MODERN SMALL INDUSTRY IN KERALA
- A review of structural change and growth performance -

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Introduction.

The process of liberalization as part of structural reforms in the management of the economy is getting entrenched in India. At the same time, there is the lurking concern in some quarters about negative tendencies that may set in especially with regard to equity as a result of minimizing the economic role of the government and indiscriminately relying upon free market mechanism for resource allocation. For example, locational decisions guided by market forces per se may have a tendency towards aggravating the spatial concentration of industrial activities and thereby increasing the disparity in development across regions in the country. The situation necessitates each regional government to take independent measures for accelerating the growth of industrial investment in the respective regions[1].

The increasing importance of regional policies in India is manifest in the increasing inter-state competition in offering fiscal concessions and other incentives for attracting national industrial capital to specific regions. Another policy-strategy, which is more complementary than competitive to the first, lies in the promotion of modern small scale industries (hereafter called small industry). The growth of this sector besides

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resulting in preponderance of self-employment and wider dispersal of industrial and economic activities ensures maxim exploitation of latent local resources, both human and material

As stated in the Economic Survey of 1991-92, th ongoing economic reforms are introduced to "promote efficiency reduce the bias in favour of excessive capital intensity a encourage employment-oriented pattern of industrialization". I is, therefore, desirable to design and practice new poli strategies for inducing efficiency-based growth of the sma industry. A pre-requisite to such policy formulation is review the growth performance of the past and to take stock the current status of the small scale sector in order to uncov the efficiency parameters of each region as compared to all-Ind average and potentialy competing and neighbouring regions.

A meaningful analysis of the relative performance small industry at decentralized levels is now all the mo important than before. Also the focus of research now has move away from the old and to an extent overexploited area "large vs small" question and concentrate on issues related structural characteristics, organizational patterns and mark friendly policy strategies which would impart vitality and gro impetus to the small industry so as to maximize its contribut to employment, output and export. The statistical data requi for such studies are scanty; the feasibility can be explored examining the Report of the Second Census of Small Sc Industrial Units (covering units registered upto 31st March 19 recently published by the Development Commissioner, Small Sc Industries, Govt.of India. Although the census report (hereaf

thus called) does not directly give comparative statistics on growth and structural changes in the small industry in different state regions as between 1972-73 (reference period of first census) and 1987-88 (reference period of second census) and relative to all-India, it is possible to generate from it the required data.

Such an exercise may prove particulary useful in the case of Kerala, where the record of industrial growth has been relatively poor, the private investment in the large scale industrial sector has been low, and the prospect of attracting national capital in competition with other states is less promising but the scope for tapping some types of latent resources - skill and material - through the development of small industry is apparently large. Also, it must be noted that small industry in Kerala has so far remained a neglected area of research in economics[2] and hence, attempts to fill in the gaps should be encouraged. In that direction this paper collates some comparative statistics from the census and reviews structural change and growth performance of the small industry in Kerala[3].

In this paper the term small industry connotes the small scale units falling within the purview of the Small Scale Industries Board whether they are registered or not under the Factory Act,1948. The units have an upper investment limit[4] In this paper growth is measured in terms of changes between two time points in regard to such indicators as number of units, value of production (output), net value added (income) and employment. By structural change is meant the change in the pattern of distribution in the number of units, value of

production etc., by broad size-groups and product-groups. The focus of the study is on the relative performance of the small industry in Kerala as compared to counter-parts in other states and the aggregate at all-India.

Growth performance.

We could begin with the evaluation of the growth performance of the small industry by recording per centage changes between 1972-73 (first census) and 1987-88 (second census) in some selected growth indicators (table 1). Presumably growth in numbers was higher than for all-India, but its growth record in net-value addition and employment creation appeared awfully poor as compared to all-India. The point to point annual compound growth rate between 1972-73 and 1987-88 in Kerala was less than one half in value-added, and one third in employment generation at all-India. Naturally, Kerala's share in all India total declined in 1987-88 as compared to 1972-73 in respect of almost all the relevant growth indicators. Clearly, the tendency to depict Kerala's progress in the development of small scale industries by citing the number of units registered without noting their dis-proportionately poor contribution in terms of income and employment can be misleading: the proliferation in the number of units would project a mystifying index of the progress of small industry in Kerala.

Average size

The growth in number without commensurate growth in other indicators like investment, employment and value-added

(income) meant that the average size of small scale units declined over time. The tendency was found both in Kerala as well as all-India level. (see table 2). By 1987-88 the average size of Kerala units in terms of all the relevant indicators (except employment) was below all-India level whereas, it was higher in 1972-73 in terms of fixed investment and production. Perhaps, the higher average size in terms of employment in Kerala could be seen as a bright facet but the fact that the average size in terms of employment declined from 20 persons in 1972-73 to 7 persons in 1987-88 in Kerala as against corresponding figures of 12 and 6 respectively at all-India has to be noted. The more depressing feature was the decline in average size of units in terms of value of production (output).

Structural ratios.

When we consider the relative performance in terms of some standard structural ratios (see table 3) Kerala was found placed unfavorably in terms of the levels of some key ratios. In regard to capital productivity, output-capital ratio in Kerala was nearly one-half of the level at all India in 1987-88. The picture was equally dismal with regard to labour productivity: an employee in Kerala did not even account for one half of the value added being generated by his counterpart at all-India!

It could be argued in defence of Kerala labour that the level of fixed investment per labour was lower in 1987-88 (Rs.72800) than at all India level (Rs.79830). Conversely, one lakh rupee of fixed investment in small industry in 1986-87 generated more employment (13.85 persons) in Kerala than at all-

India (12.53 persons). Thus viewed, the small industry in Kerala scored a point over all-India in regard to labour-intensity. However, if we consider that the lower fixed investment per employee was accompanied by lowering of labour productivity in Kerala small industry, the inference of its relatively poor performance remained valid.

A close look at the picture in 1972-73 could trace the relative growth trend. While productivity of capital and labour each increased in varying measures between 1972-73 and 1987-88 at all India, the pattern of change showed a slightly different picture in Kerala. As for labour productivity, the rate of growth in output per employee in Kerala was lower than at all-India. The difference in the rate of growth was sharper with respect to net-valued added by employee. As for capital productivity, the ratio of value-added to fixed investment declined in Kerala as against a marginal increase at all India during the period under study. Clearly, rate of productivity growth (both capital productivity and labour productivity) was woefully poor in Kerala as compared to all-India between 1972-73 and 1987-88.

Growth performance in neighboring states

It is instructive to make comparison of the growth performance of Kerala with the neighboring states of Tamilnadu and Karnataka as reflected in select indicators. (see table 4) The growth of small industry was most remarkable in Karnataka. As a result, Karnataka's share in all-India total increased substantially in all the growth indicators. In particular, its shares in all-India output almost doubled whereas, the

corresponding shares of Tamilnadu and Kerala marked the decline.

With respect to employment the share of Karnataka almost doubled, that of Tamilnadu increased marginally and that of Kerala reduced by one half between 1972-73 and 1987-88. In absolute terms, the small industry remained at the highest level in Tamilnadu followed by Karnataka and Kerala in that order in south India. In terms of growth performance however, Karnataka scored over the other two states with Tamilnadu in the middle and Kerala at the bottom of the performance scale.

