

India: On the Growth Turnpike

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I

It is a great honour and privilege for me to be invited to deliver the 2004 Narayanan Lecture at the Australian National University. ANU is one of the premier universities of the world, and to speak at this great university itself is an honour. Further, to be associated with Dr. Narayanan, one of our great Presidents, amplifies the honour manifold.

Dr. K. R. Narayanan, a noble son of India, exemplifies all that is good in India. He was President in the year when I was involved in budget-making as the Finance Secretary. As you know, in India, it is the President, who as the head of state, sends the budget to Parliament for its consideration. Hence, it is customary for the Finance Minister and the Finance Secretary to brief the President on the Budget before he gives his assent to its transmission to Parliament.

As it was my first time, I was nervous, but I was told that this would be a short and pleasant affair. The President was very warm and gracious but he asked some penetrating questions, particularly about what this budget would mean to a common citizen, and how it would accelerate growth. I was very impressed by his grasp of complex economic issues. He emphasized the need for policies that foster accelerated growth and address problems of equity. Today, in my lecture, I will endeavour to discuss some aspects of these great questions.

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My lecture is titled *India: On the growth turnpike*. The term ‘turnpike’ – which is typically North American - refers to an expressway, and today, I propose to present logic and evidence which suggests that economic growth in India will considerably accelerate further in the coming decade.

1. Macroeconomic trends and the Setting

A lot has been said and written about India's exciting growth story, which can be dated to the beginning of the 1980s. Let me start with the most interesting and important facts about India's growth experience.

From the early 1980s onwards, India got strong GDP growth, averaging 5.7% over the last 24 years. This year, in 2003-04, GDP growth is expected to be 8.2%, and GDP is expected to reach \$625 billion. India's high GDP growth is sharply visible when GDP

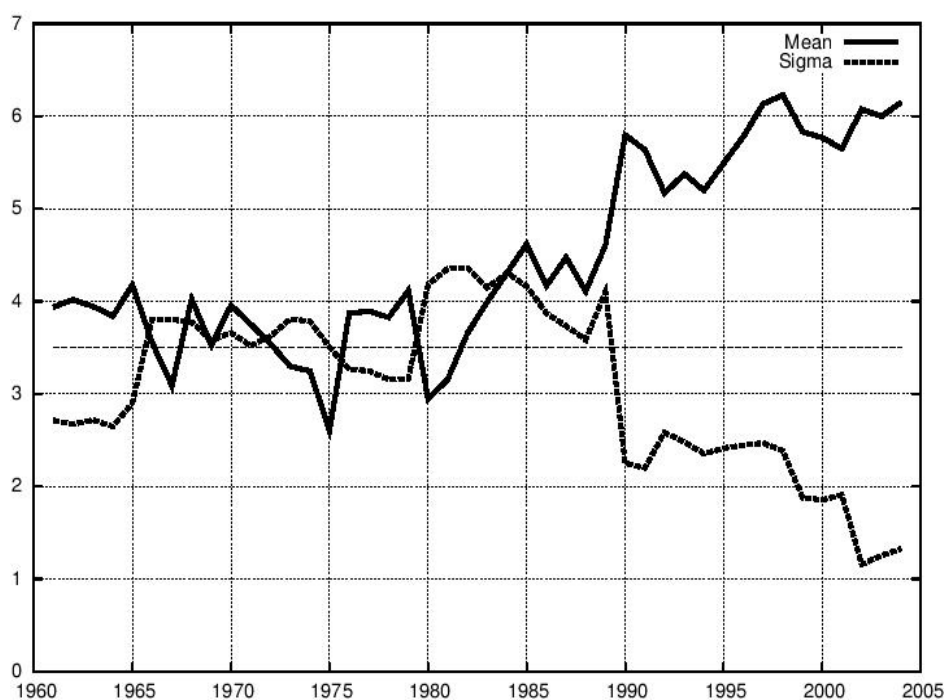
¹ The views in this lecture are mine and not of my employers. It draws heavily upon the collaborative work in progress with Arbind Modi, [Ajay Shah](#) and Arvind Subramanian. I am grateful to Centre for Monitoring Indian Economy ([CMIE](#)) and National Council of Applied Economic Research ([NCAER](#)) for access to their databases.

comparisons are done on a purchasing power parity basis. As of 2001, India came in at 4th place, with output of \$3 trillion. It is likely that by 2004, India will reach 3rd place, displacing Japan. That will give us a global ranking of US, China, and India in that order.

Looking back, it seems to me that we had two broad phases in our growth experience: Before 1980, and after. Before 1980, GDP growth had a mean of 3.5% with a standard deviation of 3.5%. In the 24 years after 1980, the mean rose to 5.7%, and the standard deviation dropped to 1.9%.

Many people have noticed India's high sustained growth over the last 24 years. But the low volatility of GDP growth is equally striking. For a comparison, over 1960-99, the median value for industrial countries was 2.18. For developing countries, it was 4.28. So we have had two big changes around 1980 as a breakpoint: mean GDP growth went up, and GDP growth volatility went down.

I find it useful to look at the acceleration of growth in India using the tool of 'rolling window' growth rates, where at each point, we compute the average growth over the last decade. A decade is a broad enough window, which allows us to smooth out the fluctuations caused by an unusual monsoon or two. So every year, we look back at the last 10 years, and compute the mean and standard deviation of GDP growth over that decade.



This graph gives us new insights into familiar facts about the acceleration in India's GDP growth.² We departed from the 'Hindu rate of growth' of 3.5% in 1982, and reached levels like 6% from 1996 onwards. In this lecture, I am going to argue that we will go further up to substantially higher growth rates in the years to come.

² Delong, J. Bradford (July, 2001) 'India since Independence: An Analytic Growth Narrative'; Rodrik, Dani, and Subramanian, Arvind (2004) 'From Hindu Growth to Productivity Surge: The Mystery of the Indian Growth Transition', *NBER Working Paper* No.10376.

We have also obtained a sharp reduction in GDP growth volatility. Along with this, inflation and interest rates have also come down sharply. We seem to have thus created an extremely benign macroeconomic environment, with low inflation, low interest rates and high GDP growth.

Period	GDP growth (%)		Years to double
	Aggregate	Per-capita	p.c. GDP
1972-1982	3.5	1.2	57
1982-1992	5.2	3.0	23
1992-2002	6.0	3.9	18

Let me talk about this in a different way - as growth of per capita GDP. While GDP growth has accelerated, population growth rates have gone down slightly. These have combined to give an even sharper acceleration of GDP growth per capita. In the 1970s, this was 1.2% and it went up to 3.9% in the 1990s.

I want to emphasise that 1.2% and 3.9% both sound like small numbers, but there is a huge difference between the two in terms of their human impact. At 1.2% a year, per capita GDP takes 57 years to double. A man sees one doubling in his adult life. At 3.9% a year, per capita GDP takes 18 years to double. A man who lives to 72 sees three doublings as compared with the standard of living that he saw at age 18. This is an enormous difference!

2. Why did India exhibit resilience to shocks?

A remarkable feature of India's growth experience has been its resilience to shocks. In many countries, short periods of high growth appear to be punctuated by years of poor growth.³ Largely speaking, this has not been the case in India over the last 25 years. This is reflected in the figure above, which shows a sustained increase in average GDP growth rates, coupled with a sharp *decline* in GDP growth volatility from the decade 1980-1990 onwards.

