

Mid-Year Review of the Economy 2006-2007

India at a Structural Break

Surjit S. Bhalla



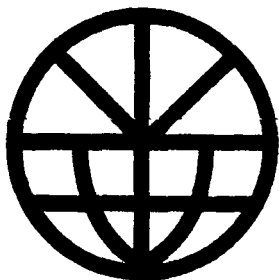
CLASS No. 330.954.....

BOOK No. BHA.P6.....

I I C



40581



**MID-YEAR REVIEW OF THE
ECONOMY 2006-2007**

Mid-Year Review of the Economy 2006-2007

India at a Structural Break

Surjit S. Bhalla

With

**Rohit Chawdhry
Tirthatanmoy Das**



SHIPRA



INDIA INTERNATIONAL CENTRE, NEW DELHI

330.954

BMA.P6



All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the authors and copyright holders.

ISBN: 85-7541-369-7

First Published in India in 2007

Mid-Year Review of the Economy 2006-2007

© India International Centre

Published by:

SHIPRA PUBLICATIONS

115-A, Vikas Marg, Shakarpur

Delhi-110092, INDIA

Phone: 91-11-65277210, 91-11-22500954 Fax: 91-11-22458662

E-mail: info@shiprapublications.com

www.shiprapublications.com

Preface

The mid-year review of the Indian economy 2006-07 was undertaken this year by Prof. Surjit S. Bhalla, Managing Director, Oxus Research and Investments, and his team. The two Discussants, Dr. Omkar Goswami, distinguished economist and currently Director, CERG, the Corporate and Economic Research Group, and Dr. Shubhashis Gangopadhyay, Director, India Development Foundation, stimulated a lively question-answer session with their observations immediately after the main presentation. Shri Suman Bery, Director-General, National Council of Applied Economic Research, who has himself presented two of the previous mid-year reviews at the IIC, chaired the seminar.

The review was different this year, focusing not so much on scrutinising the forecasts of the previous year as on the fact that the Indian economy was poised for a structural break, signs of which had also been evident in previous years. Why were these signs not understood? According to Prof. Bhalla, the data was not read correctly. In support of his argument, he provided an alternative structural model, see Table 13a (p. 109), to explain why this key shift in economic trends did not get noticed. He also provided a wide range of support data to validate his conviction that the Indian economy has begun to acquire a dynamism of its own which appears to be spreading to all levels. In fact, his preferred title for his presentation had been an eclectic 'This time it *is* different' (valid both for the economic scenario, and the seminar). Prof. Bhalla's presentation generated lively debate, but as the brief summary of the views of the two Discussants will show, there was unqualified agreement with his assessments, with some caveats thrown in.

Of all the activities of the Economic Affairs Group at the IIC, the most important is the annual seminar at which the Mid-Year Review of the Indian Economy is presented and

discussed, and which is subsequently published shortly thereafter, in time for it to be available and useful to the government and interested academics and policy makers at large. Prof. Malcolm S. Adiseshiah, who initiated the review in 1974 with the aim of making the activities of the Economic Affairs Group socially relevant and meaningful to academics, policy makers and the general public, laboured tirelessly till the end, literally, preparing the review himself year-after-year for fifteen years, and later inviting renowned economists to present their research. The 1994-95 mid-year review seminar was presented at the Centre on 12 November 1994, a few days before Prof. Adiseshiah breathed his last. He regarded the IIC's mid-year review as a kind of non-governmental alternative economic survey which he hoped would be found useful by the government in the preparation of its own massive Economic Survey and the formulation of its budgetary and other economic policies. The IIC is grateful to the Malcolm and Elizabeth Adiseshiah Trust, based in Chennai, for its support since 2001 in organizing the annual event at IIC and the successive publication that is brought out within a few months of the seminar.

The IIC thanks Prof. Surjit S. Bhalla and his team led by Mr Rohit Chawdhry for the considerable effort involved in the preparation of the review; Dr. Goswami and Dr. Gangopadhyay for their valuable observations, and Dr. Suman Bery for sparing valuable time to chair the seminar.

Shipra Publications is specially thanked for having been extremely cooperative, and ensuring that the volume is brought out without delay.

Bela Butalia
Editor

Contents

<i>Preface</i>	5
<i>List of Tables</i>	9
1. Introduction and Overview	11
2. Agriculture Growth in India, 1950-2006	16
3. Performance of Indian Industry, 1960-2006	23
4. Investment Rate and the Sustainability of Growth	32
5. Infrastructure—A Bottleneck?	39
6. Solving the Savings-Investment Puzzle	43
7. India's Public Finances	50
8. Interest Rates	62
9. Inflation and its Implications for Monetary Policy	69
10. Indian Economic Growth: 1950-2006	78
11. Social Sector Performance	87
12. Indian Equity Markets	100
13. Conclusions	107
Comments on the Review by the Discussants	110
<i>References</i>	119

List of Tables

Chapter 2

2a: Employment in Agriculture and Non-agriculture (Usual Status)	18
2b: Agricultural Growth and Rainfall	18
2c: Growth in Agriculture and Rainfall Index	20
2d: Performance of Agriculture (all figures in %)	20

Chapter 3

3a: Model for Predicting Share of Indian Industry	24
3b: Inevitability of 10 per cent Growth—Indian Industry, 1960-2006 (all figures in %)	26
3c: Countries where Manufacturing Growth has Averaged over 8 per cent for a Decade	29
3d: Industrial Growth (all figures in %)	30

Chapter 4

4a: Estimation of Investment Spending for 2006, 1990-2004	35
4b: Estimation of Investment Spending for 2006, 1990-2004 (Preferred Estimate)	36
4c: Estimating Investment Rate—Actual vs. Predicted (all figures as % of GDP)	37
4d: Credit Growth (all figures in %)	38

Chapter 5

5a: India & China—State of Infrastructure, 1995 & 2005	41
--	----

Chapter 6

6a: Savings—A Decomposition, 1970-2004 (all figures are as % of GDP and are average for the period)	47
6b: Savings (% of GDP)	48
6c: Estimating Savings in India, 2005-06 (all figures as % of GDP)	48
6d: Sources for Growth (% of GDP)	49

Chapter 7

7a: Assumptions and Forecasts for the Indian Economy (14, Bhalla et al., Feb. 2000)	57
7b: Interest Rate Targeting and Fiscal Deficit	58

7c: Performance of India's Public Finance—Revised over Budgeted, 2000-05 (all figures in %, revised over budgeted)	59
7d: Estimate of Combined Deficit-Centre and State, 2006	60
7e: Public Finance-I (all figures as % of GDP)	60
7f: Tax Revenues (as % of GDP)	61
Chapter 8	
8a: Small Savings and Provident Fund (SS+) Collections and State Finances, 1985-99 (all figures in '000 crores)	65
8b: Interest Rates (all figures in %)	66
8c: Real Interest Rates—Various Deflators, 1990-2006 (%)	67
8d: Real Interest Rates, 1990-2006 (%)	67
Chapter 9	
9a: Inflation Growth (all figures in %)	70
9b: Inflation in India, 1995-2006 (all figures are averages for the year)	72
Chapter 10	
10a: Growth Indicators (% change)	86
10b: Sectoral Growth (all figures in %)	86
Chapter 11	
11a: Employment and Unemployment Situation in India (by Weekly Status)	89
11b: Employment Situation in India	91
11c: Historical Unemployment Rates (%), by Weekly Status	93
11d: Education and Unemployment, Weekly Status	95
11e: Growth in Real Wages	96
11f: Headcount Ratio	97
Chapter 12	
12a: Indian Stock Market and Corporate Earnings Growth	101
12b: Indian Capital Flows (all figures in US\$ Mn)	102
12c: Financial Performance of Indian Corporates, 1997-2005 (all levels in Rs. '000 crores)	104
12d: Capex and Industrial Credit	105
12e: Stock Market Returns and other Growth Indicators (YoY Growth in %)	106
Chapter 13	
13a: Alternative Model for Identifying Structural Breaks (all figures in %)	109

1

Introduction and Overview

A Mid-Year Review of the Indian economy for 2006/07—it has been a privilege for Oxus Investments to undertake this research*. The economy is growing at 8 per cent plus rate for the fourth year in a row and discussion all around is whether the economy is over-heating. The Reserve Bank of India (RBI) certainly thinks that is the case, and it has raised interest rates and tightened credit several times over the last year. Most economists side with the RBI. Most also admit that the trend rate of growth has increased, but done so only from about 5.5 per cent per annum in the preceding two decades, to a growth rate close to 7 per cent per annum. Most investment houses also concur.

The belief about Indian economy over-heating and growing above potential is not just conventional wisdom today—it is universal wisdom. As always, there are a few outliers. The Planning Commission of India, a body not known heretofore for its boldness, has, in its Approach paper for the 11th plan, announced a target GDP growth of 8 to 10 per cent for the next five years. The prime minister, Dr. Manmohan Singh, has suggested that double-digit growth is well within reach. Both these forecasts can be dismissed as being politically motivated, the latter more so than the former. But, and this is the main conclusion of this Mid-Year Review (MYR), the near universal wisdom is likely to be wrong, and the planners and politicians right.

That India may be moving to a new growth trajectory is not new. India has flattered to deceive at least twice before—first in 1993-94, when major economic reforms were undertaken. India, after 40 years of “experiments with socialism” but more accurately, after 40 years of a mixed up mixed economy,

* I also want to thank Munish Rao for his excellent research assistance.

had embarked on changing the Indian economy with wide-ranging economic reforms in the early nineties. India seemed an attractive bet in 1993-94, but India flattered to deceive. The growth rate spurted to above 7 per cent for three years before petering out almost as suddenly as it had expanded. Familiar problems were cited—Indian red tape, opposition to foreign investment, and so on. In addition, there were infrastructure problems, political uncertainty, etc.

The second “discovery” of India took place around 1999. This was the year of the Y2K *and* the Internet boom. The fact that India had a large English speaking population, and a large education industry, and that a large segment of its educated population preferred to study computer science rather than mechanical engineering, meant that suddenly, Indian “software engineers” were in demand. It also helped that they were considerably cheaper than equivalent professionals anywhere else in the world. But before this realization could fructify into investments, the global bust occurred in 2000. Suddenly, just-made investments turned into just-made losses. India had flattered to deceive yet again.

This time around, circa 2004 onwards, it is likely that it is different. This Mid-Year Review is about the reasons why the probability of India no longer deceiving is very high. What has happened in India today, as never before earlier, is a sharp rise in the savings and investment rate. What has happened, as never before, is the opening up of the Indian economy to foreign trade and foreign investment. What has happened, as never before, is the opening up of the Indian economy to foreign *financial* capital. This means that even with the best of intentions, and perhaps the worst of policies, the Indian government just does not have the ability, or the influence, to mess up the economy to the same degree as before. Globalization has its say and is here to stay.

The plan of the report is as follows. Chapter 2 looks at agricultural growth in detail. Data on rainfall are used to document the following simple reality—it is very difficult for Indian agriculture to grow faster than 3 per cent per annum. This has been the trend growth before the green revolution, and after. In this regard, the Planning Commission and government of India forecasts and the appeal for a 4 per cent agricultural growth rate is seen as wishful thinking at its best.

Chapter 3 deals with the traditionally lagging industrial sector. The chapter documents an unfortunate and surprising reality—unlike several developing countries in the world, India's industrial growth has never achieved a 10-year average of more than 8 per cent per annum. The last four years have been different, and this is the first clue that India, unlike before, is on to an 8 per cent plus GDP growth path.

But it could very well be, so say many economists and policymakers, that this is precisely the giveaway overheating sign. If the economy was over-heating, one wouldn't expect for it to show up in the agricultural sector. Chapter 4, therefore, deals with what is happening to investments. Unfortunately, official data on investments are available only till fiscal year 2004/5. In that year, the investment rate was observed to be 30.1 per cent, itself the highest ever investment rate recorded. Very simply, therefore, rear-window economics (i.e. looking at averages for the past and forecasting a reversion to the mean for the future) would suggest that India was in over-heating mode as far back as 2004/05. And three years later, continuing at the same scorching pace, the Indian economy is positively overcooked.

Our forecast for the investment rate for the last two years suggests that this is unlikely. The investment rate in India in 2006/07, if our calculations are reasonably correct, is in the range of 38 per cent plus of GDP. These are Chinese levels of investment, something that even the Planning Commission believes is achievable only in the very very long run. The Chapter offers estimates of investment according to four different models of investment; all suggest an investment rate in the range 34 to 39 per cent of GDP.

Chapter 5 looks at the important issue of infrastructure. There is a large concern that weak Indian infrastructure will constrain Indian growth and that infrastructure spending will have to increase to about 8-10 per cent per annum from the present (2004/05) level of only 4 per cent of GDP. The chapter documents the likelihood that infrastructure spending in 2006/07 had already crossed the lower end of the range.

Chapter 6 discusses the source of funds for this investment spurt. First, evidence is presented on the path of the current account deficit, an indicator for which there are up-to-date statistics. This indicates an increase of just 2 percentage

points—from +1 per cent of GDP in 2004/05 to an estimated—1.5 per cent of GDP in the current year. Second, the chapter documents the increase in savings rate over the last two years. There are three sources of savings—households, corporates, and the public sector. Evolution and estimates of all three sources are provided. The net result—confirmation of the investment rate estimate mentioned above. The savings rate in India in 2006/07, while not at Chinese levels (estimated to be more than 50 per cent of GDP) are certainly close to East Asian levels—again, a target of Indian policy for 5 to 10 years hence.

Chapter 7 is a detailed review of Indian public finances. For some 30 years now, consolidated center and state fiscal deficits in India have been at the high end of the international range. The size of the deficits have surprised many; however, the chapter documents that lack of checks and balances on state finances has meant that politicians could spend freely; hence, large expenditures and outsized deficits before. Part of the striking change in India over the last few years (again, part of the structural change story) is the adoption of the fiscal responsibility act; part of the change in deficits, indeed a large part, has to do with the gradual dismantling (not yet complete) of the administered interest rate regime in India.

Chapter 8 looks in detail at the interest rate environment in India. The fact that *real* interest rates declined by over 500 basis points in the short five-year period 1999 to 2004 may have had more to do with the structural change in the Indian economy than has been conventionally assumed. That interest rates have been assumed to be almost irrelevant to the Indian economy by most analysts, and certainly by most policymakers, is documented by the Indian monetary and interest regime during the mid-nineties—a regime that brought the Indian GDP growth trajectory crashing down from a 7 per cent plus rate to a 5 to 5.5 per cent rate. Whether history will repeat itself as the current policy makers also practice rear window economics (as they did in the mid 1990s) remains to be seen.

Part of the tightening stance adopted by the RBI can be attributed to a fear that inflation is inexorably on the rise. Chapter 9 examines the inflation picture in some detail. The chapter notes that the consumer price indices (the ones signaling inflation) are somewhat outdated in that they present a consumption basket

as of the mid-1980s—a period before the economic reforms of 1991-93. The wholesale price index, produced by the RBI, is available on a weekly basis; however, this index does not cover services, a category of consumption expenditure that accounts for more than a third of total consumption, and more than half of India's GDP. The GDP price deflator is now available on a quarterly basis, and may be (relatively) the best index of price inflation in India today. This chapter also uses the various price indices to put together a core inflation index, a price index that excludes the volatile food and energy prices.

Chapter 10 summarizes our knowledge of the Indian growth story—from 1950 to 2006. Econometric estimates indicate that in the post 1970s, i.e. the last 26 years, there have been two structural breaks in the Indian economy—one in 1991 and the second in 2003. The chapter also presents total factor productivity (TFP) growth estimates for the post-independence period; these estimates suggest that TFP growth has been the highest in India in the last six years.

The report also looks at the role, and interaction, of three key variables in the development process—growth, inequality, and poverty. Poverty and inequality data for the last 25 years are analysed in Chapter 11. With growth having averaged 3.6 per cent per capita for the last twenty-five years, and with no evidence (yet) of any significant worsening in inequality, the Indian experience can conservatively be described as a miracle, and certainly in the same league as the high growth experiences of several countries in the last fifty years. Why this miracle has not been recognized as such may largely be due to the political economy of research on poverty, and its reduction.

Chapter 12 contains a discussion of the equity markets in India. Along with growth, stock market indices have also increased dramatically since 2004; increased by almost 300 per cent. The question obviously arises: is the market overvalued, or has earnings growth kept pace with stock prices? Chapter 13 concludes.¹

1. This report borrows freely from Bhalla, Surjit S., *Second Among Equals: The Middle Class Kingdoms of India and China*, forthcoming, Peter G. Peterson Institute for International Economics, Washington DC, 2007. This book explores many of the questions examined here, and also compares the Indian economy at various points in history to that of China.

2

Agriculture Growth in India, 1950-2006

Almost two-thirds of India's work force is employed in the agricultural sector. It is presumed, especially by the politicians, that that is where the poor live, and that is where the votes are. Over the last few years, the various branches of the Indian government have talked about the necessity of Indian agriculture growing at rates above 4 per cent per annum. There is the view that inequality in India has to necessarily worsen given that agriculture is only growing at 2 to 3 per cent and the rest of the economy (services and industry) growing at double digit rates.

While agriculture remains the most talked about sector in India, little can be said about the accuracy of such talk. Non-farm incomes are now close to 60 per cent in rural areas, thereby blunting the talk about inequality worsening. In other words, while it is the case that 60 per cent plus work in agriculture, not all 60 per cent work *exclusively* in agriculture. It also is the case that as the economy makes a transition from an agriculture-based economy to a non-agrarian economy; the share of agriculture reduces, implying a declining contribution to overall GDP growth. In the 1950s, the share of agriculture in GDP was over 50 per cent; today, it is less than 20 per cent. The difference between agriculture growing at 2 per cent vs. agriculture growing at 4 per cent today is 0.4 per cent extra GDP growth. Given expected GDP growth of 8-10 per cent per annum, this "extra" contribution can easily be missed.

The agricultural sector is still affected by rainfall, and thus subject to monsoon volatility. Further, and this fact needs emphasis, agriculture in India has grown at an average rate of 2.76 per cent throughout its post-independence sixty year history. Contrary to a lot of talk and idle speculation, this average growth

does not conceal a lot of variation. The average was 2.7 per cent in the first 27 years (1950-1977) and 2.82 per cent in the next 28 years (1977-2005). Different econometric techniques (correction for serial correlation) does yield some increase in the average growth rate—from 2.5 per cent in the first period to 3 per cent in the second (post the half way mark of 1977).

Employment patterns: in Table 2a we can see (via NSS data) that agricultural employment per se is stagnating—and that the slack is being absorbed by the non-agricultural sectors. There has been virtually no growth (actually about 0.3% per annum) in the dominant male employment. Female employment, on the other hand, shows a sharp rise in 1999-2004—a growth of 2.7 per cent per annum. This is to be expected and suggests the existence of a very healthy labour market i.e. the demand for labour in the non-agricultural sectors is filled by relatively full time male workers, and the agricultural sector shows a jump in relatively less full time female workers.

Results on Agricultural Growth

The lack of any significant change in the average rain-adjusted agricultural growth is revealed by the following three regressions (see Table 2b). Note that the constant term shows a fairly narrow range between 2.5 and 3 per cent per annum. An alternative estimation technique (without a correction for serial correlation, a correction not necessary since the percentage change dependent variable shows little serial correlation) shows that the constant term reflecting the average rain-adjusted growth has stayed the same, at 2.7-2.8 per cent, for the last fifty-six years.

So how come the popular perception about a decline in agricultural growth in recent years? It comes about entirely due to the choice of years. In Table 2d the actual and predicted agricultural growth for the different years has been given. There are four three-year periods (1980-82, 1983-85, 1986-88, 1992-94) with above 4 per cent growth in agriculture. Except for the first period, all other periods were accurately forecast, on the basis of rainfall, to have above average growth. If the period 1980-96 is compared with 1997/98-2003/04, then one observes a huge fall in agricultural growth—from 4.2 to 2.0 per cent. However,

Table 2a: Employment in Agriculture and Non-agriculture (Usual Status)

	Employment in Millions			Annualized Growth (%)		
	1993	1999	2004	1993-1999	1999-2004	1993-2004
<i>Agriculture</i>						
Male	139	140	144	0.1	0.5	0.3
Female	90	90	104	0.0	2.7	1.2
Total	229	230	247	0.1	1.4	0.7
<i>Non-Agriculture</i>						
Male	49	56	72	2.4	5.1	3.6
Female	14	15	21	1.1	5.9	3.3
Total	63	71	93	2.1	5.3	3.5

Source: NSSO Report on Employment and Unemployment No. 515; WDI 2006 for Urbanization Ratio.

Table 2b: Agricultural Growth and Rainfall

Regression I: Sample Period of Estimation: 1951-2005							
ya _{gr}	=	2.75	+	14.47*rain	-	12.48*rain _{t-1}	Adj R ² : 0.57
		(6.89)		(6.96)		(-6.08)	DW Stat: 2.2
							No of obs: 54
Regression II: Sample Period of Estimation: 1951-1977							
ya _{gr}	=	2.53	+	14.27*rain	-	13.27*rain _{t-1}	Adj R ² : 0.48
		(3.81)		(3.98)		(-3.82)	DW Stat: 2.1
							No of obs: 26
Regression III: Sample Period of Estimation: 1978-2005							
ya _{gr}	=	3.06	+	15.32*rain	-	11.41*rain _{t-1}	Adj R ² : 0.66
		(5.76)		(5.98)		(-4.59)	DW Stat: 2.0
							No of obs: 27

Source: Oxus Research Database, www.tropmet.res.in.

Where: ya_{gr} = Growth in Agriculture Value Added.

rain = Rainfall Index.

both the end points of the period chosen, 1980-96, were mega growth years: 13.1 and 9.3 per cent respectively! If the two periods are 1981-95 and 1996-2003 then the decline in the growth rate is from 3.2 per cent to 2.9 per cent! Incidentally, a simple regression of agricultural growth on rainfall and rainfall lagged yields a constant term of 3.88 per cent for the first 1980-96 period, and 3.93 per cent for the post 1996 period!

Rainfall Data

Construction of Rainfall Index

Rainfall data were obtained from www.tropmet.res.in. Monthly data on rainfall for a network of rain gauge stations has been collected since the middle of the 19th century. As the website states:

While selecting the network of rain-gauge stations, an effort was made to select a network which would provide one representative station per district having a reliable record for the longest possible period. The network selected under these constraints consists of 306 almost uniformly distributed stations for which rainfall data are available from 1871. The hilly regions consisting of four meteorological subdivisions of India, which are parallel to Himalayan mountain range, have not been considered in view of the meager rain-gauge network and low area representation of a rain gauge in a hilly area. Two island subdivisions far away from mainland have also not been included. Thus, the contiguous area having network of 306 stations over 29 meteorological subdivisions measures about 2,880,000 sq. km., which is about 90 per cent of the total area of the country.

The monthly (January-December) area weighted rainfall series for each of the 29 meteorological subdivisions have been prepared by assigning the district area as the weight for each rain-gauge station in that subdivision. Similarly assigning the subdivision area as the weight to each of the subdivisions in the region, area weighted monthly rainfall series are prepared for Homogeneous regions of India as well as for all India.

Table 2c: Growth in Agriculture and Rainfall Index

Period	Agricultural Growth (%)		Contribution of Rainfall
	Actual	Predicted	To Agricultural Output Growth (%)
1950-59	3.2	2.8	0.1
1960-69	2.5	2.3	-0.3
1970-79	1.0	2.3	-0.1
1980-89	4.7	3.3	0.0
1990-99	3.0	2.6	0.1
2000-2006	2.0	2.5	-0.5
Total	2.8	2.6	-0.1

Source: RBI, Indian Institute of Tropical Meteorology, Oxus Research Database.

Note: Predicted Agricultural growth is based on the simple regression model $y = a + b_1 \cdot X_1 + b_2 \cdot X_2$, where y is growth in the value added in agriculture, and X_1 and X_2 is rainfall index & lagged rainfall index. This index can be obtained from [1]; the source has rainfall data since 1877. The rainfall index is so constructed as to yield the value of zero for normal rainfall.

