Industrial Policy and Performance since 1980: Which Way Now?

Since 1980-81, manufacturing sector output has grown at 7 per cent per year, with economic reforms making little difference to the trend in the 1990s. But growth has decelerated over the last seven years, after peaking in 1995-96. Why is this so? The reforms have narrowly focused on policy-induced restrictions on supply, ignoring the demand constraint due to the cut in public infrastructure investment since the late 1980s and indifferent agricultural performance in the 1990s. These issues have to be squarely addressed to revive industrial growth, and to reap the benefits of the investment boom in organised manufacturing in the last decade.

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India's manufacturing sector currently accounts for about 17 per cent of real (measured) GDP, 12 per cent of total workforce, and close to 80 per cent of merchandise exports. Over the past half century, this sector has grown at nearly 6 per cent per year; at over one-and-a-half times the growth rate of domestic output – representing a major break from the colonial past.[1]

The annual trend growth rate of total manufacturing gross value added (output, for short, hereafter) during the last two decades (1980-2000) is close to 7 per cent. While this represents a turnaround compared with the preceding period of 'relative stagnation' (1965-1980), the record is modest in contrast to China's (official) double-digit growth during this period, as also most other industrialising Asian economies (Table 1).

I Evolution of Policy since 1980

Industrial upturn in the 1980s: Around 1980, the initial year of our study period, there was considerable gloom about the immediate prospects for industrial growth, despite having a surplus of food and foreign exchange stocks for a few years in the late 1970s – widely regarded as long-term constraints on India's economic growth. For a variety of reasons, lack of industrial demand, especially for investment goods, was widely accepted to be the principal reason for the relative stagnation since the mid-1960s. However, there was also an argument that the controls on output, investment and trade – popularly called the 'permit licence raj' – were stifling private initiative and wasting meagre public resources. Reportedly the controls led to widespread inefficiency in resource use, as reflected in poor total factor productivity growth, or in the economywide rise in incremental capital output ratios in the 1970s [Ahluwalia 1985; Rangarajan 1982]. The gloom was perhaps accentuated by the oil price and agricultural supply shocks in the late 1970s, together with political uncertainty as the Indian democracy entered the coalition era at the national level for the first time in 1977.

However, from 1980 onwards, after the domestic political uncertainty had ended, industrial policy witnessed greater pragmatism with a gradual loosening of controls, and a greater willingness to import technology and foreign private capital to modernise the manufacturing sector. Greater realism in policy-making also included stepping up of public investment in infrastructure and energy production (to insulate the economy from external shocks), rural development for diffusion of green revolution technology, and for a 'direct' attack on poverty. As the second oil shock was successfully met by increasing domestic oil production and import substitution in fertilisers in a short time, the second half of the 1980s witnessed considerable de-licensing and relaxation of import controls to upgrade the industrial technology – as reflected in Rajiv Gandhi's political slogan of taking the country to the 21st century! To achieve these, there was a greater reliance on the private corporate sector with fiscal incentives provided for stock market-based financing of industrial investment, as government faced a growing resource constraint to meet the ambitious planned investment target.

In the 1980s, many branches of manufacturing like automotive industry, cement, cotton spinning, food processing, and polyester filament yarn, witnessed modernisation and expansion of scales of production. Industrial export growth also improved in the second half of the 1980s as import restrictions moved from quotas to tariffs (as a first phase of trade reforms) although at very high levels, and a steady depreciation of the currency in nominal terms. The turnaround in industrial output growth in this decade has been variedly attributed to liberalisation, improvement in public investment and public sector performance [Ahluwalia 1992; Nagaraj 1990].

Speeding up of reforms in the1990s: As part of the orthodox initiatives since 1991, industry and trade policy reforms were accelerated, while public investment contracted sharply to reign in the fiscal imbalance. Financing of industrial development changed considerably as part of the financial sector reform that cut directed lending, and abolished subsidised credit for the identified sectors since development banks' access to long-term

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Figure 1: Share of Employment, Output and Investment in Total Manufacturing

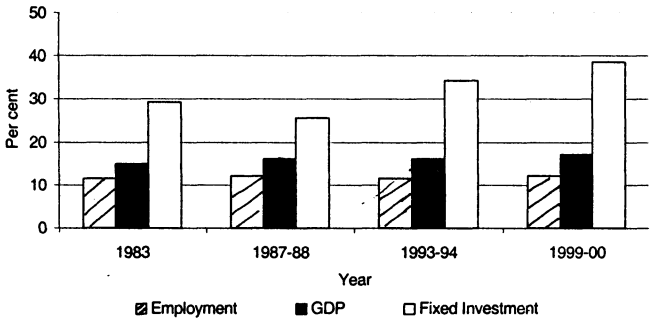
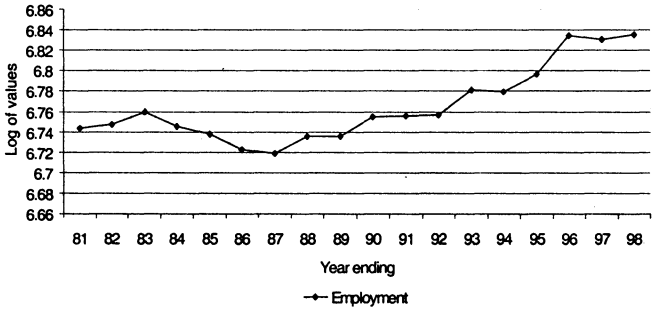


Figure 2: Employment in Registered Manufacturing



credit from the Reserve Bank and SLR funds were terminated. Although formal changes in industrial labour laws were avoided due to lack of political consensus, there were adequate signals to employers that the government would not come in the way of restructuring industrial relations, layoffs and retrenchments of organised workers – giving up the implicit *compact* that had bound capital and labour together in the previous four decades. While reforms appeared like a 'big bang' by Indian standards, the pace was gradual compared with, say, China, let alone Russia and the east European economies.

Proponents expected the reforms to accelerate domestic output and industrial growth, taking it close to those achieved by the successful Asian economies. 'Uncaging the tiger', the metaphor that *The Economist*'s Clive Crook coined, caught the imagination of the policy-makers and public alike – just as the new government was about to be formed in 1991 amidst an external payment crisis.[2] Expectedly, the policy initiatives drew considerable criticism, apprehending deep retrenchment of output and employment as had happened in Latin America, and towards 'dependent development'.

How did the industrial sector really perform in the 1990s? How does it compare it with the previous decade?