This resilience of growth in recent decades is an important change when compared with preceding decades. In 1973 and 1979, growth in India was adversely affected by oil shocks. In the later period, this vulnerability appears to have been greatly reduced.

This aspect is important in understanding India's growth experience. It is important to address the questions: *Why has India's growth been so consistent? Why has growth accelerated from decade to decade, without encountering the difficulties which are observed in many other developing countries? Why has India exhibited such resilience to shocks?*

One could maintain a hypothesis that the Indian economy was exposed to smaller external shocks in the period after 1980; that this drop in volatility is an artefact of a benign external environment. However, this is just not true. In these years, the economy has faced many shocks, including international financial crises, security tensions, international

³ Easterly, William. (2001). 'The Lost Decades: Developing Countries' Stagnation inspite of Policy Reform 1980-1998', World Bank, February.

sanctions, etc. From roughly 1995 onwards, the world has emphatically not been a quieter place. Hence, the drop in GDP growth volatility seems to reflect a genuine improvement in macro stability and not a lack of shocks.

Another possible hypothesis is rooted in currency flexibility. A broad consensus that appears to be emerging in the literature suggests that greater flexibility in exchange rates is conducive to enhanced macro-stability. A recent paper⁴ by Edwards and Yeyati finds that terms of trade shocks are exacerbated in countries with more rigid exchange rate systems. In their empirical work, under flexible exchange rates, the effects of terms-of-trade shocks on growth are approximately one half of those under pegged regimes. They also find that under inflexible exchange rate regimes, output growth is more sensitive to negative than to positive shocks.

If the economic reforms in recent decades had moved towards greater currency flexibility, then this could have been pointed to as a key source of improved resilience. However, a series of recent papers⁵ have demonstrated that in India's case, currency flexibility has been broadly unchanged since 1979. Hence, a *change* in the currency regime does not constitute a feasible explanation for this decline in GDP growth volatility.

One element of an explanation appears to be the improvement in price flexibility that took place in many *other* areas of the Indian economy. While price flexibility on two important markets - currency and food grains - did not go up, price flexibility rose sharply in the 1990s in myriad other areas such as interest rates, steel, cement, etc. In these areas, price volatility had been stifled in the traditional command-and-control paradigm of economic policy, and prices were freed up in the 1990s. This is expected to have improved the ability of the economy to adjust to shocks through changes in prices. A second explanation that we offer relates to the maturing processes of democracy, which I will come to later.

3. Globalisation

One of the most important phenomena about the Indian economy in the 1990s was the growth of international trade. We see striking changes in the one-decade period following 1991-92. India has engaged in unilateral removals of barriers to trade, and this process has been assisted by our WTO obligations.⁶

Through these, gross trade flows almost tripled over this period from \$56.7 billion in 1991-92 to \$155.5 billion in 2001-02. Expressed as a fraction of GDP, the trade-GDP ratio went up from 21.3% to 33.1% over this ten-year period. This was a fairly rapid pace of change for a structural parameter like the trade/GDP ratio.

A key feature of India's experience with trade has been the rapid growth of services exports. Over this decade, merchandise exports grew by 145% but services exports grew by 275%.

⁴ Edwards, Sebastian and Yeyati, Eduardo Levy. (2003). 'Flexible Exchange Rates as Shock Absorbers', *NBER Working Paper No.9867*, July.

⁵ Reinhart, Carmen and Rogoff, Kenneth S. (2002). 'The Modern History of Exchange Rate Arrangements: A Reinterpretation', NBER Working Paper No.8963, June; Patnaik, Ila. (2003). 'India's Policy stance on reserves and the currency', ICRIER Working Paper No.108, September, 2003; Calvo, A. Guillermo and Reinhart, Carmen M. (2002) 'Fear of Floating', *Quarterly Journal of Economics*, Vol.117, Issue 2, May.

⁶ Panagariya, Arvind. (2004). 'India's Trade Reform: Progress, Impact and Future Strategy', India Policy Forum, NCAER, March, 2004.

This high growth of services exports has been based on two distinct components. In the earlier period, invisibles revenues were primarily obtained through remittances from Indians working outside India. In recent years, improvements in telecommunications have implied that many services, which were previously non-tradable, could now be produced in India as part of global production chains. Export-oriented services production in India ranges from high volume production of low-end services like accounting, all the way to services that require highly specialised and high-wage staff, like research and development. For example, research laboratories located in India by major US companies have filed for over 1,000 patents with the US Patent and Trademark Office.

The high degree of public awareness about India's success in these IT-enabled services exports has led to a widespread perception that India is faring extremely well in services exports but has failed in obtaining growth in manufacturing exports. This perception is inconsistent with the high growth which is *also* seen with merchandise exports. Particularly in the last five years, growth rates of manufacturing and services exports have been rather alike.

India's success on exports growth has made a big difference to the overall outlook on the external sector. We began the decade of the 1990s with a BOP crisis. Today, India is widely seen as having an extremely strong position on the external sector. This was achieved through several elements: currency depreciation, export buoyancy, and policies of avoiding foreign currency debt. Our foreign currency reserves are now roughly as big as our external debt, so there can be little question of a BOP crisis shaping up.

4. Political economy of growth

One of the most interesting features about India's growth is the way it has been achieved under a democratic framework. There is a view that democracy impedes economic growth and India would eliminate poverty faster if we are willing to sacrifice freedom and democracy.

I quite disagree with this perspective. I believe that democracy is a 'growth fundamental', that we have come where we have come *because* of democracy, and not despite it. I found one insightful way of thinking about this in a 1988 paper⁷ by Dani Rodrik, which offered an interesting framework for understanding resilience of output growth, when faced with external shocks.

$$\Delta \text{growth} = - \text{external shocks} \times \frac{\text{latent social conflict}}{\text{Institutions of conflict management}}$$

This 'equation' seeks to explain the impact on GDP growth of a given external shock. This is linked to three explanations:

1. The size of the external shock matters - bigger external shocks should obviously give a bigger impact on growth,
2. The extent of 'latent social conflict'. Rodrik defines this in terms of ethnic and religious heterogeneity.
3. Rodrik focuses on 'institutions of conflict management' as the tool through which countries are better able to absorb external shocks.

⁷ Rodrik, Dani. (1999). 'Where did all the Growth go? External Shocks, Social Conflict, and Growth Collapses', *Journal of Economic Growth*, Vol.4, December, p.358-412.

Going by his definition, India has substantial 'latent social conflict', given the ethnic and religious diversity present in the country. Yet, we know that the output loss associated with shocks in India was small. How did this happen?

By Rodrik's argument, this suggests the high quality of the institutions of conflict management in the country. This is achieved through political institutions, and the functioning of democracy. As is well known, India is the world's largest democracy. Freedom of speech, regular elections, and an independent judiciary have characterised India's 57-year post-independence experience.

While India started out with very strong majorities for a single party (the Congress) in Parliament, over the decades, the political system has learnt how to obtain consensus through coalition governments. For example, in recent years, bipartisan support was essential for every piece of legislation. Milestones in economic legislation, such as the Electricity Act, the Foreclosure law, or the Fiscal Responsibility and Budget Management Act, would not have been possible without bipartisan support.

