Review Article
SMALL INDUSTRIAL ENTERPRISE IN BOMBAY, DELHI AND KARACHI

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Discussions about the role of small enterprise in economic development tend to remain inconclusive partly because of the difficulty of assessing the relative importance of economic and non-economic objectives and partly because of the dearth of factual information on which to base an economic calculus. It is probably true, moreover, that, because of a lack of general agreement as to the economic case for or against small enterprise, non-economic considerations, including some merely romantic attitudes toward smallness and bigness, tend to exert an undue influence on public policies. There may, of course, be no clear-cut economic case. And non-economic considerations should and will inevitably weigh significantly in policy decisions. If, however, some of the economic questions could be settled by more and better knowledge, these decisions could more accurately reflect the opportunity costs of pursuing non-economic objectives.

Factual studies which throw light on the performance and problems of urban small enterprise, such as those undertaken in Delhi[1] and Bombay[2] under the sponsorship of the Research Programmes Committee of the Indian Planning Commission, are consequently of great importance in assisting economists and economic policy-makers to assess the role of small firms in economic development. The purpose of this review is to present some of the principal results of these studies, as well as some of the findings of a recent study of industrial efficiency in Karachi[3] sponsored by the Institute of Development Economics, and to raise some questions about their implications for social policy.

The Indian studies are exclusively concerned with very small-scale urban industrial enterprises, employing fewer than 20 workers, and any conclusions one might derive from them could hardly be expected to apply generally to other kinds of small-scale enterprise—such as cottage industry, rural industrial estates, or small factories with upwards of 20 workers. Nevertheless, urban sub-factory industrial firms are important enough in themselves —accounting in Bombay, for example, for an estimated 15 per cent of industrial employment—to justify this kind of specialized study. The Karachi study is, of course, also concerned exclusively with urban industry, but it has the advantage of covering medium and large enterprises as well, so that

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1.   P. N. Dhar, *Small-Scale Industries in Delhi.* (Bombay: Asia Publishing House, 1958).

2.   D. T. Lakdawala and J.C. Sandesara, *Small Industry in a Big City: A Survey in Bombay.* (Bombay: Vora & Co., 1961).

3.   G. Ranis, *Industrial Efficiency and Economic Growth: A Case Study of Karachi.* (Karachi: Institute of Development Economics, 1960).

comparisons by scale are possible. How far the Karachi comparisons could be extrapolated to Delhi and Bombay must remain an open question, however. The Indian studies, especially that for Bombay, cover a wider range of problems concerning finance, marketing, competition, etc., in addition to the narrower question of industrial efficiency, in the sense of capital and labour productivity, with which the Karachi study is principally concerned. Again, it might be dangerous to extrapolate these results to Karachi. Nevertheless, it is, I think, interesting and useful to set the results of the Indian and Karachi studies side by side not only for direct comparisons where the treatment is similar, but also for the ways in which they may supplement each other because of their dissimilarities.

SECTION I

Before turning to the results of these studies, it may be useful to sharpen the focus of this review by posing two questions which, it seems to me, are at the heart of controversies about the role of small enterprise in economic development. First, what can small enterprises contribute to raising the rate of economic growth? And, second, to what extent are artificial or unnecessary competitive disadvantages or institutional obstacles preventing them from making this contribution? The latter question is relevant, however, only if, in answering the former, significant economic advantages of small enterprises over medium and large can be established. What might these be?

The economic argument for small size usually begins with the assumption that production in small firms is more labour-intensive (in terms of the capital-labour ratio). If, as is generally assumed, the economy is characterized by structural disequilibrium at the factor level, involving scarce capital and redundant labour, favouring small firms over large would help to correct this disequilibrium. More workers could be employed with a given capital. Whether also more output could be produced with a given capital depends on what happens to labour productivity. Only if smaller firms mean a saving in capital per worker more than in proportion to the drop in labour productivity associated with the capitalsaving would output be greater, as well as employment. Or, to put the requirement in more familiar terms, not only the capital-labour ratio but also the capital-output ratio must be lower.

Higher output, even at the expense of less employment, is advantageous not only because in a static economy it would be possible to improve the position of everyone by paying unemployment benefits, but, more significantly, because in a dynamic economy it also increases the potential for saving—i.e., for equipping a growing labour force. Sacrificing output for a short-run employment gain could mean less employment in the longer run because of a lower rate of saving and capital formation.