Overall, the growth performance of small industry in Kerala was poor as compared to its counterpart in the neighboring states of Tamilnadu and Karnataka and at all-India. In particular, the average size of the units and factor productivity (both capital productivity and labour productivity) was lower with the result that its contribution to income generation was the least in Kerala. Further, growth rate recorded over the fifteen years between 1972-73 and 1987-88 in productivity and other indicators in Kerala also remained much below the achievements made by Tamilnadu and Karnataka. From whichever important dimensions one viewed, the relative growth performance of small industry in Kerala remained poor! Was this anyway associated with the structure of small industry and changes therein over time?

Structural change.

As mentioned earlier, the structural change could be studied by examining the changes in the pattern of distribution by size-groups and product-groups. We first examine the pattern

of change in the size structure.

Change in size-structure

Here statistics on investment in plant and machinery for both 1972-73 and 1987-88 would be required. Considering that statistics for 1972-73 were available only for a limited size groups the change in structure could be analyzed only in terms of three size groups viz., upto Rs.1 lakh, Rs.1 to 3 lakhs, and above Rs.3 lakhs.(see table 5). However, for 1987-88 the last group was divided into more sub-groups which would give a comparative picture of the relative size structure.

It appeared over the years the smallest size group (upto Rs.1 lakh) in terms of number of units and value of production declined both in Kerala and all-India. The change was in favor of the size-group, Rs.3 lakh and above. To some extent, the pattern of change in size-structure over time reflected the changing definition of "small" industry. It is striking however, that the "tiny" units still accounted for the largest share in number as well as output of small sector both in Kerala and all-India and further, its share in production (output) was proportionately larger in the former. Presumably, the predominance of "tiny" units could have in general exerted a depressing influence on technological progress and productivity growth in Kerala.

Industry-structure

Another aspect that needed a review in relation to the relatively poor growth performance was the change in industrial structure. We needed data on some growth-indicators like value of output, value added, and employment by product-groups for

1972-73 and 1987-88. As a very detailed product-group wise analysis could have the danger of missing the wood for the trees, we opted to collate the data at two-digit NIC product-groups. The data at two-digit level in respect of value-added and employment for 1972-73 were not available. Hence, we had no option but limit the analysis in terms of value of output. The value of production for 1987-88 was worked out at 1972-73 prices[5] for estimating growth between 1972-73 and 1987-88. The pattern of distribution was depicted by the percentage shares of each industry in the aggregate output in 1972-73 and 1987-88 at current prices. (see table 6)

It was interesting to observe that output of different product-groups witnessed varying degrees of growth with some sectors recording substantial growth between 1972-73 and 1987-88. Yet, more than 75 per cent of total output in 1987-88 was shared by five NIC two digit groups viz., (1) food products (2) wood products (3) rubber & plastics (4) chemicals and (5) metal products. These very five industry-groups had also accounted for more than 75 per cent of the output in 1972-73 though inter-se shares were slightly different between these two time points. One, therefore, could draw the inference that the industrial structure of small industry in Kerala was highly concentrated in 1972-73 and no significant change in the structure took place by 1987-88.

The foregoing inference was validated further when we observed a somewhat stability in the ranks of industry-groups' output shares. The correlation coefficient (0.938) between the ranks in those two points of time was found statistically highly

significant. Broadly, it would appear that there was no significant structural change measured in terms of the per centage distribution of output across two-digit NIC during the 15 years under consideration.

Did the trend in Kerala match with the structural change at all-India level? It was found that the pattern of output distribution across product-groups (2 digit NIC) at all-India in 1972-73 was far less concentrated than the pattern in Kerala. More than 75 per cent of the output was shared by nine industries with top three being accounted by metal products (18.02%), chemicals (13.32%) and basic metal (11.30 %). The pattern of distribution in 1987-88 at all-India was also less concentrated than the corresponding pattern in Kerala. The correlation coefficient (0.886) was statistically significant suggesting a more or less similar pattern of distribution in 1987-88 as compared to 1972-73 at all India. In other words, the degree of diversification at all India was also slow as in Kerala, but the difference was that the structure was already diversified at all-India whereas it was concentrated in Kerala in 1972-73 with the result that even by 1987-88 the industrial structure in Kerala continued to remain concentrated.

Industrial base and diversification.

Another way of looking at the structural change could be the mapping of the industrial base in 1972-73 and note the changes that took place by 1987-88 in terms of some regional base study concepts like location quotient (LQ) and specialization coefficient (SQ). The location quotient[6] could be used as measure of relative regional concentration of a given industry

compared to total national magnitude. A region would tend to specialize in those industries for which it would have some comparative advantage. Hence, industries with high location quotient (say LQ>1) could constitute the industrial base of the region. Keeping in view the limited data, LQ and SQ were worked out in terms of value of output.

The industrial base of Kerala small industry was constituted by a few blocks of resource based industries (see Table 7) viz., food products, wood products, beverages, and rubber in 1972-73 and that more or less the same concentrated pattern (composed of wood products, food products, paper products, *rubber products, and non-metallic mineral products)* continued to be in 1987-88. Overall, the industrial base in Kerala was narrow and marked by the low share of modern engineering industries even in 1987-88. In other words, there was no significant level of diversification in Kerala during the period under review.

We could get a more precise idea of the extent of industrial diversification relative to national level by working out the specialization coefficient (SQ)[7] which measured the extent to which a region showed a diversified pattern as compared to all-India. The estimated coefficient for 1987-88 was 0.34 as compared to 0.46 for 1972-73. Obviously, there was some diversification in industrial production in Kerala but its extent was far less than at the national level.

Current status and problems.

Where does the foregoing pattern of structural change and growth place the small industry in Kerala? What is its current status in the all-India context? What are its major problems? It is against the backdrop of answers to these questions that one should draw new strategies for the development of small industry in Kerala. We have already noted some aspects which have relevance to the questions under examination. Even at the cost of some repetition let us now depict in a comparative frame a brief view of the key parameters of small industry in Kerala in 1987-88. (see table 8).

A profile of Kerala small industry.

In 1987-88 there were 25,717 SSI units in Kerala engaged in 1708 products as against corresponding figures of 582368 and 74449 at all-India. Kerala units were organized relatively more as proprietory units (82%), located mostly in rural areas and engaged in manufacturing (60%) as against 50 percent in all-India. Relatively, job work and repair/services were of lesser proportions which probably reflected the lack of engineering industries in the industrial base[8] particularly in the large & medium sector and the lack of linkages with the small industry in Kerala. The ownership/management pattern was marked by relatively much less involvement of Scheduled Castes & Tribes as entrepreneurs though there was relatively higher involvement of women entrepreneurs in the small industry in Kerala as compared to all-India.

Yet another interesting facet was that Kerala units which accounted for 4.4 per cent of total number in the country contributed proportionately more to aggregate exports (6.7%) by the small industry. However, much of the export earning was accounted by one industry (NIC 2-digit) viz., food products where again high percentage shares were contributed by a few traditional items like cashew, frozen prawn and shrimp.