In many countries, the introduction of market-oriented reforms has been highly unpopular with the larger populace. This appears to have not been a constraint in India. One litmus test of this problem is found in the labour market. One revealing statistic about this is the number of strikes and the man days lost through strikes in 1992 and 2002. Major changes in economic policy have been actually accompanied by a sharp *diminution* in the incidence of unrest on the part of organised labour.

How was such a consensus in favour of market-oriented reforms forged? In the early period, market-oriented reforms may have appeared relatively novel and required consensus building to support embarking on relatively unknown territory. These innovations in policy were better accepted in India, as compared with the experience of many other countries, since they were crafted through the processes of a participatory democracy. In recent years, the consensus in favour of market-oriented reforms has been cemented by the results which better economic policy has delivered. One of the reasons for this has been the better sequencing of reforms which enabled 'early harvest' of the benefits.

The most important area of progress is that of poverty reduction. A shocking fact, embedded in Indian history, is the stagnation of the headcount of the poor at 320 million for the two-decade period from 1973 to 1993. From 1993 to 1999, in a short six-year period alone, the headcount of the poor dropped by 60 million. Taking into account various factors, it can be said that 100 million people have been brought out of poverty by the growth process of the last decade. This is an astonishing achievement, and it has had a positive impact on the political acceptance of economic reforms.⁸

As mentioned before, per capita GDP now shows three doublings in an adult life, as compared with one doubling in an adult life that used to be observed earlier. These changes have been accompanied by a reduction in the volatility of GDP growth, which has helped alleviate fears about the vagaries of the free market. All these changes have been manifestly visible in the political system and public discourse, and have helped cement the consensus in favour of economic reforms.

While democratic institutions are very valuable things to have, this is not to say that it is easy for a country to learn how to operate democratic institutions. Many countries have

⁸ Bhalla, Surjit S. (2003). 'Not as Poor, Nor as Unequal, As you Think – Poverty, Inequality and Growth in India, 1950-2000', Final Report of a research project undertaken for the Planning Commission, Government of India, December 4.

lost high GDP growth rates for a decade or more, in learning to make the transition from dictatorship to democracy. By now, India appears to have absorbed the costs of learning to operate vibrant democratic institutions.

5. Recent themes in reforms

A lot has been written about the economic reforms process in India. I would like to once again be brief and selective, and talk about a few big things that are going on.

I think the general principles that are driving the reforms process may be summarised as follows. We are trying to focus on *incentives*, and give the right people the right incentives to do the right things. We are trying to reduce frictions and transactions costs, so as to enable more transactions and more trading. We are trying to harness network externalities and obtain increasing returns to scale. Finally, we are trying to emphasise the ‘meso-economic reforms’, to put a focus on that in-between space between the macro and the micro, which consists of major institutions and ‘rules of the game’.

5.1 Deepening globalisation

Let me start with *globalisation*. As emphasised above, our trade/GDP ratio went up sharply from 22% of GDP to 33% of GDP over a 10-year period. India has digested the lessons of the 1960s and 1970s, about the enormous distortions and harmful political economy that is induced by protectionism. So we have made much progress in doing unilateral trade liberalisation, and in exploiting the WTO process. We have eliminated quantitative restrictions, and brought down the peak customs rate on manufactured goods from over 150% to a present level of 20%.

What is particularly striking is that this year, with elections impending, we were able to sharply cut tariffs, and this was criticised by some observers as a ‘populist’ thing to do! This highlights the sea change that has taken place in India's attitude towards trade integration with the world economy. India, which was once described as a ‘hesitant globaliser’, has become a ‘willing globaliser’!

The elimination of QRs, and the drop in the peak rate from 150% to 20%, was obviously costly for many firms and individuals. There are real costs that have to be paid in terms of obsolete business plans, and factors of production had to shift into areas where India has a comparative advantage. In my view, this is a subtle reason behind the upsurge of bad loans in the banking industry in the mid-1990s.

However, the difficult part of our adjustment to eliminating tariffs and QRs now seems to be behind us, and we are well on our way to single digit tariffs. It is striking to observe that while the multilateral discussions about trade reforms are still talking in terms of multi-decade horizons for adjustment, India has been able to move much faster, and unilaterally make progress on trade reforms.

Going from the current account to the capital account, there is now a broad consensus that capital controls are ineffective when there is a large and free current account. There are simply too many opportunities for moving capital across the globe by over invoicing, under invoicing, transfer pricing by multinational corporations, and trade in gold. Hence, India has steadily made progress on freeing up the capital account, particularly in the last five years. For foreign institutional investors, we are 100% convertible. Indian firms can take up to 100% of their net worth out of the country. Domestic citizens can take up to \$25,000 out of

the country, which is a lot when compared with the per capita income. The opening up of the capital account has enormous implications for the conduct of Indian macro policy. The impossible trinity is now with us, so that a restrictive currency policy comes at the price of monetary price autonomy. Hence, this is a new and exciting phase for Indian macroeconomics.

As an aside, I want to highlight some non-economic factors which have been at the foundation of India's success in rapid integration into the world economy. These consist of: our strong IT and telecom sectors, our use of English, and our vibrant democracy. Our strengths in IT and telecom have helped us to exploit the Internet, which is an important highway of globalisation today. Our use of English has meant lower transaction costs in interacting with the global economy. Our democracy has helped us avoid the difficulties and hindrances that come into the picture when repressive regimes try to block ideas from flowing in through the Internet. For example, we in India have multiple competing private sector Internet service providers, with high speed lines that reach into the outside world, with no large government effort at censorship or selective blocking of content.

5.2 Infrastructure sector: Unfolding Meso-economic reforms

Let me turn to infrastructure. In the early 1990s, infrastructure was high on our minds. The public goods of transportation and communications were clearly a bottleneck to efficiency, and to internal and international trade. In the presence of those constraints, our ability to harness gains from trade was limited, owing to the high transactions costs of engaging in trade. Our inefficiencies in transport and communications ultimately filtered into the exchange rate, where the rupee had to devalue enough to obtain rough parity on the current account.

India chose to go down the path of moving towards competitive markets in infrastructure, with private sector production, under a framework of sound regulation. I believe that this was the right path to go down. But as we all know, this is a difficult path to take. There are truly subtle difficulties in finding the right policy mix, the right 'rules of the game' which provide sound incentives to private firms to produce adequate quantities of these goods, while at the same time avoiding monopolistic profit rates. I look at the difficulties in California on electricity, and in the US on broadband telecom, and I sympathise with the problems that they are facing.

For many years, all economists, including myself, used to be somewhat pessimistic about the way things were going on in infrastructure sector in India. From 1991 onwards, the State ceased to invest in infrastructure, but the new policy framework had not fallen into place! So we were stranded between the two stools.

Today, it increasingly looks like the light is at the end of the tunnel on our infrastructure problems.⁹ I believe we have made good progress on telecom, roads, ports, electricity and aviation. The big piece where we have yet to obtain real progress is railways.