II
Industrial Performance, 1980-81 to 2001-02

Quite unlike Latin America, where the manufacturing sector's share in GDP declined sharply over the last two decades, in India the share in the 1990s has remained broadly the same, with a marginal rise (Table 2). As Figure 1 shows, the manufacturing sector's share in workforce has remained roughly constant at around 12 per cent. Registered manufacturing employment – in factories regularly employing 10 or more workers constituting about one-fifth of total manufacturing employment – has steadily risen from around the mid-1980s for over a decade, without a trace of the effect of the 1991 reforms in the trend (Figure 2). Thus, in the aggregate, the worst fears did not come true (more about this later).[3]

Trend analysis: Table 3 provides the trend growth rates of output for the total and registered manufacturing for varying time periods

Table 1: Industrial Growth in Asian Perspective, 1980-2000
(Per cent per year)

Country	Growth Rate
India	6.8
China	12.8
Indonesia	10.2
Korea	9.4
Malaysia	11.2
Singapore	7.7
Thailand	9.8

Note: Data are in constant (1996) dollar terms.
Source: World Development Indicators, 2002.

Table 2: Share of Manufacturing in GDP, 1980 to 2000

Country	1980	1990	2000
Argentina	29.5	26.8	17.6
Brazil	33.5		24.0
Chile	21.5	19.6	15.9
Mexico	22.3	20.8	20.7
Memo: India	13.8	16.6	17.2

Source: World Development Indicators, 2002; *NAS*, various issues.

Table 3: Manufacturing Sector Growth, 1980-81 to 2001-02
(Per cent per year)

Period (Year Ending)	Total Manufacturing	Registered Manufacturing	Dummy Variable Test: Sign	Dummy Variable Test: Statistical Significance
1981-02	6.7		+	Not significant
1981-91	7.4	8.2		
1992-02	6.3			
1981-01		7.4	+	Not significant
1993-01		6.6		
1981-00	6.9			

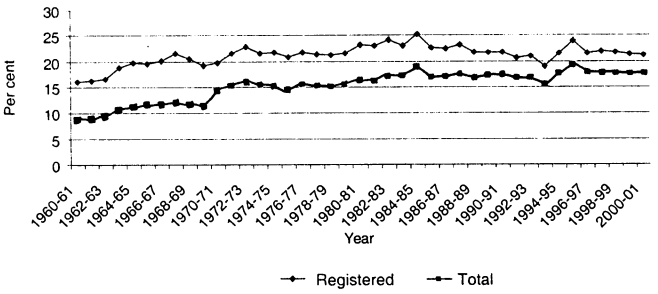
Source: NAS, various issues.

Table 4: Growth by 2-digit Industry Groups, 1980-81 to 1999-2000

Industry Group (NIC)	Total Manufacturing 1981-91	Total Manufacturing 1992-00	Total Manufacturing 1981-00	Registered Manufacturing 1981-91	Registered Manufacturing 1992-00	Registered Manufacturing 1981-00
20-21	7.0	4.9	6.1	9.5	5.2	7.3
22	2.9	10.8	5.2	8.5	8.4	7.8
23-26	5.5	3.7	4.9			
23				5.6	6.3	3.2
24				5.8	13.8	7.6
25				1.9	4.4	0.9
26				12.8	1.6	14.8
27	(-) 2.7	2.0	(-) 0.8	7.3	4.7	0.9
28	9.1	4.3	6.2	9.2	0.6	5.3
29	3.8	5.1	6.0	9.7	3.7	10.4
30	9.3	10.4	10.0	9.4	10.6	10.3
31	14.7	5.5	9.9	17.6	5.5	11.4
32	9	9.9	7.4	11.8	7.7	7.9
33	5.7	8.1	7.4	5.4	8.4	7.2
34	6.0	6.9	4.3	6.5	7.9	6.2
35	6.0	8.7	6.1	6.0	8.5	6.0
36	12.5	12.3	10.0	10.7	13.0	9.6
37	5.5	6.3	5.3	5.4	5.5	6.5
38	11.1	7.6	7.1	7.7	7.0	7.3
39+97	7.1	8.3	5.4	15.3	6.8	13.2
Total	7.7	7.5	7.2	8.5	7.4	8.0

Source: NAS, various issues.

Figure 3: Machinery Sector's Share in Manufacturing Output



between 1980-81 and 2001-02. Evidently, the growth rates are, in general, lower in the 1990s compared with those in the previous decade. However, a dummy variable to test for a break in the series in 1991-92 does not show any statistically significant change in the growth rates. Thus, industrial growth during the last two decades have remained roughly the same, both for total and registered manufacturing.

Results of a similar exercise for disaggregated (2-digit) industry groups are reported in Table 4. During the two-decade periods, in total manufacturing, chemicals (NIC 30), rubber and petroleum (NIC 31), and electrical machinery (NIC 36) have grown at above average growth rates by a reasonable margin. The same is true separately for each of the two decades. Similarly, textile products (NIC 26), leather, chemicals, rubber and petroleum, (NIC 29-31), and repair services (NIC 39+97) grew faster than the average in registered manufacturing.

Growth by use-based industrial groups: Many believe, the sharp reduction in tariffs for capital goods in the 1990s has severely affected their domestic output – 'massacre of machine building', to use Ashok Desai's (2001) graphic description. Initial assessments, based on the index of industrial production (IIP) with different base years gave conflicting evidence in this regard. We now have a better basis to assess this proposition using the ASI data for the period 1980-81 to 1997-98 (Table 5).[4] The capital goods sector has grown at 6.7 per cent per year during 1981-98, and at 5.7 per cent per year during 1992-98; but there is no statistically significant break in the trend growth rate in 1991-92. The same is true for all the use-based industrial groups. Thus, the trend in output growth in the decades of the 1980s and the 1990s are broadly similar – in the aggregate, by 2-digit industry groups as well as by use-based classification of output.

However, these trends seem to hide significant variations across specific products and industries. Within capital goods, production (in numbers) of passenger car – a widely accepted indicator of conspicuous consumption in a poor country –went up from about 31,000 in 1980-81 to about 5.8 lakhs in 2000, representing an annual growth rate of 15 per cent during the two decades.

Its contrast with machine tool industry – the heart of domestic machine building capability – is telling. Gross value added in this industry grew at a mere 1.7 per cent per year during 1981-97, witnessing a negative growth thereafter. Indian Machine Tool Manufactures' Association says, "Output by domesti metalworking machine tool manufacturers in 2001 calendar year declined by 14 per cent to Rs 5,137 million marking fourth year of decline, since 1997, for the Indian machine tool industry" (http://imtma.org/aimti.htm). Domestic machine tool production stagnated at a time when industrial investment really boomed (discussed later). Evidently, much of the incremental demand was met by imports, as the import-to-consumption ratio nearly doubled from 29 in the 1990s, to 56 per cent in1995.[5]

Due to the differing growth rates over nearly two decades, the relative weights of use-based industrial groups have changed considerably. To discern their long-term changes in registered manufacturing, we have looked at their shares in every decade since 1960-61 (Table 6). During nearly three decades since 1970-71, the share of consumer goods has gone up by 7 percentage points from 35 per cent to 42 per cent – mainly on account of consumer durable goods. Shares of basic and intermediate goods have gone down, while that of capital goods increased marginally by about one percentage point.