Another noteworthy facet was the lower requirements of capital to generate one unit of employment. Also, average wage per employee was marginally less in Kerala as compared to all-India. The comparative picture was sharper in respect of money wages per worker (i.e, excluding self-employed and own account workers).

The small industry in Kerala was however, marked by some unfavorable features. In what follows an attempt would be made to draw the contours of major problems in Kerala vis-a-vis other states (see table 9) and in different two-digit industries (see table 10) as identified by the census in 1987-88.

Capacity Utilization.

The average level of capacity utilization, defined as that part of the capacity which was utilized by the unit, during the year and expressed in terms of percentage, was 42.62 per cent in Kerala as against 50.60 per cent all India. By activity-wise, the highest rate of capacity utilization in Kerala was in repair and servicing (53.87%) and lowest in processing (33.25%). The pattern was same at all-India but the performance record was relatively poor in all the activities in Kerala.

A comparison of Kerala's performance with other states was instructive. The states which performed worse than Kerala were mainly the industrially backward ones like Assam, Bihar and Orissa. Out of 25 states as many as 16 performed better than Kerala in capacity utilization. The performance record of Kerala appeared worse when the comparison was made with the neighboring states of Karnataka (52.64%) and Tamilnadu (72.69%).

Industry-wise (see table 10), the rate of capacity utilization in the dominant industries of Kerala (e.g. food products, wood products and rubber products) was relatively lower than at the all-India level. To illustrate, food products, which accounted for nearly 40 per cent of total output, achieved a capacity utilization of 37.8 per cent in Kerala; corresponding rate was 48 per cent at all India. Interestingly, where Kerala showed better performance were in such product-groups as textiles (84.4%), metal products (46.7%) and electrical machinery & parts (52.3%), but their shares in the state's industrial structure were relatively low.

Was capacity utilization better in the case of reserved items? Considering that reservation of items for exclusive manufacture in the small scale sector remained a major policy measure, they should show up a better performance than unreserved items in terms of capacity utilization. The second census revealed that out of total 846 reserved items in the country only 290 (34%) were produced in Kerala. They accounted for a small share (17%) of the total number of products (1708) manufactured in Kerala small industry. And capacity utilization (40.6%) of the units producing the reserved items was not higher, rather it

was marginally lower, than that of unreserved items (42.3%). At all-India level also the capacity utilization of reserved items (48%) was less than that of un-reserved items (50%). It appeared, there were grounds for re-examining the usefulness of product reservation as a policy strategy for the promotion of small industry.

Reverting to the question of low capacity utilization, the census did not identify the causes; it only highlighted the gravity of the problem. Clearly, diagnostic studies in selected industries would be necessary to seek corrective measures.

Employment.

In terms of employment generation, Kerala had an edge over all India; during 1987-88 the small industry provided employment to 6.6 persons per unit in Kerala as against 6.3 persons at all-India. A better record was whown by one half of the states in the country. Tamilnadu showed a capacity higher than Kerala in employment generation though the other neighboring state of Karnataka was marginally behind.

Industry-wise, food products accounted for the highest portion of employment in small industries both in Kerala and all-India, but its share in Kerala (26%) was double the all-India level (13.%). Other major employment generating industries in Kerala were the traditional resource-based ones like wood products and non-metallic mineral products, whereas at all-India level those included modern ones in the engineering and chemical groups.

A discouraging feature in Kerala was the relatively low proportion of self-employed (14%) as compared to all-India (19%).

The states with higher levels of self-employed were not confined to industrially advanced regions; such industrially backward states as Madhya Pradesh, Rajasthan, and Bihar accounted for proportionately larger shares of self-employed in the labour force. To some extent,therefore, self-employment appeared associated with certain societal/cultural traits and Kerala obviously was not one well endowed with such a trait. Yet it was interesting to observe that engineering industries attracted more self-employed in Kerala. Plausibly, the trend of technically qualified persons to get engaged in self-employment was picking up. Given the skill profile of the youth, there would be greater scope for the development of such industries in the small scale sector in Kerala.

Wages and productivity.

A feature of particular interest in the case of Kerala was in relation to the wages because the popular notion of Kerala being a high-wage economy continued to prevail and often cited as the basic constraint to industrial growth[9]. Some research studies (e.g.Thampi 1990) based on Annual Survey of Industries data emphasized that the high wage cost hypothesis was valid in the case of a large number of industry groups in Kerala's small sector also. It must be noted that the findings were based on the data of the small scale segment of the factory sector. What was the situation in SSI sector as a whole (factory + non-factory small units) as revealed by the second Census?

As noted earlier, the average money wages paid per employee at all India level was marginally higher than Kerala. Besides, wages paid in industrially developed states like

Maharashtra, Gujarat and West Bengal and the industrially upcoming states like Utter Pradesh,Goa and Madhya Pradesh were also higher than in Kerala. Yet it should not be ignored that annual wages paid per employee in the neighboring states of Karnataka and Tamilnadu were marginally lower which could make Kerala relatively less attractive for industrial investment especially in the small scale sector. It would however be instructive to note (table 9) that difference between these three states narrowed down when annual wages per worker (employees excluding self-employed) was considered.

Plausibly, the lower average wages in Kerala as compared to all-India could be due to the predominance of low-wage traditional and resource-based industries in its industrial structure. Industry-wise details (table 10) showed that the wages paid per employee in Kerala was higher than all-India average only in five out of 18 NIC two-digit groups. In modern small scale engineering industries (e.g.electrical machinery & parts, machinery and parts (except electrical), and metal products) average wages paid in Kerala was not higher than all India level. All considered, the census did not lend empirical support to the popular myth of Kerala as a high-wage region.

Yet, it must be underlined that the census data did not lead us to reject the high wage cost hypothesis as a factor constraining the growth of the small industry in Kerala. For, average money wages per se was not what mattered in investment decisions. What would matter to the entrepreneurs was the wage-productivity relationship. The share of wages in the net value-added would therefore be the relevant parameter for considering

the wage-cost hypothesis. Thus viewed, it was disturbing to find from the census data that Kerala was one among the few states with high proportion of wages in the value-added. (see table 9). The share of wages in value added in Kerala was much higher than what it was in neighboring states as well as other industrially developed states including West Bengal. In Kerala the wage share in value added on an average (42%) was nearly twice high that of all-India (22%) level. Apparently, wage-productivity relationship in Kerala was found relatively unfavorable for prospective investment in the small industry.

A comparison of Kerala's record with other major states showed its relatively poor capital productivity: net value-added per one lakh rupee fixed investment in 1987-88 was Rs.0.59 lakh and only seven states were placed below Kerala level in the country. The situation was not much different with respect to labour productivity. Only four states in the country recorded net value-added per employee less than the level of Kerala. By industry-wise, the labour productivity was relatively lower in food products, wood products and non-metallic products, which constituted the core of the small industry base in Kerala. Also the labour productivity in these industries in Kerala was much lower than the all-India counter parts.

