretic model, which can be used as a framework to explain the growth trajectory of the Indian economy and analyse its faultlines.

Two Constraints

Any economy functions under two constraints. With nominal commitments carried over from the past, there is an internal constraint that the rate of profit should at least be equal to the interest accrued on the debt taken in the past. At a microeconomic level, this is measured by the interest coverage ratio (ICR), which when less than one means the firm does not have enough profits to even pay the interest accrued on past debt. The internal constraint of our model is the inequality that the ICR for the entire non-financial corporate sector should be greater than 1.

On the other hand, there is an external constraint set by the availability of foreign exchange. This is particularly relevant for developing economies like India with persistent current account deficits and negative net foreign assets positions. This constraint tightens when the import intensity grows with the growth rate. The external constraint in our model is the BoP condition, i.e. the GEFR should be equal to net capital inflows and change in foreign exchange reserves.

Let us look formally at these constraints, which can be seen as boundaries for the system to function well without either going bankrupt internally or externally.

The Internal Constraint

- We make the classical assumption on savings that workers consume all their wages W while the capitalists save all their post tax profits[1]. Taxes are levied only on profit income. GDP measured from the income side will be the sum of wages and profits and from the expenditure side a sum of consumption of workers, private corporate investment (I) and government expenditure ($\bar{G}$), which is a policy variable and net exports in domestic currency $\bar{X} - M$. This will give us a relationship between the growth rate g and degree of capacity utilisation u, which is the ratio between actual O and technologically given output O^*.

$$W + P = W + I + \bar{G} + \bar{X} - M$$

$$(h + m)O = I + \bar{G} + \bar{X}; \qquad h = \frac{P}{O}, M = mO$$

Dividing by K,

$$(h + m) \cdot \frac{O}{O^*} \cdot \frac{O^*}{K} = g + \xi + \bar{x} \tag{1}$$

$$u = \frac{g + \xi + \bar{x}}{(h + m)\beta}$$

where,

$$g, \xi, \bar{x}, \beta = \frac{I}{K}, \frac{\bar{G}}{K}, \frac{\bar{X}}{K}, \frac{O^*}{K}$$

- The internal constraint requires corporate retained earning [profits P - tax T - dividends ($1 - \theta$) as a proportion of post-tax P)] to be more than the interest payment on accrued debt.

- Corporate sector can borrow a total of D (corporate debt) from domestic and international finance at i and i^* with shares μ and $1 - \mu$

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[1]This is done purely for simplying reasons so the results will not change even if we were to assume both that workers save and capitalists consume a part of their incomes. That would introduce a few more variables without adding much to the analysis since the savings rate plays no role here.

respectively.

$$\theta(P - T) \geq i\mu D + i^*(1 - \mu)D$$

$$g \geq \frac{(h + m)[i^* + (i - i^*)\mu]}{(h + t)\theta}\delta - \xi - \bar{x}$$

$$\text{where,} \quad t = T/O$$

$$\delta = D/K$$

(2)

- Upward sloping line with danger zone below it (see figure 1). Corporate tax breaks, relaxation of ECB norms, appreciation of currency eases this constraint (shifts down or rotates clockwise).
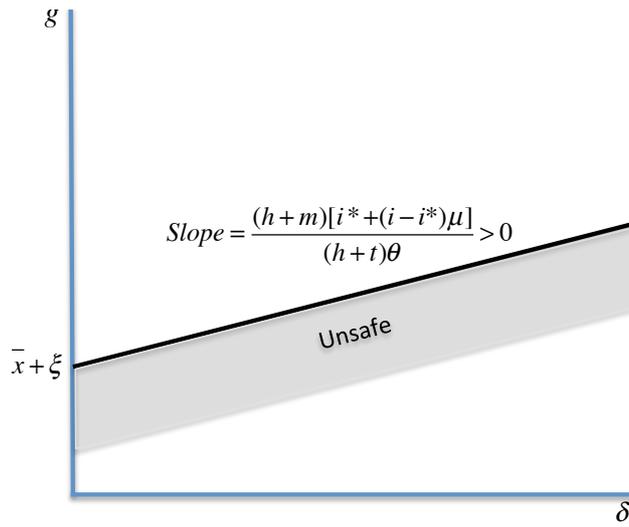
Figure 1: The Internal Constraint

The External Constraint

- Being a developing country, it faces a foreign exchange constraint as well. The requirements arise, among other things, out of the current account needs as well as the international debt servicing payments accrued in the past.

