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India: Selected Issues

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Price: \$15.00 a copy

**International Monetary Fund
Washington, D.C.**

INTERNATIONAL MONETARY FUND

INDIA

Selected Issues

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January 7, 2005

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OVERVIEW

- 1. The five papers presented here paint a picture of an Indian economy that has made great strides, but has more to do to accelerate growth and reduce poverty.** The papers focus on a number of the reforms required to ensure that needed high growth can be achieved on a sustained basis. To a large extent, these reforms are a priority of the new Indian government, and implementation is now the key.
- 2. Growth has been solid for a number of years, but a move to a permanently higher growth path—as envisaged by the Indian authorities—is not yet assured.** Chapter I establishes that there is little evidence of a rise in trend growth in recent years. The analysis points to declines in investment in manufacturing and agriculture as key reasons, suggesting that the government’s focus on enhancing infrastructure and improving the investment climate is the right one. Developments during 2004–05 give grounds for optimism: the corporate sector appears to be embarking on a new investment cycle; and India is integrating rapidly into global production chains. An expanding labor force can provide further impetus for growth over the medium term, if sufficient job opportunities can be created.
- 3. The service sector has led India’s growth, and its success provides valuable lessons for economic policy more generally.** Chapter II examines the long-term growth in services, and concludes that policies—in particular, the opening of services to FDI, trade and private ownership—have played a key role. Most recently, the phenomenal success of the IT sector highlights the potential of an Indian economy freed of heavy regulatory burden and high marginal tax rates.
- 4. India is poised to become a major destination for foreign direct investment, but broad reforms are needed.** While recent surveys point to India as a future “hot spot” for FDI, it still lags well behind most emerging markets in actual performance. Chapter III provides evidence that this seeming paradox reflects the need for broad improvements in the business climate—and not simply more favorable policies toward FDI in particular—to unleash India’s full potential.
- 5. Tax reform can help generate needed fiscal adjustment, while contributing to higher growth.** Chapter IV examines India’s current tax system, and finds that revenue intake is low, and the combination of high marginal effective tax rates and numerous tax exemptions may be constraining and distorting investment. The government’s planned tax reform would, by broadening the tax base and lowering statutory rates, move the tax system in the right direction.
- 6. Finally, for the recent recovery in private investment to take hold, the financial sector will need to play more fully its key intermediation role.** One factor inhibiting the full development of the financial sector has been the large financing need of the government, which has crowded out private sector credit and investment. Chapter V looks at one aspect of this problem—the sizable interest rate risk for banks with large holdings of government securities. While the authorities’ are addressing this risk in a broadly appropriate manner, the response could be strengthened by a more rapid convergence to best international practices.

I. HAS INDIA ENTERED A NEW PHASE OF HIGHER TREND GROWTH?¹

A. Introduction

1. **Real GDP growth accelerated in 2003/04 to its highest level in over a decade leading many to speculate that India had scaled new heights in terms of its trend growth.** At 8.2 percent, real GDP growth² in 2003/04 was double that recorded in 2002/03 when India suffered from its most severe drought in over 15 years. The rebound in activity was led by agriculture where growth reached 9.1 percent, the highest level recorded since 1996. Non-agricultural growth was also robust with industry growing by 6.7 percent, and services growing by 8.7 percent.

2. **The remainder of this chapter assesses empirically whether India entered has entered a new phase of higher trend growth.** Two alternative methodologies are used to disentangle underlying structural growth trends from shorter-term cyclical fluctuations around this trend. The first recognizes the large role monsoons still play in the Indian economy (via their impact on agriculture and consumption) by correcting growth trends for deviations in rainfall from their normal level. The second utilizes the more traditional methods of estimating underlying trend growth using well known statistical filters. Both approaches indicate that, while trend growth accelerated in the 1980s and early 1990s, there is little evidence to suggest that underlying growth accelerated in recent years. The final section puts forward some explanations for this and concludes by reviewing more recent indicators that suggest grounds for optimism regarding India's growth prospects.

B. When it Rains it Pours: Rainfall Adjusted Estimates of Underlying Growth

3. **Agricultural growth remains vital to overall economic performance in India.** Although the share of agriculture in the economy has fallen from over half of GDP in 1950 to less than one quarter today, the share of the population dependent on agricultural income has fallen by far less, from 77 percent in the early 1950s to about 62 percent today. As a result, fluctuations in rainfall are magnified through their impact on rural incomes and consumption, and the correlation between agricultural growth and overall GDP growth while decreasing, remains high (Table I.1).