What accounted for the poor factor productivity? Was it due to inappropriate work-organization, pampered work culture, outdated capital equipment or outmoded technology ? The census data did not help us to answer the question. The analysis of productivity constitute yet another area where detailed studies would be required for policy formulation.

"Sickness": Closed Units.

Yet another major problem of policy interest in India constituted the "sickness" in small industry. How seriously was the small industry in Kerala afflicted by sickness?. The census did not collect the required data to see "sickness" in terms of cash loss/net-worth relationship, payment default etc. as is generally done. However, it did give details about the closed units which could be used to reflect in some measure upon the gravity of "sickness". For, the closed (dead) ones must have been generally the "sick" ones.

It was a consolation that closed unit as a per cent of working units (for which data were collected) was of lower magnitude in Kerala (46%) as compared to all India (52%). The number of closed units as per cent of working units was below Kerala level in 14 states in the country.

Industry-wise, the incidence of sickness (closed as % working units) in Kerala was relatively more in those products like textiles, synthetic fibre textiles, garments,leather products, chemical products and transport equipments, which accounted for low shares in the industrial base. Here again, it was significant to note that the incidence was relatively low in the modern engineering industries (e.g.metal products, machinery, electrical goods and service sectors.) of Kerala as compared to all-India. Inferentially,the potential for healthy development of engineering industries could be higher in Kerala. Another instructive feature was the relatively lower proportion of closure within 5 years of start of production (see table 11a) in

Yet more interesting was the pattern of reasons advanced for closure (see table 11b). Unlike the popular belief, it was not labour problem that plagued the small industry in Kerala. The more frequent cause of closure was financial problems both in Kerala and all-India. In the case of Kerala, the closure due to financial problems (62 %) was nearly twice that at all-India level (35%). This was also reflected in the composition of working capital of small industry in Kerala. Although the ratio of working capital to turnover (production) in Kerala was relatively less (13%) as compared at all-India level (17%), the proportion of physical working capital was higher (82%) in Kerala as against 78% for all India. Presumably, given the location far down south of the country and lack of a diversified industrial base and scaler linkages within the region, the small units in Kerala were generally required to block capital for inventory accumulation even if it was uneconomic. To some measure, therefore, structural factors contributed more to industrial sickness and death (closure) in Kerala than at all-India. An analysis of the industrial structure of small industry in Kerala vis a vis other states/UTs in the country as in 1987-88 could therefore be revealing. (see table 12).

Industrial structure.

The industrial base of small scale sector in Kerala in 1987-88 as reflected in the location quotients (based on employment data) consisted of food products,wood products,paper products & printing, rubber & plastic products and non-metallic minerals. Within the above few industry groups that constituted

the industrial base in 1987-88, the major share in the output was accounted by simple processing industries like edible oil, processing of fish, cashewnut processing, sawing of woods, printing & publishing journals, rubber belting & saddle covers, and foam rubber. The modern engineering industries did not figure anywhere in the core of the small industry in Kerala. The industrial structure was rather narrow and not well diversified, the value of specialization coefficient (based on employment) being 0.26 even in 1987-88 (see table 12).

In striking contrast, the core of small industry in the neighbouring state of Karnataka was wider and included such modern industries as metal products, machinery & parts other than electrical, electrical machinery & appliances and repairing services and it was also relatively more diversified than Kerala with the specialization quotient taking the value of 0.11. The other neighboring state of Tamilnadu also presented a similar picture though, the difference of the pattern with Kerala was not as sharp as was in Karnataka.

The values of specialization coefficient of the small industry in other industrially advanced states like Gujarat, Maharashtra,and West Bengal were lower than that of Kerala. The core of small industry in each of these states was wider and included modern engineering industries. As in Kerala, the industrial base of other industrially backward States was also narrow and marked by the absence of modern engineering industries. There appeared some association between industrial diversification with modern industries and the rate of growth of industrial investment, output and employment. Atleast such a

hypothesis could be one approach to explain regional differences in the growth of small industry in India.

Implications of census results on policy strategies

To conclude, the SSI census provides information that can be skillfully used for analyzing varying aspects of small industry in different regions. Our attempt at reviewing the relative growth and structural change of small industry in Kerala has underlined inter alia its poor performance record as compared to neighboring states or industrially advanced states or all-India. It also has highlighted some of the major problems that the small industry in Kerala is faced with. Particular mention may be made here of the relatively small size, low capacity utilization, low factor productivity, unfavorable wage-productivity relationship and industrial "sickness" (closure) due to severe financial and marketing problems. Although detailed studies of different product-groups are needed to diagnose the causes, it appears that most of the problems have some association with the structural features.

The findings emerging from our review suggest that the poor performance record of Kerala cannot be explained away in terms of some unfavorable regional factors (like high money wages and trade union militancy) per se but has to be seen in the light of the weakness of size-structure, industry-mix and other structural factors and that alternative policy strategies are needed for ensuring efficiency-based growth of the small industry in Kerala. It is beyond the scope of this paper to go into the difficult terrain of strategy formulation. Yet it may be

relevant to illustrate the contours of some plausible approaches.

Given the types of structural constraints identified by our review, one crucial aspect of policy strategy for Kerala could be to influence the organizational forms that establish relationship of inter-firm, inter-scale and inter-product inter-dependencies which help in reaping economies (internal and external) of scale through division of labour (specialization) and in expanding production possibility frontiers through innovations. There are studies showing the success of ancillarisation, industrial sub-contracting or commercial sub-contracting in the states like Tamilnadu, Karnataka, Gujarat and Punjab. It seems, there are also cases of "success", though isolated ones[10] in efficiency-based growth of small industry in Kerala. The promotion of small industry on organizational patterns (e.g subcontracting) based on inter-sectoral and inter-scaler linkages by building up a diversified industrial structure in Kerala is one strategy option but the success of the strategy would largely depend upon the possibility of developing a strong and diversified large-scale sector within the region based on "foreign" (including big national capitalists) investment!.

There may also be scope for trying out, if not as an alternative but as complementary to the above, the strategy of developing space-bound clusters of small scale industries taking into account the regional specificities of raw material and skill availability and taking advantage of economies of scope and agglomeration. We have the success story of Punjab in adopting the strategy of promoting space-bound clusters of small firms where each cluster is related to a specialized industry. Some

scholars (Taub and Taub 1989) have seen in Punjab a pattern of organization akin to southern Italy's "industrial districts". The hall marks of Italian industrial districts are traits like clustering of product specific small firms, flexibility of product and labour markets, availability of common services and pooling of local resources, product innovation and technological change on a continuous basis (Sengenberger et al. 1991, Pyke et al. 1990). The Punjab pattern of organization with its extensive division of labour and externalities not only reduces the entry cost but is also conducive to "collective efficiency", with the result that small firms can not only exist but can do so with efficiency and growth (Kashyap, 1992). Though detailed studies are needed to assess the potential, it seems, there is ample scope for developing small industry in Kerala on the basis of the comparative advantage the region has in specific skills and resources for specialization in the production of specific industries (e.g. electronics, soft-wares, rubber products, and modern agro-based industries) by organizing the units into space-bound clusters as in industrial parks/districts.