In *telecom*, we have obtained a revolution by having competition between multiple, private telephone companies. We are now at 40 million mobile phones, and are growing at the rate of 2 million mobile phones every month. Little shops offering internet access are now all over the country. Every visiting card that I encounter has an email address on it. We are one of the world's first countries to shift to a 'unified licensing', where the licensing is neutral to telecom technology. I believe we are the only market in the world where the two major

⁹ Indian Economic Survey (2003-04), Chapter 9, p.206.

technologies for mobile telephony - GSM and CDMA - are locked in grim competitive battle, with customers reaping the rewards of this competition. Total phone subscribers are at 71 million, and what was once thought to be an ambitious target for teledensity that should be achieved by March 2005 was actually achieved in December 2003. Given the existing pace of hectic growth, it looks rather likely that an additional 100 million lines will be added over 2004-05 and 2005-06. This would take teledensity from 7% today to 17% by March 2006.

In *roads*, we have embarked on an enormous project to build new highways, which will take the sustained mean velocity up from 30 kph to 80 kph. I believe these new roads will generate a new phase of growth in India, by harnessing what I call 'internal gains from trade'. I believe this is the classical gains-from-trade story, being repeated *within* the country, when firms 1000 km apart are able to trade for the first time, thanks to the lowered transactions costs. I think the full impact of these roads on investment, and the geographical distribution of production, will play out in the next five years.

We have yet to make the leap to 8-lane expressways, where we will get sustained mean velocities of 160 kph. But we have a big step forward in terms of learning new institutions, revenue sources, and contracting mechanisms, through which 4-lane highways are now very much in our grasp.

In the area of *ports*, we have made progress by contracting out the operations of ports to international firms who have specialised expertise on this subject. Remarkably enough, we find that when a public sector terminal competes with an international operator in the same port, the performance of this public sector terminal also improves! The turnaround time at ports dropped by half, from 7.5 days in 1996-97 to 3.5 days in 2001-02. These new ideas in contracting are being steadily applied across the country, giving a revolution in how the ports sector works.

These improvements in ports, roads and telecom sound nice. But are they large enough to make a *material* difference? Or are they high rates of growth on a very bad base? It is important to focus on the end-result of better infrastructure, which should be more efficient firms. Using the CMIE Prowess database, we observe the 4000 largest manufacturing companies in India. For these firms, working capital as percent of sales went down dramatically from 13% in 1996 to a level of 3.5% today. This is a striking change, which reflects both the opportunities of being more efficient using the new infrastructure, and the competitive forces which are pushing firms to think more carefully about how they manage inventories.

In the area of *electricity*, the big change is the Electricity Act, which has setup a path-breaking pro-competitive framework whereby producers and consumers of electricity can interact in an unfettered market. We are already seeing myriad changes in the electricity sector in India as a consequence of this simple fact: that producers and consumers of power are now free to contract with each other across the country. Once again, I see this as a story of going from stifled markets to gains from trade.

5.3 Financial sector reforms: A quiet revolution

A major area of focus in the economic reforms has been the financial sector. Joseph Stiglitz has observed that finance is 'the brain of the economy'. The financial sector controls the efficiency with which incremental capital formation is converted into incremental GDP.

India has made good progress in building a sound regulatory framework for banking, insurance and the securities markets. Many countries, all over the world, have experienced

problems with banking. Obtaining safe and sound banking is genuinely difficult, given the extreme leverage of banks, the opacity of their assets, and the moral hazard induced by a safety net. Difficulties in banking escalate into major macroeconomic problems when the banking system is itself large, when compared with GDP. In India today, bank deposits are just 48% of GDP, and net non-performing assets are just 2.3% of assets. Hence, there is little possibility of difficulties in banking derailing the economy.

In recent years, much detailed work has taken place on strengthening the banking system. Banking has become more competitive through a steady pace of entry by domestic and foreign banks, and has been steadily transformed by the introduction of new technology such as Real-time Gross Settlement System (RTGS). Banking has also benefited, as all creditors have, from the strengthening of creditors' rights which began in 2001. This continues to be an active area for new work in developing legal structures and institutional mechanisms.

India's financial system differs from that of many developing countries and it is more in line with the Anglo-Saxon model, with large and liquid public securities markets, and with bank deposits being relatively small when compared with GDP. There has been a particularly remarkable revolution in the stock exchanges in terms of a completely new design replacing traditional notions about how the market should be organised.¹⁰ India's NSE and BSE are the 3rd largest and 6th largest exchanges of the world, measured by the number of trades in 2001 and given the present trends, it is likely that in 2004, NSE will surpass NYSE in terms of the number of trades or transactions. India was a pioneer in shifting to T+2 settlement. India is unique by world standards in the extent to which non-transparent transactions have been proscribed: all trades match on the transparent order-matching screen on the equity market.

Equity derivatives trading was launched in India in June 2000, and now has daily turnover of \$4 billion. This was one of the most successful launches of equity derivatives trading in the world.¹¹ India's success on the stock exchanges is a poster child of our ability to overcome difficult problems of political economy and entrenched interests, to obtain revolutionary change, and rise to the front ranks of the world. These institutions are precious assets today, and will be key building blocks in the next steps of modernising the financial sector, and improving transparency and competition, in the years to come.

In coming decades, enormous flows of savings are going to be intermediated through the financial sector. It is extremely important that the financial sector should be thoughtful and effective in delivering equity and debt capital into those firms in India which convert it into the highest possible GDP growth. This is particularly important because, as we will argue ahead, there is a good likelihood that the savings rate in India will grow significantly in the coming decade. The financial sector is of crucial importance in converting these vast flows of savings into a maximal impact upon GDP growth.

We know, from the experience of other countries, that this process can go wrong. We need to continue to work on carrying through the reforms in the financial sector. We have many strengths in what has taken place in finance, particularly on the equity market, but a lot remains to be done in banking and the debt market.

¹⁰ Shah, Ajay (1999). 'Institutional Change on India's Capital Markets', *Economic and Political Weekly*, XXXIV (3-4): pages 183-194, January; Shah, Ajay and Thomas, Susan. (2000). 'David and Goliath: Displacing a Primary Market', *Journal of Global Financial Markets*, 1(1): pages 14-21, Spring.

¹¹ Thomas, Susan. (2003). 'Derivatives Markets in India 2003', Invest India – Tata McGraw Hill.

A new frontier in financial sector development lies in pension sector reforms. From 1998 to 2003, an intensive effort took place in India to think about alternative strategies in pension reforms, and to design an institutional architecture that would be well suited to solve the unique problems of the Indian setting.¹² This led to important cabinet decisions in 2003 which are now being implemented.

The basic thrust of these reforms is to build a defined contribution pension system where workers would get a range of investment choices and fund managers. Centralised recordkeeping infrastructure is envisaged, which gives scale economies, keeps down transactions costs, and maximises the contestability of the market for fund management services. This new pension system has been mandatory for all new recruits to the central government from 1 January 2004 onwards. It marks the dawn of a new breed of sophisticated institutional investors in the country, who will be sources of investment into debt and equity issued by the projects of the future.

5.4 Accelerating privatisation

Privatisation has been a major new theme of reforms in recent years. Major successes, where control of a company has been sold off, include VSNL, BALCO, CMC and Maruti. The true significance of privatisation lies not in the proceeds, but in the impact upon productivity. There are 276 public sector companies at the central level. They contributed Rs.2.28 trillion of 'value added' in 2001-02. Of these, there are 47 companies with *negative* value added; i.e., GDP would go up if these firms ceased to exist. Each 1% of increase in value added by these PSUs amounts to Rs.22.8 billion of additional GDP. The international experience suggests that the value added could go up by 20% to 40% after privatisation. Thus privatisation alone could generate a direct impact worth 2% to 4% increase in GDP. In addition, there would be many positive indirect effects of privatisation. Interestingly enough, considerable privatisation efforts are now taking place at the level of state governments also. Of the 919 companies owned by state governments, 33 have been privatised and 69 have been closed down in recent years.

