Growth and Distribution in Indian Industry in the Nineties

In a study of the evolution of the Indian manufacturing sector over close to three decades we find the annual average rate of growth in the nineties to have risen almost across the board at the two-digit level of industry. Nevertheless, the acceleration is not particularly impressive for what is often hailed as the most significant policy-regime shift since 1950. There is a hefty rise in investment, however, though without a corresponding increase in its efficiency. And distribution has shifted sharply with labour's share declining. This paper attempts to link these developments in a coherent way.

PULAPRE BALAKRISHNAN, M SURESH BABU

This paper investigates the trajectory of growth and its relationship to distribution in Indian industry in the 1990s. Indeed it proposes a link between these two aspects of the industrial economy as it evolved during the period.

By any reckoning, the nineties represent a significant development in the recent economic history of India. Even though some moves in the direction of the liberalisation of the external sector of the economy had been made in the early eighties, 1991 constitutes a rupture more significant than any other in the half century since the commencement in 1950 of the project of industrialising the country. From a conceptual point of view, i e, whatever may have been the legislative aspect, the regime shift involved a two-pronged thrust: via trade liberalisation it represented an effort to integrate India with the rest of the world, even though the precise consequence and the associated mechanism may never have been spelt out; and via abolition of industrial licensing and the rescinding of the MRTP Act it aimed at giving a much greater role to the private sector in industrial development of the economy. We are interested in the consequences of this policy shift albeit at a certain level of aggregation. Further, as we intend to provide a panoramic view, some of the specificities, it may be found, are ignored. Above all, we seek the trend ignoring fluctuations. And there is no reference to geography, which is increasingly, and legitimately, emerging as an issue when the topic of industrial development in India is brought up.

The analysis of industrial development has a long history among Indian economists. It does bear clarification we believe that the prolonged debate on the topic in the seventies had focused on the stagnation since the mid-sixties and tended to highlight the likely role of demand. Well before this though, Bhagwati and Desai (1970) had drawn attention to the likely consequence of the policy regime for Indian industrialisation. Their arguments regarding a less dirigiste regime were largely theoretically inspired. Two decades later, in the nineties, there appears to be a return to this concern in the papers of Kelkar and Kumar (1990), Nagaraj (1990) and Mohan and Agarwal (1993). However, now

the consequences of liberalisation needed no longer to be merely speculated upon, they could actually be empirically evaluated, for a move towards liberalisation had occurred. Even though, in these papers, the authors study a period prior to 1991 our own short paper falls within the ambit of their motivation, which is to empirically evaluate the change in the policy regime. However, it differs a little from these much-cited papers in that it suggests a role for the distribution of income, in the particular from of the profit rate, in influencing industrial development. Of course, in doing so, we are only retrieving a long-standing tradition in economics, now under some threat of neglect, which posits distribution as a factor determining the dynamics of the economic system. Turning to the theoretical literature to us appears of little use for, with the exception of the Cambridge[1] growth models of the late fifties, half a century of growth theory from Solow to Romer is silent on the likely role of distribution. We find this surprising, for the rate of profit appears to us central to what drives entrepreneurs or their late-capitalist avatar, the corporation. From the pressure on the developing economies for market access to the assertion of intellectual property rights on a global scale, we see the rate of return on capital as the motive driving contemporary capitalism. Among the economists studying India, we can think only of Ashok Mitra[2] as emphasising the role of profits in determining the course of industrial development.

A concern with the rate of profit is neutral over a range of policy prescriptions so long as one is addressing a market economy. As an example consider that an industrialisation project, whether based on import substitution or export promotion, could fail on account of poor returns to private capital. (We assume of course that the state does not have the wherewithal – resources and manoeuvrability – to go it single-handedly.) For instance, we find the exhortation to unilateral trade liberalisation ambiguous with respect to the final outcome. Where a country's imports are largely intermediate inputs trade liberalisation would unambiguously raise the rate of profit of those industries dependent upon such imports. However, where imports compete with domestic

industry, trade liberalisation can lead to higher profits only if there is an accompanying increase in productivity. While such an outcome cannot be ruled out, it does bear the burden of the implication that firms were not minimising costs (ergo maximising proftis) to start with. But why this concern with the profit rate? We believe the profit rate to be important, for fresh investment in the same line of production does depend upon a rise in the rate of profit. For firms entering into a line of activity hitherto closed to them, but now made open due to a policy-regime shift, no such increase in the rate of profit is necessary as incentive to invest. Entry may simply follow from the removal of barriers, so long as the relative rate of return is attractive enough relative to opportunities elsewhere in the economy. Such entry is of course more likely in the case of the abolition of licensing or the removal of specific entry barriers, say 'de-reservation' of the small sector in India or 'deregulation' of the US airline industry, rather than in the case of unilateral trade liberalisation. However, here again, we could conceive of instances such as an hitherto scarce input being made freely importable after the removal of quantitative restrictions on trade. Altogether then, we find much of the policy advice to developing economies after the eighties a little obtuse in their treatment of the link between regime-liberalisation and growth. We believe that the necessary links in the chain would be – in the absence of disembodied technical progress – the share of output devoted to investment and the rate of profit. Two dimensions of profit appear here, for profit has a dual role within the system: the rate of profit governs the incentive to invest while the share of output provides the firm with the capability to devote a larger share of output to investment, thus raising the rate of growth.