Table 2d: Performance of Agriculture (all figures in %)

Period	Agriculture		GDP		Rainfall	
	Actual	Predicted	Actual	Predicted	Index	Index*
1950-64	3.4	2.9	4.3	3.7	0.06	0.20
1965-79	1.1	2.1	2.9	3.5	-0.07	-0.34
1980-82	6.5	2.6	5.5	4.1	-0.08	-0.25
1983-85	4.2	3.5	5.4	5.1	0.03	0.25
1986-88	4.7	5.1	6.2	5.0	-0.13	0.20
1989-91	0.9	0.5	4.2	5.3	0.04	-0.42
1992-94	5.1	4.3	5.7	6.4	0.00	0.40
1995-97	2.0	1.9	6.3	6.0	0.03	-0.13
1998-00	1.8	2.7	5.5	6.8	0.03	0.07
2001-03	2.5	2.5	5.6	6.2	-0.21	-0.64
2004-06	2.4	2.5	8.5	6.4	-0.12	-0.39
2003-06	4.2	4.2	8.3	6.8	-0.09	0.11
2003	9.5	9.3	7.9	8.2	0.01	1.59
2004	0.7	-2.5	8.2	4.4	-0.35	-2.21
2005	3.8	6.8	8.3	7.6	-0.02	0.92
2006	2.6	3.2	8.9	7.2	0.01	0.14

Source: Oxus Research Database, CSO, www.tropmet.res.in

Note: *denotes Contribution of rainfall to agricultural output growth.

Based on monthly data, the rainfall index, for purposes of assessing agricultural output dependence, was constructed as follows: For each month, and for each rainfall station, the standard deviation of rainfall over 130 years was computed. Since it is primarily the June-September rainfall that affects agricultural output, only the data for these four months were used. The average of the *standard deviations* for the four months is our rainfall index. (Different aggregations were attempted, but none proved as “explanatory” as this average of four month series.) What this averaging, and index, means is that for any year, one obtains the variation from “normal.”

Specifically, the rainfall index is computed in the following manner. Long-term (1871-2004) mean (μ_s) and standard deviation (σ_s) of rainfall are computed for each state. The deviation (J_s) of each years (four months period) rainfall (R_s) from the mean rainfall is obtained and divided by the long run standard deviation. This depicts the variability of yearly rainfall from its long run trend. Then the rainfall index for the country is obtained by computing the weighted average of the state level rainfall dispersion (J_s). The weight used for the computation is the area of states (A_s). Following expression represents the mathematical formulation for the rainfall index.

$$\text{Yearly Rainfall Index} = \sum [A_s \times (R_s - \mu_s) / \sigma_s] / \sum A_s$$

Chart 2(a): Agriculture Growth, 1950-2006

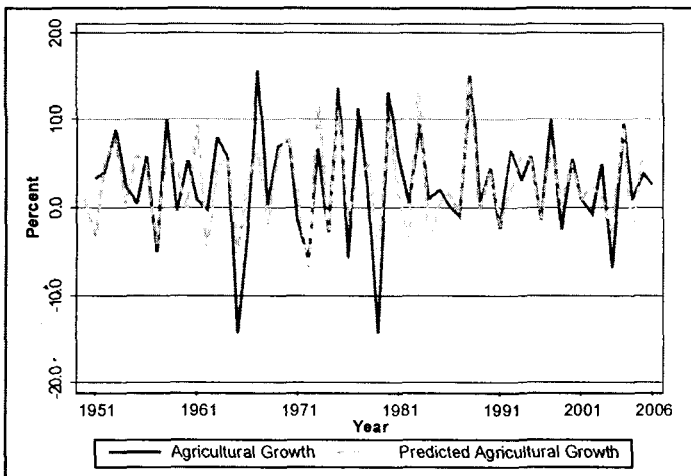


Chart 2(b): Agriculture Growth, 1950-1977

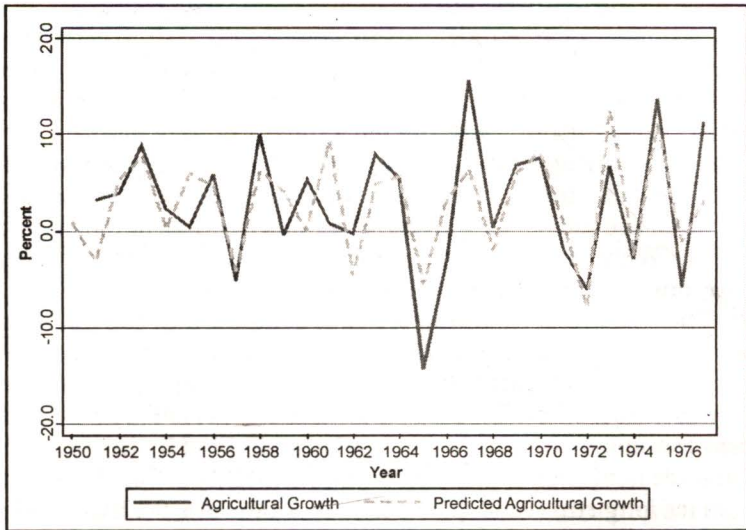
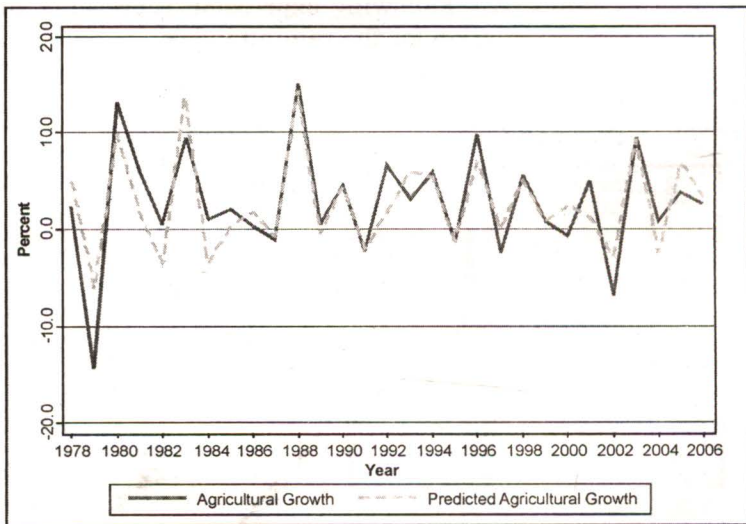


Chart 2(c): Agriculture Growth, 1978-2006



3

Performance of Indian Industry, 1960-2006

This chapter seeks to analyse the reasons for the relative under-performance of Indian industry during the eighties and nineties. Examined below are three key variables—tariff rates, exchange rates and interest rates—that could have been responsible for such relative under-performance. Also analysed are various episodes of industrial growth and why the present period might have seen a structural shift, considering that the current environment has improved significantly for the Indian industry over the last five years. The final part of the chapter addresses the key question confronting both policy makers and analysts: can the Indian industry grow at a sustainable rate of 8 per cent or more?

Indian industry did not start off behind the “curve” but inappropriate macro-policies, particularly on the interest rate and exchange rate front, has meant that in 2004, for the first time in Indian history, the share of industry in GDP was behind other countries at similar levels of development. In 1965, the actual share of industry in GDP was actually higher than predicted, and higher by almost 2 percentage points—19.0 vs. 17.2 (see Table 3a). In 1980 the lead had accelerated to 3 percentage points, but in 2004, the share of industry in GDP was behind the expected share by 2 percentage points—24.7 per cent actual vs. 26.7 predicted.

Indian Industry—Performance, Briefly

Performance of Indian industry is as follows. It grew at a steady rate of 6.5-7.5 per cent during the 1980s. For a brief period after the 1991 reforms, IIP (index of industrial production) growth

accelerated to above 8 per cent 1993-95 before decelerating back to less than 6 per cent during the second half of the 1990s. The most puzzling part of this industrial performance is the fact that despite reforms, and despite an initial acceleration, industrial growth reverted back very quickly to its average pre-reform levels. How can so many reforms (delicensing, reduction of tariffs, a less uncompetitive exchange rate etc.) have yielded zilch (nee, negative) extra growth? This puzzle is pursued, and resolved, in the following pages. The answer turns out to be straightforward—industrial (and GDP) growth collapsed because of a very tight monetary policy and double digit real rates of borrowing for Indian corporates.

Table 3a: Model for Predicting Share of Indian Industry

$$\text{xindgdp} = 13.64 + 5.93*\text{lypku} \quad \text{Adj } R^2 = 0.41$$

(7.81) (6.5)

Where:

xindgdp = Share of industry in GDP and lypku is log per capita income per day in 1999 PPP\$

This regression has been estimated for a sample of
64 developing countries for 2004

Model Estimate for Industry Share (in %)

Year	Actual	Predicted
1965	19.0	17.2
1980	22.2	19.0
2004	24.7	26.7

Source: World Development Indicators for Data on Different Countries and Oxus Research Database.

Note: Model is estimated as share of industry in GDP being the dependent variable and log per capita income as the independent variable.

Determinants of Industrial Growth

There are primarily three determinants of industrial growth; tariff rates, exchange rates and cost of capital. As illustrated in Table 3b, tariff rates and exchange rates underwent a noticeable structural shift in the early 1990s. In the 1980s, both quantitative and qualitative restrictions on

imports were considerably high.² Tariff rates on imports averaged 88 per cent in 1980s. Economic liberalization of 1990s brought reforms which reduced average tariff rates to a relatively low (yet absolutely high) level of 28 per cent in 2004.

Exchange Rates

Along with high tariff rates, the “competitive” Indian firm had to cope with a highly overvalued exchange rate. Prior to the economic reforms of 1991, Indian rupee remained overvalued at more than 100 per cent i.e. the average Indian good was more than twice as expensive as that produced by its competitors. Post economic reforms, overvaluation of rupee declined to 43 per cent and continued to decline. Today, in 2006, the rupee is *undervalued* in real terms by about 12 per cent.

Interest Rates

The third determinant of industrial growth (or investment rate) i.e. the level of *real* interest rates was near constant prior to economic reforms, but at a high level of 8-9 per cent. Lending rates were 16.5 per cent and inflation averaged 8.5 per cent. From 1989 to 1992, inflation rates increased, nominal lending rates were held constant, and real interest rates.³ declined by 2 to 3 percentage points. A fact that gets masked in period averages is a decline in real cost of capital by 400 basis in 1994 over 1993.

A positive confluence of declining tariff rates, interest rates and a more competitive exchange rate during 1992-94 provided

-
2. Comparative tariff rates in Asian countries, during 1989, were 40 per cent in China, 14 per cent in Korea, 12 per cent in Taiwan, 40 per cent in Thailand, 7.0 per cent in Japan and 87 per cent in India.
 3. Prior to 1990s, prime-lending rate was the benchmark interest rate in the economy. However, with economic reforms, government securities increasingly became the benchmark ‘signaling’ rate for financial markets. For analysis, prime lending rate has been considered as the benchmark interest rate till 1992. Post 1992, 10 year government securities rate has been used as the key long-term interest rate.

Table 3b: Inevitability of 10 Per cent Growth—Indian Industry, 1960-2006 (all figures in %)

	1960-1979	1980-1984	1985-1989	1990-1991	1992-1994	1995-1999	2000-2003	2003	2004-2006	2004	2005	2006E
<i>Growth Rates</i>												
GDP	3.4	5.5	6.0	3.2	5.7	6.3	5.1	3.6	7.9	8.2	8.3	8.9
Industry	4.5	6.4	7.8	2.7	7.0	6.0	5.4	6.6	6.4	7.1	7.4	9.6
Industrial Production	—	6.0	8.2	4.3	5.7	7.0	5.0	5.6	6.8	8.0	7.8	10.3
Manufacturing	—	4.8	8.5	3.9	5.8	7.6	5.2	5.8	7.1	9.4	8.8	11.4
<i>Inflation</i>												
GDP Deflator	6.8	8.7	7.7	11.5	8.9	6.7	3.4	3.5	4.0	4.1	4.0	4.3
WPI	7.0	8.8	6.4	11.3	9.8	5.1	4.8	3.4	5.3	5.2	4.3	4.9
WPI-Manufacturing	6.9	7.8	7.2	9.4	9.8	4.0	3.3	2.7	5.4	4.2	3.1	3.5
CPI-IW	6.4	9.6	7.7	11.8	8.7	8.2	3.9	4.0	3.7	4.8	3.9	6.4
Tariff Rates-Average	—	80.5	94.9	80.5	49.5	35.4	32.0	33.0	33.0	28.1	—	—
<i>Currency</i>												
Undervaluation	141.3	122.2	93.6	67.7	43.2	25.1	-2.9	-7.0	-6.8	-8.7	-7.2	-12.2
Nominal Call Rates	8.3	8.7	10.3	17.7	10.3	10.2	6.7	5.9	4.6	5.8	4.7	5.7
Real Call Rates	1.4	-1.3	2.8	6.9	1.3	1.7	2.8	1.6	0.9	1.4	1.0	0.2
Real Lending Rate	4.6	6.5	9.1	5.7	8.7	5.6	7.1	6.5	6.6	6.2	6.6	5.5
Real 10 Year G'Sec	—	-1.6	3.9	0.8	3.3	4.2	4.5	3.0	2.0	2.6	3.4	1.9

Source: CSO, RBI, World Development Indicators and IMF.

Notes: 1. 2006 estimates are forecasts.

2. Currency undervaluation is defined as the percentage deviation of the real exchange rate from its fair value. See Bhalla (2007).

3. Prime lending rates and the 10-year government securities rate have been deflated by CPI-IW to compute real interest rates.

4. Tariff rates are taken from World Development Indicators.

the much-needed catalysts for *acceleration* in growth. GDP growth averaged 7.2 per cent in 1994-96 with industry growing at a double-digit average rate of 10.2 per cent—the highest three period growth since independence. However, policy makers and analysts remained concerned about an overheated economy. Growth in money supply (narrow money) contracted from 24 per cent in 1994 to 12 per cent in 1996. Short-term rates averaged 18 per cent in 1995 with a peak of 40 per cent. Real interest rates increased by 100-200 basis points as inflation continued to decline from the double-digit levels of the early 1990s. Global inflation also fell during this period.⁴ Even more critically, Indian nominal interest rates stayed constant; real interest rates in India therefore increased sharply relative to their competitors.

By late 1996, short-term rates declined to 5 per cent. However, long-term interest rates continued to remain at 13 per cent despite declining inflation rates. Over the next three years, 10 year government securities rate remained steady at 12 per cent while CPI inflation fell further. Real interest rates in India therefore increased by 500 basis points from 1994-99 (from about 3% real to more than 8% real). These rates are for government securities, i.e. the best borrower. Even the best Indian corporates borrowed at a few percentage points higher than the government. The average Indian firm paid even more. Thus, a double-digit real interest rate regime was observed by most Indian corporates after economic reforms that were meant to lower such rates. Not surprisingly, Indian industry lost competitiveness, both because of lower tariffs (a good policy) and high interest rates (an unnecessary and bad policy).

The most surprising part of the episode of 1994-99 remains non-responsiveness or stickiness of long-term interest rates despite a decline in short-term rates. As explained in chapter 8, explanation of such high nominal interest rates, during late 1990s, is because they were not market determined but rather were 'managed' through small saving deposits offered by the government yielding risk free, and tax free, rate of 12.5 per cent.

4. Consumer price inflation in developing Asia fell from 15.8 per cent to 8.1 per cent from 1994 to 1996.

Starting 1999, this policy of administered interest rates began to change. The small savings rate fell from 12.5 per cent in 1999 to 8.5 per cent over the next 4 years with the government gradually moving towards market determined interest rates. This cut of 450 basis points in deposit rates yielded a downward shift in all interest rates. These rates declined by around 500 basis points in both real and nominal terms until 2003 and thus were a major reversal of the earlier tightening policy of 1995-99. It is not a coincidence that both the decline and revival of India's industrial (and GDP) growth was associated with what was happening to monetary policy and real interest rates.

Policies and Industrial Growth Post 1999/2000

Prior to 2000, average import tariff rates were around 35 per cent; these declined to 28 per cent by 2004/05. The real exchange rate, for the first time in the history in Indian economy post independence, moved towards absolute undervaluation i.e. the exchange rate was cheaper than "fair" value. As of 2004, Indian rupee was undervalued by 6.6 per cent. Growth in industry bottomed out in 2002 showing signs of acceleration of 2 percentage points from 2005 over 2002. Thus, policies on tariff rates, exchange rates and interest rates, during the eighties and nineties, were the main reasons behind lack of competitiveness of the Indian industry.

Structural Break Period 2003 Onwards

A confluence of strong global growth, lower tariff rates, a more undervalued exchange rate and modestly lower real interest rates, led to a noticeable acceleration in industrial growth post 2000. Growth in industrial production increased from 5.4 per cent in 2000-03 to 8.5 per cent in 2004-06. Similarly, manufacturing sector growth accelerated from 5.2 per cent to 9.4 per cent respectively.

Is the Present Growth in Indian Industry Sustainable?

In Table 3c, compares various countries and their respective manufacturing and industrial growth based on 10-year moving

Table 3c: Countries where Manufacturing Growth has Averaged over 8 per cent for a Decade

India not One (as yet)

East Asia	Latin America	Middle East & North America	South Asia	Sub-Saharan Africa
Cambodia (16.7,14.2)	Brazil (9.7,10.0)	Algeria (11.4,5.3)	Bangladesh (10.3,10.0)	Botswana (19.3,27.5)
China (12.9,12.7)	Haiti (8.3,8.3)	Tunisia (15.1,9.0)	Nepal (11.1,9.5)	Cameroon (12.0,15.2)
Indonesia (13.6,13.3)	Paraguay (9.0,11.5)		Pakistan (8.7,8.1)	Central African Rep. (11.7,6.0)
Kiribati (15.9,11.9)				Congo (8.4,12.8)
Lao (14.8,13.5)				Eritrea (8.5,12.1)
Malaysia (13.2,10.4)				Kenya (11.1,10.1)
Singapore (13.5,12.6)				Mauritius (9.1,8.9)
S.Korea (19.1,12.0)				Mozambique (15.7,15.3)
Thailand (12.7,12.2)				Nigeria (14.2,17.0)
Vietnam (10.8,10.9)				Sudan (8.9,6.3)
				Uganda (12.4,11.1)
				Zambia (8.1,3.2)

Source: World Development Indicators & Oxus Research Database.

Note: Figures in parenthesis denote country wise 10-year growth (moving average) in manufacturing and industry respectively.

Table 3d: Industrial Growth (all figures in %)

Period	IIP	IIP-Manufacturing	Infrastructure
1980-82	3.1	1.2	7.5
1983-85	7.7	7.5	7.7
1986-88	8.1	8.3	7.0
1989-91	5.6	5.4	5.8
1992-94	5.7	5.8	6.3
1995-97	8.2	8.9	6.4
1998-00	5.1	5.5	5.5
2001-03	5.0	5.3	4.7
2004-06	8.7	9.6	5.7
2003-06	8.2	9.0	5.8
2003	6.8	7.1	5.9
2004	8.0	8.8	5.6
2005	7.8	8.7	5.2
2006	10.3	11.4	6.3

Source: RBI.

averages have been compared. As illustrated in the table, more than 40 countries have achieved a decadal (10 year period) growth rate above 8 per cent at least once since 1960. India is *not* one of these countries i.e. India has yet to register a decadal industrial production growth of over 8 per cent (moving average). Several East Asian countries have achieved an average industrial growth of 8 per cent consistently over a 10-year period. This includes China, Malaysia, Korea, Thailand, Singapore and Indonesia. Several Sub-Saharan African countries have done so including Botswana, Cameroon Kenya, etc. Some South Asian countries have achieved it like Pakistan and Bangladesh. India has never done so.

There are two major reasons for this lack-lustre performance of Indian industry. First, the formerly entrenched nature of Indian industry. In China, there was no private sector to object to foreign investment. Such investment did not displace, or substitute, another entrepreneur. And with high tariffs, domestic industrialists were happy to earn rents and prevent competition from entering. But globalization changed a lot of equations. There are now vested interests in the export sector, there are new entrepreneurs in the software sector, and the Indian industrialist now sees the world as her market, not just India.

The second major factor inhibiting Indian industrial growth has been the real cost of capital. In China, lending rates are (today) about 1-2 per cent in real terms. In India, real lending rates are about 2-4 percentage points higher. (Parenthetically, this might be the major reason why the Indian industry is considerably more efficient than China's, and why for half the investment share in GDP, India has been able to achieve over three-fourths the Chinese growth rate). The reason lending rates have been high have in large part been due to the administered rate regime on small savings, or "scam savings." Today, cost of capital for the average industrialist has considerably declined, and real rates are in the neighborhood of 3-6 per cent. Most likely, such an environment should be supportive of industrial growth. Not surprisingly Indian industry has started to grow at above 10 per cent—a trend that may have just begun and is likely to sustain for an extended period of time.

Investment Rate and the Sustainability of Growth

In recent months, as the economy has continued to grow at over 8 per cent for the fourth consecutive year, there has been an intense debate, among policymakers, economists and the media, about the sustainability of this growth. Several have pointed towards the inadequate state of infrastructure and lack of policy implementation as significant constraints for the economy. This chapter will present estimates of the investment rate in the Indian economy for the last two years, 2005/06 and 2006/07. Official data on investment are only available till the fiscal year 2004/05 (an investment rate of 30.1 per cent of GDP).

A major determinant of economic growth is the level of investment in the economy, or the investment rate (share of investment in GDP). The conventional wisdom on India's investment rate is as follows:

- The Investment Commission, headed by Ratan Tata, has explicitly stated "...sustaining growth at over 8 per cent per annum will require a significant increase in investment levels in the economy—from approximately 30 per cent of GDP to about 34 per cent of GDP." The Commission is not alone in airing its reservations about the sustainability of economic growth.
- IMF Report on India (2006): Expects investment to increase by 10 per cent (real) or 15 per cent per annum (nominal).
- The Planning Commission states in its approach paper for the 11th plan that "acceleration from the base line 7 per cent growth to say 9 per cent will require an increase in the total investment rate from 29.1 per cent to 35.1

per cent...Infrastructure spending⁵ needs to increase from 4.6 per cent of GDP to between 7 and 8 per cent in the 11th Plan period.”

- In a recent report entitled ‘Funding Corporate India’, the Economist Intelligence Unit (EIU) mentions “an internal paper by India’s Planning Commission recommends that the target be revised upwards to 8.5 per cent for the 11th Five-Year Plan (2006/07 to 2011/12). In order to meet the preliminary target, the investment-to-GDP ratio will have to rise from 28 per cent during the tenth plan to 32-35 per cent. The Economist Intelligence Unit forecasts a savings-investment gap of 3.4 percentage points in 2006/07, widening to 4 percentage points in the next fiscal year before narrowing to 1.9 percentage points in 2010, as growth in savings outpaces that in investment. Nevertheless, the demand for investment funds is expected to continue to exceed domestic savings. This is not the case in other Asian countries, excluding Thailand and Vietnam. As in the latter two countries, India’s relatively high savings rates are overwhelmed by a demand for investment that leads to a need for foreign capital. India’s savings rate is expected to rise to 30.7 per cent in 2010, half-way between those of the Philippines (around 20%) and China (just over 40%). And while domestic savings will finance the bulk of India’s investment, foreign direct and portfolio investment will play a key role in filling the savings-investment gap.

In addition, there is the conventional analysis pertaining to a comparison of Indian and Chinese investment rates. China’s investment has been driven by the state’s focus on creating world-class infrastructure over the past two and half decades. A high savings rate and strong FDI have supported high investment rates. India’s investments have been significantly

5. Infrastructure spending is defined by spending towards roads, rail, air, water transport, power generation, transmission and distribution, telecommunications, water supply, irrigation and storage.

lower than China and investment has remained flat at about 25 per cent for most of the previous decade; for China this level has been 12 percentage points higher at 37 per cent of GDP.

Any structural break in the economy is usually accompanied by a significant rise in the investment to GDP ratio. However, unlike other developed and developing economies where updated data series are readily available for the level of investment, this is not so for India. Examining Indian investment rate is never easy as the last data point is available with a two-year lag. The last data point for 2004/05 suggests an investment rate of 30.1 per cent. Therefore, it is important to *estimate* the investment rate for 2005/06 and 2006/07 in order to adequately assess the sustainability of the present 8 per cent plus GDP growth rate.

