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Small Manufacturing Enterprises in Developing Countries

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Emphasis is often placed on the promotion of small enterprises in developing countries, particularly as a means of improving the lot of unskilled workers. This focus raises questions about the relationship between establishment size and the pattern and efficiency of factor use, and about the nature and effects of price differentials in factor markets. This article goes some way toward answering these questions with data from surveys of small manufacturing enterprises in India and Colombia sponsored by the World Bank and relevant material from other countries. The article also examines India's long-standing policy, unusual among developing countries, of providing special support and protection for small enterprises. Analyses based on disaggregated data found that small firms are not *reliably more labor-intensive than their larger counterparts; nor are they consistently more technically efficient in their use of resources. In light of these findings and an analysis of factor markets, this article discusses the general implications of the research results for industrial policy in developing countries.*

This article is about the relationship between the size distribution of manufacturing industry in developing countries and the nature and efficiency of production processes. It does not purport to be a comprehensive survey of analyses of this relationship. Rather, it discusses the findings of World Bank surveys conducted in India, and assesses their broad implications with additional information provided by associated studies in other developing countries and relevant experience in developed countries.

Concern here is not with the concentration of economic power, and hence

The author, a consultant to the World Bank, is at the University of Oxford. This article is based largely on the book *Small Manufacturing Enterprises: A Comparative Study of India and Other Countries* by I. M. D. Little, Dipak Mazumdar, and John M. Page (forthcoming). The analysis and results reported on here are predominantly the work of Mazumdar and Page, although they are not responsible for the interpretations and conclusions reached. These are the author's; and in addition to the specific research results reported here, they draw on direct observations over many years of economic policies and development in developing countries. Other major outputs based on the same research are Anderson and Khambata (1981); Anderson (1982a, 1982b); Cortes, Berry, and Ishaq (forthcoming); Ho (1980); Mazumdar (1984a, 1984b); and Page (1979, 1984). References given in the present article are mainly to Little, Mazumdar, and Page (forthcoming) and occasionally to Cortes, Berry, and Ishaq (forthcoming). These works must be consulted for original sources.

with the size distribution of *firms* and patterns of ownership, but with the size distribution of plants or establishments. However, the terms "enterprise" and "firm" are also often used; in the vast majority of cases small establishments in developing countries are independent firms.

The central issues discussed here are whether smaller enterprises use resources more efficiently than larger enterprises, and if so, for what size ranges this is true, and what might constitute an appropriate approach to industrial policy. This amounts to a concern for the best use of a country's productive resources, including labor. Any inquiry into the efficiency of resource use is an exercise in applied welfare economics. It should not need to be stressed that this framework of analysis and the concept of efficiency of resource use are not in conflict with concern for the poor.

The best use of a country's resources involves more than the efficient allocation of a given stock of capital and labor. Savings and the training of workers and entrepreneurs may influence and be influenced by the size distribution of industrial enterprises. These dynamic relations were not the central concern of the research, but where some light was thrown on them or more generally on the determinants of growth or efficiency, this is mentioned.

India has had by far the most varied and forceful set of industrial policies aimed at helping small-scale enterprises of any developing country. These policies are described, and their results assessed, below.

What do we mean by small? Size is most commonly measured by the number of workers. In industrial countries small-scale often means less than 200–300 workers. In developing countries, however, the average plant size is smaller, and "small" will generally be taken to mean 1–49 workers. Sometimes much finer distinctions are necessary, both up and down the scale, and will be introduced as required. Size may also be measured by capital employed, and for some purposes this may be a more appropriate measure. It is used for policy purposes in India, but even there size distributions by capital employed are rarely available. Both the availability of statistics and the fact that employment size is more easily envisaged make it the dominant measure.

I. Increasing the Demand for Unskilled Labor

The central issue examined is whether the promotion of small-scale enterprises (SSEs) in developing countries is a good means of reducing poverty and inequality, insofar as it would result in an increased demand for unskilled labor. This was not a major concern of development policy until the late 1960s, when international institutions and some private development propagandists claimed to discover massive and rising unemployment in developing countries. The International Labour Organisation's (ILO's) World Employment Program was then launched. The concern for employment was soon linked to advocacy of SSEs, which were believed to offer much more employment than larger firms for any given investment.

As a part of this trend, the ILO's Kenya mission took up and popularized the concept of the "informal" sector. Discussion of how it should be defined, and of its role, has filled thousands of pages. But whatever exactly it was, it was accepted that it was labor-intensive, that it provided goods and services by the poor for the poor, and that it should be encouraged rather than being regarded as an unproductive slough that development would and should eliminate. However, I have not found the informal sector to be a concept that is of either analytic or operational value, and I do not use it.

