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WORKING PAPER NO. 170

POLICY REGIMES, GROWTH AND POVERTY IN INDIA: LESSONS OF GOVERNMENT FAILURE AND ENTREPRENEURIAL SUCCESS!

Arvind Virmani

OCTOBER 2005

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Foreword

Economic growth and development of India has attracted global attention, and many issues and puzzles have been raised by the scholars of India's economy. Every member of India's elite and every foreign well wisher has a list of problems that need to be corrected and a list of recommendations for achieving it. Is there any way of prioritising and selecting from these lists of recommendations? Is it possible to separate expenditure recommendations that do not look too different from those made in the socialist period and anti reform changes (ART) that are passed of as reform from genuine policy reform and institutional reform?

The current paper is a case study of the Indian development experience since 1950-51 based on earlier studies by the author along with new analysis of Poverty. It uses a mix of theory, empirical analysis, policy experience and intuition to present a picture of the evolution of the Indian economy through two major policy regimes, four sub-regimes and underlying growth trends. From these it derives lessons for institutional and policy reform needed for speeding up growth and eliminating poverty. In particular it selects five major reforms that 'have the greatest possibility for structurally transforming the Indian economy.'

The term 'Government failure' is used relative to the benchmark set at the time of independence, which too many intellectuals implicitly assume is still true when they make suggestions for government policy and programs. The paper implies that Indian entrepreneurs would have produced even more success for the Nation in terms of both growth and poverty reduction, if the government policy had not been so oppressive. Further, it asserts that social indicators would have been much better had government focussed its resources and energies on the things it alone can do best, instead of frittering its energies on a variety of activities whose efficiency and integrity it was unable to maintain (and which the private sector and NGOs can do as well or better). Another implication of the paper is that the increase in inter-State disparities in GDP growth and poverty reduction is due to gross governance failure (corruption, breakdown of law and order) in "failed States." This hypothesis, however, needs to be analysed further using State GDP and other data.

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1 INTRODUCTION*

The focus of our analysis is on the post-colonial period after India attained independence in 1947. This paper covers the period from 1950-51 onwards for which consistent data series are available. This means that growth rates are available from 1951-52 onwards. The primary purpose of the paper is to examine the link between policy regimes, economic growth and poverty in India. We draw on the data and analysis of earlier papers to provide the growth side of the link. The second purpose is to examine the issues of distribution, poverty and hunger in greater depth. Consistent series of data on consumption distribution are available only from the seventies, so the more detailed analysis of these issues has to be limited to the second half of the post-independence period. The poverty analysis complements earlier papers, which have examined issues of growth and productivity in detail.

The links between policy, growth and poverty are explored at three levels. The first level is that of a policy regime or approach, the second is that of variations and refinements within each regime and the third level is the effect of specific policies. Virmani (2004c) statistically defines two major phases of economic growth in India's post-independence history. These are associated with different policy regimes, which can be termed the 'Indian version of Socialism (IVS)' or simply 'Indian Socialism' and 'Experiments in Market Reform (EMR).' The turning point occurred around 1980-81. Each of these two regimes was associated with a set of economic policies. We start by listing these policies and describing their direct manifestation and then examine the effect of the entire set of policies on economic growth and poverty (section 2).

At the second level, each policy regime shows a change in emphasis and scope about mid-way through its time period. Two sub-phases are identified in each phase.[1] The first policy regime had two sub-regimes, which may be termed as, 'The Quest for Commanding Heights' and 'Legislative-Bureaucratic Socialism.' Analysis of the difference between these two sub-phases, including the impact that these variations had on growth and poverty, help us in identifying policies that were the most damaging,

* My thanks to Dr. Lant Pritchett, Shri T. N. Ninan and H K Dua for comments on earlier versions of this paper. Thanks also to T C A Srinivasa Raghavan.

others that served a useful purpose for some time and those that may still be relevant with some modification (section 3).

The second policy regime, 'Market experimentation' can similarly be divided into two sub-phases & sub-regimes.[2] These may be termed, 'Critical reforms' and 'Wider reform.' Our analysis identifies the critical elements of reform in these two sub-phases and the gaps remaining including those related to institutional reform and governance (section 4). Section 5 then goes to analyse the entire history of growth and productivity change in terms of time trends (rather than phases). As detailed data is available on consumption distribution for the period covered by the 'Market experimentation' phase the paper also examine issues related to poverty rates and hunger in greater detail for this phase (section 6).

At the third level of analysis the paper examines specific policies that have potentially been responsible for changes in economic growth and productivity. The paper identifies determinants such as the real exchange rate and the share of machinery investment and their underlying policies that have clearly had a positive impact on growth. It also shows that several conventionally assumed drivers of growth such as agriculture and public investment do not have a significant effect on growth (section 7).

Various puzzles have been raised in the literature on Indian reforms and growth since the 1980s. The Indian literature since the 1960s has also put forward several hypothesis about Indian growth. The current paper views these from the perspective of economic growth theory and case studies of high growth countries' (that help fill some of the many gaps in the former). It throws up two broad thematic explanations for the effect of Indian policy distortions and reforms on growth. One is the movement from Import substituting Industrialisation to Export Promotion or Export neutrality and from there to Import Liberalisation. The first part of the story is almost conventional wisdom for those who have studied the Asian Miracle economies but takes on different hues as it interacts with other aspects of the Indian policy framework. The second part, however, goes

[1] Virmani(2004c), Virmani (2006) forthcoming.
[2] Virmani (2004c), Virmani (2006) forthcoming.

beyond the conventional neo-classical view of import liberalisation to offer new explanations/hypothesis arising from India's growth experience.

The second theme is the dynamic effects of conventional market distortion and market reform policies. One has therefore to start by distinguishing between policy reforms that have static welfare effects and those that potentially have dynamic effects. The paper hypothesises that these dynamic effects of policy are mediated through their effects on competition. There are two aspects or sub-themes linking policy with competition and its dynamic effects. One is the effect of policies on the freedom of economic entities and agents to compete. Indian socialism systematically restricted and eliminated competition in many sectors of the Indian economy. This happened to a degree that was perhaps unprecedented in a non-communist country i.e. a country where most assets were owned by individuals and not the state or communist party. A substantial part of the reform story therefore relates to the re-establishment of the freedom to compete. The story of distortions and reform is not, however, linear and symmetric. Policies that change the rules under which agents operate also alter incentives for individuals that make and implement these rules. Very gradually and sometimes almost imperceptibly, they alter the institutions and the institutional environment under which these policies operate. Thus the effect of these policies changes over time and the effect of reforms depend on history. For instance the effect of removing a recently introduced (a year ago say) policy distortion can be quite different from that of removing the same distortion imposed a decade ago. [3]

The second aspect of the dynamic effects of policy change on competition is its effect on the different dimensions of competition, namely the pressure to compete and the means or ability to compete. In any given product or industry, policy success depends on the balance between the two sides of competition – on the output side and the input side (including factor markets).[4] Different policy and institutional reforms operates to a different extent on these two sides, depending on existing institutions and policy distortions. Increased competition in the output market puts pressure on producers to

[3] See also Virmani (2004b) or Virmani(2005b) or Virmani (2006) forthcoming..

improve. Increased competition in factor markets and inputs increases the ability of producers to compete. The balance between the two determines how successful they are in meeting the challenges of competition and increasing productivity at the micro level.[5] This in turn determines the aggregate short term and medium term impact on total factor productivity and growth.

The growth analysis of this paper has a strong affinity to the 'implementation innovation (copying/catch-up)' aspects of the "Schumpeterian Growth Theory" of Aghion and Hewitt (1998, 2005). It is consistent with Rodrik (2005) that "first-order economic principles……do not map into unique policy packages. Reformers have substantial room for creatively packaging these principles into institutional designs that are sensitive to local opportunities and constraints."[6] Pritchett's (2005) argues that there is a difference between "policy" and "policy actions," and the former is a mapping from the latter to the states of the world. Economic agents may have different "beliefs" about this mapping depending on the 'direct apparatus of policy making' and 'common institutions' and these 'expectations' influence the outcome of the policy change. One implication of his hypothesis, that the same policy may have different outcomes if the institutions and the history that shape economic agents beliefs/ expectation are different, is similar to that of Virmani (2004b, 2005b).[7] This is because the institutions and the beliefs and expectations of economic agents themselves get changed over time.

Going beyond the growth experience, the paper also tries to relate the policy experience to the issues of aggregate poverty, income distribution and hunger at an aggregate level. The broad theme that emerges from the analysis of this paper is that the failures on this front, apart from the indirect effects of growth, are linked directly to the

---

[4] In a modern economy, virtually every output is an input into another output. So the extent of impact and its timing (lags) cannot be finely calibrated.

[5] The ability of entrepreneurs to compete may also vary across regions (e.g. Asia relative to Latin America and Africa) and across countries in the same region (e.g. India and ethinic Chinese countries relative to others). There are also policy determined differences, e.g. foreign substitutes in the form of FDI.

[6] Rodrik(2005) also concludes that there is a difference between policy and institutional reforms needed for initiating Growth and those needed for Sustaining growth. This also seems at first glance to be consistent with our analysis.

[7] World Bank(2005) comes to similar conclusions. Because of an oversight the reference to the author's paper has been mixed up in the first version of this publication. The correct reference in Virmani(2004b). Virmani (2006) forthcoming can also be referred to on this issue.

failure of governance. This failure has many dimensions; the misallocation of government resources, the failure to follow norms of social benefit-cost analysis that were the reason-de-tar for the introduction of national planning, the neglect of public and quasi-public goods that are the most fundamental justification for the existence of government and a gradual (over decades) but progressive deterioration in the quality of governance. This conclusion differs radically from the conventional wisdom (national and international) about India's poverty, social indicators and income distribution. Even if treated as a hypothesis it merits debate and further analysis.

Section 8, draws on the analysis and lessons of the earlier sections to identify critical policy reforms that are needed to promote structural transformation of the Indian economy and to take it to higher level of TFPG. Section 9 concludes the paper by summarising the important lessons of the Indian development experience.

2 POLICY REGIME & PERFORMANCE

As analysed in Virmani (2004c) there have been two phases in India's development history since independence. These phases were characterised by two different policy regimes. The period of 30 years from 1950–51 to 1979–80 was the phase of socialist experimentation, in which the "Indian version of socialism" was developed and instituted. The second phase of economic development started at the beginning of the eighties (1980-81) and continues till today. This was the phase of "Market experimentation," in which the oppressive control regime set up during the first phase was modified and physical controls gradually removed.

2.1 Regime characteristics

2.1.1 Indian Version of Socialism

The defining policy characteristics of this phase of Indian development were the introduction and enhancement of the Import substituting Industrialisation strategy (ISI), the restriction and elimination of the freedom of economic agents to compete in many industries and sectors and the extension of government into more and wider areas of

economic and social activity with a corresponding and progressive neglect of the fundamental job of government.

The Industrial Policy resolution of 1948 (IPR 1948) spelt out the basic framework for the evolution and development of the Indian version of socialism. It divided Industry into four categories:

(1) State Monopoly (3: Defence, atomic energy, railway).
(2) Mixed sector (6: Aircraft, Ship building, Telecom equipment, Mineral oil, coal, iron),
(3) Govt control (18 industries)
(4) Private enterprise.

The Industries (development and Regulation) Act of 1952 gave the State legal power to implement this approach. War-time import controls were periodically liberalised and re-tightened after independence. The Import Control Order (1955) continued this policy. The Industrial Policy Resolution of 1956 expanded the objective of ID&RA (1952) to one of establishing a "Socialistic Pattern of Society." It also elaborated the objective of developing heavy industry and machine building sectors and re-emphasised the objective of expanding the public sector and assisting the small and cottage industries through direct and indirect means. More concretely, it expanded the State Monopoly sector from 6 to 17 industries and the mixed sector to 12 industries.

The Industrial Policy resolution of 1956 reduced Industry into three categories:

(1) State Monopoly (Schedule A): Of the 17 industries 4 were exclusive to government (defence, atomic energy, railway, air transport). In 13 all new units were to be set up by the government but existing private units could continue. These were Electricity (generation & distribution), Telecom equipment, Aircraft, Ship building, Heavy machinery & machine tools, Heavy electrical equipment, Iron & Steel; Mineral Oil, Coal, Mining (major minerals), non-ferrous metals (Cu, Pb, Zn, Sn, Mo, Wf) manufacture.
(2) Mixed sector (Schedule B), 12 industries where the State would increasingly establish new units and increase participation but private sector could also set up new units.
(3) Private enterprise.

Chakravarty (1987) presents a detailed exposition of the underlying economic rationale and documents some of the ideological and political factors. This phase was characterised by a conscious effort to increase the role of the State in the economy

(commanding heights). This was perhaps a reflection of what Chakravarty (1987) calls a "profoundly interventionist economic philosophy" prevailing at the time among the intellectuals including Pandit Jawhar Lal Nehru. He states that given similar perceptions of the reasons for India's "structural backwardness" (which he presents), "even a more pragmatically inclined politician than Nehru could well have opted for the same set of arrangements for promoting economic development."

The expansion of the State's role took place through multiple channels including nationalisation of industries and financial institutions, reservation of sectors for the government (public sector) investment in infrastructure and other production activities, legislative measures to control and direct private activity and micro-equity driven tax systems with high rates. The underlying socialist philosophy (Marxist/ Leninist/ Stalinist/ Fabian) was constrained by strong belief in genuine people's democracy. The Mahalanobis model was the organising framework for planning and policy. Import substituting industrialisation (import control), capital goods production by the Public sector and reservation of employment intensive industries for traditional (handloom) and small-scale sectors were some of its characteristics. A flavour of the policy actions taken during this period, especially those relating to industry and external sectors is given in Chart 1(appendix). Though a few reforms did take place during this phase, these were few and far between. Thus 89 agriculture related industries were de-licensed in 1965-66, price & distribution controls on steel (which was largely in the public sector) removed in 1967-68 and automatic expansion allowed in 25 (engineering industries) out of 40 core industries in 1975.

Looking back, it is clear that there was an inherent assumption that market failure was a serious underlying problem, that the private sector could not be trusted and that the public sector would produce economic and socially superior outcomes. Though the mix of measures used varied over the phase, the vital role of competition as a disciplining force on producers and the concept of modern regulation as against bureaucratic control was sorely missing through out the first phase of economic development.

2.1.2 Experiments in Market Reform

This policy phase has been characterised by, (a) the move from Import substituting industrialisation to export promotion and from thence to broader import liberalisation and by, (b) The restoration of the freedom to compete followed by a move to restore competition in different sectors and markets.

The process of industrial and import-export de-control and easing of investment restrictions started during this phase. Initially, this process was driven by practical experience of policy failure and visible damage to the economy. It was consequently very selective and case-by-case. As K.N. Raj (1986), pointed out there was no official resolution or statement about the 'new economic policy', which saw "certain changes in policy initiated in stages over the…" Reforms focussed on industrial de-control, import controls, particularly imported items required by exporters and tax rates. There were also isolated reforms related to financial sector and capital markets (Chart 2, appendix).

A more comprehensive and integrated view of market reforms was formulated in the nineties, with wider and deeper reforms initiated in 1991-92 (Virmani (2002b, 2004a). The pace of reforms is commonly agreed to have accelerated during the nineties. This is indeed so in terms of the absolute number/amount or per cent of existing market distortions removed. However, if we invert the perspective and consider the (limited) freedom available to economic agents at the start of the reforms, the reforms during the eighties expanded this freedom by a large per cent of available freedom. From this perspective the per cent expansion of freedom was perhaps only a little greater during the nineties (numerical illustration in footnote).[8]

Economic agents in developing countries adjust to controls either by reducing certain activities (as per conventional market economics) or by moving these activities underground (i.e. into the black economy). Removal of controls therefore has two effects. It stimulates certain activities and brings some activities from the black to the white economy. The latter can in principle occur much more quickly than the former.

[8] For instance if the controls on industry were 80 out of a potential 100, then the degree of freedom was 20. A reduction of controls by 10 (say) would reduce the controls by 12.5% but expand freedom by 50%. A

Further, excessive controls are more likely to drive activity underground than moderate ones. Thus reduction from high level of controls will quickly bring the economy over-ground and thus show a higher impact on measured outcomes. If we bring in deterioration of governance (including corruption) into the picture other interesting phenomenon arise, such as the 'Governance Paradox' and the 'Inverse Governance Paradox' (Virmani (2004b), (2005a)). Thus if the quality of governance is deteriorating the black economy becomes greyer over time and the direct negative effect of controls declines. Thus when the controls are removed the immediate visible impact is much smaller. On the other hand the indirect effects on entrepreneurship and innovation cumulate gradually over time (negative effects after imposition of distortion, positive after removal).

2.2 Impact on Growth and Poverty

As these two policy regimes prevailed over fairly long periods of about 30 years (phase I) and 25 years (phase II) respectively we can obtain an idea of their impact by examining the average performance over these two phases/periods. The contrast between the economic performances during the two policy regimes is stark (Table 1). During the phase characterised by the Indian version of socialism, GDP growth was slow and poverty increased. In the phase of market reform economic growth accelerated sharply and poverty declined substantially.

The economy grew at an average rate of 3.5% per annum during the first phase. This placed us in the bottom quintile of the global growth ranking. India was at 60th position out of a group of 74 large & medium countries for which GDP data is available from 1960 onwards. The cut-off value for medium size is taken at GDP in purchasing power parity of $15 billion in 2002. Only 19% of these countries had a worse growth performance than us.

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subsequent reduction of controls by 20 (twice the amount) would reduce controls by 28.6% (more than double the rate) and freedom by 66.7%.

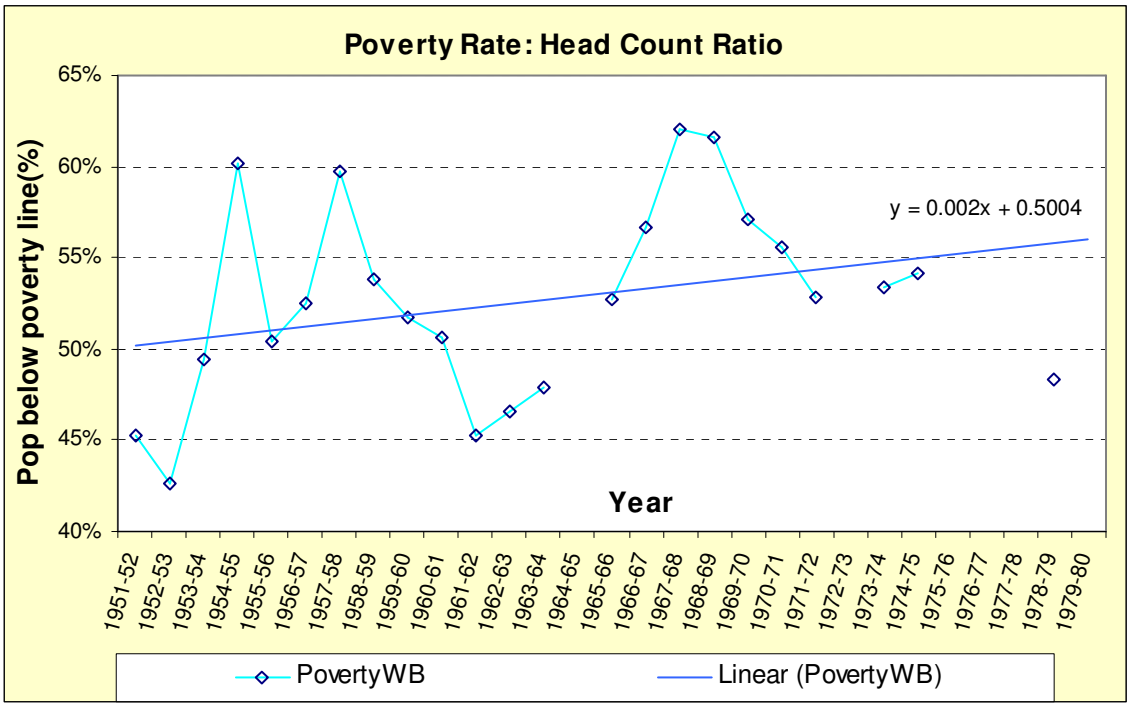
Table 1: Comparative Economic Performance During Two Development Phases

(Average Growth Rate of variable during the period)

	Phase=>	I: Indian Socialism	II: Market Reform
	Period=>	1951-2 to 1979-80	1980-1 to 2003-4
No.	Variable		
1	GDP at factor cost	3.5%	5.8%
2	World rank in GDP growth	60/74*	9/88
3	Per capita GDP	1.3%	3.7%
4	World rank in per capita growth	66/76*	9/88
5	Poverty rate (HCR)	0.2%	-0.8%
6	GDPgr: Co-efficient of Variation	1.0	0.3
7	Rainfall: Difference from mean	0.5%	-1.8%
	Contribution to GDP growth	-0.03%	-0.08%
8	Total Factor Productivity Growth	0.9%	2.7%
9	Consumption: Private	3.2%	4.6%
10	Consumption: Government	5.8%	6.0%
11	Investment: Total	6.1%	6.3%
12	Investment: Public	7.5%	2.4%
13	Investment: Private	3.6%	8.7%
14	Investment: Fixed	4.8%	6.2%
15	Machinery	6.6%	8.8%
16	Structures	4.4%	4.5%
17	Private (fixed)	3.6%	8.7%
18	Electricity, Gas & Water	15.2%	4.4%
19	Railways	2.4%	3.7%
20	Communications	9.7%	11.5%
21	Real Interest Rate: SBI	-1.7%	7.8%
22	Real Exchange Rate: Pt/Pnt	0.3%	-0.3%
23	REER (35 country, trade weightd)	-2.3%	-1.0%
24	Price of Crude Oil	15.8%	2.4%
25	Relative Price of Machinery	3.6%	-1.6%
	Note: * Global data available from1960 only		
	Sources: NAS, WDI; World Bank & Planning Commission(poverty data)		

To see how the average individual fared we have to look at the growth of GDP per capita. Per capita GDP growth averaged 1.3% per annum during this phase. This placed us at 66th in the group of 76 large-medium countries for which data is available. Only 13% of the countries had a performance worse than ours. The proportion of people below the poverty line, the Head Count Ratio (HCR), increased by an average 0.2 per cent point per annum during this phase (figure 1). As there are no official poverty data available for most of this phase, we use the World Bank poverty data set (Denninger & Squire (1996)). The co-efficient of variation in growth was also very high at 1.0. According to Thomas and associates (2000) the high variability of incomes has an adverse impact on the quality of life of the common person.

Figure 1: Poverty as measured by the Head Count Ratio (Phase I)



The GDP growth rate was significantly higher during phase II averaging 5.8% per annum. The coefficient of variation (CV) in the growth rate declined to 0.3, one-third of its earlier value. This was primarily because of a decline in the CV of agriculture which

in turn was driven by a decline in the CV of rainfall.[9] The rate of growth of Per capita GDP almost tripled to 3.7% per annum. This led to a dramatic improvement in our global ranking to 9th position out of set of 88 large-medium countries. This put us in the top percentile of the country rankings with 90% of these countries having lower growth than India's. The acceleration in the growth of per capita GDP was accompanied by acceleration in the rate of growth of private consumption to 4.6% per annum (from 3.2% per year in phase I). As a consequence of this higher growth rate of income and consumption, the proportion of the population below the poverty line (HCR) declined by 0.8 per cent point per annum during the second phase of development. Thus the shift of the policy regime from the Indian version of socialism to experimenting with market reform led to a dramatic improvement in economic growth and poverty reduction both with respect to our past performance and also as measured against global benchmarks.

The dramatic increase in per capita GDP growth was driven by a tripling of the rate of growth of total factor productivity, from an average of 0.9% per annum during phase I to 2.7% per annum during phase II (Table 1). Though the rate of growth of investment remained virtually unchanged (increasing marginally from 6.1% to 6.3%), the growth of capital stock accelerated from 3.6% per annum to 5.4% per annum. Consequently the rate of growth of capital per worker (capital deepening) doubled to 2.7% per year from 1.4% per year. There was also a change in the structure of investment from government to the private sector with rate of growth of the former decelerating sharply from 7.5% to 2.4% and that of the latter doubling. There was also an important shift from investment in structures to that in machinery and equipment, with the growth in latter accelerating to 8.8% per annum during phase II from 6.6% per year during phase I. The change in the pattern of investment was supported by a change in the pattern of demand from government consumption to private consumption. The rate of growth of private consumption increased from 3.2% per year to 4.6%.

[9] The other significant decline was that in the CV of construction.

2.3 Lessons: Level I

There are significant lessons from comparing the policy regime and its outcome during phase I with that during phase II. The most important lesson for Indian academics and policy advisors is that,

Lesson 1.1: The government is neither omniscient (all knowing) nor omnipotent (all powerful) nor omni-competent. Even with the best of intentions and motivations it can and does fail spectacularly. More commonly it has traits that are the opposite of those commonly assumed by those who expect government to solve any and all problems.

The post-independence political and administrative leadership was highly motivated, educated and honest. This situation prevailed for at least 15 years or half the phase of Indian socialism (after which it perhaps started atrophying gradually). Despite its sincere efforts to develop India and rid it of the scourge of poverty, the proportion of citizens below the poverty increased. Despite drawing on the best development economists in the world and pioneering the concept of mixed economy and non-communist (sometimes referred to as 'Fabian') socialism, development performance as measured by the rate of per capita income was extremely poor compared to other countries.[10] The problem lay in the policy regime, the Indian version of socialism, as the dramatic improvement of performance during phase II demonstrates.

One of the philosophical foundations of Indian socialism was that private consumption of the rich ('well off' or 'better off') must be reduced and their resources diverted into the public sector (directly through taxes or indirectly through the financial system). The result, contrary to assumptions was an increase in poverty. The puzzle is that poverty increased despite a growth of per capita income! Government was clearly appropriating too much resource, leaving little for the general public. Growth of government consumption was much higher (average 5.8% per year) than the growth of GDP (3.5% per annum). Private consumption grew even slower (3.2% per annum) than economic growth. Logically this would mean that, the consumption distribution worsened, at least around (and just above) the middle of the income distribution.

[10] Its performance when measured by other human development indicators such as literacy was even worse.

Alternatively either (a) the NAS data on income and consumption is wrong or (b) poverty is not appropriately measured because of incorrect or inappropriate deflators used in adjusting the poverty line over time or (c) the NSS data is not capturing the time trends correctly. It is highly unlikely that per capita GDP or average private consumption declined over the 30 years till 1979-80, *so the problem must lie in the poverty estimates* as Bhalla (2003a) has argued. The same problem in fact continues into subsequent years.

The second lesson is that,

Lesson 1.2: The role of Private consumption in economic growth and poverty reduction can be more important than that of Government/Public Consumption.

One of the important pillars of the economic strategy under Indian socialism was to control private consumption (through controls on, production of and investment in, consumer goods and taxation of such goods) and divert resources into the government through steep/exorbitant income taxes. For instance the effective marginal tax on income from capital (including wealth tax) rose to 100% in the mid-seventies. As a consequence government consumption grew at 5.8% per annum, much faster than the rate of GDP growth. Though government consumption has continued to grow at over 6% per annum, the anti-consumer policy was gradually diluted during phase II and finally abandoned in the nineties. Faster growth of private consumption has therefore driven the poverty reduction in phase II and probably contributed to the acceleration in growth through increased aggregate demand and consequent higher capacity utilisation and increase in expected profitability of private investment in new consumer goods.

The third lesson is,

Lesson 1.3: Government Investment is neither necessary nor sufficient for Growth.

Corollary 1.3.1: The importance of government investment as a driver of growth has been overrated and the importance of private investment underrated. Government investment in 'private goods and service' is a substitute for private investment and will have zero direct effect on growth (assuming equal efficiency). The net effect is negative if we take account of tax distortions to raise funds for government investment.

Corollary 1.3.2: The efficiency of investment is critical to growth. Government investment that is not driven by social benefit-cost considerations can be highly inefficient. A monopolistic government sector is likely to be highly inefficient and can retard growth.

Between phase I and phase II the average rate of growth of Public investment declined to 2.8% per annum a third of its earlier average of 7.5%, while the rate of growth of private investment almost doubled from 4.3% to 8.4% per annum. Thus the decline in the rate of growth of government/public investment did not have a negative effect on growth and may have had a positive effect by creating space for an acceleration of private investment. Private investment clearly played a positive role in the growth acceleration. The reason for this result is that unlike private investment the allocation of public investment and its efficiency is neither responsive to profits nor disciplined by losses. Gresham's law applies with a vengeance. Pet theories and vested interest can drive public investment not only into the most unprofitable activities but also into the most socially unproductive channels, with everything being justified in the name of the poor and the public.[11]

The fourth lesson,

Lesson 1.4: Though investment is necessary for growth the key driver of total productivity growth and overall growth is investment in machinery.

Between phases I and II the rate of growth of investment increased marginally from 6.1% to 6.3% while the rate of growth of fixed investment and machinery investment accelerated by 31% and 34% respectively. As the rate of growth of Investment in structures increased only marginally, the acceleration in investment and GDP growth was driven by the acceleration in machinery investment from an average of 6.6% per annum to an average of 8.8% per annum.

[11] As the acting/temporary incharge of the Program evaluation organisation (PEO) in the Planning Commission during 2001-2002 I was shocked to find that the social cost benefit analysis of programs even of the kind discussed in the literature (eg Little-Mirlees) in the fifties was virtually non-existent for social programs.

3 INDIAN SOCIALISM

The phase of Indian Socialism can be further sub-divided into two sub-phases. Though these sub-phases differ in their rate of growth, the difference in growth is not statistically significant, once the break in growth between phases I and II is accounted for. The sub-phases are however significant from the policy perspective, as the difference in policy between these two sub-phases helps in refining the policy lessons.

3.1 Quest For Commanding Heights

During this sub-phase the policy of the Public (government) sector occupying the so-called "Commanding heights" of the economy was devised and implemented. This had the effect of (artificially) creating public monopolies and progressively eliminating competition from many sectors of the economy. This approach was part of the Mahalanobis model of development, whose second pillar was import substituting industrialisation.

The policy approach was first outlined in the Industrial policy resolution of 1948 and given legal backing through the Industries Development and Regulation Act of 1952. The span of control of ID&RA was ambitious (draconian!), with every industry required to obtain a license (from 1953) for any investment above Rs. 1 lakh.[12] Licensing of all industries was, however, soon found to be administratively infeasible and licensing restricted to those industries employing 50 (100) or more people with (without) power. The exemption limit was also raised to Rs. 10 lakh in 1960 and further to Rs. 25 lakh in 1963.

The definition of commanding heights was expanded via the Industrial policy Resolution of 1956. Besides the State monopolies in Defence (arms, ammunition etc), Atomic energy, Railway and Air transport, public monopolies were created over time in Power, Telecommunication, Aircraft & Ship building, Heavy machinery and electrical equipment, Metals (Iron & steel & non-ferrous) and minerals (petroleum oil, coal and all major minerals). Government companies were created in 12 other industries. These competed with the Private sector on a non-level playing field tilted heavily towards the

public sector. Special advantages included government guarantees for debt, priority in allocation of (domestic & import) controlled goods, services, technology and finance, purchase preferences and other direct and indirect benefits.

Given the focus of the Mahalanobis strategy on capital-intensive industry and mining, it was clear that such a policy would not be conducive to employment generation.[13] This was sought to be counter balanced by a policy of employment generation through traditional small and cottage industries. The SSI policy reserved these industries for the small-scale sector; medium-large industry was banned from investing in such industries if the investment needed was above a defined threshold. Thus a dualistic industrial structure was (deliberately) fostered.

Some of the most advanced labour legislation was put in place at or soon after independence, perhaps more advanced than ever seen in a country at India's level of per capita income/development. This included the Industrial Disputes Act 1947 (covering all 'workers' with salary up to Rs. 500 per month & dealing with disputes, strikes & lock outs and retrenchment), The Minimum Wages Act, 1948 (govt prescription of minimum wages), the Employee Sate Insurance Act, 1948 (injuries, medical requirements) and the Employees Provident Fund Act, 1952 (retirement benefits).

What was the outcome of this policy approach during the sub-phase IA from 1950–51 to 1964–65? Though economic growth was impressive when benchmarked against the colonial past it was quite poor compared to what others were able to achieve during the same period. Growth accelerated sharply from the pre-independence levels, to an average of 4.1% per annum. About 0.45% of this is however due to unusually favourable weather, which resulted in mean monsoon rainfall to average about 4% above the long term mean. Nevertheless, even the adjusted (for rainfall) average growth of 3.6% represented a tripling of the colonial high of 1.5% during the pre-war years 1990 to 1913.[14] Though impressive compared to the past, even the unadjusted growth rate of 4.1% at 39th was in the middle ranks of the 74 large-medium countries for which data is

[12] 1 lakh =100,000. Initially 37 industries, extended to 70 industries during 1952 itself.
[13] Dare one say obsession!

available for 1960 to 1964. Average income grew by 2.0% per year, a performance that at 41st ranked well below the median of this set of countries. On average 52.5% of the population was poor during this sub-phase.