While higher output means a greater potential for saving, the realization of this potential depends, in part, on how the additional output is distributed. One of the strongest counterarguments against the claim that small enterprise saves capital is that it reduces saving by increasing labour's share of income. If this is true, even a lower capital-output ratio may in the long run imply slower growth and higher unemployment because of the lower saving propensity.

To recapitulate, there may be a short-run employment effect, an output effect, and a saving effect from substituting small enterprise for large. And the combination of the three yields a growth effect, which is also a long-run employment effect. The short-run employment effect depends on the labour-capital ratio of small versus large firms. The output effect depends on this together with labour productivity (Y/L), the product of L/K and Y/L yielding Y/K—the output-capital ratio. If the latter can be taken as constant, so that $Y/K = \triangle Y / \triangle K$, it can be multiplied by the proportion of output saved (S/Y) in the familiar Harrod equation to yield the rate of growth of output. We have, then,

$$L/K \cdot Y/L \cdot S/Y$$

as an expression for the rate of growth and, comparing the values for enterprises of varying size, as a criterion for judging whether favouring small over medium and large enterprises enhances the rate of growth. The expression can be shortened to simply S/K, but it is more useful to view it as the product of its component parts[4].

Some findings of the three studies with respect to factor proportions, labour productivity, and saving potential in small enterprises are presented in the next section. Questions about the competitive position and special problems of small firms are taken up very briefly in the following section. In the concluding section some questions about the policy implications of the findings are raised.

SECTION II

What we would like to know to assess the economic argument for small enterprise is how labour intensity, labour productivity, and the saving propensity vary among firms of different size. Unfortunately, only the Karachi study gives us this kind of comparative data. While the Delhi and Bombay surveys produced considerable information about these growth determinants for very small firms no comparable data for larger firms is available for direct comparisons. The author of the Delhi study, P. N. Dhar, did, however, in a later work[5] attempt some indirect comparisons which can be compared with the Karachi results. First, however, I will attempt to summarize the latter.

Table 1 presents those results of the Karachi survey which relate to the performance criteria outlined above. Only four industries were covered, but firms of all sizes were interviewed. Capital is the depreciated value of equipment, land, and buildings plus inventories. Output is value added—i.e., gross value of output less value of inputs purchased from other firms. Saving is undistributed corporate profits plus the saving of the owners of unincorporated enterprises.

What is most striking is the remarkable capital-saving performance of the smallest firms—those with 0-9 workers. The average capital-output ratio for this class was far below that for the others in each of the four indus-

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[4]. Note also that S/K could be the same for two sets of firms, but one could employ more workers or produce a greater output.

[5]. P. N. Dhar and H. F. Lydall, *The Role of Small Enterprises in Indian Economic Development*. (Bombay: Asia Publishing House, 1961).

tries surveyed. In three of the industries this result is explained by the ability of the smallest firms to achieve, with a vastly inferior (in money value) equipment per worker, a level of labour productivity not very far below the larger firms. The exceptional industry is plastics, where it is primarily the high level of labour productivity in the smallest firms rather than less equipment that explains the lower capital-output ratio for that class.

Owing to the inadequacy and unreliability of information about saving for the smallest firms it was not possible to compare directly their saving propensity with that of the larger firms. This means also that we do not have for the 0-9 workers class a value for the final coefficient, S/K. We do have profit per unit of capital, however, and here again the performance of the smallest firms appears to be outstanding. This is due principally, of course, to the lower capital-output ratio, but in part it is due also to a substantially lower average hourly wage rate paid by these firms[6]. Moreover, a part of their superiority in output per unit of capital may be due to the fact that their working hours are 16 per cent longer than those in the other classes[7]. Thus, a part of the superior profitability of the smallest firms appears to be due to their ability to "exploit" labour more fully via lower pay and longer hours[8].