- In the capital account, there are 3 kinds of net capital flows, debt (positively related to the difference between domestic interest rates i minus some 'country risk' ρ and international rate of interest i^*), foreign portfolio investment, FPI, (moves with the stock market and growth) and foreign direct investment, FDI, (positively related to the difference between the rates of growth of the recipient nation and the nation of origin of finance) flows along with an autonomous component (α_0) determined by the push factors from the originating countries. So, $f = \alpha_0 + \alpha_i(i - \rho - i^*) + \alpha_g(g - g^*); \quad f = F/K; \alpha_0, \alpha_i, \alpha_g > 0$

- External constraint can be represented by the total foreign exchange requirements from the current account (net imports) plus the interest payments on accrued foreign debt should be equal to net capital inflows and change in foreign exchange reserves. Formally, $(M - \bar{X}) + i^*(1 - \mu)D = F + \Delta R$ (change in reserves ΔR). Dividing this by the capital stock and substituting for f gives us:

$$i^*(1 - \mu)\delta = \alpha_0 + \alpha_i(i - \rho - i^*) + \alpha_g(g - g^*) + \Delta r + \bar{x} - mu\beta$$

$$i^*(1 - \mu)\delta = \bar{c} - \left(\frac{m}{h + m} - \alpha_g\right)g$$

$$\text{where, } \bar{c} = \alpha_0 + \alpha_i(i - \rho - i^*) - \alpha_g g^* + \Delta r + \bar{x} - m\left(\frac{\xi + \bar{x}}{h + m}\right) \tag{3}$$

$$\Delta r = \Delta R/K$$

- This is a negatively sloped line depicting the trade-off between growth and external account stability for emerging economies such as India (see figure 2). To justify this, which requires $\frac{m}{h+m} > \alpha_g$, we assume that imports rise faster than the FDI as the growth rate rises. It will be important to remember that in this external constraint, the danger zone lies above the line.

Banks' and Capitalists' Behaviour Functions

How is investment determined in a capitalist economy? There are two sides to this story: borrower's and lender's. We look at them one at a time.

$$Slope = \frac{i^*(1-\mu)(m+h)}{m-\alpha_g(m+h)} < 0$$
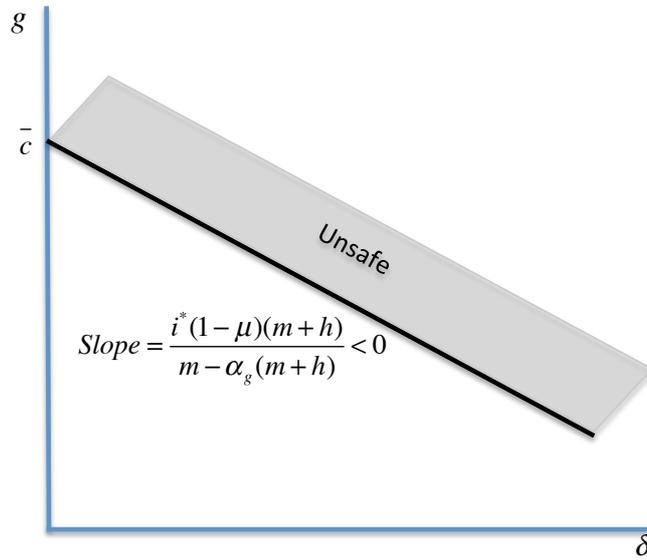
Figure 2: The External Constraint

Borrower's Side: Capitalists' Behaviour

Let us assume that the life of an investment project is n time periods. If the prospective stream of yields are $q_1, q_2 \cdots q_n$, then the rate of return on this investment (marginal efficiency of investment, MEI) is determined as follows: it is that rate which when used to discount the above mentioned stream of prospective yields, gives rise to a magnitude that equals the value of the investment project. The shape of the MEI schedule has been under debate since Kalecki (1937). Keynes (1936) postulated it to be a decreasing function of the magnitude of current investment on account of decreasing returns to scale and imperfect competition (see (A) in figure 3).

Kalecki (1937) argued that the above-mentioned two reasons to explain the negative slope of the MEI in Keynes (1936) are both invalid, the first one on purely logical grounds whereas the second one contradicts the logical universe of Keynes' analysis. Diseconomies of scale may be relevant only when the capital stock is given but the very act of investment increases the capital stock, invalidating the premise of diseconomies of scale i.e. fixity of some 'factor of production'. Further, Kalecki (1937) argued that in competitive
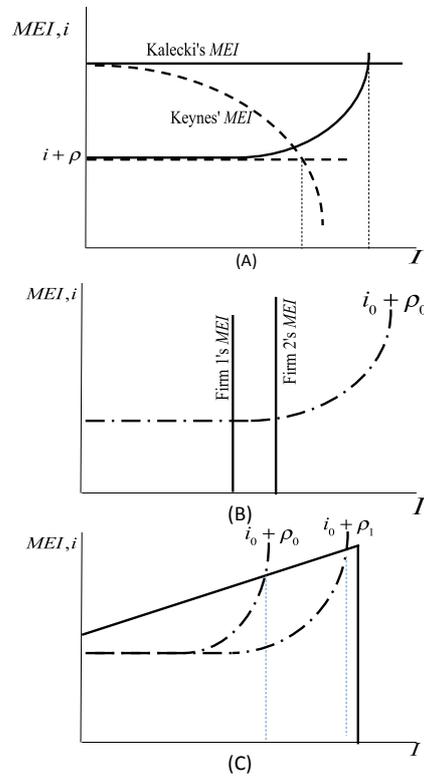
Figure 3: (A) Keynes' Vs Kalecki's MEI and Principle of Increasing Risk; (B) MEI in an established Oligopoly; (C) MEI in a nascent oligopoly

conditions such as what Keynes (1936) assumed, the MEI schedule should be horizontal because an individual firm, by virtue of being a price taker, faces a horizontal demand curve for its products (see (A) in figure 3).