Total factor productivity (TFPG) grew by 1.6% per annum (Table 2). Of the 2.4% per annum growth in net domestic product (NDP) per worker, TFPG contributed 68% while capital deepening (fixed capital per worker) contributed 13% with the rest accounted for by good rainfall. In this sub-phase investment grew strongly at 7.9% per annum led by the growth of government investment at 11.6% per annum. As a result, the share of public sector in the total capital stock grew from an estimated 10.7% at the beginning of 1950-51 to 35.7% at the end of 1964-65. The driving force for productivity growth was the rapid (9.7% per annum) growth in investment in machinery.

In this sub-phase government investment in Public and Quasi-public goods vied with investment in production of private goods classified as commanding heights. The distinction between 'private goods' and "public goods" seems to have been missing from the Indian discourse in Phase I. The former are goods & services (G&S) for which private markets routinely exist and production of which by the government merely displaces private production. The latter are G&S for which there are no markets and therefore government supply can add to total output. "Quasi-public" goods and services, which fall in the grey area between the two, can be defined as those "private goods having substantial externalities e.g. Drinking water, irrigation dams, primary education (see also chart 4 in appendix). In 1960-61, 30% of public investment went into Administration and Defence, 19% into Railways 18% into registered manufacturing, 12% into agriculture and 9% into the electricity gas & water sector.[15]

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[14] As measured by the rate of growth of the GDP at factor cost at 1993-94 prices. The rate of growth using the GDP-at-market-price series is 4.4% per annum.

[15] 1960-61 is the earliest year for which the sectoral composition of government investment (GCF) is available in 1993-4 prices. Administration is a public good, which can easily become a public bad. Railways and parts of the electricity & agriculture (dams & canals) sectors could be classified as a quasi-public good during this sub-phase. Most manufacturing was private goods.

Table 2: Comparative Performance in Sub-phases of Indian Socialism

(Average annual growth rate during sub-phase, unless otherwise specified)

Phase=>	I A:Commanding Heights	I B: Leg-Bureaucratic Soc
Period=>	1951-2 to 1964-65	1965-66 to 1979-80
Variable		
GDP at factor cost	4.1%	2.9%
World rank in GDP growth	39/74*	63/74
Per capita GDP	2.0%	0.6%
World rank in per capita growth	41/74*	67/74
Poverty rate (Avg. HCR-level)	50.5%	55.4%
Co-efficient of Variation of GDPgr	0.6	1.5
Rainfall: Difference from mean	4.0%	-2.7%
Contribution to GDP growth	0.44%	-0.48%
Total Factor Productivity Growth	1.6%	0.2%
Consumption: Private	3.7%	2.8%
Consumption: Government	6.6%	5.1%
Investment: Total	7.9%	4.5%
Investment: Public	11.6%	**3.7%**
Investment: Private	3.5%	3.8%
Investment: Fixed	6.5%	3.2%
Machinery	9.7%	3.7%
Structures	5.8%	3.2%
Private (fixed)	3.5%	3.8%
Electricity, Gas & Water	25.3%	6.5%
Railways	11.1%	-5.1%
Communications	13.1%	6.8%
Real Interest Rate: SBI	-0.3%	-4.1%
Real Exchange Rate: Pt/Pnt	-0.1%	0.7%
REER (35 country, trade weighted)	-2.9%	-0.6%
Price of Crude Oil	0.9%	29.7%
Relative Price of Machinery	5.1%	2.2%
Ratio: Export/GDP		4.1%
Note: * Global data available from1960 only		
Sources: NAS, WDI, World Bank Poverty data.		

As railway and communication were government policy created monopolies, government investment equalled total investment in these sectors. The electricity sector was a near monopoly and public investment constituted about 92% of total investment in

1960-61. By creating these monopolies though reservation (exclusion of the private sector), government ensured that efficient growth enhancing private investment could not take place in these sectors.

The growth of Government consumption at 6.6% also far exceeded economic growth. In contrast the growth rate of private consumption was a very modest 3.7% per annum a rate slower than that of GDP growth. Thus the ratio of government to private consumption also rose sharply during this sub-phase.

3.2 Legislative-Bureaucratic Socialism

Having captured the "commanding heights" in sub-phase IA from 1950-1 to 1964-65, the State/ruling establishment turned its attention to controlling the organised/modern private sector even in areas which it had been allowed to operate, areas not earlier considered to lie on the peaks. The nature, width and depth of the control and interference in the private sector and entrepreneurship, was unprecedented for a market economy (i.e. one in which private agents owned a large proportion of total assets). Many fast growing East and South East Asian economies, such as S. Korea, Singapore and Taiwan had a fairly large Public sector, including government owned banks, but none stifled private initiative and competition in the way that India did during this sub-period. Despite twenty five years of reform, the legacy of this supremely misguided interference is still with us.

The second major failure of intellectual leadership during this sub-phase was to ignore the lessons that the NICs (S Korea; Taiwan, China; Singapore) had learned, that it was time to move on from ISI to export promotion (EP). Indian policy, in contrast moved after a short reversal following the crises of the mid-sixties in the other direction. A widening of Import controls into a virtual principle that the import of anything that was produced in India would automatically be restricted or banned.

A spate of restrictive laws and rules were introduced during the Legislative-bureaucratic sub-phase from 1965-66 to 1979-80. The Monopolies and Restrictive Practices Act 1969 (MRTP) was introduced to control the family owned "large industrial houses." The Nationalisation of the 14 largest banks in 1971 was followed by the nationalisation of general insurance in 1972 so as to control the major sources of

investment funds for the private sector.[16] The notorious 'convertibility clause' was introduced (1978) into loans provided by the Public Financial institutions to private industry allowing the former to convert loans into equity.[17] The copper industry, coking & non-coking coal mines, refractory and the Indian Iron & Steel Company were nationalised during 1971 to 1973. The Foreign Exchange Regulation Act 1973 was introduced to control the equity holding of foreign investors in Indian industry. Labour laws and procedures were tightened. For instance, for the first time prior permission of the state government was required for retrenchment of workers in firms with 300 or more employees (1978-9).[18] SSI reservation was extended to modern small-scale industry for the first time in 1967-68 (with the threshold limit for reservation being Rs 7.5 lakh).[19] The list of SSI reserved industries was progressively expanded during this sub-phase, thus reducing the scope for medium-large industry further (Chart 1 in appendix). The maximum marginal rate of income tax was 78% in 1975-76, with the effective marginal tax on the return to capital around 97% because of the simultaneous application of wealth tax on capital assets. The climate for private investment thus continued to deteriorate during this sub-phase (1965-6 to 1979-80).

During this sub-phase, there were also a few modest steps towards liberalisation of licensing. These included, (i) de-licensing of 42 agro-industries. (ii) A progressive rise in the investment/asset limit for compulsory licensing, from Rs 25 lakh at the start of the sub-phase to Rs. 3 crore at the end. (iii) Permission for automatic expansion of licensed capacity (5% per year) for 25 engineering industries included in the set of 40 core industries. There was also some relaxation in the severity of the Import control regime, though it occurred in fits and starts and with periodic reversals (chart 1).

In 1976 the Congress (Indira) party government took on the pampered labour unions for the first time by breaking the railway strike. In 1977 a government headed by the erstwhile leader of the right wing of the Congress party and including the Bharatiya Janata Party (BJP) an offshoot of the Jana Sangh, a right wing party took power. The

[16] See Patel (2002), chapter 5, for a description of how the nationalisation happened and the subsequent public reaction.
[17] A 'Democles sword' to ensure political pliability!
[18] Earlier they were only required to report to the government their intent to retrench (on a 'last come first go' rule). The number of employees for this rule to apply was changed to 100 in 1982.
[19] Since 1966.

government, however, also included socialist who introduced FERA and 'Gandhians' who distrusted State socialism and wanted fewer "controls and subsidies," but went along with 'Swadeshi' external (protectionist) policies. Though the modest liberalisation may have had some effect on the efficiency of existing producers, it was not enough to halt the deterioration in the investment climate. The one step forward, two step backward, nature of the changes reduced the credibility of policy reforms.

As a consequence of these policies, rules and procedures, Indian governance acquired the appellation, "Licence-Permit-Quota Raj." The growth rate fell to an average of 2.9% per annum. This rate was well below the so-called "Hindu Rate of Growth" and took India to the bottom 15% of the growth rankings: At 64th position out of a set of 74 countries for which data is available. Our relative per capita performance was even worse, with the average growth of income falling to 0.6% per annum, less than a third of its value in the previous sub-phase (2%). This put us at 67th position among the 74 countries, with only six (10%) countries performing worse than us. The percentage of population below the poverty line increased to an average of 55.4% during this sub-phase from 50.5% in the previous sub-phase. This sub-phase was therefore bad for both growth and poverty.

The weather was however, significantly unfavourable during this sub-phase, with average rainfall about 2.7% below the long run average. This resulted in the loss of an estimated 0.48% per annum of growth during this sub-phase. If we adjust for this poor rainfall, the underlying (adjusted) growth rate was about 3.4% per annum, marginally lower than the rainfall adjusted growth rate in sub-phase IA. Nevertheless it can be said that the interventionist government policy was not able to provide any corrective to this rainfall-induced reduction in the growth rate. Ironically therefore our analysis confirms that there was an underlying rate of growth of around 3.4% to 3.6% for the Indian economy during 1950-1 to 1979-80 that is better described as the "Indian Socialist Rate of growth" than a "Hindu rate of Growth."

The decline in growth during this sub-phase was associated with a decline of total factor productivity growth from 1.6% per annum in sub-phase IA to 0.6% per annum in sub-phase IB. Thus the decline in average growth of per capita income by 1.4% point was equal to the decline in TFPG. Though there was a growth of capital per worker this was

just enough to offset the decline in growth due to rainfall. Bad weather reduced the rate of growth of net domestic product per worker by an average of less than 0.5% point, while the increase in NDP per worker contributed an average of 0.6% per annum during this sub-phase.

Many analysts of the slowdown in economic growth during the sixties have attributed it either to the decline in government investment or to a slowdown in agriculture. Rate of growth of public investment certainly declined sharply during sub-phase IA. But the rate of growth was even lower during the second phase when growth picked up significantly (table 1). Further, the rate of growth of public investment continued to decline during both sub-phases of the second phase while growth accelerated. The railway and telecommunication sectors were completely monopolised by the government, while in the electricity government instituted a public monopoly on Greenfield investment. In 1960 investment by existing private companies was less than 8% of the total. Deceleration of investment in these infrastructure sectors was therefore largely due to a deceleration in public investment. Growth in fixed investment in railways fell from 11.1% per annum in sub-phase IA to -5.1% per annum in sub-phase IB, in telecom from 13.1% to 6.8% and in electricity from 25.3% per annum to 6.5% per annum. Telecom growth recovered in phase II and remained strong, while in railway and electricity it recovered in sub-phase IIA and decelerated again in sub-phase IIB. Given the government created monopoly (i.e. little or no opportunity for private investment) a deceleration of public investment in these sectors could have had a negative effect on growth.

It must be remembered, however, that the massive expansion of public investment, though it did build needed infrastructure, was seldom based on allocating resources where the highest social return was to be found. Further, public monopolies, once built by the government, had little incentive to behave better than any private monopoly. This led to a build-up of X-inefficiency in public monopolies and gradual deterioration in the supply of public and quasi-public goods. Though initially government investment may have complemented private investment, over time an increasing proportion began substituting for and crowding out private investment and consumption. The dead weight loss of taxation in transferring consumption from private to public account contributed to

the crowding out of private by public activity. The solution to slowing investment in these infrastructure sectors did not necessarily lie in greater public investment but in allowing private entry into these infrastructure sectors, stimulating competition in whichever segment possible and regulating natural monopoly segments like electricity distribution and railway lines.

The poor rainfall in sub-phase IB appears to have affected overall GDP growth through its direct effect on agriculture. Agricultural growth declined from 3.1% per annum in sub-phase IA to 1.5% per annum in sub-phase IB. If we adjust for the effect of rainfall on GDP from agriculture, the adjusted (underlying) growth rate of agriculture was 2.9% per annum and 2.2% per annum in the two sub phases respectively. The underlying decline in agriculture growth between the two sub-phases was therefore about 0.7%, while the underlying (adjusted) decline in overall GDP was about 0.2%. From the national income identity, a change in growth of any sector directly affects total GDP (e.g. 0.7*(1/3) = 0.2).

This accounting arithmetic does not however give us an explanation for what is driving the growth of the economy as a whole. For this we need to determine the effect of agriculture growth, not driven by rainfall fluctuations, on non-agriculture sector. This requires some econometric analysis which is presented in section 7. Some simple correlations illustrate the problem. The co-efficient of variation between growth of agricultural GDP and overall GDP growth is 0.86, but falls to 0.73 if we use the rainfall adjusted growth rates for both (i.e. it is much less than 1). The co-efficient of variation between non-agriculture GDP and agriculture GDP is 0.13 and falls to an insignificant 0.05 for rainfall adjusted growth rates. These facts suggest that at best, higher agricultural growth (for any given level of rainfall) has no effect on non-agricultural growth and at worst could have a negative effect on overall growth, if such growth results from a shift of (government) resources from other sectors to agriculture.

3.3 Lessons: Level II

The lessons from the analysis of sub-phases are as follows.

During phase IB numerous policies were introduced in the name of the poor, the oppressed, the farmers, small scale industry and the less well off. These included, (1)

Nationalisation of banks and insurance, (2) Monopolies and Restrictive Trade Practices Act, (3) Foreign Exchange regulation Act, (4) SSI Reservation of Modern industries and (5) Nationalisation of Coal, Steel, Copper and Textiles. This slew of "socialist measures" neither improved the rate of growth of average per capita income nor helped in reducing poverty. On the contrary the proportion of people below the poverty line (poverty ratio) increased during sub-phase IB.

> ***Lesson 2.1:*** The 'socialist' measures introduced between 1967-68 and 1973-74 neither improved the rate of growth of per capita income nor helped reduce the proportion of people below the poverty line. They may have played a role, along with deteriorating government monopolies (created in the 1950s), in increasing the poverty ratio.

The neglect of irrigation and drought proofing in sub-phase IA, impacted growth in sub-phase IB when rainfall turned adverse. These droughts accounted for an average decline in the aggregate growth rate of 0.5% per annum (relative to the base case with normal rainfall). The decline was a direct effect of rainfall on agriculture output. Because of the common property nature of water resources, the role of government remains important in creation of sustainable water systems. Yet government did not put sufficient effort into these aspects despite paying lip service to them.

> ***Lesson 2.2***: Sustainable and efficient systems for water conservation, use and recharge remain essential for minimising the effect of rainfall on agriculture and on the rural population dependent on it.

Most early development economists (including those with a Marxist bent), had emphasised the importance of shifting people from the low productive (land intensive, diseconomies of scale) agriculture sector to the high productivity (constant returns to scale) manufacturing sector.[20] Agriculture was therefore relatively neglected during sub-phase IA. After the agriculture crises of 1965-66, some revisionist economists in India perhaps went too far in the other direction.[21]

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[20] Though the USA emphasised the importance of Agriculture for the Asian economies (e.g. Taiwan), the USSR squeezed agriculture to push the growth of Industry ('Scissors crises')!

[21] Creating self sufficient "Village Republics" with agriculture as the core.

Growth of GDP (TFP) in every sector affects aggregate GDP (TFP) growth through the aggregation identity, and therefore any variation in agriculture growth will also affect GDP growth. The real question is the effect of agriculture growth on the growth of non-agriculture GDP. It is found to be insignificant or negative once the effect of rainfall is accounted for.

Lesson 2.3: Agriculture has not been a driver of growth in India and may have been a substitute. Productivity growth through diversification and adoption of new technology nevertheless remains important, because information problems are more acute and consequently the role of government more important in agriculture.

The rainfall-induced slowdown in the growth of the economy reduced government revenues and forced government to reduce government expenditure. The government choose to reduce the rate of government investment growth and maintain the rate of growth of government consumption. Despite the deceleration in the growth of public investment in each of the four sub-periods, growth increased dramatically in phase II (i.e. sub-phase IIA).

Lesson 2.4: The sharp slowdown in public investment in phase IB had no perceptible affect on the growth rate of the economy. Government investment is neither a sufficient nor a necessary condition for growth.

There are two critical dimensions to public investment in the production of goods and services (G&S). (a) Whether it is for a Private, Public or Quasi-public (private with significant externalities) good. (b) The degree of competition permitted by the government e.g. a monopoly (oligopoly) created by banning private production (entry or investment). (c) The degree of substitution with other services (e.g. transport-road, rail, air) or the potential for competition from under ground sources of supply (illegal private generator sets). Creation of government monopoly in Quasi-public and private goods (electricity, railway, telephone network before the advent of 'mobile') made economic growth dependent on government investment in these sectors. The efficiency of public governance deteriorated over time and X-inefficiency rose unchecked in the absence of independent regulation.

Lesson 2.5: The effect of government investment depends on the category of goods & services in which it is made, the policy framework (e.g. entry barriers) and the presence of (legal & illegal) substitutes. Changes in government investment in the production of private goods and services in a competitive industry have no direct effect on growth (assuming ownership does not affect efficiency)

Corollary 2.5.1 The net effect of a reduction of government investment in private goods on growth could therefore be positive if it is financed by (distorting) tax revenues.

Lesson 2.6: A slowdown of fixed investment in govt-monopolised Quasi-public services has a negative impact on GDP growth, but the impact is reduced over time (ipso facto).[22] As the monopoly ages, X-inefficiency increases, governance deteriorates and substitutes (legal & illegal) develop.

The solution is a policy framework that, (a) facilitates efficient production & regulation. (b) An independent professional regulatory system that promotes competition & minimises regulatory costs. (c) Institutional innovation that breaks/reverses the deteriorating trend in efficiency & governance and (d) government investment focussed on public & quasi-public goods with the highest social return. The first two have been seen in Telecom (of and on /in fits and starts) and the last two in Highways (NHAI).

Externalities in 'natural monopoly' sectors can be represented by a bell curve (inverted U) with population density on the horizontal (X) axis and the gap between social and private return on the vertical (Y) axis. The relatively high-density rural areas in the middle have the largest externality (gap between social and private returns) and thus are the most worthy of government intervention.

[22] Time being measured from the point at which the government monopoly was created.

4 MARKET REFORMS

The basic philosophy of economic development that had prevailed since independence began to be questioned in the late seventies. The first harbinger of change was perhaps the braking of the railway strike in 1976 by the avowedly pro-poor Prime Minister Mrs. Indira Gandhi. The change continued with the coming to power in 1977 of the so called 'right-wing' political parties such as the Congress (O) and the Jan Sangh/BJP (though some of the coalition partners were Indian socialists the PM was a pro-capitalist opponent of Mrs Indira Gandhi). A questioning of the traditional development approach was implicit in the reports of the P C Alexander Committee on Export-Import Policy and the Dagli Committee on Controls and Subsidies. These reports were submitted in 1978, but with the fall of the Janata Dal government in 1979 few reforms materialised. One of the few noteworthy liberalisation measures during the Janata regime was the raising of the investment licensing limit under IDR&A to Rs. 3 crore. These committees however crystallised the doubts that many people had begun to have about the previous approach.

Anyone who had any direct experience of controls was aware of the evasion & corruption, rent seeking & rent creation associated with them.[23] Yet few academics and intellectuals either recognised or were willing to admit publicly, that this 'Indian socialist' policy framework was undermining the quality of all governing institutions. This included both market complementing institutions such as the revenue department (CBDT, CBEC) as well as Market subtracting/substituting institutions such as licensing authorities [Virmani (2004b) (2005b)]. The decline in the former had long lasting negative effects on economic performance while deterioration of the latter likely increased the rate of growth of the economy during the eighties (see *Governance Paradox op cit*).

[23] As personal income tax was applicable to a small proportion of the population even fewer knew about the irreversible evasion-corruption effects (hysterisis) that was to permanently weaken the tax bureaucracy.

4.1 A Path Through the Jungle of Controls

Policy reform during the first sub-phase of the phase of Market reform experimentation were characterised by two themes; the move to an Export Promotion strategy and the progressive restoration of the freedom of entrepreneurs to compete. The gradual nature of these reforms was referred to by us a decade and half ago as "Tinkerisation." Subsequent analysis suggests that the pace of reforms during this decade was not so misaligned with the 'optimal.' These reforms were driven by necessity (slow export & manufacturing growth), pragmatism (trial and error, incremental change), personal observation of market economies and business drive. Though the architects of the 1990s reforms were in government during the 1980s they did not have the authority in the 1980s that they did in the 1990s. The policies that had clearly failed in India were modified and where the modification appeared to work the degree of change was increased (e.g. progressive increase of exemption levels). The changes were based neither on macro-growth analysis nor on the growth policy experience of other countries.[24] Consequently they appeared more ad hoc and limited. We know, however, from Tax theory that the welfare effects of tax distortions are non-linear i.e. they rise more than proportionately with the tax. Thus we would expect the removal of the greatest, most visible, distortions (critical bottlenecks) to have a disproportionate positive effect on the economy's performance.

Reforms started after Mrs. Gandhi's return to power in 1980 (with Mr. P C Alexander her Principle Secretary). Economic reforms during the eighties attacked two major failings of the earlier policy regime: Domestic controls on production & investment and external trade controls & distortions. Reforms during sub-phase IIA could be characterised as "Reforms by Stealth," a term that become popular a decade later. As K.N. Raj (1986), pointed out there was no official resolution or statement about the 'new economic policy', which saw "certain changes in policy initiated in stages over the last several months." From our current perspective, we can see that the implicit

[24] No body has claimed parentage of these reforms or asserted that they were based on a clearly articulated objective or policy approach.

*objective of these reforms was to free the domestic economy at a faster pace than the external, so as to prepare domestic entrepreneurs/industry to compete with foreign o*nes.

Domestic reforms addressed the most glaringly harmful aspects of the previous policy framework. The later included a policy that discouraged investment and production and limited the exploitation of economies of scale and scope so essential for technical change, productivity improvement and growth. Starting in 1980-81 there was a gradual liberalisation of controls on prices, production, distribution and investment (detailed illustrative list in chart 2). Among the reforms undertaken were:

(a) Price and distribution control on two important industries, cement and aluminium, still subject to control, was removed.
(b) 'Broad-banding' expanded the variants and range of products that a given firm (licensed previously for a specific product) could produce. Thus firms could (legally) exploit economies of scope for the first time.
(c) The upper limits on how much an ID&R act licensee could produce, by adding some equipment or replacing old equipment with higher capacity new equipment, was gradually raised (to 5 crore in 1985, 15 crore in 1988). Thus firms could for the first time legally exploit new economies of scale as they emerged (from the technology/supply and demand side).
(d) Greenfield investment was gradually de-licensed by progressively freeing specified sub-sets of industry from its ambit (i.e. expanding the positive list of de-licensed industries) and raising the value limit on investment below which no license was required. This represented not just a change in the approach to economic growth but a freeing of the fundamental instrument of growth.
(e) For the list of industries reserved for investment by the Small Scale Sector, the investment value limit was raised so as to allow SSI to exploit economies of scale.[25]
(f) The positive list of MRTP exempt industries was expanded and the investment value limit (above which a licence was required even for industries in the positive list) was raised progressively. As only such MRTP groups had the resources and risk taking ability to invest in large capital-intensive industry, where economies of scale are most critical for competitiveness. These industries were therefore implicitly decontrolled.

The overall effect of these reforms was to greatly increase the degree of domestic competition in the economy, contrary to what Rodrik and Subramanian (2004) have asserted. These reforms represented a fundamental change in India's development

[25] Though the list of SSI reserved industries was expanded from 500 to 800 most of this was the result of greater dis-aggregation of the list (by replacing generic term for product X with a longer list of specific types of X).

philosophy. A concrete recognition that the *jungle of controls* put in place during phase I was not contributing to any of the objectives that they were supposed to achieve.

Other domestic reforms included a reduction in corporate income, personal income and wealth tax rates and on Estate duty (inheritance tax). In 1975-76 the maximum marginal rate (MMR) on personal income rate (PIT) was approximately 78%. The effective rate of tax on income from capital was almost 100% because of the existence of a wealth tax. The reduction in these extortionate rates began with a lowering of the maximum marginal rate on personal income to 62% in 1980-81. Most other reductions followed after the election of 1984 (chart 2). The Central excise tax had by the end of the seventies become complex welter of rates. For instance, excise tax rates on textile fibres and fabrics varied by denier, count, weight and material with as many as 30-50 different rates on textiles alone. The Modified value added tax (MODVAT) was introduced in 1986, to replace the multi-point Central excise tax.

A modest beginning was also made on capital market reforms. These domestic reforms were complemented by external reforms that represented a much clearer recognition that the import substitution strategy did not free the country from external dependence, high current account deficits and BOP problems.[26]

4.1.1 Import Substitution To Export Promotion

External reforms during the 1980s followed the classical pattern of moving away from an Import Substituting Strategy to an export neutral regime (in which the bias against export was neutralised), traversed earlier by S Korea (1963+), Taiwan, China and the ASEAN countries. For exporters and producers of exportable goods, reforms in India included the following (details in chart 2):

(a) A substantial increase in the availability of imported inputs and capital goods through special schemes. Among these were, Advance Licence (AL), Intermediate Advance Licence, Special Import License (SIL), Import Export Pass book scheme, Export Promotion Capital Goods Scheme (EPCG) and Tradable Replenishment (REP) Licenses.
(b) A reduction in tariffs on imported inputs & capital goods through duty free imports of the former and reduced duty import of the latter.
(c) Neutralisation of domestic input taxes (e.g. excise) and availability of domestic raw materials at world prices.

[26] Trade liberalisation & reform experiments in phase I were under taken under the pressure of BOP crisis and Ad hoc policy decisions (listening to the cry "Try it you'll like it") and thus just as arbitrarily reversed.

(d) Export production was exempted from investment licensing, location restrictions and restriction under MRTP policy. The export obligation of firms was reduced so that they could use their facilities to produce according to market signals.
(e) More export promotion zones (EPZs), which had simpler administrative procedures for duty free import.
(f) Special credit facilities & lower interest rates on pre and post-shipment credit.
(g) Reduced taxes on profits from exports of goods and services (professionals).

Many of the measures ostensibly directed at exporters (e.g. EPCG and tradable REP license) also had the effect of making modern capital goods and critical inputs available to non-exporters and thus increased the efficiency of protection.[27] The formal rigours of the general import control regime were simultaneously but gradually reduced.

The scope of the comprehensive import control structure (quantitative restrictions) was gradually reduced on inputs and capital goods, without touching consumer goods and mixed/dual use (consumer-capital) goods. The positive list of capital goods on open general license (OGL), a misnomer for complete elimination of import controls/ quantitative restrictions, increased progressively from 76 items in 1979 to 1939 items in April 1990. According to one estimate 32% of all imports were on OGL in 1987-88. These were primarily intermediate and capital goods not produced in the country (i.e. high equivalent tariffs) and would therefore be expected to have the greatest positive impact on the economy. The restricted list of imports, which contained intermediate goods that were produced in insufficient quantity to meet domestic demand was also gradually expanded and made more flexible. The scope of canalised imports, i.e. imports that had to be made through government/public sector firms, was also reduced.

Import tariff rates on inputs and capital goods were simultaneously raised. The rise in nominal tariffs, such as the increase in average (effective) tariff rate on capital goods from 37% in 1973-74 to 63% in 1988-89, have been viewed as increasing import protection. In our judgement the effect of the tariff increases on inputs & capital goods during the 1980s was (by and large) to close the gap between the equivalent tariff (arising from QRs) and the nominal tariffs that existed in the 1970s.[28] These in turn reduced rents improved the efficiency of the remaining rationing and increased the tariff collection rate

[27] Further any producer could import any item by purchasing exports from genuine exporters (by paying an exporter a commission to channel exports through his firm), even though this was not clearly legal.
[28] In a proportion of cases (say 10%), effective protection must also have increased.

(from non-POL imports) from 30% in the late 1970s to 61% in 1986-87. This is reflected in the fact that *the real exchange rate (Pt/Pnt) depreciated by 0.3% per year* during sub-phase IIA after appreciating by 0.7% per annum during the previous sub-phase IB (Tables 2 & 3).[29]

As India's external reforms in the 1980s followed broadly the same pattern as that of the 'East Asian Miracle' economies the growth spurt in these countries after the switch from pure Import substituting to Export promotion (export incentive) policy can serve as a benchmark. The cut-off points for comparison are obtained from the World Bank (1993) study of that name and the pre-and post policy change growth rates compared. Malaysia is an exception in that it moved from market led development to a combination of export promotion and import substitution, so that we do not expect a positive growth spurt. As China and India are not part of that study, China's cut-off points are taken as identical to that of India. Vietnam is not included because pre-1980 data is not available. Table 4 shows that the growth spurt ranged from a low of 1.7% per annum in the case of Taiwan (China) to a high of 5.1% per annum in the case of Indonesia. The Indian growth spurt is 2.6% per annum (according to the standardised WDI data), which is the median of the group of 7 Asian countries shown. China's growth spurt over the same two periods was almost identical at 2.7%.

If we use the Indian data we can also estimate the policy induced, rainfall adjusted increase. The adjusted per capita GDP growth rate increased by 2.2% points, from 1.1% per year in phase IB to 3.3% per year in phase IIA.[30] This is in the lower half of the set of Asian reformers. The growth spurt in India may have been limited by the restrictive domestic policies (such as small scale industry reservation & restrictions on firing labour) whose removal would have complemented external reform/liberalisation.[31]

[29] During phase IIA, there was also a modest liberalisation of technology imports and of areas in which Foreign direct investment was allowed.
[30] Or from an average of 1.3% per year in phase I to an average of 3.7% per annum in phase II i.e. by 2.4%.
[31] There may also have been other complementary domestic reforms in economies showing a larger spurt.

Table 3 : Comparative Performance During Sub-Phases of Market Reform

Phase=>	II A: Basic Reform	II B: Wider Reform
Period=>	1980-1 to1991-2	1992-3 to 2003-4
Variable		
GDP at factor cost	5.5%	6.1%
World rank in GDP growth	**12/88**	**9/107**
Per capita GDP	3.2%	4.1%
World rank in per capita growth	**14/88**	**9/107**
Poverty rate (HCR-level)	38.0%	35.3%
Co-efficient of Variation of GDPgr	0.5	0.2
Rainfall: Difference from mean	-1.7%	-1.9%
Contribution to GDP growth	-0.08%	-0.08%
Total Factor Productivity Growth	2.6%	2.8%
Consumption: Private	4.5%	4.8%
Consumption: Government	6.0%	6.1%
Investment: Total	5.0%	7.6%
Investment: Public	2.9%	2.0%
Investment: Private	7.3%	10.3%
Investment: Fixed	5.6%	6.9%
Machinery	**8.5%**	**9.2%**
Structures	3.7%	5.4%
Private (fixed)		
Electricity, Gas & Water	7.8%	0.3%
Railways	5.0%	2.2%
Communications	12.3%	10.6%
Real Interest Rate: SBI	7.9%	7.8%
Real Exchange Rate: Pt/Pnt	-0.3%	-0.4%
REER (35 country, trade weighted)	-2.7%	0.8%
Price of Crude Oil	-1.0%	5.8%
Relative Price of Machinery	-0.8%	-2.6%
Ratio: Export/GDP	4.9%	9.0%
Note: * Global data available from1960 only		
Sources: NAS, WDI, Planning Commission Poverty data.		

Table 4: Growth Spurt in Asian Economies
[From Import substitution (IS) to Export promotion (EP)]

	Last IS	1960	X+1	End EP	Growth
Economy	Year X	to X*	to Y	year Y	Spurt
	1	2	3	4	5=3-2
Indonesia	1966	0.0	5.1	1973	5.1
Singapore	1966	4.8	8.4	1979	3.7
China	1979	4.9	7.7	1991	2.7
India	1979	0.6	3.3	1991	2.6
S. Korea	1960	3.3	5.7	1970	2.3
Thailand	1980	4.1	6.2	1992	2.1
Taiwan, China	1957	5.0	6.7	1972	1.7
[From market led to IS cum EP policy]					
Malaysia	1970	3.5	4.4	1985	0.9

Note:1) *=data for S. Korea in this column is for 1960-64, as WDI data is available only from 1960.

2) Turning points are from World Bank (1993), except for India and China.

4.1.2 Embodied Technology and Factor Productivity

The spurt in growth was driven mostly by a 1.7 per cent point acceleration in total factor productivity to 2.6% per annum [Virmani (2004d)]. Technology embodied in machinery appears to have played an important role in the spurt in TFPG. The rate of growth of investment in Machinery and equipment more than doubled from 3.7% per annum during sub-phase IB to 9.9% per annum during sub-phase IIA (Tables 2 & 3). This raised the average share of machinery in gross fixed capital formation by 15.4% points between the two phases. As shown by De Long & Summers (1991, 1992, and 1993) equipment investment is strongly co-related with long run growth. Hendricks (2000) links this to relative prices of capital goods by modelling the effect of equipment prices and equipment investment. We find that Indian case fits this theory as the relative price of machinery declined by 0.8% per annum during sub-phase IIA after rising by 2.2% per annum during IB.[32]

[32] As per theory we should use a quality adjusted price, but this is not available for India.