Investment Rate—Model Estimate I

We have used three separate models to estimate the level of investment rate in India in 2006/07. A fourth heuristic back-of-the-envelope method is as follows. Nominal GDP has grown at 13 per cent rate in each of the preceding two years. Nominal investment spending in 2004/05 rose by 22 per cent, after having grown at 19 per cent the year before. Assuming that investment spending rose at a slightly faster rate in each of the following two years—average of 25 per cent a year—yields an investment rate of 37 per cent in 2006/07. This therefore, is our first estimate of investment rate in 2006/07.

Investment Rate—Model Estimate II

For the next two models, the specification is as follows.

Growth in investments = f^{a} (bank lending or non-food credit, share of middle class, cost of capital)

In Table 4a the results for the growth in non-food credit or growth in bank credit to industry (both are used as a proxy for growth in nominal investment spending) are reported. In addition, the share of middle class and the real government securities are also introduced. The logic of using cost of capital variable is straightforward; a lower cost of capital implies a more conducive environment for making investments. The other

variable, middle class, offers a new approach to understanding an investment led growth process. Usually, as the country develops and per capita income rises (and also its growth), the middle class starts demanding better infrastructure, i.e. better airports, roads, etc. It may be mentioned here that models I & II are valid if all non-food and/or bank credit to industry credit is short-term or less than 1 year in terms of maturity. This assumption is nearly true for non-food credit as approximately 70 per cent of non-food credit is for period less than 3 years. Notwithstanding the above drawback, models mentioned in Table 4a yield an investment to GDP of 34-39 per cent. Period for this in-sample estimation is 1989-2004.

**Table 4a: Estimation of Investment Spending
for 2006, 1990-2004**

Non-food Credit Model								
yinv	=	c	+	ynfcred	ybcind	yxpma	L1.rrgsec	Adj R ²
		14.23		0.07	—	0.55	-1.44	0.34
		(1.6)		(1.4)		(0.8)	(-1.6)	
Bank Credit to Industry Model								
yinv		9.82	+	—	0.05	0.95	-1.23	0.62
		(2.1)			(2.9)	(2.2)	(-2.2)	

where

yinv = Growth in investments,

ybcind = Growth in bank credit to industry,

ynfcred = Growth in Non-food credit,

yxpma = Growth in share of middle class,

L1.rrgsec = Real 10 year govt. securities rate, one period lag.

Investment Rate—Model Estimate III

The third and final model is documented in Table 4b. This model estimates the *change* in the share of investments in GDP. The independent variables are the change in share of non-food credit in GDP, real interest rate (lagged) and the change in the share of middle class. Model III does not suffer from the above mentioned drawback of models I & II (of non-food credit and/or bank credit growth containing elements of non investment spending) and therefore remains our preferred method.

**Table 4b: Estimation of Investment Spending for 2006, 1990-2004
(Preferred Estimate)**

Change in investment shares model						
dxinv	=	c	dxnfcrcd	rrgsec	dxpma	Adj R ²
		-0.27	1.05	-0.19	0.74	0.58
		(-0.4)	(2.2)	(-1.3)	(1.7)	

where

- dxinv = Change in the share of investments in GDP,
 dxnfcrcd = Change in share of non-food credit,
 dxpma = Change in the share of middle class,
 rrgsec = Real 10 year govt. securities rate.

This regression estimation suggests the share of investments in India's GDP for 2006/07 at 38 per cent for our preferred change in investment share model—or a level close to Chinese investment rate levels. At this rate of growth, India's growth in investments over the last two years has been one of the fastest in history among all nations.

Corroborating the argument for a high investment rate are the data on corporate capital expenditure. The total corporate capital expenditure, for a sample of 177 firms (see Table 12c) suggests a growth of 66 per cent in 2005/06 while the average growth rate for the two-year period 2004-06 was close to 49 per cent. Further, anecdotal evidence suggests a significantly strong pipeline of investments for 2006/07.

The average annual growth in investments has been 19.8 per cent for 2003-04. This compares favorably with an average growth rate in investments of 14.8 per cent from 1980 to 2002 but less favorably with the period 1992-95 when the growth averaged 22.8 per cent. The key question that needs to be examined next—Can investments be relied upon as a leading indicator of growth? Is it not a case of the mid-1990s (1994-96) repeating itself when the acceleration in investment rates could be classified as a cyclical phenomenon?⁶

6. Investment rate during the mid 1990s witnessed a significant acceleration. For the period 1991-93, it averaged 23.7% vs. 26.4% in 1994-96. The average investment rate for 1997-99 being 24.8% or a decline of 1.5% over the previous three year average.

Comparison of present period with mid 1990s suggests that several factors have changed since then. As mentioned in the previous chapter on Indian industry, real interest rates, tariff rates and exchange rates showed considerable improvement relative to mid 1990s—the key differences between now and then.

Table 4c: Estimating Investment Rate—Actual vs. Predicted (all figures as % of GDP)

<i>Period</i>	<i>Actual</i>	<i>Model Estimate</i>	<i>Models</i>	<i>2004/5</i>	<i>2005/6</i>	<i>2006/7</i>
		<i>(Preferred Estimate)</i>				
1950-64	12.5		Actual	30.1	–	–
1965-79	17.2					
1980-82	20.6	20.6	Back of the envelope	30.1	33.3	36.4
1983-85	20.7	20.4				
1986-88	23	20.7				
1989-91	25.1	22.4	Non-food credit	30.1	33.0	34.2
1992-94	24.9	24.8				
1995-97	26	24.6	Bank credit to industry			
1998-00	24.4	26.4		30.1	32.0	
2001-03	25.2	25.0				
2004-06	34.1	29	Preferred estimate			
2003-06	32.4	37.1		30.1	35.5	38.7
2003/4	27.2	32.8				
2004/5	30.1	31.4				
2005/6		35.5				
2006/7		38.7				

Source: RBI, CSO and Oxus Estimates.

Note: Model specifications as per Table 4a and 4b.

A second factor which has undergone a significant shift (from 1992/95 vs. 2003/05), is the growth in non-food credit. The average annual growth in non-food credit was close to 19 per cent from 1994-96; in 2003-06 the growth has been over 30 per cent. This growth in credit can be attributed to the increased capital spending by Indian corporates (and also in personal loans). Evidence also suggests that capital expenditure for India's top 177 firms crossed Rs. 872 billion in 2005 (pipeline

for Indian corporates is around \$150 billion as of October, 2006) or a growth of 66 per cent over the previous year. This implies an annualized growth of 40.7 per cent from 2002 to 2005 vis-à-vis 35.7 per cent for non-food credit for the same period. Correspondingly, credit-to-deposit ratio has increased from 55 per cent in 1992-95 to 64 per cent in 2003 to 2005.

Table 4d: Credit Growth (all figures in %)

Period	Bank Credit	Non-Food Credit	Infrastructure
1950-64	9.4		
1965-79	15.7	16.0	
1980-82	16.7	17.2	
1983-85	15.2	14.7	
1986-88	13.8	16.9	
1989-91	13.1	12.2	
1992-94	17.4	16.7	
1995-97	14.2	14.9	
1998-00	15.2	13.8	41.4
2001-03	16.6	17.8	43.0
2004-06	28.1	29.0	55.0
2003-06	24.6	26.0	55.8
2003	14.2	16.9	57.4
2004	26.9	27.5	34.7
2005	31.4	32.5	75.3
2006	26.0	27.1	

Source: RBI.

Conclusion

The above analysis suggests that targeted rate of investment by both the Investment Commission and the Planning Commission has already been achieved. In other words, while most participants expect a real GDP growth of 9 per cent, contingent upon achieving an investment rate of 34-35 per cent (as % of GDP), India seems to have exceeded that in 2006!

Infrastructure—A Bottleneck?

This chapter seeks to examine the second question regarding sustainable growth. If indeed the present GDP growth has been supported by an investment led process then is it going into the right areas, i.e. infrastructure?

No sector in India, in recent years, has got as much focus and attention as infrastructure. Market participants have been critical of the poor state of infrastructure in the country and have cited it as a major constraint to high growth. Indeed, it has been reasoned that the sustainability of this new trend rate of growth, i.e. 9 per cent, is highly questionable, simply due to the existence of an under-developed infrastructure. Conventional wisdom therefore suggests that comparison between India and China, on various parameters, is not appropriate, i.e. India cannot grow at Chinese rates Why? Because Indian infrastructure, now and in the future, cannot match that of China.

Middle Class—Demanding better Infrastructure

There are three major determinants of infrastructure growth; economic growth, level of income and the share of the middle class.⁷ Econometric estimates point out that, of the three, the middle class is the most important in explaining the growth in infrastructure spending. “Elasticity” of the middle class is significant and is about $\frac{1}{2}$ to $\frac{1}{4}$ that of income growth for most infrastructure variables. The reasoning for such a model specification is simple. The middle class is a major demander

7. See Bhalla, *Second Amongst Equals; Middle Class Kingdoms of India and China* (Forthcoming), for a detailed discussion of the role of the middle class in development.

of infrastructure—demand for power, roads, airports, clean water, sanitation, etc. Also, the middle class is a major demand maker for social infrastructure—education and health. Hence, it acts as a check and balance on the government's promise to deliver. When it doesn't, the middle class acts to make sure it does. Given that India now has a middle class close to a third of the population, and growing, it will most likely effectively ensure that the required infrastructure gets built.

Infrastructure: India is China with a 5-10 Year Lag

While comparing India with China, what is generally forgotten is that China's income level is more than twice that of India. In parallel, the share of middle class is almost twice that of India in 2006. Most of the data examined suggests that India is China with 5-10 year lag. Table 9a illustrates this point more appropriately. In other words, it is more appropriate to compare India with China in 1995, or India in 2015 with China in 2005.

Growth in China's infrastructure took off post-1995. Similarly, there are enough signs of this growth occurring in India today. Presently, infrastructure as per cent of GDP is close to 8 per cent, almost double the level of a few years back (see Chart 5a). The take-off in 2004 is also worth emphasizing. Interestingly, this level of 8 per cent has been "recommended" as a target for 2012.

Our Estimate for Infrastructure Investments

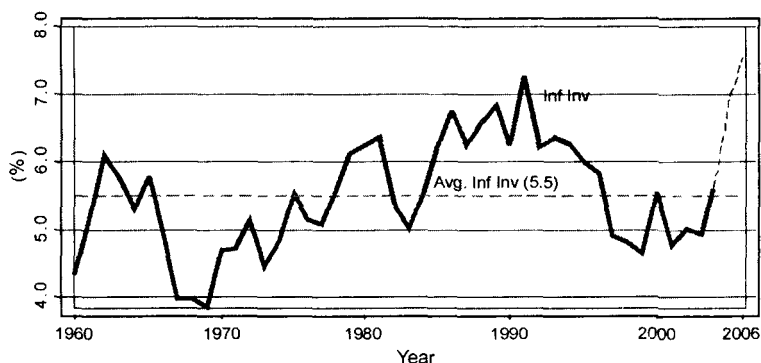
As mentioned earlier, share of infrastructure investments in GDP peaked at 7.3 per cent in early nineties and has trended down until 2001. According to the last data point available for 2004, this share was around 5.6 per cent for 2004/05. Further, share of infrastructure investments to total investments is around 20 per cent (see Chart 5b). That is, from each marginal rupee of investments, 20 paise or one-fifth goes towards infrastructure. Total investment in India is likely to be close to 40 per cent of GDP. One-fifth of that is 8 per cent i.e. infrastructure investment in India today is close to 8 per cent or the target for 2012 and beyond.

Table 5a: India & China—State of Infrastructure, 1995 & 2005

Infrastructure Growth 1995-2005	China		India		China Growth p.a.	India Growth p.a.
	1995	2005	1995	2005		
Total road length km (m)	1.2	2.2	2.3	3.3	6.6	3.9
Expressway/highways as a % of total road length	0.2	1.6	1.8	2.0	21.7	1.0
Railways - Route km	59700	74408	62915	63465	2.2	0.1
No. of aircrafts flying in the domestic sector	852	1245	na	202	3.8	
No. of airports	139	126	na	92	-1.0	
Airlines - Total passengers carried (m)	51	138	26	39	9.9	4.1
No. of seaports	55	124	na	199	8.1	
Cargo handled at ports (MT)	802	2928	215	423	12.9	6.8
Electricity (Capacity - GW)	217	516	83	127	8.7	4.3
Electricity (KWH bn)	1007	2398	380	617	8.7	4.8

Source: CLSA.

Chart 5a: Share of Infrastructure Investments (as % of GDP)



Infrastructure Spending = Spending in Electricity, Gas, Water, Transport, Storage and Communication

**Chart 5b: Share of Infrastructure Investments
(as % of GDP)**

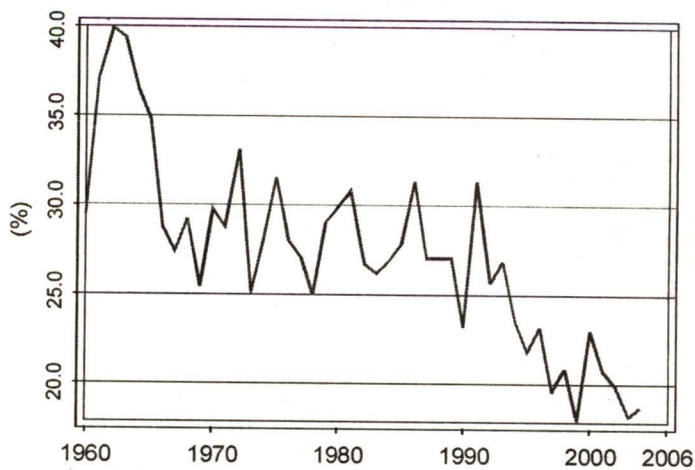
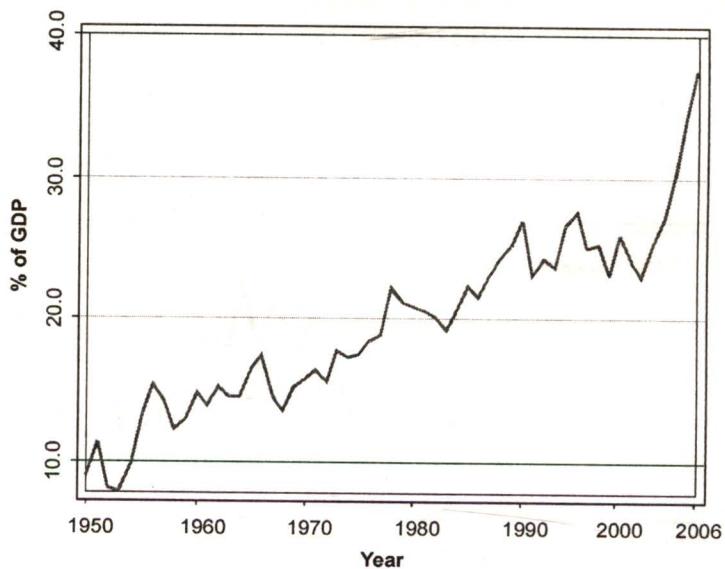


Chart 5c: Investment, (% of GDP)



6

Solving the Savings-Investment Puzzle

Data for both savings and investment are not available for 2005/06 and 2006/07. Our principal argument for a structural break in the Indian economy is dependent on a sharp rise in the investment rate, estimated at 38-40 per cent of GDP for 2006/07. But a sharp rise in investment implies a sharp rise in the savings rate. So the follow up question is: has there been, could there have been, a sharp rise in the savings rate over the last two years?

Consensus on Indian Savings Rate

Many commentators and analysts suggest that the savings rate, after having shown a sharp increase over the last few years (about 6 percentage points since 2000, from 23.5 to 29.1% of GDP), is unlikely to show much of an increase in the next few years. The Planning Commission target is for the rate to gradually rise to the mid-30s by the end of the next plan period i.e. in 2012. The reputed Economist Intelligence Unit states that "India's savings rate is expected to rise to 30.7 per cent in 2010, half-way between those of the Philippines (around 20%) and China (just over 40%). And while domestic savings will finance the bulk of India's investment, foreign direct and portfolio investment will play a key role in filling the savings-investment gap." (Funding Corporate India, Economist Intelligence Unit, 2006).

Thus, according to the experts, an investment rate of 40 per cent is achievable only if the current account deficit to GDP ratio rises by large unsustainable amount (as savings rate cannot rise by much) say by 7-8 per cent. However, the current account deficit to GDP ratio has not exceeded 2 per cent in either

2005/06 or 2006/07 and therefore, an investment rate of 38-40 per cent in 2006/07 is a near impossibility (according to experts). The experts, of course, consider the possibility of the savings rising in such a short period of time as extremely remote. This is where we believe (and empirically document) that the expert opinion is likely to be in error.

Estimating Savings in India

Two methods of estimating savings in India are presented. First, the three main sources of savings—household, government and private—are examined. A separate forecast is made for the savings rate in *each* sector. Addition of the three estimates provides an estimate of the aggregate savings rate for 2005/06 and 2006/07. The second method is simply a back of the envelope method which involves use of the identity that investment spending is equal to savings plus the current account deficit.

Savings in India—A Decomposition

Historically, households have been the main source of savings in India. Essentially, household savings can be structurally classified into four periods; 1970-74, 1975-86, 1987-98 and 1999-2004 (see Table 6a). It can be observed that the major structural break for household savings occurred in the twelve year period 1986-98. The share in household savings increased from 13.8 per cent in 1975-86 to 18.2 per cent in 1986-98. Correspondingly, the share of corporate sector savings (as % of GDP) doubled in 1986-98 to 3.3 per cent from 1.6 per cent earlier. Thus, the two measures of savings—household and corporate—show a fairly constant rate for most of the 1980s, before picking up in the early-to-mid-1990s. The third component of savings i.e. the public sector, showed a significant decline from 1970 to 2002. The share of public sector savings to GDP more than halved; from 3.8 per cent in 1975-86 to 1.4 per cent in 1987-98.

During 1999-04, the above rising trend in savings persisted. However, while the share of household and corporate savings increased, that for public sector declined and in fact became

negative. Public sector savings reflect two sources: administrative departments (revenue deficit) and deficit of public sector corporations. Negative savings from the public sector, during this period, can most likely be attributed to poor performance of the administrative departments.

Household Savings

There are broadly two sources of household savings—financial and physical. The share of financial savings as a per cent of GDP showed a consistent upward trend from 1970-1992—an increase from 3.0 per cent to 8.7 per cent for 1970 and 1992 respectively. Over the next ten years, financial savings remained broadly in the range of 10-11 per cent of GDP. According to latest available data on household savings in financial assets, the estimate for the same are close to 12.9 per cent in 2005/06 as against 10.3 per cent in the previous year (see Table 6b). This represents a 2.6 percentage point increase in just one year. Primarily, this increase in financial savings has been achieved by an increase in savings on account of bank deposits, shares and debentures and a decrease in claims on government.

Household savings in *physical* assets can be decomposed into two main components—gold and investment in real estate. Anecdotal evidence suggests that since gold imports have increased, there should be an increase in gold savings. Further, Indian real estate market (the other major component of physical savings), bottomed out in 2003/04 and has since witnessed a nationwide boom. House prices in most cities, both metros and non-metros, have near doubled over the last few years. Considering such strong demand in both gold and real estate market, it would be reasonable to expect an increase in the physical savings rate over 2004/05.

Estimating Financial and Household Savings

It is easier to estimate share of financial savings as a per cent of GDP due to availability of data for 2005/06. The share of financial savings in GDP had already increased by 2.6 percentage points—from 10.3-12.9 per cent of GDP (RBI Annual Report, Table 6b). Going by historical relationships between financial and total household savings, this yields an incremental

household savings rate of 3.5 percentage points (ppt) in 2005/06, and most likely by an additional 2 ppt in 2006/07. This means that almost 5.5 ppt increase in projected investment rates would have come about from just the increase in household savings.

Estimating Public Sector Savings in India

Public sector savings are computed from budget data, and capture the excess of government expenditure over revenue expenditure. Examination of the trend in public sector savings suggests a secular decline from 1970 (3.0%) to 2002 (-0.7%). This decline in trend was arrested in 2002 from where it has risen to 2.2 per cent in 2004. However, if our *worst-case* scenario for the central and state fiscal deficit is achieved (5% of GDP for 2006/07) then it is likely that one would witness an approximate increase in government savings of 2.5 percentage points since 2004/05 (see Table 6c).

The real surprise for 2006/07 is most likely going to be in the form of a even lower fiscal deficit (of both center and state). The consolidated fiscal deficit for the last three years as per cent of GDP: 7.5, 7.3 and 6.3 per cent (budgeted, 2006/07). If the 6.3 per cent target is achieved, then the savings rate in 2006/07 would be approximately 37 per cent—i.e. very close to our investment forecast and without help from the rapidly expanding corporate savings. forecast achieved and with no help from the rapidly increasing corporate savings.

Estimating Corporate Sector Savings in India

Private corporate sector savings in the form of retained earnings are obtained from company balance-sheet data (but for non-government/non-financial firms only). The savings rate for corporates increased from 3.6 per cent in 2002 to 4.8 per cent in 2004. For the same period, retained earnings for a sample of top 177 firms showed a rise from 0.8 per cent (of GDP) in 2002/03 to 1.6 per cent in 2004/05. For the year 2005/06, this figure showed a marginal rise of 0.1 per cent. It is likely that the share of corporate sector savings was either flat or marginally increased in 2006/07. Thus, over the two-year period 2004/05 to 2006/07, however, the corporate savings rate could have increased by as much as 1 per cent of GDP.

Profits for non-government non-financial companies reveal an increase of 70 per cent in 2005/06. Assuming the same

dividend rate, this implies an improvement in retained earnings of 0.8 per cent (as % of GDP) for 2005 over 2004. On a conservative basis, therefore, the corporate savings rate is likely to have increased by 0.2 per cent and 0.3 per cent in 2005/06 and 2006/07 respectively (see Table 6c).

Estimating Domestic Savings—Indirect Method

Mathematically, the difference between savings and investment yields the current account balance. Assuming a minimum investment rate of 38 per cent and a likely current account deficit of 2 per cent for 2006/7, the likely savings rate for 2006/07 is 36 per cent (see Tables 6c and 6d).

Conclusion

The two methods discussed yield a likely savings rate of 36-37 per cent—our central forecast range for domestic savings rate in 2006/07. Thus, most of the extra investment that has occurred over the last two years was financed by domestic savings and most emphatically not from foreign savings (current account deficit)—a sustainable growth paradigm.

Table 6a: Savings—A Decomposition, 1970-2004
(all figures are as % of GDP and are average for the period)

Particulars	1970-74	1975-86	1987-98	1999-04
Household	11.0	13.8	18.2	22.2
<i>Physical</i>	7.4	7.8	9.1	11.6
<i>Financial</i>	3.7	6.0	9.2	10.6
Corporates	1.7	1.6	3.3	4.2
Public Sector	3.0	3.8	1.4	-0.3
Savings-Total		18.4	21.7	26.5

Source: CSO

Table 6b: Savings (% of GDP)

Period	Total Savings	Household Sector			Corporate Sector	Public Sector
		Household	Physical	Financial		
1950-64	—	—	—	—	—	2.2
1965-79	18.0	12.4	8.0	4.5	1.6	3.3
1980-82	19.1	13.2	7.1	6.1	1.6	4.0
1983-85	19.1	14.1	7.5	6.6	1.7	3.1
1986-88	20.7	16.3	9.2	7.1	1.8	2.3
1989-91	23.0	18.4	9.8	8.6	2.8	1.6
1992-94	23.7	18.9	8.3	10.5	3.3	1.3
1995-97	24.5	18.0	8.4	9.6	4.6	1.7
1998-00	23.5	20.5	10.2	10.3	4.1	-1.2
2001-03	26.3	22.9	12.0	10.9	4.0	-0.6
2004-06	32.6	22.0	11.7	11.3	4.8	2.2
2003-06	31.7	22.8	11.9	11.3	4.6	1.6
2003	28.9	23.5	12.0	11.5	4.4	1.0
2004	29.1	22.0	11.7	10.3	4.8	2.2
2005*	33.4	—	—	12.9	—	—
2006*	37.7	—	—	—	—	—

Source: RBI.

Note: * Forecasts.