Apart from the informal sector, there was much conceptual and analytic confusion as it came to be recognized that unemployment was not closely related to inequality or poverty, and that the evidence for any general increase in unemployment was weak and even false. One need not follow the changes in emphasis in international forums from unemployment to inequality to poverty. It suffices to say that a consensus has formed within the international development establishment in favor of a pattern of development that is more demanding of unskilled labor, and that the case for this does not depend on evidence of either unemployment or underemployment. Essentially the case made is that in developing countries a minority of people work with a lot of capital (or land) while a large majority work with very little indeed and can thus earn very little. If new investment called for more participating labor, more work would be done, real wages would rise, or both would occur. In any case, unskilled (or initially unskilled) workers would benefit. This is a consensus with which I am in full agreement.

Thus the main argument for encouraging small-scale enterprise development as a means of reducing poverty and inequality rests on the increased demand for unskilled labor that is supposed to follow.[1] It is clear, however, that output and, more specifically, the productivity of unskilled labor must also be considered. If small enterprises used both more capital and more labor per unit of output than larger enterprises, then investment in small enterprises would result in a smaller increase in output than investment in large enterprises and there would be no clear case for special investment in SSEs. Similarly, it is not sufficient to show that SSEs use more labor and no more capital per unit of output than do larger enterprises. This being so, one could as well employ more workers to do nothing in large factories (as is indeed often done) as employ them "productively" in SSEs. Labor almost always and everywhere has some opportunity cost—that is, if not employed wherever it is, it would somehow earn some money and produce something elsewhere. There is thus no escaping the fact that the case for promoting any particular type of enterprise is that it uses factors more efficiently, given their social costs. The so-called employment case *for* SSEs must rest on this. There will certainly be a strong case *against* SSEs if they are shown to use both more capital and more labor per unit of output: if such is the case, then one

1. It is also argued that SSEs produce goods that are more appropriate for the poor than do larger enterprises. The significance of this argument is recognized, but it is not discussed in depth in this article.

could only advocate the promotion of SSEs in order to increase the demand for labor if there were no way of increasing labor demand without reducing output—which is in general false.

Hence, to establish a case for special encouragement of SSEs, it must be claimed that (1) smaller enterprises are both relatively labor-intensive (low capital-labor ratio, K/L) and have relatively high capital productivity (output-capital ratio, O/K), low labor productivity (output-labor ratio, O/L) being implied; and (2) that these characteristics represent a more efficient use of capital and labor. If production functions are homothetic and profits are maximized,[2] then the first claim implies that small firms face a lower price of labor relative to capital than larger firms. Further, it implies that these resources are more efficiently employed if this lower relative price of labor is closer to its relative shadow price than is that faced by larger enterprises. This assumption implies distortions in capital or labor markets, or in both.

The above paragraph raises questions that are discussed in the next four sections. First, what are the facts concerning relative factor proportions and productivities? Second, if small and large enterprises face different wages should this be regarded as a distortion? Third, are capital costs similarly distorted? Fourth, are the facts about factor proportions and productivities consistent with differences in factor prices? Before turning to these questions I conclude the present section by pointing out that any case for reform to support SSEs will be strengthened if it can be shown that government policies, whether macroeconomic or industrial, have discriminated against small enterprises.

With the exception of India (the policies of which are examined in a later section), developing-country governments have shown little real (as opposed to cosmetic) concern for SSEs. Industrialization has been promoted in three main ways: first, by regulating trade; second, by legislating investment incentives; and third, by directly undertaking public sector investments, often with foreign aid or commercial loans. All of these policies have discriminated against SSEs. Foreign trade and payment controls have discriminated, since large firms are better placed to obtain import permits for capital equipment, components, and raw materials and are also better able to obtain the tariff rebates that are intended to alleviate some of the harmful effects of high protection. Investment incentive laws have sometimes actively discriminated against the small, by restricting their tax concessions to firms of some minimum, generally large, size. Where there has been no such overt discrimination, small firms have nevertheless often been ignorant of the concessions obtainable or unable to handle the paperwork needed to make an effective case to the public office concerned.