We know that the freeing of capital good imports improved the quality of capital goods (in terms of embodied technology) available to the domestic economy. As analysed by Helpman and Krugmen (1985) access to foreign suppliers provides access to specialised capital goods, which by expanding the assortment of capital goods (and inputs) available for production raises TFPG (chapters 9 and 11). An empirical evaluation would require hedonic price indices that take account of product quality and variety. These have never been constructed for India. We hypothesise that the quality-adjusted price of capital goods declined at a faster rate than the nominal price during phase II. *Thus the increase in investment in machinery and the greater availability and use of higher quality equipment imports were important factors in the acceleration in growth during this sub-phase***.**

Investment (gross capital formation) growth accelerated marginally from 4.5% per annum in sub-phase IB to 5.0% in sub-phase IIA. There was, however, a sharp acceleration in the rate of growth of private investment from 3.5% (3.6%) per annum during sub-phase IB (I) to 8.4% per annum during sub-phase IIA. GDP from manufacturing whose rate of growth had declined sharply during sub-phase IB accelerated by 2% points. As TFPG increased by 2.1% points, policy reform linked productivity improvement drove the recovery in manufacturing.

Levine and Renalt (1992) pointed out that exports as a percentage of GDP have a positive effect on growth. As this effect disappears when investment is included it implies that trade acts through its effect on investment. Tables 2 and 3 show that exports increased from 4.1% of GDP in sub-phase IB (1965-6 to 1979-80) to 4.9% of GDP in sub phase IIA (1980-1 to 1991-2). Frankel and Romer decomposed the effect of trade on income into their indirect effect through capital deepening, education and TFP and found the greatest impact is through TFP. Using the same methodology Alesina, Spolaore & Wacziarg (2003) found a positive effect of openness on growth of income per capita, with the effect being larger in smaller countries. Wacziarg (2001) found that the effect of trade policies on growth occurred through investment (primary factor) and technology transmission.

Thus on the supply side, ***liberalisation of production and investment, import liberalisation and more efficient tariffs combined to accelerate growth through higher***

total factor productivity growth. This was complimented by increased private demand as private consumption growth rose from 2.8% (3.2%) per annum in sub-phase IB (phase I) to 4.5% per annum in sub-phase IIA. The real price of oil declined as the rate of growth of the nominal oil price decelerated sharply (table 3). This acted like a reduction in external tax on citizens and stimulated domestic demand.[33]

4.2 Wider Reform

Though the main underlying reform themes in the second sub-phase of market reforms were a continuation of those started in the first sub-phase, the direction, emphasis and pace was altered sharply: The move to an Export substituting strategy in the previous sub-phase was supplanted by and encompassed within an import liberalisation one. This in turn was embedded within an overall strategy of eliminating restrictions & barriers to competition and progressively promoting competition. Static efficiency and welfare gains also received direct attention.

The BOP crisis of 1990-1991 was turned into an opportunity for wider reforms. The architects of the 1990s reforms clearly understood the shortcomings of the socialist approach and appreciated the positive aspects of the market (a la the Miracle growth economies of East & S.E. Asia).[34] These architects were in charge of the finance ministry, which had under its purview a substantial number of sectors needing reform (external, financial, taxation, fiscal, monetary policy). The reform of these sectors could in principle be undertaken in a relatively integrated and comprehensive way, though institutional and political constraints affected its pace in different areas. The widening and deepening of the reforms during the early 1990s was partly due to this fortunate development. The main challenge for the reformers in the 1990s was to generate public and political support for these reforms, when few academics, administrators and politicians had a similar perspective. The 1990-91 BOP crises helped in this process by making it easier to convince administrators & politicians that the old approach was not sustainable.[35]

The economic response to the crises was two fold. One was classical macro-economic management of the Balance of Payment crises. That is a combination of

[33] Increasing tax evasion may have also contributed to this spurt.
[34] See Virmani (2001, 2002d, 2003).

expenditure reduction, through a reduction of the fiscal deficit coupled with expenditure switching through a devaluation of the exchange rate. The second was to change policies that were retarding productivity, private investment and growth. The underlying approach was to remove controls and restrictions that were either limiting/distorting competition in product markets or limiting access to capital and technology. The scope and content of the reforms was much wider than in the eighties.

The sectors included manufacturing industry, Central infrastructure services (Telecom, ports), external sector, finance and taxation. Industry and infrastructure were not connected with the Ministry of Finance and were characterised by a more opportunistic approach (in the sense of proposing and pushing reforms as the opportunity arose). Industrial (manufacturing) decontrol and investment de-licensing (under the industry ministry), represented a completion, at an accelerated pace, of reforms that started in the late 1980s.[36] Remaining controls on production and licenses on investment in manufacturing were rapidly removed. Among the last to go, but highly significant, was the de-licensing of investment in consumer durable goods including automobiles (cars) and white goods in 1993-94.[37] Specific industries, such as sugar, fertiliser and drugs, however, still remain under control. Infrastructure sectors under the constitutional purview of the Central government were also government monopolies with strong vested interests and were reformed at a pace that depended much more on who headed these ministries and the interest taken by the Prime Minister.

External reforms were aimed at reducing the enormous protection enjoyed by industry as well as to provide access to modern intermediate and capital goods. They included QRs/import controls and tariff reduction.[38] Controls on a large proportion of final consumer goods were not eliminated till 1999-2000.[39] On the capital account side the most important steps were the removal of restrictions on flow of FDI and Foreign equity into India. Though the initial liberalisation was dramatic, a few restrictions

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[35] At least in sectors where vested interests were relatively weak.
[36] The crises also made this possible, along with the presence in the industry ministry of a secretary and economic advisor who were convinced that this was the best way to promote manufacturing growth.
[37] A vast under-growth of controls also remains in virtually every sector and consequently subjective indices of economic freedom still classify India as mostly unfree.
[38] Tariff rates were till 2003-4 still however among the highest in the world.
[39] These were the only reforms in which timing was determined by external pressure, namely the DSP case at the WTO that forced India to give up use of the BOP clause for imposing import controls.

remained in some sectors, which were then removed very gradually over time. Restrictions on import of technology were also lifted gradually along with those on capital goods imports, though limits remain on payment royalty (percentage of domestic and export sales). Movement of foreign skilled personnel was made easier. The entire system of exchange rate management was transformed rapidly from a controlled one to a market oriented one a change that played a large role in the success of external sector reforms.[40]

The financial system and capital markets were gradually de-controlled and the private sector / market forces allowed greater play within a newly introduced modern regulatory regime. As the nationalised banking system was a virtual government monopoly this has affected the nature and pace of banking reform. Tax reform proceeded at a much more gradual pace with the early focus on revenue neutral reduction in marginal tax rates, which was expected to improve efficiency of the tax system and improve horizontal equity by raising voluntary compliance and reduction of tax evasion. Over time this was expected to raise revenue (list in appendix chart 3). Reform was gradually extended to excise and other taxes, but is still far from complete in any area.

4.3 Lessons: Level II

India's experiments with market reforms have thrown up lessons about the static and dynamic effects of reforms and of their timing and phasing. These lessons depend on an understanding the nature of the economy that existed in 1979-80. Indian Planning and the Indian economy were very different from that of the USSR and the Soviet Bloc, which may be termed communist-socialist economies. India's economy was always a market economy but in 1970s, perhaps one of the most heavily controlled market economies in the World (whence the term Indian version of Socialism). This has to be kept in mind when drawing lessons for other countries.

It is important to distinguish between the static and dynamic effects of reforms. The former affects allocative efficiency, equity and current welfare and the latter affects growth rates of productivity, investment and GDP (/per capita GDP). Though in principle an improvement in allocative efficiency can lead to an improvement in the

[40] See Virmani (2001, 2002d, 2003) for details.

investment environment and growth the lags can be relatively long and unpredictable. The common expectation that every reform should result in an increase in the growth rate and/or reduction in poverty, sets up an incorrect benchmark. Thus for instance, the primary objective of the 1990s income tax reforms was static efficiency and welfare gains (tax payer equity) that are expected to generate a gradual but sustained increase in income tax revenue.[41] This has indeed happened with the share of Personal Income tax revenue quadrupling from 0.2% of GDPmp in 1990-1 to 1.2% of GDPmp in 2002-03. The dramatic change took place after a major reduction in average marginal rates in 1997-98.[42] Revenue from corporate income taxes remained stationary as a share of GDP during the 1980s despite rate reductions. This has been followed by steady but modest reductions in the marginal corporate tax rate in the 1990s. As a consequence revenues have increased from an average of 1% from 1980-1 to 1990-1 to 1.5% of GDPmp in 2002-3. Overall income tax revenues have more than doubled from 1.2% of GDP in 1990-1 to 2.7% of GDP in 2002-3. Any effect of this reform on TFPG or GDP growth is, on the other hand, very speculative

Financial sector reforms also have a substantial static component. The most significant reforms related to the removal of interest rate ceilings on bank lending and a host of associated controls and restrictions affecting nationalised banks. Similarly introduction of prudential regulations reduce systemic risk but are unlikely to have any visible impact on growth. On the contrary they may reduce growth in the short run as lenders become more risk averse. The other major reform was the entry of private banks in competition with the Nationalised Banks. The most significant impact of this has been the development of a housing loan market and consumer durable financing. It has also spurred improvement in the quality of service provided to bank customers. Thus allocative efficiency and welfare have improved. As 40% of credit is still allocated according to government guidelines and 70% of the Banking system is owned by the government there has been little competition or innovation (so far) in the supply of credit for production and investment. The spread of credit to new borrowers (small and

[41] As a fraction of 1% of the population was liable for income tax, income tax reforms could not have a direct effect on poverty or on common aggregate measures of distribution.
[42] Personal Income tax revenues averaged 0.33% of GDPmp from 1980-1 to 1997-98.

medium) or the introduction of new methods of evaluation and appraisal are therefore minimal, as are the dynamic effects of these reforms.

Freeing of controls on equity markets has also led to gains in allocation within the existing set of firms and entrepreneurs. Better regulatory systems and procedures have reduced systemic risk and facilitated the flow of external funds (FII) into the equity markets. Though the transaction cost for established/existing entrepreneurs has fallen the access of new entrepreneurs does not appear to have widened significantly. There are two reasons. One is the absence of complementary reforms (company law, limited partnership, SICA/ bankruptcy law). Second, the general deterioration in the quality of the police-legal system reduces the probability of catching and convicting illegal financial behaviour. Regulatory systems are designed to deal with financial grey areas in a situation in which black (criminal/illegal) acts are dealt with by the normal legal system. Because of information asymmetry, the risk of financing new entrepreneurs includes the risk of some of them being financial frauds. Even though the regulatory system has improved, reducing the transaction cost of financing new borrowers, this has been partly offset by the increased risk of fraud. The market for risk capital has therefore not expanded beyond its traditional catchments area, and the dynamic effects that one might expect from capital market reforms are limited. Entry of venture capital and other equity funds with sophisticated evaluation capabilities will eventually overcome the second problem, while policy reform is needed to ensure that the first problem is solved.

The market reforms that appear to have had the strongest dynamic effects in India are those relating to production, investment and external controls. These are best understood through the prism of competition.[43] For this purpose we distinguish three aspects of competition: The freedom to compete, the pressure to compete (competitive pressure) and the means and ability to compete. In a normal market economy freedom to compete is taken for granted. India created a system of production and investment controls and in some cases price and distribution controls that restricted or eliminated the freedom of medium-large firms to compete. As scale was an important characteristic of modernisation, limits on size effectively limited the freedom of such firms to compete.

There was two ways in which freedom could be restored: Legally, by eliminating the price, distribution, production and investment controls or illegally through evasion and corruption or by a combination of the two. As Krueger, Bhagwati and others pointed out, controls led first to evasion then to corruption deterioration in the quality of governance). Virmani (2004b, 2005a) highlighted the governance paradox; deterioration in governance can actually enhance productivity and growth as it reduces the distortionary effect of controls. This is what happened in India during the 1970s. Both processes can also interact in highly unusual/unpredictable ways. A small reduction in controls, if it signals a credible change in approach, can undermine the legitimacy of the entire control system characterised by creeping evasion-corruption, leading to a rise in evasion and corruption and a disproportionate positive effect on efficiency and growth. This is what happened in the 1980s to some extent.

Lesson 3.1: Freedom to compete is a necessary condition (an essential pre-requisite) for competition and efficiency gains.

Corollary 3.1.1: Governance Paradox; A deterioration in governance can increase the freedom to compete and thus lead to increased efficiency/growth.

Corollary 3.1.2: A small expansion of freedom to compete can lead to a disproportionate effect on efficiency/growth because of the de-legitimisation of distortionary controls and an increase in evasion-corruption.

The pressure to compete (competitive pressure) can come from two sources: Domestic production or from imported supplies. In the first case domestic production can be by indigenous entrepreneurs or through FDI (more below). Entry of FDI can put competitive pressure on entrepreneurs, while imports can put pressure on both types of producers.

The threat of imports can sometimes be as powerful as actual competition. Thus the creation of artificial monopoly, an exclusive license to produce non-tradable services or to produce a tradable good with a complete ban on imports, eliminates actual as well

[43] Porter(1995) had emphasised the importance of competition in developing and sustaining the competitiveness of firms on which the competitive strength of countries was built.

as potential competition. In contrast a monopoly arising from market structure for instance a small market size relative to minimum efficient scale always has a potential competitive threat. Similarly an import ban or QR eliminates not just imports but the threat of imports. With imports free a custom Tariff, even one that is high enough to eliminate actual imports, puts some competitive pressure on domestic producers as it does not extinguish the threat of imports. Thus we can have a paradoxical situation in which an overall liberalisation of import controls coupled with a rise in average tariffs can increase competitive pressure dramatically. The rise in tariffs on products subject to QRs by reducing rents, evasion and corruption reduces transaction cost of imports and thus multiplies the positive effect of a liberalisation of these QRs. This is what happened during the eighties.

The third dimension of competition is the means to compete. This has two aspects. Competition requires access to the inputs and capital goods that a firm needs to increase its ability to compete. It also requires access to factors (technology, capital, skills) and the flexibility to adjust them (unskilled labour). FDI by bundling many of these improves not only the ability of the nation to compete, but also strengthens the ability of domestic entrepreneurs through spill over effects. In contrast to abstract theoretical benefits of technology or exports FDI demonstrates in practice the gains from new technology, management techniques, new products and new markets (exports). The spill over effects can therefore enhance the ability of domestic entrepreneurs to compete.

Freedom to import inputs and capital goods therefore not only puts competitive pressure on producers but also expands the means available to the producer to compete. Freedom to import consumer goods on the other hand puts competitive pressure on producers but does not directly provide the means to compete in the short run. However, it increases the information flow about product innovations and enhances knowledge about new materials and technology that are incorporated in it, thus increasing competitive ability in the long run.

Lesson 3.2: Domestic Liberalisation: Reduction of controls and pricing, distribution, production and investment simultaneously increase the freedom to compete and the

pressure of competition. It is therefore a necessary condition for increasing competition and deriving its dynamic benefits.

With imports of goods and technology banned or severely restricted, domestic liberalisation is not sufficient to ensure the benefits of competition in terms of productivity gains.

Lesson 3.3: A reduction in controls on imports of raw materials, intermediate goods and capital goods increases both the competitive pressure on domestic producers and their access to the means of competition.

Corollary 3.3.1: Availability of imported capital goods improves access to embodied technology and thus provides the means to compete. Freedom to import capital goods is therefore necessary for a low income country to obtain the benefits of competition.

Corollary 3.3.2: Domestic liberalisation coupled with liberalisation of capital goods imports is necessary and sufficient for increasing competition and obtaining its benefits in terms of efficiency/productivity for the existing set of goods.

India developed a capital goods industry during the 1960s and 1970s behind protective walls supplemented by import of technologically inferior capital goods from the USSR (under the so called rupee payment system). The embodied technology available to Indian industry was therefore backward or outdated. The Export Promotion Capital Goods (EPCG) scheme allowed (1980s) producers to import any capital good after making a commitment to export a certain multiple of the import value. This increased access to embodied technology for exporters as well as for modern industry and services generally. Coupled with a gradual increase in access to intermediate imports, first for export production and then for all producers (Actual Users) it strengthened the ability to compete.

Lesson 3.4; A liberalisation of imports of intermediate inputs (parts, components and sub-assemblies) is necessary for introduction of competitive new manufactured products.

Corollary 3.4.1: Liberalisation of intermediate imports can complement liberalisation of capital goods imports in promoting productivity improvement.

A modern durable good consists of many parts. The quality of the good is not much better than that of its weakest/lowest quality part. There is also a quality ladder associated with levels of economic development and per capita income.[44] Thus a low income country would primarily produce and use low quality goods. The average quality of the goods produced and consumed would rise progressively with per capita income, with different goods rising faster or slower (depending on tastes and average income). A low income country, even a large one like India, or a small middle income country cannot produce all the parts that compose a good either economically or of equal quality. Thus import of some parts and components are essential for the introduction of newer, better quality/ more advanced products and access to such imports are a necessary condition for the introduction of such new products.

Much productivity change takes place through small incremental improvements. These often require new parts or equipment. If imports are banned or restricted, such productivity improvement would be retarded, because of lower availability or higher cost or a combination of the two. Conversely, a freeing of such imports can contribute to the acceleration of productivity change.

Lesson 3.5: A replacement of QRs with equivalent tariffs increases the threat of competition on both the output and input side and thus increases both the competitive pressure and the ability to compete (through more competitive supply of inputs).

Corollary 3.5.1: A rise in average tariffs can lead to a decline in effective protection when coupled with a reduction in import controls (including QRs), because of a reduction in transaction costs. This can lead to substantial gains in efficiency because of a more efficient allocation of allowed imports.

[44] Grossman and Helpman (1991).

The eighties were characterised by both a gradual reduction in QRs and an increase in tariffs. This led to an increase in the efficiency of the remaining import control regime and contributed to TFPG and growth.

Lesson 3.6: A reduction in import controls on final consumer goods increases the pressure to compete but enhances the ability to compete after a lag. A slower phasing in of consumer goods import liberalisation can therefore be justified.

The second aspect of access is the access to competitive factor markets. The most important is access to technology. To the extent that technology is embodied in capital goods, freedom to import capital goods is critical. Restrictions on import of disembodied technology affect not only current productivity but have a cumulative negative effect because of the hierarchical nature of much technology. Each rung of the technology ladder is helpful in understanding the next (even if not a prerequisite). An elimination of access to the latest technology handicaps access to future technological innovations. Similarly all types of skills are not available within a country. The freedom to import skilled personnel as and when needed strengthens the ability of firms to compete. Both these, however, require a higher level of entrepreneurship and managerial ability. Competitive well regulated capital markets reduce the cost of capital and improve its allocation. These strengthen the competitive position of industry by reducing the cost of factors. Similarly more flexible labour markets allow use of labour intensive technology, which is potential source of competitive advantage in a low income country. Rigid labour (laws/rules/procedures) markets, in contrast, destroy this comparative advantage by artificially raising the risks and costs of using labour and labour intensive technology.

FDI that bundles technology, management, marketing skills (including export marketing) and capital can rapidly expand a country's access to all these factors. In a country with a relatively high number and quality of entrepreneurs, such as India, FDI is most effective in modern industries and new products. In other words,

Lesson 3.7: The positive effect of FDI is the highest where controls have created the largest gap between the domestic and global technology level.

These are likely to be the industries and products which have had the largest technological change globally. "Technology" includes management and marketing techniques and system relevant to the industry/product.

International spill over of knowledge are critical to the growth of all countries and the importance increases the less advanced the country. Eaton and Kortum (1996) found that in a sample of 19 OECD countries found that Japan, Germany, France and UK obtained 50% of their productivity growth from ideas that originated outside the country while this proportion was 90% for all other countries in the OECD (excluding USA). Coe, Helpman and Hoffmaister (1997) found that foreign capital stock explained 20% of the variation in the TFP level of developing countries. As absorptive capacity of developing country differs across countries with level of education an improvement in the latter would raise TFP levels (Caselli and Coleman (2001). Griffith, Redding and Reenen (2003) found that the rate at which lagging countries caught up with leading countries (technology frontier) was positively related to investment in R&D. Hejazi and Sefarian (1999) found that international spill over from FDI to TFP are at least as large as the spill over from trade to TFP. Kellor (2001) decomposed the international spill over and found that 70% were through trade, 15% through FDI and 15% the result of language skills. Thus increased Trade along with FDI flows and R&D designed to improve the use of foreign technology can accelerate TFPG and catch up growth. For India Banga(2003a,b,c,d) has demonstrated the positive effect of FDI on exports (own), on export spill over (to domestic firms in industry) as well as on the efficiency and productivity of non-traditional industries.

Corollary 3.7.1: In a country that lacks entrepreneurs (perhaps because such entrepreneurs have been eliminated or expelled) FDI is vital for fast growth.

Communist China, during the reign of Mao, physically eliminated entrepreneurs and decimated potential entrepreneurs, through campaigns directed at "capitalist roaders." Therefore fast industrial growth of the kind seen in China since 1982 would have been impossible without large scale 'import' of entrepreneurs from Hong Kong, Taiwan etc. that was part of the FDI package. Uganda under Idi Amin undermined the

entrepreneurial base of his country by expelling Asians, who went on to become prominent business persons in the UK and USA.[45] Certain poor agrarian countries lack indigenous entrepreneurs. For these FDI often bundled with migration of entrepreneurial groups may be a necessary condition for faster growth.

Lesson 3.8: A market sensitive exchange rate policy (i.e. one that takes account of foreign exchange supply-demand and market expectations), is critical to the success of market based international trade liberalisation.

The 25% depreciation of the exchange rate in 1991 was followed by the introduction of a dual exchange in early 1992, an integrated market oriented exchange rate in 1993, and full convertibility on the current account in 1994. The new exchange rate-trade regime led to, (a) An increase in intra-industry trade, (b) An export growth rate well above average world rates (c) A rise in India's world share from less than 0.5% to about 0.8%, and (d) Current account deficits were reduced to 1.1% of GDP.[46]

By definition, import liberalisation and reform changes relative prices from the distorted domestic ratios to World relative prices. Highly protected goods would have relatively higher prices and would grow faster in a distorted economy thus giving them a higher weight in production at the start of reforms. With liberalisation and opening, their prices and growth rate will fall, temporarily even to negative. At the same time the output and growth of previously under-protected goods would rise. Any Laspeyrs type quantity indices will understate the (true change in) growth rate. Thus conventionally measured growth rates may understate the true growth rate during the reform period. A shift in the base year to a post reform year will raise the post reform growth rate and reduce the pre-reform one, reflecting the effect of reforms more accurately. If reforms are dramatic the effect can be significant.

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[45] His successor, Mr Mussoveni, recognising the critical importance of entrepreneurs in development, has reversed this policy and publically welcomed their return.

[46] The Indian experience is therefore consistent with the World Bank – IMF view but **not** identical to it as we have emphasised "market sensitivity" in contrast to "market determination." An important difference is the asymmetry in terms of negative and positive shocks, with the former translating more readily into nominal depreciation than the latter do into nominal appreciation. See Virmani(2001, 2002d) for details.

If reforms are slow and gradual, relative prices change gradually and producers adapt by stopping investment in unprofitable product lines and initiating it in newly profitable ones. The former is limited by the rate of depreciation and the latter by the pace of incremental technical change. Major Import liberalisation can lead to a drastic change in product specific competitive advantage. Because of capital immobility, the capital employed in uncompetitive product lines become redundant and capacity utilisation falls. If productivity calculations use capital stock measures based on the accumulation method with no adjustment for capacity utilisation, calculated productivity will decline in these product lines. Though this will be partially offset by better capacity utilisation in lines that have become more competitive, full utilisation of the new potential requires adoption of new technology including investment in new capital goods (producing better quality output). The introduction of completely new (unfamiliar) technology will have short term negative effects while the positive productivity effects will take time to emerge, including the time taken to diffuse technology-S curve(see below for reasons). This results in what may be called the J-curve of liberalisation-productivity, by analogy with the J-curve of the impact of exchange rate changes on trade. This is one of the reasons why studies show a fall in total factor productivity growth in registered manufacturing during the 1990s. It also explains why acceleration of aggregate TFPG and GDP growth rate has been so low.

Lesson 3.9: The **J curve of Import liberalisation and productivity change**. In a heavily protected economy, a major import liberalisation will initially slow measured productivity growth and result in its acceleration only after a lag.

We know from the Innovation literature that incremental change can have a different effect from major ("drastic") inventions. The latter "can trigger an uneven growth trajectory, which starts with a prolonged slowdown followed by a fast acceleration" (Helpman (2004)). There are many possible reasons for this. Hornstein and Krusell (1996) and Greenwood and Yorokolgu (1997) argued that adoption of new technologies requires firms to learn how to use them and this slows down productivity growth. Helpman and Trajtenberg (1998) argued that it takes time and resources to develop complementary inputs and during this time the diversion of resources slows

down growth. Helpman and Rangel (1999) argued that on-the-job training that raises the productivity of workers also means that technology specific skills are lost when a new technology replaces an old one. Labour productivity would therefore decline temporarily. All these arguments have been used to explain the decline in productivity growth in the post-oil crises period (Helpman (2004)). The experience of Indian Import liberalisation leads to the conclusion that major import liberalisation can have similar effects.

Lesson 3.10: Credibility of Regime Change. A credible change in the policy regime can help magnify the effect of small reforms on (private) investment and growth while a non-credible change can minimize/reduce the effect of large changes.

Corollary 3.10.1: It is easier for a single party regime with an unchallenged leader to gain credibility.

Corollary 3.10.2: In a democratic system the opposition is expected to question the government's changes and to be critical, but criticism from within the ruling party, it's supporting organisations and coalition partners can undermine credibility.

Mrs. Indira Gandhi, as Prime Minister, worsened controls during mid-1960s to mid 1970s. Thereafter she lost an election and then won an election to return as PM in 1980. The movement towards market reform she instituted was highly credible because of her earlier socialist background, her new pro-market advisor (her son Sanjay followed by Rajiv) and her unchallenged sway over her party. In contrast, during the 1990s the governments have either been minority Governments or coalitions in which ginger groups have continuously criticised their own government's reform policies. Such internal criticism reduces credibility, especially if it is seen to slow down the pace of reform or halt it in some cases.

India's institutions and social capital are high relative to other low income and lower middle income countries. Given its free, democratic structure new institutions continue to emerge and strengthen, such as a wide variety of NGO's and a free and vibrant TV media. The quality of its basic government institutions has however been deteriorating over the past several decades.

Lesson 3.11: The impact of deterioration in Governance in a country with relatively high initial level of governance is slow process i.e. it can be virtually invisible to those not directly affected by it. Because it is long term phenomenon long term measures are required to deal with it. Short term measures are neither necessary nor sufficient to stop or reverse the long term deterioration.

GROWTH TRENDS

4.4 Long Term Growth

Figure 2 shows the long term trend in growth rate of Gross Domestic Product at factor cost (GDPfc). The growth trend is estimated using the Hedrick-Prescott filter on the GDP series, using two set of parameters: The standard set and one allowing greater cyclicality.[47] The GDP growth rate (standard series) decelerated during the fifties and sixties to reach a low of 3.3% per annum during the period 1971–72 to 1973–74. The trend growth rate accelerated from the mid-seventies to reach a peak of 6.2% per annum during the period 1995–96 to 1996–97. Thereafter, the trend growth rate has again decelerated till 2002-03. The growth trends in Per capita GDP (PCgdp), GDP per working age population (15 to 64)/ per worker GDP (PWgdp) and Labour productivity/ GDP per unit of labour (PLgdp) mirror this pattern.[48] The low point in the growth of these variables was reached in 1972-73 and the peak around 1996-97(figure 3, left scale). The per capita GDP growth pattern is closest to that of GDP, but the others are quite similar (figure 3, left & right scale respectively). The decline in trend growth after 1996-97 is much greater for GDP than for either labour productivity or GDP per working age population or per capita GDP. One reason is that population growth has slowed to about 1.7% per annum so that GDP growth has decelerated more than GDP per capita. A rise in the proportion of population aged 15 to 19 has however been offset by delayed entry into the labour force as the proportion staying in school/college has increased.

[47] HPF(6.25)

[48] Annual aggregate series for total population, working age population i.e. population aged 15 to 64 and total labour force is taken from WDI, WB.