Though informative, the above findings are incomplete, as they exclude the unregistered sector, which constitute one-third of the total manufacturing value added. Moreover, with the diffusion of technology and skills, spread of electricity, and in response to a variety of policies to encourage small enterprises, many industries have got diffused in the unorgainsed sector in this period. While such a process is more likely in consumer goods industries, it is probably true to a lesser extent in machinery manufacturing, since technology in these industries is amenable to division of labour and specialisation. But we cannot satisfactorily capture these changes, as use-based classification of unorganised sector output is not available.

However, as a proxy for capital goods, we take the share of NIC 35 to NIC 37 in total manufacturing output (Figure 3). Expectedly, the capital goods' share in total manufacturing is smaller than that in registered manufacturing. The two shares move in parallel, though there seems to be some narrowing of the gap between the two, suggesting a notable diffusion of capital goods production in the unorganised sector.

But strikingly, capital goods' share in total manufacturing, after peaking at about 18 per cent in 1984-85 has stagnated in the following decade-and-a-half. Thus, reforms have severely affected the sector – at least in the aggregate. Arguably, the steep

Table 5: Growth in Registered Manufacturing according to Use-Based Classification of Output, 1980-81 to 1997-98

(Per cent per year)

Use-Based Group	1980-81/ 1997-98	1980-81/ 1990-91	Dummy Variable Test
1 Basic goods	8.3	8.0	(-) Not Sig
2 Intermediate goods	10.7	11.2	(-) Not Sig
3 Capital goods	6.7	5.3	(+) Not Sig
4 Consumer goods	9.1	8.9	(-) Not Sig
4.1 Consumer durable goods	12.5	12.0	(+) Not Sig
4.2 Consumer non-durable goods	8.5	8.3	(-) Not Sig

Source: EPW Research Foundation (2002).

Table 6: Changes in the Use-Based Classification of Registered Manufacturing Output, 1960-61 to 1997-98

Use-Based Groups	1960-61	1970-71	1980-81	1990-91	1997-98
1 Basic goods	27.5	30.7	21.3	23.7	23.0
2 Intermediate goods	21.0	19.0	16.3	16.8	17.0
3 Capital goods	10.7	15.2	21.2	17.5	16.3
4 Consumer goods	40.8	35.1	41.1	42.0	43.6
4.1 Consumer durable goods	2.5	2.8	4.8	6.8	8.8
4.2 Consumer non-durable goods	38.3	32.6	36.4	35.2	34.8

Note: Data for the years 1960-61 and 1970-71 are from Ahluwalia (1985:9).

Figure 4: Real Price of GFCF by Type of Assets

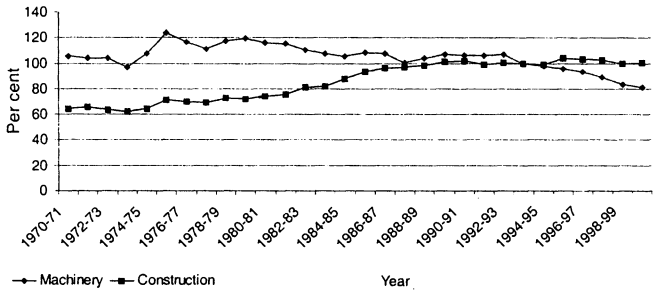


Figure 5: Workforce Distribution, 1983-2000

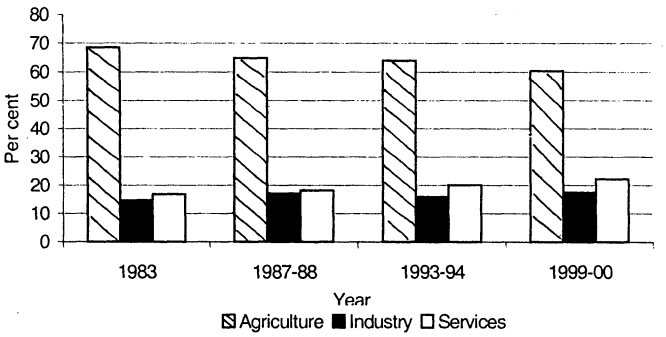


Figure 6: Manufacturing Output Growth, 1991-2002

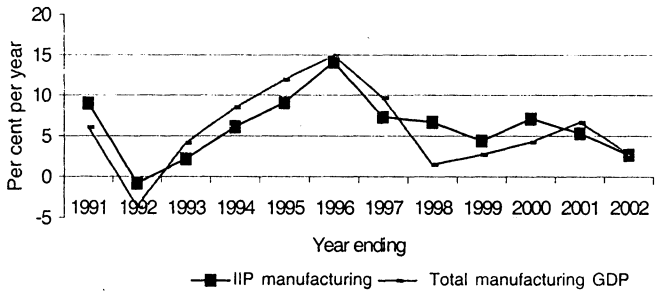
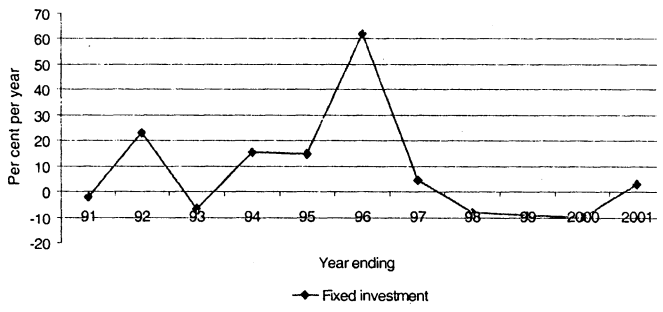


Figure 7: Fixed Investment Growth in Total Manufacturing



rise in imports reflects poor capability of the domestic industry and its high prices. While there may be some merit in such an argument, it is hard to believe that such an outcome was inevitable, with policy reforms.