Selective credit controls combined with low, controlled real interest rates have the consequence that banks have not been able to compensate for the higher cost

2. In homothetic production functions, if relative factor prices are the same for large and small firms, then relative factor proportions will also be the same. Evidence presented in section II of this article suggests that production functions are homothetic for at least some of the industries surveyed. The possibility of differences in firms' technical efficiency should also be recognized (see section VI).

of small loans by charging more (higher collateral requirements not necessarily being a feasible alternative). The limited credit has therefore been allocated to large clients. Finally, when governments have directly promoted industrial investments, they have favored the large project even when it would be owned and operated by a private enterprise, whether foreign, local, or a joint venture.

Bias can also arise because the problems of dealing with the tax authorities and with governmental regulations weigh more heavily upon small firms, even in the absence of trade controls and industrial promotion. However, the hand of the law and the tax collector may often fail to reach the very small (say, less than ten workers) in most developing countries. When this is so, nonenforcement of taxes and of some regulations such as those governing minimum wages or working conditions will constitute a bias *in favor* of the very small (though this in turn may sometimes be outweighed by harassment of the small under zoning regulations in urban areas). Thus, taxes and regulations are likely to weigh more heavily on the small modern factory employing ten to fifty workers than on either the large factory or household/workshop activities.

Government concern for SSEs should be reflected in measures to offset the disadvantages imposed upon them, even if this does not involve major liberalizations of trade and industrialization regimes so as to remove these biases "at source." Indeed, in most countries, some such measures have been implemented. Some credit institution has usually been set up to lend to small and medium-size enterprises (the medium-size being favored in practice for the reasons already given). Industrial extension schemes, management training institutes, and industrial estates (the latter not always mainly for the small) have been started in many countries, often supported by the United Nations Development Programme, ILO, or some bilateral aid agency. Even where these have had some success, however, their reach has invariably been very limited, if only because of the difficulty of communicating their existence to all possible recipients. This applies also to the provision of institutional credit. Small firms (less than fifty employees) get very little of the credit reserved for the medium-size and small, and the very small (less than ten) almost never get any medium- or long-term loans. Except in the case of India, where some exceptional measures protect traditional industries, it is safe to conclude that the measures targeted to favor small enterprises have negligible positive impact relative to the negative impact of the general economic policies of governments.

However, the question remains open as to whether a bias against the small also amounts to a bias in favor of capital-intensive development. The contrasting experiences of India on the one hand, and the Republic of Korea and Taiwan on the other, suggest the opposite. India has done much to preserve and encourage small enterprises, and its industrial development has been very capital-intensive. Korea and Taiwan have done very little for the small, and tiny manufacturing enterprises have almost vanished. Medium-size and large enterprises accounted for the bulk of the extremely rapid rise in employment in these economies. For instance in Korea between 1963 and 1975 there was a rise in manufac-

turing employment of over 1 million persons, 86 percent of which was accounted for by firms with over 100 employees. The smallest census size group, 5–9 workers, showed no rise (Ho 1980). Moreover, large-scale industrialization was compatible with capital-output ratios that were among the lowest achieved by any economy.

To summarize, the prima facie case for policy interventions in favor of SSEs as a means of raising overall welfare in developing economies must rest on evidence that small units on average use factor inputs more productively than their larger counterparts, so that a shift of resources in favor of smaller units would yield a net increase in output, as well as an increase in the demand for unskilled labor. This is not to deny that income distribution is an important consideration; indeed, an increase in the demand for unskilled labor is probably one of the most effective means of improving distribution. However, this topic and the related claim that small enterprises produce goods more appropriate for the poor than do large enterprises are not considered in this article.[3]

II. Firm Size, Factor Proportions, and Productivity—Some Findings

I now address the first of the questions posed in the previous section: how do factor proportions and productivities actually vary with size? I first consider manufacturing in the aggregate and summarize evidence from industrial censuses for Japan and eleven developing countries.[4] With only a few anomalies, capital intensity and labor productivity rise with size. But capital productivity quite often behaves unexpectedly. In Japan, it rises from the smallest size class (1–9 workers) to peak in the range of 20–49 workers (Ohkawa and Tajima 1976). In many developing countries, the figures behave erratically, but there is some evidence of a similar peak coming in the range 20–200 workers. For instance, in Korea capital productivity is virtually constant for 5–49 workers, rises dramatically in the range 50–199, and then falls again, though not to the level found in small enterprises (Ho 1980).