To conclude, one major strategy question in Kerala is this: how to induce organizational forms whereby small firms could overcome the limitations imposed by concentrated industry-structure, "tiny" size, and technological backwardness without being subjected to dependent or unstable relationship. In this the regional government, instead of directly intervening with the usual bureaucratic attitude, will have to play a market-friendly role as a facilitator from a distance for ensuring competition as well as cooperation, adequate support-structures & community

services, and local institutions for industrial peace and innovations so that factor productivity is enhanced and the growth of employment, output and export is maintained on the basis "collective efficiency" by the modern small industry in Kerala.

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END NOTES

For a theoretical case for regional policies to correct regional imbalances see Kaldor N (1970).

The few studies on the subject available in the literature are based on the data from Annual Survey Industries for the sample segment of the factory sector. There are hardly any analytical studies on the modern small scale industries (SSI) which include both factory and non-factory units in Kerala.

Recently Sandesera (1993) has attempted a review for all India. The present paper dealing with Kerala follows a similar approach.

The upper limit prescribed by the government has changed many times. The ceiling in investment of plant and machinery (original value) was Rs.7.5 lakhs for small scale and if ancillary Rs.10 lakhs in 1972-73 and Rs.35 lakhs and Rs.45 lakhs respectively in 1987-88. The limit was revised to Rs.60 lakhs for small scale industries and Rs.75 lakhs for ancillary industries in 1991.

Wholesale price index of manufactured products was used for working out deflation factor.

Location quotient (LQ) was expressed as:

$$LQ = (x_{ij}/x_j)/(x_i/x_N)$$

where, x = relevant growth variable (e.g.output or employment)
i = ith industry
j = jth region
N = national total

SQ was expressed as

$$SQ = \Sigma \{(x_{ij}/x_j) - (x_i/x_N)\}$$

If a region was as diversified as the nation, SQ would be zero while if all its industrial activity were concentrated in an industry which in turn concentrated in that region only, SQ will be equal to zero. SQ nearer the zero more diversified the region and vice-versa

For evidence see K.K.Subrahmanian 1990

9. The Report of the High Level Committee of the Plannin Board, Govt. of Kerala (1984) advanced the high wage cos as the basic cause of industrial backwardness in Kerala Subrahmanian and Pillai (1986) later contented that wage cost hypothesis was not the dominant explanation o industrial stagnation by showing the findings to t contrary in the case of ASI factory sector. Nevertheless the notion of the industrial economy of Kerala as a hig wage one continues to prevail.

10. A preliminary study by one of the authors has identifi some "successful" cases of small industry in Kerala and i in the process of making a detailed case study of growth of Kootukaran Group in the manufacture of auto-part and machine tools for sale inside and outside the state.

Table 1

Growth of Small Industry in Kerala : 1972 and 1987-88

Indicators	Kerala			All-India			Point to Point ACGR %	
	72-73	87-88	%change 72-87	72-73	87-88	%change 72-87	Kerala	India
No. of Units in Census Frame (lakh)	0.11 (4.30)	0.38 (3.80)	245	2.58	9.87	282	8.62	9.36
No. of Working units (lakh)	0.7 (4.40)	0.25 (4.20)	257	1.59	5.94	273	8.86	9.18
No. of units for which data tabulated (lakh)	0.06 (4.30)	0.26 (4.50)	333	1.40	5.82	317	10.27	9.96
Fixed Assets (Rs.Cr.at 72-73 Price)	44 (5.50)	122 (4.20)	177	797	2926	267	7.03	9.06
Plant & Mach. (Rs.Cr.at 72-73 Price)	22 (4.00)	66 (3.80)	200	537	1745	225	7.60	8.17
Production (Rs.Cr. at 72-73 Price)	116 (4.40)	358 (2.60)	209	2603	13528	420	7.80	11.61
Net value-added (Rs.Cr.at 72-73 Price)	36 (4.30)	71 (2.20)	97	841	3230	284	4.63	9.39
Employment (No. lakh)	1.26 (7.60)	1.69 (4.60)	34	16.5	36.66	122	1.98	5.45

Note : Figures in parantheses indicate the percentage share of Kerala in all-India.

Source : Development Commissioner, Small Scale Industries, Govt. of India, New Delhi, Report on Census of Small Scale Industry Units, Vol.I & II, 1977 and Report on the Second All-India Census of Small Scale Industrial Units for All-India and Kerala, August 1992.

Table 2

Average Size of Small Industry Units 1972-73 and 1987-88

Indicators	Kerala			All-India		
	1972-73	1987-88	%change 1987-88 over 1972-73	1972-73	1987-88	%change 1987-88 over 1972-73
fixed asset (Rs.)	73	46	-37	57	50	-12
Plant & Mach. (Rs)	36	25	-31	38	30	-21
Production (Rs.)	193	137	-29	186	232	+25
Net Value added (Rs.)	60	27	-55	60	55	-8
Employment (Nos.)	20	7	-65	12	6	-50

Note: Rs. in thousands, 1972-73 prices.

Source: Table 1

Table 3

Select Ratios in Small Industry 1972-73 and 1987-88

Ratios	Kerala 1972	Kerala 1987-88	Kerala %change	All-India 1972	All-India 1987-88	All-India %change
Production/Fixed Asset (Rs.lakh)	2.63	2.93	+11	3.27	4.62	+41
Net Value-added/ Fixed Asset (Rs.lakh)	0.81	0.58	-28	1.06	1.10	+38
Production/ Employment (Rs.thousand)	0.92	2.11	+140	1.57	3.69	+135
Net Value-added/ Employment (Rs.lakh)	2.85	4.20	+47	5.09	8.81	+73
Employment/ Fixed Asset of Rs. 1 lakh	28.63	13.85	-56	20.75	12.53	-40
Fixed Asset/ Employment (Rs. thousand)	34.92	72.18	+108	48.19	79.83	+166

Note: Value of production, investment, net value-added as specified in Table 2.
Source: Table 1.

Table 4

Some Characteristics of Small Industry in Kerala
as Compared to Neighbouring States of Karnataka and Tamilnadu.