Table I.1. Correlations with Agriculture Sector Growth

	1950/51- 2003/04	1970/71- 2003/04	1990/91- 2003/04
GDP growth (at market prices)	0.83	0.80	0.52
Private consumption growth	0.51	0.38	0.54
Private fixed investment growth	0.14	0.29	-0.08
GDP growth (at factor cost)	0.88	0.85	0.66
Industrial sector growth	0.27	0.31	0.06
Service sector growth 1/	0.16	0.18	-0.14
Government services growth	-0.12	-0.20	-0.27

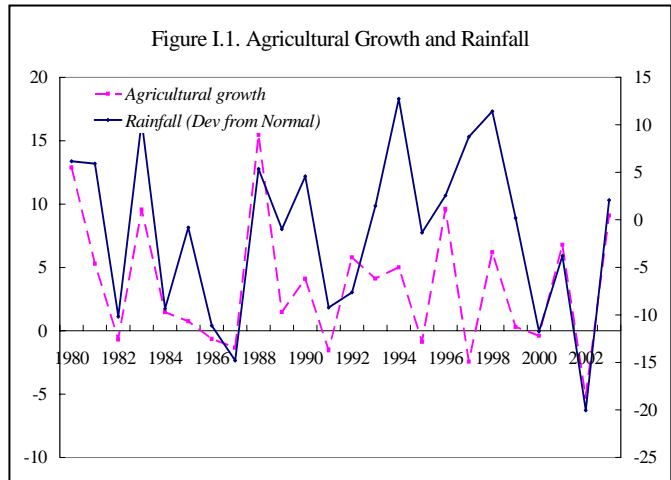
Source: Staff estimates.

1/ Excluding construction and government services.

¹ Prepared by Catriona Purfield.

² At factor costs. Expenditure-based GDP data are not yet available.

4. **Agriculture in India remains largely rain fed.** Only 40 percent of the net sown area in India is under irrigation (Planning Commission, 2000) which leaves the main agricultural season (June-September) highly dependent both on the timely arrival and widespread dispersion of the summer monsoons. Moreover, the lack of irrigation restricts the share of the country that can take advantage of the second agricultural season (October-December). The high correlation between agricultural growth and rainfall in India (about 0.65), illustrates dependence of growth on rainfall (Figure I.1). Salgado (2002) found rainfall to be a significant explanatory variable driving agricultural growth.



5. **Growth in 2003/04 benefited from two weather-related factors.** In the preceding year India experienced its most severe drought in 15 years

which caused agricultural growth to contract by 5.2 percent, while overall growth fell to twelve year low of 4 percent. The recovery in agricultural production from the drought contributed to a large base effect in 2003/04. In addition, rainfall in 2003/04 was about 2 percent above normal. These two factors helped boost agricultural growth to an eight-year high.

6. **Adjusting GDP for the impact of rainfall helps disentangle the role of cyclical and structural factors in the 2003/04 pickup in growth.** The relationship between GDP growth and rainfall is modeled using annual data from 1970/71–2003/04. The general-to-specific methodology of Hendry and Doornik (HD) is used to determine the lag with which rainfall impacts growth.³ A rain-adjusted GDP growth series is then calculated by taking the coefficients from the model and substituting the normalized rainfall series for actual rainfall.⁴

³ The procedure begins with a general unrestricted model containing three lagged values of rainfall and GDP. It uses both a top-down and bottom-up approach to recursively eliminate insignificant variables. At each stage mis-specification tests are re-computed, and if any test fails that particular reduction it is disregarded as invalid until a parsimonious model is identified where all the remaining variables are significant. The dependent variable, GDP, is non-stationary and so is specified in growth rates. The final model specification, with all variables significant at the 1 percent level, is:

$$LNGDP_t = -1.7 + 0.008t + 0.17LNRAIN + u_t,$$

(continued...)

7. **The uptick in 2003/04 growth was cyclical as underlying growth appears to have slowed after the fluctuation in rainfall levels is taken into account.** Rain-adjusted GDP growth averaged 4.3 percent in 2003/04, well below the headline growth rate of 8.2 percent and its recent five-year average of 5 percent.⁵ However, the rainfall-adjusted series suggests that underlying growth in 2002/03 was in fact quite robust, despite the drought.

C. Estimates of Trend Growth

8. **Various studies find that India transitioned to higher level of trend growth in the early 1980s but has since made little progress in improving its growth performance.** Virmani (2004), and Rodrick and Subramanian (2004) find that trend GDP growth in India rose from a rate of 3½ percent (the so-called Hindu rate of growth) that prevailed during the 1960s and 1970s, to 5–6 percent in the 1980s. Surprisingly, these papers find no evidence of trend growth increasing in the 1990s when India liberalized its economy.

9. **We also examine the acceleration in growth in 2003/04 using an alternative methodology.** Trend GDP growth is estimated by smoothing the underlying rain-adjusted GDP series for the 1970–2003 period using the Hodrick-Prescott Filter.⁶ Correcting for deviations in rainfall from its period average by using the rain-adjusted series should also help control for years in which India was impacted by severe weather conditions, particularly at the end of the sample when India experienced various natural disasters including earthquakes and droughts.

where t is time, $LNRGDP_t$ is real GDP growth (all variables in logarithms), and $LNRAIN_t$ is rainfall. The R-squared is 0.46.