It is clear that the shape of the MEI schedule would be determined by both the nature of economies of scale as well as the nature of competition in an industry. With increasing returns to scale under competitive conditions, the MEI is an *increasing* function of the amount of investment (Steindl (1945)). On the other hand, if an industry is functioning strictly under conditions of *established* oligopolies, where it is difficult to expand the market *share* of a firm, the limit to investment of a firm is set by its expectations about the rate at which the industry itself expands (a proxy of which could be firm's past

capacity utilisation). Under such conditions, the MEI is a vertical schedule at the level corresponding to expectations about demand (see (B) in figure 3). Each firm within this industry will have its own vertical MEI, the height of which is determined by the scale of operation of that firm, and the limit is determined by the share in the market that the firm enjoys (see the difference in the height as well as the position of the MEIs of firms 1 and 2 in (B) of the figure). As will be seen below, as well as in the figure, the rate of interest or the amount of credit available will have no influence on the investment level unless the firms are credit constrained and not demand constrained[2].

But what if there are increasing returns to scale but the industries have *not yet* matured[3] into established oligopolies i.e. industries in which large firms are still competing to establish their market shares? This would give us a kinked investment schedule. There is an upward sloping portion showing increasing returns to scale (minus the borrower's risk), which is also a continuous function depicting the possibilities of expanding one's share at the cost of competitors in the same industry. Since there is imperfect competition, each firm's maximum sales possible are limited by the industry demand curve, which sets the limit and, hence, the kink in the MEI schedule (see (C) in figure 3).

The process described above determines the MEI under differing stages of maturity of an industry. However, it is not just the MEI that matters while calculating the returns from an investment, there is another component, borrower's risk, which goes into the decision making. The rationale for borrower's risk is given below.

As the magnitude of investment increases, it is likely that a part of that investment starts getting financed by external sources. As a result there arises a borrower's risk on account of two factors: (a) higher is the debt as a proportion of own capital, higher is the risk of a loss to own capital; (b) since capital good is illiquid, distress sale in the event of failure of expectations leads to losses, the magnitude of which rises as investment rises. This implies that greater the proportion of borrowed funds to own funds (gearing ratio δ), the higher is the risk of losing one's own capital.

To arrive at the prospective net profit from an investment project, therefore, one needs to subtract the borrower's risk from the MEI. Higher the

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[2]An investment function for such an industry with the two possibilities existing (but obviously exclusive to each other) can be imagined as $g = \min\{h(\delta), f(u)\}; h', f' > 0$.

[3]The word 'maturity' used for these industries has the same meaning as Steindl (1952) had used in the title of his seminal work.

gearing ratio, higher the borrower's risk and lower the investment by firms on the upward sloping portion of the MEI, which is typically representative of new (but not necessarily financially small) entrants in industries who are in the process of getting established.

At any given point in time, there will be mature industries, where demand (vertical MEI) sets the limit to invest with no role of finance (unless there is a severe credit squeeze as explained in footnote 2), as well as nascent industries, where demand (by influencing the MEI) as well as finance constraint (through borrower's risk) together set the limit to investment that the firms would like to undertake.

Based on the discussion above, we can think of an investment function for the economy as a whole, which has three components with their relative importance determined by the weightage of different categories of industries (mature or nascent) for the period under consideration.

One, there is an autonomous component of investment γ_0, which, as Kalecki had argued, is dependent on factors such as innovations. We have not yet explored the role of the interest rates, which is discussed below, so suffice here to say that for those firms where finance matters, the cost of loan is an important factor which will affect investment negatively. Without adding an additional argument for the role of the exogenously given real interest rates, we make the autonomous component γ_0 move inversely with it. The interest rate used in this function is a weighted average of the domestic and the international interest rate[4]. Two, capitalists invest based on the difference between the expected degree of capacity utilisation and their desired capacity utilisation (u_0). Three, as argued by Steindl (1952), firms have a desired leverage ratio δ_0 and investment decreases/increases if the actual leverage ratio δ is greater/lesser than the desired one[5].

$$\dot{g} = \gamma_0(r) + \gamma_u(u - u_0)g - \gamma_\delta(\delta - \delta_0); \qquad \gamma_0' < 0; \gamma_u, \gamma_\delta > 0 \qquad (4)$$

Substituting for u from equation 1, and denoting the Keynesian multiplier by $\Gamma = 1/[(h + m)\beta]$, this gives us a parabolic function in the (δ, g) space of the following form:

$$\dot{g} = \Gamma\gamma_u g^2 - \gamma_u[u_0 - \Gamma(\xi + \bar{x})] \cdot g - \gamma_\delta\delta + (\gamma_0 + \gamma_\delta\delta_0) \qquad (5)$$

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[4]$r = (\mu \cdot i + (1 - \mu) \cdot i^*) - \pi$, where π is domestic rate of inflation.

[5]Steindl's theory, taking cue from Kalecki (1937), stands in contrast to the mainstream corporate finance theory that capital structure does not matter in investment decision making.