Moreover, "profits" for the small firms include a substantial element of wages for owner-family labour. The Bombay survey, for example, shows that for firms in the 0-9 workers category owner-family labour represents about 30 per cent of total employment. Multiplying hours worked (which includes hours of owner-family labour) by average hourly wage and comparing result with an estimate[9] of the wage bill for hired labour suggests that for Karachi the percentage would be about the same. In any case, if we assume that owner-family labour is remunerated at the average rate for hired labour, profit per unit of capital is reduced from 67.4 per cent to 44.2 per cent. The latter is certainly a more meaningful figure.

We can also ask what the profit rate for this class would be if hours of work and rates of pay were at the average for all classes. If we assume that value added would be reduced in the same proportion as working hours[10], the effect would be to reduce the average profit rate further to 17.8 per cent.

Finally, we do not have any direct information about the saving propensities of the smallest firms. From two-thirds to three-quarters of their profits are saved by firms which employ more than 20 workers. In the 10-19 workers class this ratio drops to slightly less than one-half. It seems reasonable to

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[6]. The average hourly wage rate for firms in the 0-9 workers class was 73 per cent of the average for all classes and 58 per cent of the average for the largest firms.

[7]. Working hours do not vary significantly among the other four classes.

[8]. A day's wage is about 16 per cent less for about 16 per cent longer hours.

[9]. Value added less profits.

[10]. This may be a dubious assumption. However, the average work-week for the smallest firms is only about 51 hours, so that we might not expect any substantial improvement in man-hour productivity in dropping to 44 hours.

assume that it would be lower still in the 0-9 class[11]. We cannot be sure, therefore, that the superiority of the smallest firms with respect to capital-output ratios and profit rates would extend also to the general growth crite-rion—saving per unit of capital—especially in comparison with firms in the 20-99 workers range. Furthermore, if pay and working hours *per se* are made part of the performance criteria, the standing of the smallest firms is lowered further.

Still, with all of these qualifications, the evidence seems firmly to suggest that on our criteria the very smallest firms in Karachi do economize in the use of capital, particularly when viewed in relation to firms in the next larger size group and in the largest size group. The principal reasons seem to be substantially less investment per worker—not offset by labour productivity that is lower in the same proportion—substantially lower average wage rates, and longer working hours.

On the same evidence and the same criteria the performance of firms in the next larger size group (10-19 workers) and in the largest size group appears to be the least economic. In the case of the 10-19 class the principle reason for the poor performance seems to be the fact that while investment in equipment per worker was far above that in the 0-9 class—approaching that in the larger firms—there was no comparable improvement in labour productivity. This might suggest that in the 10-19 class there was some ten-dency to use "modern" methods and expensive equipment, but that these techniques are uneconomic below the level of 20 workers.

The poor performance of the largest firms is difficult to explain. These firms are concentrated in the textile and light engineering industries (none in Leather and only one—a comparatively efficient one—in Plastics). In Textiles, equipment per worker does not seem to vary significantly for firms above the very smallest size. This suggests that techniques may be the same throughout this range, and that the relatively poor labour productivity for the largest is due to organizational problems or underutilization of capacity. In addition, the significantly higher wage rates paid by the largest firms help to explain the low profit and saving rates. In the engineering industry the principal factor appears to be the much greater investment per worker which yielded only a very modest return in increased labour productivity.

On its face the evidence suggests that, to maximize economy in the use of capital, industrial firms should be very small, using little equipment and primitive methods, with a high proportion of owner-family labour, low pay and long hours; or, if modern methods and equipment are used, they should be of a medium-small size, employing at least 20 but not more than 100 workers. This reviewer finds the first half of this conclusion easier to swallow than the second half. It is not surprising that small entrepreneurs, chronically short of capital, find ways of squeezing the most, in the way of output and profits, out of their small investment. They must do this to survive. But why, at the other end, should diseconomies set in at the modest size of 100 workers?

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11.   We are assuming that owner-family labour is remunerated at the average rate for hired workers which, in the 0-9 class, is 23 per cent lower than in the 10-19 class. The assumption that a much larger portion of profits would be used for owner-family con-sumption in the smallest firms seems, therefore, justified.

Why should the optimum size be 20 to 100 workers (if wage rates and hours are uniform) ?