Figure 2: Long Term Growth Trends in GDP (Hedrick-Prescott Filter 1 & 2)

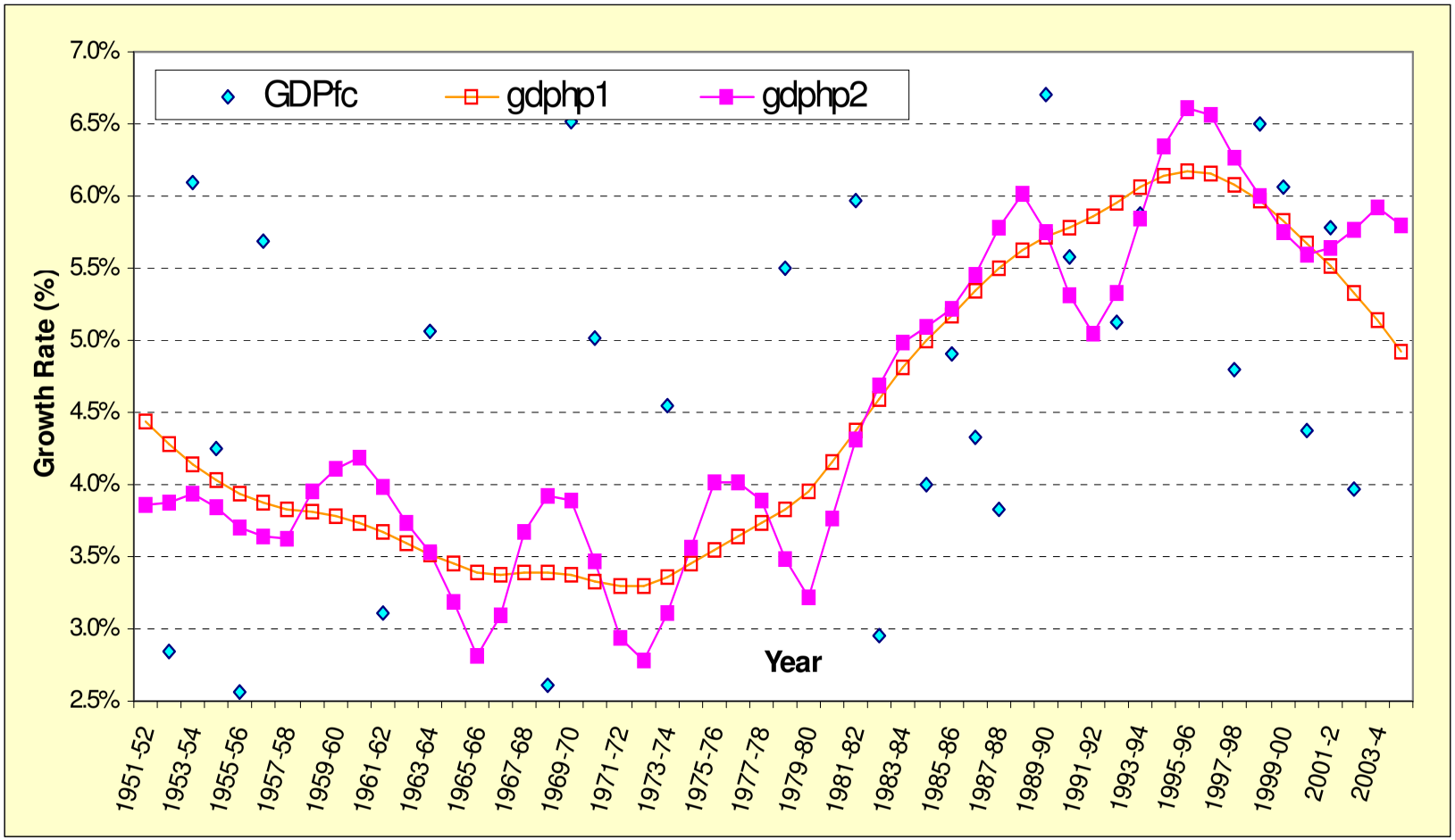
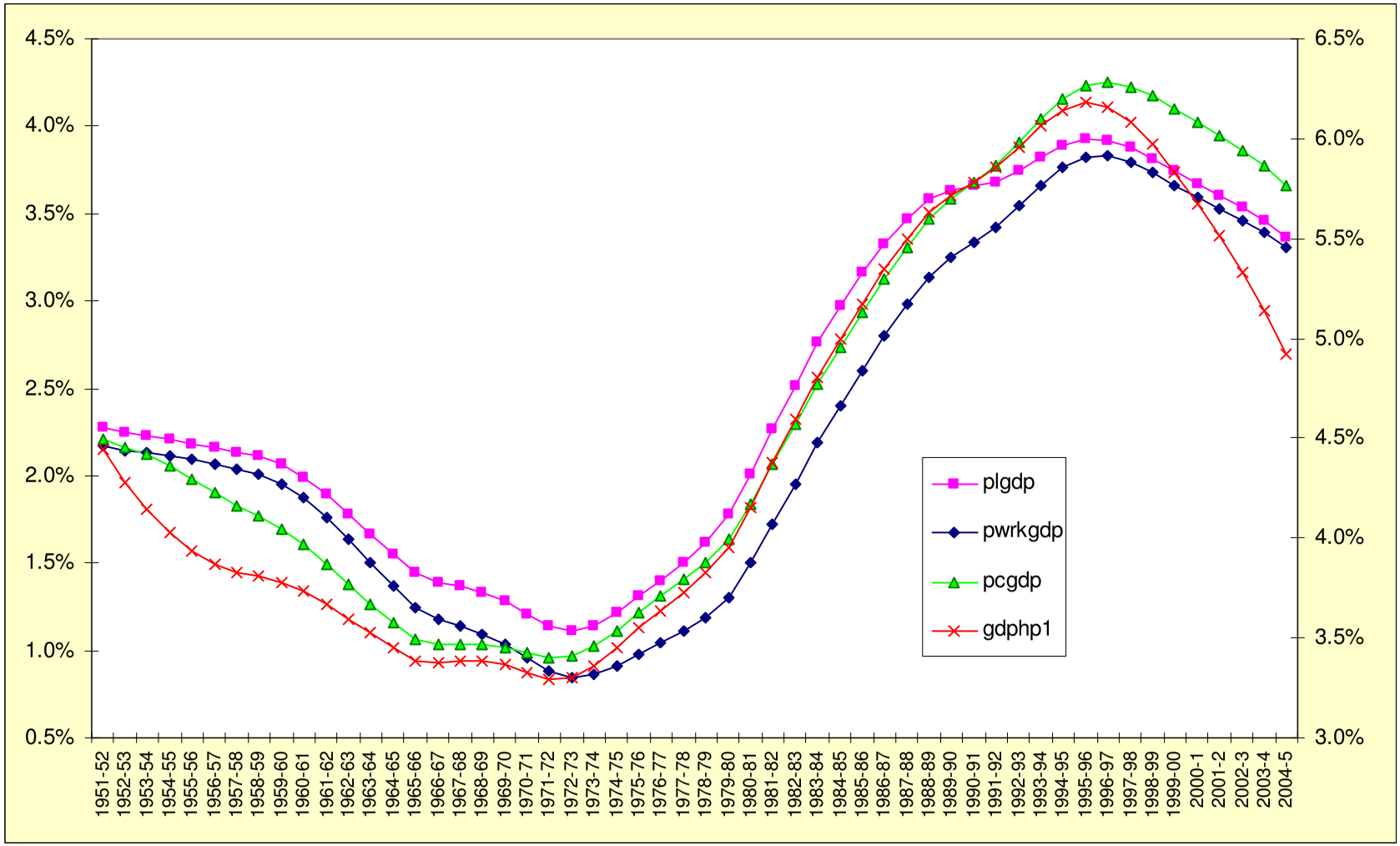
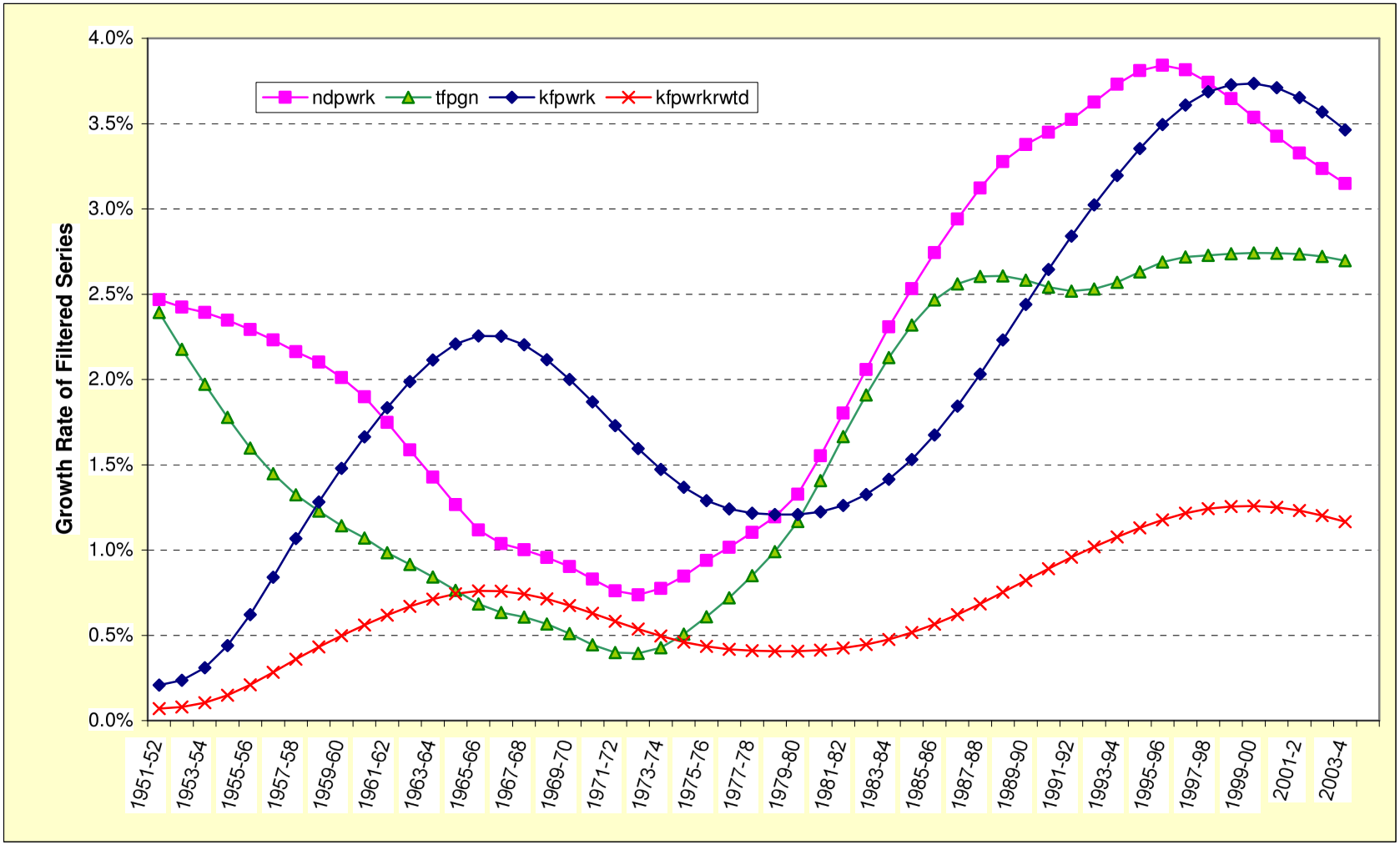


Figure 3: Growth of GDP, PCgdp, PWrkgdp, PLgdp (HP filtered)



Note: Gdphp1 is on right scale, all others on Left scale.

Figure 4: Sources of Growth: NDP and Fixed capital per working age population (ndpwrk, kfpwrk) and TFPG (HP filtered series)



The other HP filtered series GDPhp2 gives a somewhat richer picture. There were two troughs at 1965-66 (2.8%) and 1972-3 (2.8%) and a shallower trough in 1979-80 (3.1%). The growth trend has recovered thereafter (figure 2). Similarly, though there is still a clear peak of 6.6% in 1995-96 there are shoulders in 1988-89 (6%) and 2003-4 (5.9%). This suggests that the long term trend as given by the first filtered series may give a misleading indication of the medium term trends. We will return to this issue subsequently.

4.5 Sources: TFPG and Capital Deepening

The growth in per worker GDP can be decomposed into capital deepening /fixed capital per worker (kfpwrkr) and total factor productivity growth (TFPG) using standard sources of growth methodology (Virmani(2004d). Because of the volatility in all these series we again use HP filtered series to determine and analyse the long term trends. The underlying trend growth of Total factor productivity growth after independence is estimated at 2.4%. TFPG declined steadily thereafter, falling below single digit at the beginning of the sixties and reached a trough of less than 0.4% per annum in 1972-73 (figure 4). With the negative impact of some policies becoming visible even to those with ideological blinkers and strong vested interests, minor reforms in these led to a recovery thereafter, with TFPG accelerating slowly during the seventies and faster during the eighties to reach a peak of over 2.6% per annum in 1988-89. This was followed by a temporary setback due to the BOP crises after which TFPG has recovered rapidly to its earlier peak, but seemed to have plateaued out at 2.7% to 2.75% per annum.

The trend growth rates of NDP per worker (ndpwrkr) and TFPG were broadly in consonance from the beginning of the period till the early 1990s, so that the latter appears to be the main driving force for the former. Since then trends have diverged somewhat with TFPG growth and rate of capital deepening plateauing and other series peaking, however the high rate of growth is clearly related to sustained high level of TFPG.

Figure 4 also shows the trend growth of fixed capital per worker (kfpwrkr) as well as its contribution to growth of NDP per worker (kfpwrkr_wtd) where the weight is the

production function parameter estimated for the sources of growth analysis.[49] Growth of capital per worker increased gradually from the time of independence to reach a peak of 2.3% in the mid-sixties. Thereafter controls and distortions of the government's socialist policies became too oppressive to continue the pace of investment despite falling TFPG. The rate of growth of capital per worker therefore declined sharply during the first half of the seventies to 1.2% in the second half of the seventies. The pace of capital deepening recovered in the eighties following the acceleration in TFPG. It had exceeded its earlier peak by the end of the eighties and established a new peak of 3.7% per annum at the end of the nineties. The contribution of capital deepening to growth of NDP per worker seems to have plateaued out between 1.2% and 1.3% points since the mid 1990s (figure 5).

The long term trend analysis therefore suggests that the peak TFPG potential for the Indian economy is about 2.7% per annum and the peak capital deepening possibility/contribution to growth is around 2.75%/1.3% per annum. Thus according to this long term trend analysis the peak growth in NDP per worker can reach about 4% per annum. The trend rate as given by the HP filtered series is about 3.1% per annum or 80% of potential. We can complete the long term picture by using the HP filtered series for the growth rate of workers (working age population), which shows a trend rate of 2% per annum. This indicates a maximum NDP growth potential of 6% per annum. As suggested earlier, these long term trend rates may however be slightly misleading given the regime change in 1980.

4.6 Machinery Investment & Real Exchange

The relative price of capital goods rose continuously from 1950-1 to 1979-80 as shown by the positive rate of growth of the HP filtered series (figure 5). This was the direct result of the import substitution policy based on the Feldman-Mahalanobis model (sometime attributed to PM Nehru). It has fallen continuously during the market reform period starting in 1980-81 (negative growth rate) largely because of liberalisation of capital goods imports (reduction of controls and QRs) and reduction in tariffs. As we

[49] This differs from earlier analysis because it includes a rainfall index in the production function. See Virmani (2004d) for details.

would expect, rising (falling) prices had a negative (positive) effect on investment in machinery, a tradable good (relative to structures a non-tradable). Consequently the share of machinery in fixed investment has risen constantly during the market reform period, even though it has plateaued out since the late 1990s. As technology embodied in new machinery and equipment is an important determinant of productivity this has played a significant role in the recovery of TFPG during the 1980s.

The trend rate of growth of machinery prices decelerated till the mid-sixties, contributing to the acceleration in rate of growth of capital in the form of machinery (figure 5). Much of this growth was however driven by the acceleration of public investment. As this investment was policy driven, the strategy of building heavy and capital goods industry in the public sector, it was relatively less affected by consideration of cost and profits.[50] This also meant that the pressures for efficiency and cost reduction were low and prices could rise to reflect costs, as import of such items was banned. Worse the quality (technological level) gap could widen indefinitely because of import controls, thus having an even more devastating impact on TFPG.[51] The combination of deteriorating quality and price acceleration from the mid-sixties to the mid-seventies led to a deceleration in the growth of machinery investment.

Conversely, a reduction in QRs on imports (e.g. a shift from banned to restricted category of) that made technologically superior machinery available at higher cost (including tariffs) could result in a rising share of machinery. Machinery prices resumed their deceleration from the mid-seventies and this is reflected in acceleration in the growth of machinery capital (figure 5). This was mirrored in the recovery of TFPG growth in the seventies. These trends strengthened in the eighties with a shift of strategy from import substituting industrialisation to export neutrality. Consequently the growth rate of machinery prices became negative. The peaking of the trend growth of machinery accumulation in the 1990s has coincided with the steadying of the price decline.

[50] The socialist (i.e. non-FDI related) part of China's economy still shows similar characteristics as does exports from the 'socialist' economy Virmani(2005c). Therefore any change the exchange rate will have an effect on the market part (FDI-export complex) of the economy but not the socialist part, unless the party/government takes a (separate) decision to reduce investment and/or exports.

[51] Hedonic price indices that reflect the effect of quality are not available in India.

Figure 5: Trend in Growth of Machinery Capital and Relative Price (HP filter)

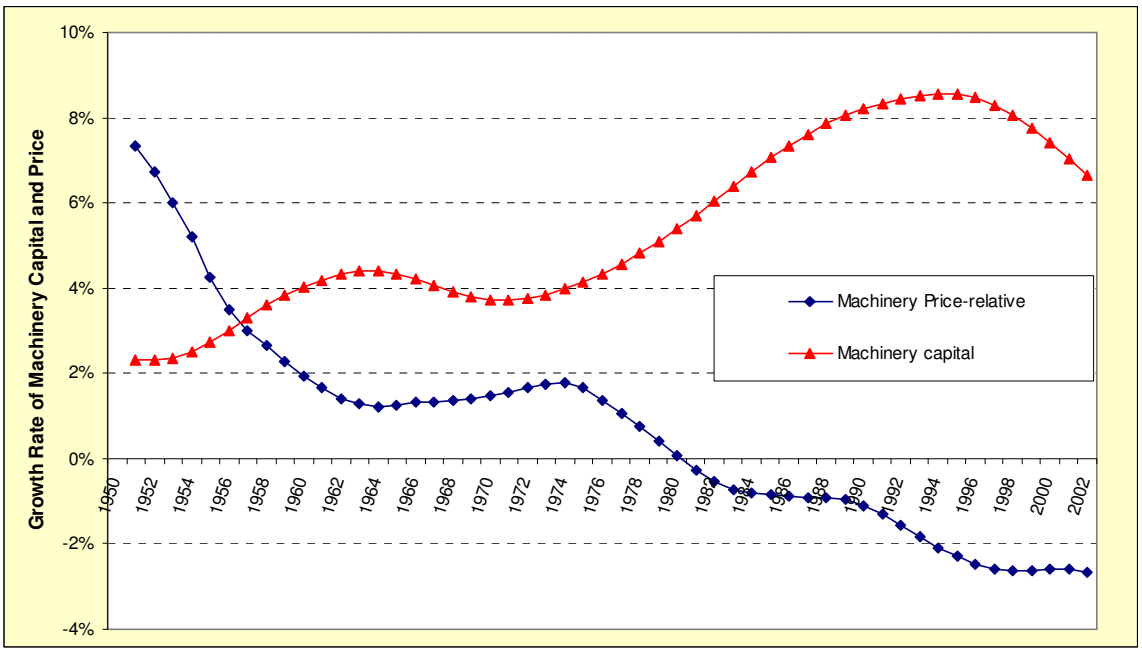
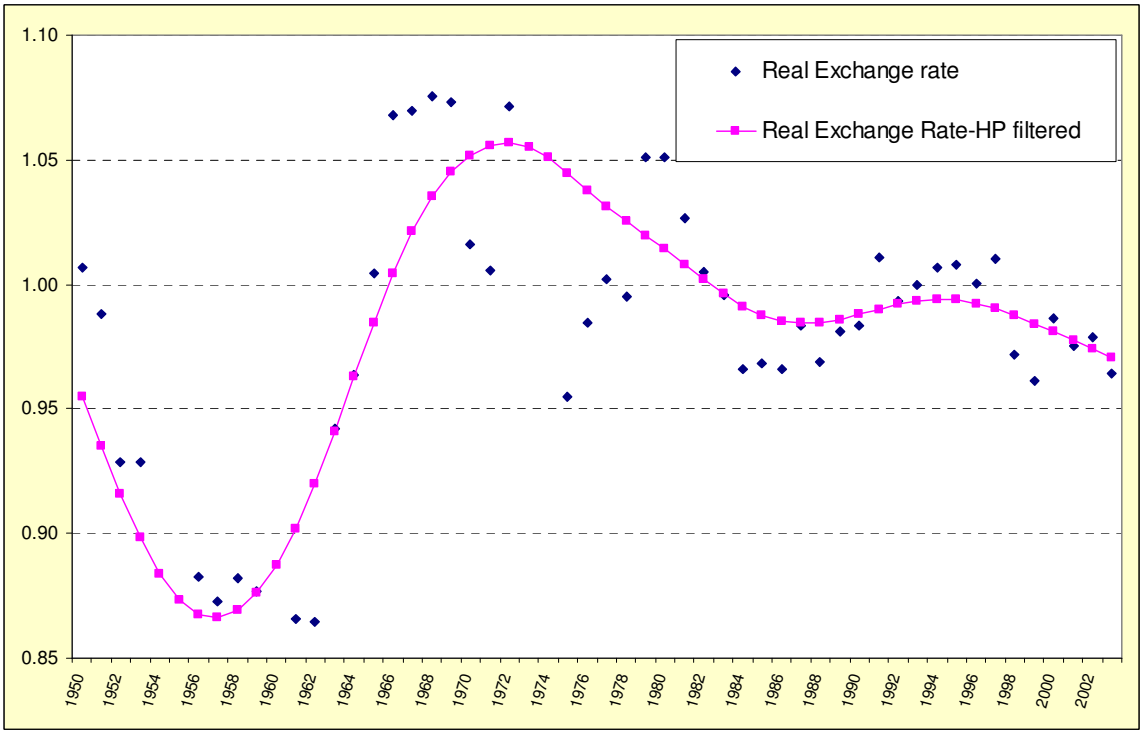


Figure 6: Trend in Real Exchange Rate (HP filtered series)



Another factor that explains the growth of total factor productivity and GDP growth is the real exchange rate, the price of tradable goods relative to non-tradable goods.[52] Because of the complex interplay between import controls and tariffs it is very difficult to measure the level of protection directly. A QR index and average tariffs are available for the market reform period. The effect of opposite movements in the two depends on whether the equivalent tariff is lower or higher than the applied tariff. Any rise (decline) in protection would, however, lead to an appreciation (depreciation) of the real exchange rate.[53] When the nominal exchange rate is set by the central bank, as it is in India, a devaluation of the exchange rate cannot be precisely calibrated with exogenous shocks or endogenous changes and therefore has an independent impact on effective protection. A sharp nominal depreciation, not offset by reduction in QR-tariffs can therefore lead to a short term rise in protection.[54] If factor productivity grows at different rates in tradable goods and non-tradable services that will also affect the real exchange rate.

Figure 6 shows that the real exchange rate was on a depreciating trend in the early 1950s. This suggests that the some of the protective measures introduced during the World War may have been eased during this period. This also acted to offset the effect of rising machinery prices on private investment, contributing to a gradual rise in share of machinery investment. The real exchange was on an appreciating trend from the mid 1950s to the end 1960s thus contributing to a deceleration of TFPG and GDP growth. The real exchange rate depreciated thereafter till the mid 1980's. This was perhaps a factor in the rise of machinery investment and TFPG in the 1970s. In the 1980s the depreciating real exchange rate along with falling capital goods prices resulted in accelerating TFPG and GDP growth.

There has been no clear trend in the real exchange rate since the end-1980s. Though peak tariff rate reductions started in 1991-92 they were spread out over a decade

[52] Earlier case studies of other countries, have also noted the importance of exchange rate devaluation in setting off a growth spurt/episode and a realistic exchange rate policy thereafter in sustaining growth. See eg. Lal and Myint(1993).
[53] If the nominal exchange rate is market determined it would appreciate (depreciate). If it is fixed it would become over more (less) overvalued.
[54] See Virmani (2002a) for a detailed explanation with illustrative examples.

or more. Relatively few commodities were initially affected by these reductions as there was considerable water in the tariff. Further the QRs on consumer goods were removed at the end of the 1990s. The need to correct crises generated adverse expectations resulted in a nominal depreciation in 1991 that was higher than necessary to obtain BOP balance under normal conditions.[55] The effective protection to manufacturing therefore increased initially and then came down gradually as shown by the real exchange rate (started declining from the second half of the1990s). Compared to the 1980s the depreciation in the real exchange rate during the 1990s has been minimal and this is one of the reasons for the plateauing of TFPG.

4.7 Medium Term Growth Trends

As the policy regime changed around 1980, a long term trend analysis based on the evolution of the GDP over the two regimes that have prevailed since independence may be misleading for the market reform period that still prevails today. It is therefore useful to analyse the trends during the market reform period starting in 1980-81. As the number of observations is too short for HP filter analysis we use linear and polynomial trends of 2nd and 3rd order. These are shown in figure 7 for GDP growth. The GDP growth rate has clearly been on a rising trend during the 1990s, with the current underlying trend between 6.2% and 6.6% per annum based on the linear and polynomial trend lines.[56] If GDP is adjusted for the impact of rainfall variations, its growth rate plotted and a trend line fitted it confirms the underlying rising trend in the GDP growth rate. However it shows that the underlying trend growth is currently about 6.3% (6.25% to 6.35%).[57] Thus the underlying medium term growth rate has been rising since the BOP crisis of 1990 and is now around 6.3%. It is likely to rise to about 6.5% over the next few years as the effect of the 1990s reforms works through the system as hypothesised in our analysis of the J-curve of liberalisation.

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[55] See Virmani(2001) for estimates of the depreciation that was required at end 1980s to obviate the BOP crisis of 1990-1991.

[56] There linear and 2nd order polynomials yield identical lines. The polynomial of 3rd order shows a marginally lower current growth than the linear.

[57] The 2nd order polynomial follows a similar pattern to that for the unadjusted, but suggests a lower current growth rate of about 6.25% per annum

The medium term trends in the growth of GDP per capita/worker/labour are similar to those for GDP growth, with both linear and polynomials (2nd & 3rd order) showing a rising trend. Only the 3rd order polynomial for per capita GDP shows a plateauing of growth as it does for GDP growth. The current underlying growth trend is found to be about 4.8% (4.5% to 4.9%) for per capita GDP, 4.3% (4.1% to 4.5%) for per worker GDP and 4.3% (4% to 4.5%) for labour productivity.[58] These are about 1% point higher than the long term rates based on HP filtered series.

The underlying medium term trends in TFPG and capital deepening are less pronounced but in the upward direction (figure 8). TFPG has shown little variation during this period and is now running at between 2.6% and 2.9% not much different from the 2.7% indicated by the long term analysis. The rate of growth of fixed capital per worker shows a very clear linear uptrend over the market reform period. Its contribution to growth of NDP per worker has risen steadily from 0.3% point in 1980-1 to 1.5% point in 2004-5. This suggests a total growth potential of 4% per annum for NDP per worker, while the actual series shows a trend growth of about 4% (3.8% to 4.2%).[59] This is almost identical to the growth trend for the HP filtered series. There is also an indication of plateauing of these variables so that NDP/ GDP growth is unlikely to keep increasing unless new reform initiatives are taken.

[58] The linear, 2nd & 3rd order polynomials give a range for the latest year. The average is a judgement.
[59] The 3rd order polynomial indicates a decline in growth of NDP per worker similar to the long term trend, with a current rate if 3.3% compared to 3.1% for the HP filtered series. This decline is not however supported by any decline in TFPG or growth of capital deepening.

Figure 7: Medium Term GDP Growth Trend

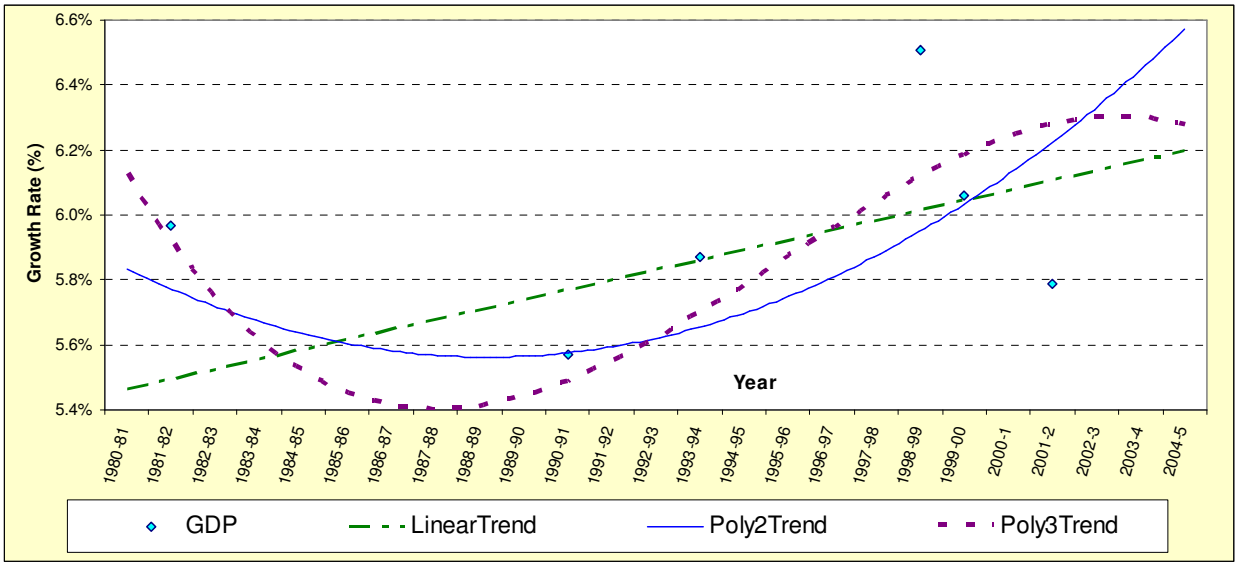
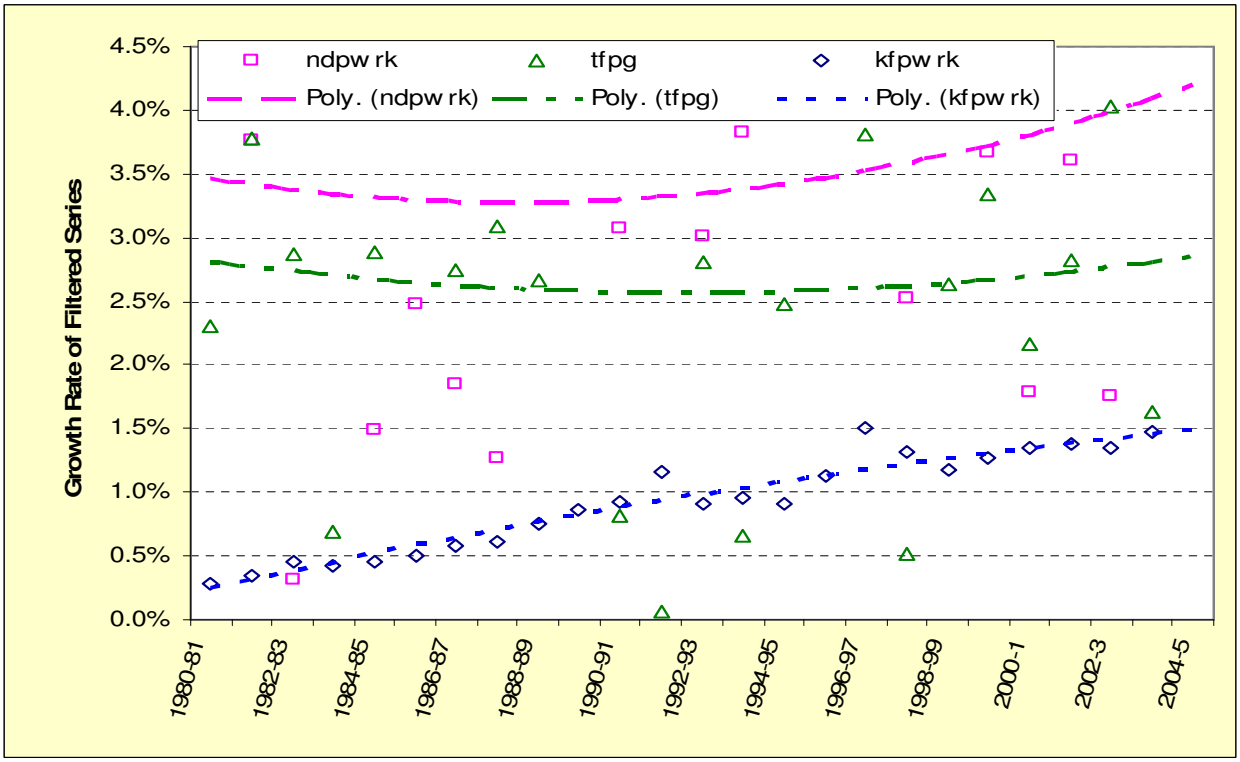


Figure 8: Medium Term Growth Trend in Per Worker NDP/Fixed Capital and TFPG



4.8 Reforms, TFPG & Capital Deepening

One interesting dichotomy between our earlier per iodisation into two policy regimes and growth phases and the picture revealed by the time series is the recovery of TFPG in the seventies. If market reforms started around 1980-81, how and why did TFPG start recovering from the early seventies? Though the control regime termed the license-Quota-Permit Raj (LPQ raj) was progressively tightened after independence till the mid-seventies this was not a simple linear process. Attempts at reforms alternated with further tightening. The control regime led to the worsening of social norms and governance and was in turn affected by it. We hypothesise that evasion of controls and corruption increased progressively over the seventies, leading to a weakening of the effectiveness of controls, even though the extent of formal controls may have remained unchanged (or increased in some areas).

The drought cum BOP crisis of 1965-66 and 1966-67 lead to the first real re-evaluation of the Indian development model. In particular the role of agriculture was completely modified and private farmers given a central role in the so called "Green Revolution" that started in the early seventies. This may have led some people to silently question the demonization of the private sector in other sectors.[60] The first real pro-production (anti-militant labour) action of the government was the breaking of the railway strike in the mid-seventies. This was followed by the election of a supposedly more rightwing government in 1977.[61] With the coming into power of an anti- Congress (Indira) - socialist government there was open questioning of earlier failed policies and greater media attention and public credibility to this questioning. The few reforms that were actually implemented lacked credibility because of discordant socialist voices within the government as well as the unstable political situation. These developments nevertheless undermined the legitimacy of the earlier development model that depended so heavily on the LPQ Raj and on suppression of private initiative. This magnified the

[60] Mrs Gandhi was re-elected in 1972, and nationalized the banks thereafter.
[61] The Prime Minister was Morarji Desai, who had earlier constituted the right wing of the Congress Party and included members of former right wing parties such as the Swatantra party and the Jan Sangh, as well as the indigenous socialists (Lohia)

effects of natural trends towards greater evasion of controls and corruption of officials to facilitate this evasion. The effectiveness of controls therefore deteriorated.

Economic reasoning suggests that (other things being equal) the controls most likely to have been circumvented were those in which the rents were the highest. These would also be the controls that created the greatest distortions and whose circumvention would therefore result in the greatest gains in efficiency. As consequence the economy's total factor productivity growth started increasing during the seventies. New investment, on the other hand, is much more dependent on the formal rules and procedures and the credibility of risk reducing reforms. This remained virtually unchanged overall, perhaps worsening in some sectors and improving modestly in others. As a consequence the rate of growth of capital deepening continued to decelerate till the end of the seventies. The two sources of growth started reinforcing each other only from the 1980s when a new more credible policy approach was instituted.

A similar dichotomy in reverse is visible during the market reform period following wider and deeper reforms since 1991-92. These reforms have not resulted in a statistically significant increase in the TFPG rate or its trend but the pace of capital deepening has increased steadily though slowly. The latter is clearly related to the improvement in the investment climate resulting from the reduction in controls and restrictions. The reduction in the real interest rates faced by those with access to capital from organised sources is also contributing to this acceleration.

Consequent to the introduction of policy reforms, acceleration in the TFPG growth can lag that in investment for several reasons. The first is overshooting. A rush of investment into newly opened sub-sectors and by newly permitted investors (e.g., foreign) can lead to an excess of investment as many investors try to test the market and establish themselves. This can lead to excess investment and a decline in capacity utilisation, which will show up as a decline in measured TFPG growth in the sector to which the sub-sector belongs. Second, in sectors with economies of scale, capacity is built ahead of demand (planned excess capacity). An improvement in the investment climate and reduction in investment risk will lead to a step jump in investment from the

old constrained equilibrium to the new free equilibrium. This planned build–up of excess capacity will, during the transition from equilibrium to another, have affects similar to that of overshooting. During 1994-5 to 1996-7, the passenger car industry and some other consumer durable industries saw both these phenomenon occur simultaneously. This was followed by a demand recession (for perhaps the first time in India). Third is the J-curve effect of trade liberalisation (defined earlier).[62] The rising freedom to import, affected most sub-sectors of registered manufacturing, temporarily offsetting and consequently delaying the overall positive effects of reforms on TFPG.