However, such aggregated figures, even if reliable, are of limited interest. For policy purposes, it is important to know whether small units survive and are labor-intensive because they produce the great bulk of a limited range of goods that are technologically unsuited to large-scale, capital-intensive production or whether a very wide range of goods is produced in both small, labor-intensive and large, capital-intensive units. In the former case, significantly more small-scale production could be engineered only by a change in demand in favor of the sorts of things that can be efficiently made by small units. In the latter case, a large relative shift to small units may be both possible and desirable without

3. They are dealt with, though not systematically, in Little, Mazumdar, and Page (forthcoming), especially in chap. 13.

4. For more detail and sources see Little, Mazumdar, and Page (forthcoming), chap. 7. The eleven developing countries are Brazil, Chile, Colombia, India, Malaysia, Mexico, Pakistan, Paraguay, the Philippines, Sri Lanka, and Venezuela.

such a change in demand. In narrowly defined industries, it is likely that the products of large and small firms are or could be highly competitive, though this is by no means always the case.

For this reason, more disaggregated figures obtained from censuses and surveys in India, Korea, the Philippines, and Taiwan were examined; industry classifications ranged from the two-digit to the five-digit standard industrial classification (SIC) level. The greater the disaggregation, the less frequently were smaller enterprises found to be more labor-intensive, and to have lower labor and higher capital productivities (Little, Mazumdar, and Page, forthcoming, chap. 7).

In India, disaggregation to the level of 32 industries produced evidence that factories in the range 10–49 workers (10–99 if no power was used) were more labor-intensive than larger ones in a high proportion of cases (Mehta 1969). But analysis at the much greater level of disaggregation possible in Korea (373 industries in the 1975 survey) showed that the incidence of highest labor intensity is almost even throughout the range of size classes from 5–499 workers. Moreover, highest *capital* intensity was as often found in the range 5–50 workers as in the range 50 plus (Ho 1980).[5] The moral is obvious. Even if one were constructing a policy purely to favor labor intensity, it would be essential to discriminate finely between industries. However, no such policy ignoring output could be sensible.

The crudest possible scale which might yet have claim to measure efficiency in a labor-abundant economy is capital productivity. The results here are not favorable to either the very small or the very large, even for manufacturing as a whole. In all the economies examined, capital productivity for manufacturing (taken in the aggregate) peaks in the range 20–200 workers. The highly disaggregated Korean figures produce the results that capital productivity peaks within the range 50–500 workers in two-thirds of the industries.[6] Further analysis of the figures shows that capital intensity was lower and capital productivity higher in the range 100–99 workers as compared with the range 20–49 workers in about half of the 139 industries for which this comparison could be made. A Reserve Bank of India survey (1979) of small industries (defined by capital) suggested that enterprises employing over 20 workers (the "large-small") have higher capital productivity than the "small-small."

In Korea, in many industries, smaller size groups were "dominated" by their larger counterparts, that is, they used both more labor and more capital per unit of output. Where this is not the case, it is useful to shadow price the inputs. (Shadow pricing is also desirable because of variation in labor skills.) Using actual wages as shadows[7] and a uniform 20 percent as the opportunity cost of

5. All the Korean figures derive from the census of 1968.

6. The relatively low capital productivity of large firms, especially the very large (say, over 2,000 workers), that is often observed may have little to do with size as such. The large size classes are likely to include a relatively high proportion of firms whose prices are controlled, and a high proportion of public sector firms.

7. It is widely agreed that the labor market in Korea is such that wages closely map opportunity costs.

capital, it was found that in only 32 of 138 cases was social cost lowest per unit of value added for small enterprises (less than 50 workers); only 7 of these cases were in the smallest size class (5–9 workers).[8]

The evidence thus far reviewed is very unfavorable for the SSE case.[9] It is, however, to some extent misleading. The smaller size categories include some cases in which capital intensity is abnormally high and productivity low. Thus a large firm measured by normal employment will fall into a smaller size category in a bad year, and a sick or dying firm may have only a skeleton staff. The smaller sizes also include start-ups that have installed most of their equipment but have not yet reached planned employment levels. There is some evidence that, when size is measured by capital, the factor proportions and productivities behave in a more orderly manner, and that the small thus defined would show up better, but census data are not normally available on this basis.

Partly for the above reasons, and out of some general distrust of census figures, a number of narrowly defined industries were intensively surveyed in India under the World Bank research program. These yielded further and less biased evidence concerning the variability of factor proportions and productivities with size than that provided by censuses. The very intensive inquiries made of the enterprises should also have resulted in these survey figures being more reliable than those of censuses. The industries studied included shoes, soap, printing, machine tools, and metal casting. In general it was found that the intragroup variations were so large that mean differences between groups were rarely statistically significant.