I suspect—and this only a suspicion—that the answer is that the full production and profit possibilities of the larger-scale firms have not yet been as fully exploited as those in the smaller firms; and that, incidentally, they have been most fully exploited in the very smallest firms. In our static production theory we assume that for each size the best technique (in the broadest sense) has already been adopted. Actually, the process of growth for a firm is to a considerable degree a process of learning how to solve the new organizational and production problems that arise as a concomitant of the greater production potential that larger size makes possible[12]. After all, if small or medium-small firms are more efficient and profitable in prospect for the future, as well as in present actuality, all of the larger firms should immediately split into numerous small production units, maintaining common ownership only for reasons of market power, etc. I wonder how many would recommend this. In a context of rapid industrialization, it is probably true that the largest firms *should* appear less efficient and profitable. What doesn't appear in the calculus is the value of the learning process they are undergoing. The question for a newly developing economy is not whether firms of more than 100 workers are too large, but whether the trend toward firms of this size is proceeding at too rapid a pace.

This view gains support from the comparisons of capital-output ratios made by Dhar and Lydall[13] based on the 1956 Census of Indian Manufactures. Their results (in slightly altered form) are reproduced in Table 2. In three of the industries (rice milling, bicycles, and electric fans), there seems to be no definite relation between size and economy in the use of capital. In the remaining six industries, however, there is evident a clear-cut trend toward greater economy with larger size. On the assumption that the larger-sized Indian firms are older and more experienced than their Karachi counterparts, these comparisons are probably more indicative of the potential productivity of capital at varying sizes than are the results of the Karachi survey.

The Indian census does not, however, cover the smallest firms—those hiring fewer than 20 workers. Using Dhar's Delhi study together with National Sample Survey data and some unpublished studies of the Perspective Planning Division of the Indian Planning Commission, Dhar and Lydall arrived at the further conclusion that:

> . . . . for enterprises employing less than 20 persons the output-capital ratio is generally more favourable than for those immediately above them (in size), but not necessarily more favourable than for large enterprises working two or three shifts. The figures suggest that, in general, the *most capital-intensive* type of manufacturing establishment is the small factory using modern machinery, and employing up to 50 workers[14].

[12].   E. Penrose, "Limits to the Growth and Size of Firms," *American Economic Review*, May 1955, pp. 531-543.

[13].   P. N. Dhar and H. F. Lydall, *op. cit.*, pp. 13-20.

[14].   *Ibid*, p. 19.

This appears on the surface to conflict sharply with the results of the Karachi survey, but if we include the 10-19 workers class in the "small modern factory" category for Karachi, and make allowances for the inexperience of the largest firms, there may be no real inconsistency. The rationale for grouping the 10-19 workers class in the Karachi study with the firms above them in size and the same class in the Indian studies with those below them in size is evident from a comparison of the Delhi and Karachi results. Since the industries covered are not the same we cannot be sure to what extent differences are due to peculiarities of particular industries. The comparison is, I think, useful nonetheless.

From the Delhi study, eight industries which have a substantial number of firms in both the 0-9 and 10-19 workers classes have been selected. The data relevant to our growth criteria for these eight industries are shown in Table 3. Capital (except for the omission of land and buildings) and output are measured as in the Karachi study[15]. In lieu of information on saving, "surplus"—defined as value added less the wage bill—is given as indicative of saving potential.

Note that the sharp difference in investment per worker, which appears in the Karachi results between the 0-9 and 10-19 classes, is not evident for Delhi. In general, Delhi firms in the 10-19 workers range seem to share with the very smallest firms the characteristic of extremely low investment per worker. On the other hand, they have a definite superiority over the smallest firms in labour productivity, with the result that they have lower capital-output ratios. This contrasts most sharply with the Karachi findings, but it may mean only that for Delhi, but not for Karachi, the 10-19 class must be included in the low equipment, primitive methods category. One wonders if this means that firms of this size in Delhi will remain small and primitive, while those in Karachi are in transition to a larger size at which their modern methods will become efficient.

On the surface the small firms in Delhi (both classes) appear to be remarkably economical in the use and generation of capital, with extremely low capital-output ratios and very high surplus-capital ratios. The same is true for very small firms in Bombay as is indicated in Table 4. The figures are quite misleading, however, because of the omission of land and buildings from the value of capital and of rent from value added. In both, the Delhi and Bombay studies, it was decided to treat rent as an input to be deducted in calculating value added and, consistently, not to include the value of land and buildings in calculating capital. This would be all right either if land and buildings represented a small proportion of total capital or if the ratio of rent to value of land and buildings was similar to the ratio of value added (excluding rent) to other capital. Unfortunately, neither is true with the result that the capital-output ratios calculated seriously understate the actual use of capital in production.