5 Inequality, Poverty and Hunger

5.1 Consumption Distribution

A reasonably standardised large sample consumption survey has been carried out every five years by the National Sample Survey Organisation since 1972-73 (the earlier surveys are not strictly comparable). Based on these surveys a consistent series for the consumption distribution can be constructed. This is shown in Table 5. If we ignore the 1977-78 data for the moment, we find a remarkable result. The rural income distribution has improved progressively from 1972-73 to 1999-2000 and this can be seen at every level. Thus for instance the share of the poorest 10%, which was 3.7% in 1972-73 increased to 3.8% by 1983, to 4.3% in 1987-8 to 1993-4 and to 4.4% in 1999-2000. The same pattern is found at every level of cummulation (Technically there is "Stochastic Dominance,"). Thus the new situation is Pareto superior to the earlier one, reducing the importance of measure such as the 'Gini' coefficient.

Another way to look at the result is from the perspective of the eighties and nineties. In this case 1977-78 constitutes the situation prior to the start of the eighties. Therefore ignoring 1972-73 we again find that the consumption distribution has improved continuously during the eighties and the nineties. Each rural consumption distribution during the eighties stochastically dominates the previous distribution based on large sample surveys. In common parlance *citizens at every level of income have shared in the fruits of growth since 1980-81*.

[62] Also see Helpman (2004) and other references given earlier after the J-curve lesson.

Table 5: Rural Consumption Distribution (NSS 30 day recall)

	Cumulative Percentage of Rural Persons										Poverty	
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	HCR (%)	
Year	Cumulative Consumption Distribution										Rural	Total
1972-3	3.7%	8.9%	15.0%	22.0%	30.1%	38.7%	49.1%	60.5%	74.8%	100%	56.5	54.9
1977-8	3.5%	8.4%	14.3%	20.8%	28.4%	36.7%	46.2%	57.6%	71.7%	100%	53.1	51.3
1983	3.8%	9.0%	15.2%	22.1%	30.2%	39.2%	49.2%	60.9%	75.5%	100%	45.6	44.7
1987-8	4.1%	9.5%	15.8%	22.9%	30.7%	39.7%	49.6%	61.5%	74.7%	100%	39.1	38.6
1993-4	4.1%	9.6%	16.0%	23.1%	31.1%	40.0%	50.1%	61.7%	75.8%	100%	37.3	36.2
1999-00	4.4%	10.1%	16.7%	24.1%	32.8%	41.9%	52.1%	63.8%	77.8%	100%	27.1	26.2
Source: P. D. Joshi, "Changing Pattern of Consumption Expenditure in India and Some selected States," Sarvekshna Analytical Report No 2 (July 1998) and NSS												

The results for the national total (rural cum urban areas together) are shown in Table 6. These results confirm that the consumption distribution has improved over the eighties and nineties. Every cumulative consumption distribution during the eighties and nineties (except 1987-88) stochastically dominates the previous distribution. The only ambiguity is in 1987-88 where stochastic dominance fails at the 50th percentile vis-à-vis the 1983 distribution. Even this distribution however dominates the 1977-78 one. The consumption distribution has unambiguously improved during the nineties. The anomalies arise because the urban distribution is not unidirectional, dependent as it is on the migration from surrounding rural areas (push and pull factors).

Table 6: National/Total Consumption Distribution

	Cumulative Percentage of Persons										Gini
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	
Year	Cumulative Consumption Distribution (%)										
1977-8	3.3%	8.1%	13.8%	20.2%	27.5%	35.9%	45.4%	56.7%	71.0%	100%	34.7
1983	3.5%	8.4%	14.3%	20.9%	28.5%	37.1%	47.0%	58.6%	73.2%	100%	32.5
1987-8	3.7%	8.6%	14.4%	21.0%	28.4%	36.8%	46.5%	57.9%	72.5%	100%	32.9
1993-4	3.7%	8.7%	14.5%	21.2%	28.7%	37.1%	46.8%	58.2%	72.7%	100%	32.5
99-00	3.9%	8.9%	14.8%	21.5%	29.0%	37.4%	47.1%	58.6%	73.1%	100%	32.0
Source	: Bhalla (2003b) background tables.										

The Kuznets curve hypothesis asserted that income distribution is likely to follow an inverted U shaped pattern as per capita income grows from very low levels to high levels. As early studies were based on cross-country evidence they do not demonstrate anything about the Kuznets hypothesis. Lindert and Williamson (1985), Deninger and Squire (1998) and Lundberg and Squire (2003) do not find any evidence to support the

hypothesis. In contrast the Indian Gini (as per the World Bank series) has followed a declining trend over the first two and half decades. During the eighties and nineties the above data shows that the distribution has improved gradually but slowly.[63]

5.2 Trends in Poverty

There are numerous controversies regarding the measurement of poverty. The most important one relates to the adjustment of individual consumption levels as derived from a survey, by the ratio of the per capita consumption from the National account statistics to the survey mean for the same item. Such an adjustment leaves the distribution of consumption unaffected while changing the calculated poverty rate. Before 1993 such an adjustment was routinely made in calculating poverty rates, after 1993 it has been discontinued. The World Bank's Country Economic Memorandums for India however introduced the change in methodology several years earlier. We were critical of the change in methodology by the World Bank and the Planning Commission and continue to believe that an adjustment of the survey mean is necessary to get a true picture of the poverty rates.[64] The World Bank's series covers the entire period from the 1950s on a consistent basis and is therefore essential for finding out what happened in phase I as well as for comparing poverty in the two phases.[65]

The 3rd order polynomial trend line fitted to the World Bank poverty data (figure 9) shows that poverty increased during the fifties and sixties. This happened despite the fact that per capita GDP grew at a trend rate of between 1% and 2% per annum through out these two decades. The increase in poverty therefore coincided with a declining rate of growth of per capita income and private consumption (figure 3). This contradicts the picture of the Golden age of Independence under the Fabian Socialist policies of the first Prime Minister Nehru that many development economists have.[66]

Since the early seventies, poverty has been on a clear down trend according to all series. The official poverty calculations based on large sample surveys (Figure 9) shows

[63] However the upward trend is not statistically significant i.e. it is an L shaped pattern.
[64] In personal discussions with the author(s) of the WB CEMs and in internal notes in the Planning Commission respectively. The ratio has increased over time (Bhalla(2003a).
[65] The only other such series is by Bhalla (2003a).

a steeper decline in poverty (especially in the nineties) than the World Bank series.[67] The declining trend in poverty rate therefore coincided with an acceleration in the trend growth of Per capita GDP (figure 3) and TFPG (figure 4) from the mid-1970s.

5.3 Poverty and Per Capita Consumption

We can also use the survey data to determine the relationship between the national poverty rate derived from the survey and the all average all India per capita GDP as calculated from the survey. This helps us skirt/avoid the controversies arising from the discrepancies between NSS and NAS consumption data and differing judgement about which is superior for what purpose. As both the poverty rates and the average consumption are derived from the same data set, this yields a consistent picture of the evolution of poverty rates over time as well as its relationship to average consumption. As official poverty rates are not available for early decades we use the World Bank poverty and average consumption data from 1950 to 1999.

It is clear from figure 10 that there is a linear relationship between aggregate poverty and average consumption.[68] A one Rupee increase in average real monthly consumption expenditure raises 1% of the population above the poverty line. This implies that in India, given our democratic political system, in which the poor are fully represented, growth of aggregate income/consumption is a sufficient condition for the reduction of poverty.

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[66] The Bhalla (2003a) series in contrast shows a decline in poverty during the two decades.
[67] The Bhalla (2003a) series shows an even steeper decline.
[68] The R^2 is 0.93. The 2nd order polynomial, implying a smaller impact of consumption growth in the early decades and a larger impact in recent decades, has an R^2 of 0.97.

Figure 9: Poverty as Measured by the Head Count Ratio

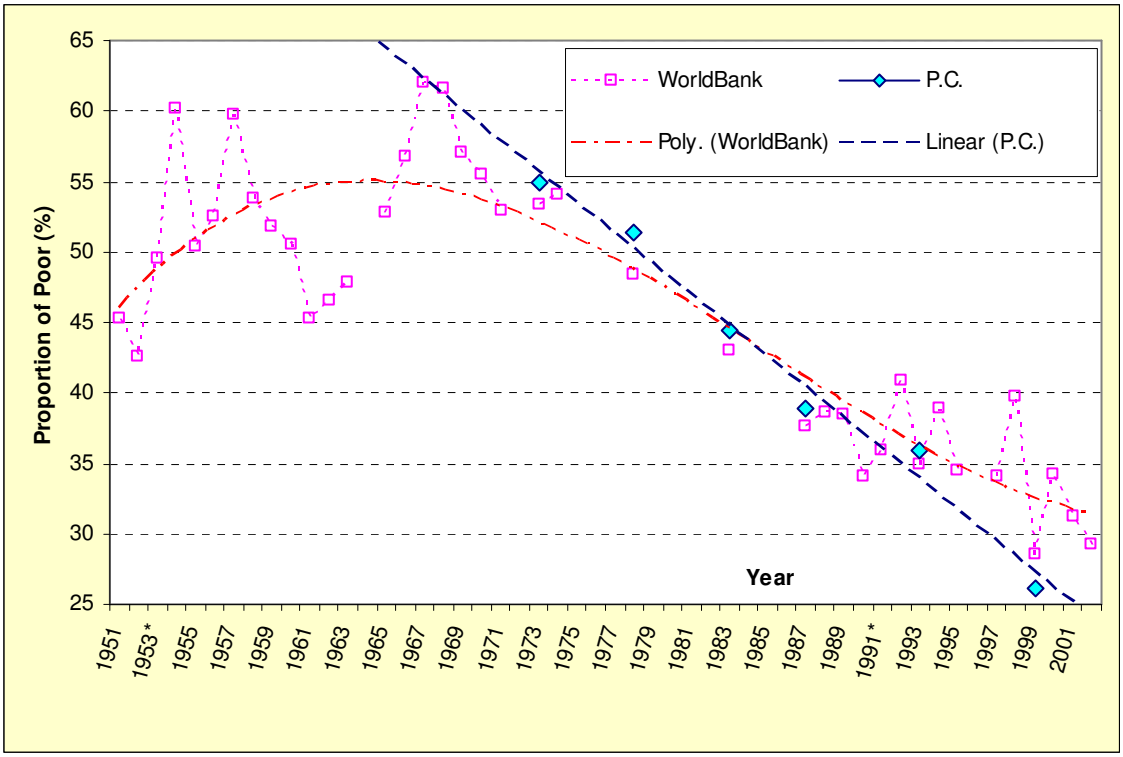
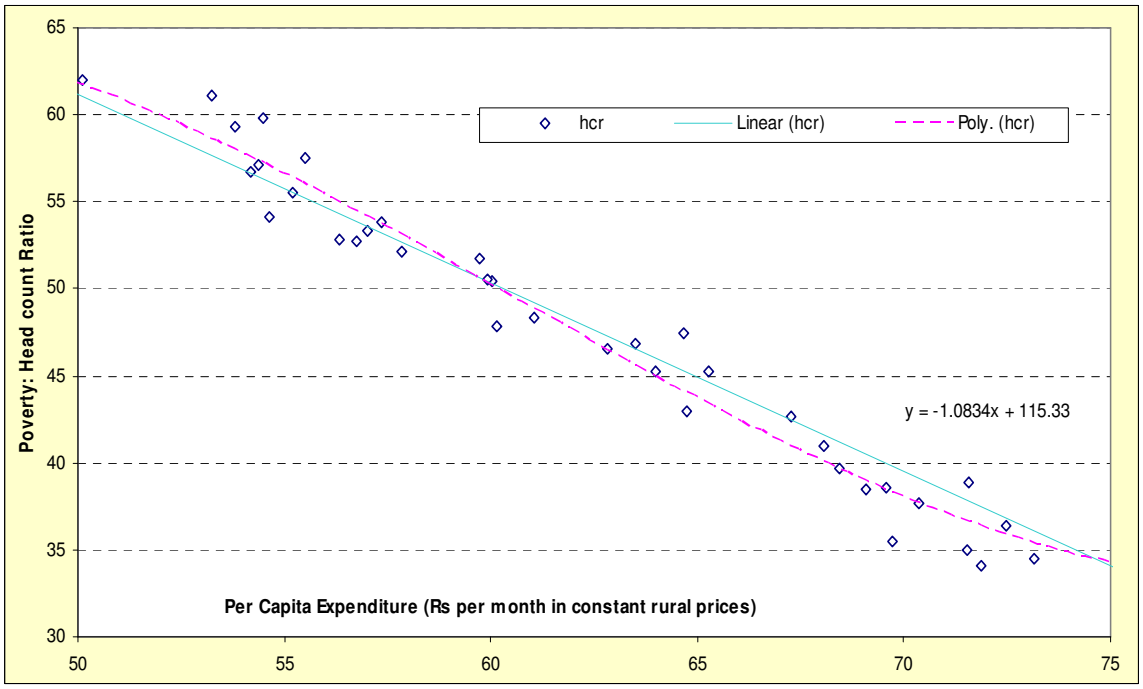


Figure 10: Per Capita Expenditure and Poverty (World Bank Data-1950 to 2000)



5.4 Poverty in 1999-2000

The most recent controversy regarding poverty estimates relates to the manner in which the data was collected in the 1999-2000 survey. Briefly there are three categories of goods in the consumption surveys. Food products that are purchased frequently (daily/weekly) semi-durable goods that are purchased with moderate frequency (monthly/quarterly) and durable goods that are purchased occasionally (annual/biannual or less). To obtain optimal recall it would be appear to be best to use the 7 day recall period for the first category, 30 day for the second and 365 day for the last. The National sample surveys have been rightly experimenting with these periods, but perhaps without giving due regard to the implications for comparability of poverty estimates over time. In the 1999-2000 survey, for the first time the same set of households were asked to give their food consumption for 7 days and 30 days, thus making it non-comparable with earlier periods when only the 30 day question was asked.[69] It was subsequently discovered that there was another source of non-comparability. The use of the 365 day recall period for a sub-set of commodities in 1999-2000, whereas the 30 day recall was used for these commodities earlier.[70] Different scholars have tried to make adjustments and re-calculate the poverty rate (Head count ratio), based on the official methodology. According to these the poverty rate was between 26.1% and 28.5% in India in 1999-2000 (table below).

	HCR in 1999-2000		
	Total	Rural	Urban
Planning Commission	26.1	27.1	23.6
Sundaram & Tendulkar	27.3	28.9	23.1
Sen (Abhijit) & Himanshu	27.8	28.8	25.1
Angus Deaton	28.5	30.0	24.7

[69] K L Datta's forthcoming ICRIER Working paper goes into all the complications and problems.
[70] The 1993-4 survey however had also collected data for 365 day recall for these sub-set of commodities, but stored it in the archives.

It is useful to note the other estimates that have been made using other methodologies. Deaton & Dreze (2002) have estimated a Poverty rate of 22.2% (26.28% rural & 12% urban) based on better measures of rural-urban cost of living differences and more accurate poverty lines based on better price indices. Bhalla's (2003a) estimates for poverty in 1999-2000 (1993) is 6% (15%) when based on an appropriate adjustment of the gap between survey mean consumption and average consumption as per NAS. Bhalla (2003b) has estimated a poverty level of 12-13% based on the Indian consumption poverty line of $1.08 a day and the consumption distribution as prevailing in 1983. This paper uses the growth in wages of the poorest (agricultural workers) between 1983 and 1999. This growth in wages (obtained from NSSO surveys of employment and unemployment) is used to substitute for the (mis-measured) growth in NSSO average consumption. Quah (2002) has also estimated Indian poverty using a $2 per day poverty line to be 12%-19% for 1992.[71] The World Bank however estimates a $1.08 (PPP) a day based poverty rate of 35.3% for India in 1993. Our calculations suggest that the $ a day line, which was $1.08 international in 1993 is equal to $1.2 in 1999. India's national poverty line (rural-urban average) was $1.48 at India's PPP exchange rate of Rs 8.17 per International $ in 1999. The poverty rate based on dollar a day should therefore be lower than that based on the National poverty line, whereas the World Bank's estimate of 35.3% for the former is much higher than the 28.6% for the latter.[72] The World Bank estimate of the poverty rate based on $ a day poverty line is therefore not credible.

Deaton and Dreze's (2002) estimate of a poverty rate of 22.2% in 1999-2000 appears to be plausible if we maintain the conventional practice of using unadjusted consumption survey data. From a global comparative perspective, a small empirical exercise based on WDI (WB) data for national poverty rates, per capita GDP, and share of the bottom 20% of the population suggests a poverty rate of 21.7% for India in 1999.[73]

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[71] His estimate of poverty for China for 1992 using the same poverty line is 14% to 17%.

[72] The reason seems to be that two different people have made the estimates at different points, perhaps based on different methodology!

[73] We find about 20 country-data points which have a per capita GDP in (2000 prices) between $2224 and $3874 (India is $2362) as well as an estimate of HCR ratio and income/consumption share of bottom 20%. Assuming that these are all based on conventional methodology, HCR is regressed on the per capita GDP and share of bottom 20%. The estimated equation is used to obtain the predicted value for India.

The issue raised by Bhalla (2003a & b) about the inconsistencies that arise when the conventional approach is used, has not been adequately answered by experts who defend the conventional approach. Thus his method of using NSS agricultural wage data (average growth 2.5%) to adjust for understatement of NSS consumption (average growth 0.8%) is credible. This adjustment however, requires an assumption of zero net saving by the poor (or no change in the saving rate), that may be only partially valid. The poor, particularly those pushed into poverty because of health reasons are likely to be net dis-savers (by drawing down their assets). This net dis-saving is likely to decline with average income of the poor and the vulnerable.[74] Therefore we conclude that the poverty rate for India in 1999-2000 was between 12% and 22%.

What is likely to happen to Poverty assuming that the growth rate of per capita GDP (about 3.8% per annum) and the rate of decline of poverty maintain the average rate seen in that period? Since 1980-81, poverty has declined at a rate of 0.92 per cent points per annum according to the World Bank estimates and at the rate of 1.17 per cent point per annum according to the Planning Commission.[75] Given the assumption of the future evolution of per capita GDP and its relationship to poverty reduction these imply that poverty would be eliminated by 2030 and 2021 respectively. If we take the Deaton-Dreze estimate of 22.2% in 1999 and the corresponding rate of decline of 1.08% point per annum (since 1987), then ***poverty in India would be eliminated by 2020***, when India would be a Middle Income Country.[76] If we use the Bhalla (2003b) estimate of 12%, poverty would be eliminated by 2010.

5.5 Global Comparison: An Equal Society

India is still a low income country. Its Per capita GDP measured at purchasing power parity is in the 33rd percentile i.e. 33% of the countries in the World have a lower per capita income then us (Table 7). A more realistic comparison is however with the

[74] For instance if consumption of the poor falls from 1.2 times income to 1 times over 16 years, a rate of growth of income of 2.5%(2.9%) per annum would be reduced to a consumption growth rate of 1.3% (1.7%) per annum.
[75] To determine the rate of decline during 1980-1 to 1999-2000 we have taken the average of the decline from 1987 to 1999 and from 1983 to 1999. For WB these are 0.94% & 0.90% and for PC 1.2% & 1.14%.
[76] In between a lower (LMIC) and upper middle income country (UMIC), a category that has been removed from the WB classification scheme. According to our projections India will become an LIMC before 2010.

medium-large countries defined as those with 2003 GDP at PPP greater than or equal to $ 15 billion. For this set of countries India is in the 23rd percentile i.e. only about 1/4th of medium-large countries are poorer than us, 3/4th of them are richer. The position has improved considerably since 1980 when we were in the 16th percentile of all countries and the 10th percentile for medium-large countries.

Poor countries generally have higher rates of poverty. We should therefore not be surprised to find a relatively high poverty rate in India compared to better off countries. There are only 85 (56 medium large) countries for which a Poverty rate (Head count ratio) is available for any year since 1985. Among these 85 (56) countries India's poverty rate was 29th (25th) lowest i.e. it fell in the 66th (57th) percentile (table 7).[77] In other words *India's poverty ranking is far superior to its Per capita GDP rank*. This is partly due to (& consistent with) the fact that India has a *relatively equal income distribution*. Among 127 countries (95 medium-large), India's relative rank on various income distribution parameters is even better than its rank on poverty.

Table 7: Global Comparison of Poverty and Distribution

	Cntry GDPppp > $ 15 bil (2003)						All countries with data			
	Rank India	No of Countries	% countries Above	% countries Below	Value	Year	Rank India	No of Countries	% countries Above	% countries Below
Income										
Per Capita GDP ppp	71	79	90%	10%	636	1980	107	127	84%	16%
Per Capita GDP ppp	80	104	77%	23%	2892	2003	111	165	67%	33%
Income Distribution & Poverty										
Share of Lowest 10%	4	95	4%	96%	3.9	2000*	6	127	5%	95%
Share of Lowest 20%	11	95	12%	88%	8.9	2000*	14	127	11%	89%
Share of Lower 40%	21	95	22%	78%	21.2	2000*	25	127	20%	80%
Gini Index	29	95	31%	69%	32.5	2000*	32	126	25%	75%
Poverty: Head Count Ratio (%)	24	56	43%	57%	28.6	2000*	29	85	34%	66%

Note: * = Poverty And Income Distribution Data is available for different years for different countries

India's rank on the GINI co-efficient (a summary measure of inequality), is in the 75th (69th) percentile, the share of income/consumption of the lowest 40% of the population is in the 80th (78th) percentile, the share of the lowest 20% is in the 89th (88th) percentile and that of the lowest 10% is in the 95th (96th) percentile. This means that the

poorest tenth of population have a higher share of the national pie than in India, in only 6 countries (5% of total) of which 4 are medium-large countries (4% of ML). This is a remarkable fact that the "nattering nabobs of negativism" choose to ignore. This could be partly the result of the socio-political systems higher sensitivity to poor voters (though there is no empirical evidence).

5.6 Hunger

The FAO defines about 19% of the people in developing countries (828 million) as hungry, while the proportion of Hungry in S. Asia is asserted to be about 20% (254 million). The World food programme on the other hand claims that nearly 50% of the hungry in the World live in India and 35% (350 million) are food insecure. Recall that 26.1% to 28.5% of the population has been found to be poor in 1999-2000, where the former is the official figure. What are the facts about hunger? NSS 38 round in 1983 as well as the NSS 50th (1993-94) and NSS 55th round (1999-2000) had a question on hunger that allows a direct answer to this question.[78] The NSS questions on hunger are, (a) Do all members of your household get two square meals/enough food everyday, (b) If not, then during which calendar months did you or other members of the household not have enough food everyday? The number of months indicated by the household is recorded.

The proportion of households that were hungry during any part of the year, by this definition (the authentic voice of the poor in India) was 15.7% in 1983, 4.5% in 1993-4 and 2.1% 1999-2000. In terms of individuals (assuming that every person in the household was hungry), we estimate that the number of hungry people declined from 15.1% of total population (101 mil.) in 1983 to 4.4% of population (37 mi.) in 1993-4 and further to 2% of the population (18.5 mi.) in 1999-2000.

It is useful to look at these numbers in relation to poverty (Planning Commission estimate), because logically the number of hungry people must be a fraction (less than 100%) of the poor for any reasonable definition of poverty. More formally the line

[77] If rich countries are assumed to have 0 poverty, India falls in the 62nd (51st) percentile of medium-large (all) countries. In 1993 the World Bank's $1 a day poverty line was equal to the Indian poverty line.

defining the 'very poor' or 'hungry' must logically lie below the poverty line. Thus the hunger ratio must be lower than the poverty ratio. The ratio of very poor/hungry to the poor may in general decline, stay constant or rise, depending on the distribution of consumption in the lower half of the distribution. In 1983 an estimated 33.9% i.e. more that 1/3rd of the poor were hungry at some point in the year. This proportion declined to 12.2% in 1993-4 and further to below 7.7% in 1999-2000.[79] Thus not only has poverty declined over the 1980s and 1990s, but the proportion of the poor who are hungry has also declined. This is precisely what we would expect given that the consumption distribution has consistently improved for the bottom 40% of the population.

That 18.5 million people went hungry and 260 million people were still poor half a century after Independence (as per official estimates) is matter of great sadness for the nation.[80] Do we need to exaggerate/ magnify the problem to convince ourselves of its seriousness or to gather the will to solve it?

5.7 Life And Literacy

Only a few indicators of health and education are available on a continuous basis and for earlier periods. On the health side Mortality and life expectancy data is available since 1960-61 and on the education side literacy data is available from the same date. This allows us to compare the performance of these over the two phases of growth and to see whether they are consistent with the data on poverty and hunger. It should be remembered that these indicators are a) very strongly correlated with per capita income of the household. b) The quantity & quality of public and quasi-public goods and services have a have a critical influence on the basic health and education indicators in low income countries. These include public health measures (control of communicable diseases & epidemics), public education (nutrition, personal hygiene, ORT), the supply of clean water, sewerage and sanitation and primary education.

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[78] Do we believe in "Voices of the Poor," or don't we? Is it only if it is a small selected group of poor?
[79] Using the official poverty rate gives us the upper bound on this percentage.
[80] One could go further and seriously consider Bhalla's argument that we should declare victory according to the $1 a day poverty line and replace it with a higher $2 a day poverty line.

In Table 8 we use a 'life expectancy gap,' defined as follows: The maximum female life expectancy in any country (which is higher than the male) is currently 85.2 years. We therefore round this up to 90 and calculate the difference between this and the actual life expectancy in any year and call it the 'life expectancy gap.' Similarly we use the rate of illiteracy (100 - literacy rate) to calculate the pace of change.

All the available health indicators, with one exception, show that the annual rate of improvement has accelerated (or remained unchanged) during phase II above that which prevailed during phase I. The most significant is the pace of improvement in under – 5 and infant mortality. The rate of decline in infant mortality has almost doubled to an average of 2.5% per annum between 1980-1 and 2003-4. The rate of decline of under-5 mortality has increased from 1.7% per annum between 1960-1 and 1980-1 to 2.8% per annum between 1980-1 and 2003-4. The female and total life expectancy gap is also closing at a faster rate in phase II than it was in phase I.

The only contrary indicator is adult male mortality rate, whose improvement has almost come to a halt. As the male is more likely to be employed this suggests that the reason may lie in his work environment rather than in his household situation (income, residence etc.). This evidence is however, contradictory to that on the male life expectancy gap, which has continued to close at the same rate as earlier.

On the education side, the rate of illiteracy has declined at a much faster rate in phase II for all categories (adults, youth, male, female). For instance the illiteracy rate of adult females aged 15 and over declined at the rate of 1.5% per annum during 1980-1 to 2000-1 compared a decline 1% per annum between 1970-1 and 1980-1. The literacy gap between females and males, which was expanding during 1970-1 to 1980-1, has been closing for adults as well as youth during 1980-1 to 2000-1 (table 8).

Table 8: Social Indicators During Two Phases

(Per 1000, years or % of category)

	Phase I: 1950-1 to 1979-80					Phase II: 1980-1 to 2003-4				
	Years		Variable		Change	Years		Variable		Change
	TI1	TI2	YI1	YI2	Gr Rt I	TII1	TII2	YII1	YII2	Gr Rt II
Health										
Mortality rate, under-5 (per 1,000)	60	80	242	173	-1.7%	80	03	173	87	-2.9%
Mortality rate, infant (per 1,000 live births)	60	80	146	113	-1.3%	80	03	113	63	-2.5%
Mortality rate, adult female (per 1,000 fem adlt)	60	80	407	279	-1.9%	80	00	279	191	-1.9%
Mortality rate, adult, male (per 1,000 male adlt)	60	80	398	261	-2.1%	80	00	261	250	-0.2%
Life expectancy at birth, total (years) Gap	62	82	45	35	-1.2%	82	03	35	27	-1.3%
Life expectancy at birth, female (years) Gap	62	82	45	35	-1.3%	82	03	35	26	-1.5%
Life expectancy at birth, male (years) Gap	62	82	44	35	-1.1%	82	03	35	27	-1.1%
Education										
Illiteracy rate, youth male (% of males 15-24)	70	80	40	32	-2.1%	80	00	32	20	-2.3%
Illiteracy rate, youth total (% of people 15-24)	70	80	55	45	-2.0%	80	00	45	27	-2.4%
Illiteracy rate, youth female (% of females 15-24)	70	80	70	58	-1.9%	80	00	58	35	-2.5%
Illiteracy rate, adult male (% of males $\geq$ 15)	70	80	53	45	-1.6%	80	00	45	32	-1.8%
Illiteracy rate, adult total (% of people $\geq$ 15)	70	80	67	59	-1.3%	80	01	59	39	-2.0%
Illiteracy adult female (% of females $\geq$ 15)	70	80	81	73	-1.0%	80	00	73	55	-1.5%
Young Illiterate females:males (% ages 15-24)	70	80	1.8	1.8	0.2%	80	00	1.8	1.7	-0.1%
Socio-economic										
Labor force, children 10-14 (% of age group)	60	80	30.1	21.4	-1.7%	80	03	21.4	10.7	-3.0%
Fertility rate, total (births per woman)	62	82	6.5	4.8	-1.5%	82	03	4.8	2.9	-2.4%

Two general indicators which reflect the acceleration in income/consumption growth and social improvement are the labour force participation rate of children aged 10 to 14 years and the total fertility rate (births per women). The prevalence of child labour declined at 1.7% per annum between 1960-1 and 1980-1. The rate of decline has almost doubled to 3% per annum during 1980-1 to 2003-4. The rate of decline of the fertility rate has similarly increased from 1.5% per annum over 1962-3 to 1982-3 to 2.4% per annum during 1982-3 to 2003-4.

5.8 Governance Failure: Quasi-Public Goods

Our relative performance in the area of basic health is broadly in line with our relative ranking on per capita income. However our relative performance on education is worse than our relative per capita income. The relative ranking in both is also much worse than in poverty and income distribution. This set of facts suggests that the failure lies in the quantity and quality of Public and Quasi-Public Goods (& services) supplied by the State. Relatively poor performance in *basic education* and to a lesser extent in public health represents a relative failure of governance. Despite an extensive network of government health Centres the poor spend a substantial fraction of their funds on health. Much of this is, however, wasted on unqualified medical practitioners, Quacks and Faith healers. The effectiveness of this expenditure can be increased through public education. State Governments must give much more attention to *basic education (3R s & discipline), public education & information dissemination (new approaches, technology & opportunities) and public health education (nutrition, nature and method of spread of diseases, constraints on treatment, faith healing)* than most have in the past, to correct these anomalies.

Among the set of medium-large countries, India ranks around the 20th percentile in Life expectancy at birth, Mortality rate of infants, children under 5 and females (table 9). This is only marginally lower than our ranking on per capita GDP. India's ranking on male mortality at the 31st percentile is however much better than for per capita GDP, but still significantly worse than for poverty (57th percentile). India has many government programs focused on Women and children's nutrition and health. These have clearly not

been successful in closing the large gap between adult male mortality, because 40% of staff (55 to 60% in PHS of poorer states) is absent (Choudury et all (2005)). In addition, the relative neglect of basic public health and public health education is a major factor in the relatively poor level of basic health indicators.

Table 9: Global Comparison of Basic Health and Education Indicators

	Rank India	No of Countries	% countries Above	% countries Below	Value	Year
Health						
Mortality Rate Male(per 1000 males)	75	108	69%	31%	250	2000
Mortality Rate female(per 1000 females)	85	108	79%	21%	191	2000
Mortality Rate Infant (per 1000 infants)	84	108	78%	22%	63	2003
Mortality Rate under 5(per 1000 5-)	86	108	80%	20%	87	2003
Life expectancy at birth(per 1000)	87	108	81%	19%	63	2003
Education						
Primary(net) school enrolmnt (%)	82	101	81%	19%	83	2000
Primary(net) school enrolmnt (%)	86	101	85%	15%	83	2001
Primary completion rate (%)	82	100	82%	18%	77	2000
Primary completion rate (%)	81	102	79%	21%	81	2002
Persistence to grade 5(% of cohort)	88	92	96%	4%	61	2000
Labor force with education $\geq$ Primary	69	74	93%	7%	49	1988
Youth(15-24) Literacy (% of youth)	90	98	92%	8%	73	2000
Adult Literacy Rate (% of adults)	100	108	93%	7%	57	2000
Adult Literacy Rate (% of adults)	100	108	93%	7%	61	2001

Source: World Bank, World Development Indicators, 2005 CD ROM.

Basic education was badly neglected during the Phase of Indian socialism. This is most starkly reflected in the literacy rate and the education level of the labour force. At the beginning of the 21st century India ranks in the 7th – 8th percentile in adult literacy, youth (15-24) literacy and percent of labour force with Primary or higher level of schooling (table 9). Persistence of student to the level of grade 5 (as % of the cohort) is even worse with only 4 out of 92 countries having a worse performance (4th percentile). The global ranking is somewhat better for Net Primary school enrolment and Primary school completion rates, being ranked in the 15th percentile in the former and in the 21st percentile in the latter. These are, however, worse than our Per capita GDP ranking.