Survey findings for establishments ranked by the number of employees are shown in table 1. Some comments can be made on the results for particular industries. In printing, the relatively low capital productivity of the two largest size categories, which is not offset by relatively high labor productivity, suggests that these establishments are technically inefficient relative to their more labor-intensive, smaller counterparts. Machine tools was the only industry in which a statistically significant difference was found between the factor productivities of very small firms (less than 10 workers) and those of larger firms. The soap sample was restricted to firms using no power, and the associated uniformity of technique accounts for the similarity of capital intensities and factor productivities across size categories. Similarly, in shoes technology is probably a better guide to capital intensity and factor productivities than is size, with the marked difference in findings for establishments with more than 100 workers reflecting the use of factory rather than traditional handicraft methods. In metal casting, the size-groups with over 50 workers had both higher capital and higher labor productivity, but the intragroup variation was too large for this to be statistically significant.

8. For this comparison the number of industries was reduced by excluding those with entries in less than four size classes, as well as those for which considerable heterogeneity of output was suspected.

9. This article has reported mainly Korean figures. Other broadly confirmatory evidence is given in Little, Mazumdar, and Page (forthcoming, chap. 7).

Table 1. *Factor-Output and Capital-Labor Ratios in Firms in Five Indian Industries, by Number of Employees*

Size (N = number of workers)	*Printing*			*Machine tools*			*Soap*			*Shoes*			*Metal casting*		
	Y/L	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*
$N < 5$	8.92	4.86	1.84	—	—	—	10.80	2.47	4.37	5.23	14.28	0.37	3.20	10.67	0.30
$5 \leq N < 10$	12.15	3.51	3.46	4.16	1.11	3.75	9.33	2.20	4.24	5.61	29.87	0.19	13.91	4.97	2.80
$10 \leq N < 25$	14.18	3.26	4.35	6.73	2.66	2.53	9.78	2.04	4.79	5.67	16.20	0.35	12.32	5.77	2.14
$25 \leq N < 50$	14.56	3.51	4.15	7.84	3.28	2.39	11.19	1.98	5.65	6.30	13.13	0.48	14.44	7.63	1.89
$50 \leq N < 100$	11.59	1.24	9.35	7.44	2.57	2.90	10.92	2.93	3.73	—	—	—	19.40	29.96	0.65
$N \geq 100$	13.81	1.21	11.41	12.31	2.13	5.78	11.10	2.74	4.05	15.32	4.93	3.11	22.47	8.59	2.62

— Not available.

Note: *Y/L* and *K/L* are in thousands of rupees per worker. *Y/K* is a pure number.

Source: Little, Mazumdar, and Page (forthcoming, table 11-1).

Similarly, high intragroup variation was found in two surveys of small and medium-size firms in the metalworking and food processing industries conducted in Colombia (see Cortes, Berry, and Ishaq, forthcoming). In metalworking, capital intensity was lowest and capital productivity highest in the range 41–60 workers, and labor productivity was also higher than in the small size groups. In food processing, capital intensity was lowest and capital productivity highest in the size group 16–29 workers. Labor productivity was lower in the 16–29 worker group than in the 8–15 and 30 plus groups, but higher than in the smallest size class (1–7 workers). The authors of these surveys also estimated a social cost-benefit ratio, which was best in the largest size classes (61 plus workers in metalworking and 30 plus in food processing) (Cortes, Berry, and Ishaq, forthcoming, chap. 3).

When establishments are ranked by capital (measured as the undiscounted cost of fixed capital at 1979–80 prices), the factor proportions and productivities vary with size in a manner that is closer to expectations than when employment is used as the size discriminator. In the two Colombian surveys, the ratios behaved exactly as expected: capital intensity and labor productivity rose with size, and capital productivity fell. This confirms what has been found to be true in some other surveys or censuses, for example, in Japan (Kaneda 1980). However, in the Indian surveys (see table 2) substantial irregularities occurred, and the differences between size groups were frequently insignificant, intragroup variation remaining high. Shoes was the only industry except for the largest size class, in which there was a regular rise of capital intensity and labor productivity with capital size and a regular fall in capital productivity.

The surveys also distinguished between skilled and unskilled workers. In the cases of machine tools, shoes, and metal casting, there was a distinct tendency for the proportion of unskilled workers to rise as the size of firms rose above twenty-five workers. In soap there was little variation, while in printing the results were highly erratic (probably reflecting difficulties with the classification of workers).