5.5 Link to productivity growth

In my discussion about recent themes in reforms, I have highlighted four big areas: globalisation, infrastructure, privatisation, and the financial sector. It is important to reflect on the consequences of success in these four areas: these successes will give improvements in *productivity*. For a given level of labour and capital, progress in each of these areas will give higher output growth.

6. Areas of concern

There are two major areas of concern in this happy picture. The first is the problem of successful resolution of fiscal consolidation issues, and the second is that of regional disparities.

¹² Bordia, Anand and Bhardwaj, Gautam (2003). 'Rethinking Pension Provision for India', Invest India – Tata McGraw Hill Series; Shah, Ajay (2004). 'Issues in pension system reform in India' in 'India's Financial Sector: Trading Efficiency for Stability?', edited by Priya Basu and Marilou Uy, Oxford University Press, forthcoming.

6.1 Fiscal consolidation¹³

As you all know, one of the biggest problems faced in India is the fiscal deficit. The consolidated fiscal deficit, of the centre and the states, has been at stubbornly high levels for around twenty years now.

The essence of this problem has been a stagnation in the tax/GDP ratio. From 1990-91 to 2003-04, we did obtain progress on direct taxes, which went up from 1.9% of GDP to 3.5%. The phasing out of customs duties has inevitably given poor growth in indirect taxes, which went from 7.9% of GDP to 5.7%. The fiscal difficulties at the states have given a fresh impetus to state level tax efforts, which have yielded some progress, with growth from 5.3% of GDP to 6.3% of GDP. However, the overall picture has been unchanged, with the tax/GDP ratio being stable at 15.5% of GDP in 2003-04 and in 1990-91. The combination of large fiscal deficits with a stagnant tax/GDP ratio has given sharp growth in the debt/GDP ratio. From 1992 to 1998, the debt/GDP ratio was stable at 60% of GDP, and that might have given some comfort. But after that, it has resumed an extremely rapid climb to the present level of 80% of GDP. This has fuelled concerns about the possibility of India facing the problem of debt trap as interest payments have steadily become a bigger fraction of tax revenues.

Sometimes, India's fiscal problem is seen narrowly in terms of debt sustainability or a debt trap. I think this is a narrow perspective. The fiscal problem can be damaging to growth in coming years, even if it does not come to a debt trap. The reasons for this need to be reiterated :

- The high fiscal deficit has eliminated the room for manoeuvre in terms of counter-cyclical fiscal policy.
- It has sharply circumscribed the ability of the State to initiate new spending programs which could produce highly beneficial public goods.
- It has served to crowd out private investment, and thus reduce GDP growth.
- It has generated incentives for many distorted policies in the financial sector, where it has helped inhibit banking reform and the development of liquid markets for interest rates.

It is important to observe that the fiscal problems would have had an exacerbated impact on growth, by 'crowding out' private investment, if it had not been for the growth in household savings that was discussed earlier. Roughly speaking, Government has taken 10% of GDP in 1990 and in 2003. However, household savings grew from 18% to 23%, thus supplying an *additional* five percentage points of GDP to non-government investment in the country.

In many countries, 'downsizing government', i.e. cutting government *expenses*, has been central to fiscal adjustment. In the case of India, central government expenses dropped from 18.9% of GDP in 1986 to 15.6% of GDP in 2001. These values do not appear to be particularly out of line by international standards, and are broadly consistent with the level of expenses that are required to produce public goods of the required quality and quantity.

¹³ Report of the Task Force on Direct Taxes, Government of India, December, 2002; Report of the Task Force on Indirect Taxes, Government of India, December, 2002; Shome, Partho (2002), 'India's Fiscal matters', Oxford University Press

Three difficult items of expenditure, i.e. interest payments, defence expenditures and subsidies make up near 100% of tax revenues. In addition, there are highly inflexible expenses such as pensions, transfers to states, etc. Hence, it appears that there is little flexibility in obtaining a fiscal adjustment by compressing expenditures. There is a great deal that can be gained in terms of improving the extent to which existing expenditures are refocused away from subsidies towards providing public goods, and improving the efficiency of provision of public goods. However, it is hard to visualise a drop in expenses which would be large enough to significantly contribute to the required fiscal adjustment.

This leads us to focus on improving tax revenues as the central policy instrument in the required fiscal adjustment. Hence, efforts towards the fiscal consolidation, that have been undertaken, are focused on the following elements:

- Enlarging the tax base by rationalising exemptions and expanding service tax.
- Process engineering of the tax system
- Achieving a simple and rational tax system
- Reduction in transactions costs; improved taxpayer services.
- Reduction in subsidies, with better targeting.

Have these efforts borne fruit? Many observers have pointed out that the tax to GDP ratio is still below the levels found in the late 1980s. This observation, taken in isolation, is sometimes interpreted as implying a failure of tax reforms in India. However, this aggregative fact masks important accomplishments in terms of obtaining change.

Source	1990		2001	
	Collections	Percent	Collections	Percent
Income tax (individual)	5,010	9.7	31,764	16.8
Income tax (firms)	4,729	9.2	35,696	18.9
Customs	18,036	34.9	47,542	25.2
Excise	22,406	43.4	68,526	36.3
Service tax			2,613	1.4
Others	1,455	2.8	2,463	1.3
Total tax collections	51636	100.0	188,604	100.0

The table summarises changes in the *structure* of tax revenues from 1990 to 2001.

The most important accomplishment was in the area of direct taxes, which grew by almost 7 times over these 11 years. Direct taxes hence improved sharply from 18.9% of collections to 35.7%. This may be interpreted as a striking 'Laffer curve' outcome, where a sharp reduction in rates was accompanied by a sharp improvement in tax collections, by influencing incentives towards tax evasion and labour supply. Customs collections have lost ground, and will drop further, as India shifts away from protectionist policies. Taxing the services sector has now begun, in a small way.

These reforms anchor the fiscal consolidation envisaged in the Fiscal Responsibility Act,¹⁴ and the commitments of state governments, which require elimination of the revenue deficit : from 5.83% in 2002-03 to 0 by 2007-08. It is important to envision what the sources of a 5.83% improvement could be. One example of a feasible combination could be as follows:

1. An increase in direct taxes to GDP ratio of 1.5 percentage points.
2. An increase in union excise duty (including services) to GDP ratio of 2 percentage points.
3. State VAT will be implemented in the near future. It will replace many existing taxes, but across the entire transition, it is expected that this will yield an additional 1 percentage point of GDP.
4. Reduction in subsidies and enforcement of user charges will yield 1 percentage point of GDP.
5. A reduction in interest payments to GDP ratio of 0.5 percentage point is expected, as new debt, at contemporary low interest rates, replaced old, high-cost debt.

The Interim Budget presented in February this year indicates that fiscal consolidation is proceeding on this line, as the revenue deficit for the year 2003-2004 has been projected to decline by 0.5 percent. This has been due to combination of higher tax/GDP ratio and lower current expenditure.