Therefore of prime interest to us in our investigation is the relation between output growth, investment and profitability. However, in addition we provide evidence on employment, productivity, and a host of distributional indicators other than profits, ranging from the product wage to the share of wages in value added. On the whole, we believe we are able to provide a broad and consistent characterisation of industrial development in the nineties. Our concerns lead us to arrange the analysis under the rubrics Output, Employment, Productivity; Profits and Investment; and Wages and the Distribution of Income.

Even though in a detailed Appendix below we discuss the data, we would like to highlight one aspect right away. We use data from the Annual Survey of Industries. A change in the Survey's classification scheme is effected for the years 1998-99 onward. In this study we consider the period up to 2000, the maximum feasible at the time when we had embarked upon it. The data has been harmonised, by a procedure discussed in the Appendix, enabling the production of a continuous time series. As far as we are aware, this is the first use of a harmonised industrial-sector data series extending continuously from 1973 up to 2000. Apart from starting early it enables us to study a longer period into the reforms initiated in 1991. Essentially, a harmonised series has the implication that we are now free to study a variable's growth across time avoiding dependence upon a discontinuous time series, a problem especially encountered when working with the Index of Industrial Production, the composition of which has undergone fairly regular revision over the close to three decades considered here. In this article, we study the entire manufacturing sector at the two-digit level of disaggregation. The 18 industry groups to be found at the two-digit level have been rationalised by us to 15. The recombination is apparent in the presentation

of the data, for which see the tables. Details and implications are discussed in the Appendix.

I
Output, Employment and Productivity

Notice from Table 1 that the annual average rate of growth of output, here measured by gross production, shows an increase in the period since 1991. We might mention at the outset that this generic result is unaffected either by the choice of output measure – i e, whether gross production or value added or even when the Index of Industrial Production is used – or the base of the price index used for deflation of the nominal values, though the rate of increase does vary from case to case. Mostly in this paper we work with gross production as the output measure, considering it to be the appropriate variable when it comes to ascertaining the employment response, productivity growth or the behaviour of profits, all at a level lower than that of the economy as a whole.

The higher growth since 1991 is a feature across the manufacturing sector with only four out of 15 groups registering a deceleration, two of these amounting only to a marginal slowing. However, clearly an inter-industry differential does exist in the rate of acceleration. Even as this must elicit calls for an expla-

Table 1: Output
(Annual average rate of growth)

Industry	1973-74 to 1990-91	1991-92 to 1999-2000
Food Products (20-21)	5.82	7.23
Beverages and Tobacco (22)	5.32	6.27
Textiles (23+24+25)	4.99	4.62
Textile Products (26)	10.62	14.43
Wood and Wood Products (27)	2.66	7.94
Paper and Paper Products (28)	5.27	5.34
Leather and Leather Products (29)	6.59	6.36
Chemicals and Chemical Products (30)	8.52	7.41
Rubber, Plastic and Petroleum Products (31)	9.64	5.52
Non-Metallic Minerals (32)	8.76	7.20
Basic Metals and Alloys (33)	6.69	6.86
Metal Products (34)	4.41	9.41
Machinery (35+36)	8.04	8.41
Transport Equipment and Parts (37)	7.36	10.86
Other Manufacturing Industries (38)	11.99	18.72
All Manufacturing	7.16	8.29

Table 2: Employment
(Annual average rate of growth)

Industry	1973-74 to 1990-91	1991-92 to 1999-2000
Food Products (20-21)	0.39	1.49
Beverages and Tobacco (22)	4.31	0.72
Textiles (23+24+25)	-0.86	-0.93
Textile Products (26)	4.40	10.91
Wood and Wood Products (27)	-0.49	3.92
Paper and Paper Products (28)	0.75	-0.24
Leather and Leather Products (29)	5.49	1.54
Chemicals and Chemical Products (30)	3.07	3.96
Rubber, Plastic and Petroleum Products (31)	4.17	3.65
Non-Metallic Minerals (32)	2.99	-0.27
Basic Metals and Alloys (33)	2.23	0.81
Metal Products (34)	1.10	2.09
Machinery (35+36)	1.73	1.28
Transport Equipment and Parts (37)	1.85	0.55
Other Manufacturing Industries (38)	1.76	7.55
All Manufacturing	1.28	1.51

nation, we do not attempt one here for a more overarching account of industrial performance and development is our concern in this paper. On the latter track, it may be mentioned that the acceleration in output growth following the single most important policy-regime shift in India since 1950 has not been dramatic.