Table 6c: Estimating Savings in India, 2005-06
(all figures as % of GDP)

	Savings	Incremental Increase in SavingsE		Projected Shares of Savings	
	2004/5	2005/6	2006/7	2005/6	2006/7
Household	22.0	3.6	2.0	25.6	27.6
Physical	11.7	1.0	—	12.7	—
Financial	10.3	2.6	—	12.9	—
Corporate	4.8	0.2	0.3	5.0	5.3
Government	2.2	0.5	2.0	2.7	4.7
Total Savings	29.1	4.3	4.3	33.4	37.7

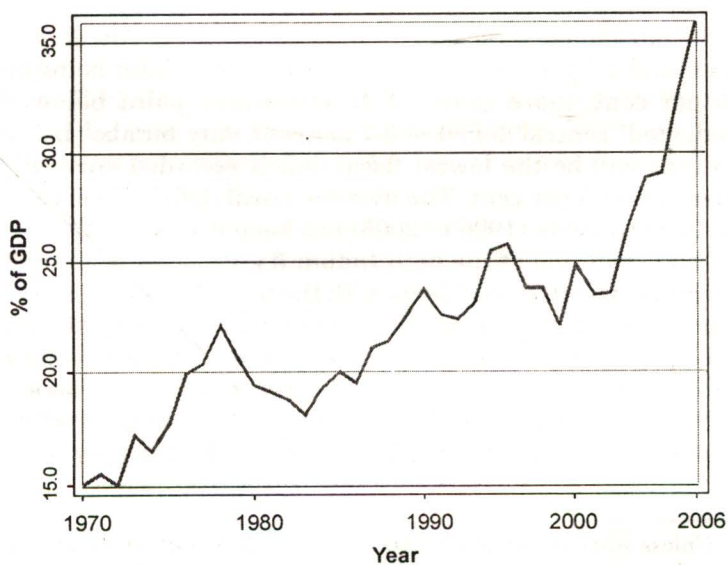
Source: RBI and Oxus Research Database.

Table 6d: Sources for Growth (% of GDP)

Period	Savings	Investments	Current Accounts
1950-64			
1965-79	18.0	18.1	
1980-82	19.1	20.6	
1983-85	19.1	20.7	
1986-88	20.7	23.0	
1989-91	23.0	25.1	-1.7
1992-94	23.7	24.9	-0.9
1995-97	24.5	26.0	-1.4
1998-00	23.5	24.4	-0.8
2001-03	26.3	25.2	1.4
2004-06	32.6	34.1	-1.1
2003-06	31.7	32.4	0.1
2003	28.9	27.2	2.4
2004	29.1	30.1	-0.8
2005*	33.4	35.5	-1.1
2006*	37.7	38.7	-

Source: RBI.

Chart 6a: Gross Savings, (% of GDP)



India's Public Finances

These are interesting times for public finances in India. Until literally just yesterday (and perhaps even today) the high consolidated fiscal deficit in India has been the subject of much attention, and criticism—and even a little bit of wonderment. How is it possible for a country to grow so fast, for so many years, and yet have a fiscal deficit⁸ in the range of 9 to 11 per cent? Further, how is it possible that the inflation rate is contained at historically, and absolutely, low levels of inflation (around 3-5%)?

When the official fiscal deficit estimates are known in early March 2007, things will change, and perceptions will change. Our analysis suggests that the fiscal deficit estimate for 2006/07 will come out at below 5 per cent versus a target of 6.3 per cent. Indeed, our forecast (detailed below) is for the deficit to be around 4.5 per cent, with the deficit at the center being only 2.5 per cent, more than a full percentage point below the “budgeted” central deficit of 3.7 per cent. Any number below 5 per cent will be the lowest fiscal deficit recorded since 1970, when it was 5 per cent. The average fiscal deficit observed for the last ten years (1996 to 2005) has been 9.1 percent!

The evolution of the high Indian fiscal deficit is a story in two parts. The first part deals with the period 1980-98, a period characterized by unrestrained borrowing for expenditure, especially for expenditures at the state level. The second period is from 1999 to 2003, a period of concern and some action—particularly in the form of breaking the “support base” of high expenditures. This base has been provided by the operation of

8. Unless otherwise stated, the term “fiscal deficit” will refer to the fiscal deficit of both center and states i.e. the consolidated fiscal deficit.

the financing system made possible by “scam savings”—small savings deposits raised by the states to finance (without any possibility of checks and balances), their excessive expenditures. Starting in 1999 the Finance Ministry began to reduce the nominal (and real) rate of interest given to holders of small savings.⁹ From a level of 12.5 per cent in 1999, this rate was lowered to 8.5 per cent in 2003/04—a significant contribution to fiscal health.

The third (and new) phase is characterized by the adoption of the (Fiscal Responsibility and Budget Management) FRBM Act 2003. The States Debt Consolidation and Relief Facility (DCRF), gives incentives for states to reduce their fiscal deficit. Along with high GDP growth, these two fiscal responsibility measures have brought Indian public finances to the excellent shape they are (likely) in today.

Fiscal Deficits and Growth—An Overview

The general assumption is that high fiscal deficits are “bad” because of crowding out, i.e. high fiscal deficits leave less room for private investment. This statement holds true in a closed economy. In open economy macro, a country (or its residents) can borrow from abroad at not high domestic interest rates, but at low world interest rates. But open economy macro also means that the exchange rate is allowed to fluctuate, and appreciate, something that several economies, especially high growth Asian economies, do not allow. This means that fiscal deficits can lead to some crowding out.

There are several problems in estimating the effect of fiscal deficits on GDP growth in India. First, there is a very close correspondence between the doubling of fiscal deficits from 5 to 10 per cent of GDP (prior to and post-1980) and the acceleration in GDP growth (again, post 1980). Second, there is the problem of low volatility in the level of these deficits. So it is virtually impossible to obtain any significant relationship between fiscal deficits and GDP growth. And any such

9. See Bhalla, “The Most Kindest Cut of All” for how a single small rate cut in small savings rates in 1999 set in motion the possibilities and policies that have made a low fiscal deficit possible.

relationship is likely to be positive. Which is what happens in econometric models for Indian GDP growth—the coefficient for fiscal deficits is never significant, and mostly positive, i.e. that high fiscal deficits lead to less crowding out and higher GDP growth!

Does this mean that fiscal deficits do not have an impact on growth? Of course, not. The estimation complications were mentioned above. In addition, the peculiar nature of fiscal deficits in India (state deficits have lately formed close to 50 per cent of the consolidated center-state fiscal deficits) and the method of its financing (via small savings collections made possible by incentives in the form of high deposit interest rates) most likely make the case that fiscal deficits are the result of administered and high interest rates, rather than fiscal deficits causing “crowding out” leading to high interest rates, and therefore low growth.

Why has India followed a policy of such aggressively high real interest rates? The answer is fiscal deficits—but not the deficits at the center as is commonly presumed. The consolidated fiscal deficit of the center and the states has stayed in the rather narrow range of 7.4 to 11.3 per cent for the last twenty-five years, with a standard deviation of 1.3 per cent. The decadal averages are even narrower—10 per cent in the eighties, 8.9 per cent in the nineties, and 9.0 per cent in the first three years post 2000. What changed between the eighties and nineties is the share of state deficits. This share reached a trough of 25.6 per cent in 1985—in 2003/04 this share reached a peak of 50 per cent.

The Influence of Small (Scam) Savings on High State Deficits, 1980-2003

Until recently, the states have not been restrained from excessive expenditures. And this is because of government policy, which encouraged states to have as high a fiscal deficit as they so desired, subject to practically no discipline. The modus operandi of this (now old) policy was as follows. First, the states were not allowed to borrow from the Reserve Bank of India (RBI) or from the market. Technically they could borrow but only after obtaining permission from the RBI, a permission

which, given the large debt of the states, was not forthcoming. Second, the states were allowed to borrow from the people in the form of postal "savings." The two diktats together form the elements of "scam savings." Postal savings carried significantly above average rates of interest, and were guaranteed by the central government. In effect, the central government built a system with a negative discipline, i.e. the worst form of moral hazard possible, with states borrowing in an unrestrained fashion, with no discipline from the center, from the market, or from the people.¹⁰ The states could incur as much deficits as they pleased, as long as they raised the revenue from postal, *nee* scam savings.¹¹

In order to finance their deficits i.e. pay salaries, the states had two options—either borrow on behalf of state corporations¹² or borrow from scam savings. Since the interest rates on such savings were administered, there was a vested interest in keeping such rates well above "market" rates—or given declining inflation, to keep them at old nominal rates. Inflation started declining in India in 1996, a trend not different than that experienced worldwide. The growth rate in small savings or scam savings (SS) deposits averaged 15.2 per cent per annum during 1995-2003, compared to a nominal GDP growth rate of 11 per cent. Given such excess, the laws of compounding soon lead to an explosion. Small savings accounted for a fifth of national savings in 2004, and was more than half of the entire financial savings in the system.

10. Though conceivable, it is unlikely that a state election campaign will involve accusations from the opposition about misuse of postal savings. The issue is too complicated for elections, and all political parties are interested in getting on the gravy train.

11. See Bhalla (2000) and several journalistic pieces cited therein for an expose of this scam, and the fact that the central government was scoring an "own goal" in the process.

12. This is the second reason (the first being opposition from domestic industrialists) for privatization to be so "unpopular" in India. The state politicians obviously do not want privatization, since it affects their source of revenue. The central government has recently caught on to this possibility and restricted such borrowing/funding by state corporations.

The government has also been pro-active in reducing the scam.¹³ Apart from reducing interest rates on such savings, the government (RBI) set up two committees (in 2002 and 2003) to study and advise the government on policies to “rationalize” such savings deposit schemes. As pointed out in Bhalla(2001) such schemes are akin to “axing one’s own feet” or scoring an own goal. The higher the rate on postal savings, the higher the rate, *ceteris paribus*, on other government borrowings from the market. And given the large borrowings, present fiscal deficits were in large part due to past interest rates. So much so that in the late 1990s close to 70 per cent of the central deficit, and close to 90 per cent of the state deficits, were composed of interest payments. In 2006, it is likely that interest payments alone will be more than the entire fiscal deficit i.e. a surplus on the revenue account.

In a study published in early 2000 (Bhalla et. al, *This is India’s decade*) we had outlined the benefits that would accrue to the Indian government, and economy, if interest rates in India would be market determined rather than determined by the rate on small savings deposits. Table 7a is a reproduction of our original Table 14. This table reports our assumptions and forecasts for 2000-05. Table 7b has three sets of estimates for the consolidated deficit and interest payments: two sets of forecasts made in the 2000 study (one business as usual and second based on a cut in the small savings rate) and the third set is what actually happened.

The interest payments in column 3 (Table 7b) were estimated on the basis that the nominal rate on government securities remained unchanged at 12.0 per cent (the rate prevailing in 1999/2000). Interest payments in column 5 were the hypothetical interest payments that would occur if interest rates on small savings (and therefore government securities) would decline to 8 per cent.

13. See Bhalla (1999), “The most Kindest Cut of All” – the article applauds the government for instituting a policy of reducing administered rates on small savings – a policy that has reduced the nominal rate on such savings from 12.5 per cent in 1999 to 8 per cent today. Note that the effective borrowing rates are about 2 percentage points higher because a large proportion of the interest on such savings is tax-free.

Our forecasts on the levels of interest rates, decline in fiscal deficits and the acceleration in GDP growth have *all* turned out to be exceedingly accurate. Long-term rates are presently in the 7.5 to 8 per cent range and rates on small savings are at 8.5 per cent. (Our assumption was that the interest rate on both small savings and ten-year government securities would be 8%.) GDP growth was assumed to accelerate from 7 per cent per annum to 9 per cent per annum—it has done exactly that. We had also forecast that the fiscal deficit would decline to 8 per cent by 2005—this target was also accurate (fiscal deficit in 2005 was 7.4 per cent). This accuracy in forecasts suggests that the prime mover behind the recent acceleration in GDP growth rates to the 8 per cent plus range, and fiscal deficit reduction to 5 per cent, was the policy of a cut in small savings rates initiated in March 1999 by then Finance Minister Yashwant Sinha.

Significant Improvement in Fiscal Deficit Likely in 2006

This year (2006/07) the fiscal deficit is likely to witness a significant improvement over even the budgeted estimates. The state fiscal deficit is budgeted to be at 2.6 per cent of GDP and central deficit is budgeted to be around 3.7 per cent; this yields a consolidated fiscal deficit of 6.3 per cent. Will this budgeted target be met? Will it be exceeded?

To explore this question in detail it becomes imperative to look at the pattern of expenditure and tax revenues. Estimating tax revenue is relatively straightforward given that such data are available for close to three-fourths of the current year—from April to November. While the budgeted figure for the tax to GDP ratio for 2006/07 is close to 10.1 per cent, it is likely to come out more than a full percentage point higher—at 11.4 per cent. Direct tax collections have grown at 40 per cent (data for April-November, 2006), which is significantly higher than budget estimates. Therefore, assuming a modest growth of 13 per cent for nominal GDP coupled with a conservative 30 per cent growth in tax revenues for 2006, the tax to GDP ratio at 11.4 per cent looks conservative.

The estimation of expenditure, therefore, becomes the key for assessing improvement in consolidated fiscal deficit over

budgeted figures. It is noteworthy to mention here that any *material* increase in expenditure over the budgeted estimates requires prior approval of the parliament. Indeed, the last three years have seen improvement on the expenditure side. The revised figures for expenditure over budget have shown a marginal increase of 1.7 per cent in 2005/06. This figure is considerably lower than the excess of 8.1 per cent observed in 2003/04. Assuming an average increase of 2 per cent over budgeted figures for total expenditure in the current year, the consolidated fiscal deficit to GDP ratio is likely to range between 4.5-5.0 per cent of GDP for 2006/07 compared to budgeted figure of 6.3 per cent.

A likely reduction in fiscal deficit would open up new frontiers for policy markers:

1. Reduction and rationalization in both direct and indirect tax rates. The prime minister and the finance minister have both hinted at the possibility.
2. Reduction in Statutory Liquidity Ratio (SLR) for banks. Presently, Indian banks are supposed to park 25 per cent of their incremental net time and demand liabilities in government securities (G'Secs). A reduced fiscal deficit would signal less requirement for deficit funding. Also, with new market participants like FIIs entering the Indian debt markets, government's reliance on banks for funding the fiscal deficit will be lower. If the SLR is indeed reduced, it would free resources for banks and give them greater flexibility to lend for more profitable projects (rather than parking their investments in government securities as the SLR requires them to do).

Table 7a: Assumptions and Forecasts for the Indian Economy (Table 14, Bhalla et al., Feb. 2000)

Policy		Interest Rate Targeting by RBI				
MoF Administered Rates		Assumptions				
Year	MoF Administered Rates	MoF Administered Rates	MoF Administered Rates			
	Nominal GDP	Consolidated Fiscal Deficit	Consolidated Fisc. Def/GDP (%)			
	Interest Payments	Interest Payments	Interest Payments			
1999	1790	184	10.3	1790	184	10.2
2000	1978	211	10.7	2014	205	10.2
2001	2186	235	10.8	2265	221	9.8
2002	2415	262	10.8	2549	238	9.2
2003	2669	291	10.9	2867	255	8.8
2004	2949	324	11	3226	272	8.4
2005	3259	359	11	3629	289	8.0

Source: RBI, GoI Documents, Start of India's Decade (Feb. 2000) and Oxus Research Database.

(All figures are in Rs. '000 crores)

Table 7b: Interest Rate Targeting and Fiscal Deficit

Year	Business As Usual'			Forecast in 2000*			Actual	
	Consolidated Fiscal Deficit to GDP (%) Col.2	Interest Payments (at 12%) (In Rs. '000 Crs) Col.3	Consolidated Fiscal Deficit to GDP (%) Col.4	Interest Payments (at 8%) (In Rs. '000 Crs) Col.5	Consolidated Fiscal Deficit to GDP (%) Col.6	Interest Payments (In Rs. '000 Crs) Col.7	Consolidated Fiscal Deficit to GDP (%) Col.6	Interest Payments (In Rs. '000 Crs) Col.7
1999	10.3		10.2		9.4			
Forecasts								
2000	10.7	25	10.2	16	9.4	15.0	15.0	
2001	10.8	28	9.8	18	9.9	17.0	17.0	
2002	10.8	31	9.2	19	9.6	18.7	18.7	
2003	10.9	35	8.8	20	8.5	20.5	20.5	
2004	11.0	39	8.4	22	7.5	21.5	21.5	
2005	11.0	43	8.0	23	7.5	21.9	21.9	

Source: Start of India's Decade, Developing Trends (Feb., 2000), Oxus Investments & RBI.

Note: 1. Denotes variables under "no change" in conditions and interest rates prevailing at that time Data as simulated in Start of India's Decade.

2. Denotes estimate for various years published in the above-mentioned publication.

Table 7c: Performance of India's Public Finance—Revised over Budgeted, 2000-05
(all figures in %, revised over budgeted)

	2000-01		2001-02		2002-03		2003-04		2004-05		2005-06	
	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E	R.E/B.E
Revenue Plan Expenditure												
Central Plan	-0.8	9.0	1.7	1.2	1.7	1.2	1.2	1.2	1.2	1.2	1.2	39.4
Central Assistance for State & Union Territory Plans	6.3	-9.3	7.1	2.5	7.1	2.5	2.5	2.5	2.5	2.5	2.5	9.2
<i>State Plan</i>												
Total Revenue Plan Expenditure	6.1	-10.1	6.9	2.6	6.9	2.6	2.6	2.6	2.6	2.6	2.6	8.9
Capital Plan Expenditure	1.5	2.7	3.4	1.6	3.4	1.6	1.6	1.6	1.6	1.6	1.6	29.3
Central Plan	-17.0	15.2	2.9	0.3	2.9	0.3	0.3	0.3	0.3	0.3	0.3	18.9
Total Capital Plan Expenditure	-7.4	7.0	-4.1	-1.6	-4.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-42.3
Total Plan Expenditure	-2.1	4.3	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	4.4
Revenue Non-Plan Expenditure												
Interest Payments	-0.6	-4.5	-1.5	-2.2	-1.5	-2.2	-2.2	-2.2	-2.2	-2.2	-2.2	6.4
Defence	-2.4	-4.8	-5.7	-2.1	-5.7	-2.1	-2.1	-2.1	-2.1	-2.1	-2.1	11.7
Subsidies	26.0	2.4	12.1	-10.4	12.1	-10.4	-10.4	-10.4	-10.4	-10.4	-10.4	2.0
Grants to State & U.T Govts	-8.7	-8.3	-21.8	-14.7	-21.8	-14.7	-14.7	-14.7	-14.7	-14.7	-14.7	129.0
Total Revenue Non-Plan Expenditure	0.7	-3.1	-0.4	-1.6	-0.4	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	11.5
Capital Expenditure												
Defence	-17.6	-15.0	-30.4	-19.3	-30.4	-19.3	-19.3	-19.3	-19.3	-19.3	-19.3	2.7
Total Capital Non-Plan Expenditure	-12.8	-8.0	-21.4	138.9	-21.4	138.9	138.9	138.9	138.9	138.9	138.9	-44.0
Total Non-Plan Expenditure	-0.4	-3.6	-2.3	11.0	-2.3	11.0	11.0	11.0	11.0	11.0	11.0	0.7
Add expenditure linked to divestment												
TOTAL EXPENDITURE	-0.9	-2.9	-1.5	8.1	-1.5	8.1	8.1	8.1	8.1	8.1	8.1	1.7

Source: Budget Documents, Government of India.

Table 7d: Estimate of Combined Deficit-Centre and State, 2006

	2005	2006 (BE)	2006 (Oxus)
Centre			
Govt Expenditure	14.1	13.8	13.8
Govt Revenue*	10.1	10.1	11.4
Govt Fiscal Deficit	4.1	3.7	2.4
State			
Govt Expenditure	16.1	15.4	15.4
Govt Revenue	12.9	12.8	13.5
Govt Fiscal Deficit	3.2	2.6	1.9
Combined Deficit-Centre+State	7.3	6.3	4.3

Source: Budget Documents & Oxus Research Database.

Note: Assuming revenues are rising by 30 per cent and GDP rising by 13 per cent.

Table 7e: Public Finance-I (all figures as % of GDP)

Period	Centre			State		
	Receipts	Expenditure	Deficits	Receipts	Expenditure	Deficits
1950-64						
1965-79						
1980-82	8.8	14.3	5.5	11.0	13.6	2.5
1983-85	9.4	16.3	6.9	11.3	14.2	2.9
1986-88	10.4	18.1	7.7	12.1	15.0	2.9
1989-91	10.2	17.1	6.8	11.7	14.8	3.1
1992-94	9.4	15.3	6.0	12.0	14.7	2.6
1995-97	9.1	14.3	5.2	11.2	13.9	2.7
1998-00	9.1	14.9	5.8	10.6	15.0	4.4
2001-03	9.6	15.1	5.5	11.4	15.7	4.3
2004-06	10.0	13.9	3.9	12.5	15.6	3.1
2003-06	10.0	14.1	4.1	12.3	15.7	3.5
2003	10.2	14.6	4.5	11.5	15.9	4.5
2004	9.9	14.0	4.0	11.9	15.4	3.5
2005	9.9	14.1	4.1	12.9	16.1	3.2
2006 (B.E)	10.1	13.8	3.7	12.8	15.4	2.6

Source: RBI, Budget Documents, Government of India.

Table 7f: Tax Revenues (as % of GDP)

Period	Corporate Tax	Personal Inc. Tax	Direct Tax			Indirect Tax			Total Tax	Non Tax
			Centre	State	Total	Centre	State	Total		
1950-64	-	-	-	-	-	-	-	-	-	-
1965-79	1.0	0.4	-	-	-	-	-	-	12.4	3.7
1980-82	1.1	0.3	2	0.5	2.5	7.2	4.3	11.5	14.0	4.2
1983-85	1.1	0.3	1.9	0.5	2.4	7.7	4.4	12.1	14.6	4.1
1986-88	1.0	0.2	2	0.5	2.5	8.5	4.8	13.3	15.8	4.4
1989-91	1.0	0.2	2.1	0.6	2.7	8.1	4.7	12.8	15.5	4.2
1992-94	1.2	0.2	2.5	0.6	3.1	6.7	4.7	11.4	14.6	4.4
1995-97	1.3	0.3	2.9	0.6	3.5	6.3	4.6	10.9	14.4	4.1
1998-00	1.4	0.6	2.9	0.6	3.5	5.7	4.7	10.4	13.9	4.1
2001-03	1.4	1.1	3.4	0.7	4.1	5.3	5.1	10.4	14.4	4.3
2004-06	2.2	1.3	4.5	0.8	5.3	5.6	5.4	11.0	16.9	3.7
2003-06	2.1	1.2	4.3	0.8	5.1	5.5	5.3	10.8	16.4	3.8
2003	1.7	1.1	3.8	0.7	4.5	5.4	5.1	10.5	15.0	4.2
2004	1.9	1.1	4.3	0.8	5.1	5.5	5.3	10.8	15.8	4.1
2005	2.2	1.4	4.8	0.8	5.6	5.7	5.5	11.2	16.8	3.4
2006 (B.E)	2.5	1.4	-	-	-	-	-	-	18.1	3.5

Source: RBI, Budget Documents, Government of India.

Interest Rates

The chapter analyses the behaviour of interest rates in India. This study of interest rates helps resolve the two most prominent puzzles pertaining to the Indian economy. First, why did the reforms of 1991-93 have so little effect on acceleration of GDP growth and second, why has there been acceleration in growth rates, and a structural break, from 2003/04 onwards.

Small Savings and their Impact on Interest Rates

During the eighties and the nineties, among the array of “Hindu” constants, was the constancy of interest rates. This constancy emerged because of the peculiar nature of Indian monetary policy; this policy was predicated on the existence, and level, of the interest rate on small savings. The interest rate on small savings remained fixed at a high 12-14 per cent level until 1999/2000. The political economy of interest rate policy during the eighties (and indeed nineties) was that small savings collections constituted an important, even critical, component of the financing of state expenditures, and therefore of state deficits. During 1985-89, the quantum of small savings constituted around 35 per cent of state’s fiscal deficit; this number had risen to 44 per cent by the late 1990s (see Table 8a)

Small savings (SS+) were necessary for financing state expenditures. Like all defunct chit fund schemes, the operation of deposit schemes worked as follows: the deposits were collected, and immediately transferred for financing the state deficit. Next year, new deposits were collected, and new expenditures were made. During the nineties, the importance of SS+ grew. Investors found these risk-free schemes attractive

with the pre-tax yields at around 14-16 per cent. SS+ liabilities, during the nineties, showed a clear upward trend (see Table 8a). Importantly, the trend was even more prominent from 1996-99 when the change in SS+ liabilities doubled in the short space of three years.