The isocline for this function is a parabola with its axis of symmetry[6] parallel to the δ-axis with the arrows pointing in the directions as shown in figure 4. The shape of this curve is determined by the coefficients of g and δ. Economic argument ensures that both the coefficients should be negative which gives the curve the shape that it has. The coefficient of g is negative because the capacity utilisation generated exogenously from exports and government expenditure, $\Gamma(\xi + \bar{x})$, should always be less than the desired capacity utilisation u_0 otherwise the economy due to exogenous factors alone will be running without any aggregate demand problems.
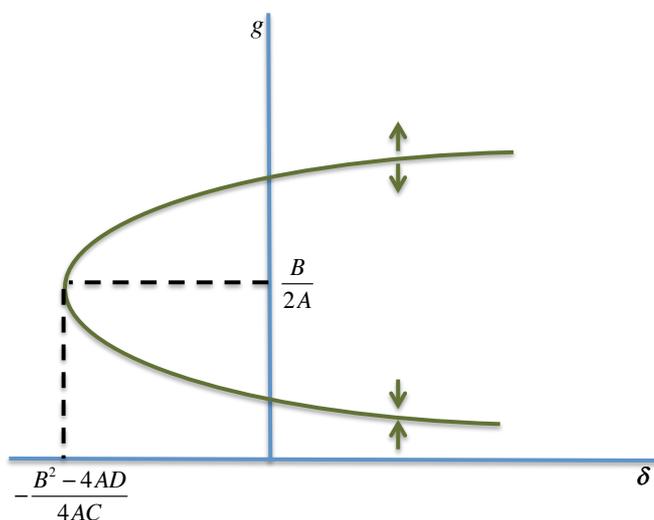
Figure 4: The Growth Isocline

This parabola tells us that for every value of the debt-capital ratio, there are two growth rates possible, much like Kalecki's argument (Kalecki (1962)). At lower rates of growth, a decline in the gearing ratio leads to an increase in investment as there is a decline in the borrower's risk, as captured by $-\gamma_\delta \delta$. But after a certain point higher growth rate itself starts dominating this risk averse tendency of the capitalists so that even if the gearing ratio is rising, the rate of growth rises. Such an investment function generates multiple

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[6]The vertex of the parabola is given by $g = \frac{B}{2A}, \delta = -\frac{B^2-4AD}{4AC}$, where $A = \Gamma\gamma_u$, $B = \gamma_u[u_0 - \Gamma(\xi + \bar{x})]$, $C = \gamma_\delta$, $D = \gamma_0 + \gamma_\delta\delta_0$.

equilibria, as we will see below, so that the tendency towards stagnation exists along side the 'growth begets growth' tendency with a tipping point happening at a particular rate of growth and a debt-capital ratio (vertex of the parabola).

Let us consider a few stylised facts mentioned above to see how this curve responds to them. The discussion presented here can be considered in terms of the two symmetrical arms of the parabola, the upper arm corresponding to the 'growth begets growth' tendency whereas the lower one corresponding to the stagnationist tendency.

1. A fall in the real rate of interest ($r \downarrow \rightarrow \gamma_0 \uparrow$) due to a fall in domestic interest rates, our stylised fact 6, will shift the vertex of the curve laterally to the right (see footnore 2 and 3). Similarly a fall in the international rate of interest will also have the same effect as above. For the lower arm, this means that the rate of growth would rise for a given debt-capital ratio since a fall in the interest rate pushes up investment demand.

2. There were two different *triggers* to high growth, though not responsible for its sustenance, in the two phases respectively.

   (a) In the first boom, it was a sudden spurt in export demand (stylised fact 2) so that export as a proportion of capital stock increased.

   (b) For the second, it was a policy decision in the post-global economic crisis conditions, when active injection of demand through fiscal policy was made to tide over its effects (stylised fact 7).

   Since these are both triggers and not structural changes, we present them as a sudden northward jump off the growth isocline rather than a shift in the curve itself (which would have been justified had these changes been permanent in nature). This means that the rate of growth would rise for a given debt-capital ratio since these factors push up the demand in the short run.

3. A rise in the import intensity ($m \uparrow \rightarrow \Gamma \downarrow$), our stylised fact 8, shifts the vertex to the northwest. For the lower arm, this means that the rate of growth would fall for a given debt-capital ratio since an increase in import intensity means a leakage of demand from the domestic economy i.e. the Keynesian multiplier falls.

Lender's Side: Banks' Behaviour

Bank lending plays a central role in our model. Their role enters the picture through the cost of loans which is given by the sum of interest rates and lender's risk as in Kalecki (1937).

Kalecki (1937) argued that given the asymmetry of information about profitability between lenders and the borrowers, the lenders ask for a higher risk premium as the leverage (or debt-equity ratio) rises. So, that part of investment, which is financed by debt, can be limited by bank finance (not savings) because the banks might set a limit to lending both through the interest rate changes as well as credit rationing. They can target a δ through these two instruments. Banks in India seem to have used these two instruments to control the magnitude of bank debt. They can both persuade and dissuade borrowing through these instruments. In the case of nascent industries, banks can help increase investment by decreasing interest rates and/or relaxing their risk curve (the latter is shown in (C) in figure 3). Our model does not specify the targeting rule explicitly.