We might mention in passing that the estimated rate of growth of output was statistically significant at the 5 per cent level in the case of 11 of the 15 individual industry groups and for manufacturing as a whole. However, to leave the picture uncluttered we do not report the results in the table. Further, while it is customary to test for a change in the trend or annual average growth rate since 1991, we have resisted the practice as the number of observations on either side of the break point are so unequal as to make for a low power of any such test. The practice is retained on all subsequent occasions of data analysis in this paper.

The behaviour of employment growth is usually a matter of interest second only to that of output. The data are presented in Table 2. As in the case of output we find an increase in the growth of employment since 1991. However, the acceleration in employment growth is even less pronounced than that of output growth. Moreover, unlike in the case of output there is substantial inter-industry divergence. Actually, there is slower growth in the case of nine groups, making for a majority. The higher growth rate overall is only due to rapid acceleration in certain industries. There is a decline in employment in one-fifth of the total number of industry groups. However, the so-called puzzle of 'jobless growth' – often spoken of in the context of industrial development in the eighties – does not present itself to us. For instance, the cases of decline in employment are confined to the industries where output growth has slowed. Indeed, viewed alongside output growth, the estimates of employment growth in the nineties appear quite credible for we believe that, in the short run, the relation between output and employment at the sectoral level in a market economy tends to be robust, i e, we would expect a positive elasticity of employment with respect to production.

Productivity growth is often scrutinised with a view to accounting for profits. This is, of course, unexceptionable. However, it tends to get overlooked that at least some part of productivity growth is structural in the sense of being determined along with the rate of growth of output and employment, being part of the so-called 'dynamic' economies of scale that Kaldor was prone to speak of as characteristic of manufacturing. This is with respect to labour productivity. There is capital productivity too of course. Annual average growth in labour productivity and the average annual incremental capital-output ratio (ICOR) are presented in Tables 3 and 4, respectively. The faster growth in labour productivity overall is widely spread across manufacturing with about one-third of the industries showing a deceleration. Those interested in economic relationships per se may wish to note that it broadly follows the change in output growth, suggesting that the Verdoorn Effect may well be a feature of Indian industry. with productivity having a structural component not always amenable to managerial effort, being a part of the external effects of faster growth. Whatever may be the underlying cause though. the almost across-the-board increase in labour productivity growth is a notable feature of the period that we are studying. Turning to the incremental capital-output ratio the picture is less rosy. however. Though not as pervasive as the increase in labour

productivity growth, the ICOR has increased pretty much across all the groups and, therefore, not surprisingly for the industrial sector as a whole for the period after 1991. So long as there are significant gestation lags, an increase in the ICOR cannot always be interpreted as worsening efficiency of capital use. However, we might mention that in this study the ICOR reported for each

Table 3: Labour Productivity
(Annual average rate of growth)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	5.42	5.74
Beverages and Tobacco (22)	1.00	5.54
Textiles (23+24+25)	5.86	5.55
Textile Products (26)	6.22	3.50
Wood and Wood Products (27)	3.15	4.01
Paper and Paper Products (28)	4.53	5.60
Leather and Leather Products (29)	1.10	4.84
Chemicals and Chemical Products (30)	5.45	3.44
Rubber, Plastic and Petroleum Products (31)	5.47	1.87
Non-Metallic Minerals (32)	5.77	7.48
Basic Metals and Alloys (33)	4.46	6.06
Metal Products (34)	3.30	7.31
Machinery (35+36)	6.30	7.12
Transport Equipment and Parts (37)	5.51	10.31
Other Manufacturing Industries (38)	10.22	11.21
All Manufacturing	5.87	6.78

Table 4: Incremental Capital-Output Ratio
(Average annual ICOR)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	0.29	0.42
Beverages and Tobacco (22)	0.30	0.81
Textiles (23+24+25)	0.62	1.64
Textile Products (26)	0.24	0.30
Wood and Wood Products (27)	0.67	0.45
Paper and Paper Products (28)	0.92	1.81
Leather and Leather Products (29)	0.29	0.49
Chemicals and Chemical Products (30)	0.74	1.11
Rubber, Plastic and Petroleum Products (31)	0.31	0.60
Non-Metallic Minerals (32)	0.96	2.09
Basic Metals and Alloys (33)	1.04	1.69
Metal Products (34)	0.45	0.49
Machinery (35+36)	0.39	0.48
Transport Equipment and Parts (37)	0.71	0.60
Other Manufacturing Industries (38)	0.45	0.21
All Manufacturing	0.57	0.84