By definition, a deficit can only be financed by borrowing, and SS+ schemes was borrowing, albeit more in the Ponzi nature scheme of things. One aspect of SS+ financing was that the opportunity cost of these funds for the state politicians was close to zero. Given the highly non-transparent nature of this market “borrowing,” a form which left many economists bamboozled, the politician did not have to face the electorate, or the press, with answers to the question, “What have you done with all the borrowings” lately? Thus, there were no “checks and balances” on the politicians behaviour, an additional pernicious effect of an already unsound policy.

The correct answer to deficit financing was market borrowing by the states to finance their expenditures—a solution well known but less relied upon during the eighties and nineties.

State Small Savings and National Interest Rates

The benchmark for short and long term interest rates was the interest rate on small savings. These rates were controlled by the Ministry of Finance (MoF) rather than the monetary authorities; hence, interest rates were set by politicians rather than the Reserve Bank of India. The risk-free small savings after tax deposit rate of 15 per cent (12.5 per cent pre-tax) shifted the yield curve upwards for both sovereign and non-sovereign borrowers. Thus, the yield on ten-year government securities (and other interest rate instruments) was primarily determined by the small savings rate.

In the February 1999 budget, the finance minister, Yashwant Sinha, put the Indian economy, and fiscal deficits, on the road to recovery; the interest rate on SS deposits were reduced by 100 basis points to 11 per cent. In the following years, this rate was reduced systematically to 8.5 per cent by 2003, where it has remained.

Thus, the real rate of interest on the small savings fell from

7.2 per cent to 3.7 per cent during 1999-2006. Correspondingly, the real rate on govt. securities fell from 8 per cent to 3.1 per cent (see Chart 8a). And it is this fall in real interest rates, which had a positive impact on GDP growth leading to acceleration from around 5.5-6 per cent to 8-8.5 per cent.

Interest Rates 1990s and 2000s: Inter-country Analysis

Examination of real interest rates in India, China and the U.S. suggests the following. While the real interest rates have shown a consistent decline in China, they have shown a decline for both U.S. and India from 2000-04. Since 2004, the real interest rates have gone up by 100 basis points in India and by 300 basis points in the U.S. (see Table 8d). Still, the real interest rates in India are higher compared to both the countries.

**Table 8a: Small Savings and Provident Fund (SS+)
Collections and State Finances, 1985-99
(all figures in '000 crores)**

Year	Expenditure	Receipts	Deficit	Change in SS+	State's Share	SS+ as % of		
						Liabilities	in SS+	State Exp
1985	40.9	33.4	7.5	4.4	0.8	1.8	2.2	10.0
1986	47.5	38.2	9.3	3.5	3.3	6.9	8.6	35.5
1987	55.2	44.0	11.2	3.8	3.9	7.0	8.8	34.5
1988	62.1	50.4	11.7	5.3	3.9	6.2	7.7	33.2
1989	72.0	56.5	15.5	9.4	5.2	7.2	9.2	33.6
1990	85.3	66.5	18.8	8.5	6.3	7.3	9.4	33.2
1991	99.4	80.5	18.9	5.7	6.2	6.3	7.7	32.9
1992	112.0	91.1	20.9	2.4	8.5	7.6	9.3	40.5
1993	126.2	105.6	20.6	6.7	7.4	5.9	7.0	36.1
1994	150.0	122.3	27.7	15.6	8.9	5.9	7.2	32.0
1995	168.2	136.8	31.4	10.4	10.7	6.4	7.8	34.2
1996	190.3	152.8	37.3	12.4	13.2	6.9	8.6	35.3
1997	214.5	170.3	44.2	20.6	13.2	6.2	7.8	30.0
1998	250.7	176.4	74.3	28.5	32.7	13.0	18.5	44.0
1999	298.7	207.2	91.5	32.2	40.0	13.4	19.3	43.7
2000	327.5	238.0	89.5	37.6	36.0	11.0	15.1	40.2
2001	351.7	255.7	96.0	37.8	32.1	9.1	12.6	33.4
2002	382.5	280.3	102.1	50.9	22.3	5.8	8.0	21.8
2003	439.6	316.5	123.1	61.9	40.9	9.3	12.9	33.2
2004	481.3	372.1	109.3	82.0	20.2	4.2	5.4	18.5
2005	568.1	454.2	114.0	66.9	19.4	3.4	4.3	17.0
2006	620.1	514.2	106.0		21.9	3.5	4.3	20.7

Source: RBI, Government of India Documents and Oxus Research Database.

Table 8b: Interest Rates (all figures in %)

Period	Nominal Rates		Inflation		
	10yr G-Sec	Call Rate	WPI	GDP Deflator	Core Inflation
1950-64	–	–	–	–	–
1965-79	–	8.3	7.5	7.3	8.0
1980-82	7.6	8.3	10.1	9.3	10.1
1983-85	10.1	9.5	6.0	7.6	7.7
1986-88	11.4	9.9	6.9	7.7	7.5
1989-91	11.6	15.6	10.0	10.4	9.4
1992-94	12.3	10.3	9.8	8.9	8.7
1995-97	13.2	11.4	5.5	7.3	6.9
1998-00	11.6	8.6	5.3	4.9	5.2
2001-03	7.5	5.9	4.1	3.4	3.6
2004-06	6.9	5.8	5.1	4.1	3.8
2003-06	6.6	5.5	5.1	4.1	3.9
2003	5.7	4.6	5.3	4.0	4.1
2004	6.1	4.7	6.2	4.1	4.0
2005	7.3	6.9	4.3	4.0	3.6
2006	7.4	5.7	4.6	4.3	3.8

Source: RBI & Oxus Research Database.

Table 8c: Real Interest Rates—Various Deflators, 1990-2006 (%)

Period	G-Sec 10yr			Call Rate		
	WPI	Deflator	Core Inflation	WPI	Deflator	Core Inflation
1950-64	—	—	—	—	—	—
1965-79	—	—	—	0.8	1.0	0.3
1980-82	-2.5	-1.7	-2.5	-1.8	-1.0	-1.8
1983-85	4.1	2.5	2.4	3.5	1.9	1.8
1986-88	4.5	3.7	3.9	3.0	2.2	2.4
1989-91	1.6	1.2	2.2	5.6	5.2	6.2
1992-94	2.5	3.4	3.6	0.5	1.4	1.6
1995-97	7.7	5.9	6.3	5.9	4.1	4.5
1998-00	6.3	6.7	6.4	3.3	3.7	3.4
2001-03	3.4	4.1	3.9	1.8	2.5	2.3
2004-06	1.8	2.8	3.1	0.7	1.7	2.0
2003-06	1.5	2.5	2.7	0.4	1.4	1.6
2003	0.4	1.7	1.6	-0.7	0.6	0.5
2004	-0.1	2.0	2.1	-1.6	0.6	0.7
2005	3.0	3.3	3.7	2.6	2.9	3.3
2006	2.8	3.1	3.6	1.1	1.4	1.9

Source: RBI & Oxus Research Database.

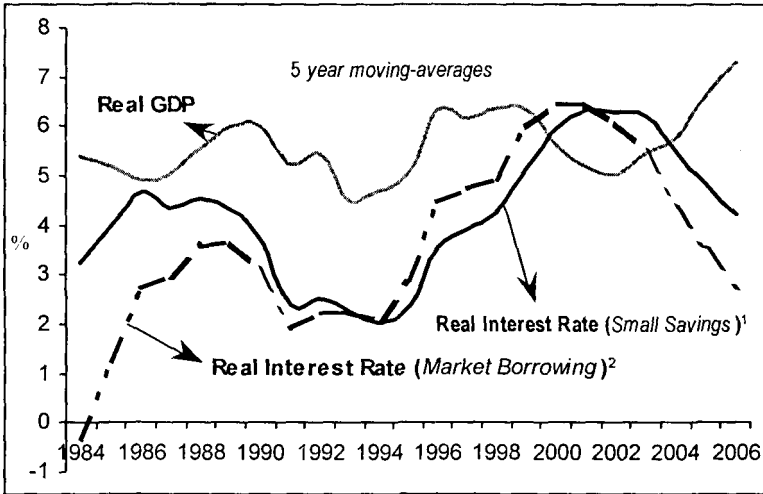
Table 8d: Real Interest Rates, 1990-2006 (%)

	India	US	China
1990	1.4	3.9	4.3
1995	5.3	-0.5	3.7
2000	7.6	4.0	3.0
2003	1.7	0.3	2.3
2004	2.0	-1.5	1.6
2005	3.3	-1.0	1.8
2006	3.1	1.3	1.6

Source: WDI, Fred Database, CSO, RBI, NBS & UBS.

Note: Real interest rates has been defined as the ten-year G'Sec rate deflated by GDP deflator.

Chart 8a: Real GDP vs. Real Interest Rate



Source: RBI, GoI Documents and Oxus Research Database.

- Notes: 1. Real Interest Rate (small savings) has been computed as nominal interest rate on small savings which was 12 per cent till 1998, minus the inflation rate as calculated by GDP Deflator.
2. Real Interest Rate (market borrowings) has been computed as 10 year G'sec interest rate minus the inflation rate as calculated by GDP Deflator.

Inflation and its Implications for Monetary Policy

An above trend rate of economic growth over the last 4 years has initiated an active debate about an overheated economy and the return of inflation. Market participants have pointed towards peak operating rates (across all sectors) and runaway prices in real estate as evidence. A recent survey of 600 firms conducted by NCAER reported that 96 per cent of the firms were operating close to their peak capacity utilization. Does this merit a cautious approach by the policy maker? Is it a cause for concern? This chapter seeks answers to these questions. It also analyses the record of inflation during two periods: 1980-95 and 1996-2006. Various components of inflation are also examined. Further, various measures are discussed to assess whether they are the appropriate benchmarks to consider for an adequate monetary response. Finally, future course of inflation is discussed in conjunction with the current restrictive policy.

Record of Inflation—1980 to 1995

During the seventies, inflation was mostly cost-push: governed largely by high tariff rates and energy prices. Inflation averaged 7.5-8 per cent in the 1970s, largely driven by oil shocks of 1973 and 1979. Over the next 15 years, i.e. 1980 to 1995, inflation stayed at the same level, averaging around 8-8.5 per cent across all measures (see Table 9a). However, the standard deviation of inflation was significantly different during the seventies and the early eighties (1980-95); 6-8 per cent vs. 2-3 per cent respectively.

Table 9a: Inflation Growth (all figures in %)

Period	CPI-IW	CPI-AL	WPI	GDP Deflator	Deflator Core
1950-64	2.7	2.7	2.7	2.7	
1965-79	6.8	6.2	7.5	7.3	8.0
1980-82	10.0	10.0	10.1	9.3	10.1
1983-85	8.2	5.2	6.0	7.6	7.7
1986-88	8.6	8.7	6.9	7.7	7.5
1989-91	9.8	10.1	10.0	10.4	9.4
1992-94	8.7	8.8	9.8	8.9	8.7
1995-97	8.5	6.4	5.5	7.3	6.9
1998-00	6.4	4.8	5.3	4.9	5.2
2001-03	4.0	2.7	4.1	3.4	3.6
2004-06	4.8	4.3	5.1	4.1	3.8
2003-06	4.5	4.1	5.1	4.1	3.9
2003	3.7	3.7	5.3	4.0	4.1
2004	3.9	2.7	6.2	4.1	4.0
2005	4.1	3.8	4.3	4.0	3.6
2006	6.3	6.4	4.6	4.3	3.8

Source: RBI & Oxus Research Database.

Record of Inflation—1996 to 2006

Economic reforms of 1991 resulted in a structural shift in tariff and exchange rates. This, along with global trends in inflation declines resulted in a structural decline in all domestic inflation rates. As illustrated in Table 9a, inflation across most measures declined by 200-300 basis points in 1995-97. This fall in inflation continued until its bottoming in 2002. During the period 1996-2006, inflation averaged 4.5-5.5 per cent with a standard deviation of 1.5-2.5 per cent. The impact of declining tariff rates was most visible in WPI-manufacturing inflation; a decrease from 11 per cent in 1995 to 3 per cent in 2006. Most likely, the transitional period of 1995-96 marked a structural break in the trend rate of inflation.

The increase in commodities prices did have some impact on inflation rates post 2000. The CRB Index, a useful proxy for commodities (includes energy, materials and agricultural commodities), has risen by 45 per cent since end 2003. Correspondingly, food prices have increased by 5 per cent, fuel

by 1 per cent and consumer prices by 2 per cent from 2003 to 2006 (see Table 9b). Interestingly, GDP deflator and core inflation¹⁴ have stayed constant at 4 per cent. Non-acceleration in inflation rates at the aggregate level—GDP Deflator and the core measure—represents a departure from the 1980s when commodity prices used to play a significant role in determining inflation rates. The most plausible explanation for this is the increased level of globalization (read productivity led growth in developing economies) and the rising share of services. While this share was close to 45 per cent during the 1980s, it has increased since then to 55 per cent. Therefore, even though food¹⁵ and fuel price inflation have been rising post 2000s, both measures of aggregate inflation—core and GDP deflator—have stayed stable.

Current Inflation Rates

There has been an active debate regarding the present inflation level. Several analysts have pointed out that since the economy is overheating, and higher food and fuel prices are observed, a sterner policy response is warranted. The Reserve Bank of India has raised the short-term rates by over 250 bps over the last two years: the RBI, and also recently the CRR by 50 basis points to 5.5 per cent. The question that needs to be answered—Is the present monetary policy appropriate?

Examination of Table 9b suggests that, over the last few years, most aggregate price measures have either exhibited stability or a decline in their rate of growth. The only aggregate measure, which runs opposite to this general trend, is consumer price inflation; this suggests acceleration in 2006 to 5.8 per cent

14. Core inflation has been derived by stripping out volatile components like food and fuel from the aggregate measure i.e. GDP deflator.

15. Trend in food price inflation presents interesting insights. Food price inflation, as per WPI–Food Articles index, averaged around 10 per cent from 1990-1998. Year 1998 marked a mini-structural break, when the food prices peaked at 10.8 per cent. In the ensuing years, food price inflation declined continuously until 2003 when they bottomed out around 1.4 per cent. Since then the food price inflation accelerated to its current level of 6.4 per cent.

Table 9b: Inflation in India, 1995-2006 (all figures are averages for the year)

Year	Aggregate Measures			Sector Specific Measures					Core Inflation	
	WPI	CPI	GDP Deflator	WPI	WPI	WPI	WPI	CPI	GDP Deflator	Core
		<i>Ind. Workers</i>	<i>Aggregate</i>	<i>Food Articles</i>	<i>Fuel, Power & Lubricants</i>	<i>Manufacturing</i>	<i>Agri. Labourers</i>			
1995	10.7	9.6	8.5	10.6	6.3	11.1	11.1			8.5
1996	4.4	8.7	7.0	9.0	7.8	3.0	7.7			6.7
1997	4.5	7.1	6.4	5.9	13.0	2.6	5.0			5.4
1998	5.6	12.4	7.5	10.8	6.0	3.7	9.2			7.4
1999	3.5	4.6	3.8	4.3	5.3	3.4	5.8			4.3
2000	6.0	3.8	3.4	4.0	22.5	2.7	1.0			4.0
2001	5.1	3.7	2.8	2.6	14.0	2.9	-0.1			3.5
2002	2.4	4.4	3.5	2.5	4.4	1.6	2.7			3.3
2003	5.2	3.6	4.0	1.4	6.5	4.9	4.2			4.1
2004	6.4	3.9	4.1	2.2	8.7	6.5	2.7			4.0
2005	4.6	3.9	4.0	3.8	9.5	3.8	3.2			3.6
2006	4.6	5.8	4.3	6.4	7.3	3.1	5.9			3.8

Source: RBI & Oxus Research Database.

from around 4 per cent over the last three years. To a certain extent this represents a 'catch-up' with WPI as the latter usually leads the former. Further, CPI-IW is a '*partial proxy*' for the volatile food sector due to its unusually higher weightage at 57 per cent.

Only two price measures, show an established uptrend in 2006: food and energy prices. Prices in these sectors bottomed in 2002-03 and have trended higher since. This has led to a growing consensus amongst economists that a more restrictive monetary policy is needed. Key question—Is the consensus justified?

Monetary Policy Setting and the Measure to Target Inflation

Globally, central banks mostly follow a 'core' measure of inflation for their interest rate setting. The core measure strips out the volatile components in the inflation basket; usually food and fuel prices. This stripped measure of inflation is easily available in most developed and developing economies. However, the non-existence of such a readily available data series in India prevents analysts and policymakers from formulating a "rational" policy response. Therefore, it is necessary to compute core inflation to analyse if the present restrictive monetary policy remains appropriate.

Construction of a "Core" Measure of Inflation

A core measure of inflation should fulfill two properties. First, it should adequately represent all sectors in the economy. Second, it should ignore transient components of inflation. The volatile components of inflation are food and fuel. The most widely watched indicators of inflation, i.e. WPI and CPI fail on the first filter. While WPI completely ignores the services sector or 55 per cent of the economy, it (services sector) is under-represented in the CPI (just 27% of total expenditures). Inadequate representation of services within WPI and CPI render these measures relatively useless for constructing a core-price index.

Private final consumption expenditure, excluding food and fuel, is the other option for developing a measure of core-

inflation. It is also the preferred measure of the US Federal Reserve Board. However, due to its lagged nature (last data point being 2004-05), its use is not feasible. The last alternative is to use the GDP deflator. By definition, this measure covers the entire spectrum of the economy, i.e. fulfils the first requirement. To satisfy the second condition, Agriculture (a proxy for food) and Electricity, Gas and Water (a proxy for fuel) are stripped out to arrive at the core GDP Deflator, i.e. one excluding food and fuel. Examination of Table 9b suggests that *core inflation* has stayed stable in the 3.5-4.0 per cent range from 2001-06 compared to an average of 6 per cent in 1995-2000. Even more critically, the standard deviation of core-inflation has declined precipitously from 1.8 per cent in 1995-2000 to 0.3 per cent in 2001-06.

Supply Shocks of 1998 and 2006—An Examination of Policy Response

There have been two episodes of food shocks in recent times—1998 and 2006. In 1998, food price inflation was running in double digits (see Table 9b); yet the RBI did not raise interest rates (stating that this action was unwarranted considering that the major contribution towards inflation was a supply shock). Short-term rates were also stable in the 8-9 per cent range. Compared to 1998, food inflation in the present year, 2006, has averaged close to 6.5 per cent or 250 basis points lower. But the response of the monetary authorities has been very different—short-term interest rates have risen by 100 basis points over the last twelve months. Further, the RBI has increased the cash reserve ratio (CRR) by 50 basis points in December'06. The present policy response represents a contrast to the one in 1998, and more so if the decline in core-inflation—by 350 basis points from 1998 to 2006—is taken into account.

Food Supply Shock of 2006—Transient or Permanent? An RBI Perspective

Some recent statements made by the RBI on inflation are as follows:

- In the latest annual assessment for 2005-06 (released in September, 2006) it has stated, “a core inflation measure is useful if a shock is temporary (or transient).”
- It has further mentioned that “primary food articles prices have emerged as the key driver of inflation during 2006-07 so far”; this in its Macroeconomic and Monetary Developments for 2006-07(released on October 30th, 2006).
- Finally, it has voiced concerns about the elevated level of headline inflation and also about “signs of demand pressures in addition to possible *transient supply* constraints in respect of primary commodities.” The last statement made during mid-term review of the Indian economy, 2006-07 (released on October 31, 2006).

Examination of last two statements suggests that the RBI treats the recent food inflation as a major, although a transient, component, contributing to the overall price rise in the economy. The first statement suggests that core inflation is useful during transient shocks. Thus, it would reasonable to assume that the RBI would be using a measure of core-inflation to react to the present food supply shock.

However, RBI continues to use the WPI as the preferred inflation measure (with its comfort zone at 5-5.5%). Thus, It is not clear if the RBI is designing policy for anchoring inflationary expectations for transient and/or permanent components of inflation. The available evidence suggests that the present food shocks are transient in nature due to increasing supply-side response. While both rice and wheat prices have risen over the last few months, land acreage allocations have also increased. Land acreage for rice is up by 14.7 per cent y-o-y while that for wheat has risen by 17 per cent as of November 2006.

An analysis of inflation components suggests the following. Both fuel and food have an expenditure weight of 15 per cent in the WPI basket. For 2006, the average food and fuel inflation was 2 per cent and 3 per cent higher than the average WPI inflation respectively. This implies an “*extra*” inflation of 0.75 per cent on account of both these components. With food and energy prices having stabilized (in fact oil prices have declined

by about US\$25/bbl from their peak at US\$80 in July 2006), the WPI forecast for 2006/07 is around 4.5 per cent.

A rising supply-side response, transient nature of food-shocks and stable core-inflation rate suggests that the argument for a restrictive policy remains weak and unsubstantiated.

Inflationary Expectations and Monetary Policy

Another critical element for analysing a monetary policy response is inflationary expectations. Given below are some leading indicators of global inflation, which form part of inflationary expectations.

- The U.S economy has slowed. The 3rd quarter growth was 2.2 per cent compared to 5.6 per cent in the 1st quarter for 2006. The slower pace of economic growth could be attributed to a slowdown in residential activity.
- Oil prices have declined from a peak of \$79.5/bbl in July 2006 to its present level of close to \$50.
- Core inflation, in both U.S and Euro area, is well behaved. In the Euro area, core inflation (CPI excluding food and energy) has been largely contained within the 1.4-1.7 per cent range. Similarly, core inflation in U.S (according to Federal Reserve's preferred measure i.e. core personal consumption expenditures), has stayed stable within the 2.1-2.4 per cent band over the last 2 years.

To conclude, evidence suggests that global (and anticipated) inflation is likely to have a downward bias in the coming months, considering recent data releases on growth, housing and energy prices.

Asset Price Inflation—A Right Measure to Target Inflation?

One of the most widely discussed subjects is asset price inflation and the role of central banks. Ever since Alan Greenspan's comments on "irrational exuberance" (5 December, 1996), central banks have considered this form of inflation as

an important “determinant” of monetary policy. However, subsequent to Greenspan’s comments, the U.S. stock market registered exceptional gains over the next three years, thereby hinting that it, the market, did not buy into Greenspan’s exuberance. The main reason for such an exceptional run was the productivity led growth in U.S from 1990 to 2005. This implied a check on inflation without compromising on growth. The key lesson—to distinguish between productivity led growth (and therefore a structural break) from a cyclical up-trend.

A similar situation exists in India today. The average real GDP growth for the last four years has been close to 8.5 per cent. Productivity levels are high. There is some merit in asset inflation but in pockets. Though equity markets have stayed elevated, their level is justified by the earnings growth (more than 25 per cent over the last three years) that Indian companies have registered. Not surprisingly, PE ratios have remained fairly constant (see Chapter 12). To conclude, evidence suggests that though there are pockets in real estate (Mumbai, Bangalore and Gurgaon) whose prices may have run-up more than usual, things do not appear to getting out of hand. Though some time and price based correction is not ruled out, the argument for targeting asset price inflation remains weak.

Finally, targeting asset price inflation involves the political economy. Recently, Frederic Mishkin (a Federal Reserve Board Governor) has suggested that monetary policy makers should restrict their efforts to achieving their mandate of stabilizing inflation and employment, and should not alter policy to have pre-emptive effects on asset prices. He has also stated that targeting asset prices can weaken its (the central bank’s) public support, making it harder for it to successfully conduct monetary policy to stabilize inflation and employment.

Indian Economic Growth: 1950-2006

Growth: An Overview

The Indian growth story since independence in 1947 is straightforward. Prior to 1980, Indian growth averaged less than 4 per cent per annum, and per capita growth less than 1.5 per cent per annum. GDP growth during both the 50s and 60s was the same, 4 per cent per annum. The next decade saw the average growth rate fall by a full percentage point to 3 per cent. This decade was a period of turmoil worldwide, with oil prices first quadrupling in 1973 and then doubling in 1979.