Capital goods prices: But the flip side of this is that, the real price of capital goods – the ratio of prices of capital goods to the GDP deflator – has steadily come down during the last two decades with the decline in tariffs, especially since 1993-94 (Figure 4). The same holds true for the real price of construction – a positive effect of gradual decontrol of the cement industry since 1982 leading to substantial capacity creation, entry of new firms and technological upgradation (moving from wet to dry process, thus lowering of the energy intensity of output). As the real price of fixed investment has gone down, and the share of machinery in gross fixed capital formation (GFCF) has risen steadily, the additions to the capital stock are much more productive. This, in principle, would have economywide effects on potential output and productivity growth.

Growth of construction sector: With the relaxation of supply constraints on cement and steel, and a fall in their real prices, there seems to have been a steady growth in the construction sector. Though not evident from domestic output estimates, employment figures seem to show a clearer picture.[6] The employment (usual status) share in construction for all India has nearly doubled from 2.3 per cent of the total workforce in 1983, to 4.4 per cent in 1999-2000 [Chadda and Sahu 2002]. Therefore, quite contrary to the popularly held view, the employment share of the industrial sector (mining, manufacturing, construction and utilities) shows a moderate increase in the last two decades, despite stagnation in manufacturing's share (Figure 5).

Better functioning of industrial market: Undoubtedly, economic reforms have increased domestic and external competition, providing greater consumer choice. A relative cheapening of capital goods under pressure from import competition has made fixed investment more productive, the gains of which are increasingly passed on to consumers by price reduction, or quality improvement. Firms can no longer implicitly operate on a 'cost plus' pricing principle. The shift in market conditions is perhaps best reflected in manufacturers' growing use of consumer credit to induce sales of durable goods.

Moreover, the widely commented corruption in the industrial licensing system at the level of the central government has got largely eliminated, as entrepreneurs now have to merely register their proposed project with the concerned ministry, while state governments compete with each other for private investment with incentives. These are certainly significant gains of the gradual reforms over the last two decades.

On a close look, however, there are many causes for concern.

III
A Closer Look at the 1990s

While the trend growth rate in the 1990s is the same as in the previous decade, the yearly growth rates show an interesting pattern (Figure 6). After an expected contraction in response to the external payment crisis in 1991-92, industrial output rebounded rapidly in the following four years, peaking in 1995-96. In fact, the annual growth rate of output of over 14 per cent in that year is perhaps the highest ever recorded in India. The sharp upturn is widely credited to policy reforms, with the expectation of further acceleration with more reforms.

But the growth rate steadily decelerated in the following seven years, except for a minor improvement in 1999-2000. Though it is not yet evident as a statistically significant break in the trend growth rate, the perceptible slowdown for so many years is surely a matter of concern. The deceleration is even sharper in fixed investment, which has turned negative in recent years (Figure 7). As there was an investment boom in manufacturing without a corresponding rise in output growth, there is now a huge excess capacity, especially in consumer durable goods, the automotive industry –and more generally in capital goods.

Figure 8: Unregistered Sector's Share in Manufacturing Fixed Investment

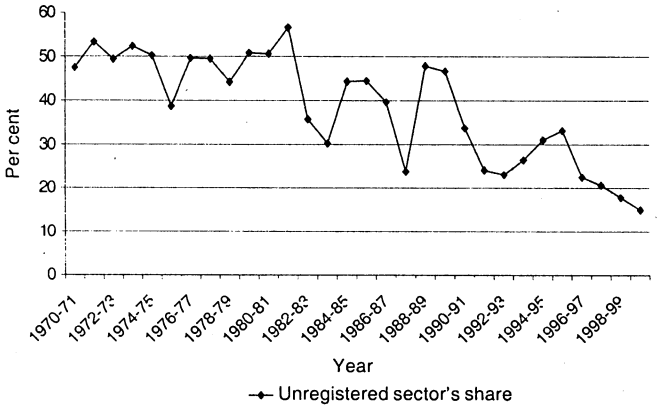
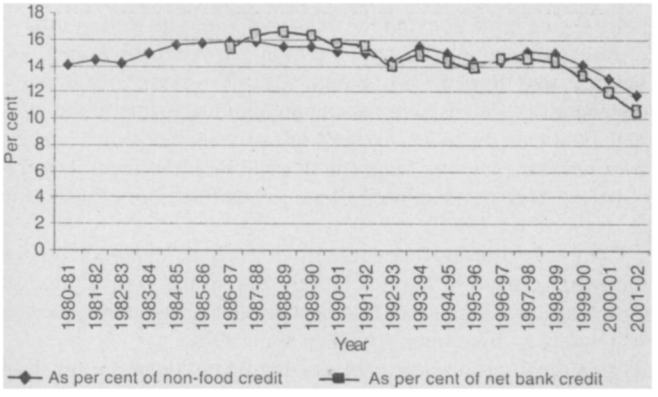


Figure 9: Bank Credit to SSI, 1980-81 to 2000-01



Divergence in performance: By doing away with the reported import substitution bias in industrial policy, reforms were expected to boost output and exports of labour intensive manufactures. If we accept the distinction of registered and unregistered sectors as proxies for import competing and export-oriented manufacturing respectively (as is widely done in the literature), then the experience of the 1990s seems to be at variance with the priori expectation.

While there was an investment boom in the registered sector, the unregistered sector has suffered. The unregistered sector's share in total manufacturing GFCF has nearly halved, from around 45 per cent in the mid-1980s to less than 20 per cent by the end of the 1990s (Figure 8). What explains this? Investments seem to have been driven by the potential size of the domestic market, and the expectation of its growth in the liberalised regime.[7] This is particularly true of consumer durable goods and the automotive industry, largely driven by a surge in foreign direct investment [Nagaraj 2003]. Many incumbent domestic firms responded to the threat of new entry by modernisation, expansion and strengthening the distribution network, thus contributing to the investment boom. However, this did not translate into output growth as the size of the market was found to be much smaller than projected.

Investment in unregistered manufacturing was probably hurt by high interest rates in the initial years of reforms.[8] While interest rates came down in the second half of the 1990s, commercial banks have resisted lending for productive sector as they found it profitable to invest in risk-free government securities. As a proxy for access to fund investment, bank credit to the small-scale sector in unregistered manufacturing – as proportions of (i) total non-food credit, and (ii) net bank credit – has declined from over 16 per cent in the late 1980s to less than 12 per cent a decade later (Figure 9). In other words, in the liberalised regime and without a change in the legal environment, commercial banks had little incentive to lend to small enterprises.

Thus, after over two decades of 'creeping' liberalisation – to borrow Pranab Bardhan's (1998) phrase – there is now widespread gloom, with decelerating growth for nearly seven years since the mid-1990s with a huge excess capacity in many industries. This is in sharp contrast to the euphoria that marked the initiation of the orthodox economic reforms a little over a decade ago.