This fiscal consolidation will assist GDP growth in many indirect ways, including:

- Reduction in the cost of capital,
- Enhanced equity,
- Improved allocative efficiency,
- Increased administrative efficiency,
- Reduced transactions costs, and
- Enhanced transparency and accountability

¹⁴ Fiscal Responsibility and Budget Management Act (2003), No.39 of 2003, The Gazette of India Extraordinary, Part II, Section 1, No.43, August.

A successful implementation of this transformation of the tax system, and an elimination of the revenue deficit by 2007-08, is perhaps the most important single issue in public policy in India today. The tax reforms that are currently underway will enable the economy to meet the objective of fiscal consolidation. Successful fiscal consolidation will enable the economy to achieve other important social goals such as better environment protection, greater investment in health infrastructure, Research & Development and the agriculture sectors.

6.2 Regional disparities

	Per-capita SDP	Population
	1999-2000	2001
<i>States</i>	(Thousand rupees)	(Percent of India)
Bihar	6.3	10.7
Orissa	9.2	3.6
Assam	9.6	2.6
Uttar Pradesh	9.8	17.0
Sum of these 4		33.9
India	15.6	100.0

A major problem that India faces is the large cross-sectional dispersion in economic development. There is a roughly 3:1 ratio in the per capita GDP, when we compare the richest states to the poorest states. Much attention has been focused on the 'BIMARU' states (Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh) which have high population density and low per capita output. The term 'BIMARU' is catchy because the word 'bimaar' means 'sick' in Hindi. The table above identifies the four large states where per capita SDP was over 33% below the national average. These four states make up 33.9% of India's population.

Regional disparities in India have been present for at least a century, if not more. Under normal circumstances, the processes of the market economy should generate 'equalising differences', whereby firms move to low-wage areas in the quest for reduced costs thus equalising differences in wages and land prices. Similarly, individuals migrate to high wage areas, thus equalising wages, and increasing the land per capita in poor areas. These processes are expected to generate convergence of per capita GDP in the normal framework of growth theory.

It is important to emphasise that the forces of convergence depicted here are based on factor mobility. They operate over and above the conventional notions of convergence through trade, which are based on technological catch-up and trade in goods, without factor mobility. This worldview has faced a challenge from the empirical evidence of the 1990s, where there is some evidence of a lack of convergence. Some states, particularly the states of

the West and the South, seem to have excelled in harnessing the opportunities of globalisation and the market economy. In other states, weaknesses in human capital and governance have generated reduced growth rates in the post-1990 period.

This has been a source of much concern on the part of many observers, from two points of view. First, it is argued that if the economic reforms of the 1980s and 1990s failed to ignite growth in Bihar, then there is a need to find a new policy mix which can achieve high growth in Bihar. Second, there are fears of mounting political stress that might come about if income disparities between rich and poor states widen further. There is a remarkable similarity between these problems in India and those that have been observed in China, where coastal provinces have progressed enormously compared with the interior.

These problems are undoubtedly important, and are going to be a central issue in Indian economics and politics in the years to come. While the above difficulties are real, there are also many forces at work which are steadily having an ameliorating effect.

- i. **Flexibility of the labour market** Factor mobility is a fundamental element of the process of equalising differences. As of today, roughly 90% of India's labour force is in the unorganised sector, which is a classical labour market, undistorted by labour law. In addition, unlike China, India has no government restrictions on inter-state or rural-to-urban migration.

This innate flexibility of the labour market will assist the process of convergence. In the historical data, migration flows do not (as yet) account for substantial movements of the population. The reforms of the 1990s ignited high growth rates in some states. It is likely that migration flows have a lagged response to high wage differentials. By this logic, the 2011 census may be expected to show larger migration flows than were observed in the 2001 census.

- ii. **Impact of new infrastructure on 'equalising differences'** The development economics literature has emphasised the problems of land-locked states, which are unable to harness gains from trade through high costs of transportation.¹⁵

India's growth experience suggests that geography is important. At the same time, there are exceptions. Coastal states in India have fared well; however, Orissa is a coastal state. Land-locked states have fared poorly; however, Punjab and Haryana are land-locked.

Gains from internal trade are clearly an important mechanism through which poor states can obtain economic growth. This is critically related to costs of transportation. This suggests that the recent successes in infrastructure policy - particularly in roads, ports, airports, and telecom - are highly significant in thinking about regional disparities. The new roads being built by NHAI imply that vegetables produced in Bihar or Orissa can find markets in Calcutta. This constitutes a new impetus for the forces of convergence, as compared with the preceding post-independence experience.

- iii. **Fiscal transfers** India has a well-developed system of fiscal transfers, through which taxes collected in rich states are transferred to poor states. This

¹⁵ Gallup, John Luke., Sachs, Jeffrey D., and Mellinger, Andrew D. (1998). 'Geography and Economic Development', NBER Working Paper No.6849, December.

constitutes an important channel for convergence – one that is perhaps reminiscent of the 60-year story of North Italy and South Italy.

While these rules have always been with us, the *economic significance* of these transfers improves in line with growth in GDP and in the tax/GDP ratio. Holding the fiscal rules intact, when the size of the pie goes up, larger per-capita flows are being sent into poor states. In the decade of the 1990s, India's GDP was roughly \$350 billion and the tax/GDP ratio was roughly 12%. GDP has already risen to \$620 billion, giving a quantum leap in the expenditures of government. Looking forward, in a few years, if we envision GDP of \$1 trillion and a tax/GDP ratio of 15%, then there will be enormously larger resource flows through existing fiscal institutions, which will generate much larger spending in poor states.

- iv. Policy innovations** One important insight derived from the experience of economic growth in East Asia is the importance of 'regional role models'¹⁶. East Asian countries learned from each other. Across these countries, there was a significant amount of experimentation and real-world trials of alternative ideas, including choices of effective institutions, policies, and technologies. There was a contagion effect within this region with countries learning from each other's success stories.

In the decade of the 1990s, a similar phenomenon has begun with the states of India. States are now increasingly conscious of the importance of local public goods. The political leadership of many states is increasingly conscious of the need to find policy innovations which would improve the quality and quantity of local public goods.

The 1990s began with a certain heterogeneity of governance procedures in the states. The economic reforms of the 1990s have inevitably had a differential impact on various states; some states had policies which were more conducive to harnessing these opportunities. When the gap in per capita income widens, the political system has incentives to search for policy responses which would close the gap. Andhra Pradesh, Madhya Pradesh, West Bengal, and Kerala are all examples of states where there has been a distinct learning from the regional role models, and consequent changes in governance.

In parallel to this learning from regional role models, there are two important policy innovations which are going to fully play out in the coming decade. The first is the move towards smaller states. It is widely conjectured that smaller states are more effective at catering to local variation in preferences and technology, and at ensuring greater accountability for public goods outcomes. Uttaranchal, Bihar, Jharkhand and Chattisgarh are important experiments in this regard. It is, as yet, too early to tell whether the outcomes play out in line with the conjecture. If governance does prove to be superior in smaller states, then (a) it will generate convergence, given that these four states are all below the national average, and (b) it suggests one policy avenue for improving governance in other large states in the future.

¹⁶ The East Asian Miracle: Economic Growth and Public Policy (1993), World Bank, Oxford University Press, September.