The 1980s was the first decade that India experienced above 5 per cent growth—actually, a high 5.6 per cent per annum. There is a debate whether the 1980s growth was sustainable, because the decade ended in a crisis in 1990-91, with growth of that year being an exceptionally low (3 standard deviations away), but still *positive*, growth of 0.9 per cent per annum. Since 1980, growth has averaged 5.8 per cent per annum, and per capita growth today is close to 7.2 per cent per annum. Excluding the crisis year of 1991-92, the lowest GDP growth rate observed in Indian economy since 1980 was 3.0 per cent, witnessed in 1982-83.

Despite major reforms in 1991/92, and continuous reforms since, there was no acceleration in GDP growth until 2003/04. Growth in per capita terms has increased from a range of 3.8-4.2 per cent in 1995-2003 to 6.8 per cent in 2004-06. This sudden acceleration presents policy makers with a key question. Is this behaviour consistent with a strong cyclical economy or does it indicate a structural break?

The economic crisis of 1990/91 led to the introduction of major economic reforms in 1991-93 by the new government led by Narasimha Rao and with Manmohan Singh as the finance minister. The reforms involved a 20 plus depreciation of the exchange rate, a very large reduction in tariffs, and a removal of quantitative controls on production and trade. The next three years, 1995-97 did show some acceleration in growth (0.6% over 1992-94) before falling back to 5.5 per cent in 1998-2000. The GDP growth rate for the three year period 1994-96 averaged above 7 per cent; the only three year period to have done so pre-2000. This acceleration seemed to be from the efficiency gains of reforms and was expected to continue; surprisingly, this did not happen and the average growth rate over the next seven years (1997-98 to 2003/04) averaged, with very low volatility, 5.54 per cent, only a whisker away from the twenty-four year average growth rate of 5.59 per cent a year!

Questions about Indian Growth Performance

This section discusses three questions regarding India's *growth* experience in some detail. First, what caused India's growth to *accelerate* in the early 1980s and second, what *prevented* India's growth from accelerating in the 1990s? The Indian story is about *both* factor accumulation, and productivity growth. Growth decelerated in the late 1990s due to continuance of both a tight monetary policy and high real rates of interest; such rates occurred because the government persisted with the nominal level of administered deposit rates despite world and domestic inflation falling by approximately 4-6 percentage points; keeping nominal interest rates fixed led to a sharp increase in the real cost of capital. This increase prevented GDP and productivity growth from maintaining the high growth levels of the early to mid-1990s.

A simple decade analysis of GDP growth suggests that (i) there was only a mild acceleration in India's growth rate in the eighties relative to the non-oil and international food price shocks years of 1950-1964 (and even including the domestic food shock years of 1965 and 1966) and (ii) that the average growth rate, post 1980s, and post major economic reforms,

stayed the same as the pre-reform decade of 1980s.¹⁶ Thus, there are two important questions that need to be addressed: first, what caused India's growth to *accelerate* in the eighties and second, what *prevented* India's growth from accelerating in the nineties. While there are several analyses of the first question, very few attempts have been made to answer the second. This chapter does both.

A review of research on India's growth can help put the debate about causation, and reforms, in perspective. Until the end of the nineties, all economic research on India (e.g. Virmani (1997), Ahluwalia and other papers in the Bajpai-Sachs volume (1999)) had highlighted the important causative role of 1991 reforms in accelerating India's growth. The first paper to highlight the constancy of India's growth rate post the 1970s was Bhalla et al. in Feb 2000.¹⁷ This paper entitled, "Start of India's decade," highlighted the fact that there was not one, but several "Hindu growth" constants. For example, the consolidated (state plus central) fiscal deficit of the Indian economy had stayed in a narrow range of 8 to 10 per cent for two decades. Or that India's money supply growth had never wandered much from an average growth rate of 17 per cent during the entire 20-year period.¹⁸ Or that, surprisingly, industrial production growth had also not wandered much beyond 7 per cent per annum.

Amongst the important conclusions reached in the 2000 paper: first, that fiscal deficit was high, constant, and higher than it "should" be because of the misguided policy of administered interest rates:

-
16. A decade wise analysis is okay since the dating of India's growth acceleration has converged onto the period 1979-81 (see Virmani (2003) for a detailed attempt, and Panagariya and Rodrik-Subramaniam).
 17. It is possible that other articles highlighted this fact before; the important point is about the nature of research and how "collective" its mind-set is i.e. until Bhalla (2000) (or another paper), no researcher had pointed to the lack of acceleration of growth post the 1991 reforms.
 18. The paper also pointed out that the volatility of money supply growth rate in India was the lowest in the world, and that the volatility of "no 2" (Thailand) was three times higher!

...the consolidated (state plus center) fiscal deficit has stayed constant around 9-10 per cent of GDP for the last twenty years. Abnormally high interest rates (no arbitrage with world rates possible because of a closed capital account) have resulted in higher cost of borrowings, and a higher proportion of interest payments for financing the fiscal deficit. As a share of GDP, interest payments have increased from 3 per cent of GDP in the early eighties to almost 8 per cent of GDP today; as a proportion of the fiscal deficit, the percentage is 35 per cent in the early eighties, and more than 75 per cent today. High interest rates are a major *cause* for the high fiscal deficits in India. (2000, p. 2).

The same paper highlighted the fact that despite major economic reforms, the Indian economy had failed to show any acceleration in the 1990s:

The Indian economy has been growing at a steady rate of 5.5 per cent to 6.5 per cent for the last twenty years—a fact ignored by most analysts. Excluding the crisis year of 1991-92, the lowest GDP growth rate observed in Indian economy has been 3.0 per cent witnessed in 1982-83. *In spite of continuous economic reforms, there has been no acceleration in the growth rate.* This presents a key question for both analysts and policy makers. (2000, p. 2, emphasis added).

Since the publication of this February 2000 study, a virtual growth industry analysing the failure of the Indian economy to accelerate, has developed. Several recent papers have also noted the paradox in India's growth and reforms story. Prominent in this debate are DeLong (2001), Panagariya (2004), Rodrik and Subramaniam (2004) and Virmani (2004). The quotes below highlight the concerns of these authors.

DeLong: "Since the late 1980s India does not look ordinary at all. It has been one of the fastest-growing economies in the world, with a doubling time for average GDP per capita of only sixteen years. Conventional wisdom traces the growth acceleration to neoliberal economic reforms implemented under the government of Narasimha Rao. Yet the timing of the growth acceleration suggests an earlier start for the current Indian

boom under the government of Rajiv Gandhi...There's lack of hard evidence to support the view that in the absence of the second wave of reforms in the 1990s, it is unlikely that the rapid growth of the second half of the 1980s could be sustained."

Panagariya: "At the same time, reforms played a significant role in spurring growth in the 1980s. The difference between the reforms in the 1980s and those in the 1990s is that the former were limited in scope and without a clear road map whereas the latter were systematic and systemic. This said, the reforms in the 1980s must be viewed as a precursor to those in the 1990s rather than a part of the isolated and sporadic liberalizing actions during the 1960s and 1970s, which were often reversed within a short period."

Virmani: "The growth performance of India since 1950 has been remarkably stable. Statistically, there are only two phases of growth during the 55-year history of modern India. The first phase, characterized as the 'Hindu' rate of growth (HRG), starts at independence (1947) and lasts to the end of the seventies. The second phase, which started in 1980-81, and characterized as the phase of the 'Bharatiya' rate of growth (BRG), is still going on, and has seen a sharp and statistically significant acceleration in the growth rate."

Virmani on why no acceleration in growth post the reforms: "Four reasons are found to be most compelling: Gaps in the reform process, the failure of public monopolies to provide critical infrastructure services like electricity and rail transport, the deterioration of government supply of public and quasi public goods (quantity and quality), and dissension within the ruling coalition/party/organization that undermine credibility of reform." (p. 75)

Rodrik-Subramaniam on why growth accelerated in the eighties: "India's growth transition began in the early 1980s rather than after the crisis of 1991. The performance of the 1980s appears to have been triggered by a perception on the part of the private sector that the government's attitude toward it had changed, a perception that was subsequently (in the mid-to-late 1980s), mildly validated by piecemeal reforms of the industrial licensing system. The attitudinal shift signaled by the Congress governments in the 1980s elicited a large productivity response."

Explanation of the Two Growth Puzzles

There are three aspects to the India story, aspects that collectively answer a large set of questions related to Indian growth. The first noteworthy fact is that the 1970s growth was significantly below trend—and lower because of essentially two factors, bad weather and bad oil prices. The average GDP growth rate for the three periods (1950-64, 1965-79 and 1980-85) is as follows: 4.3, 2.9 and 5.4 per cent. So the acceleration in the 1980s *relative to the 1970s* was 2.5 per cent per annum while acceleration *relative to the 1950s* was only 1.1 per cent per annum. In other words, there was not much acceleration in the early eighties that needed to be explained by productivity growth, a conclusion at some variance with the conventional wisdom. This is the second noteworthy fact about Indian growth.

The lack of acceleration in the 1990s, despite major economic reforms, is the third fact deserving explanation. Most of the economic reforms instituted in 1991-93 related to trade, and exchange rates. Growth should have been higher by at least 1 to 1.5 percentage point in the 1990s (relative to the 1980s). However, what one observes is not a 1 to 1.5 ppt acceleration but only a 0.3 percentage point increase. So, were the trade reforms ineffective? No, they were very effective, i.e. they raised the potential growth rate by more than one percentage point. What depressed the 1990s growth rate was a bad monetary/fiscal policy. Inflation fell in India (as in the rest of the world) and the government did not respond adequately (or at all) to this new phenomenon. Nominal deposit rates were left unadjusted with the consequence that real interest rates increased and proved to be the “other” side of financial repression (too high rather than too low real interest rates). Investment rates stayed constrained, profitability was dampened and somewhere between 0.4 and 0.8 percentage points of GDP growth were lost.

So what was the contribution, the value-added of the 1991 reforms? About 1.3 per cent extra growth per annum, if normal weather, and stable oil prices is the benchmark. It is not clear whether this is too much, or too little. For a “base” investment rate of only 23 per cent of GDP, this estimate is slightly better than what should have been expected. In that context, the 1991 reforms have to be considered a huge success.

The third fact demanding an explanation is the recent, most remarkable period in India's economic history: the sharp 2 to 3 percentage point acceleration in GDP growth since 2003/04. The acceleration in GDP growth during this period has been rapid. The average growth for 2003-06 averaged close to 8.5 per cent, the longest and the fastest period of expansion in India's economic history. Despite the sustained acceleration in GDP growth, skepticism remains. Most analysts and economists have doubted the sustainability of this higher growth citing lack of labour reforms, poor state of infrastructure and poor growth in agriculture.

India's growth in the last four years has been accompanied by several international and domestic factors. World growth during this period of 2003-06 averaged 4.9 per cent, registering one of the longest and fastest growth cycles. Another plausible explanation for this strong performance has been sharp recovery in global investment rates, especially in Asia post-2000. While investment rates in developing Asia recovered from 28 per cent in 2000 to around 36 per cent in 2006, investment rates in the rest of world have remain boxed within 20-25 per cent for the last fifteen years. Indeed, evidence suggests (as discussed earlier) that the investment rate in India is close to 38 per cent for fiscal year 2006/07, in line with the increase seen in regional investment rates. A high investment rate in India has been well supported by declining real interest rates. Indeed, industry has been the biggest beneficiary of this lower interest rate regime. Growth in industry rose at its fastest pace in 2004-06. While industry grew at 8 per cent for 2004-06, manufacturing growth was strong at around 9.1 per cent (see Table 10b). Services and Industry seem to have contributed close to 7.8 per cent for this period, with the remaining 0.6 per cent coming from agriculture.

The Growth Math

To conclude, evidence does suggest that the last four years have seen a structural break in growth. (Econometric structural break models place the turning point year as 2003/04). The new growth dynamics also suggests that the likely trend rate of growth is around 9.0 per cent. The inevitability of 10 per cent growth is more likely now despite politics and populism. Further,

future growth is more likely to be aided by strong growth in savings and investment rates. Extra growth from extra investment is likely to be 3 to 4 per cent. A consistent GDP growth math is as follows:

1. 6 per cent (before) + 3-4 per cent=9-10 per cent is trend rate of growth.
2. Alternatively: industry and services to grow at 11 per cent—yields 9 per cent GDP growth with zero growth in agriculture; or 9.6 per cent growth with 3 per cent growth in agriculture.

Figure 10a: Annualized Growth in GDP, Constant Prices, 1950-2006

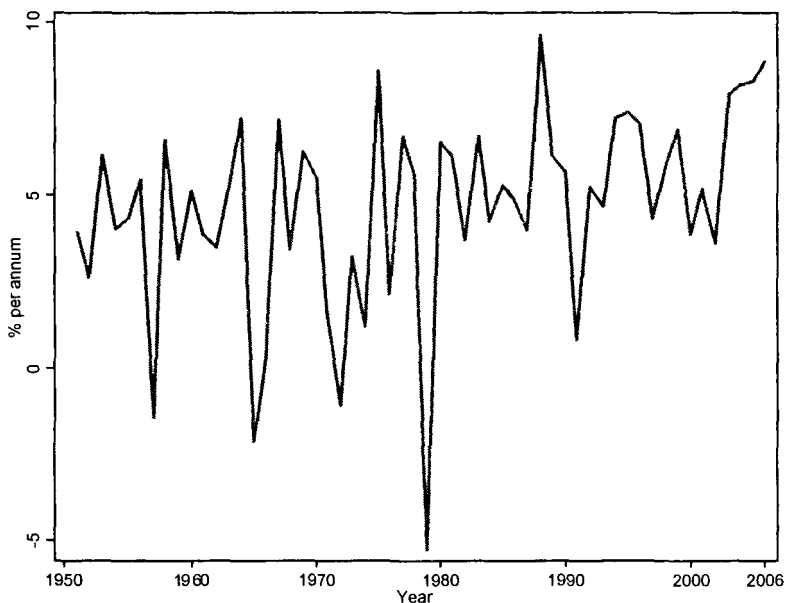


Table 10a: Growth Indicators (% change)

Period	Real GDP	Population	GDP Per Capita
1950-64	4.3	1.9	2.3
1965-79	2.9	2.2	0.7
1980-82	5.5	2.0	3.4
1983-85	5.4	2.1	3.3
1986-88	6.2	2.0	4.2
1989-91	4.2	1.9	2.3
1992-94	5.7	1.8	3.9
1995-97	6.3	1.8	4.4
1998-00	5.5	1.8	3.8
2001-03	5.6	1.7	3.8
2004-06	8.5	1.7	6.8
2003-06	8.3	1.7	6.7
2003	7.9	1.7	6.2
2004	8.2	1.7	6.5
2005	8.3	1.7	6.7
2006	8.9	1.6	7.2

Source: CSO & Oxus Research Database.

Table 10b: Sectoral Growth (all figures in %)

Period	Agriculture	Industry	Manufacturing	Services
1950-64				
1965-79	0.3	4.5	4.4	4.0
1980-82	5.5	5.8	4.8	5.1
1983-85	3.8	6.4	6.6	6.2
1986-88	4.1	7.9	7.4	6.6
1989-91	1.3	5.3	4.4	6.2
1992-94	4.9	7.0	7.8	6.1
1995-97	1.9	7.7	8.2	8.5
1998-00	2.1	4.4	4.7	7.6
2001-03	2.8	5.1	5.3	7.3
2004-06	2.4	8.0	9.1	9.8
2003-06	4.2	7.6	8.5	9.4
2003	9.5	6.4	6.9	8.1
2004	0.7	7.1	7.8	9.7
2005	3.8	7.4	8.6	9.8
2006	2.6	9.6	11.0	10.1

Source: CSO & Oxus Research Database.

Social Sector Performance¹⁹

This chapter reviews the social sector performance of the Indian economy. During the first three decades post independence, the Indian economy was essentially closed. The reforms of 1991-93 accelerated growth from a pre-reform level of 3 per cent per annum to a present level of over 8 per cent in the last few years.

Beginning with the economic reforms in 1991, there has been extensive discussion regarding the impact of reforms on the social sectors such as employment growth, unemployment, wage growth, etc. Some analysts²⁰ have suggested that despite higher growth, the economic reforms of 1991 were detrimental to social developments. These researchers have classified the post reform period as one characterized by low employment growth, high unemployment rate, increasing inequality and a declining pace of poverty reduction. In other words, the post reform period catered only to the non-poor, leading to higher inequality, increasing unemployment rate and low poverty reduction. This chapter evaluates the propositions of both the proponents and critics of economic reforms.

Employment Levels and Growth

One criticism of the economic impact of reforms is that such reforms failed to create jobs commensurate with the increase in GDP growth. Data²¹ from several official sources have

19. This chapter draws upon the detailed analysis presented in Bhalla-Das (2006).

20. See Sen-Himanshu (2004); Dreze-Sen (2001).

21. NSSO Employment Unemployment Survey conducted in years 1993/94 and 1999/00.

attempted to confirm this phenomenon.²² In particular, it is noted that organized sector employment has shown a severe decline in the pace of employment growth.

Often, analysts confuse overall employment growth with growth in the organized sector. The latter represents only 8 per cent of the total employment of the economy. Further, half of the employment in the organized sector is public sector employment, and hence not directly affected by the success or failure of economic reforms. Indeed, part of the goal of economic reforms is to decrease the share of organized sector employment in GDP.

Employment Growth 1972-2004

Table 11a we provide an overview on the long term trends in various indicators pertaining to the labour market. There were eighteen NSSO employment surveys conducted between 1972 and 2003, six of which were large sample surveys (1972-73, 1977-78, 1983, 1987-88, 1993-94 and 1999-2000) and twelve of which used smaller samples. Not all the surveys were conducted for the agricultural year, which extends from July through June. The center of this “benchmark” year is December. In Table 11a the “raw” weekly employment figures for those surveys that have a non-December center have been adjusted. For example, the 2002 survey was conducted from July to December and the 2003 survey from January to December. Employment between these two surveys grew at a rate of 4.1 per cent a year; so the adjusted level for December 2003 (the center of the 2003-04 agricultural year) is 400 million. In other words, if the 4.1 per cent growth rate had extended for another six months, the level of employment would have been 400 million rather than 393 million.

A long-term trend line is fitted to all (log) employment surveys since 1972 (Chart 11a). The average trend growth rate in employment for the 32 year period is 2.0 per cent per annum. As can be seen easily from the graph, this growth has stayed relatively constant, i.e. the pre and post reform employment growth rates are equal at 2.3 and 1.8 per cent per annum. There

22. According to the official figure the employment growth declined from 2.9 in 1983-93/94 to 1.1 in 1993/94–1999/2000.

Table 11a: Employment and Unemployment Situation in India (by Weekly Status)

Year	Labour force (mil)	Unemployed (mil)	Unemployment rate (%)	Employment	Employment*
27 (1972-73)	231	10	4.3	221	221
32 (1977-78)	245	11	4.5	234	234
38 (Jan-Dec83)	275	12	4.5	263	266a
43 (July87-June88)	296	14	4.8	282	282
45 (July89-June90)	317	11	3.5	306	306
46 (July90-June91)	328	13	4.0	315	315
47 (July-Dec91)	338	15	4.4	323	326 a
48 Jan-Dec92)	349	18	5.2	331	337 a
50 (July93-June94)	359	13	3.6	346	346
51 (July94-June95)	352	7	2.0	345	345
52 (July95-June96)	355	8	2.3	347	347
53 (Jan-Dec97)	363	9	2.5	354	356 a
54 (Jan-June98)	358	13	3.6	345	337 a
55 (July99-June00)	385	17	4.4	368	368
56 (July00-June01)	377	10	2.7	367	367
57 (July01-June02)	396	13	3.3	383	383
58 (July02-Dec02)	394	13	3.3	381	380 a
59 (Jan03-Dec03)	405	12	3.0	393	400 a
61 (July 04-June05)	440	20	4.5	421	421

Source: NSSO Reports on Employment and Unemployment available at (mospi.nic.in/stat_act_t14.htm).

Note: Indicates adjustment to original data to make the employment estimate conform to a July-June year.

are fluctuations (deviation around the trend), but it is remarkable how quickly the economy has come back to its long-term trend.

The short-term growth rate was only 1 per cent per annum between 1993/94 and 1999/00. This decline in the pace of growth is most likely due to measurement error. The “outliers” reveal this to be the case. Employment level in 1993/94 was 5 per cent *higher* than that of the trend rate of growth in contrast to the residual 2 per cent *below* trend for 1983. Most analysts have used the NSSO survey years of 1983, 1993-94, and 1999-2000 to derive implications about what happened not only between these survey years but also in the pre- and post reform periods. The uneven pattern of residuals is suggestive of the problems that can arise if just three data points are used to derive conclusions about employment growth. If 1983 is below trend and 1993-94 is above trend, then this means that growth is overstated for the pre-reform period by 0.7 per cent a year (7 per cent divided by ten years). Analogously, growth is understated for the 1993-94 to 1999-2000 period by 5 per cent over six years, or 0.8 per cent a year. The average annual growth rate (based on all the surveys available rather than just the large sample surveys) is 2.3 per cent for the pre-reform period and 1.8 per cent for the post-reform period.

Thus, the headline *decline* in employment growth rates between the 1993/94 and 1999/00 is not 1.6 (2.6 per cent a year pre-reform versus 1.0 per cent a year post-reform), but only 0.5 per cent (from 2.3 to 1.8%). The much-talked about jobless growth in the post reform period is actually job growth of 1.8 per cent a year, a rate not much different than the thirty two-year average of 2.1 per cent. As noted earlier, the 0.5 per cent annual decline in the rate of growth is, perhaps not coincidentally, exactly equal to a *minimum* estimate of a decline in labour force growth.

Labour Market: Structure

NSSO E&U surveys provide several details about the large transformation of the Indian economy. Some basic data for the Indian workforce since 1983 are reported in Table 11b. It indicates that the total employment in agriculture grew at a

Table 11b: Employment Situation in India

<i>Employment (million)</i>	1993/94			1999/00			2004/05		
	Rural	Urban	All India	Rural	Urban	All India	Rural	Urban	All India
<i>Agriculture</i>									
Male	135	6	140	136	5	141	140	5	145
Female	74	4	78	78	3	81	88	4	92
All	209	10	218	214	8	222	228	9	238
<i>Non Agriculture</i>									
Male	47	58	105	55	69	123	70	82	153
Female	12	12	24	13	14	27	18	19	36
All	59	69	128	68	83	150	88	101	189
Growth (%per year)									
<i>Agriculture</i>									
Male				0.2	-2.7	0.1	0.5	1.9	0.5
Female				0.7	-4.2	0.5	2.6	6.4	2.8
All				0.4	-3.3	0.2	1.3	3.8	1.4
<i>Non Agriculture</i>									
Male				2.5	2.9	2.7	5.1	3.6	4.3
Female				1.8	2.9	2.3	5.8	5.9	5.8
All				2.3	2.9	2.7	5.2	4.0	4.6

Source: Report No. 458, 516 on Employment and Unemployment survey published by NSSO.

Notes: All numbers are in as per weekly status. Work force participation rates in agriculture and non-agriculture are obtained by usual status definition, as NSSO do not publish these numbers according to the weekly status definition. Then the rates are imposed on the employment numbers by weekly status and employment for agriculture and non-agriculture are obtained.

pace of 0.2 and 1.4 per cent per annum during 1993/94 to 1999/00 and 1999/00 to 2004/05; the non-agriculture employment growth during this two periods was 2.7 per cent and 4.6 per cent respectively. The loss in agricultural jobs in the Indian economy has been made up by an increases in employment in services and production. In terms of employment growth, females were catching up with males at a significant pace. Job growth of rural females was 1.8 per cent and 5.8 per annum compared to male job growth of 2.5 and 5.1 per cent during 1993/94 to 1999/00 and 1999/00 to 2004/05. Job growth of urban females was 2.9 per cent and 5.9 per annum compared to male growth of 2.5 and 3.6 per cent respectively during 1993/94 to 1999/00 and 1999/00 to 2004/05. This shift indicates a structural change in the economy; a gradual transformation from an agrarian economy to an industrialized economy.

Unemployment

Several recent studies have concluded that the post reform period has been characterized by increasing unemployment rates.²³ While GDP growth may have maintained its earlier pace, or even mildly accelerated, slow employment growth was more the reality of the post reform period, and given India's high population and labour force growth, increasing unemployment rates were to be expected. This potentially and theoretically possible increase in unemployment was also viewed to be serious enough to warrant a policy response. This response came in the form of a major employment guarantee program. However as shown in Table 11c unemployment rates in the reform period except 1993/94 (weekly status) are not very different from unemployment rates in the pre-reform years.