To be sure, while bank debt can set a limit to investment during exuberance (i.e. when MEI-borrower's risk>interest rate+lender's risk) through an increase in effective cost of loans, in conditions of extreme pessimism (MEI-borrower's risk<lender's risk), banks cannot force the corporate sector to borrow necessarily. This asymmetry, for reasons of simplicity, has been left out in the model.

Banks have a desired debt capital ratio δ^d, which is positively related to the rate of growth depicting their willingness to lend more when the growth rate increases (λ_g measures the sensitivity of this relationship). Together with an autonomous component, λ_0, which captures the general state of confidence of the bankers about the investment climate as well as the lending rules institutionally in place, this desired rate can be written as follows:

$$\delta^d = \lambda_0 + \lambda_g g$$

Banks being risk averse try to increase/decrease the actual δ depending on whether it is lesser/greater than the desired rate.

$$\begin{aligned}\dot{\delta} &= \Theta(\delta^d - \delta) \quad \Theta > 0 \\ &= \Theta(\lambda_0 + \lambda_g g - \delta)\end{aligned} \tag{6}$$

The isocline for this function is a positively sloped straight line showing

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the willingness of the banks to lend more as the rate of growth rises with the phase arrows showing in the direction as depicted in fig. 5.
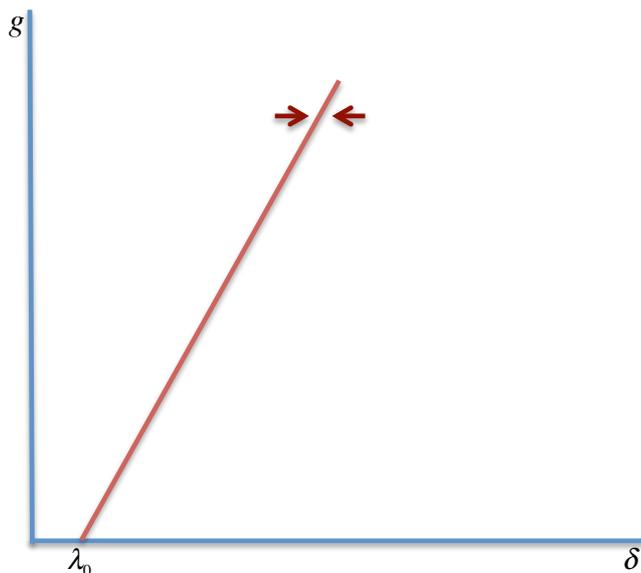
Figure 5: The Debt Isocline

Our central argument about the two growth phases in the 2000s is that while the fiscal arm of the State withdraws in the neoliberal regime, there is no withdrawal of the State but it is only the nature of the intervention that changes. Far from *laissez faire*, the State plays its economic cards through the public sector banks. So, while it is true that the State does not play a *direct* role in demand management in this regime, except in conditions of recessions, it acts as a guarantor for the capitalists when it comes to seeking loans from banks, especially the public owned ones.

With the tacit backing of the State, the public sector banks are made to relax their risk function with the understanding that the State will bail them out should the need arise. In the process, capitalists are the biggest gainers as they do risky business with other people's money. If they win, they get to keep the spoils and if they lose, the State ends up cleaning their act. Increasing corporate delinquencies and clamour for debt write-offs can be seen as a demand for the State to clean up. Analytically, this could be

captured through a tendency of the desired rate to rise for a given rate of growth i.e. a rise in λ_g. In other words, banks become higher risk takers. This desired rate can be further increased through relaxation of corporate lending norms in order to promote private investments and PPPs. This latter possibility can be captured by a rise in λ_0.

Let us look at a few stylised facts in the context of this relationship.

1. Stylised fact 4 tells us that the increase in the growth rate was accompanied by a rise in the debt-capital ratio. This can be understood as a movement up the debt-iscoline.

2. Institutional reforms, such as the demise of the Development Financial Institutions (DFIs) in India and the encouragement provided to the commercial banks to expand corporate lending entails an exogenous push to bank lending, represented by a rightward shift in the intercept.

3. Stylised facts 5(a) and 5(b) represents a clockwise *shift* of the curve, which represents a relaxation in the risk function of the banks ($\lambda_g \downarrow$). While 5(a) represents absence of ponzi finance, 5(b) shows that a credit bubble was sought to be created in the second boom through ponzi finance since here, unlike the first boom, the share of debt of companies who could not even cover their interest payments was increasing.

Dynamics of the Macro system

Having laid down the building blocks of the growth model, we can bring them together to see the growth experience of the Indian economy in the 2000s. An analytical model also helps us see different possibilities about the future trajectory of the economy.