The second innovation is the devolution to local governments, as a consequence of the 73rd and 74th constitutional amendment. The underlying premise of Panchayati Raj is that when local citizens control public expenditures, there will be a greater likelihood of obtaining good *outcomes* in terms of producing public goods. There are three key elements of local autonomy: (a) Transfer of functions and schemes, (b) Transfer of staff and (c) Transfer of funds, and autonomous financial decision making. As of yet, different states have made different degrees of progress on these three fronts. It is, as yet, too early to tell whether the outcomes play out in line with the underlying premise. If we do obtain improvements in governance by empowering local governments, then this would constitute one channel for convergence.

6.2.1 Empirical evidence

How are we faring? There is some evidence that these effects are already at work and are reshaping the nature of regional inequalities in India. There are two striking illustrations which show the changes which are taking place:

- In a deliciously ironic development, the very phrase ‘BIMARU’, which symbolised backward states as of 1990, has become out of touch with the location of poverty traps! This symbolises the dynamism of regional economics in India. Rajasthan and Madhya Pradesh have made significant progress in the 1990s. Chattisgarh, Uttaranchal and western parts of Uttar Pradesh have lower poverty. The most difficult areas are now no longer the BIMARU states, but the eastern region comprising Orissa, Jharkhand, Bihar, and eastern parts of Uttar Pradesh. This illustrates the *mutability* of poverty traps in India, and suggests that there *are* forces at work through which poor regions can obtain convergence.
- The second illustration concerns the BPO industry. If the idea of exploiting IT for services exports, in areas like call centres and accounting, had been described to an impartial observer in 1993, the prediction which would have been squarely made is that this would flourish in southern states, owing to the superior quality of local public goods. This would include issues such as education, reliable electricity, law and order and gender issues. Questions of law and order, and empowerment of women, are extremely important in this field, given the need for women to work the night shift. The impartial observer would have solemnly argued that North India was innately and deeply hamstrung when it came to women obtaining high education, participating in the labour force, and working at night.

The actual outcomes, from 1993 to 2003, have been inconsistent with the prediction that IT-enabled services would primarily be located in the peninsula. When we look back at the last ten years, it is an undeniable fact that Gurgaon, Noida and Chandigarh have also emerged as the major centres of IT-enabled services exports. While locations like Bangalore, Madras, Hyderabad, Poona and Bombay have all also succeeded in this area, Gurgaon and Noida are probably the largest centres. This suggests that issues such as low labour cost dominated issues such as poor production of local public goods, which suggests that forces of convergence were effective.

The most interesting evidence about the question of convergence is found in data for investment projects outstanding.¹⁷

State	4/1995	10/2003	Change (%)
Delhi	313	5966	1804.8
Kerala	991	5579	462.8
Chattisgarh	1097	4525	312.5
Madhya Pradesh	1846	6889	273.3
Tamil Nadu	2491	6941	178.6
Karnataka	3528	8265	134.2
Haryana	3021	6820	125.7
Maharashtra	4409	8957	103.1
Bihar	799	1560	95.3
Andhra Pradesh	3740	7083	89.4
India	3258	5510	69.1
Rajasthan	1852	2771	49.6
Punjab	3662	5148	40.6
Orissa	6073	7432	22.4
Uttar Pradesh	1302	1544	18.6
West Bengal	2408	2686	11.5
Gujarat	12531	11950	-4.6
Jharkhand	3908	3643	-6.8

The table above exploits the CMIE database which tracks investment projects at hand as of a point in time. It juxtaposes the projects under implementation as of April 1995 (the first point in the CMIE database) versus October 2003 (the most-recent date available). All values are expressed as rupees per capita.

This data is interesting from two points of view. Focusing on *levels*, we see states like Gujarat, which have above-mean output and above-mean investment. At the same, there also appear to be equilibrating forces at work. High growth in investment is seen in backward states like Kerala, Madhya Pradesh, Chattisgarh and Bihar. In a striking display of

¹⁷ Ahluwalia, Montek S. (2002). 'State Level Performance under Economic Reforms in India' in Economic Policy Reforms and the Indian Economy edited by Anne O. Krueger.

convergence, of the 10 states with above-average growth in per-capita investment, 8 had a below-average *level* of per capita investment as of 1995. In addition, Punjab shows the opposite phenomenon. Low growth in investment is found in high income states like Punjab and Gujarat.

These trends are indicative of the possibility of meeting the objective of regional equity with well defined policies at the Central level and at the State level. Regional equity is going to be perhaps one of the most important issues for the political economy of growth in a federal system like India. We will need to be continuously mindful of this aspect and keep policies under review so as to achieve equity in outcomes across the States of our Union.

III

7. Growth outlook: Contributions from labour, capital and productivity

Let me now shift gears considerably. So far I have talked about the reform efforts, repeatedly alluding to the impact of reforms on efficiency, productivity and improved resource allocation.

But what about the perspective for the growth of inputs? Ever since Krugman's 1994 article¹⁸ in *Foreign Affairs*, about the extent to which East Asian growth was 'merely' caused by a high flow of inputs in terms of labour and capital, all of us have had a heightened consciousness about both (a) the power of additional inputs in delivering high growth rates, and (b) the importance of asking whether there is productivity growth over and above this.

7.1 Labour

Let me start with labour. It is conventional to focus on citizens between age 15 and 64 as 'the working population'. The fascinating thing about India is that we will be one of the last large countries in the world to experience our demographic transition. Current projections show that from 2010 or so, the fraction of Chinese and of Koreans in the age group of 15-64 will start dropping. In the case of Japan, this fraction has been dropping from 1995 onwards.

In the case of India, we will experience 'demographic dividend' as the ratio of working population to the total population will grow all the way till 2050. In particular, a sharp drop in the dependency ratio from 59% to 50% is projected between 2005 and 2020. The dependency ratio is projected to drop to 47% in 2040. It is only from 2040 onwards that India's dependency ratio is projected to go up. This will give robust fuel to the process of economic growth. This forecast for India reflects the existing young population structure, coupled with a deceleration of fertility, so that a large number of children are not expected to be added.

A second change that is taking place on the labour force is equally significant for economic growth. This concerns the *quality* of the labour force. Every year, the human capital of the stock of labour goes up, through gains in education and gains in experience. Hence, we are likely to obtain improvements in the labour inputs to economic growth from

¹⁸ Krugman, Paul (1994) 'The Myth of Asia's Miracle – A Cautionary Fable', *Foreign Affairs*, November/December.

three, distinct directions: (a) Incremental workers, (b) Incremental education and (c) Incremental experience of the existing stock of workers. All this is potent fuel for economic growth. The experience of Asia shows that the 'growth miracles' in Japan or in 'Tiger' economies of South East Asia or in China occurred at the similar stage of demographic transition when the share of working population in total population grew sharply.

7.2 Capital

What about capital? One element flows directly from demographics. Children and old people tend to save less; saving is the highest in the working years. Using NCAER survey data¹⁹, we find that in 1994-95, while the overall savings rate was 20.3%, this dropped to 16.9% when the head of household was below 30. The highest savings rate, of 23%, was found when the head of the household was in the fifties. In the case of urban households, these effects were more pronounced, with a savings rate of just 7.8% when the head of household was below 30.

So the demographic projections which clearly point out that India will have a bigger fraction of the population in the age group from 15 to 64 simultaneously predict a higher savings rate in the future. Further, holding household characteristics identical, a larger number of children would induce higher consumption, so declining fertility is likely to induce higher saving.