		Kerala	Karnataka	Tamilnadu	All-India
Units	1972-73	6.20(4.4)	5.60(4.0)	16.00(11.5)	140.60(100)
(No.'000)	1987-88	25.70(4.4)	40.50(6.9)	57.20(09.8)	582.40(100)
Employment	1972-73	1.26(7.6)	0.64(3.9)	2.16(13.0)	16.50(100)
(lakh)	1987-88	1.69(4.6)	2.44(6.7)	5.36(14.6)	36.66(100)
Fixed Asset	1972-73	44.00(4.2)	44.00(4.1)	111.00(10.5)	1055.00(100)
(Cr.)	1987-88	387.00(4.2)	661.00(7.1)	1086.00(10.8)	9296.00(100)
Output	1972-73	115.00(4.4)	80.00(3.0)	322.00(12.3)	2603.00(100)
(Cr.)	1987-88	1136.00(2.6)	2527.00(5.9)	4513.00(10.5)	42972.00(100)
Avg. size	1972-73	20.00	11.00	13.00	12.00
(Employment)	1987-88	7.00	6.00	9.00	6.00
Avg. size	1972-73	70.96	78.57	69.37	75.03
(Rs. '000)	1987-88	150.58	163.21	189.86	159.62
(Fixed asset)					
Output/Fixed	1972-73	2.61	1.82	2.90	2.47
asset (Rs.)	1987-88	2.93	3.82	4.16	4.62
output/					
Employment(Rs.)	1972-73	9127.00	12500.00	14907.00	15776.00
	1987-88	67219.00	103566.00	84198.00	117218.00
Employment/	1972-73	28.63	14.54	19.45	15.63
Fixed asset	1987-88	4.36	3.69	4.93	3.94
(lakhs)					
Fixed asset	1972-73	3492.00	6875.00	5139.00	6394.00
/Employment (Rs.)	1987-88	22899.00	27090.00	20261.00	25357.00

Note : Figurs in parentheses are the relative percentage share in all-india total.

Table 5

Changes in Size - Structure

Size Class Plant&Mach. Rs.lakh	Kerala No.of units	Kerala Production (Rs.Cr.) 1972-73	Kerala No.of units	Kerala Production (Rs.Cr.) 1987-88	All-India No.of units	All-India Production (Rs.Cr.) 1972-73	All-India No.of units	All-India Production (Rs.Cr.) 1987-88
Upto 1	5691	72.72	20825	420.84	127390	1458.95	482500	12070.00
	(92)	(63)	(81)	(37)	(91)	(56)	(83)	(28)
1-3	386	24.81	3065	277.89	8729	595.09	59800	8640.00
	(6)	(21)	(12)	(24)	(6)	(23)	(10)	(20)
3 & above	128	18.11	1827	438.21	3458	548.69	40200	22263.00
	(2)	(16)	(07)	(39)	(3)	(21)	(7)	(52)
all size	6205	115.64	25717	1136.94	139577	2607.74	582400	42973.00
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)
3-7.5			934	201.91	24900	7916.00	24900	7916.00
			(4)	(18)	(4)	(18)	(4)	(18)
7.5 - 15			210	8787.00			8500	5260.00
			(1)	(8)			(2)	(12)
15 - 25			90	7787.00			4200	4579.00
			(**)	(7)			(1)	(11)
25 - 35			47	7048.00			2400	4239.00
			47	7048.00			2400	4239.00
			(**)	(6)			(**)	(10)
35 & above			4	99.00			**	267.00
			(**)	(**)			(**)	(**)

Note: (**) = Insignificant
(figures in parentheses percentage to total)

Table 6

Structural Change 1972-73 - 1987-88:
Distribution of output by NIC two digit product groups in Kerala

CODE	INDUSTRIES	OUTPUT IN Rs. LAKHS 1972-73			% CHANGE IN 1987-88			ACGR % 1987-88 OVER 1972-73 (1972-73 PRICE)
		TOTAL OUTPUT	% SHARE	RANK	TOTAL OUTPUT	% SHARE	RANK	
20&21	FOOD	4893	42.26	1	44886	39.48	1	1.81
22	BEVERAGES	56	0.48	15	572	0.50	15	0.46
26	HOISERY GARMENTS	277	2.18	8	2774	2.44	8	0.41
27	WOOD PRODUCTS	1317	11.39	3	17577	15.46	2	3.50
28	PAPER, PAPER PROD.	440	3.80	6	5220	4.59	6	1.15
29	LEATHER	31	0.27	16	218	0.19	16	0.08
30	RUBBER AND PLASTICS	865	7.48	4	10360	9.11	3	1.54
31	CHEMICALS	830	7.18	5	8666	7.62	4	0.62
32	MINERAL PRODUCTS	429	3.71	7	5616	4.94	7	1.26
33	BASIC METALS	283	2.45	9	1887	1.66	12	0.16
34	METAL PRODUCTS	1320	11.41	2	7128	6.27	5	0.75
35	MACHINERY AND PARTS	272	2.35	10	1945	1.71	11	0.30
36	ELEC. MACH. & PARTS	194	1.68	11	2445	2.15	10	0.36
37	TRANSPORT EQUIPMENT	194	1.68	12	953	0.84	13	0.33
38	MISC. MANUFACTURE	60	0.52	14	680	0.60	14	0.33
97	REPAIR SERVICES	103	0.89	13	2748	2.42	9	0.49
	TOTAL	11564	100.00		113692	99.99	100.00	7.80

ACGR = Annual Compound Growth Rate

Table 7

Industrial Base : Location Quotient (LQ)

Code	Industry	KERALA				ALL INDIA				LQ	
		1972-73		1987-88		1972-73		1987-88		1972-73	1987-88
		output	% share	output	% share	output	% share	output	% share		
20&21	FOOD	4893	42.31	44886	39.48	15222	5.85	938561	21.84	7.23	1.81
22	BEVER	56	0.48	572	0.50	741	0.28	47247	1.10	1.70	0.46
23	COTTON	0	0	352	0.31	0	0	30052	0.70	0.00	0.44
24	SILK	0	0	2	0.00	0	0	25795	0.60	0.00	0.00
25	JUTE ETC	0	0	3	0.00	0	0	5649	0.13	0.00	0.02
26	HOISERY	277	2.40	2384	2.10	15536	5.97	220756	5.14	0.40	0.41
27	WOOD	1317	11.39	17577	15.46	10250	3.94	189803	4.42	2.89	3.50
28	PAPER	440	3.80	5220	4.59	12635	4.85	172260	4.01	0.78	1.15
29	LEATHER	31	0.27	218	0.19	8852	3.40	102581	2.39	0.08	0.08
30	RUBBER	865	7.48	10360	9.11	15114	5.81	254170	5.91	1.29	1.54
31	CHEMICAL	830	7.18	8666	7.62	34664	13.32	527272	12.27	0.54	0.62
32	MINERAL	429	3.71	5616	4.94	12548	4.82	176804	4.11	0.77	1.20
33	B.METAL	283	2.45	1887	1.66	29415	11.30	448517	10.44	0.22	0.16
34	METAL PR	1320	11.41	7128	6.27	46873	18.01	361578	8.41	0.63	0.75
35	MACH.PART	272	2.35	1945	1.71	21180	8.14	247428	5.76	0.29	0.30
36	ELE.MACH.	194	1.68	2495	2.19	15169	5.83	259865	6.05	0.29	0.36
37	TRANSPORT	194	1.68	953	0.84	13474	5.18	108910	2.53	0.32	0.33
38	MISC. MFG	60	0.52	680	0.60	6117	2.35	78953	1.84	0.22	0.33
94	REPAIR	103	0.89	1739	1.53	2484	0.95	44165	1.03	0.93	1.49
97	SERVICE	0	0	0	0.00	0	0	2713	0.06	0.00	0.00
OT	OTHER SER	0	0	0	0.00	0	0	54145	1.26	0.00	0.00
	TOTAL	11564	100.00	113692		260274	100.00	4297205	100.00		
	SQ (Based on output)									0.45	0.34