Evidently, there is an uncanny resemblance of the current industrial outlook with that around 1980, which we described at the beginning. Why did reforms not lead to an acceleration of output growth with a greater share of labour-intensive manufactures and exports? More pertinently perhaps, why has growth tapered off after the mid-1990s, although there were no significant policy reversals? If anything, regardless of the political dispensation in power, successive governments have sought to iron out the wrinkles in the reform process. Is it a question of the reforms being too little, too late? Or is it a mere failure of implementation of a sound design (political and bureaucratic inertia)?

These are serious questions that have a bearing not just on industrial performance, but also perhaps on the validity of the analytical model that underpins much of the current policy discourse.

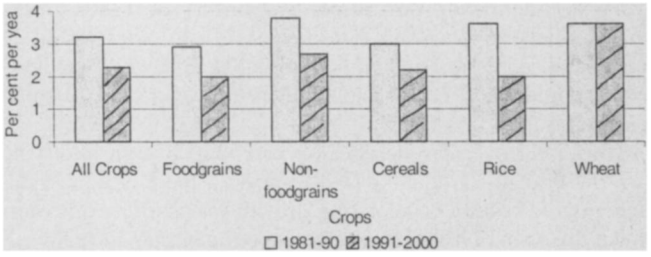
IV
Towards an Explanation

The policy initiatives of the 1990s were based on considerable support from the mainstream economics. They were, in principle, expected to set right what was widely believed to have been wrong with India's industrialisation effort. As T N Srinivasan argued, "They (the reforms) were solidly based on an understanding of what went wrong with Indian development strategy since 1950 that delivered neither rapid growth nor appreciably greater equity" [Srinivasan 1993:258]. In Jagdish Bhagwati's view, the three main elements of India's policy framework that stifled growth and efficiency were: "extensive bureaucratic controls over production, investment and trade; inward looking trade and foreign investment policies, and a substantial public sector, going well beyond the conventional confines of public utilities and infrastructure" [Bhagwati 1993:48]. Joshi and Little (1994:3) contended, that "India's control system was not only microeconomically inefficient but macroeconomically perverse", implying that the industrial policy was responsible for persistent fiscal deficits and periodic balance of payment crises.

Broadly, none of these features of the policy framework remain any more after 1991. Why, then, has manufacturing sector growth slowed down so precipitously since the mid-1990s? Why haven't the budgetary imbalances disappeared with the doing away of the allegedly worst features of the policy framework?

Desai (2001), among others, has argued that the credit squeeze in 1996 and rise in interest rates throttled the boom of 1993-96. While it might have been true in the short run, why has industry not revived despite the steady loosening of credit constraint and the fall in interest rates over the past seven years?

Figure 10: Trends in Agricultural Production, 1980-81 to 1999-2000



Many attribute the slowdown (lack of sustained improvement in the 1990s) to the stalled reforms. They believe a quick and sharp reduction in tariffs to the average levels of many Asian economies, pulling down the remaining restrictions on foreign direct investment, and removal of policy-induced rigidities in the industrial labour market would deliver the desired fruits of reforms. These arguments merit closer examination.

If such an argument is valid, then the hastening of the reforms in the 1990s, compared with the previous decade, ought to have improved industrial growth rate, which evidently did not happen. Moreover, in comparative experience, there is little evidence to suggest an unambiguous positive association between the scope (and speed) of reforms and economic outcomes. If one can cite cases from Asian economies as successful examples of following the orthodoxy, there are equally compelling cases from Latin America with adverse outcomes.

Thus, there are no clear signals as to how to reverse the trend of decelerating industrial growth, except for the fond hope that further relaxation of rules governing the use of capital (domestic and foreign) and labour would somehow do the trick.[9] Moreover, the view that 'reforms have not gone far enough' resembles the arguments in earlier times when repeated failure of the five-year plans to meet targets was attributed to 'not enough planning' or 'lack of political will', despite the growing evidence of the economy's structural weaknesses, or the heavy hand of bureaucracy. Therefore, such arguments in favour of more reforms do not seem to be based on an application of economic reasoning and examination of the evidence. Thus, there is a reason for us to look for an alternative explanation.

It is perhaps useful to start with the classical economic view. As Arthur Lewis once asked, "What limits the size of the manufacturing sector?" His preliminary answer was, "productivity of farmers whose marketable surplus will exchange for manufactures" [Lewis 1984:121]. As India is still a large and poor agrarian economy with 3/5th of workforce still dependent on agriculture (in Bihar it is close to 3/4th), with land productivity being one-third of China's, per capita value added in manufacturing is the lowest among the newly industrialising economies; and one-fourth of China's (Table 7).

If we accept, following Chenery's stylised fact, that large countries in general have low trade ratios, and that India does not have abundant natural resources for exports, then industrial growth largely boils down to the size (and growth) of the domestic market. This, in turn, yet largely depends on how agriculture performs. The rich discourse on India's industrialisation experience has shown that in a poor agrarian economy lack of demand could be a binding constraint on industrial growth. To quote K N Raj:

> Private consumer demand in a country such as India depends to a large extent, ... on how things go in the agricultural sector. If output and income in this sector are rising rapidly, consumer demand for both agricultural and non-agricultural products can also be expected to increase rapidly, the latter being even more than the former since higher proportions are generally spent on non-agricultural products as levels of income rise. Output and incomes in the agricultural sector need not of course always rise together since the effect of sharp increases in output could well be to lower the prices of agricultural products more than proportionately; this is in fact an important factor governing agricultural income in some regions of the country characterised by serious year-to-year variation in climatic conditions and water supply [Raj 1986:225i]

Without denying that long-term constraint in a developing economy is one of supply of savings and investment, Sukhamoy Chakravarty argued that under specific circumstances that India faced, lack of aggregate demand could become a binding constraint [Chakravarty 1979 and 1984].

From a variety of analytical perspectives, it is widely accepted that autonomous public investment in a developing economy helps create large demand for industrial goods as well as relieve infrastructure supply constraint [Narayana and Srinivasan 1978; Patnaik and Rao 1978]. Pandit's (1995) survey of macro-econometric evidence seems to unambiguously support the view that public investment 'crowds-in' private investment. International evidence also suggests that public investment in infrastructure does not displace private investment, but crowds it in [Serven 1996].

Combining the above arguments, one can perhaps contend that industrial growth in India is largely run on the twin engines of agriculture productivity and public investment. Apparently, neither of these was functioning well in the 1990s.

Agricultural performance: In the aggregate, there are no signs of a statistically significant slowdown in the growth of GDP in agriculture in the 1990s [Nagaraj 2001]. However, there are other pieces of evidence, mainly based on physical output growth, at the disaggregated level, that seem to suggest a different tendency.