Let us bring the two differential equations and the two isoclines together.

$$\dot{g} = \gamma_0 + \gamma_u(u - u_0)g - \gamma_\delta(\delta - \delta_0)$$
$$\dot{\delta} = \Theta(\lambda_0 + \lambda_g g - \delta) \tag{7}$$

This system generates two rates of growth, the lower one shown by **E1** is a stable node and the higher one shown by **E2** (with higher δ) is a saddle point (see fig. 6).
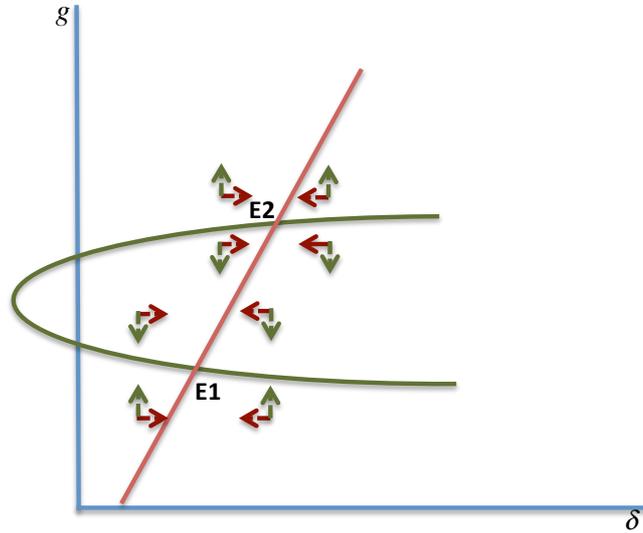
Figure 6: Macrodynamics of the two rates of growth in the model

Opening Up of the Indian Economy and the Constraints

External Constraint: The external constraint got relaxed with capital account liberalisation which eased the flow of finance ($\alpha_0 \uparrow$). India also started attracting higher debt inflows due to the interest rate differential ($i - \rho - i^*$). With the rate of growth of exports going up prior to the first boom ($\bar{x} \uparrow$), foreign exchange problem gets further relaxed. Intercept of the external constraint moved up because of all these factors. Also international finance capital's response to growth increased in this phase $\alpha_g \uparrow$, which was accompanied by a fall in the international rates of interest. These rotate the constraint anti-clockwise (see figure 7). All in all the external constraint moves up to make higher growth *possible* at a given debt-capital ratio.

Internal Constraint: State providing corporate tax concessions increases retained earnings so, the corporate sector can incur a higher debt-capital ratio at a given rate of growth, which leads to a clockwise rotation of the internal constraint (slope falls). Any cheapening of credit (through a fall in the nominal interest rate, domestic and international alike) also relaxes this constraint (see figure 7).

With financial liberalisation and opening up, both the constraints open
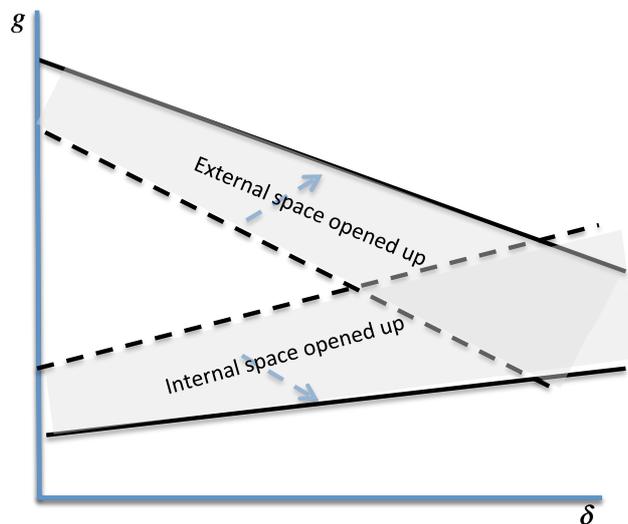
Figure 7: Relaxation of the 2 Constraints

up, thereby creating *possibilities* of a wider range of growth rates than hitherto possible. But then they are just necessary and not sufficient conditions for higher growth. For the actual movement in the growth rates, we need to take a closer look at the two isoclines mentioned above. Let us look at the two booms separately.

First Boom (5 years): 2003-04 to 2007-08

Starting from a comparatively lower equilibrium (N) of the 1990s (see figure 8), a lowering of the risk function of the public sector banks both due to institutional changes as well as tacit backing of the State, the debt isocline shifts to the right (for reasons discussed above).

This was also accompanied by lower real interest rates (stylised fact 6) which encouraged the corporations to take more credit (stylised fact 3) both domestically as well as internationally (external commercial borrowings accounted for higher proportion of total capital inflows). Despite RBI's stated policy stance of "encouraging non-debt creating and long-term capital inflows and discouraging debt flows", debt and short term capital flows have

dominated the flow of capital in and out of India over the 2000s. In terms of our diagram, these factors shift the growth isocline to the right (due to a fall in r). So there was dual-route injection of corporate credit in the economy: risk function relaxation as well as cost reduction (domestically as well as internationally).