The extent of this understatement for Bombay was estimated by the

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[15]. Capital is measured both as depreciated original cost and as estimated replacement value in the Indian studies. The former has been preferred here both to enhance comparability with the Karachi data and because, unless both output and capital are calculated net of depreciation, the capital-output ratio does not permit an accurate comparison between equipments of different durability. Of course, depreciation estimates are not likely to be very accurate, but then neither are estimates of replacement cost.

reviewer by assuming that the value of land and buildings was ten times the value of annual rent and, on this basis, recalculating capital-labour, capital-output and surplus-capital ratios (including rent in value added). The results are shown in the figures in parentheses in the K/L, K/Y and S′/K columns of Table 4. For all industries the average capital-output ratio is tripled as a result. Presumably, a similar correction for Delhi would yield similar results.

Even with these corrections, however, the overall results of the Delhi and Bombay surveys show capital-output ratios that are quite low—very much lower than the overall average for firms of all sizes in the Karachi survey. Surplus-capital ratios would require some additional downward adjustment to compare with Karachi profit-capital ratios, but even here the evidence again suggests that the performance of the smallest firms does not suffer seriously by comparison. The same comments as above with respect to the contribution of low pay and long hours would, no doubt, apply here as well.

That the capital-saving advantages of small size tend to disappear with the adoption of "modern" techniques was suggested by the Karachi study and is corroborated by the Bombay findings. The Bombay industries in Table 4 have been grouped according to the use or non-use of power. For the seven industries which had firms in both categories, comparisons between manual operations and power operations can be made. In five of the industries, the use of power resulted in a very much higher capital-output ratio. In one industry—printing—the amount of equipment per worker is about the same whether or not power is used, and capital-output ratios do not differ significantly. Only in electrical repair industry did the use of power result in a great increase of labour productivity, and even here the additional cost of equipment per worker was almost enough to offset the gain, so that the capital-output ratio was only 20 per cent lower. In terms of surplus-capital ratios, the performance of the power-operated firms is superior, in engineering, as well as in printing and electrical repair. Overall, however, the results are not encouraging with respect to the advantages of power operations for very small firms.

It is not easy to generalize from studies of selected industries in three cities of the subcontinent. A study in depth of each industry in its own locale[16] would undoubtedly turn up a host of peculiar characteristics and special circumstances to explain its own performance in terms of our criteria. Despite this, I will attempt to summarize what I think these studies suggest about the potential growth contribution of very small enterprises. First, very small firms use much less capital per worker. The short-run employment effect of favouring them over larger firms would be very substantial. Second, while labour productivity is low for these firms, it is not so low as to offset completely their favourable capital-labour ratios. Hence, their capital-output ratios are also relatively low. Despite their labour-intensive character, non-labour's share in value added for the smallest firms does not suffer as much as one might expect *a priori* because of their substantially lower wage rates and longer working hours. Finally, their advantage thus far is considerably diluted

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[16].   The Bombay and Delhi studies both include valuable industry studies.

by their lower saving propensity (Here the guesswork becomes heroic!). In sum, the very smallest firms, because of their low investment per worker, implying backward techniques and manual operations, as well as their low pay and long hours, do save capital and do have a saving potential in relation to their capital that is not below that of large firms.

SECTION III

If, on the criteria outlined in Section I, it does seem that very small firms have a potential for contributing to the growth of the economy, the question posed earlier of possible competitive disadvantages and institutional obstacles which might interfere with the full realization of this potential becomes relevant. The list of chronic complaints of small businesses is virtually endless. What we would like to be able to do is to distinguish those which are legitimate protests against discriminatory treatment from those which merely reflect true diseconomies of small size. This is something that cannot be undertaken here, however. I will permit myself only the comment that remedies suggested for the disabilities of small enterprises very often involve some sort of combined or cooperative action—i.e., a larger scale of organization.