Table 8

Some Key Parameters of Small Industry in 1987-88

	Kerala		All India		Kerala's share
No. of Units		%		%	%
Census frame	38030	100.00	986861	100.00	3.8
closed	11763	30.9	304856	30.1	3.9
working units for which data collected	25717	67.6	582368	59.0	4.4
Category Nos.					
Small scale	24703	96.0	560470	96.2	4.4
ancillary	97	0.4	3029	0.5	3.2
small service estt.	917	3.6	18869	3.2	4.8
Type of activity: nos.					
mfg.	15580	60.5	292301	50.2	5.3
processing	3849	15.0	88711	15.2	4.3
job work	2033	7.9	70399	12.1	2.8
repair/service	2209	8.6	83118	14.3	2.6
combination	2046	8.0	47839	8.2	4.3
Type of organisation: nos.					
proprietory	21202	82.4	468717	80.5	4.5
partnership	3787	14.7	98049	16.4	3.9
Ltd. company	296	1.1	12283	2.0	2.4
cooperative	301	1.2	1702	0.3	17.7
Ownership Pattern: Nos.					
SC & ST entrepreneurs	366	1.4	13862	2.4	2.6
Women entrepreneurs	3542	13.8	44759	7.7	8.0
Location: Nos.					
Rural	18093	70.4	245573	42.2	7.4
No. of products	1708		7449		22.9
	Total	per unit	Total	per unit	
Performance					
Production (Rs. lakh)	113691	4.4	4297205	7.4	2.6
Export (Rs. lakh)	16736	0.6	249902	0.4	6.7
Net Value added (*)	22693	0.9	1026127	1.8	2.2
Employment (Nos)	169309	6.6	3665810	6.3	4.6
Plant & Machinery (Book Value Rs. lakh)	21120	0.8	554258	0.9	6.0
Fixed Investment (*)	38751	1.5	929603	1.6	4.2
Working capital (*)	14245	0.5	714826	1.2	2.0
Wages paid (Rs.lakh)	9527	0.4	229857	0.4	4.1
Performance Ratios					
Capacity utilization (%)	42.2		50.60		
Fixed Invst/Emp. (Rs.lakh)	0.23		0.25		
Emp/Fixed Investment (Nos.)	4.31		3.94		
Output/Fixed Invst (Rs.lakh)	2.73		4.62		
NVA/Fixed Invst. (Rs.lakh)	0.58		1.10		
NVA/Employment (Rs.)	13403		27990		
Wages per employee (Rs.)	5668		6270		
Wages per worker (Rs.)	6603		7725		
Working Capital/Prod. (%)	12.52		17.33		
Export/Production (%)	14.72		5.82		

Table 9

PERFORMANCE INDICATORS 1987-88 : BY STATES

STATES	PERFORMANCE RATIOS									
	PER UNIT EMP	WAGE SHARE IN NVA (%)	SELF EMP. AS % EMP.	WAGES PER EMPLOYEE (Rs.'000)	WAGES PER WORKER (Rs.'000)	EMP.PER Rs.1 LAKH F.INVST.	NVA PER EMPLOYEE (Rs.'000)	NVA.PER Rs.1 LAKH F.INVST.	CAPACITY UTIL.%	CLOSED WORKING UNITS
INDUSTRIALIZED										
a)Early										
GUJRAT	8.04	34.64	19.73	6.63	8	3.1	19.13	0.60	44.84	55.08
MAHARASHTRA	11.92	15.38	11.83	10.74	12	2.8	69.83	1.97	74.6	36.59
TAMIL NADU	9.38	30.63	12.55	5.53	6	4.9	18.05	0.89	72.69	43.39
WEST BENGAL	6.79	35.85	16.18	5.69	7	7.3	15.87	1.15	35.95	79.66
b) Late										
PUNJAB	4.55	20.41	30.52	5.39	8	3.6	26.41	0.96	63.06	47.86
HARYANA	4.52	14.03	28.73	5.79	8	3.0	41.29	1.23	29.33	89.83
KARNATAKA	6.02	13.84	21.58	5.40	7	3.7	39.03	1.44	52.64	36.10
INDUSTRIALIZING										
ANDHRA	7.04	16.95	15.55	5.37	6	4.4	31.69	1.40	51.28	37.78
ASSAM	7.78	38.08	10.43	5.78	6	3.7	15.17	0.56	19.31	39.10
BIHAR	5.22	34.40	20.99	4.53	6	5.5	13.16	0.72	37.47	42.54
HIMACHAL	3.66	34.30	28.77	5.68	8	3.2	16.56	0.52	29.96	40.90
J&K	4.48	29.44	25.75	5.89	8	3.6	20.01	0.72	48.29	44.39
KERALA	6.58	42.30	14.16	5.67	7	4.4	13.40	0.59	42.62	45.74
MADHYA PRADESH	2.15	14.95	38.94	6.47	11	6.1	43.29	2.64	46.2	48.01
ORISSA	8.36	19.45	13.37	4.97	6	4.4	25.56	1.13	28.7	43.53
RAJASTHAN	4.22	27.85	30.95	4.62	7	3.4	16.57	0.56	57.3	60.35
UTTAR PRADESH	6.55	37.79	18.93	6.04	7	3.6	15.99	0.57	40.27	69.91
MANIPUR	4.92	62.90	18.29	5.01	6	4.9	7.97	0.39	65.37	8.13
MEGHALAYA	6.44	47.12	16.01	9.10	11	4.3	19.31	0.82	55.25	23.17
NAGALAND	16.72	1.93	5.36	5.52	6	4.2	286.53	12.02	46.29	45.36
TRIPURA	12.45	47.07	7.72	4.39	5	6.8	9.33	0.64	40.76	74.54
SIKKIM	15.65	16.59	7.07	7.26	8	1.3	43.76	0.58	51.38	54.55
ARUNACHAL	8.50	30.41	11.91	6.89	8	3.9	22.66	0.89	51.23	11.04
GOA	7.19	29.34	15.22	7.29	9	2.7	24.84	0.67	53.44	34.52
MIZORAM	4.61	97.53	22.40	6.54	8	3.0	6.70	0.20	71.88	33.37