A second factor that is at work is the sheer GDP growth. NCAER data shows that there are extremely low savings rates for low income households. Remarkably enough, as of 1994-95, only 1.9% of all saving was done by households with income below the then-prevalent median income. In 1994-95, the poorest 80% of the population accounted for half the income, and this group accounted for 23.9% of total savings. As a rough approximation, we may say that significant savings behaviour only took place in the top quartile of the income distribution of 1994-95. Households in the top decile had a much higher savings rate, of 35.8%, as compared with the general population.

Economic growth steadily pushes households above the absolute income threshold required to be in the top quartile by the income distribution as of 1994-95. Thus, every year, a large number of households graduate into the income group where saving will commence. The bottom 30% of the 1994-95 income distribution has near-zero or negative saving. GDP growth shrinks this set of zero-savings households. The top quartile of the 1994-95 income distribution had high savings rates. GDP growth pushes more households into this set of high-savings households. Through this process, holding other aspects of the stochastic environment of the household constant, the high GDP growth rates that India has been experiencing are likely to generate a steady escalation of the savings rate.

The two arguments suggested above - about the impact of income growth, and about the changing dependency ratio - have been at work for some time. If these arguments are on track, then it should have been the case that the savings rate in India should have been going up in recent years. The empirical evidence is consistent with this prediction, for household savings grew from 18% to 23% over the period after 1990. Looking forward, our arguments suggest that household savings will grow further in the coming 15 years. In addition, growing openness of capital account would mean greater inflow of foreign capital as the country becomes a 'willing globaliser' i.e., more open to trade and investment. This means that in the coming decade, the supply of both domestic and foreign savings are going to

¹⁹ Pradhan, Basanta K., Roy, P.K., Saluja, M.R., and Shetty, S.L. (2003), 'Household Savings and Investment Behaviour in India', *National Council of Applied Economic Research*, September.

sharply increase leading to a much higher rate of capital accumulation compared to the last two decades.

7.3 Outlook on productivity

Paul Krugman noticed that East Asian growth had weak foundations in terms of productivity increases; that the high growth rates were primarily a combination of demographics (an increase in the working population) and capital being brought to bear on production. This is disappointing. The essence of development is improved technology; it is all about new ways of organising production, of injecting new scientific knowledge and new institutions into the economy. We expect that when economic development takes place, *productivity* should be transformed.

It is important to point out that many studies have taken place on productivity in India, and the consensus suggests that there *has* been significant TFP growth in India. The definitive measurement is by Bosworth and Collins in 2003²⁰, who find that in the period after 1980, 2% of the growth (out of a total of 5.73%) was accounted for by productivity changes. This suggests that India's reforms process has been able to obtain results in terms of better incentives and competition, coupled with better public goods, inducing improvements in productivity.

The outlook for the acceleration in the TFP growth in the coming decade or two is very promising. This is for several reasons. The first is the impact of information technology. In the coming decade, the rate of diffusion of IT is going to be greater due to increased availability of hardware, telecom infrastructure and human capital. In the US and other countries, the diffusion of IT has had a well documented positive impact on productivity growth.. The second reason is the beneficial impact of mesoeconomic reforms and privatisation of the infrastructure sector on productivity. The international experience has been that such meso-economic economic reforms have led to an all-round increase in productivity. The third element is the engines of increasing returns which will be accruing from network industries due to network externalities.²¹ The new highway network and telecom networks are two prime examples of new network industries. In the U.S., both these network industries have had profound impact in accelerating growth in total factor productivity.

When we look back at the experience with growth across various countries over the last 200 years, each experience with rapid growth has been caused by accumulation of capital, coupled with a catching-up of scientific knowledge. Over the years, the technologies of information processing and dissemination have steadily improved. This suggests that the *diffusion of knowledge takes place faster and faster*. This is consistent with the fact that the more-recent growth episodes, like those of China, Korea and Taiwan, have experienced higher growth rates when compared with the older growth episodes, like those of Russia, Japan and the US. Looking forward, India will benefit strongly from the great technological improvements in the diffusion of knowledge which have taken place in the last 25 years. When Korea was integrating into the world economy, and catching up with global scientific knowledge, the process of knowledge acquisition was slower than that found today in India, given the greater extent of information access through the Internet, voice calls, international travel, etc. This suggests that the speed of productivity change in India, in the next 20 years, could be higher than that seen in any experience with rapid economic growth in the last 200 years.

²⁰ Bosworth, Barry and Collins, Susan (2003), 'The Empirics of Growth: An Update', Brookings Paper on Economic Activity 2:2003, pp.113-79.

²¹ Shy, Oz (2001), 'The Economics of Network Industries', February.

These arguments suggest that in the coming decade, it is not difficult to envisage a sharp increase of more than 50 per cent in the annual TFP growth a doubling of the TFP growth from the present trend of 2 per cent per annum. Such an increase would be in line with the international experience of dynamic economies.

8. On the growth turnpike

This brings me to my main thesis: that India may be about to embark on a new golden age of high economic growth. The key argument runs in these steps:

- There is a near inevitability that there will be a bulge in the working population, particularly till 2020. This effect will be further multiplied due to enhanced levels of skills i.e. accumulation of human capital.
- It is likely that this demographic dividend, coupled with strong GDP growth, will fuel an increase in the savings rate.
- Thus India is likely to fare *better* than it did over the 1980-2000 period, in terms of putting factor inputs into the growth process.
- The policies of the recent years - particularly in infrastructure, reductions of protectionism, and building modern securities markets - will continue to fuel TFP growth.
- Being a 'willing globaliser' will attract greater flow of FDI and technology.
- In addition, India has already shown a track record for obtaining TFP growth over the 1980-2000 period. TFP growth will show further acceleration thanks to the impact of information and communication technologies upon the speed of knowledge diffusion and to the network externalities.
- These elements add up to a scenario where GDP growth in India over 2004-2024 will be much higher than that seen over 1980-2004. In the coming decade or two, growth rate in India may surpass the 'miracle growth' rates achieved by other Asian countries. This is not surprising as India, compared to Japan, China and other high growth economies of Asia, will have advantage of an access to productivity enhancing IT, which was not available in earlier decades. This way, we will be cashing in on the '*late comer's advantage*'.

Concluding Remarks

Now, I would like to sum up. Thanks to painstaking policy reforms initiated over the last two decades by successive Governments, I believe that India is at the threshold of 'a golden age of growth', with India's democratic framework being a key growth fundamental. It seems to me that, over time, India has paid the 'fixed costs' of democracy in terms of the creation of institutional infrastructure, traditions and conventions. Further, India's democratic system has also internalised what Prime Minister Vajpayee calls *Coalition Dharma*, showing that coalitions can provide stable government and push economic reforms. This means that in the future, the economy can reap the dividends from the resultant systemic stability. Thus, India - riding the wave of growth fundamentals such as demographic transition, human capital accumulation, improved incentive structures, diffusion of new technologies such as IT, total factor productivity accelerators through 'network industries', and an improved security environment - will be growing at growth rates which can be above 10% per annum i.e. double digit growth rates. There is an ineffable sense of joy for me personally, and professionally, to see India embark on this growth odyssey, a journey that I call 'India: On the growth turnpike'.

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