However, in the Bombay study, which was more concerned with these questions than were the others, two problems of prime importance stood out: finance and excess competition. Since the findings of that study with respect to these problems have very interesting implications for social policy, a few words should be said about them.

The authors of the Bombay study found that excess capacity was the most important problem faced by small firms. More than one-third were operating at less than 50 per cent of capacity and about half, at less than 60 per cent of capacity. Overwhelmingly, the most important reason given was lack of demand. In 73 per cent of the cases it was cited as the sole reason, and in more than 95 per cent of the cases it was cited in combination with one other reason. In contrast, lack of finance was cited as the sole reason in only two per cent of the cases, and raw material supply and labour supply each in only one per cent of the cases.

Moreover, while competition from large firms was an important factor limiting demand for the output of small firms, for most the problem seemed to be rather an excessive number of small firms competing for a limited market. Thus, whatever other disabilities face small firms, difficulty of entry does not seem to be one of them.

This conclusion is very significant in relation to the problem of finance. The small firms do not have access to bank credit and borrow very little even from money-lenders. Their principal sources of finance are the owners' own family, friends, and relatives, as well as traders who extend them credit. In 84 per cent of the cases, no interest on borrowed capital was paid[17]. Somehow, there is enough available of this kind of finance to encourage an excessive number (in relation to the market) of these small firms. One suspects that

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[17]. There may be an implicit interest charge, however, in the prices charged or paid by traders who extend "free" credit.

much of the saving that is thus mobilized would not be available to large enterprise or to government. A part might disappear entirely into consumption if these small entrepreneurs were not aggressively seeking it. To this extent, small enterprise has another mark to its credit: an effect of increasing total saving in the economy. And, its ability to do this seems to be sufficient to ensure that the inaccessibility of bank credit does not significantly limit the number of small firms.

SECTION IV

To draw general conclusions from the findings of these three studies about the kinds of social policies toward small enterprise that might enhance prospects for economic development would clearly be very risky. Nevertheless, it is tempting to try.

Suppose we fully accept the finding that very small firms can mobilize additional saving that is not available to others, that they can employ capital economically in production, and that they can return a reasonable share of the proceeds as reinvestment. The question then must be asked: reinvestment in what? In more poorly-equipped, low-pay, long-hour establishments of which there are already too many? But if not that, in what else? Reinvestment in modern equipment may cost them the most important advantage they now possess—a very low investment per worker. If each could advance to a substantially larger size, each could eventually achieve efficiency in the utilization of capital at a higher level of technique. But this is possible for only a few because of market limitations. The aggregated data presented in these studies no doubt hide a wide range of differences in performance among individual firms in each industry and size category. Special benefits and subsidies to smallness *per se* may only dilute the advantages of the better entrepreneurs and encourage the perpetuation of an excessive number of very small firms.

This doesn't mean that there is no future role for very small firms. In certain lines, they will always have inherent technical advantages—e.g., manufacturing or repairing to customers' orders—and there will long be small isolated markets to which to cater. Moreover, in the present state of underdevelopment in India and Pakistan, small enterprises play a very important role. They employ people who would otherwise be unemployed. They produce output that would otherwise not be produced. And they mobilize saving that would not otherwise be forthcoming.

They do not, however, represent the desired pattern of future industrial development for these countries. They represent, rather, a kind of stop-gap solution at a particular stage of industrial growth. Recognizing this, one still might call for special privileges and subsidies to small firms in this stage. The difficulty is, as I see it, that this might result in undermining those very elements of strength which they possess. This conclusion may outrage many, but I wonder if it might not be better simply to leave small urban enterprises alone[18], rather than adopt a blanket policy of favouring smallness,

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[18]. I suspect that the question of encouragement of small rural enterprises is an entirely different matter.

since their principal advantages seem to derive from their natural response to a generally disadvantageous position.