Table 5: Investment Ratio
(Average annual ratio)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	0.02	0.03
Beverages and Tobacco (22)	0.02	0.05
Textiles (23+24+25)	0.03	0.08
Textile Products (26)	0.03	0.04
Wood and Wood Products (27)	0.02	0.04
Paper and Paper Products (28)	0.05	0.10
Leather and Leather Products (29)	0.02	0.03
Chemicals and Chemical Products (30)	0.06	0.08
Rubber, Plastic and Petroleum Products (31)	0.03	0.03
Non-Metallic Minerals (32)	0.08	0.15
Basic Metals and Alloys (33)	0.07	0.12
Metal Products (34)	0.02	0.05
Machinery (35+36)	0.03	0.04
Transport Equipment and Parts (37)	0.05	0.07
Other Manufacturing Industries (38)	0.05	0.04
All Manufacturing	0.04	0.07

decade is the average of annual estimates, implying that the possibly lagged effect is not left out altogether. Therefore it would not be entirely inappropriate as commentary that, given the behaviour of the ICOR, industrial development in the nineties may not have been particularly efficient.[3] It is interesting to note that a *declining* ICOR following trade liberalisation is an explicit prediction[4] in the work of Anne Krueger who has for long championed outward orientation as a strategy for the developing economies. Of course, a final picture on the efficiency of resource use rests on the behaviour of total factor productivity the estimation of which we do not embark upon here. It may be noted in passing though that if there is an unanimity[5] among researchers – often in face of the apparent predilections of some – on any one aspect of the nineties it is on the decline in the rate of growth of total factor productivity in Indian manufacturing. Readers may also note when reading Table 4 that we have calculated the ICOR using the change in output, as opposed to value added, making for estimates of commensurately smaller magnitude than found by some other authors.

II
Profits and Investment

Having noticed an increase in the rate of growth we are, naturally, interested in seeking its source. There is a long tradition of the 'sources of growth' approach in economics. Emerging out of Dennison's work on the US it has finally got focused[6] on the recent history of east Asia. Within its growth-accounting framework we are able to decompose, having appealed to some restrictive assumptions, output growth into the growth in inputs and the growth in their productivity. Were the growth in income to be measured in per capita terms, total growth may be decomposed into the growth in the (per capita) stock of capital – which is investment – and productivity. As mentioned, there is evidence of declining total factor productivity growth in the nineties. Therefore, in this paper we look at the behaviour of the investment ratio, that is investment as a share of income. Data on the investment ratio in Indian industry is presented in Table 5. Notice that after 1991 the share of investment has risen pretty much across the board within manufacturing. In the aggregate the increase is over 75 per cent; for some groups it exceeds 100 per cent. In our view, the rise in the share of investment is an indicator of the supply response of firms to the economic reforms, reflecting a certain confidence on their part in the future of manufacturing in India.

While we remain convinced of the importance of 'animal spirits', acting to make investment an autonomous factor in macroeconomics, we believe that sustained investment cannot really be divorced from profits in any meaningful way. So we turn to look at the behaviour of profits. We look at three measures, meant to convey different roles of this variable. First we look at the profit share, or the ratio of profits to income. Next we look at profitability measured by the rate of profit and the gross margin. Profits, defined in either of these ways, may be expected to directly impinge upon the dynamics of the system. First, so long as investment is contingent upon finance, profits as retained earnings of firms remain a source of investible funds. While a firm has several sources of finance in principle, there is some evidence that firms in India fund investment from profits. The share of profit in income then becomes a measure of the firm's capacity to make investment outlays. This measure for Indian

manufacturing is presented in Table 6. Find that the increase in the share of profits in the aggregate is matched by an increase for the majority of industry groups, declining marginally in the case of only two. A consistency check on our estimates is provided by our estimates of the gross margin, presented in Table 7. Find

Table 6: Profit Share
(Average annual share)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	0.06	0.07
Beverages and Tobacco (22)	0.14	0.19
Textiles (23+24+25)	0.08	0.07
Textile Products (26)	0.10	0.15
Wood and Wood Products (27)	0.11	0.12
Paper and Paper Products (28)	0.12	0.12
Leather and Leather Products (29)	0.06	0.10
Chemicals and Chemical Products (30)	0.13	0.17
Rubber, Plastic and Petroleum Products (31)	0.08	0.12
Non-Metallic Minerals (32)	0.13	0.15
Basic Metals and Alloys (33)	0.09	0.12
Metal Products (34)	0.12	0.11
Machinery (35+36)	0.14	0.14
Transport Equipment and Parts (37)	0.10	0.11
Other Manufacturing Industries (38)	0.15	0.15
All Manufacturing	0.10	0.12