⁴ The normalized rainfall series is calculated by the Indian Metrological Department as a long-run moving average of actual rainfall.

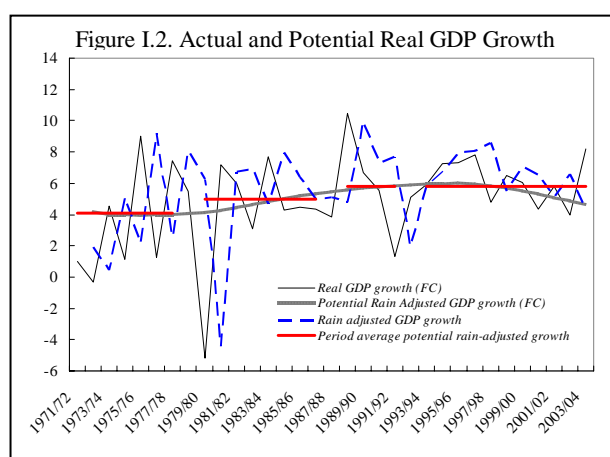
⁵ It may also be optimal to include a measure of the dispersion of rainfall across Indian states in the model to capture the fact the distribution of rainfall can have differential impact on growth depending on the importance of agriculture and irrigation in each state. However, preliminary investigations found the measure of dispersion across India's metrological districts (calculated using the standard deviation or the coefficient of variation) turned out to be insignificant and was rejected in the general-to-specific modeling process. Future work will examine the potential of this, and the possibility of an interaction rainfall-time variable that captures the structural decline of the importance of agriculture in the Indian economy in recent years.

⁶ A difficulty with this approach is that the trends tend to become poorly defined at the sample end-points. To cross-check the robustness of the results, trend real GDP growth, in levels and adjusted for rainfall, is also estimated by extending the sample period using staff forecasts of GDP for 2004/05–2009/10 period. The results are broadly similar.

10. **Underlying trend growth does not appear to have accelerated in recent years.**

The plot of trend GDP growth confirms that growth in India has undergone several distinct phases, accelerating sharply in the early 1980s to between 5 percent and 6 percent (Figure I.2). While conclusions drawn for the period since the late 1990s are more circumspect owing to problems with end-points under the HP filter approach, the data suggest that trend growth has been on a decelerating path since the late 1990s.⁷ More

formally, Chow tests applied to an ARIMA (2,1,2) model of trend rain-adjusted GDP growth identified two periods of increased trend growth. These tests confirm the acceleration in trend growth starting in 1980s.⁸ Trend growth rose to 5 percent, an increase of one percentage point over the 1971–79 period. In contrast to the earlier findings, the tests identify two additional breaks in the series, in 1989 and in 1992. While the statistical evidence of a break in 1989 is somewhat weaker,⁹ the evidence that trend



growth accelerated in 1992 is quite robust to whether growth is measured using real GDP or rain-adjusted real GDP. While trend growth averaged 5.8 percent between 1992–2000, trend growth in more recent years has fallen to an average level of five percent.

⁷ The deceleration in trend growth from the late 1990s onwards was also found when the sample for the HP filter was extended outwards by including staff forecasts of GDP growth for the 2004/05–2009/10 period.

⁸ Applying Chow tests to a Hodrick-Prescott real (non-rain adjusted) GDP series yielded similar results, with the exception that it identified an additional structural break in 1995/96 when underlying trend growth accelerated to its highest level (just over 6 percent).

⁹ F-tests on the rain-adjusted HP filtered real growth series and on the HP filtered real GDP series are significant at the 5 and 10 percent confidence levels. The corresponding log-likelihoods tests are each significant at the 5 percent level of significance.

11. **The leveling-off in trend growth most likely reflects a decline in investment.** Since the mid-1990s, total investment in India has declined from 26 percent of GDP to under 22 percent of GDP, reflecting in part fiscal crowding out. The rate of public investment almost halved over the 1990s, as rising interest and recurrent outlays took an increasing share of government revenues. Private investment has also declined by about 1.6 percentage points of GDP from its mid-1990s peak. Earlier work found that about 70 percent of the decline in private investment reflected the shift in public spending away from investment and infrastructure spending (Salgado, 2002).

12. **The decline in trend growth is primarily concentrated in the industrial and agricultural sectors, where investment was sharply curtailed.** Until recently, growth in private fixed investment and capital per worker in the manufacturing sector was negative (Figure I.3). Agricultural trend growth fell from about 3¾ percent in the early 1980s to about 2½ percent in recent years reflecting falling public and private investment in the sector (Figure I.4). The potential of both these sectors is also hampered by restrictions on the size of investments in certain sectors (small-scale industrial reservations), labor regulations, and continuing constraints on internal and external trade, especially for agricultural produce.