There are again two steady state growth rates possible. Will the economy move to the higher one B, a saddle point, rather than the lower one A, a stable node (see these relative to point N in figure 8)?
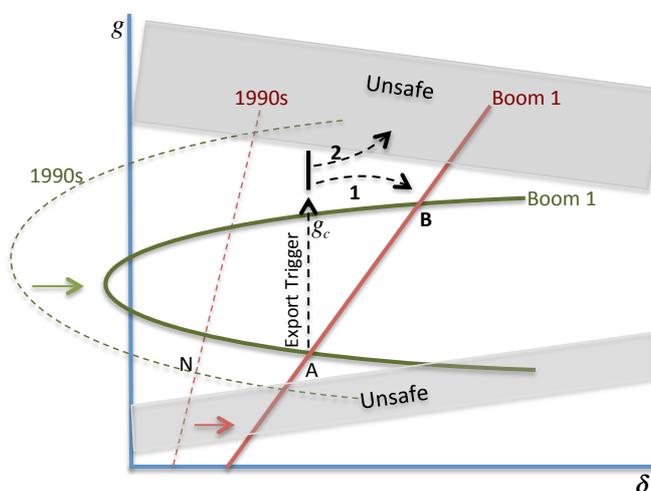
Figure 8: Boom of 2003-04 to 2007-08

Our argument about the trigger of high exports is that if it pushed the economy beyond a critical value (g_c in figure 8) after which the upper arm of the growth isocline comes into play, then the economy might take path 1 and temporarily settle at B (duration of the first boom). It is temporary because it is a saddle point so that any movement away from the stable arm will be destabilising. So, the economy witnesses a high growth rate but it comes along with a high debt-capital ratio.

One could ask why is it necessary that the initial trigger would be such as to push the economy on the stable arm (path 1) of the saddle point? It may not, in fact, this is just one of the many possibilities (see the two possible paths – 1, 2 – above the upper arm) once the rate of growth crosses the upper arm of the growth isocline as a result of the export-trigger. But

in so far as the trigger is great enough to push the economy beyond that critical value, there will be a spurt in growth and debt-capital ratio with the economy eventually hitting the external constraint (path 2).

The initial trigger of high exports prior to the first boom and greater capital inflows also took gross external financing requirement (GEFR) - gross national income (GNI) ratio to a new low. However, since 2003 there has been a steady deterioration, both of the current account balance as well as in terms of short-term debt accumulation, taking the GEFR-GNI ratio to 8% in 2008. This shows that while exports definitely acted as a trigger, they could not have been responsible for sustenance of the boom. It is here that credit-financed corporate investment, which saw a structural break in 2003 (stylised fact 3, 4, 5(a)), becomes critical in explaining the sustenance of the boom beyond the initial spurt in export demand. In the absence of this, the economy with an initial surplus in the current account with a fall later would have brought the economy to A.

Second Boom (2 years): 2009-10 to 2010-11

With the global economic crisis setting in 2008-09, there was a drastic fall in the rate of growth of exports, which dropped the economy from B initially. Therefore, growth rate declined through the year 2008-09. It is at this point that there was an attempt to jack up growth through a direct injection of demand through corporate tax concessions as well as expansionary fiscal expenditure (stylised fact 7) which compensated for a fall in the exports (see fig. 9). Quite like what exports did in the first boom, fiscal policy did it in the second. But then this might just as a trigger not necessarily as a factor which sustained the boom.

Sustenance of the boom for two years was made possible since PSBs were made to further relax their risk curves (a fall in the debt isocline) to spur in credit-financed corporate investment similar to the first boom. This led to a higher growth as well as debt-capital ratio, depicted by C in fig. 9 (stylised fact 5(b)). The centrality of credit in this boom comes out clearly in the second year (2010-11) of the boom, which was the highest ever since the post-reform period (chart 1.1).

A rising trade deficit as a result both of higher growth and declining export market made the external financing requirements binding with a fall in the external constraint. This constraint could fall in such a way so as to make C unsustainable, something which brought the Indian economy during

this period to the brink of a balance of payments crisis witnessed in continual fall in the value of the Rupee. The government could arrest this movement only by discouraging imports of gold and other items by increasing customs duties to ward off such a crisis. In today's context, the external constraint does not seem to be binding since the growth rate started declining by then as we see below.
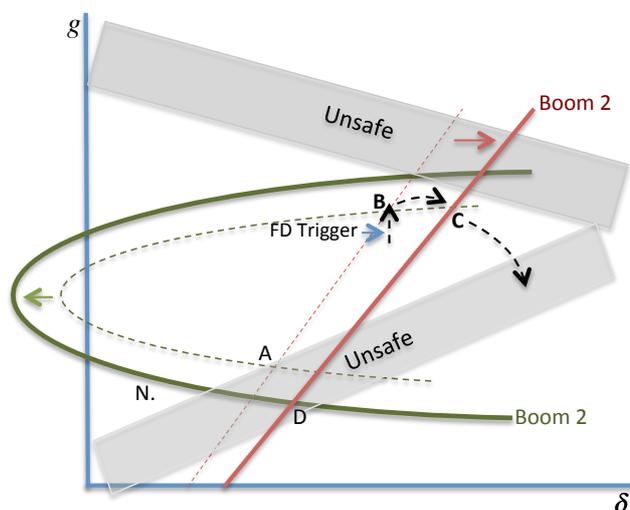
Figure 9: Boom of 2009-10 to 2010-11

This boom was, however, short-lived (just 2 years) both because of the unstable nature (saddle point) of this growth rate as well as a rise in the domestic real rate of interest from 2010-11 (stylised fact 6) due to RBI's efforts towards inflation targeting. This step of the RBI reversed the movement of the growth isocline back towards its initial position in the 1990s (see fig. 9). It did not fall all the way back to the 1990s' growth isocline because international borrowing costs were still quite low due to monetary easing in the US in the aftermath of the global economic crisis. So, r in our growth isocline increased only partially (see footnote 2 and 3). In other words, while cost of domestic credit increased, its international counterpart remained very low, which led to a change in the *composition* of corporate credit in favour of external commercial borrowings.