Table 7: Gross Margin
(Average annual percentage margin)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	7.66	8.89
Beverages and Tobacco (22)	15.51	21.32
Textiles (23+24+25)	10.58	11.45
Textile Products (26)	11.15	17.61
Wood and Wood Products (27)	13.55	15.54
Paper and Paper Products (28)	16.57	16.31
Leather and Leather Products (29)	7.71	12.47
Chemicals and Chemical Products (30)	17.27	21.62
Rubber, Plastic and Petroleum Products (31)	10.48	14.19
Non-Metallic Minerals (32)	18.16	21.60
Basic Metals and Alloys (33)	13.09	16.15
Metal Products (34)	14.21	13.82
Machinery (35+36)	16.41	16.84
Transport Equipment and Parts (37)	13.81	14.71
Other Manufacturing Industries (38)	18.38	17.23
All Manufacturing	12.99	15.50

Table 8: Rate of Profit
(Average annual rate)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	20.20	17.54
Beverages and Tobacco (22)	62.44	63.97
Textiles (23+24+25)	1.89	-1.10
Textile Products (26)	46.00	61.74
Wood and Wood Products (27)	21.80	13.85
Paper and Paper Products (28)	5.37	8.70
Leather and Leather Products (29)	14.10	35.23
Chemicals and Chemical Products (30)	12.39	18.22
Rubber, Plastic and Petroleum Products (31)	32.40	24.51
Non-Metallic Minerals (32)	11.88	7.67
Basic Metals and Alloys (33)	4.57	5.25
Metal Products (34)	23.54	11.18
Machinery (35+36)	27.62	25.70
Transport Equipment and Parts (37)	11.41	17.62
Other Manufacturing Industries (38)	35.06	36.10
All Manufacturing	13.06	13.93

that the margin has increased in 13 out of the 15 groups, and, as may be expected therefore, in the aggregate.

While by now we seem to have a lead on how the substantial increase in investment was financed, the capacity to invest can only be part of the explanation of the ramping up of investment itself. The decision to commit funds as fixed capital is usually based on some consideration of the profitability of investment. While in economic theory this tends to get identified with an expected rate of profit, we believe that for periods as long as a decade, as considered here, the measured rate of profit is a good indicator of what firms actually expect on their investment, or put in another way, expectations may be expected to have caught up with reality. Our estimate of the rate of profit is presented in Table 8. We have a couple of observations to make. First, overall the rate shows only a marginal increase. Second, there is wide inter-industry divergence in the behaviour of profits with swings in both directions noticeable in the period since the onset of reforms in 1991. Nevertheless, though by a wafer-thin margin, there is a rise in profitability in the majority of industries. We clarify that the data as presented is only for the period from 1980-81 for ASI data on profits is available for periods dating only from then on. The ASI's profit figure being 'after depreciation and interest' is superior, in our view, to a researcher's estimates from ASI data for that would perforce include interest. ASI do not provide separate data on 'interest paid' for the period prior to 1980-81.

We have focused on the rate of profit as an indicator of the incentive to invest. While we may say that 'overall' the behaviour of the rate of profit is not entirely out of synch with the rise in investment, we must acknowledge that the rise in the rate of profit is modest in relation to the burden of the explanation being proffered. We are not entirely clueless in the face of what we set out to explain though. First, an increase in the equilibrium rate of profit is not necessary to explain investment induced by fresh entry as opposed to capacity expansion in a regime of unimpeded entry. Secondly, there can be no denying that firms may well have horizons longer than what is construed in our focus here on the nine-year period since 1991 for which alone data is currently available. And, finally, the actual increase in the rate of profit in the nineties is likely to be underestimated by the figures in Table 8 once taxation is taken into account. The corporate tax rate in India has declined since 1991.

Apart from the trend in the rate of profit being a reflection of the evolution of the incentive to invest over time, the estimates in Table 8 invite two other comments. First, the rate of profit is quite high in Indian industry by international standards.[7] Secondly, the fact of even a small increase in the rate of profit is at odds with the preconception of textbook economics that a more competitive market structure lowers profits. From such a point of view, the precise role of economic reforms in altering market structure in Indian industry remains an open issue.