A comparison of land productivity of all major crops (and crop groups) between the 1980s and the 1990s shows a distinctly lower trend growth rate in the latter decade, except for wheat (Figure 10).[10] If this evidence has any merit, then poorer agricultural performance could have adversely affected the demand for industrial goods.

The indifferent agriculture performance in the 1990s is perhaps associated with the much-commented slowdown in public in-

Table 7: Manufacturing Value Added Per Capita in Selected Industrialising Economies

Countries	Value Added Per Sapita in Manufacturing in US$ in 1998
Argentina	1253
Brazil	1078
Mexico	821
Hong Kong	1738
Korea	2142
Singapore	6064
India	70
China	286
Malaysia	946
Indonesia	115
Thailand	582
Turkey	501
Memo: High income economies	5344

Source: Weiss (2001): 15.

Figure 11: Share of Manufacturing and Infrastructure in GFCF

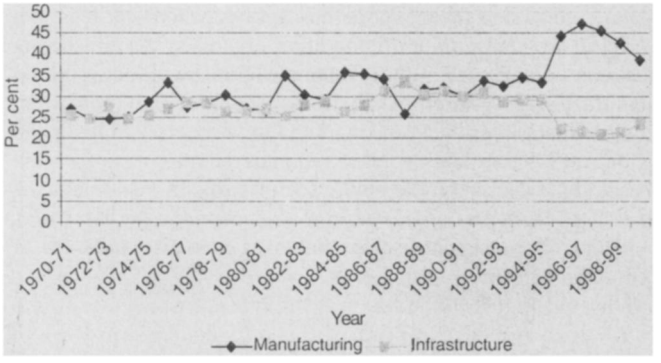
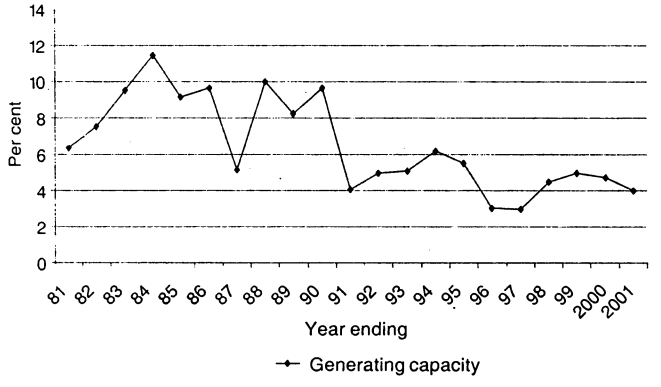


Figure 12: Annual Growth in Electricity Generating Capacity, 1981-2001



vestment in this sector. Although an improvement in private investment seems to have partially compensated for the decline in public investment, there is an undeniable decline in total agricultural investment growth [Roy and Pal 2002; Gulati and Bathla 2001].

Poor agricultural performance seems to be also evident in lower labour demand in rural areas. Chadda and Sahu (2002) show that between 1993 and 2000, unemployment rates have gone up, while it had come down in the previous decade. This is found to be true by all measures of unemployment.

Thus, piecing together the above evidence seems to suggest a deterioration of agricultural performance in the 1990s that could perhaps have adversely affected industrial output growth.

Public investment: It is widely accepted that as part of economic reforms, public investment – over one-half of which is in infrastructure – was deliberately reduced.[11] Figure 11 shows the share of infrastructure (mining, utilities and transport) and manufacturing in GFCF for the period since 1970-71. Evidently, the decline in infrastructure's share started in the second half of the 1980s and became sharp in the mid-1990s. Interestingly, its mirror image can be found in the manufacturing sector's increasing share in GFCF. If we take a longer time-period (not shown here), we discover that the share of public investment in the late 1990s, at about 30 per cent of total GFCF, has fallen close to the level it was in the early 1950s when India initiated planned economic development. In physical terms, the decline in public investment is perhaps best captured in the precipitous fall in the growth of electricity generation capacity from 8-10 per cent per year in the 1980s to 4-6 per cent in the 1990s (Figure 12). The fall in public investment has been so drastic that it is now – to rephrase Bhagwati's earlier quote – well *behind* the conventional confines of public utilities and infrastructure.

While some may applaud this 'achievement' at dismantling the public sector's role in the provision of social overhead capital, this has not led to a surge in investment and employment in labour-intensive manufactures. But the fall in infrastructure investment seems to have constrained industrial output and export growth, and also perhaps the inflow of foreign direct investment.

Economic theory seems fairly clear that when markets fail, as often happens in the industrial sector which has considerable externalities, economies of scale, scope and network, state intervention, in principle, improves social welfare. Such a view is increasingly countered by arguing that in developing economies, the costs of 'state failures' due to inefficiency, waste and corruption could outweigh the costs of market failure.

As such disputes cannot be resolved analytically, we have to look at evidence on market failure versus state failure in the course of industrialisation. The experience of successful industrialisation in the 20th century does not seem to support the state failure hypothesis in the aggregate: if anything, the sustained ability at acquisition of technical capability in late industrialising economies has gone hand in hand with substantial, yet responsive, state action [Amsden 2001]. On the other hand, leaving more and more economic decisions to markets uncritically during the past two decades seems to have led to deindustrialisation, as measured by workforce distribution [Weiss 2002]. Chile is probably the prime example of Latin America's most industrialised nation getting transformed into a primary producer of exotic (counter seasonal) agricultural produce.

V
Policy Options and Constraints

If the foregoing discussion has any merit, then what should be done for industrial revival? There is widespread support from diverse analytical perspectives for stepping up public infrastructure investment, but the endorsement weass thin as to how to finance it. Financing by increasing user charges and cutting down delays and waste in public sector (reducing X- inefficiency) are obviously the first-best solution, but it is a gradual and politically difficult – but perhaps not an insurmountable – process in a democratic set-up. Probably the best practical option in the medium-term is to use the available food and foreign exchange reserves for stepping public infrastructure investment – perhaps on the lines that Shetty (2001) suggested. Given the overflowing food stocks and considerable excess capacity in industry, the inflationary potential of such a stance is likely to be modest. But what if such a policy accentuates the existing fiscal imbalance? But it need not necessarily happen, as is often believed. As Mihir Rakshit argued:

> Even in mainstream economics it is recognised that the fiscal deficit cannot be a primary policy parameter, but is the outcome of the working of the entire system...[in] India almost all industrial units producing heavy machinery, equipment and basic metals belong to the public sector; and the wage bill in the large majority of these enterprises constitutes a fixed rather than a variable cost in the short and medium run. This implies that (i) an increase in the demand for fixed capital goods met from domestic sources

raises public sector savings by an almost identical amount; and (ii) the value of the investment multiplier is close to unity. Thus even the short-run effects of public consumption and investment on aggregate demand are quite different [Rakshit 1994:269-70].[12]