The unemployment rate has remained constant since 1999/00 at 4.5 per cent. While rural unemployment rates (3.9) are lower than urban (7.0), the averages in pre and post reform periods are similar. The reason for such constancy despite impressive employment growth of 2.8 per cent per annum can

23. In particular, three Planning Commission studies, two authored by Gupta (2002a, 2002b), and the third the recently released "Mid-Term Appraisal of the Tenth Five-Year Plan" (2005).

Table 11c: Historical Unemployment Rates (%), by Weekly Status

Year	Rural	Urban	All India
1972	3.9	6.6	4.3
1977	3.7	7.9	4.5
1983	3.9	6.8	4.5
1987	4.2	7.1	4.8
1993	3.0	5.8	3.6
1994	1.6	4.0	2.2
1995	1.5	4.0	2.1
1997	1.9	4.5	2.6
1998	2.8	5.8	3.5
1999	3.9	5.9	4.4
2000	2.1	4.7	2.8
2001	2.7	4.7	3.2
2002	2.5	5.6	3.3
2003	2.4	5.0	3.1
2004	3.9	6.0	4.5

Source: NSSO Reports on Employment and Unemployment available at (mospi.nic.in/stat_act_t14.htm).

Note: Numbers in italics represent the thick survey rounds.

be attributed to the increase in the actual and potential²⁴ labour force participation rates. LFPR in year 1999 was 39 per cent and it has increased to 41 per cent in year 2004/05.²⁵ Urban female labour force participation also went up to 17 per cent in 2004 compared to 15 per cent in 1993. The growth of population in the working age group 15-59 was 2.3 per cent per annum for period 1991 to 2001. The collective impact of both the factors— increase in LFPR and working population—increased the pool of available workers thus resulting in zero change in the unemployment rate.

24. Potential Labour force is defined as the population eligible to participate in work force i.e. population between the age group 15 to 59 years. For details see Bhalla and Das (2006).

25. See Report on Employment and Unemployment Situation in India, 2004-05 published by NSSO.

Poverty, Education, and Frictional Unemployment

The relationship between poverty and unemployment is a controversial one. Some argue that the poor remain poor because they cannot find employment. Others argue that the poor are poor because they lack human and physical capital, not because they lack job opportunities or jobs.

There is an additional dimension—the relationship between education and unemployment. It has been argued that the jobless growth of the 1990s provided employment only for the educated rich; the uneducated poor were left behind. If so, then one should observe a strong negative relationship between education and unemployment, that is, the less educated you are, the more likely you are to be unemployed.

There is an alternative hypothesis about this particular relationship, which yields the opposite sign. With economic development, and especially with globalization, one should expect the more educated members of the labour force to search longer for “better” jobs. This hypothesis would imply that unemployment rates and education are positively related, that is, the rich have a much higher probability of unemployment than the poor. The NSSO data strongly support the latter explanation. In Table 11d the unemployment rates and education levels for various classifications of households is reported. The different patterns yield one very firm conclusion: the mean education level of the unemployed is very high and has been increasing over years. For the weekly status definition, the mean education attainment of the unemployed in 1983 was six years, almost two and a half times the mean education level of an average Indian. The story in 1999-2000 is no different: the mean education level of the unemployed increased to 7.2 years. Such individuals, in terms of education, are in the top 10 per cent of society.

Wages—Pre and Post Reforms

This section examines whether wage growth corroborates the evidence for the assumed deleterious effects of slower job growth. For example, a slower rate of wage growth in the post-reform years would be strong evidence that job growth in the 1990s was of a lackluster variety. Indeed, one important reason

Table 11d: Education and Unemployment, Weekly Status

	1983	1993	1999
<i>Unemployment (%)</i>			
Rural	3.5	2.7	3.4
Urban	7.3	5.9	6.1
All India	4.3	3.4	4.1
Poor*	4.5	3.2	4.5
Agricultural labourer household	5	3.2	4.3
<i>Mean education years of labour force</i>			
Rural	2.2	2.8	3.3
Urban	5.8	6.3	6.9
All India	3	3.6	4.2
Poor*	1.9	2.2	2.5
Agricultural laborer household	1.1	1.6	1.9
<i>Mean years of education of unemployed</i>			
Rural	4.9	6.3	6.1
Urban	7.9	9	9.1
All	6	7.3	7.2
Poor*	4.3	5.3	4.5
Agricultural laborer household	2.2	3.1	3.3

Source: Employment Unemployment Survey conducted by NSSO for years 1983, 1993-94 and 1999-2000.

Note: * The poor are defined as those with monthly per capita consumption less than the official poverty line.

why the finding of slow job growth was generally accepted was because some analysts pointed to a sharp decline in the rate of growth of wages (particularly the wages of unskilled agricultural workers) as evidence of “bad” reforms.²⁶ This evidence was deemed to be consistent with the associated “findings” that reform-led growth was lopsided, that poverty had not declined as fast as it had in the 1980s, and that reforms had caused an increase in inequality. There is only one source of data on wages of *all* workers: the NSSO E&U large sample surveys conducted in 1983, 1993-94, and 1999-2000.

26. Agricultural workers constitute a large fraction of the poor in the country and live in households whose primary, and almost exclusive, source of income is from labour.

If in the NSSO period II (1993-94 to 1999-2000) real wage growth rates are observed to be higher than NSSO period I (1983 to 1993-94), then one can reach the “safe” conclusion that wage growth was better in the post reform period. If the wage growth rate shows a decline in NSSO period II, then unless one knows what happened in the intervening five years (1988-89 to 1992-93), years, which overlap both the pre reform, and the post reform periods, there is little that can be said about pre- and post reform growth.²⁷ With these caveats, it is the case that the time profile of real wage growth, as revealed by the NSSO data, shows an unambiguous acceleration. Wage growth figures for all workers in India accelerated from an annual average of 2.5 per cent to 4.5 per cent (Table 11e). This wage growth pattern is consistent with annual GDP per capita growth, which rose from 3.0 per cent to 4.3 per cent over the same years. Per worker income growth also showed a sharp acceleration, from 1.6 to 4.7 per cent annually.

Table 11e: Growth in Real Wages

	1983 to 1993-94	1993-94 to 1999-2000
<i>NSSO data</i>		
Agricultural workers	2.6	2.6
Rural India	2.5	4.1
Urban India	2.4	4.9
All India	2.5	4.5
<i>National Accounts data</i>		
GDP, per capita	3.0	4.3
Private income	1.6	4.7

Source: NSSO Employment-Unemployment surveys conducted in years 1983, 1993-94, and 1999-2000, *Handbook of Statistics on Indian Economy, 2004-05*.

Thus, both the national accounts and NSSO survey figures are in close agreement that wage and income growth nearly

27. Some indication about what happened to wages in this intervening period is yielded by the data on agricultural wages; the AWI and CoC wage series reveal an annual growth rate of 0.7 and 3.1 per cent, respectively.

doubled after reforms. For agricultural workers, NSSO data suggest constancy in the rate of growth of about 2.6 per cent a year both before and after reforms. These twin findings—a large increase in the overall wage growth of workers and constancy in wage growth of the poorest agricultural workers—are at variance with the general belief that wage growth, especially of agricultural workers, collapsed in the post reform period.

Poverty and Inequality

Poverty and inequality estimates have been mired in controversy, especially in the post 1991 years when economic reforms were introduced. Several scholars have characterized the post-reform era as a low pace of poverty reduction and pervasive increase in inequality.²⁸ The official headcount ratio was 44 per cent in 1983, came down to 30 per cent in 1993/94 and further reduced to 26 per cent in 1999/00. The figure for 2004/05 as revealed by the 61st round, is 22 per cent according to mixed recall period and 28 per cent according to the uniform recall period (Table 11f). Estimates for 1999/00 are not considered credible because of the change in questionnaire design in 1999/00 and inferred to bias the consumption upward.

Table 11f: Headcount Ratio

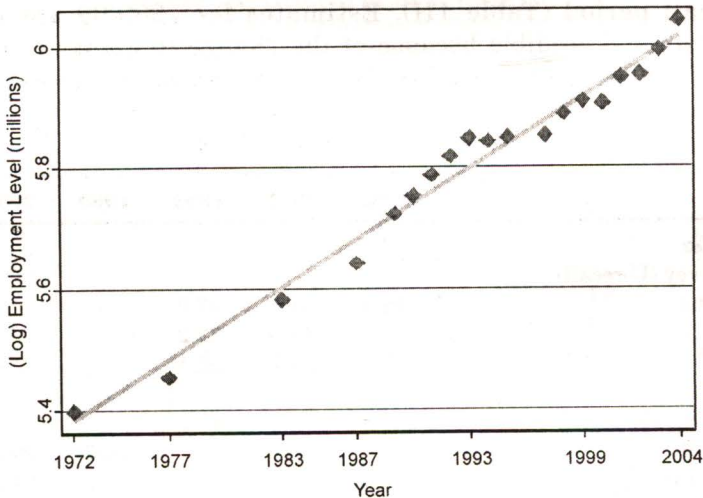
	1983	1987	1993	1999	2004
<i>India</i>					
Survey (U recall)					
Rural	46.3	39.5	37.0		
Urban	43.4	40.6	33.2		
All India	45.7	39.7	36.1		28.0
Survey (M recall)					
Rural				26.6	20.0
Urban				24.3	24.1
All India				26.1	21.2

Source: NSSO, Consumer Expenditure Survey conducted in 1983, 1987-88, 1993-94 & 1999-00; NSSO report on consumer expenditure, number. 508

28. See Deaton and Dreze (2001); Sen and Himanshu (2004).

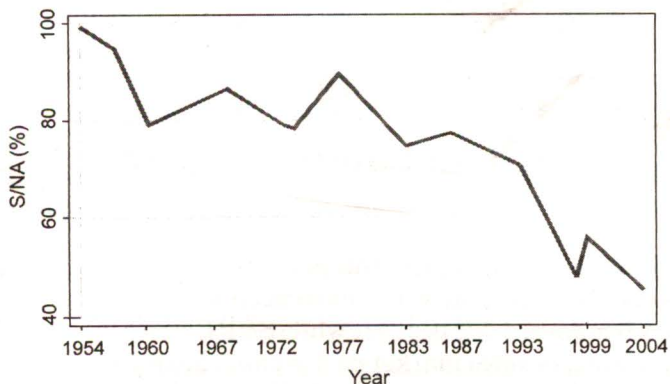
The estimates for the other years are also not that reliable; this for the simple reason that the average consumption captured by the NSSO surveys has been growing at a considerably lower rate than the average consumption revealed by national accounts. In 1983, the NSSO survey captured 75 per cent of the consumption expenditure reported in national accounts document. This ratio declined to 65 per cent in 1993/94 and fell to 55 in 1999/00 and has declined further to 47 per cent in 2004/05. This means that in the last 11 years (1993/94 to 2004/05), mean consumption growth in the NSSO surveys has been *underestimated* by almost 3 per cent a year! If just the growth in average expenditures had been accurately captured by the NSSO surveys, then the official poverty rate in India in 2004/05 would have likely been under 10 per cent.

Figure 11a: Employment 1972-2004



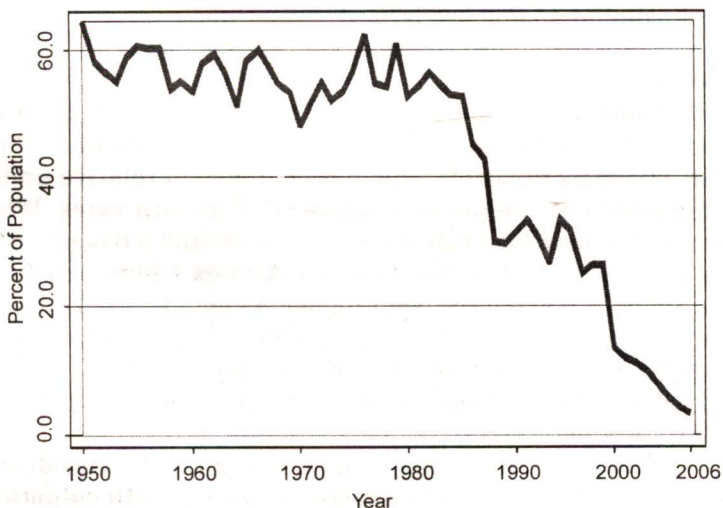
Source: NSSO, Employment & Unemployment Survey, Various Years.

Figure 11b: Survey to NA Ratio



Source: NSSO Consumer expenditure survey since 1954 to 2004/05; National Accounts data published by CSO, Government of India.

Figure 11c: India: Headcount Ratio, with 1987 Survey/NA Ratio



Note: The computation is based on the survey national accounts ratio of 1987. The consumption are inflated by the survey national accounts ratio of 1987 to compute headcount ratio.

Indian Equity Markets

This chapter analyses the performance of Indian equity markets. The last four years have been exceptional. The BSE Sensex has gained 308 per cent while S&P CNX Nifty has gained 262 per cent. Several market participants have voiced concerns about the elevated state of the Indian stock market. Indeed, they have argued that valuations remain stretched and therefore the Indian equity market is overheated. This is analogous to the argument about overheating of the Indian economy, a conjecture rejected by our analysis in the previous chapters. The question remains—Is the stock market overheated at 13,000 levels?

Despite economic reforms, the stock market did not go anywhere during the 1990s. Indeed, it remained boxed between a 3000-6000 range for over a decade (1993-2003). In contrast, other comparative Asian indices appreciated by around 50 per cent. The most plausible explanation, for such relative under-performance, is offered by relative GDP growth rates. While the average economic rate for India was around 5.6 per cent for the period 1992-2002, the same for Asia-ex China and India was almost a percentage point higher. As noted earlier, a sharp rise in real interest rates during 1996-99 killed the growth acceleration seen during 1994-96 (of above 7% GDP growth) and this contributed significantly towards under-performance of the stock market.

The explanation offered by high real interest rates during the latter half of the nineties is also consistent with valuations becoming more expensive or unattractive based on most stock market metrics, be it discounted cash flow or forward price-earning ratios (P/E). While P/E ratios (for Sensex) averaged around 28x during 1994-96, the dividend yield of 1.1 per cent was unfavorable compared to a risk-free 10-year rate of 13 per

cent. Similarly, the P/E ratio for Sensex stocks averaged 15x for 1997-99 while dividend yields for the same year were around 1.6 per cent, and nominal 10 year bond yields averaged 12 per cent. Clearly, fixed income alternatives for investors were a lot more attractive than equities during the mid-to-late nineties; this was an important reason for relative under-performance of Indian equities.

Table 12a documents earnings and prices for the 30 Sensex stocks indexed to a 100 in 2003. Note the severe undervaluation of stocks during the high interest rate period—1996 to 1998. Only in 1999, and mostly due to the internet boom along with increased importance of software in Indian industry, the index of earnings and prices were at comparable levels. Since the beginning of the bull run in 2003, prices have moved in a linearly manner to earnings. The most liberal estimate of overvaluation

Table 12a: Indian Stock Market and Corporate Earnings Growth

Year	Level of Sensex	Index of Sensex (Price)	Index of Sensex (Earnings)
1991	1909	32.7	28.1
1992	2615	44.8	26.7
1993	3346	57.3	30.4
1994	3927	67.3	27.8
1995	3111	53.3	46.5
1996	3085	52.8	72.0
1997	3659	62.7	87.8
1998	3055	52.3	84.6
1999	5006	85.7	89.4
2000	3972	64.9	58.2
2001	3262	55.9	63.2
2002	3377	57.8	70.4
2003	5839	100.0	100.0
2004	6603	113.1	111.0
2005	9398	161.0	170.6
2006	13475	230.7	204.1

Source: Capitaline, BSE India, Oxus Research Database.

Note: Index for Price has been computed using BSE Sensex as the benchmark; both price and earnings are the average for each fiscal year.

of the stock market in 2006 is about 10 per cent—difference between the index of earnings and stocks prices, indexed to 100 in 2003/4 and assuming the market was fairly valued at 5800 in 2003.

A significant feature of the bull run has been inflows by global institutional investors (see Table 12b). The confidence of global institutions is also strongly supported by the advanced nature of the Indian stock market. By international standards, the Indian equity markets have state-of-the-art market mechanisms used in trading, clearing and settlement. Introduction of single stock futures, ahead of even the U.S., suggests rapid progress in terms of financial products and financial deepening of the market. Such a strong trading and regulatory mechanism provides a comfort level to global institutions.²⁹ Evidence further points to continuation of such future inflows as Indian equities remain under-owned (like most Asian markets excluding China). According to the latest data from Investment Company Institute (US), total net assets of global institutions in India equalled \$50 billion as of 2006Q2.

Table 12b: Indian Capital Flows (all figures in US\$ Mn)

Year	FDI	FII
1991	129	4
1992	315	244
1993	586	3567
1994	1314	3824
1995	2144	2748
1996	2821	3312
1997	3557	1828
1998	2462	-61
1999	2155	3026
2000	4029	2760
2001	6130	2021
2002	5035	979
2003	4322	11377
2004	5652	9315
2005	7751	12492

Source: RBI.

29. Global institutions refer to members of National Mutual Fund Associations, European Fund and Asset Management Association.

This represents less than 0.3 per cent of their total asset base invested globally. Several European countries like Austria and Sweden have more than 2-3 times that amount (though a lot lower level and also growth in GDP-PPP terms). Even Korea has more than 5 times the total assets deployed in India by such institutions. Such an anomaly is unlikely to persist for very long and more so if the structural break story holds true.

Fundamentals Remain Strong Through Valuations Slightly Ahead

While the present growth period of 2003-06 has been exceptional—with average GDP growth of more than 8 per cent—the structure of Indian balance sheets has also improved dramatically. As illustrated in Table 12c, the most noticeable shift, in the financial performance of Indian firms, is revealed by the secular decline in leverage ratios. The debt-equity ratios for top 177 firms show a decline from 0.9 in 1997 to around 0.4 in 2005. By the same measure, share of interest payments in earnings before interest and taxes shows a decline from 34-11 per cent. Similarly, savings generated through lower interest rates have added to cash reserves; cash to total assets more than doubled from 6.8-14.8 per cent. On the profitability side, return of net worth increased from 13-20 per cent, net profit margins expanded by 400 basis points to 13 per cent in 2006 while operating profit margins increased by 300 basis points.

Also noteworthy is the present capital expenditure (capex) cycle which has seen unprecedented growth (see Table 12d). This has been accompanied by growth in non-food and industrial credit. While growth in capital expenditure has been around 65 per cent for the sample set of 177 firms, non-food credit growth has been strong at around 29 per cent. A strong capex cycle, perhaps, offers the most plausible explanation for near V-shaped recoveries (despite headwinds such as U.S housing slowdown) seen in Indian stock market during October 2005 and May 2006.

Strikingly, the present growth in corporate earnings has been without leverage. Such earnings have grown at an average of more than 25 per cent for each of the last 3 years (Chart 12a). While the Sensex has risen quite sharply post 2002, the

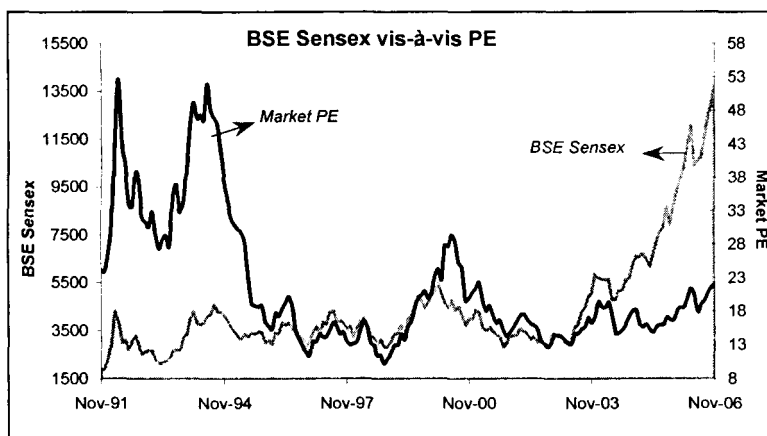
Table 12c: Financial Performance of Indian Corporates, 1997-2005 (all levels in Rs '000 crores)

Particulars	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
P&L Data									
Sales	171.7	181.8	205.6	233.2	261.6	290.7	346.1	427.7	492.6
% Growth	5.9	13.1	13.4	13.4	12.2	11.2	19.0	23.6	15.2
Expenditure	144.4	152.2	173.0	195.6	217.5	243.5	286.0	350.6	413.5
% Growth	5.4	13.6	13.1	11.2	11.2	11.9	17.4	22.6	17.9
Depreciation	8.3	10.0	11.3	12.7	14.8	15.3	16.4	17.9	19.0
PBT	18.9	19.5	21.3	24.9	29.2	31.9	43.6	59.2	60.2
% Growth	3.1	11.2	9.3	16.6	17.5	9.3	36.7	35.7	1.7
Interest Cost	9.7	11.2	11.6	12.3	11.9	10.0	8.7	8.1	7.6
Tax	4.4	4.6	5.0	5.5	6.1	7.9	9.9	14.7	17.8
PAT	15.2	13.5	15.4	21.4	20.8	26.8	38.8	54.5	61.5
% Growth	-11.2	13.7	13.7	39.2	-2.6	28.7	44.7	40.6	12.9
Bal Sheet Data									
Share Capital	19.4	19.8	20.8	20.7	21.2	21.3	21.8	22.9	25.9
Net Worth	117.6	127.8	140.0	155.3	166.0	181.0	205.7	248.8	305.5
Debt	104.9	108.4	101.3	102.6	109.0	105.4	101.9	106.3	117.8
Cash & Cash Equivalents	15.0	18.4	15.2	19.2	21.5	22.2	33.5	58.2	62.7
Total Assets	222.6	236.2	241.3	257.9	275.0	286.4	307.6	355.0	423.3
Ratios									
Interest/EBIT	34.0	36.6	35.3	33.0	28.9	23.9	16.6	12.0	11.3
Depreciation/Total Exp	3.8	4.3	4.7	4.9	5.4	5.3	5.3	5.0	4.5
PAT/Net Worth	12.9	10.6	11.0	13.8	12.6	14.8	18.9	21.9	20.1
Tax/PBT	23.5	23.7	23.3	22.2	20.9	24.8	22.8	24.8	29.5
Cash/Total Assets	6.8	7.8	6.3	7.5	7.8	7.7	10.9	16.4	14.8
Debt/Equity	0.9	0.8	0.7	0.7	0.7	0.6	0.5	0.4	0.4

Source: Capitaline.

PE ratios have remained well contained, primarily due to high growth in earnings. A sustained increase in the stock prices seems to be consistent with the growth in earnings over the last 3 years and is likely to sustain over the next several years.

Chart 12a



Source: Bombay Stock Exchange.

Table 12d: Capex and Industrial Credit

Year	Capex*		Credit to Industry	
	Rs. billion	Growth -yoy(%)	Rs. billion	Growth -yoy (%)
1996	335.4	25.6	1249.4	22.1
1997	481.9	43.7	1385.5	10.9
1998	340.0	-29.4	1610.4	16.2
1999	260.3	-23.4	1790.0	11.2
2000	272.7	4.8	2001.3	11.8
2001	428.3	57.0	2188.4	9.3
2002	257.1	-39.9	2295.2	4.9
2003	324.8	26.4	2955.6	28.8
2004	450.2	38.6	3130.7	5.9
2005	871.5	93.6	4268.9	36.4
2006	-	-	5490.6	28.6

Source: Capitaline.

Note: * Calculated from a set of 177 firms.

**Table 12e: Stock Market Returns and other Growth Indicators
(YoY Growth in %)**

Year	Equity Returns	GDP	IIP	Call Rates*
1992	37.0	5.3	2.3	14.4
1993	27.9	4.9	6.0	7.0
1994	17.4	7.5	9.4	9.4
1995	-20.8	7.6	13.0	17.7
1996	-0.8	7.4	6.1	7.8
1997	18.6	4.5	6.7	8.7
1998	-16.5	6.0	4.1	7.8
1999	63.8	7.1	6.7	8.9
2000	-24.2	4.0	5.0	9.2
2001	-14.0	5.3	2.7	7.2
2002	3.5	3.6	5.7	5.9
2003	72.9	8.3	7.0	4.6
2004	13.1	8.5	8.4	4.7
2005	42.3	8.7	8.2	6.9
2006	43.3	9.2*	10.9	5.7

Source: RBI.