III
Wages and Distribution of Income

Distribution may interest us because our model predicts that it effects the dynamics of the system, the trajectory of output, for instance. Indeed from the data presented in Section II above we had surmised that a rising profit share and an increasing rate of profit may well underlie the rise in investment in the nineties. We now approach the matter from the normative point of view

and examine the behaviour of both a series of wage indicators and also the share of wages in income. We make a point in advance. While all parties may be made better off as a result of the implementation of a fresh plan, it is still entirely conceivable that not all parties benefit from it equally. This relative gain is often a source of interest in studies of the consequence of a shift in economic policy, with the parties commonly referred to as 'winners' and 'losers', respectively, according to how they have fared. That is, we now turn to an examination of the pure distributional consequence of the change in the policy regime.

We look first at the trend in the wage per worker, presented in Table 9. There is a pattern for manufacturing as a whole, which is one of a rising wage rate, so to say, but at a slower rate. Only two industries show a deviation from this rigid pattern, with a substantially faster wage growth after 1991.

We would expect some surprise being evoked at a focus on the *money* wage rate. However, this can only be based upon a resolute acceptance of the classical postulate that the labour supply function is in real terms, rationalised as the absence of money illusion. If this were to be treated as an axiom, so far so good. However, we may query its universal relevance. For instance, where the product market is oligopolistic, firms possess market power. We may then conceive of a situation[8] whereby firms and workers first bargain over the money wage

Table 9: Money Wage Rate
(Annual average rate of growth)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	13.29	9.12
Beverages and Tobacco (22)	10.67	9.18
Textiles (23+24+25)	9.87	7.52
Textile Products (26)	9.42	8.51
Wood and Wood Products (27)	10.56	16.29
Paper and Paper Products (28)	10.70	8.08
Leather and Leather Products (29)	8.39	7.71
Chemicals and Chemical Products (30)	11.03	7.70
Rubber, Plastic and Petroleum Products (31)	10.49	8.78
Non-Metallic Minerals (32)	9.97	9.73
Basic Metals and Alloys (33)	9.92	13.61
Metal Products (34)	10.80	7.88
Machinery (35+36)	10.96	8.90
Transport Equipment and Parts (37)	11.09	8.58
Other Manufacturing Industries (38)	10.56	9.32
All Manufacturing	10.63	9.03

Table 10: Product Wage
(Annual average rate of growth)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	6.14	1.50
Beverages and Tobacco (22)	3.48	0.18
Textiles (23+24+25)	4.23	0.39
Textile Products (26)	4.81	3.83
Wood and Wood Products (27)	1.92	0.15
Paper and Paper Products (28)	2.02	1.16
Leather and Leather Products (29)	-0.08	1.68
Chemicals and Chemical Products (30)	4.78	-0.18
Rubber, Plastic and Petroleum Products (31)	2.02	-0.98
Non-Metallic Minerals (32)	2.47	4.18
Basic Metals and Alloys (33)	0.89	7.74
Metal Products (34)	2.29	3.44
Machinery (35+36)	4.36	4.09
Transport Equipment and Parts (37)	2.96	3.35
Other Manufacturing Industries (38)	7.22	4.92
All Manufacturing	3.52	2.91

and profit-maximising firms mark-up direct cost, constrained only by the elasticity of demand. Now, the behaviour of the money wage may be seen as a reflection of the shifting power of workers vis-à-vis capital. Indeed when the trend in the money wage in the nineties is seen alongside a generally slowing growth of the product wage, presented in Table 10, we may interpret it as reflecting a weakening of the power of labour.

Nevertheless, the data also force the conclusion upon us that if class struggle can be read off from wage-price skirmishes alone, in the era of economic reforms in India the workers appear to be winning yet! However, this may be a premature conclusion. For a truer picture we turn to that measure of distribution pure, the share of wages in value added. This data are presented in Table 11. We find a decline in the share of wages across the entire manufacturing sector at the two-digit level. There can no longer be any doubt that since 1991 – alongside the higher rate of growth and the improvement in productivity – there has been a relative shift of income away from workers towards profit earners.

A resolution of the seeming paradox of a rising product wage coexisting with a declining share of labour is lurking in our commentary thus far. Productivity has grown faster in the nineties exactly when the product-wage growth has slowed. Quite simply, the increase in productivity has not been passed on as higher product wages, leading to a decline in the share of labour. (As a corollary, labour cost would decline too, as they have for Indian industry in this period. We do not consider it necessary to present the evidence of this having happened here.)