Within mainstream economics there are many who argue that after reforms the markets may be less imperfect, but may not 'naturally' lead to improved growth performance. Dornbusch famously argued, "Stabilisation may be inevitable, but it is not a ticket for prosperity...One should not presume that the market automatically solves the coordination problems..." [Dornsbusch 1990:42-43]. A large and credible public investment programme – besides creating the well known economywide supply and demand linkages – could go a long way in stabilising the private sector's business expectations, and provide powerful signals on the broad direction of the economic policy, and the commitment of policy-makers to it. Further, it would perhaps not be incorrect to argue that in a poor and inequitous, agrarian economy like ours public infrastructure investment contributes towards efficiency as well equity.[13]

Agriculture has received less policy attention in recent years as food stocks have risen well beyond the needs of safe levels for food security. But such a policy overlooks the fact that what is procured and distributed by the public distribution system forms a small part of total food production and consumption; and a sizeable (though declining) share of food output is not marketed at all. Therefore, what share of rural income is left for non-food consumption depends on food production (and its prices), as poor and marginal farmers are net buyers of food.

VI
Summary and Conclusions

To sum up, industrial output growth during the last two decades has improved compared with the previous period of 'relative stagnation'. But contrary to both the euphoria and apprehension, with the acceleration of reforms there has been little change in the trend growth rate of output in the 1990s compared with the previous decade. Moreover, since the mid-1990s, there are distinct signs of a slowdown in growth for seven years now.

Gradualism in industry and trade policy reform during the last two decades has some notable achievements to its credit. Industrial markets have become more competitive, and product quality and variety have improved substantially. A relative cheapening of machinery and construction have made fixed investment more productive. An improved supply of cement and steel, and a fall in their real prices, has spurred the construction sector whose share in total workforce has nearly doubled – increasing industrial sector's share in the total workforce.

Contrary to many apprehensions, the trend growth rate of capital goods in the registered manufacturing has not declined during 1992-98 from that in 1981-91.While the capital goods sector's share in registered manufacturing has increased by about one percentage point in the 1990s, the share in total manufacturing has virtually stagnated since the mid-1980s, clearly suggesting the negative effect of reforms on this sector. Moreover, the aggregate performance seems to hide more than it reveals. To illustrate, the number of passenger cars produced has increased at 15 per cent per year for two decades now. But the machine tool industry – making the mother machines – has barely grown with imports to consumption ratio nearly doubling in the 1990s.

The much expected restructuring of production away from domestic market orientation, and towards labour intensive manufactures and their exports has not happened – at least not as yet. If anything, import competing organised manufacturing has been strengthened by the investment boom, while unregistered manufacturing suffered in the 1990s. Much of the boom went into production for the home market. Quite contrary to Joshi and Little's (1994) contention, elimination of the import substitution bias and the decline in the public sector's role in manufacturing have not resulted in a decline in macroeconomic perversity, as evident from persistent fiscal imbalances even after a decade of economic reforms.

Why did industrial and export growth not accelerate in the 1990s with the speeding up of the orthodox reforms? More precisely, why did the growth momentum of the 1980s taper off so sharply after a mere four-year boom in the early 1990s? The experience seems to suggest that the much argued positive association between reforms and growth seems suspect, or overdone. What, then, should we do to revive industry?

'Stalled' reforms since the mid-1990s are widely believed to be responsible for the industrial deceleration. Such a view presumes a positive association between speed (and depth) of reforms and output growth – a view sustainable neither in principle nor in comparative experience. Successive governments in the 1990s have, by and large, sought to operationalise the reforms and remove various bottlenecks rather than go back on them – but with little effect.

Therefore, it needs to be recognised that the industrial sector currently suffers from a lack of demand especially of investment, and not of supply – constrained by policy. In a poor, agrarian economy there are many structural features that can constrain industrial demand, although low capital stock per head continues to be the long-term constraint. Lack of demand seems to be on account of poor to indifferent agricultural performance in the 1990s and a deep cut in public infrastructure investment since the late 1980s.

Following the classical economic precepts, there is an urgent need to refocus policy on stimulating agricultural productivity that creates rural demand. With growing capital intensity of crop production, such a move will not only augment demand for consumer goods but also for capital and basic goods. Stepping up public infrastructure investment would not only generate investment demand but also ease the constraints on infrastructure supply that could bring in domestic investment, and probably the much sought after foreign investment as well. Given the structural features of the Indian economy, a carefully crafted strategy of financing such investment may not worsen the budgetary imbalance as widely apprehended – on the contrary it may improve it, if the utilisation of excess capacity stimulates internal savings of enterprises. EPW

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Notes

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1 Unless mentioned otherwise, the growth rates in this paper refer to log-linear trend growth rates, and all economic aggregates are measured at constant prices.

2 Clive Crook wrote, "India is a caged tiger. The tiger, set free, can be as healthy and vigorous as any in Asia. ... What needs to be done is clear. ... The government must dismantle an unbelievably complicated system of restraints and rewards that, over the past four decades, has securely enclosed every aspect of Indian life. The first and necessary step is to see these restraints and rewards as the cage that they are" (*The Economist*: India Survey, May 4, 1991:5).

3 Reportedly, there have been large-scale retrenchments in older industries and locations like Mumbai, though the official estimates do not seem to reflect the reality as the system of reporting of labour statistics has deteriorated. Howell and Kambhampati (1999) give a grim picture of textile workers in Ahmedabad.

4 The latest ASI data are available up to 1999-2000. We are unable to use the information for the last two years of the 1990s as there is, once again, a change in the industrial classification, and the census and sample sectors within the factory sector have also been redefined. We believe the broad trends reported in this study are unlikely to change by adding the data for the latest two years. In this study we have used the consistent time series compiled by EPW Research Foundation (2002).

5 High level of import-to-consumption ratio in machine tools would not have mattered if their exports were also growing rapidly. Machine tools are a highly traded goods, even among countries like the US, Germany and Japan, with considerable economies in specialisation.

6 While output has boomed since cement decontrol in 1982, neither fixed capital formation in construction nor domestic output in construction shows a corresponding increase, suggesting a growing underestimation of value addition in this sector [Nagaraj 2001].

7 Much of this investment was predicated on the estimated size of the domestic market for consumer durable goods to be around 200 million – based on private market research and consumption surveys.