With such a leftward shift in the growth isocline as a result of the increase in domestic interest rates, it can be seen in figure 9, that the growth rate of

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the second boom C now falls on the unstable path of the saddle point and the economy starts falling precipitously. A fall in the growth rate precipates a further fall, thereby, threatening to hit the lower constraint, which has risen as a result of rising nominal interest rates.

When the economy hits the lower constraint, it leads to large scale non-performing assets (NPAs) in the balance sheets of public sector banks such as being witnessed today. State acts as an *implicit guarantor* for the capitalists when it comes to seeking loans from banks, especially the public owned ones.

As we saw above, banks' constraints are relaxed since their risk is shared by the State. It is a win-win situation for the capitalists. In the process, they are the biggest gainers as they do risky business with other people's money. If they win, they get to keep the spoils. If they lose, the State ends up cleaning their act.

Make in India: Where Are We Headed?

An attempt towards repeating the 2001-02 to 2003-04 spurt in exports to usher in booms similar to 2000s is what the Make in India campaign is about. There are a few impediments to that.

One, there is a fallacy of composition in the strategy of export-oriented growth as a panacea for growth of all the economies. All countries cannot be export-oriented at the same time. Obviously some of them would have to be import-oriented to be able to accommodate others export-oriented growth. And if there are limited markets abroad to compete for - like the present situation where the global recession has led to a shrinkage in world trade - more difficult will it be for an export-oriented strategy to succeed for an economy like India's, which does not enjoy the first mover's advantage in most sectors.

Two, this strategy has to be in contradiction with a domestic demand driven approach. This is so because it requires a continuous decline in the cost of production, a significant proportion of which is the wage cost, to outcompete the rivals. Two ways in which one can keep the relative wage costs down is by depressing the wages and/or increasing the productivity of labour relative to the competitors. Both these involve a fall in the share of wages in the economy (as has been the case with the Chinese or other such experiments). This squeezes the domestic demand in the economy in the long run either through a fall in incomes (wage fall) or unemployment (through labour displacing technological expansion). This contradiction is

clearly visible with the Chinese today, who are finding it difficult to move from an export-oriented strategy towards a domestic demand driven strategy. And in this race to the bottom, if one does not win, one ends up losing on both ends, neither will there be an external market created nor a domestic market remaining.

Three, the other part of the cost, raw materials, requires the corporates to be given a free-hand in terms of exploiting the natural resources. Corporate scams across the Third World today are mere reflection of how desperate they are to grab the resources without paying for the same, all in the name of outcompeting the 'external' rivals in this race. The extent of environmental degradation domestically coupled with exploitation of the resource-rich-but-politically-weak countries abroad should also be a matter of concern.

Last but not the least, this growth, if delivered, would still be in control of the importing nations. If for some reason, they hit a roadblock in terms of providing a market, as is happening today, it will have a cascading effect on the export-oriented economies who would have lost the fall back options in the very process. Chinese talk of a 'new normal' and difficulties in achieving it is merely a recognition of this problem.

Let us further look at two specific analytical points in the immediate future which are relevant for the model discussed above.

A US taper

In an eventuality of a rise in the international rate of interest and flight of capital, both the constraints close in, thereby, making the higher rate of growth, if attempted again, inaccessible just as it was in the 1990s. The two constraints are given as below. Current government's Make in India attempt to make the economy attractive for international finance should be seen as an attempt to push the external constraint outwards.

$$i^*(1-\mu)\delta = A - \left(\frac{m}{h+m} - \alpha_g\right)g$$

$$g \gtreqless \frac{(h+m)[i^* + (i-i^*)\mu]}{(h+t)\theta}\delta - \xi - \bar{x}$$

Rising import intensity

It has been witnessed that the import intensity of this growth process has been rising. If this trend coninues, the external constraint becomes a concave

function since at higher rates of growth the external financing rises faster since imports are rising faster at higher rates of growth. This might again make the higher growth rate infeasible. If, however, the make in India effort succeeds in getting higher financial inflows in the form of FDI or even FPI, then a rising import intensity will be partially countered.

Conclusion

We have attempted in this chapter to provide a theoretical structure to the Indian growth story in the 2000s as presented through compelling evidence in the previous chapters. We divide this decade in two booms: 2003-04 to 2007-08 and 2009-10 to 2010-11. The first boom was triggered by export surge prior to the boom accompanied by public sector bank lending, debt inflows and low real interest rates. The second boom, however, was triggered by an active fiscal policy accompanied by more reckless lending (since it was increasing despite an increase in domestic interest rates) by the public sector banks as well as debt inflows. These high growth rates, though possible, are saddle points so an initial fall leads to a precipitous fall leading the economy to stagnationist growth path or hit the internal constraint with calamitous effects on the balance sheets of the public sector banks.

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