While the product wage does serve at least as a rudimentary index of labour power, in any framework other than the workhorse one-good model of macroeconomics it would remain a poor indicator of the workers' standard of living. To get a handle on this we would need to measure the observed trend in the money wage relative to changes in the cost of living. The annual average change in a measure of the real wage – taken as the money-wage rate deflated by the consumer price index for industrial workers, representing the cost of living for India's workers – is presented in Table 12. Though, overall, the real wage shows a constancy, it has declined in close to half the industries. This is in marked contrast to the period prior to 1991 when a high growth in real wages may be observed across the manufacturing sector. What this points to is that in situations where workers consume goods other than the ones that they produce their welfare is directly affected by the prices of these other goods. The factor underlying the decline in the real wages of India's industrial workers in the nineties is not far to seek. To a large extent this deterioration in their living standard is very likely linked to the rise in the relative price of foodgrains, which in itself can[9] be linked to the hike in the procurement price of these commodities. Thus given the political economy of government intervention in India, even successful efforts of the workers to improve their position at the work site, via a rising product wage, may be frustrated due to a state acting on behalf of the surplus farmers. While a rising product wage might imply that they are winning the battle for higher living standards it cannot ensure that they will win the war. A near stagnant real wage also points to the likelihood of demand for lower-order consumer goods not having grown as fast as it would have otherwise. This has implications for why industrial growth is sputtering by the end of the decade of the nineties, an important feature yet beyond the purview of this article.

Conclusion

Since the beginning of the shift in India's trade and industrial policy regime in the eighties there has been a consuming interest in the response of the industrial economy to that change. Not all of the assessment has always been objective, so to say, with ample doses of rhetoric often employed to bolster[10] preferred visions of the outcome. We believe that, by comparison, the pre-theoretic approach adopted by us in this paper is a little less beholden to the categories intrinsic to a theory.

In our study we have found that there is a faster rate of growth of output across manufacturing since 1991, but then this is by no means dramatic. As we would have expected, there is also a rise in employment, though perhaps not commensurate with the increase in the rate of growth of output. However, suggestions of a jobless growth, often expressed, appear exaggerated. Principal among the proximate causes of output growth in the nineties has been investment, with the share of investment in output having increased very substantially overall and pretty much across the board in Indian manufacturing. To the extent that the share of investment reflects response to a regime change, the rise in its share signals the success of reforms in energising the supply side of the economy. However, the quite significant rise in investment does not represent animal spirits alone. There is a rise in the rate of profit, though marginal, which provided the

Table 11: Distribution – Share of Wages
(Annual average share)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	23.46	18.88
Beverages and Tobacco (22)	26.98	19.52
Textiles (23+24+25)	46.04	32.52
Textile Products (26)	26.86	17.07
Wood and Wood Products (27)	29.96	23.62
Paper and Paper Products (28)	29.01	21.50
Leather and Leather Products (29)	34.76	21.02
Chemicals and Chemical Products (30)	14.60	9.78
Rubber, Plastic and Petroleum Products (31)	13.68	9.87
Non-Metallic Minerals (32)	25.32	15.49
Basic Metals and Alloys (33)	26.61	15.88
Metal Products (34)	27.94	21.92
Machinery (35+36)	22.37	16.52
Transport Equipment and Parts (37)	34.14	23.24
Other Manufacturing Industries (38)	26.33	16.99
All Manufacturing	26.59	17.20

Table 12: Real Wages
(Annual average rate of growth)

Industry	1973-74 to 1990-91	1991-92 to 1999-00
Food Products (20-21)	5.64	0.47
Beverages and Tobacco (22)	3.02	0.52
Textiles (23+24+25)	2.23	-1.14
Textile Products (26)	1.78	-0.14
Wood and Wood Products (27)	2.93	7.63
Paper and Paper Products (28)	3.05	-0.57
Leather and Leather Products (29)	0.75	-0.95
Chemicals and Chemical Products (30)	3.38	-0.96
Rubber, Plastic and Petroleum Products (31)	2.85	0.13
Non-Metallic Minerals (32)	2.32	1.07
Basic Metals and Alloys (33)	2.28	4.96
Metal Products (34)	3.16	-0.77
Machinery (35+36)	3.31	0.25
Transport Equipment and Parts (37)	3.45	-0.08
Other Manufacturing Industries (38)	2.93	0.67
All Manufacturing	2.99	0.37

incentive to invest via a higher return on capital. An increase in the share of profit has eased the financing constraint for firms, a factor tending to being overlooked, even as it remains crucial for investment is contingent on finance. Distribution as the share of profits in output enters the growth dynamic in this way. However, we have also investigated distribution from the perspective of the allocation of the gains from the change in the policy regime since 1991. Within manufacturing capital has gained. Even labour's gains in terms of a rising product wage have been extinguished by a state intervening on behalf of the surplus farmers.

We are struck by the closeness of the picture emerging from our study to that envisaged in the version of the Cambridge growth model developed by Kaldor where faster growth driven by a higher share of investment is financed *automatically* by rising profits. However, we wish not to push the analogy as growth theory mostly works with one-good models of a closed economy. The industrial economy of India is not self-contained in this way, being on the contrary, in constant interaction with the rest of the economy and via trade with the rest of the world. Nevertheless, we believe that we have identified the main ingredients of industrial development in the India since the initiation of reforms in 1991.