8 Many believe the reservation policy for small scale industries (SSIs) is responsible for the lack of investment in the unregistered sector. While de-reservation surely merits attention, the policy cannot perhaps explain the fall in investment, as the reservation is restricted to a small number of industries, with a modest share in SSIs' output.

9 This view is well reflected in the official *Economic Survey* since the early 1990s.

10 I owe an earlier version of this graph to G S Bhalla.

11 Usually infrastructure includes mining, utilities, transport and communications. However, if investment in major irrigation and flood control were also included, keeping in view the agrarian nature of the economy, its share would be even higher.

12 The Economic advisory committee's report (1987) under the chairmanship of Sukhamoy Chakraverty had worked out numerical exercises to examine the effects of stepping up investment in infrastructure on domestic output and public saving.

13 Bardhan said, "... there are many projects which by relieving the severe constraints faced by poor and improving their conditions can help economic growth in the process. This runs somewhat contrary to the preoccupation of mainstream economics with equity-efficiency trade-offs, with its emphasis on the various costs of redistribution in terms of reduced economic incentives and performance....
"Then there are important dynamic externalities which can arise from community or neighbourhood -specific characteristics. These may refer to physical infrastructure (like roads, communications, irrigation and power systems) improving the productivity of private investment..." [Bardhan 1996:1346-47].

References

Ahluwalia, Isher (1992): *Productivity and Growth in Indian Manufacturing*, Oxford University Press, Delhi.

– (1985): *Industrial Growth in India: Stagnation Since the Mid-Sixties*, Oxford University Press, Delhi.

Amsden, Alice H (2001): *The Rise of 'The Rest': Challenges to the West from Late-Industrialising Economies*, Oxford University Press, New York.

Bardhan, Pranab (1998): *The Political Economy of Development in India, Expanded edition with an Epilogue on the Political Economy of Reform in India*, Oxford University Press, Delhi

– (1996): 'Efficiency, Equity and Poverty Alleviation: Policy Issues in Less Developed Countries', *Economic Journal*, Vol 106, September.

Bhagwati, Jagdish (1993): *India's Economy: The Shackled Giant*, Clarendon Press, 1993

Chadda, G K and P P Sahu (2002): 'Post-Reform Setbacks in Rural Employment', *Economic and Political Weekly*, Vol 37, No 22, May 25.

Chakravarty, Sukhamoy (1984): 'Aspects of India's Development Strategy for the 1980s' in reprinted in Chakravarty's, *Selected Economic Writings*, Oxford University Press, Delhi, 1993.

– (1979): 'On the Question of Home Market and Prospects for Indian Growth', *Economic and Political Weekly*, Vol 14, Nos 30-32, August, Annual Number.

Desai, Ashok (2001): 'A Decade of Reforms', *Economic and Political Weekly*, Vol 36, No 50, December 15.

Dornsbusch, Rudiger (1990): 'Policies to Move from Stabilisation to Growth', Proceedings of the World Bank Annual Conference on Development Economics, World Bank, Washington, DC.

Economic Advisory Council (1987): *Public Enterprises in India: Some Current Issues*, Economic Advisory Council, New Delhi.

EPW Research Foundation (2002): *Annual Survey of Industries, 1973-74 to 1997-98 – A Data Base on the Industrial Sector in India*, *EPW* Research Foundation, Mumbai.

Gulati, Ashok and Seema Bathla (2001): 'Capital Formation in Indian Agriculture Re-visiting the Debate', *Economic and Political Weekly*, Vol 36, No 20, May 19.

Howell, Jude and Uma Kambhampati (1999): 'Liberalisation and Labour: The Fate of Retrenched Workers in the Cotton Textile Industry in India', *Oxford Development Studies*, Vol 27, No 1, February.

Joshi, Vijay and I M D Little (1994): *India: Macroeconomics and Political Economy, 1961-1991*, Oxford University Press, Delhi.

Lewis, W Arthur (1984): 'Development Economics in the 1950s', Gerald Meier and Dudley Seers (eds), *Pioneers in Development*, Oxford University Press, New York.

Nagaraj, R (2003): 'Foreign Direct Investment in India in the 1990s: Trends and Issues', *Economic and Political Weekly*, Vol 38, No 17, April 26.

– (2001): 'National Income and Balance of Payments Statistics: A Review' in C P Chandrasekhar and Jandhyala B G Tilak (eds), *India's Socio-Economic Database: Surveys of Selected Areas*, Tulika, New Delhi.

– (1990): 'Industrial Growth: Further Evidence and Towards an Explanation and Issues', *Economic and Political Weekly*, Vol 15, No 41, October 13.

Narayana, N S S and T N Srinivasan (1977): 'Economic Performance since the Third Plan and Its Implications for Policy', *Economic and Political Weekly*, Vol 12, Nos 6-8, February, Annual Number.

Pandit, V (1995): 'Macroeconomic Character of the Indian Economy: Theories, Facts and Fancies' in Prabhat Patnaik (ed), *Macroeconomics*, Oxford University Press, Delhi.

Patnaik, Prabhat and S K Rao (1977): 'Towards an Explanation of a Crisis in a Mixed Underdeveloped Economy', *Economic and Political Weekly*, Vol 12, Nos 6-8, February, Annual Number.

Raj, K N (1986): 'Growth and Stagnation in Indian Industrial Development', *Economic and Political Weekly*, Vol 11, Nos 5-7, February, Annual Number.

Rakshit, Mihir (1994): 'Issues in Structural Adjustment of Indian Economy' in Edmar L Bacha (ed), *Economics in a Changing World: Development, Trade and Environment*, Vol 4, St Martin Press, London.

Rangarajan, C (1982): 'Industrial Growth: Another Look', *Economic and Political Weekly*, Vol 17, Nos 14-16, April, Annual Number.

Roy, B C and Suresh Pal (2002): 'Investment, Agricultural Productivity and Rural Poverty in India: A State-Level Analysis', *Indian Journal of Agricultural Economics*, Vol 57, No 4, October-December.

Serven, Luis (1996): *Does Public Capital Crowds Out Private Capital? Evidence from India*, Policy Research Working Paper No 1613, World Bank, Washington, DC.

Shetty, S L (2001): 'Reviving the Economy: Some Explorations', *Economic and Political Weekly*, Vol 36, No 30, July 28.

Srinivasan, T N (1993): 'Demand Deficiency and Indian Industrial Development' in Pranab Bardhan et al (ed), *Development and Change: Essays in Honour of K N Raj*, Oxford University Press, Delhi.

Weiss, John (2002): *Industrialisation and Globalisation: Theory and Evidence from Developing Countries*, Routledge, London.