Note: * Nominal Interest Rates.

Conclusions

When economic growth is restricted to a more conventional business cycle and range, it is a lot easier to predict. A favorite method of prediction is a *regression towards the mean* model. However, when an economy is undergoing a transformation, such prediction models fail, and fail because they *assume* no structural change. This assumption introduces large errors in the forecasts, with the consequence that forecasts then have to be frequently revised and ratcheted upwards. Such a revision in estimates occurred in the 1960s when the Japanese economy was undergoing a structural transformation (not unlike India at present). At that time, most estimates/forecasts by participants were revised upwards, on a consistent basis, for several years. Another example is provided by China in the 1990s (or more specifically from 1992-96) when it witnessed a sharp acceleration in growth and an adjustment in forecasts.

A simple model to assess structural breaks (without using any econometric sophistication) is to compare the consensus estimate of GDP growth (from various multilateral institutions, central banks and investment banks) with the actuals. If there is a consistent bias in the estimates vis-à-vis actual figures (either upwards or downwards), then it is reasonable to expect that some information (structural in nature) has not been captured in the models used.

An Alternative Method for GDP Forecast

Examination of forecasts by various participants suggests a strong possibility of a structural break in India around 2003/04. India's GDP growth estimates have been revised

upwards, time and again, over the last 3 years. In Table 13a the consensus forecasts for a sample of leading forecasters—IMF, ADB, RBI and Morgan Stanley—is examined. Two sets of errors are possible because for each year, two separate forecasts are made: initial and revised. These two errors (actual minus initial forecast and actual minus revised forecast) provide two estimates of errors for the present year, 2006/07.

Over the last 3 years (from 2003-05), mean forecasting error for both sets of forecasts are the same: an underestimate of GDP growth of 2 per cent per annum. Thus, if one adds the mean forecasting error (2%) to the mean consensus estimate of 7.7 per cent for 2006/07, *one obtains 9.7 per cent as the GDP forecast for the current fiscal year*. This forecast is also close to our central forecast of 9.3 per cent for 2006/07. Note that the from the figures in the table we can see that while most forecasters were searching for a deceleration in GDP growth over the last 3 years, this deceleration has not happened. This strengthens the argument that maybe it is different this time. And maybe, rear window economics may not be as helpful in explaining growth as it has successfully done so in the past.

Chart 13a: Savings and Investment, (% of GDP)

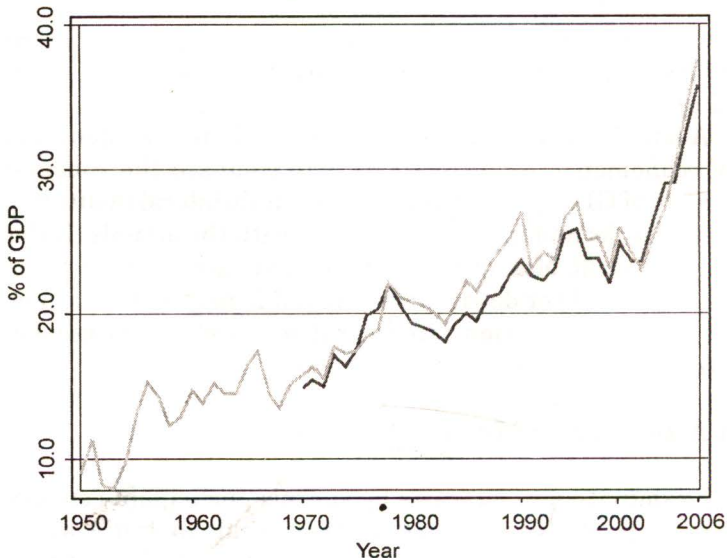


Table 13a: Alternative Model for Identifying Structural Breaks (all figures in %)

	2000	2001	2002	2003	2004	2005	2006#
Actual-Real GDP	4.0	5.3	3.6	8.3	8.5	8.7	
WEO-Initial	6.3	5.6	5.5	5.1	6.8	6.7	7.3
RBI-Initial			6.25	6	6.75	7.0	7.8
ADB-Initial	7.0	6.2	6	6	7.4	6.9	7.6
Morgan Stanley-Initial		5.7	5.6	5.3	6.4	6.4	8.1
Average	6.7	5.8	5.8	5.6	6.8	6.8	7.7
WEO-Revised	6.7	4.5	5	5.6	6.4	7.1	8.3
RBI-Revised			5.25	6.75	6.25	7.25	8.25
ADB-Revised	5.7	5.3	4	6	7.6	6.9	7.8
Morgan Stanley-Revised			4.2	6.2	5.5	6.6	8.4
Average	6.2	4.9	4.6	6.1	6.4	7.0	8.2
Mean Forecasting Error- Initial				-2.7	-1.7	-2.0	
Mean Forecasting Error- Revised				-2.2	-2.1	-1.7	
				<i>Mean forecasting error is same (2%) in both sets - initial and revised</i>			
Model Forecast							9.7
<i>(Mean Forecasting Error-Initial / Revised)</i>							

Source: Annual monetary policy statement, RBI; World Economic Outlook, various Issues, Annual and Mid-Term Reviews, Asian Development Bank and Morgan Stanley

Note: In case of RBI, average of its estimate range has been considered as the central forecast for the above model.

Comments on the Review by the Discussants

Dr. Omkar Goswami*

I tend to agree with most things said by Professor Bhalla. Frankly I do agree with his general conclusion, but I think we are at a crossroads, we are at a point of inflection and it's quite possible for India—I am not certain about the 10 per cent growth—it is quite possible for India to increase its growth rate from the current 8.2 per cent Compounded Annual Growth Rate (CAGR) of the last 4 years including this year. I am assuming this year we are going to reach 8.2 to 8.3 per cent. It is definitely possible to raise that to the 9 per cent range or even a little above 9 per cent and it's very much—I think for the first time in the history of India—it is very much within grasp. The reason why I state this is because I have never, over the last 25 years that I have pretended to observe the economy, seen an entrepreneurial energy and an entrepreneurial capability in India that has been evident to me over the last 5-6 years. I think it is a new entrepreneurial capability within a global canvas, and I am not talking of Ratan Tata buying Corus. It's a completely global 'can do, will do, will deliver' entrepreneurial class which believes in scales, is not worried about global competition—in fact relishes it—wants to go across and have footprints elsewhere.

This class is very different from the Bombay Club, which happened in the nineties, very different from when I was the Chief Economist at CII where everyone used to come around and ask, 'How can we have more anti-dumping duties against China'? Many of you may remember that phase. Today, it's a totally different phase and I believe that enormous animal spirit can actually deliver us.

* Dr Goswami is Director, CERG, the Corporate and Economic Research Group.

Let me express a few things that deeply worry me. Let me share with you some hard cold micro-facts. India has been going around touting the highway programme, a programme that we have been touting to be successful, and let me prove to you with facts how much of a failure this is, by going into the detailed numbers which the National Highway Authority themselves come out with, by tracking those numbers over the years. The so-called golden quadrilateral—the highway network that links Delhi, goes to Jaipur, comes down via Ahmedabad to Bombay, then goes down via Bangalore to Chennai, and then goes up the coast to Calcutta, and then, through Kanpur comes back to Delhi—totals 5,846 km. Do you know there was never a shortage of money because right from the word go, the Vajpayee government had put a cess on petrol and diesel in order to finance it. The golden quadrilateral was supposed to have been completed in December 2003. The goal-post was shifted to December 2004. It was then shifted to December 2005. Today (i.e. November 2006) we still have 6-7 per cent uncompleted. We are not even looking at six laning in this. Ninety-five per cent of it is just two to four lanes. And we still have 6-7 per cent left to complete and we will miss the 2006 deadline.

The second phase of the highways project, the north-south-east-west corridor—Srinagar to Kanyakumari, and Jorhat all the way down to Dwarka—totalling 7,400 km, has only achieved 15 per cent of its target. The deadline for completion was December 2006, later changed to December 2007, yet only 15 per cent has been completed. There is no way, at the rate at which tendering is proceeding that it will be completed even by 2010. Three hundred and twenty km of the network has to be completed to connect the main ports to the golden quadrilateral and to the north-south-east-west corridor. Only 100 km of these 320 km has been completed. So while the ports have improved—believe it or not, ports have improved—nothing has shown up in better container movement, because the linkage between ports and highways has not happened.

This is the state of the roads, and do you know this is not because of financing. The National Highways Authority of India (NHAI) has more than enough money. It is amazing that over the last four months no significant tender has come out of NHAI,

because for any significant tender to be considered, the honourable minister for surface transport wants to have a look at the files.

Now the whole idea about the roads going forward is the idea that all of this can be done by PPP (public-private partnership), so you have 3 more phases of the roads. You have the National Highway Development Project (NHDP) phase I, which is the golden quadrilateral of about 5,846 km; you have NHDP phase II with about 7,500 km which was the north-south-east-west corridor; you have NHDP phase III which is 40,000 km and which is basically linking the national highways to state capitals, of which 4,000 km has been tendered, but there is still a lot left to be done. Then you have several other NHDPs. You have NHDP phase 6, which is going to take the four lanes of the golden quadrilateral and make them six lanes, and so on and so forth. Now the whole idea behind the NHDP phase II is that most major roads are going to be made via the PPP, and basic concept behind the PPP is the BOT—build, operate and transfer, either based on ownership or based on the annuities systems. I am giving you these because at the end of the day growth is a series of accretions of micros. So I am giving you some micros.

Now, the idea is that today's model concession agreement, it's called the MCA, is apparently in the minds of the policy makers, that everyone will be lining up left right and centre in order to avail of 20 year concessions and build highways. Let me give you an example of perhaps the most successful toll expressway built in terms of execution, design and in terms of linking the best part of India to another best part of India, another really fantastic part of India. And that has to be the Delhi-Noida-Delhi (DND) flyway, right? You couldn't get a better linkage than linking Delhi with Noida. You surely couldn't have got a better place to get a good estimate and a good fix of revenue and therefore profits. It didn't overshoot time. For the first four years, DND as a company made accumulated losses of 116 crores, despite having perhaps the most attractive concessionaire agreement in the history of tolling in India and probably in the world. It made accumulated losses of 116 crores. It had to go back, to all its creditors to reschedule its loans, because, leave alone not being able to repay its principal, it

couldn't even repay interest. It's only in the last year that it made profits. Now, here is the question. The model concession agreement which is going to provide toll roads between small parts of states to state capitals, where it is heinously difficult to predict traffic, based on which bids are going to be made, the upper bound of these concession agreements on toll is going to be 40 paise per km. Now Rs.2/km was the premise for the Delhi Noida Delhi toll for four years. At 40p/km how do you expect these concession agreements to take place? So that's the road situation.

Let me now give you an idea of the energy and power situation; 12.5 per cent is the shortfall as of now between peak demand and supply. It really doesn't matter, will be the stock reply, we have only gone down a bit, say from 13.5 to 12.5. But very few countries can claim a CAGR of over 8 per cent and have this kind of consistent shortfall in power. So it's 12.5 per cent today. Here's an example. How many of you remember a wonderfully glorious document that was produced in 2001 under the Vajpayee government, end of 2001, claiming power for all. Do you remember this document? It was a big fat document entitled 'Power for All' which (given the incredible level of detail that the Planning Commission can go into, quite often on mythical things), actually did enormous detailed work right down to the level of districts, on how much incremental capacity was needed. 'Power for All' meant assessing the quantity every consumer in India, every village in India, every urban consumer in India, every factory in India would require between 2002 and the end of 2011, which amounted to an extra 100,000 megawatts of power. Today we are already approaching 2007, and yet how many additional megawatts of that 100,000 megawatts has been created between 2002 and 30th Sep 2006? Eighteen thousand only! And one is expected to believe that in the remaining period, the other 82,000 megawatt capacity will be provided.

India is the only country where 70 per cent of the firms in the manufacturing sector have to invest in their own gensets (power generating sets). So we've a power constraint of the highest order. We have seen absolutely nothing happening except big talk about 4,000 megawatt power stations where there is going to be no oftake because it is easy to realise that a

4,000 megawatt power station will simply not be able to oftake its supply on to the grid because the grid will not be able to wheel it out somewhere else. So that's the state of power.

I want to elaborate on one more thing, which is, I think of a lower order. Let me start with the premise that I am completely positive about Prof. Bhalla's conclusion. We are on the threshold of at least getting 9-9.5 per cent growth. Maybe 10 per cent too, it is quite possible. We are looking at the greatest entrepreneurial energy that I think any one of us has seen in our history. Even more interesting to me is that if you were to track quarter-on-quarter growth over the last seven years, growth of industrial production and growth of manufacturing, and of services, it's fascinating, because services have always remained in the 8 to 9 to 10 per cent range. Manufacturing has gone up. It's just been going up and I am thoroughly impressed by the way in which Indian entrepreneurs in services certainly, but much more so in manufacturing, are producing the kind of outputs we are witnessing.

Rural India accounts for 52 per cent of the country's net domestic product and there are over a hundred districts in rural India which have asset amenity and spending patterns not statistically different from urban India. Rural has morphed and is morphing in a phenomenal manner. It's all there. But if you were to just look at this one constraint—roads, power, multimodal transport, railways, civil aviation, although this latter will be alright, we are exactly in the situation in civil aviation that China was 10 years ago, before Pudong airport came. But I do believe that these are constraints. One more constraint that one would worry about enormously in policy making and in governance is that if you were to look at the *assets amenities in the hands of the households*, as well as the real consumption patterns of households across every district of rural India and the district data on asset amenities in the 2001 census, what you are actually seeing is this chilling validation of that casual statement that an economist made I think in the 1980s on the east and west of Kanpur. It's a very, very chilling validation actually. He observed that one could draw a longitude through Kanpur and one would find that the districts which are standard deviations better than average almost invariably happened to be on the longitude to the west

of Kanpur and those that are worse, barring one or two, happened to be almost invariably to the east. The correspondence between districts which are 1.5 standard deviations worse than the mean, and Maoist insurgency, is almost eerie. Barring a few districts in the west, it's almost entirely red districts, red also in terms of how poorly-off they are. And I think one of the issues we do need to think from a governance point of view is that if we get the kind of growth that we are talking about, how is it going to ensure that the east falls less off the map than it already has?

Shubhashis Gangopadhyay*

I agree with the speaker, Prof. Bhalla's conclusion, although I agree for reasons different from those given by him. Let me very briefly summarise what he said and those point where I am in complete agreement with him. He talked about institutions. He said that institutions in particular are not that important for growth. I seriously differ as I believe that one of the basic things or the basic changes that took place in the Indian economy in 1991 were that individual enterprise, free enterprise and resources, individual resources, all these things were given greater emphasis in changing the economy than the views of a group of wise men or you know some expert somewhere sitting down and trying to decide how the country should grow. And that was a huge change in the mindset or at least in the systems that were put in place. So in that context if you look at what is happening to institutions all over the world or has happened to institutions all over the world, institutions change only when there is a demand for that change. One does not observe the role of institutions till they hit you as a constraint.

In that context, certainly in India today, we are talking about institutions simply because people want to grow and these earlier institutions, traditions, norms, have been seen as barriers to this urge to grow, and so people want to change them. It's not clear whether institutional change leads to growth

* Dr. Shubhashis Gangopadhyay is Director, India Development Foundation.

or the desire to grow. It is when the economy bursts at the seams that institutions change. I think the fact that we are a democracy, this ability to tell the policy makers that we need to change, that ability is much more magnified when in a democracy the information flows, there is a free press, etc. So obviously democracy in that sense should be an advantage rather than a disadvantage for changing institutions.

On infrastructure somehow, what the speaker had referred to was at an aggregated level. He also mentioned China and he mentioned the fact that it was 1978 when China started its reforms and re-started them around 1991. To add to that argument it is interesting to see that one of the biggest criticisms that we've had against India both internally as well as externally, is that India does not encourage foreign investment. It is interesting to see that if we look at the data on China—China really allowed foreign investment to come in around 1983, when there was significant foreign investment coming in. The second thing that happened is that between 1993 and 1994, China's increase in foreign direct investment was exactly three times the amount of the year before. So clearly it's not a linear increase. The other mistake is to think that foreign investment leads to growth. It's exactly the other way round. If you have stable growth for a long time, you attract investment. So we are being unnecessarily critical about what the Indian scenario is like, when it comes to foreign investment. Added to that is the fact that we do have a lot of foreign indirect investment. When we are comparing between India and China, rather than looking at the static picture in any particular year, I think we should compare like for like.

I will just give a couple of examples on why we need to look at the way India is going differently from what we have seen in the past. Both in industry and agriculture you will find very few examples of a particular type of product or a particular activity within these two large sectors where a country has been able to export without building up a national base. That is to say, unless you have a very large domestic market, you will not be able to go out and export. If you look at the new technology, in IT till about 3-4 years ago, 85 per cent of all our production was meant for the external market. Even today in India, we talk about the South as being heavily IT-consuming. But if you

look at Tamilnadu, it is very similar to Bihar in the use of IT and manufacturing. We did a survey of 870 companies and the results were quite shocking to see, because we had felt that beyond the service sector IT would have by now trickled out into other areas of the economy. But it hasn't. So this is a very new phenomenon which has usually not been observed, and that is because this new technology is quite different from how we have understood economic modelling earlier. And in that sense, the role of the services sector, not in terms of its magnitude or its quantity, but the way it is going to change the economy and the way it is going to change the way we do business with the rest of the world in a global setting, is going to have a severe impact, and I would think that these would be real avenues for India to grow, because it has no hang-ups from the past. These are services that essentially use a much larger amount of human capital, use physical capital, so we need to integrate labour markets.

What we do not understand is entrepreneurs behaving in a very different way today than they were doing before. And here I would like to say that there are so many innovations that are taking place in India, innovations in ways of doing business, that it is remarkable. The way this is transforming not just the economy, but also the society in which we live, is quite remarkable. Look what the services sector has done, specially these IPOs and the BPOs, which I would agree otherwise is a horrible job to be in. But look what it has done. There was an innovation there, which is essentially the pick-up and drop-off method. As soon as that happened, it opened up a whole new method of women's participation in this particular sector. So if we do not look at the average Labour Force Participation Rate (LFPR) but look at only the BPO LFPR of women, we will find that it is way above the average LFPR in the economy. And that is going to bring in a transformation. Today we are moving away from the big city of BPOs and call centres to the smaller city, smaller town BPOs and call centres. This will have a huge impact. The economy will transform and society will transform and change much faster than we are used to believing, because of these new ways of doing business.

These BPOs and call centres affect people in a very big way. It takes time for the momentum to pick up, but we are

witnessing completely new ways of thinking. I am not talking about efficiency here, nor of productivity, or new investment, we are talking about new ideas of doing business, right, that are coming up in India. And that's what the 1991 change did. It allowed people to think independently, without having to run to the wise men of India. Let me end with the speaker's point, which really was quite shocking, that in India, in which we have taken such great pride as having such a big industrial base compared to other developing countries since the 1950s, with inward development, input substitution, all of that, yet this India had never before shown a growth rate of 8 per cent within a decade.

References

- Acharya, Shankar (2006), "Essays on Macroeconomic Policy and Growth in India," Oxford University Press.
- Ahya, Chetan and Sheth, Mihir (2005), "India economics infrastructure: Changing gears," Morgan Stanley: Morgan Stanley.
- Anderson, Jonathan (2006), "Asia by the Numbers," UBS Economic Research.
- An Economist Intelligence unit briefing paper (2006), "Funding Corporate India, Opportunities in International Financial Markets."
- Bhalla, Surjit. S. (2007), *Second Amongst Equals—Middle Class Kingdoms of India and China*, Peter G. Peterson Institute for International Economics, Washington, DC (forthcoming).
- . (2004), "The Occam's razor model of growth: India 1950-2004", paper presented at an NBER conference, Boston.
- . (2004), "Reform of Personal Income Tax in India," July 2; background paper for the Kelkar task force report. <http://www.oxus.in>
- . (2002), *Imagine there is No Country: Poverty, Inequality and Growth in the Era of Globalization*, Institute for International Economics, Washington DC.
- . (2001), "In the Interest of India," *Business Standard*, Jan. 20.
- . (2001), "Small Savings—A Piggy Bank," *Business Standard*, Feb. 9.
- . (2000), *New Economic Policies for a New India*, Indian Council for Social Science Research, Har-Anand Publications.
- . (1999), "This Time India is Different," *Economic Times*, Aug 17,
- . (1999), "The Most Kindest Cut of All," *Economic Times*, Feb.4,
- . (1997), "Growth Miracles—India is next," paper presented at the World Bank IMF meetings, Hong Kong, Sept.
- and Das Tirthatanmoy (2006), "Pre and Post Reform India: A Revised look to Employment, Wages and Inequality," *Indian Policy Forum*, Vol. 2, pp. 183-254.
- . Chawdhry, Rohit and Mookerjee, Arindom (2000), *Start of India's Decade*. Developing Trends, Oxus Research & Investments, February.
- Bhalla, Surjit. S. (ed.), (2000), *New Economic Policies for a New India*, Indian Council of Social Science Research, Har-Anand Publications.
- Dange Aniruddha, Paterson James and Dutta Anirudha (2006),

- “Chindia-A new economic world order by 2020”, CLSA
 Deaton, Angus and Kozel, Valerie, eds. (2005), *The Great Indian Poverty Debate*, Macmillan India Ltd.
- and Jean Dreze (2002), “Poverty and inequality in India: A re-examination”, *Economic and Political Weekly* (September 7th), pp. 3729-48.
- DeLong, Bradford, (2001), “The World’s Income Distribution: Turning the corner?” mimeo, <http://www.J-bradford-delong.net/>, February.
- Dreze, Jean and Sen, Amartya (2002), *India: Development and Participation*, Oxford University Press.
- Gupta, S. P. (2002a), “Report of the Steering Committee on Labour & Employment for the 10th Five Year Plan 2002-2007,” reproduced in Kapila, Raj and Kapila, Uma, *Planning Commission Report on Labour and Employment*, Academic Foundation, New Delhi.
- (2002b), “Report of the Special Group on Targeting Ten Million Employment Opportunities per Year over the 10th Plan Period,” reproduced in Kapila and Kapila.
- International Monetary Fund, *World Economic Outlook*, various issues.
- International Monetary Fund, “Regional Economic Outlook,” *World Economic and Financial Surveys*, various issues.
- Investment Commission Report (2006), Government of India.
- Kelkar, Vijay, (2002), *Report of the Task Force on Direct Taxes*, Ministry of Finance and Company Affairs, Government of India, December.
- Panagariya, Arvind, (2004), “India in the 1980s and 1990s: A Triumph of Reforms,” IMF Working Paper WP/04/43, March.
- Planning Commission (2006), “Towards Faster and More Inclusive Growth—An Approach to the 11th Five Year Plan,” Planning Commission, Government of India, June.
- Reserve Bank of India, *Annual Report*, Various Issues
- *Monthly Economic Bulletin*, Various Issues
- (2005-06), *Handbook of Statistics*,
- (2005-06), *Report of Trends and Progress of Banking in India*.
- Rodrik, Dani, and, Subramanian, Arvind, (2004), “From ‘Hindu Growth’ to Productivity Surge: The Mystery of the Indian Growth Transition,” draft, March.
- Sanyal Sanjeev, 2006, “What will India’s Next Big Growth Sector Be?” *India Today* Special Anniversary Issue, December.
- Sen, Abhijit, and Himanshu, (2004), “Poverty and Inequality in India—II: Widening Disparities during the 1990s,” *Economic and Political Weekly*, pp. 4361-4375, Vol. XXXIX No. 39, September 25.
- Statistical Yearbook, National Bureau of Statistics, China, various issues
- Virmani, Arvind, (2004), “India’s Economic Growth: From Socialist Rate of Growth to Bhartiya Rate of Growth,” ICRIER Working Paper No. 122, February.
- World Bank, World Development Indicators, CD-ROMS, 1996-2006.



SHIPRA

SHIPRA PUBLICATIONS IIC

115-A, Shakarpur, Delhi 110 002

Ph. 91-11-65277210, 22458662

Fax 91-11-22458662

Email info@shiprapublications.com

URL// www.shiprapublications.com



40581

ISBN 81-7541-369-7



9 788175 413696