Appendix

I The Data Base

As the analysis spans over three decades we needed to ensure the consistency of different series over time. To examine the issues of interest to us, the data has been drawn from the Annual Survey of Industries (ASI) published by the CSO. For the period up to 1997-98 we have we have used the data as published in 'Annual Survey of Industries: A Data Base on the Industrial Sector in India', *EPW* Research Foundation, Mumbai, 2002. For the subsequent years the data has been taken from the respective volumes of the ASI itself. Suitable deflators have been applied to derive trends adjusted for price changes.

Our analysis of industrial sector is for the registered segment of India's manufacturing sector. This implies the exclusion of unregistered manufacturing activity along with generation of electricity, the provision of water supply and repair services, all of which count as industry. The entire manufacturing sector is analysed at the two-digit level of disaggregation. For want of suitable price deflators we have clubbed together some of the industries at the two-digit level leaving us with 15 industry groups for analysis. The precise details are as follows: Manufacture of Cotton Textiles (23) + Manufacture of Wool, Silk and Man-made Fibre Textiles (24) + Manufacture of Jute and Other Vegetable Fibre Textiles (except cotton) (25) make up the 'Textiles' of our analysis while Manufacture of Electrical Machinery (35) + Manufacture of Non-Electrical Machinery (36) make up the group 'Machinery'. We believe that the loss of information due to this rationalisation is minimal, and in any case irrelevant to our concerns here. Note that 'Food Products' which is the combination of groups numbered 20 and 21 is as chosen by the ASI itself.

The ASI's classification of industries at the two-digit level rests on the National Industrial Classification (NIC). Until 1997-98 the ASI data was organised according to the NIC 1987 classification, since then the NIC 1998 classification has been

followed. To arrive at a consistent data set at the two-digit level we have used a concordance table published by the CSO to reclassify the data for the years 1998-99 and 1999-2000 according NIC 1987 code. The table is re-produced below. Readers may wish to know that even though some of the fastest growing segments such as software are by now recorded separately at the two-digit level, under the NIC 1998 it had been included under 'Non-Electrical Machinery'. As, in this study we work with NIC 1987 it is included under 'Machinery'. This does not concern us particularly as we do not extend any special significance to this component of Indian manufacturing.

II The Variables

Output: Value of output deflated by the wholesale price index for manufacturing in the aggregate and the corresponding price indices for each industry group. The price index base 1993-94 = 100 has been used throughout.
Employment: Number of workers.
Labour productivity: Value of (real) output per worker.
ICOR: Fixed capital was treated as the measure of capital, and thus annual changes in which yield investment. Investment was deflated by the wholesale price index for 'machinery and machine tools' base 1993-94 = 100. The ICOR was then estimated as the average annual investment ratio for each period divided by the annual average growth of output for that period.
Investment ratio: Investment, calculated as above, as a percentage of real output.
Profit share: Value added less depreciation and total emoluments as a share of output.
Rate of profit: Profits as a percentage of the book value of fixed capital. 'Profits' here is net of depreciation, rent and interest.
Gross margin: Output less total emoluments and the value of inputs expressed as a percentage of output.
Money wage: Wage per worker.
Product wage: The money wage deflated by the corresponding product price index.
Distribution: Wages as a percentage of value added.
Real wages: Money wage deflated by the 'consumer price index for industrial workers' base 1982-83 = 100.
The source for deflators is 'Index Numbers of Wholesale Prices in India', Ministry of Industry, Government of India.

III The Concordance Table

NIC 1987 code	NIC 1998 code
20-21	151 + 152 + 153 + 154
22	155+16
23+ 24 + 25	171
26	172 + 173 + 181
27	20+361
28	21+22
29	182+19
30	24
31	23 + 25
32	26
33	27 + 371
34	2811 + 2812 + 289
35-36	2813 + 29 +30 +31+ 32
37	34 + 35
38	33 + 369
39	725

Source: 'National Industrial Classification', Central Statistical Organisation.

Ministry of Planning and Programme Implementation, Government of India, New Delhi 1998. [EPW]

Address for correspondence:
balan@iimk.ac.in
sureshbabu@cds.ac.in

Notes

1 See Kaldor (1958).
2 See Mitra (1978).
3 For earlier evidence on deteriorating ICORs in the nineties see Soman (2001).
4 See Krueger (1998), p 1518.
5 See Goldar (2002).
6 See Nelson and Pack (1999).
7 See Brahmananda (2001).
8 See Hahn and Solow (1997).
9 See Balakrishnan (2000).
10 See Jain (1993) and Chakraborty (2002), respectively, for a critical review of some prominent assessments of economic performance in Indian in the eighties and nineties.

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