Table 10

Performance Indicator 1987-88 : Industry wise

		% Cap. Utl.		% share in Total Employ-ment		Self Employed % total Employers		Annual Wage per employee (in '000)		Wages as % net value added (Wage sh.)		Employ-ment per 1 lakh rupee (Fixed Inv.)		Net Value added per Employee (Rs.'000)		Net Value added per Rs. 1 lakh Fixed investment (Rs. lakh)		Closed units as a % working units		Working capital as % production	
		Ker.	Ind.	Ker.	Ind.	Ker.	Ind.	Ker.	Ind.	Ker.	Ind.	Ker.	Ind.	Ker.	Ind.	Ker.	Ind.	Ker.	Ind.	Ker.	Ind.
20 & 21	Food pr.	38	48	26	13	10	22	4	5	26	18	6	4	13	25	0.8	1.0	35	36	7	9
22	Beverages	45	60	1	2	32	6	4	4	17	16	3	10	24	24	0.8	2.0	39	56	19	12
23	Cotton Text.	84	68	-	1	8	8	9	5	27	28	4	5	32	18	1.3	1.0	200	62	19	14
24	Wool, Silk, etc.	20	74	-	-	30	13	-	8	"	10	2	3	10	15	0.2	2.0	166	98	-	11
25	Jute, Hemp etc	20	37	-	-	14	11	-	7	"	22	5	3	7	30	0.3	1.0	67	105	-	22
26	Hoisery	28	69	4	5	15	22	4	7	47	24	9	6	9	27	0.8	2.0	69	63	17	17
27	Wood Products	45	48	14	6	13	27	6	5	47	20	5	5	12	25	0.5	1.0	42	43	12	16
28	Paper & Printing	48	60	7	5	19	20	6	7	61	26	3	3	9	27	0.2	1.0	28	40	13	18
29	Leather & Products	54	79	-	2	31	33	5	6	78	13	7	6	6	46	0.4	3.0	90	55	14	15
30	Rubber & Plastic	49	58	8	5	19	17	7	7	28	23	3	3	17	31	0.5	1.0	51	78	16	19
31	Chem.& Chem. Pr.	51	53	6	9	13	11	7	7	30	14	4	4	21	51	0.8	2.0	92	89	17	17
32	Non-metal Mineral	48	49	13	12	7	9	6	4	74	36	6	7	8	12	0.5	1.0	52	64	24	22
33	Basic Metal Pr.	46	43	1	6	11	11	8	8	45	20	3	3	16	43	0.4	1.0	56	64	20	17
34	Metal Products	47	43	8	10	19	21	7	7	52	23	4	3	14	30	0.5	1.0	52	63	17	21
35	Machinery & Parts	48	62	3	8	21	19	8	8	47	34	3	3	16	25	0.5	1.0	44	49	23	24
36	Elect. Machinery	52	42	2	4	13	12	8	10	26	22	3	3	31	44	1.0	1.0	51	62	20	22
37	Transport Equip.	49	60	1	3	14	15	9	8	36	33	3	3	25	26	0.7	1.0	59	52	22	23
38	Misc. Mfg.	40	41	1	2	15	17	6	6	55	15	5	4	11	44	0.5	2.0	70	65	20	23
97	Repair Services	52	62	5	5	26	44	6	4	52	93	3	5	11	5	0.4	-	25	36	11	16
99	Services n.e.c	54	51	-	-	28	26	5	7	50	34	1	1	10	21	0.1	-	30	35	10	15
OT	Other Services	49	-	-	-	-	-	-	-	25	16	-	-	-	-	-	-	-	-	-	-
	Total	43	51	100	100	14	19	6	6	42	22	4	4	13	28	0.6	1.1	46	52	13	17

Table 11(a)

Closed units within the year of start of production 1987-88

Years	Number '000		Percentage	
	Kerala	All India	Kerala	All India
1 - 2	1169	41442	9.93	13.75
3 - 5	3939	107486	33.48	35.66
6 - 10	4069	87494	34.59	29.03
above 10	2586	64968	21.98	21.56
Total	11763	301390	100.00	100.00

Table 11(b)

Reasons for closure

Reasons	No. of units closed			
	at the end 1980		at the end 1988	
	Kerala	India	Kerala	India
1. Labour problems	45	968	371	6777
	(3.3)	(2.6)	(3.2)	(2.2)
2. Dispute among owners	31	1798	186	11023
	(2.3)	(9.6)	(1.6)	(3.6)
3. Raw material problem	49	2516	441	17010
	(3.6)	(6.7)	(3.7)	(5.6)
4. Finance problem	844	10901	7244	104668
	(61.8)	(29.2)	(61.6)	(34.7)
5. Marketing problem	99	4237	1043	43451
	(7.3)	(11.4)	(8.9)	(14.4)
6. Natural calamity	5	1477	60	10255
	(0.3)	(3.9)	(0.5)	(3.4)
7. Combined reasons	108	6788	1185	49738
	(7.9)	(18.2)	(10.1)	(16.5)
8. Others	183	8616	1233	58468
	(13.4)	(23.1)	(10.5)	(19.4)
Total	1364	37281	11763	301390
	(100.0)	(100.0)	(100.0)	(100.0)

Table 12

Industrial Base (LQ > 1) and Industrial Diversification (SQ) based on employment

	Location Quotient : NIC Two digit Code																				
STATES	20&21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	97	99	O.T	SQ
INDUSTRIALIZED																						
a) Early																						
GUJRAT										1.19	1.29	1.04	1.92		1.93	1.21		1.91			0.19	
MAHARASHTRA		2.09	1.16	2.39	1.09			1.34		1.38	1.29		1.23	1.10	1.42	1.80	1.38	1.56		1.11		0.20
TAMIL NADU		1.34	1.72	1.66		1.68		1.21	1.64		2.50				1.01					2.25		0.21
WEST BENGAL					3.32	1.17		1.03		1.12		1.12	1.28	1.36	1.21	1.10			1.07		1.24	0.11
b) Late																						
HARYANA	1.24						1.11		1.77				1.50	1.49	1.01		1.28	1.23	2.06		1.18	0.20
KARNATAKA	1.48	1.39					1.14	1.10						1.00	1.14	1.03			1.20	2,07		0.11
PUNJAB			1.16	2.92		1.31			2.04				2.14	1.12	1.63		3.20	1.12	2.05			0.28
INDUSTRIALIZING																						
ANDHRA PRADESH	1.85	3.86										1.15							1.10	2.09	1.01	0.19
ASSAM	1.56						2.61					1.30		1.35					1.36			0.27
BIHAR							1.97		1.32	1.20		1.83							1.80		2.87	0.25
HIMACHAL PRADESH	1.26			5.97	2.32	1.55	3.11						1.04									1.16
JAMMU AND KASHMIR	1.03					1.18	3.10		1.25			1.31		1.25				2.80	1.43		1.70	0.28
KERALA	1.96						2.33	1.32		1.52		1.08										0.26
MADHYA PRADESH	1.06					1.90	1.66		1.6			1.67							1.66		1.15	0.23
ORISSA	1.48	1.30					1.30					1.74	1.36	1.13							1.44	0.22
RAJASTHAN	1.20		9.45	2.72	2.20							1.74		1.02					1.40			0.20
UTTAR PRADESH	1.12				1.59			1.03	1.77			1.47	1.03			1.08		1.20			1.46	0.11
MANIPUR	1.02					2.33	4.36					1.98								1.45		0.40
MEGHALAYA	1.50						3.48	1.45				1.32							3.25	1.07		0.40
NAGALAND							0.11															0.56
TRIPURA	1.79						1.27					4.08										0.49
SIKKIM								1.78	1.26	2.11	1.83					1.01		7.55				0.47
ARUNACHAL PRADESH	1.21						0.55															0.62
GOA	1.52	3.57			10.61			1.21		1.42							1.39	1.15	1.27	1.62	1.05	0.11
MIZORAM						4.74	2.64	1.97											3.20			0.47