The constitution enjoined the State to provide education. The courts interpreted these to create a government monopoly over Primary and Secondary education (State list)

and degree granting colleges/universities (Central list). The government(s) took 40 years to set up a network of schools, where on average 25% of teachers are absent from school, another 25% are absent from the class, and 5% or more are just sitting in class. (Choudury et all (2005)). Overall the quality of teaching is abysmal, despite teachers getting much higher salary than in the reluctantly permitted, bureaucratically oppressed, non-profit schools. A government monopoly coupled with low accountability and poor governance is the worst possible solution to any economic or social problem. Our constitutionally mandated and court interpreted education system is an approximation of this hypothetical one. The solution is greater accountability (via user groups) to those who are directly affected by this failure, namely the parents and grandparents of school age children. Sustained accountability also requires the involvement of Panchayati Raj institutions (local level for primary, block for secondary) and non-govt organisations.

5.9 Poverty Elimination

5.9.1 Estimated Cost

What is the cost of eliminating poverty and hunger in India? That of course depends on the extent of poverty, which is currently mired in academic debates about the measurement of poverty. The 'conventional wisdom' would agree that in the years from 1993-94 to 1999-2000 the poverty rate (HCR) was between 25% and 35%.[81] So as not to distract from the main point of this section we can therefore skirt the debate about the precise change in poverty between 1993-4 and 1999-2000 and its level in either year by considering three numbers. For each of these years we order the households/person by consumption level and identify the ones which are 25%, 30% and 35% from the bottom. That is we identify in each year the consumption level of the person(s) who would be just at the poverty line if the poverty rate was 25%, 30% and 35% respectively. Then we calculate the income transfer needed for every body below that level to be brought up to the level. This data is summarised in the table below.

[81] For those who believe that the poverty rate was 10% to 12% in 1999-2000 this could be treated as a calculation for eliminating poverty as per a higher poverty line ($1.5/ $2/ $2.5 a day).

Table 10: Consumption Expenditures and Expenditure Gap

	Poverty Rate (HCR) or Cut off line (x)			
	25%	30%	35%	50%
Average Per Capita Expenditure (1999-2000)				
Person at x% line	4092	4356	4632	5532
Persons below x%	3273	3523	3622	4026
Average Gap	819	833	1010	1506
Number below x%(crore)	23.1	27	32	46.21
Total GAP (Rs crore)	18914	22478	32318	69584
Average Per Capita Expenditure (1993-94)				
Person at x% line	2288	2448	2596	3102
Persons below x%	1810	1927	2029	2258
Average Gap	478	521	567	844
Number below x%(crore)	21.1	25	29	42
Total GAP (Rs crore)	10086	13016	16448	35459

In 1993-94 the Central government expenditure in the budget category "subsidies" was Rs. 12,682 crore of which Rs. 10,099 crore were for food and fertiliser subsidies. The latter would have been enough to bring all the poor to the consumption level of the person/household at the 25% level. During the same year the Central and State governments together spent another Rs. 14,160 crore on the budget categories 'Rural development,' 'Welfare of SC, ST & OBCs' and 'Social Security and Welfare.' This expenditure would have been enough to bring all the poor to the consumption level of the person/household at the 30% level. These two sets of expenditures (Rs. 25850) would have been more than sufficient to eliminate poverty in 1993 if transferred directly to the poor and disadvantaged (SC, ST, handicapped, old, poor farmers).[82]

In 1999-2000 the total subsidies provided by the Central government were Rs 25,690 crore of which Rs. 22,680 crore were for food and fertiliser. During the same year the Central and State governments together spent another Rs. 28,080 crore on 'Rural development(RD),' 'Welfare of SC, ST & OBCs' and 'Social Security and Welfare.' Either of these was sufficient to bring all the poor to the consumption level of the person/household at the 30% level. Given that poverty was between 26.1% and 28.6% either of these if transferred directly to the poor and disadvantaged (SC, ST, handicapped,

[82] Official poverty rate was 36.1% in 1993.

old, poor farmers) would have eliminated poverty. Together these subsidies and poverty alleviation expenditures (Rs. 53,770 crore) would have been sufficient to eliminate poverty in 1999-2000, even if administrative costs and leakages used up half the allocation (and the small fraction of RD expenditures on water supply were excluded).

In 2004-5 the total amount spent on these budget heads was about 60,000 crore.

5.9.2 Income Transfers

It can be argued that the ideal (most efficient) social welfare policy is a direct transfer of income to the poor through a *negative income tax*. In a developed country this would be very easy. How can we transfer these amounts directly to the poor, the needy and the disadvantaged in a poor country? The answer, by setting up an Indian version of a income transfer system using a modern smart card technology that delivers cash and/or subsidies to the poor based on their entitlements as per specified parameters and norms. Such a smart card could be programmed with identity (photo & biometric fingerprint), and have information on social (SC/ST) and personal/household characteristics. Each person/ households' entitlements could be in the form of specified subsidies (per unit subsidy of s_i for up to q_i units for all i in C) for the purchase of a set of items C. The set of items C could include food/cereals, kerosene, midday meals, nutrition supplements, drinking water, toilet/ sanitation services, basic drugs, schooling (primary/secondary), internet access, electricity and a host of other items reflecting the dozens of subsidies and programs currently in existence. The entitlement could be varied with and dependent on various economic and social handicaps such as SC-ST, age (infant or aged), mental handicap, physical disability, female head of household, lactating mother, chronic illness. In this way all the current stakeholders, special interest groups and social policies could be accommodated within a single integrated system.

These subsidies would have to be collected by the provider of the specified service from the government through the smart card system just as is done currently in a credit card system.[83] Alternatively all these entitlements could be calculated and consolidated into a single cash value to be delivered to the beneficiary every month at his residential address, through the smart card system. Though on theoretical economic grounds the

[83] The entitled person would pay the difference between the market price and the subsidy directly to the private or public entity supplying the goods or services.

latter may be the preferred option, the former would also yield substantial gains and perhaps be more feasible at this stage.

5.9.3 PDS Non-experiment

If poverty could be eliminated so easily why has this not been tried before? There are many reasons, but the most fundamental is illustrated by the following experience: In the formulation of the tenth Plan as Advisor (Development Policy) responsible for food policy/ PDS system the author proposed the gradual introduction of a credit /debit /smart card system to replace the existing PDS system characterised by enormous leakages and high administrative costs (see Virmani and Rajeev (2001)). In this system the entitled person could obtain the specified subsidy from any participating supplier of food/cereals. The person would pay the supplier the difference between the market price and the unit subsidy, and the supplier would collect the subsidy from the government. The formal proposal was to carry out an experiment (as a first step) to determine its effectiveness and to learn about and iron out any problems that may arise. Consequently funds were allocated in the tenth plan for introducing it in a sample of urban areas along with the introduction of food stamp system in a sample of rural areas. Not a single State govt has agreed to undertake this experiment so far, as it has the potential of dramatically reducing leakages and administrative costs.

5.9.4 Smart Card System

The smart card would also constitute a national identity card. For instance the card could contain information on citizenship and voting eligibility (constituency for voting) as provided and checked by the home ministry and the election commission respectively. Secrecy and confidentiality clauses would have to be built into the national smart card system by law. For instance, any person who does not want to avail of any subsidies / entitlements from the government need not provide the information needed for calculating & monitoring the subsidy/entitlement. They would for instance only provide the information necessary to obtain a passport and voter registration card. Many agencies of government (e.g. CBEC, CBDT, and Home) have proposed identification cards. There are significant economies of scale in having one smart card system for all citizens, with

different agencies having their own special modules (password protected access to memory segments) within the card for their specialised needs.

The setting up of a smart card system is somewhat distinct from running it even though there may be economies of scope. The former is very similar to carrying out a (special) census in which the data gathered would be entered into a smart card. There is however an additional, technically challenging component, the simultaneous recording of a photo and a biometric fingerprint so as to minimise fraud. The experience with a similar system used in SEBI MAPIN project suggests that it would be best to sub-contract it to private parties in each State/region.

The running of smart card system is on the other hand very much like the running of a credit card system. All the credit card companies, as well as companies that provide back office services to credit card issuers or marketers, would be interested in competing to obtain the contract for the running of such a system. As a credit card company has to incur a fixed cost in setting up its own credit card system, these companies may be willing to charge below cost if they can share the fixed costs of the public system with their private card systems. This could make a significant difference in the cost of spreading the system to the rural areas. Cash delivery through smart card would be akin to a modern version of the Post & Telegraph department's money order system, already operational with specialised companies that intermediate international/national remittances. The cost of setting up and running a nationwide cash delivery system for the poor would probably be significantly less than that of a commodity related system. The total steady state cost of running this system (including depreciation and return on capital) should be of the same order as the current credit card systems (< 10%).

The identity of the households below the poverty line is not fixed from year to year. The largest turnover occurs because of health shocks followed by natural disasters (droughts and floods) that knock people below the poverty line, while others who have recovered from the shock or have improved their position move above the line. As a matter of abundant caution we could target the bottom half of the population for issue of smart cards (with complete entitlement related information). Annual updating of entitlement related information could be done for those below the poverty line and those

up to half this percentage above the line (i.e. if poverty rate, HCR, is 24%, cover poorest 36%).

5.9.5 Regulatory Authority

An independent authority including government officials and non-government organisations could be set up to monitor the integrity of the Poverty Elimination System. This supervisory authority would ensure that private operators are running the smart card system in a manner needed to ensure that the subsidy reaches the poor.

6 Empirical Analysis: Determinants

We turn briefly to the third level of analysis that of econometrically identifying the determinants of growth in India and estimating their impact. We also show that some of the popular explanations of historical variations in the rate of growth of the Indian economy do not stand up to a little more rigorous empirical scrutiny. This is a very preliminary and illustrative analysis, as we do not resolve all the econometric issues and problems that arise.

6.1 Machinery Investment & Exchange Rate

We start by introducing a variant of the results in Virmani (2004d) that show the impact of the real exchange rate and of machinery investment on TFPG. We then show that the same variables along with a few others also determine GDP growth.

The real exchange rate is assumed to reflect the degree of import protection as well as the conventional elements of over/under valuation. We believe that this variable captures the effective protection to Indian industry/ restriction on access to technology better than independent indices of tariff rate and QRs, because of the complex mix of import controls, quantity restrictions and tariffs that prevailed in India. Further even the latter indices are available only from the 1980s. Investment in machinery captures the effect of embodied technological change emphasised by De Long and Summers (1991, 1992).

A simple regression of the growth of fixed investment in machinery (Grkfme) on TFPG yields a highly significant co-efficient:[84]

[84] All growth rates used in the author's studies quoted here are stationary as per ADF test (1% level).

Equation 1: TFPG1 = 0.30 Grkfme –0.20*GrXRreal–0.27 AR(1)

(7.5)*** (-3.2)*** (-2.0)*

$R^2 = 0.25$, R^2 (adj) = 0.22, DW = 2.1

GrXRreal is the rate of change of the real exchange rate (measured by ratio of Implicit GDP deflator for tradable goods/non-tradable services). The confidence level is 1% (***), 5% (**) or 10%(*). Thus investment in machinery & equipment seems to have a productivity enhancing effect in India as shown.[85] Rainfall variations are not significant when introduced into this equation for TFPG as expected, as we have taken account of these in calculating TFPG. Similar results are obtained if the dependent variable is the share of machinery stock in total capital stock.

Using the co-efficient of 0.3 we can estimate the impact of machinery and equipment investment on TFPG. Thus the contribution of machinery investment doubled from about 1.1% per annum in phase 1 to 2.25% per annum in phase II. It contributed an average 0.9% point, 1.26% point 2.1% points and 2.4% points per annum to TFPG in the sub-phases IA, IB, IIA and IIB respectively.[86]. The contribution of the real exchange rate was a fraction of this. Appreciation reduced TFPG by 0.15% point in sub phase IB and by 0.06% point and 0.08% point in IIA & IIB respectively.

From earlier analysis we know that the dummy for 1965-6 to 1980-1 has a significant effect on TFPG.[87] Introducing this into the above equation we have,

Equation 2: TFPG1 = -0.01 D6580+ 0.335 Grkfme –0.19*GrXRreal – 0.32 AR(1)

(-2.2)** (8.3)*** (-3.2)*** (-2.4)**

$R^2 = 0.31$, R^2 (adj) = 0.27, DW = 2.2 .

The co-efficient on Grkfme is marginally higher than in equation 1 but similar.[88] Thus in addition to import controls and import substitution policies that affected

[85] The inverse equation shows that tfpg1 has an insignificant effect on the rate of machinery capital.
[86] As capacity utilisation data is unavailable, the capital series measures installed (and not utilised) capacity.
[87] When crude oil price growth is introduced into this equation its co-efficient of –0.0147 is significant at the 5% level (R^2(adj)=0.29). However it becomes non-significant when D6580 is added. Further the same variable is not significant in the production function. This suggests that the oil price increases of 1971 & 1979 interacted with other policies to produce the negative effect of oil price increase on TFPG.
[88] If Ifme_if is replaced by kfme_kf , R^2 and R^2 (adj) are marginally greater. Similar results are obtained if TFPG0 is used instead of TFPG1.

machinery investment and the real exchange rate, TFPG was reduced by 1% point during 1965-6 to 1980-81 due to other policies. In other words approximately 1 % point of the 1.45% (0.77%) point decline in TFPG (TFPGhp) during sub-phase IB is explained by equation 2.

One possibility is that the other policies captured by the dummy worked to reduce capacity utilisation. This is suggested by the rise in the co-efficient on machinery capital on introduction of the dummy and the doubling of the rate of growth of capital per worker during sub-phase IB. The policies introduced during this phase could for instance have reduced the rate of capacity utilisation through the following channels: (a) Rise in import duties leading to higher prices paid by consumers for domestic consumer goods and consequent reduction in consumer demand, (b) Higher (income/excise) taxation and consequent reduction in personal disposable income, (c) Over-investment by government in the production of goods and services for which there was no demand from the private sector.[89] This is the sub-period of "Legislative-Bureaucratic socialism" that Virmani (2004c) called the "Socialist Rate of Growth (SRG) period in which GDP growth plummeted.

6.2 Role of Agriculture

The other suggestive result is that of the effect of agriculture on GDP. By definition any sub-sector of GDP (agriculture, manufacturing, and services) would have a one to one effect on total GDP (identity). To find the real effect of agriculture, we need to examine the effect of agriculture on non-agriculture GDP. We also need to account for the impact of rainfall on agriculture as this known to be positive and is equivalent to injecting/withdrawing real resources (grants in aid) from outside the economy. [90] OLS estimation finds no effect (not significant) while simple 2SLS estimation shows that the effect is negative:[91]

[89] Purchase and price preference tried to generate demand for such goods and services from other public sector units, but this was perhaps not sufficient

[90] This has routinely been ignored in earlier studies.

Equation 3: GrNagGdp= 0.047+ 0.026 D81 + 0.122 drainm – 0.112*GrGdAgr

(13)*** (5.2)*** (3.4)*** (-1.8)*

$R^2 = 0.37$, R^2 (adj) = 0.33, DW = 1.9

Thus the general argument that growth of Indian agriculture is necessary for sustained growth of the economy is not supported by analysis that takes account of the direct effect of rainfall on agriculture and on GDP.

One policy instrument that the government has is the allocation of expenditure between different sectors. An alternative is larger expenditures on agriculture funded either by higher taxes on non-agriculture sector or higher fiscal deficits. The above equation suggests that either policy will in general reduce the overall rate of growth. It leaves open the possibility that reallocation of existing expenditures on agriculture and rural development to **productivity enhancing** activities may increase agricultural and overall growth. These include agricultural R&D and its dissemination, aquifer (ground water) recharge, dams, canals and drainage systems.

6.3 Role of Public Investment

Another factor that has often been asserted as a driver of growth in India is public investment. Empirically we find that the effect of public investment is either statistically insignificant (OLS) or negative (simple TSLS).

Equation 4: GrGdp=0.035+0.024 D81 + 0.196 drainm – 0.11drainm(-1) -0.0*GrIpub

(10)*** (5.4)*** (6.5)*** (-3.4)*** (0)

-0.35 AR(1)
(-2.5)**

$R^2 = 0.63$, R^2 (adj) = 0.59, DW = 2.1.

GrIpub is the rate of growth of Public investment (at constant prices). Neither this variable nor the rate of growth of fixed investment by the public is significant when introduced into equation 3. Thus growth equations do not provide any support to the

[91] The effect of Non agriculture GDP growth on Agricultural GDP growth is also not significant in OLS but the Rsquare is higher. Possibly because rainfall plays a more important role in agriculture.

contention that government investment per se is an important determinant of GDP growth in India.

These results could be either because the allocation of public investment is bad or because public investment is inefficient in India or both. It therefore leaves open the possibility that investment in public goods (e.g. connecting roads, modern courts & police systems), utilities (e.g. electricity) or infrastructure (e.g. ports, airports, and railway lines) has a positive effect on other sectors. The systems of allocation of funds as well as the incentives of publicly run organisations have not, however, been able to capitalise on these externalities. A policy framework that promotes private entry and competition in these sectors and reduces policy risk through professional regulation of monopoly elements is likely to produce much better results than larger public investment in public monopolies riddled with X-inefficiency.

The monopolisation of infrastructure sectors by the government also had the unfortunate effect of converting a technical issue into an ideological one. The technical issue was one of degree of complementarily between production of and investment in *infrastructure* (or utility) services and the *other sectors* of the economy. This was converted into an ideological issue of the complementarily between *public* investment and *private* investment. A priori one would expect that electricity and to a lesser extent modern communications and transport are complements to modern industrial production and market systems. The technical possibility of complementarily or substitutability does not, depend on whether one or other or both are private or government owned.[92] The fact that these sectors were under government monopoly misled many economists into thinking and arguing as if the issue was one of complementarily between private and government investment in all sectors (i.e. including manufacturing, mining, agriculture and other services).

[92] The best way to estimate substitutability can however depend critically on the ownership pattern and consequently the incentives and behaviour of the managers.

7 Lessons For The Future

7.1 Accelerating Private Investment

The web of controls created by the government over the decades is a virtual jungle whose profile is well known, but whose details are not known so well known. It covers every sector of the economy but remains particularly oppressive in areas where government was an active producer/supplier, such as physical infrastructure (railways, power, irrigation & drainage, urban utilities), social sectors (education, health) and mining. It also remains in factor markets.

The broad approach to market reform is familiar.[93] That is to promote competition wherever it is possible to do so and to mimic competition (introduce *benchmark competition*) through enlightened professional regulation where there are natural monopoly elements. Thus for instance, the first step in railway reform could be to allow the private sector to provide train services (while keeping the rail network under the Indian Railways).[94] There is still not sufficient understanding, however, of the difference between professional regulation for development of the industry in the long term interests of consumers and interventionist controls to force extraneous consideration and interests upon it. Thus identifying and eliminating the latter and defining and implementing the former requires detailed study of each sector/sub-sector, hard work and determination to overcome self seeking arguments and vested interests. These reforms will gradually and in parallel, accelerate capital deepening and Total Factor Productivity growth (with different lags) and thus raise GDP growth above its current potential (trend rate) of 6.5% per annum.

One existing initiative that will contribute to structural transformation of the economy is the building of National & State highways and their inter linkage to towns and villages. Out of the slew of other possible policy and institutional reforms in every sector there are five that have the capacity to fundamentally transform the productivity and growth environment. These are the labor market, education, electricity, Foreign Direct Investment and government administration.

[93] See for example Virmani (2002, 2004b).

7.2 TFPG Through Structural Change

7.2.1 Double Dualism

Arthur Lewis outlined a model of the "labour surplus" Dual economy that captured some essential elements of reality in Asian Economies. In most economies of E and S E Asia that moved from low to middle to higher income, labour moved from agriculture to the informal non-agricultural sector and from there to the modern manufacturing / industrial sector. Universal primary schooling ensured that agricultural labour became 'socialised' and acquired the basic education needed to work in regular non-manufacturing jobs. After some on the job experience in the informal sector it was ready to serve as *unskilled labour* in the modern organised sector.[95] The spread of secondary education ensured that labour was gradually able to undertake the semi-skilled jobs that opened up as the economy moved to middle income level. The Lewis model implicitly assumed that global technology and private goods such as electricity necessary for the modern sector were readily available. The only limitation was capital accumulation/investment.

Indian development policy converted the Dual economy into one with "double dualism." The anti-scale bias of this policy made both mass-scale labour intensive manufacturing and relatively labour-cum-capital intensive manufacturing having significant economies of scale unprofitable. The former became another dual sector within the informal, while the latter become a dual within the modern sector, thus fragmenting the modern manufacturing sector along two fault lines. This has reduced the scope for productivity growth in the economy. It has also dramatically slowed down the shift of labour out of agriculture that one would expect in an industrialising economy.

7.2.2 Agriculture Employment

Indian agriculture's share of value added has declined in line with the fall in demand for cereals and food that we would expect with rising per capita incomes. The

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[94] Any interested PSU could also run train services in competition with IR.

[95] Primary education is essential for good quality unskilled work in modern manufacturing and services. Low levels of education in the labour force result in poor (average) quality of service and low average quality of mass consumer goods.

"double dualism" has however had the effect of slowing the shift of labour out of agriculture. This can be seen from a cross-country comparison of the share of agriculture in Value Added and employment. Figure 11 plots these two shares for all medium-large countries ordered by per capita GDP at PPP (2001 data) and fits a trend line through each. India's share of agricultural value added is marginally higher than the trend line, but agriculture's share of total employment is way above what we would expect at its level of per capita GDP.

7.2.3 Modern Services

Contrary to a perception, that the share of Value added from Manufacturing is too low and that from Services is too high in total value added both are marginally higher than the cross country trend line (figure 12). Among the high growth economies (top 10 in GDP or PCGDP growth since 1980) India has had the third highest increase in the share of services in value added (13.7%) since 1980 after Hong Kong and Luxembourg. Somewhat surprisingly China had the fourth highest increase of 11.6% points. The former was only 1.15 times the latter, though the share of services in China's GDP remains the lowest among this set of 12 countries, because of the communist legacy. India's service share being the highest among the low and lower-middle income countries

As this issue has often been raised in public discourse it is useful to examine it briefly. We assume that the registered and unregistered sector approximate the modern and traditional manufacturing sector. We analogously divide the service sector into the modern and traditional. The former is defined as consisting of Electricity (+ gas & water), Communication, Finance & Insurance, Business services, Research & Development, Education and Medical services. The average growth rates during the phases and sub-phases are shown in table 11.

Figure 11: Cross country Comparison of Agriculture Share (2001)

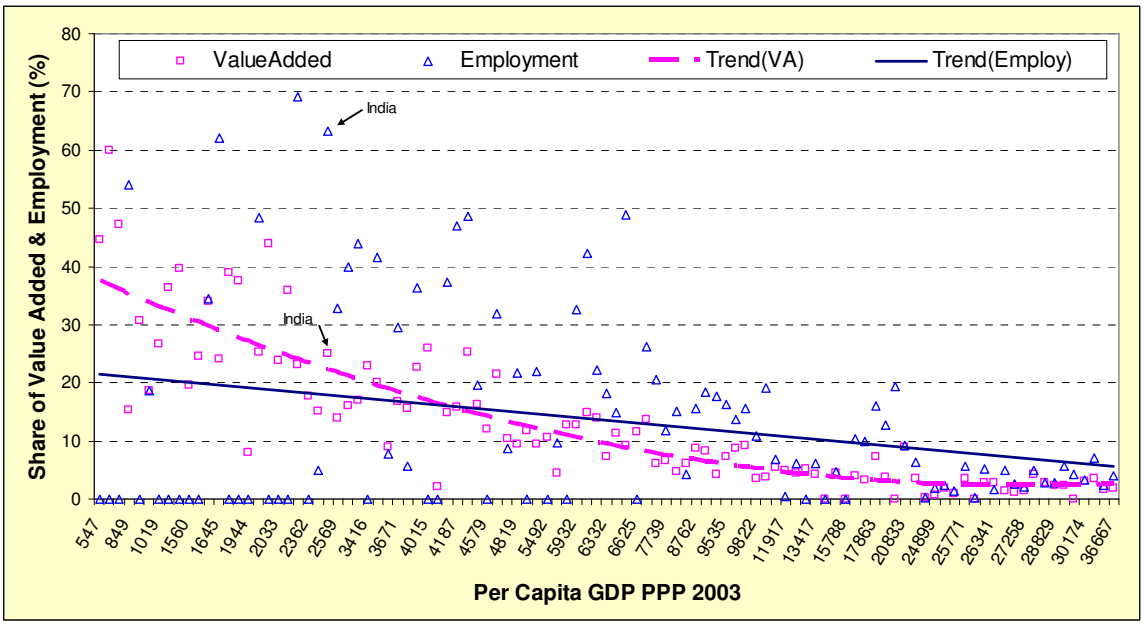

Figure 12: Shares of Manufacturing and Services in Value Added by Country

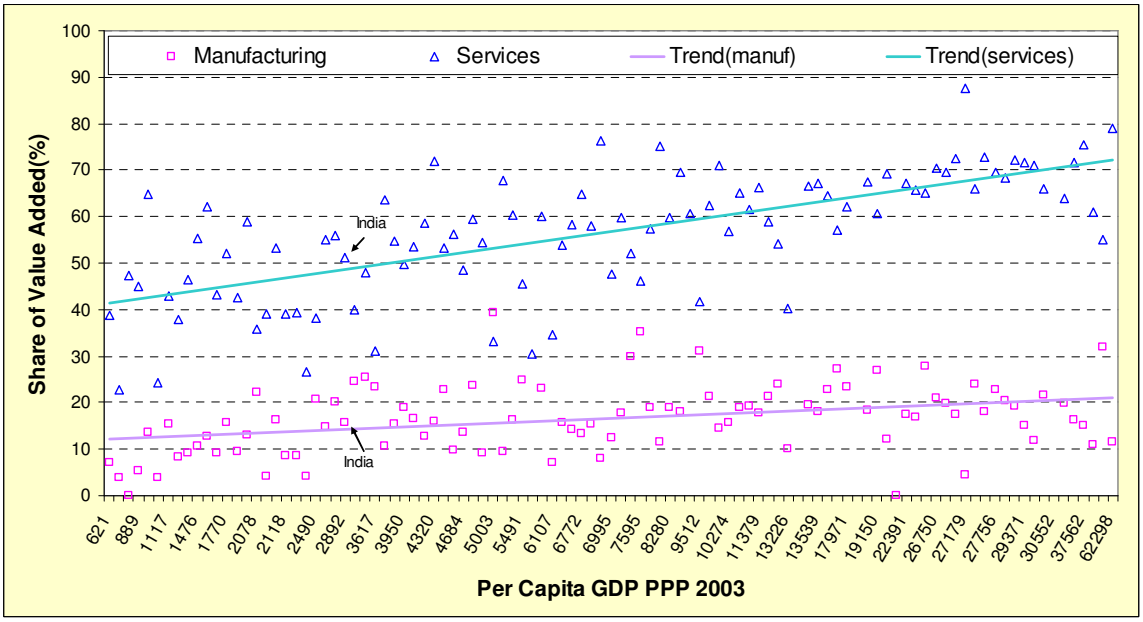

Table 11: Growth of Modern Manufacturing and Services

Phase	Period	Manufacturing Total	Manufacturing Modern (regd)	Manufacturing Traditional (unregd)	Services Total	Services Modern*	Services Traditional
I	1951-2 to 1979-80	5.3%	6.1%	4.5%	4.7%	6.9%	4.3%
I A	1951-2 to 1964-5	6.6%	7.9%	5.4%	5.2%	7.5%	4.8%
I B	1965-6 to 1979-80	4.1%	4.4%	3.7%	4.2%	6.3%	3.8%
II	1980-1 to 2003-4#	6.5%	7.0%	5.6%	7.0%	9.2%	6.1%
II A	1980-1 to 1991-2	6.1%	6.8%	5.0%	6.3%	8.4%	5.7%
II B	1992-3 to 2003-4#	7.0%	7.1%	6.3%	7.6%	10.1%	6.4%

Notes: * Modern services include Electricity, Telecom, Finance & Others. Others' are business, air travel, education, medical & R&D
= 2002-3 & 2003-4 are authors estimates for Other modern

The first noteworthy fact is that the average rate of growth of services has been faster than that for manufacturing in every sub-phase (except sub-phase IA) i.e. since mid-sixties. Despite this the share of services is in line with our per capita GDP. Second, modern services have grown faster than modern manufacturing and traditional services have grown faster than traditional manufacturing since sub-phase IB. As a consequence the share of traditional manufacturing and services has remained more or less constant during the reform phase. The share of modern manufacturing has grown by 40% while that of modern services has grown by 120 % from 1980-1 to 2003-4 (i.e. during phase II). Consequently in 2003-4 the share of modern services was about 21%, i.e. about a quarter larger than the 17% share of all manufacturing in GDP.

Though the relatively fast growth of modern services can be sustained till India reaches the high income category this will not necessarily result in a faster shift of the labour force out of agriculture. By definition modern services are more capital intensive (K/L) and less labour using than traditional services. Their degree of capital intensity varies just as it does within the modern manufacturing sector. It is likely, however, that on average modern services are more educated/skilled labour intensity (H/L) than modern manufacturing.[96] Thus faster growth of modern services implies faster growth of demand for educated/skilled labour than for unskilled labour. Therefore unless the policy distortions that constrain modern labour intensive manufacturing are addressed the

[96] In India this could itself be due to fear of the labour laws that have constrained manufacturing.

problem of excess labour in agriculture and the rural-urban poverty gap would be difficult to solve.

7.2.4 Manufacturing productivity

Historically the most important driver of productivity change in low and lower-middle income countries has been the shift of labour from agriculture to modern industry. In India the proportion of the total labour force in manufacturing has increased marginally from 10.2% in 1977-8 to 11% 1999-2000 while the share of GDP from manufacturing has risen from 13.6% of total GDP to 16.7% of total over the same period. The structural shift of labour continues to be stymied in India by inflexible labour laws that discourage hiring of (unskilled) labour in organised industry (and services) and encourage the adoption of (unskilled) labour saving technology.[97] The adoption of capital intensive technology in modern manufacturing results in faster capital deepening and lower aggregate TFP growth than would have prevailed under flexible labour laws, though productivity continues to increase. This contrasts with the performance of S. E Asian countries with more flexible labour laws, which have simultaneously had higher rates of growth in manufacturing employment and Value added and in overall growth than India.

In 2003 the share of Manufacturing in GDP was lower in India (15.8%) than that of 53 other countries (out of 97 countries with GDPppp $\geq$ \$15 bi.). Most of the economies that grew faster than India during 1980 to 2003 had a higher share of GDP from manufacturing than India. Among these were China (39.3%), Thailand (35.2%), Malaysia (31.1%), Singapore (27.9%), Indonesia (24.7%), S Korea (23.4%), and Vietnam (20.8%).[98] As share of manufacturing in GDP starts to decline after countries reach high income level, the share of manufacturing in high income countries is declining naturally. It is therefore useful to look at the highest share of manufacturing GDP reached during this period. 70 out of 100 countries attained a higher share than that of India (18.1%).

[97] Hashim and Virmani (forthcoming)

[98] Japan whose high income period was between 1950 and 1980 had a maximum GDP share of manufacturing of 28.7% during the post 1980 period and was 20.5% in 2003.

7.2.5 Labour Flexibility

The key to rebalancing India's employment structure and sustaining higher TFPG levels is increased labour flexibility, the modern democratic equivalent of competition in the labour market. Modern social democratic societies apply a different metric to competition in labour markets (involving flesh and blood human beings) than they do to markets for goods and services. Only in a dictatorship or communist country can "hire and fire" really mean what the Indian left accuses it of being in democratic countries. In democratic India, we do ***not*** need to introduce a Chinese Socialist system that allows FDI/exporters to "hire and fire" and make them work 80-100 hours of work per week, 52 weeks a year. We do, however need to allow, in the interests of the common labourer, labour markets to adjust to changes in demand and supply i.e. to become more flexible.

The extreme rigidity in the Indian labour system is partly a matter of laws, partly of rules and procedures that assume that labour is always right and the employer always wrong. We need a change in laws, rules and procedures that allow greater flexibility:

a) The Contract labour act must be changed to allow sub-contracting of any job, with the onus of labour law enforcement on the contractor.

b) Even if the laws relating to closure and retrenchment cannot be changed, the rules must be modified so that firms whose business/ demand/ sales falls sharply can reduce the size of their work force commensurately.

c) We need procedures that make it easy (not difficult) to fire lazy employees who do not want to do productive work and/or undermine the motivation of other to work.

Germany and France have among the most rigid labour laws in Europe, while continental Europe is recognised to have more rigid laws than the USA and UK. In Germany workers would feel that it is their responsibility and right to work hard and produce quality output. It would be unthinkable for workers to believe or expect that they will not be fired if they shirk work. Even in France where they may object to a profitable company firing its workers and moving its operations to another country, no one would question the right of a company to reduce its work force when demand falls sharply. If we can change our mindset and make essential changes in the laws, rules and

procedures, the structural transformation of the economy could resume with consequent acceleration in TFPG.

Accelerated removal of SSI reservation would complement this process as would a reform of education.