The real long-run solution to the problems of small enterprise lies in increasing employment opportunities in large enterprises. This view seems to be shared also by the authors of the Bombay study who conclude[19]:

> The hard core of the problem, however, lies elsewhere. A substantial proportion of the small-scale units find the main cause of their excess capacity, which is their most important problem, to be not competition with the factories but competition among themselves. The excessive number of small-scale units in relation to the market demand for their products is in many cases the essence of the problem. To the extent that this market demand is price-elastic, increase in the efficiency of the units for which a policy has been outlined above will raise the quantity demanded in the market. Excess capacity will be reduced to this extent. With increase in incomes, there may be some change in demand for these products for the better. But by and large the solution must lie in decreasing the pressure on many of these lines by increasing employment opportunities in other fields. At this stage, the problem of small-scale units merges into the general problem of rapid economic development.

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[19] D. F. Lakdawala and J. C. Sandesara, *op. cit.*, p. 200.

TABLE I

KARACHI

(*Four Industries*)

Industry by number of Workers	Capital Worker (K/L) (......rupees.....)	Output Worker (Y/L)	Capital Output (K/Y)	Saving Output (S/Y)	Saving Capital (S/K) (............percentage............)	Profit Capital (P/K)
Textiles						
0-9	887	1,406	0.63	—	—	102.8
10-19	9,237	3,124	2.96	23.5	7.94	15.1
20-49	8,653	2,360	3.67	25.1	6.83	12.7
50-99	9,514	3,421	2.78	36.3	13.05	17.7
100 up	8,708	2,509	3.47	29.6	8.53	12.7
Total	8,656	2,519	3.44	29.6	8.61	12.9
Light Engineering						
0-9	2,491	2,564	0.97	—	—	55.7
10-19	5,841	1,596	3.65	17.1	4.69	11.0
20-49	8,064	3,114	2.59	38.5	14.86	19.9
50-99	7,214	3,023	2.39	44.0	18.41	23.0
100 up	16,121	3,208	5.02	18.2	3.62	6.4
Total	11,266	3,029	3.72	26.3	7.08	11.4
Plastics						
0-9	7,845	5,786	1.35	—	—	59.7
10-19	4,469	1,047	4.26	25.7	6.04	12.2
20-49	10,259	2,712	3.78	45.1	11.92	15.8
50-99	19,039	3,792	5.01	23.8	4.75	4.8
100 up	4,813	2,129	2.26	19.4	8.60	19.9
Total	8,442	2,451	3.45	31.2	9.03	15.6
Leather and Leather Goods						
0-9	824	2,457	0.34	—	—	150.2
10-19	1,533	2,063	0.74	23.5	31.72	61.7
20-49	3,805	2,539	1.50	37.8	25.23	32.7
50-99	2,707	3,388	0.80	40.7	50.90	66.8
100 up	—	—	—	—	—	—
Total	3,063	2,733	1.12	35.8	31.93	45.1
All Industries						
0-9	1,964	2,269	0.87	—	—	67.4
10-19	6,018	1,964	3.06	21.9	7.15	14.5
20-49	7,414	2,708	2.74	35.5	12.96	18.4
50-99	7,693	3,209	2.40	40.4	16.85	21.7
100 up	9,265	2,562	3.62	28.5	7.88	11.9
Total	8,868	2,591	3.42	29.2	8.54	13.0

TABLE 2

CAPITAL-OUTPUT RATIOS IN INDIAN MANUFACTURING

Industry	Number of workers				
	20-49	50-99	100-249	250-499	500 up
Wheat flour	4.35	2.27	2.86	1.25	—
Rice milling	3.13	2.94	3.33	—	—
Vegetable oils	5.00	4.17	4.55	3.33	—
Soap	7.69	5.56	1.82	—	1.41
Tanning	3.57	2.56	2.63	1.82	—
Cotton textiles	4.17	2.00	4.35	2.44	1.59
Woollen textiles	7.14	2.94	6.25	2.94	1.96
Bicycles	1.96	1.72	2.56	1.96	2.04
Electric fans	2.78	3.00	1.89	2.44	3.33

Figures which relate to the output of only one factory have been eliminated.
Output is net value added.
Capital is depreciated value plus inventories and cash.