7.3 Competition in Education

One of the important failings of Indian socialism was the gross neglect of literacy and primary education. The contrast is particularly glaring when we compare with communist-socialist countries such as the USSR, Eastern Europe and Maoist China, who achieved a high level of education for the general population/labour force. One of the less noticed consequences of this neglect[99] is the poor (average) quality of services (e.g. equipment repair, construction & associated repair) and goods of common consumption (including drugs & pharmaceuticals) generally produced by the small scale sector and Khadi & Village industries.[100]

The education sector grew at an average rate of 6.2% per annum in phase I from 1950-1 to 1979-80. It continued to grow at around the same rate in Phase IIB from 1980-1 to 1991-2. Growth has accelerated sharply to an average rate of 9.0% per annum during sub-phase IIB from 1992-3 to 2001-2. This has happened despite,

a) Government expenditure on education and training decelerating from an average growth (1993-4 prices) of 11.7% per annum in phase I to 6.4% per annum in sub phase IIA and further to 5.2% in phase IIB (till 2001).[101]
b) Severe constraints on private provision of education. The Supreme Court had (earlier) interpreted the constitutional provisions that enjoin the State to provide education to its citizens, as prohibiting private provision of "basic" education (schooling, BA/BSc, MA/MSc).[102] The SC had however allowed non-profit organisations (societies and trusts) to set up non-governmental

[99] Largely because of the unavailability of statistical data on quality, and the measurement problems.
[100] In the case of drugs produced by SSI, including spurious drugs, this can have serious consequences
[101] Nominal data is from Ministry of education web site. Deflator is based on NAS GDP for education.
[102] The definition of "basic" appears to exclude professional courses such as information technology, medicine and engineering.

schools, so as to "assist/help" the State to fulfil its constitutionally mandated duty.[103]

With reforms the rate of growth of the sector could be doubled and its quality improved manifold without an excessive strain on limited government revenues. The education sector in India can be transformed within a span of 3 to 5 years given the right mix of policy, regulation and reorientation of government expenditure. This in turn can have a profound impact on the quality of output in all sectors of the economy and the competitiveness of Indian industry, services and agriculture. What we need is constitutionally and legally sanctioned competition in tertiary and secondary education, replacement of bureaucratic controls by professional regulations along with private-public partnership to ensure universal primary education within 3-5 years.

The key to success is removal of current bureaucratic controls and interference with aggressively promoted competition by professionally empowered regulators (not controllers). A policy framework for the competitive supply of education by non-government organization will have the following elements:

a) *Rating Agencies*: University Grants Commission /All India Council for Technical Education / National Accreditation Council / Medical Council of India/ Professional Councils, would Register / License rating agencies in their area of authority / expertise. Some of these rating agencies will specialize in specific subjects, but others could cover multiple topics or broad areas. These rating agencies would devise a system for rating the quality of educational institutions and offer their services to all education service providers (private & public).

b) *Private Entry*: Free entry of registered societies (non-profit) and publicly listed (education) Companies in all fields of education, subject to the following pre-specified conditions:

   i) *Quality Rating*: Compulsory rating by accredited agency (prior to accepting any fees from students). Ratings must be renewed every year at least for the first 3-5 years. Periodicity of compulsory rating can be reduced thereafter.

[103] When too many legal elements and rules are grey, profit making educational institutions are not allowed or restricted and controls are a means to generate personal income, only shady institutions can thrive.

ii) *Transparent Fees & Accounts*: Fees must be published and known in advance. Accounts must be audited by CA and results made public if revenues/fees received exceed Rs. 10 lakhs. Un-audited institutions must publish their basic/ minimum accounts (revenues, expenditure, profits, capital investment, no of students, average fee per student) in prescribed format.

c) *Subsidy Accounting*: Any education society that gets below market-price land or other assistance must give means-cum merit scholarships to needy students equal in value to the effective subsidy.

d) *Government Grants/Scholarship*: An impartial system for determination of what would be a fair and affordable contribution of parents to children's education based on family income/ wealth. This system would also calculate eligibility for education loans and grants.[104] Such and integrated system can be modeled on the government run online system that exists in the US, but modified to suit Indian circumstances. The system would ensure that the poor and lower middle class children get the grants and the middle class the loans that they need to educate children to the level of their capabilities and interest.

e) *Removal/minimization of controls and restrictions:* For instance specification of particular infrastructure and/or number of teachers etc would be redundant, as rating agencies would evaluate institutions based on output, peer evaluation and other relevant aspects.

The reform could be phased in gradually if political/administrative risk aversion makes it necessary. They could start with Tertiary education and extend to Secondary education within 3 years and to Primary education thereafter. We could also start by freeing entry of Non-profit organizations (domestic and foreign) registered under the societies act, trusts and co-operatives and follow it up with entry for registered education companies(within three years).

Simultaneously the government should focus its attention and resources on ensuring universal primary education within 5 years. For this purpose all types of public-partnerships must be explored (e.g. management contracts, capital subsidies to NGOs).

Government school teachers must be made accountable to user associations consisting of parents and grand parents of school age children and/or local government. This can be done by giving authority to these associations (*progressively*) to (a) Grade teachers (negative marking for class absence), (b) determine a part of their salary (10% say) and finally (c) to dismiss them depending on the grade over 3 to 5 years.

Government's higher education funds should be focussed on promoting science education, generation of PhD s and financing of R&D in all subjects.

7.4 Electricity: T&D Mafia and Policy Risk

The third policy reform that is capable of structurally transforming the Indian economy is electricity reform. Some of our analysis suggests that electricity supply by government monopolies has been the most important (infrastructure) constraint on overall economic growth. It is the only component of infrastructure that turns out to be statistically significant in growth regressions and FDI analysis. A condition of excess supply of electricity could transform manufacturing competitiveness, demand for consumer durables and the rural non-farm economy.

There are two fundamental problems. First, policy and regulatory risks are too high despite the passing of the path breaking Electricity Act (2003). Second, the issue of T&D losses (in reality Theft and Dacoity losses) has not been seriously addressed. Let us start with the second issue first. Officially reported T&D Losses at the all India level were 32.5% of total availability in 2003-4. They ranged from a low of 17.2% in Tamil Nadu to a high of 57.1 %. It should be kept in mind however, that a thorough review of these losses in the past has resulted in a sharp jump in the estimated T&D loss. Thus for instance in Andhra Pradesh they jumped 1.7 times to 33.1% in 1996-97 from 19.6% the previous year and in Karnataka they jumped 1.6 times to 30.6% in 1998-99 from 19.1% the previous year. With the city States of Delhi and Goa have T&D losses of 43.7% 45.1% respectively one would not be surprised if an independent audit showed All India losses to be of the order of 50%.

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[104] All those wanting scholarship grants would have to provide the required information so that their requirements of scholarship grants and loans can be evaluated.

Private entry into distribution cannot be sustained unless organised theft is eliminated and T&D losses brought down to levels considered normal across the World (i.e. around 8%). This requires taking on the *T&D mafia* that diverts half of available electricity into the black market for personal gain. The arguments about whether rich or poor steal more electricity are a red herring. The T&D mafia is deeply entrenched in the State Electricity Boards and their successor distribution companies and ensures that political patrons share in the loot so that nobody questions or exposes them. The mafia can only be controlled by a combination of peoples power (Resident Welfare Associations), sustained reporting by media, legal changes (power to acquire the ill gotten assets of SEB/ distribution company employees) and administrative/police action. Success requires recognition by all protagonists that a T&D mafia is being confronted, not individuals stealing power.

During the debate on the Electricity Bill (2003) the opposition rightly wanted more independent and stronger regulators. It agreed to facilitate passage of the Bill only after the govt. promised to bring in the desired amendments at a subsequent date. Since the opposition became the govt. an ill fated attempt to weaken (rather than strengthen) the regulator has thankfully been thwarted. The delay in implementation has, however, increased regulatory risk, whereas professional, secure regulators would reduce it. The noises from several State governments similarly suggest a desire to weaken rather than enhance open access by non-transparent and dilatory setting of access charges. Pricing of access is a regulatory function and regulators must be empowered with the authority and the professional capability to discharge this function, if policy and regulatory risk is to be eliminated.[105] Without a progressive elimination of Theft and Dacoity losses and of policy/regulatory risk a radical transformation of the electricity supply scenario is impossible.

Another more radical solution would be to declare a ten year (say) regulatory holiday for all new investment in generation, transmission and distribution. To ensure that there is no regulatory confusion, all such new investment should be by new

[105] This has two components a tax to support legacy losses and inefficiency in the State Electricity Boards and a carriage cost, based on a fair sharing of the costs of the natural monopoly distribution network.

companies or companies that have no existing electricity investment. Existing regulations would continue to apply to existing operations, which would gradually be improved along the lines indicated earlier. The new companies would be free to set up new distribution systems, share such systems among themselves or undertake any other investment or production without being subject to any price or distribution controls for a period of 10 years from start of operation.[106] The supply situation could be radically transformed within these ten years, by which time policy and regulatory risk could also be eliminated, so that the two sub-systems can easily be merged.

7.5 FDI: Global Supply Chain

The fourth reform that can structurally transform the economy is the integration of Indian manufacturing in the Global supply chain. This involves both policy and institutional reforms. The second half of the 20th century has been characterised by a fragmentation of production and outsourcing of many stages of the manufacturing process. Though it started with domestic outsourcing, it has crossed the border during the last quarter of the century, so that an increasing amount of World trade is intra-industry trade in intermediate goods. "Exports of parts and components-a proxy for participation in global networks – increased by almost 2 percentage points faster than exports of total manufactured goods from 1981 to 2000."[107] The world trade share of electronics, chemicals and transport equipment and machinery, where trade in components is most important, has risen to 43% in 1997 (from 27% in 1986).[108] The share of US multinational affiliates' imports of intermediate inputs in their total sales has also risen significantly over time. By 1994 it was about 12% in manufacturing, 11% in industrial machinery and equipment, 22% in electronics and 24% in Transport equipment.[109] Intra-firm trade constituted over 35% of total US trade and about 30% of total Japanese trade in 1999.[110]

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[106] Of the first new company.
[107] Global Economic Prospects 2003.
[108] Shive and Chyn (2001).
[109] US Bureaue of Economic Analysis as reported in Hanson, Matalini and Slaughter (2001).
[110] OECD (2001), World Bank (2001).

As FDI constitutes a bundling of capital, technology (including management & marketing expertise) and entrepreneurship, it is an especially potent force for growth in a globally integrating World. The ASEAN countries were among the first historically to use FDI and exports as a major driver of GDP growth. Part of their success lay in capturing the cross-border wave in outsourcing of manufacturing to become a part of the global production chain. This is reflected in the high concentration of exports of parts and components from developing countries (LDC), with 78% of LDC exports of parts and components coming from China, Mexico, S. Korea, Malaysia and Thailand. China has been both more welcoming and more dependent on FDI and exports to propel its growth. It opened the real estate sector and retail trade to FDI fairly early in the reform and has reaped the benefits in terms of showcase urban properties (e.g. Shanghai) and availability of both high quality branded products (exportable) and their much cheaper but relatively high quality replicas of consumer products. Over 55% of China's exports originate with FDI enterprises, a percentage that is significantly higher than in Asian miracle economies. One estimate (Wanda et al (2001)) suggests that FDI has contributed over 2% points to TFPG and about 3% points to annual GDP growth in China.

In contrast to S.E. Asia, China and most countries in the developing world, India has strong domestic entrepreneurship. FDI is therefore much more likely to play an incremental role and complement domestic investment. The inflow of FDI into India has however been so low in the past that we have not even exploited this potential for complementarity. In the 24 years to 2003 FDI has averaged 0.3% of India's GDP and 1.3% of Gross Fixed Capital Formation. This placed India close to the bottom of the set of 82/83 medium large countries at 86th/87th rank or in the 7th percentile. Despite the opening of FDI in the 1990s our relative rank has not improved significantly as other countries have also opened up. In the last 12 years FDI has doubled to 0.6% of GDP and 2.4% of Gross Fixed Capital Formation but India is still ranked at the 9th percentile for the former and in the 7th percentile for the latter. That is only in 7 out of 100 medium-large countries is the contribution of FDI to total investment (GFCF) less than in India.

Banga (2003 a,b,c,d) has shown that even the limited FDI that has taken place in India since 1991 has had a positive effect on efficiency, exports and productivity growth

of industries where it has flowed. Freeing of FDI in retail would help our integration into the consumer driven supply chains (e.g. in textiles). We should therefore remove all equity restrictions on foreign FDI in the Indian economy in a phased manner, by allowing 49% FDI for an initial period of 3 years (to facilitate collaborative learning and spill over), followed by permission for 100% FDI.

7.5.1 Bureaucratic Mindset

Most important is a change in the mindset of the Indian bureaucracy in its attitude to private investment and production, both domestic and foreign. Institutional reform that makes the bureaucracy responsible for aggregate production, employment and investment could accelerate TFPG and capital deepening. The labour and education policies suggested above would not only help the pace of global integration but also multiply the benefits to labour.

7.5.2 Tariff Rates

Reduction of tariff rates to developed country levels would facilitate integration into the global supply chains. In particular it would help in integration into the global production network run by companies headquartered in the developed countries, but which have production facilities (FDI) in developing countries. Globalisation has meant that different stages of production are carried out in different countries and goods move in and out of countries, particularly in producer driven supply chains. Low tariffs on raw materials, manufactured intermediates and capital goods greatly facilitate this outsourcing.

We have to distinguish between agricultural and non-agricultural tariffs, as the ability of the farmers to compete is (on average) considerably less than that of non-agricultural entrepreneurs. This differential arises from the differentials in education, information and rural infrastructure. Thus a slower reduction in agricultural tariffs can be justified.

Virmani (2005a) recommended reduction of (peak) non-agricultural tariffs to 10% in the 2006-7 budget and to a (uniform) 5% by the 2008-9 budget. The Planning

Commission has supported the former and the Finance Minister has indicated in a speech that it he would consider it. The introduction of a uniform non-agriculture tariff of 5% thereafter would not only send a strong positive signal to FDI investors, but also make it easy for them to carry out all semi-skilled labour intensive stages of manufacturing in India. A realistic schedule of tariff reductions could be as follows:

Table 12: Customs Duty Reduction for Competitiveness

		Proposed / Recommended Custom Tariffs					
	Description of Goods	2005-6	2006-7	2007-8	2008-9	2009-10	2010-11
1	All Goods (excl 2-4)#	15%	10%	7.5%	5%	5%	5%
2	Cars & 2-wheelers*	60%	30%	20%	15%	10%	5%
3	Agricultural						
	General	30-60%	30%	20%	15%	10%	5%
	Specified*	65-100%	45%	30%	25%	15%	10%
4	Hard Liquor (> 5% alcohol)	150%	100%	50%	25%	20%	15%

Note: # this is the "Peak Rate" for non-agricultural goods.
(at 5% the customs duty should become uniform)

* Agriculture & allied goods include agro based products like wine & beer
(Low alcoholic beverages with alcohol content ≤ 5%)

7.6 Government: Back To Basics

The conventional wisdom is that the role of government was curbed by the new economic policy introduced in 1991-92. In fact, the public sector's share of GDP rose to its peak of 26.7% in 1998-99.[111] The public sector's share of Gross Fixed Capital Formation peaked several years before the 1990's reforms (at 52.8% in 1987-88) because the government had no savings left to invest. Since then the public share in GDP has indeed gone down to about a fourth and its share of fixed investment (GFCF) has gone down to less than a third.

The government's thirst for intervention in all spheres of economic and social activity has far exceeded its ability to achieve positive outcomes in any of them. The high moral fervour that characterised the political leaders and the positive motivations that drove the administration at the time of independence has long since faded. There is a

[111] The variables are in 1993-94 prices, with appropriate deflators applied to public and total values. The ratios may differ if current prices are used.

large gap between the theory of Government intervention and the Practice of governance in a low income democratic country. In theory market failure has been used to justify the production of all kinds of goods and services by the government. In practice the problem of government failure is now much more serious. In theory ownership of the means of production by the government should result in efficiency equal to private ownership and greater equity. In practice government production and supply is characterised by lower efficiency and either no gains in equity or the creation of new inequity. The high moral purpose assumed to be present in public functionaries does not exist and incentives systems for motivating desired behaviour (e.g. profit maximisation or cost minimisation) cannot be sustained in the public sector because of political over lord ship.

The theoretical accountability of politicians to voters is thwarted in practice by sharing misappropriated public resources with special interest groups whose vote is critical to re-election.[112] All interventions are justified by the ministers and administrations as in the public interest or in the name of the poor or both. This professed concern of government for the public, contrasts sharply with the neglect of public goods & services that are the traditional & accepted responsibilities of every government. One such responsibility is the security of life and property (policing). The theft of electricity, represented by the data on T&D losses of 40% to 50% and the visibly poor quality of Urban roads, drains, sewerage and water supply systems are just a few of the many indicators of State Government failure.

An over whelming proportion (90%) of public functionaries ***do not care about the public interest***. About 80% of them (from the peon upwards) are corrupt.[113] "Corrupt" is used here in the wider sense that the people's representatives and government functionaries have no interest in the job per se or the institution's objectives and public purpose. The government job is merely an instrument to further their personal interests, whether a promotion, a posting, a seat in a university/job for their children, a bribe,

[112] Means (laws, rules) and Ends (objectives/goals) are inverted resulting in the infamous Bureaucratic Red Tape; Means (rules, procedures) become Ends in themselves and the original Ends are sometimes used to justify the means (the new goals) even if these ends are being met by others.

[113] This estimate is based on conversations with a sample of retired senior IAS officers, IB officials and SSI proprietors and industrialists. The other 10% are neutral towards the job, perhaps because there are no incentives and many disincentives.

election fund or votes (see Virmani (2002)). The principle-agent problem is compounded in such low quality government systems, because nobody has the clear incentive to promote the organisation's objectives. For instance when the minister's objective is (at best) to maximise votes for himself, there is no sustainable incentive scheme for PSU managers to maximise PSU profits rather than their own welfare. The deterioration of the quality of governance is the most important cause of growing interstate disparities in Poverty rates.[114] The absence of any genuine/sincere desire to accelerate growth and poverty reduction has the greatest negative impact on the least developed States, including on their supply of social services and safety nets. In several States (particularly the poorest) the provision of public goods like courts/judiciary, policing and unbiased administration has deteriorated so badly that expropriation risk is too high for most new investment and danger of kidnapping for ransom too high for anyone with skills that can be marketed elsewhere to remain there.[115]

The solution is to free the people, non-profit organisation, entrepreneurs and companies to do what they can do best and to focus the government's limited resources, attention span and time on functions that only the government can do. This is to supply *public goods* & services and to ensure the supply of *quasi-public goods* (particularly those having production externalities) up to a level at which the social benefits equals cost of provision.[116] The supply of public goods like local & connecting roads, aquifer recharge & management, agricultural R&D and its dissemination ('extension services') control of disease vectors, quasi-public goods like irrigation & drainage, railway network are inadequate to the demands of modern agriculture & commerce. Similarly public services like communicable diseases, public health education, sewage systems, and quasi-public goods like drinking water, public sanitation services, primary education, is inadequate to the demands of modern, healthy, disciplined labour force. Governments, particularly in the poorest States, must *focus on these basics of government* and use public-private partnerships wherever possible to improve efficiency in supply of quasi-public goods and lift all controls (bureaucratic red tape) on the non-govt sector (see chart

[114] Though the deterioration started many decades ago, it reached a tipping point with the entry of criminals into the legislatures of the heartland States.
[115] Resulting in large scale out-migration.

4). A reduced span of activity also reduces the information requirements for transparency and accountability to voters. The media can therefore play a more effective role in monitoring performance and exposing corruption.

7.6.1 Notorious Bureaucracy

To motivate administration, administrators should be judged by the increase in value added within their area and sphere of responsibility (Economic Sub-objectives: production, investment, productive employment). This would provide an incentive to shift from *'red tape' to 'green tape.'* Professional regulation of State highways, canal networks, electricity transmission & distribution and primary & secondary education by independent regulators would multiply the social gains from private entry into these sectors. Together such focussed improvements in governance have the potential to eliminate inter-State differences in poverty and growth and thus raise the growth rate of the entire economy.

8 Conclusion

India may be termed a "Democratic Market economy," in contrast to "Nationalist Market economies" like post-war Japan, S Korea, Taiwan and Singapore and "Socialist Market economies" like China and Vietnam. The conclusions of this paper therefore apply to India and other Low & Middle income democratic market economies.

The most important conclusion is the vital role of competition in driving productivity and growth. There are two aspects of this: The pressure to compete and the ability to compete. Polices that put pressure on producers and factors to compete and polices that enhance the ability of producers and factors to compete have the strongest effect on productivity and growth. Though ideally the best results can be obtained with a set of polices that do both in a calibrated manner (simultaneously and harmoniously). The ability to cope with an imbalance in the two aspects (i.e. greater pressure relative to ability) depends on the strength of entrepreneurship. This is available in India to a greater degree than in most other low and middle income countries.

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[116] Strictly, "are not lower than the social costs of provision."

Government policies that suppressed or limited competition or created government monopolies retarded TFPG and GDP growth. One of the vital lessons of Indian experience is that government monopoly is, in a low income democracy, more inimical to efficiency and growth than a private monopoly because regulatory capture is much easier in the former. This is because either policy, regulation and ownership functions are vested in the same government department (monolith) or regulation and ownership functions are overseen/ controlled by the same department. In contrast, in the case of private monopoly, regulatory capture can be impeded by two layers of accountability; First an independent professional regulator and then the government department (to appoint & over see the regulator).

The most important dynamic gains have come from removal of extreme policy distortions in the forms of bans, controls and restrictions on Production, Investment and Import of Capital and Intermediate goods (including raw materials). These reforms worked together to increase TFPG and Capital deepening (faster growth of private investment) by (among other things) expanding access to modern machinery and reducing its relative price.

The growth spurt in the eighties is shown to follow broadly the classical pattern seen in other Asian countries when they shifted from import substituting (IS) to export promotion (EP) strategy. Delving a little deeper the paper found two factors responsible for the sharpness of the growth acceleration relative to that seen in the nineties. First the increase in the ability to compete kept pace with or exceeded the increased competitive pressures. Second is the non-linear effect of policy changes. The non-linearity arises (to an extent) from the complex interplay between the laws and rules, evasion of these rules and corruption that facilitates such evasion (Paradoxical effects of deterioration in governance and the Governance paradox). It can also be viewed as the dynamic counterpart of non-linearity in the Welfare analysis of taxation, namely the non-linear (convex) effect of tax distortions.[117]

The nineties in contrast were marked by a broad array of reforms the effects of, which on aggregate growth were much more gradual. There are a number of reasons for

[117] Income tax rates peaked in the 1970s and started declining in the eighties. Modvat was also introduced in the mid-1980s. Nominal tariffs increased but on this reduced the gap with equivalent tariffs (QRs).

this. First, some of these reforms were static in nature and are not expected to impact growth or TFPG over the short-medium term. They may result in an increase in efficiency and/or equity leading to welfare improvements, but any growth impacts are likely to occur with a long and variable lag. The 1990s tax reforms (primarily income tax) are of this nature and are expected to lead to a sustainable increase in revenues.[118] Similarly most of the financial reforms so far have improved the health and stability of the financial system and improved the allocation of funds (static efficiency, welfare). Reforms that will increase competitive supply of funds to new entrepreneurs, credit rationed producers and (direct) investors have been limited.

Second, the increase in the pressure to compete has been higher, relative to the increase in access to the means to compete, in the 1990s than in the 1980s. This imbalance would not have emerged if recommended factor market reforms (labour, risk capital and debt finance, bankruptcy law, technology) had been implemented. Third a sharp reduction in protection gives rise to a 'J-curve of liberalisation', an initial negative impact on measured productivity that is gradually exceeded by slowly rising factor productivity. There are several elements in the J curve of liberalisation: One, the rebalancing of historically distorted prices, which raise (lower) the relative price (weight) of previously slow (fast) growing sectors. Two, the immediate reduction in capacity utilisation in unprofitable product lines due to capital immobility, till depreciation eliminates the excess capacity. Three, gestation lags in investment in newly profitable product lines and the S curve of technology diffusion that slows productivity improvements. Four, the resources and effort needed to adopt unfamiliar technology that may reduce the productivity of existing technology/capital.

On the product market side, greater competition is most urgently needed in sectors that were earlier monopolised by the government (infrastructure, education). Policy risks are high, as the incumbent monopolist and/or its supervising government department(s), often have a vested interest in the failure of private entrants. This is particularly so in electricity where the strongest vested interest is the T&D Mafia (formally Transmission & Distribution but in reality Theft & Dacoity). A reduction of the policy and regulatory

[118] Interestingly some of the polices that continued to worsen during the 1980s were also static in nature and therefore did not undermine the positive dynamic effects of decontrol policies.

risks is essential to ensure unsubsidised private entry and genuine competition. The dynamic effects of competition on productivity and growth are unlikely to arise if entry is contingent on layers of counter guarantees.

Professional regulation can play a vital role in promoting and enhancing competition (e.g. through benchmark competition), even in segments that may be 'natural monopolies' (e.g. networks with strong economies of scale) or services in which asymmetric information problems are acute (e.g. health services). Professional regulation implies / requires knowledge based interventions. Production externalities must be identified through research or informed analogy from other countries experience. Regulatory intervention must have a light touch fully cognizant of gaps in knowledge and information. At the same time there must be a continuous and sustained search for knowledge through upgrading of staff skills, sponsored research and openness to producer-consumer experiences. Decisions must be updated when new information and experience become available and altered/reversed if necessitated by such information. Such a method and system of functioning is beyond the capacity of normal bureaucracies and their political bosses in democratic low & middle income countries. Independent, professional regulatory systems and regulators are therefore a must if the maximum benefit is to be derived from free entry in such sectors.

In sectors characterised by information asymmetry between private suppliers and individual buyers, such as education and health, reducing regulatory costs and risks requires a change in approach. We know from the theory of optimal intervention that it is most efficient and effective to attack the externality directly. The problem of information asymmetry can best be addressed by mandatory disclosure of information that can help the buyer judge the quality of the supply and its real cost/price. Compulsory rating of education providers and standardised disclosure of accounts and fees can help solve much of the problem and allow removal of conventional, oppressive, bureaucratic controls and approvals.

Poverty, which rose during the socialist period, has been on a clear down trend during the Market reform period. The level of poverty in 1999-2000 is estimated to be between 26.1% and 28.5% as per the Planning Commission methodology. This level of poverty is to be expected in a low income country like India. Our Global poverty ranking

is in fact better than our ranking by per capita income. Further our rank with respect to income distribution is even better, with the poorest 10% of the population having a consumption share that is the 6th highest in the World.

Where we have failed as a nation is in improving our basic social indicators like literacy and mortality rates. Much of the failure is a legacy of the socialist period. The rate of improvement of most indicators has accelerated during the market period. The gap between our level and that of global benchmarks is still wide and our global ranking on most of these social parameters remains very poor. This is the result of government failure. Government overstretch, misplaced priorities and deteriorating quality (corruption) has resulted in a failure to full fill the traditional, accepted functions of government like public safety & security, universal literacy and primary education, public health education (superstition & quackery), provision of drinkable water, sanitation drains & sewage facilities, public health (infectious & epidemic diseases), building roads and creating & disseminating agricultural technology. Consequently the improvement in social indicators has not kept pace with economic growth and poverty decline and has led to increasing interstate disparities in growth and poverty.

The paper showed that government total expenditure or investment expenditure has not had a positive effect on growth. This is because government expenditure/investment does not maximise social benefit-cost ratios. The dead weight cost of taxation and crowding out of private investment from the production of private goods increases the negative effects. It can only be beneficial if it is directed towards accelerating growth through investment in public and quasi-public goods. It was also shown that greater allocation of expenditures to agriculture (per se) will not increase overall growth rate and is likely to reduce it. Acceleration of rural growth and poverty reduction requires greater attention to productivity enhancing activities such as aquifer (ground water) management & recharge, better drainage systems, water shed management, training of farmers in water harvesting and other scientific practices, revival of extension systems/information flows, and better agriculture related R&D.

The only practical solution is to focus and restrict the government to those activities that others cannot do (production of public goods, addressing externalities) and open up all other activities to the non-governmental sector (commercial, non-profit, social). The

government must shed the role of producer of "private" goods and services, regulating those that need it and watching over both producers and regulators as the ultimate authority. Further it is not necessary to address externalities by producing the goods and services in the public sector. Financial instruments (taxes and subsidies) should be used wherever they are effective. In the case of basic health and education and rural public utilities, where government has an obligation to supply target groups, private production and public-private partnerships can and should be used to minimise costs and thus maximise the social benefit-cost ratio.

Social objectives such as the elimination of poverty can be achieved much more cheaply and effectively by transfer of income to poor households through a well designed and implemented smart card system. The paper has shown that the money currently spent by the Central & State governments on poverty alleviation and social welfare (under different guises) is enough to completely eliminate poverty.

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10 APPENDIX

Chart 1: Illustrative List of Controls and Restrictions Introduced during Phase I

Year	Sector		Grd	Policy and Institutional Actions
	prs	Scs		
				Sub-Phase I A
1948-49	Indus	Mono	-	Industrial Policy Resolution 1948(april):Category (a)State monopoly (Defnc,atomic,rail) (b) Mixed (Gov I mnply: Aircraft, Telecom mnf, Ship bldg, Coal, I&S, mineral oil) (c) Government controlled (18:Auto,Mach, heavy mach/chem, Mtools, EE,Fert, sugar,paper,cement,Text(cotn,woln)) (d) Private enterprise
1948-49	Indus	Scale	-	IPR 1948 Cottage ind imp; Foreign capital (majority Indian ownership, mgt ctrl); Labour in mgt encrged
1952-	Indus	Inv	-	Industries Development and Regulation Act 1952 (May): Licence required for Investment >Rs 1 lakh (SSI exempt). Initially 37 industries, extended to 70.
1953-	Indus	Inv	-	IDRA: Licensing extended to all industries
1954-55	Extnl	Trf	-	India Tariff second amendment act (1954)-Tariff increased on 32 items, import quotas extended
1955-	Extnl	Im	-	Import Trade Control Order(1955) under (?) Import and Export (Control) Act 1947.
1956-	Indus	Inv	-	ID&RA: Applicability changed to 50 (100) employees with (without) power [admin overload)
1956-	Indus	Mono	-	Indusrial Policy Resolution of 1956: 'Socialistic pattern of Society' Expand Public sector, Heavy & machinery ind, Co-operative sector. State monopoly(Sch A-17<=6):Defence(A&A),Atomic E, Rail, Air trans; Power,Telecom, Heavy Industries,Minerals,Transport. Mixed: Sch B(12). Assist SS&CI
1956-57	Extnl	Im	-	Started tightening Import control (BOP crisis '57). Continued till 1965. No tariff use as substitute.
1960-	Indus	Inv	c-	ID&Ra exemption raised to Rs 10 lakh
1960-61	Extnl	ImEx	c	Import duty drawbacks on 89 items, excise rebate on 27(started 1954 w raw mtrls; 1955 excise rebate)
1962-66	Extnl	ImEx	c	Neutralisation for exports; Growing import duties.
1963-	Indus	Inv	c+	ID&Ra exemption raised to Rs 25 lakh

Year	**Sector**		Grd	**Policy and Institutional Actions**
				Sub- Phase IB
1965-66	Extnl	Im	-	Import control regime reached its peak (import substitution highest in CG 1951 to 1963)
1965-66	Indus	Inv	b	42 agriculture related industries de-licensed
1967-68	Indus	Price	c	Steel (price, distribution)de-control completed (started march 1964)
1967-68	Indus	Scale	-	SSI reservation of modern industries for 1st time; limit = Rs. 7.5 lakh from 1966.
1969-	Indus	Mono	-	Nationalisation of 14 large banks
1969-	Indus	Scale	-	Monopolies & Restrictive Practices Act 1969; Producer of SSI reserved gds restricted gr< 25% per 5 yrs
1969-70	Indus	Scale	-	MRTP Act Interconnected undertakings with asset ≥ Rs. 20 crore, dominant (33%shr) ≥ 1cr
1970-	Indus	FDI	b	Feb 1970:FERA Invest(-pub res) a) Core/heavy(> 5 cr) allowed,(b)1-5 cr liberalised; Jt sec(gov ctrld)
1970-	Indus	Inv	b	Feb 1970:MRTP(20) Invest(-pub res) a) Core/heavy(> 5 cr) allowed,(b)1-5 cr liberalised; Jt sec(gov ctrld)
1970-	Indus	Loan	-	Public financial institutions empowered to convert their loans into equity in future. Convertibility clause mandatory for loans >5 mi. Optional for smaller (July 1970)
1970-	Indus	Scale	-	Licensing policy [ILPC(1969) Large House = Rs. 35 cr]
1970-	Indus	Scale	-	New Indus Licensing Policy: More industries reserved for SSI, and expansion of public sector scope
1970-	Indus	Scale	b	ID&Ra exemption raised to Rs 70 lakh
1971-	Fincl	Mono	-	Nationalisation of General Insurance
1971-	Indus	Mono	-	Nationalisation of Coking Coal Mines
1972-	Indus	Mono	-	Nationalisation of Indian Iron & Steel Co., copper industry & refractories and of 46 textile mills.
1972-73	Indus	InvMrp	c+	NILP(amended IPR(1956)): Apndx I Core sec up to 19 indus(frm 9) (excld ssi/public resrvd)
1972-73	Indus	Scale	-	Defn of "large Indus house" equated to MRTP dfn I.e. 20 crore (down from 35cr); Prj aprovl board(SIA)
1973-	Indus	Mono	-	Nationalisation of non-coking coal mines and wholesale wheat trade
1973-74	Indus	FDI	-	Foreign Exchange Regulation Act 1973; Foreign equity 40% (Appx 1), 51%, 74%(exprt,hi tech),100%(eou)
1975-	Indus	PrdInv	b	Auto expansion by 5%/yr upto 25% in 5 yr (> normal 25% auto) in 25 (eng inds) of 40 core inds alwd
1975-76	Tax	IncPer	-	Max marginal PIT rate =78%; Effective MMR on capital income = 97% (because of Wealth tax on assets)
1976-77	Extnl	ImK	b-	OGL: 79 capital goods on OGL
1977-78	Indus	Scale	-	SSI reservation list increased to 504 (from 180 during 1967-76); limit Rs. 10 lakh from 1975.
1977-78	Indus	Scale	b+	Policy statement (March 1978): ID&RA exemption limit for licensing raised to 3 crore (frm1cr)
1977-80	Indus	FDI	-	Exit of IBM, Coca -Cola (FERA dilution refused)
1978-	Extnl	ImEx	c	Alexander(1978) on Exim policy. Change of direction towards CG/input liberalisation (esp for exporters).
1978-79	Indus		?	Dagli Committee on Controls and Subsidies
Note:				Grades are given for reforms. Controls & restrictions are ungraded "-".

Chart 2: Policy and Institutional Reforms & Reversals (ART) during Phase II A

Year	Sector		Grade		Policy and Institutional Changes
	prs	scs			
1980-	Extnl	PrdInv	a-	3	IDR(Jl80):Export prod exempt frm license ceiling, locational pol & MRTP; Expansion of duty free import of raw materials/component/capital goods, cash incentives, rise in royalty limit. Excise reduce fr non-traditnl EOUs
1980-	Indus	PrdInv	b	5	IDR(Jl80):Automatic expansion 5%/yr up to 25% in 5 yr (> 25% normal auto) in 34[Apx I(19)+15] allowed
1980-	Indus	PrdInv	b	5	IDR(Jl80):Regularised excess(of lic/regd) capacity in Apndix I (19) Inds & 15 other (34 total) [excl mrtp,fera]
1980-	Indus	Scale	?		Industrial Policy Statement(July 1980):Locational dispersal-Backward area,rural etc.; Favour Agro-industry.
1980-81	Indus	Scale	-		SSI reservation list increased to 800 (from 500)
1980-81	Indus	Scale	b-	6	SSI (Jl80) reservation limit raised to 20 lakh (from 10), to 25 lakh for anciliary (from 15)
1980-81	Tax	IncPrs	a-		PIT: 8 slabs, max marginal rate 61.9%, standard salary deduction = 25%
1980-86	Extnl	Trf	c+		Tarriff: Collection rate on non-POL imports increased from under 30% in late 1970's to 61% in 1986/87
1980-86	Extnl	TrfK	c+		Tarriff: Avg effective tariff rate for capital goods increased from 37% in 1973-74 to 63% in 1988-89
1982-	Extnl	ExInv			100% EOU/EPZ free of sec 20-21of MRTPa
1982-	Extnl	FDI	c+	7	FERA(MRTP)(Oct82): Core industries list(free) enlarged.
1982-	Indus	InvScl	b-	6	MRTP(FERA)(Oct82): Core industries list(free) enlarged. 100% EOU/EPZ free of sec 20-21of MRTPa
1982-	Indus	PrdInv	b	5	IDR(Apr82):Automatic expansion 5%/yr up to 25% in 5 yr (> 25% normal auto) in Indus w export angle
1982-	Indus	PrdInv	b-	6	IDR(Apr82):If Ucap>94% automatic licensed capacity increase by 1/3 (frm1/4) over best prod in last 5 yrs
1982-	Indus	Price	c+	7	Partial de-control of Cement industry (levy reduced to 2/3rd, 1/3 free sale)
1982-	Indus		?		PM Indira Gandhi's declaration to make 1982 the 'year of productivity'
1982-83	Extnl	FDI	b	5	FERA Cos.: Scope enlarged- Eligible industries list expanded
1982-83	Indus	InvScl	-		MRTP: Dominant undertaking definition 25% of market (from 33% earlier)
1982-83	Indus	PrdInv	c+	7	IDRA exemption raised to Rs. 5 cr.; Re-endorsement of excess capacity (1/3*(x-1.25lic))
1982-83	Indus	Price	b	5	IDRA: Cement: Dual Pricing(1st time) Levy x=66.6%,y=50%(1979:3 retention Pr; 1968 to 78: 1 retention price)
1983-	Indus	InvScl	b	5	MRTP free to invest in Industries of National import, IS & hi tech Industries (May 1983)
1983-	Indus	PrdInv	b	5	IDRA licensing exemption limit raised to Rs. 5 crore (from 3 crore)
1983-84	Extnl	ImK	c+	7	Exim: Import of second hand equipment placed on OGL
1984-	Indus	Scope	b		IDRA: Broad banding introduced
1984-85	Extnl	ExTxI	b	5	Export: 50% of business profits attributable to exports made income tax deductible
1984-85	Extnl	ImK	b	5	Exim: 94 new items of industrial machinery (CG) placed under OGL
1985-	Extnl	FDI	b	5	FERA (MRTP) free entry in 21 hi tech items, 33 grps in Apndx I (non-ssi,PS res) (Dec 1985)
1985-	Extnl	ImT	b+	4	FERA: Upper limit for import of tech & computers increased from $ 0.5 million to $10 million.
1985-	Extnl	TrfK	b-	6	Tarriff: Import duty on CG for gen/power/fertiliser projects cut to 45(frm 105%)/25%/0
1985-	Indus	Exit	c+	7	SICA(1985): Sick Industrial Cos (Spcl Provisions) Act for restructuring, sale, foreclosure sick units
1985-	Indus	Inv	b	5	IDRA (Dec 85): De-licensed 28 industries and 82 bulk drugs (fr non-mrtp/fera,non-ssi)

1985-	Indus	InvScl	a	2	MRTP asset limit (defn) raised from Rs. 20 crore to Rs. 100 crore (March 1985)
1985-	Indus	InvScl	**a**	2	MRTP clearance waived for 27 industries, 20(of 27) de-licensed if in backward area (May 1985)
1985-	Indus	InvScl	b	5	MRTP (FERA) free entry in 21 hi tech items, 33 grps in Apndx I (non-ssi,PS res) (Dec 1985)
1985-	Indus	PrdInv	c	8	IDRA: Removal of virtually any upper limits on capacity in non-consumer electronics
1985-	Indus	Scale	b	5	SSI (Mar85) reservation limit raised to 35 lakh (from 20), to 45 lakh for anciliary (from 25)
1985-	Indus	Scope	a	2	IDRA: Broad banding allowed in 28 industry groups still under licensing regime.
1985-	Tax	IncPrs	b	5	PIT exemption to Rs.18000 (from 15000), Rate by 20 to 30 %, marginal to 50% (from 62%)
1985-86	Extnl	Im	b	5	Exim: 685 items allowed to be imported without restriction
1985-86	Extnl	ImEx	a-	3	Exim: Advance License(AL), Intermediate Advance License, Special Import License(SIL) for Exporters
1985-86	Extnl	ImEx	b+	4	Exim: Export Import Passbook Scheme Introduced
1985-89	Extnl	ExCrd	c	8	Interest rate on export credit reduced from 12 to 9.5 percent
1985-89	Extnl	ExCrd	c-	9	Period of pre-shipment credit extended to 180 days for all exports compared to 90 days earlier.
1985-89	Extnl	ExFe	c+	7	Exporters allowed to retain 5 to 10% of their foreign exchange earnings for export promotion.
1985-89	Extnl	ImEx	b-	6	Major export subsectors:supply of domestic raw materials at world prices (eng prod had earlier)
1985-89	Extnl	ImM	b+	5	26 items decanalised.
1985-89	Extnl	ImT	?	8	FERA: Relaxation of controls over foreign collaborations
1985-89	Extnl	TrfK	c	8	Tarriff: Import duties on project imports increased and equalised with general industrial machinery tariffs.
1985-89	Extnl	XR	b	5	Accelerated depreciation of the exchange rate
1985-89	Tax	Estate	**a-**	3	Estate duty abolished
1985-89	Tax	IncCrp	**a**	2	Corporate tax rates reduced by 5 to 10% to a range of 50 to 65%
1985-89	Tax	IncCrp	b	5	Introduction of a uniform 30% tax on royalties and fees for technology
1985-89	Tax	IncCrp	b+	4	Depreciation to be calc on blocks of assets, instead of individual assets, with only 3 rates.
1985-89	Tax	IncCrp	c-	9	Measures taken to reduce administrative delays and improve tax compliance.
1985-89	Tax	IncPrs	**a**	2	PIT rates reduced across the board, maximum marginal rate reduced from 60% to 50%
1985-89	Tax	IncPrs	b	5	Capital gains tax exempt on urban land,buildings(s.t proceeds invested in approved scheme
1985-89	Tax	IncPrs	c	8	Scheme of compulsory deposits by income tax payers abolished
1985-89	Tax	Scale	b	5	Excise concessions to small scale industry reduced
1985-89	Tax	Wealth	**a-**	3	Maximum wealth tax rate reduced from 5% to 2%
1985-90	Extnl	ExTx	c	8	The number & value of incentives(neutralisation) to exporters increased & their administration streamlined.
1985-90	Extnl	ImMex	b	5	Freely tradable Replenishment (REP) Licenses given to exporters
1985-90	Extnl	PrdInv	c	8	Dispersal: Export obligation reduced from 50% to 25% for Category B and C industries
1986-	Extnl	ImK	b	5	29 more items of machine tools added to OGL
1986-	Fiscl		c	8	Long Term Fiscal Policy announced
1986-	Indus	Inv	b	5	Pvt sector allowed to produce Steel using Electric Arc Furnaces
1986-	Indus	InvScl	b-	6	MRTP(mar86): 20 Appendix I industries delicensed in backward areas
1986-	Indus	PrdInv	b	5	IDRA exemption for increase up to 49% over license capacity(modernisation,quality improvement); MES.
1986-	Indus	PrdInv	b-	5	IDRA:If Ucap>80% automatic license capacity increase by 1/3 over last 5 yrs best prod. NA to 26(<=77) Ind

1986-	Tax	vat	b+	2	Multi-point excise duties converted into a **modified value added (MODVAT)** system
1986-87	Extnl	ImK	b	5	Duty free imports of capital goods allowed in selected 'thrust' import industries
1986-87	Indus	PrdInv	**b**	3	IDRA: Firms with 80% Ucap in any 5 yrs(bfr '85) can expand to 133% of Max Ucap in those yrs
1986-90	Indus	Scale	b	5	Fixation of minimum economic size for 106 industries
1986-90	Indus	Scope	b-	6	IDRA: Broadbanding allowed in 18 more industries
1987-	Indus	Exit	?	7	BIFR (Jan87): A Board for Financial Restructuring created
1987-88	Extnl	ExTxI	b+	4	100% of business profits attributable to exports made income tax deductible
1987-88	Extnl	Im	?	5	OGL: 32% of all intermediate and capital goods imports on OGL
1987-88	Indus	Inv	b	5	IDRA: List of industries exempt from licensing requirement increased to 28 in Oct. 1987
1988-	Indus	InvScl	b	5	MRTP (Ju88) firms de-licensed in industries where they were not dominant undertakings
1988-89	Extnl	ImK	b+	4	OGL: 1170 capital goods on OGL in April 1988 (Increased from 79 in 1976)
1988-89	Indus	Inv	b+	4	IDRA: licensing exemption limit raised to Rs 15 crore (from 5 cr) & to Rs 50 cr for backward area
1988-90	Extnl	ImK	c+	7	OGL: No of capital goods on OGL raised from 1170 in Apr 1988 to 1339 by Apr 1990(Cons. ban on).
1988-90	Indus	InvScl	**b**	2	IDRA: 32 industries de-licensed for entry by non-MRTP firms, and 23 for those covered by MRTP
1989-	Indus	Price	b		IDR(Mar89): Complete decontrol (price & distribution) of cement industry
1989-90	Indus	Inv	b+	4	IDRA: Investment limit for industrial licensing raised to Rs. 150 mi (Rs. 500 mi in backward areas)
1989-91	Indus	Price	b	5	IDRA: Price and distribution controls on aluminium abolished
1990-	Indus	Loan	?		SIDBI, the apex bank for small scale industries became operational from Apr 2, 1990
1990-91	Extnl	ExCrd	-		Credit restriction for imports (BOP crises - foreign exchange reserves decline).
1990-91	Extnl	ExCrd	?	13	Export credit refinance liberalised from 75% to 100% of the increase in export credit over the monthly average level of export credit for the financial year 1988–89.
1990-91	Extnl	ExpTxI	c	8	Deduction for foreign source income (for categories of professionals) increased from 25% to 50% of income, or 75% of the foreign exchange, whichever is higher.
1990-91	Extnl	ImEx	b	5	ExIm Policy 1990–93 simplified Import Replenishment Licensing (REP) scheme. REP rates reduced to 4 basic (20, 15, 10, 5%). Separate for handicrafts, newspaper/journal/periodical
1990-91	Extnl	ImEx	b+		Exim policy:Allows CG import ≤Rs.100mi at 25% duty st export of 3 x import value (in 4 yrs)
1990-91	Extnl	ImG	**a**	2	Abolition of Gold Control Act.
1990-91	Extnl	Trf	b-	13	Rationalisation of customs tariffs.
1990-91	Extnl	Trf	b	5	Tarriff: Basic & auxiliary custom duty rate slabs & range reduced to 0–125% (most items).
1990-91	Fincl	fisc	-		SLR raised from 38% to 38.5% of all net demand & time liabilities of scheduled commercial banks.
1990-91	Fincl	int	-		Upward revision in (i) the Bank Rate from 10% to 11%, (ii) interest rate on RBI refinance facilities, (iii) interest rate on bank advances of over rs. 2 lakhs from 17% (minimum) to 18.5% (minimum)
1990-91	Fincl	int	b	5	Scheduled commercial banks interest rates on loans to individuals (i) for purchase of consumer durables, (ii) against shares and debentures/bonds, & (iii) non-priority sector freed.
1990-91	Fincl	int	c	8	Interest rate structure for industrial finance by term lending institutions liberalised.
1990-91	Fincl		-		Borrowers with working capital limits of > Rs. 1 crore, commitment charge of 1% p.a required by RBI on unutilised quarterly limit, s/t tolerance level of 15% of such limit.

1990-91	Fincl		c	8	GIC, NABARD, IDBI and bills rediscounters allowed in call/notice money market as lenders
1990-91	Indus	IDR	?	13	Liberalisation of the Single Window Scheme introduced in 1988
1990-91	Indus	Inv	b+	5	Investment limit for industrial licensing raised to Rs. 250 mi (Rs. 750 mi in backward areas)
1990-91	Indus	Inv	d	11	IDRA: Guidelines for licensing of new sugar factories and expansion of existing ones revised
1990-91	Indus	Inv	d	11	IDRA: New guidelines issued to simplify procedure for licensing of steel units.
1990-91	Indus	Inv	d	11	Registrations (Secretariat for Industrial Approvals (SIA)) u de-licensed & exempted category up.
1990-91	Indus	Loan	-		Excise loan to sick/weak industrial units(>1000 workers) made easier.
1990-91	Indus	Scale	-		SSI: 100% excise exemption upto Rs. 20 lakhs sale (frm 15 lakhs) for goods under one Chapter
1990-91	Indus	Scale	-		SSI: Revival of 15% Central Investment Subsidy Scheme for small scale sector.
1990-91	Indus	Scope	?		IDRA: Minimum economic capacity fixed for jelly-filled telecommunication cables
1990-91	Indus	Scope	b-	6	IDR Broadbanding: Full fibre flexibility allowed for jute and textile mills
1990-91	Kmkt	dbt	c	8	Guidelines for issue of Commercial paper (CP) and Certificates of Deposit (CD) relaxed broaden
1990-91	Kmkt	m/a	b	5	Public announcement of take-over offer reqd ≥ 25% (up frm 10%) of voting capital of Cos
1990-91	Kmkt	Primry	b	5	All merchant bankers now required to obtain authorisation from SEBI.
1990-91	Kmkt	Primry	b-	6	Allotment of new shares/debentures iff > 90% of the amount issued is subscribed.
1990-91	Kmkt	Primry	b-	6	Rights/public issue subscription to be kept in spcfd bank acts till the SEs approve allotment.
1990-91	Kmkt	Primry	c	8	Fees to (equity,convrt deb) issue manager < 0.5%/0.2% for issue≤ Rs25 cr(5cr)/>Rs25 cr(5 cr).
1990-91	Kmkt	Secry	b	5	Mutual Funds (MFs) Guidelines issued for development and orderly functioning.
1990-91	Tax	IncCrp	-		Gulf Crisis surcharge imposed on corporate tax - rates increased by 5%.
1990-91	Tax	IncCrp	**a**	2	Tax rate for Public ltd Cos reduced from 50% to 40%.
1990-91	Tax	IncCrp	b	5	Corporate Inc incentives like Investment Allowance & Investment Deposit Account abolished
1990-91	Tax	IncCrp	d	11	Deductions for setting up new industries raised.
1990-91	Tax	IncCrp	d	11	In the area of direct taxes, concessions announced for cooperative societies and companies.
1990-91	Tax	IncCrp	d	11	Inc tax deductions for setting up new industries raised.
1990-91	Tax	IncPrs	b-	8	Equity Linked Saving Scheme (ELSS) finalised on a netting principle
1990-91	Tax	IncPrs	c	8	Dividend income of dom Co exempted up to declared dividends during the relevant period.
1990-91	Tax	IncPrs	c	8	Employment surcharge of 8% applicable on taxable Inc > Rs. 75,000 (up frm Rs. 50,000).
1990-91	Tax	IncPrs	c	8	Introduction of tax rebate system in place of old provision for deduction under section 80-C.
1990-91	Tax	IncPrs	c	5	Personal Income Tax slabs =4 (reduced from 8 over 1980 to 1990)
1990-91	Tax	IncPrs	c-	9	Exemption limit for personal income tax raised from Rs. 18,000 to Rs. 22,000
1990-91	Tax	IncPrs	c-	9	Lowest rate of tax of 20% extended from Rs. 25,000 to Rs, 30,000.
1990-91	Tax	IncPrs	d	11	Limit of saving incentives u/s 80-CCA increased from Rs. 30,000 to Rs. 40,000.

1990-91	Tax	Scale	-		SSI: Liberalisation of central excise exemption scheme for small scale industries
1990-91	Tax	Scale	b	5	Partial tax holiday for new rural SSIs u/s 80-HHA & ind in backward areas u/s 80-HH withdrawn.
1990-91	Tax	vat	?	13	For simplification of Central Excise Tariff, duty rates recast for large number of goods.
1990-91	Tax	vat	?	13	Simplification and rationalisation of tariff structure in the textile sector
Note:					Grades are given for significance of reforms. Controls & restrictions are ungraded "-".

Of the total of 146 changes listed in above chart, 50 relate to industry, 31 to taxation, 45 to External sector, 6 to financial sector (mainly money and banking) and 8 to capital markets. Of the total 135 or 92.5% are positive changes and 11 or 7.5% are negative changes. The rest are unclear but most likely positive. 12 of these 135 reforms were judged to be very significant individual reforms (grade of A- or A). Of these six were in Taxation and three each in industry and external sector.

Chart 3: Significant Changes in Policy or Institutions during Phase II B

Year	Sector		Grade		Policy and Institutional Changes
	prs	scs			
1991-92	Extnl	ExIm	a-	3	Exim scrips (tradable import licenses) for 30% of export value(suplemntry license abolished).
1991-92	Extnl	FDI	a	2	FIIs permitted to invest in K mkts, subject to a ceiling of 24% of the equity of the company.
1991-92	Extnl	FDI	a	2	Ceiling on acquisition of shares/debentures of Indian Cos by NRIs/OCBs raised from 5 to 24%.
1991-92	Extnl	Imp	a-	3	Elimination of a substantial volume of import licensing.
1991-92	Extnl	Trf	a	2	Reduction of peak rate of customs duty to 110% from over 300% (excpt passenger baggage, alcoholic beverages, dried grapes, almonds, ball & roller bearings);
1991-92	Extnl	xr	a	2	18% devaluation of Rupee
1991-92	Fiscl		a	2	Reduction in fiscal deficit from 8.4% of GDP to 6.5%
1991-92	Indus	ImInv	a	2	Abolition of Phased Manufacturing Programmes
1991-92	Indus	Inv	a	2	IDR(July91): Abolition of industrial licensing for most industries (eg Steel, cement)
1991-92	Indus	Inv	a	2	Public sector reserved industries to 8 (from 17), Intro of selective competition in reserved Ind
1991-92	Indus	Inv	a	2	Removal of investment controls on large business houses
1991-92	Infra	Elec	a	2	Electricity Act(1910),Electricity Supply Act(1948) amended to permit Pvt invst,100% foreign eqty
1991-92	Kmkt	Inv	a	2	Setting up of mutual funds in private and joint sectors allowed.
1991-92	Kmkt	reg	a	2	SEBI (formed 1988) made a statutory body by a Presidential Ordinance on Jan. 31, 1992.
1991-92	Tax	IncPer	a	2	TDS on commissions, bank interest (TDs) & withdrawals from the National Savings Scheme.
1992-93	Extnl	ImG	a	2	Returning Indians allowed to import gold upto 5 kg. At duty of Rs. 220 per 100 gms (~ 3%)
1992-93	Extnl	TrfK	a-	3	Duty on project imports & general machinery reduced to 55%, for electronic industry to 50%

1992-93	Extnl	xr	**a**	2	FERA 1973 substantially liberalised through an ordinance
1992-93	Extnl	xr	**a+**	2	Liberalised Exchange Rate Management System (LERMS) in March 1993, dual rates effective 1/3/93.
1992-93	Fincl	Inv	**a**	5	Guidelines formulated for establishment of new private sector banks.
1992-93	Fincl	Loan	**a-**	3	Recovery of Debts Due to Banks and Financial Institutions Act, 1993 passed.
1992-93	Fincl	Reg	**a**	2	Prudential norms for income recognition, classification of assets & bad debt provisioning introd
1992-93	Infra	Inv	**a**	2	Telecom: Value added services opened up to domestic private and foreign players
1992-93	Kmkt	dbt	**a**	2	Auction of 364-Day T-Bills started to replace auction of 182-Day T-Bills
1992-93	Kmkt	dbt	**a**	2	Auctions of 91-Day T-Bills and Govt. Securities commenced
1992-93	Kmkt	reg	**a**	2	SEBI made the regulatory agency for Capital Markets in India
1992-93	Tax	IncPer	**a**	2	Capital Gains to be adjusted for inflation. Cost Inflation index with 1981-82=100 notified
1993-94	Extnl	xr	**a**	2	Comprehensive amendments to FERA 1973
1993-94	Extnl	xr	**a**	2	Authorised dealers not reqd to surrender to the RBI any part of forex sold to them.
1993-94	Extnl	xr	**a+**	2	Unified exchange rate, free exchange market, no surrender to govt/rbi
1993-94	Fincl	Reg	**a-**	2	Capital adequacy(FIs)& Prudential norms*(TLI)* for DFIs(IDBI, IFCI, ICICI, IRBI,EXIM bnk) issued
1993-94	Fincl	Reg	**a-**	3	A Board of Financial Supervision set up with an Advisory Council
1993-94	Indus	Inv	**a-**	3	Motor car, white goods, raw hides & skins, leather/patent leather(-chamoise) indus delicensed.
1993-94	Kmkt	InvF	**a**	2	Capital Issues (Control) Act 1947 repealed; Office of the Controller of Capital Issues abolished
1994-95	Extnl	ImS	**a-**	3	Move towards current account convertibility: more relaxations on current account payments
1994-95	Extnl	Trf	**a**	2	Peak rate of customs duty reduced from 85% to 65%
1994-95	Fincl	Int	**a**	2	Bank interest rates on loans above Rs. 2 lakh fully decontrolled. 2 adminstered rates left.
1994-95	Infra	Inv	**a**	2	National Telecom Policy, 1994 opened up basic telecom services to private operators.
1994-95	Infra	Road	**a**	2	National Highway Authority of India (NHAI) made operational in February 1995.
1994-95	Tax	IncCor	**a**	2	Corporate inc tax (on domestic companies) reduced to a uniform rate of 40%
1994-95	Tax	vat	**a**	2	Service tax introduced
1994-95	Tax	vat	**a**	2	Cut in number of ad-valorem excise rates to about half; phasing out of exemption notifications
1995-96	Kmkt	InvF	**a-**	3	Private sector institutions permitted to set up Money Market Mutual Funds
1995-96	Kmkt	Reg	**a**	2	SEBI empowered to regulate all market intermediaries.
1996-97	Extnl	FDI	**a**	2	Automatic approval of RBI for FDI up to 74% of equity allowed in 9 categories of industries
1996-97	Extnl	FDI	**a**	2	Automatic route: Foreign equity up to 50% (3 ind added) and up to 51% (13 ind added)
1996-97	Indus	Inv	**a**	2	Delicensing of consumer electronics. Only 14 industries remain under industrial licencing
1996-97	Infra	Reg	**a**	2	TRAI Bill,1996 introduced & TRAI Ordinance promulgated. TRAI functioning from Feb 1997
1996-97	Kmkt		**a**	2	Depositories Act, 1996 allows for dematerialisation (and rematerialisation) of securities in depositories & transfer of securities through electronic book entry.
1996-97	Kmkt		**a-**	3	SEBI vested with powers of registration of depositories & participants, approval or amendmt of the bye-laws of a depository.
1996-97	Tax	Y	**a**	2	Tax rate reduction continued: tax rate on first slab lowered from 20% to 15%. .
1997-98	Extnl	Trf	**a-**	3	Peak import duty reduced from 50% to 40% advalorem & to 30% in respect of raw materials.

1997-98	Kmkt	Sec	**a**	2	Rolling settlement introduced by making it optional for demat scrips.
1997-98	Tax	Y	**a**	2	Corporate tax: Domestic firms to 35% (from 40%) & on foreign firms to 48% (from 55%).
1997-98	Tax	Y	**a**	2	The surcharge on corporate tax abolished
1997-98	Tax	Y	**a**	2	Max marginal personal Inc tax reduced to 30%(from 40%) & the minimum to 10% from 15%. New Rs. 60001-150000 slab with 20% rate inserted
1997-98	Tax	Y	**a-**	3	Voluntary disclosure of Income Scheme 1997 introduced b/w 1.7.97 & 31.12.97
1998-99	Infra	elec	**a**	2	CRERC and SERCs established
1998-99	Infra	elec	**a**	2	Indian Electricity Act(1910), Electricity (Supply) Act(1948) amended to allow private investment in power transmission.
1999-00	Extnl	Im	**a**	2	Import of 894 items de-licensed, & 414 items permitted to be imported against SIL.
1999-00	Extnl	xr	**a-**	3	FERA 1973 replaced by Foreign Exchange Management Act (FERA) in 1999
1999-00	Infra	tel	**a**	2	Voice and data segment opened to full competition, and 100% foreign ownership allowed.
1999-00	Kmkt	Futr	**a**	2	Securities Laws (Amendment) Bill passed;derivatives & units of collective insurance schemes defined as securities in Securities Contract Regulation Act 1956.
1999-00	Tax	vat	**a**	2	Central Excise: 11 major advalorem rates reduced to 3- central 16%, merit 8%, demerit 24%.
2000-01	Tax	vat	**a**	2	Central value added tax (CENVAT) of 16% on all manufactured goods with a few exceptions
2001-02	Extnl	ImC	**a**	2	QRs on BOP grounds removed by dismantling restrictions on the remaining 715 items
2001-02	Indus		**a-**	3	Defence industry:100% private cos allowed, FDI up to 26%, both subject to licensing
2001-02	Indus		**a-**	3	14 items dereserved from the small scale sector exclusive manf list
2002-03	Extnl	FDI	**a**	2	26% FDI in print media and 74% in non-news and non-current affairs print media allowed.
2003-04	Infra	elec	**a**	2	Electricity Act amended to set up a frameework for a competitive electricity market

Only the items graded a have been included as the complete list is too long.

Chart 4: Refocusing Government Expenditures And Administration

		Government and Public Sector								Non-profit	Profit Making	
		Administration					Regulators	Companies	Public-Pvt	Societies	Co-operative	Commercial
		Policy	Planning	Finance	Supply	Produce	(professional)	PSUs	Partnership	(NGO)		
				or Subsidise								
I	**Public Goods & Services:**			**Primary & Major Responsibility of Govt**								
1	Defence#					A+						
2	Courts					A+	JudicialCom					
3	Police					Autonomy	Police Com	@				
4	Roads											
4.1	Central Highways		Center	Partial				NHA	A			Const/maint
4.2	State Roads		State		A	B		SHA	B			Const/maint
4.3	Local,Conecting		State			A+						Const/maint
5	Public Education											
5.1	Preventive Health	A+	A	A+		A			Yes	Yes		
	(nutrition,cleanliness)											
5.2	Scientific approach	A+	A	A+		A			Yes	Yes		
	(supertition)											
5.3	Agri/crop(Extension)		Yes			A			Yes			e chaupal
6	Disease Control											
6.1	Communicable/Vector		A+			A+						
6.2	Epedemic/Environment		A+			A+						
7	Population Control	A			A+							
8	Town & Village											
8.1	Water Drains	A	A+		Run	Set up			Rural	Rural	Rural Mgt	Manage
8.2	Sewers,treatment	A	A+		Run	Set up			Rural	Rural	Rural Mgt	Manage
8.3	Solid Waste disp	A	A+		Run	Set up			Rural	Rural	Rural Mgt	Manage
9	Irrigation											
9.1	Aquifier Mgmt	A	A				yes					
9.2	Drainage systems	A	A		State	Local			Yes	Yes	Yes	
II	**Quasi-Public G&S:**		**Government Responsible for Correcting Externality**									
	(prod externalities)											
1	Defence Equipment					Major Sys			HiTech Eqp			Genrl Equip
2	Irrigation											
2.1	Dams	Yes	Yes			A						Construction
2.2	Canal arteries	Yes	Yes	Yes	A				Maintain			Construction
2.3	Distribution canals		Yes	Yes	A				Maintain		Farmers	Construction
3	Rural											
3.1	Elect Transmission		Yes	Yes	Yes		A+	Yes	Yes			Yes
3.2	Elect Distribution		Yes	Yes	Yes		A+	Yes	Yes	Yes	Yes	Yes
3.3	Telephony,Internet			No Tax;USO				OpenAccess				Competition
3.4	Postal network			Yes				India Post	SupplyChain			Front end
4	Water-drinkable		Yes	Yes	Yes	Rural		Urban	Yes			Urban Mgt
5	Education											
5.1	Schooling*	A	A	A	UrbPoor	Rural	A+:InfoAsym		Yes	Yes		Yes
6	UrbanMassTransit*	Yes	Yes	Yes				Subway	Busses			Busses
III	**Private Goods & Services:**			**Regulate Non-Government Agents, Promote competition**								
1	Health											
1.1	Insurance*			Grants	Poor		Info Asym	Compete	Yes	Poor	Rural	All
1.2	Services*			Grants	Urb poor	Rural	Info Asym		Poor	Poor	Rural	All
1.3	Hospitals			Poor			Info Asym	Yes	Yes	Yes		Yes
2	Education											
2.1	Technical		B				Certification		Institutes			Yes
2.2	Higher*			Grants		Centr/stat	Rating		Yes	Yes		Yes
2.3	Professional*			Grants		Centr/stat	Rating		Yes	Yes		Yes
3	Electricity											
3.1	Production			Un convn			B	B	Un convn	Un convn	Un convn	Competition
3.2	Transmission					Eliminate	A+	Yes	Yes			Benchmark
3.3	Distribution					-Theft	A+	All	Yes			-competition
4	Ports	Yes	B				Yes	Yes	Yes			"
5	Airports	Yes	B				Yes	Yes	Yes			"
6	Railway											
7.1	Rail line & Signals		B	Strategic			Yes	Open Access	Yes			Local lines
7.2	Trains/service							Yes				Competition
8	Telecom: Urban						Yes					Competition
9	Pipeline:Gas/Oil		B					Open Acess				Open Acess
	Notes: The importance of the governments role in the subjest is represented by the grade (A, B)											
	# = Defence Equipment is a public good monopsony;					* = Social/Merit arguments for subsidy(in addition)						
	@ = The T&D mafia in SEBs and the Coal mafia in Bihar are examples of failure to protect public property (family jewels?).											