TABLE 3

DELHI

(Eight Industries*)

Industry by number of workers	Capital Worker (K/L) (.....rupees......)	Output Worker (Y/L)	Capital Output (K/Y)	Surplus Output (S'/Y) (......percentage......)	Surplus Capital (S'/K)
Printing					
0-9	2,067	1,414	1.46	38.9	26.6
10-19	1,964	1,346	1.46	30.2	20.7
all	2,012	1,378	1.46	34.4	23.6
Hosiery					
0-9	959	1,963	0.49	59.2	121.1
10-19	1,215	2,582	0.47	68.0	144.6
all	1,069	2,229	0.48	63.6	132.6
Soap					
0-9	765	1,226	0.62	47.6	76.3
10-19	1,109	3,145	0.35	69.8	198.0
all	955	2,285	0.42	64.5	154.3
Drugs					
0-9	752	1,404	0.54	75.6	141.2
10-19	1,563	1,260	1.24	42.4	34.2
all	1127	1,338	0.84	61.2	72.6
Light engineering					
0-9	481	1,017	0.47	36.8	77.7
10-19	750	1,275	0.59	37.2	63.2
all	681	1,209	0.56	37.1	65.8
General engineering					
0-9	860	1,305	0.66	38.3	58.1
10-19	1,252	1,843	0.68	40.8	60.1
all	1,170	1,730	0.68	40.4	59.8
Electrical goods					
0-9	529	946	0.56	41.2	73.6
10-19	1,372	3,446	0.40	42.5	106.7
all	1,083	2,589	0.42	42.3	101.2
Electroplating					
0-9	320	833	0.38	18.1	47.1
10-19	230	1,070	0.22	30.3	141.2
all	290	912	0.32	22.8	71.7
Eight industries					
0-9	1,154	1,307	0.88	44.5	50.4
10-19	1,314	1,804	0.73	43.5	59.8
All	1,248	1,600	0.78	43.9	56.2

*Those which had a significant number of firms in each size group.

TABLE 4

BOMBAY

(Fifteen Industries*)

(Firms with fewer than 10 workers with power and fewer than 20 workers without power)

Industry	Capital Worker (K/L) (......rupees......)	Output Worker (Y/L)	Capital Output (K/Y)	Surplus Output (S″/Y) (......percentage......)	Surplus Capital (S′/K)
I. All manual operated					
Sweetmeat & farsana	365 (1,324)	1394	0.26 (0.95)	40.3	155.1 (42.4)
Bidi	97 (364)	628	0.15 (0.58)	—11.7	—116.5 (—20.2)
Dyeing & printing	309 (907)	1,278	0.24 (0.71)	14.8	61.7 (20.8)
Footwear	136 (758)	736	0.185(1.03)	3.9	21.3 (3.8)
Photography	997 (2,075)	1,687	0.59 (1.23)	29.3	49.7 (23.8)
Watch repair	316 (1,313)	1,002	0.315(1.31)	—15.0	— 47.5 (—11.5)
Stove & tin jobbing	83 (964)	57	0.15 (1.73)	21.9	146.0 (12.7)
II. Both power (P) & manual (M)					
Furniture (P)	540 (5,213)	1,256	0.43 (4.17)	33.0	76.7 (9.0)
(M)	274	1,245	0.22	42.3	192.1
Printing (P)	2036 (2,750)	1,424	1.43 (2.14)	23.0	16.1 (6.1)
(M)	1800	1,146	1.57	3.0	1.9
Leather products (P)	1041 (864)	1,144	0.91 (0.81)	— 3.5	— 3.9 (3.8)
(M)	178	989	0.18	9.7	54.1
Misc. metal products (P)	1068 (1,322)	1,369	0.78 (1.10)	32.8	42.1 (27.4)
(M)	193	1,135	0.17	28.4	167.2
Engineering (P)	1356 (1,822)	1,595	0.85 (1.37)	44.2	52.0 (21.7)
(M)	415	1,064	0.39	15.2	39.0
Auto repair (P)	1030 (1,776)	1,515	0.68 (1.34)	39.7	58.4 (24.9)
(M)	261	1,135	0.23	27.1	117.9
Electrical repair (P)	1743 (2,948)	4,469	0.39 (1.02)	41.5	106.3 (35.6)
(M)	629	1,310	0.48	31.1	64.8
III. All power operated					
Flour mills	525 (1,085)	709	0.74 (1.53)	11.8	15.9 (7.7)
All industries	620 (1,837)	1,241	0.50 (1.48)	30.4	60.9 (20.5)

*The fifteen industries with the greatest number of firms in the sample.