As between the industries, printing was the most capital-intensive. It may be noted that for these five industries, intraindustry differences in capital intensity were of the same order of magnitude as interindustry differences. However, this similarity certainly does not carry over to the whole range of industries, as witnessed by Samuel Ho's examination of the Korean and Taiwanese censuses. In Korea, some industries were more than a hundred times as capital-intensive as others, while within industries the difference between size classes seldom exceeded three times.

This is an important observation. It suggests that, to achieve a more labor-intensive manufacturing industry, there is far more mileage to be obtained by changing the industry mix by altering the pattern of demand than by influencing the size distribution within industries. It should be noted, however, that this argument rests on observation of *average* intensities and productivities. *Marginal* values will clearly be important in determining optimal policies.

Table 2. *Factor-Output and Capital-Labor Ratios in Firms in Five Indian Industries, by Value of Fixed Assets*

Size (K = thousands of rupees)	*Printing*			*Machine tools*			*Soap*			*Shoes*			*Metal casting*		
	Y/L	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*	*Y/L*	*Y/K*	*K/L*
$K < 1$	—	—	—	—	—	—	—	—	—	3.77	42.30	0.09	—	—	—
$1 \leq K < 5$	6.08	4.81	1.26	—	—	—	—	—	—	4.76	18.41	0.26	3.20	10.67	0.30
$5 \leq K < 10$	8.38	5.40	1.55	—	—	—	9.86	4.20	2.35	6.13	9.72	0.63	—	—	—
$10 \leq K < 20$	10.83	5.77	1.88	—	—	—	9.11	3.82	2.39	7.37	9.42	0.78	5.84	6.84	0.85
$20 \leq K < 50$	13.02	3.98	3.27	6.25	3.17	1.97	8.39	2.35	3.15	10.84	8.64	1.26	12.74	10.72	1.19
$50 \leq K < 100$	14.40	3.52	4.09	7.38	3.25	2.27	10.06	1.41	7.14	10.88	6.26	1.74	23.06	8.91	2.59
$100 \leq K < 200$	13.00	1.44	9.03	6.45	2.08	3.10	12.08	1.61	7.50	—	—	—	12.12	6.45	1.88
$200 \leq K < 500$	17.24	1.57	10.98	8.41	1.79	4.70	10.79	2.75	3.92	—	—	—	27.82	8.44	3.30
$500 \leq K < 1{,}000$	15.13	1.42	10.66	10.63	2.22	4.79	13.03	2.41	5.41	14.45	3.35	4.31	21.26	7.83	2.72
$K \geq 1{,}000$	12.71	1.09	11.66	15.91	1.80	8.84	—	—	—	15.98	6.11	2.62	25.96	2.72	9.54

— Not available.

Note: Y/L and K/L are in thousands of rupees per worker. Y/K is a pure number.

Source: Little, Mazumdar, and Page (forthcoming, table 11-2).

The Indian surveys provided data at the firm level that permitted analysis of variations in inputs and outputs going well beyond the simple relationships of size, factor proportions, and productivities that have thus far been described.[10] The analysis was based on the fitting of three factor translog production functions of the average and frontier type. The three factors were capital and skilled and unskilled labor.[11] It is convenient to record some of the more interesting econometric findings at this point.

Technical efficiency was investigated by measuring the ratio of the factor inputs of a hypothetical best practice or "frontier" firm to those of the actual firm (both having the same factor proportions). There was no significant relationship between firm size and efficiency except in the case of machine tools, in which it was positive. This was true whether or not one controlled for various other potential determinants of technical efficiency (these other determinants are discussed in section VI).

It has often been argued that the relative prices of factors of production have little bearing on the methods of production employed, and hence that they are largely irrelevant so far as employment is concerned. Even if this were not so, however, the substitutability of factors would be an important issue. In all four industries for which estimates could be made,[12] the elasticity of substitution was highest for the ratio of skilled to unskilled labor (averaging 3.1, taken at the mean size), next highest for the ratio of skilled labor to capital (averaging 2.0), and lowest for the ratio of unskilled labor to capital (0.7). There was no significant variation of substitutability with size.

Tests were made for homotheticity and constant returns to scale. With a homothetic production function, the scale of operations will not affect the capital-labor ratio, provided relative factor prices remain the same. In the case of machine tools, metal casting, and soap, the hypotheses of homotheticity and constant returns to scale could not be rejected. In printing and shoes, size tended to favor capital intensity, while returns to scale were variable. In no case was there strong evidence of increasing returns.

In summary, enough evidence has been presented to show that size, especially when measured by the number of employees, is a very poor indicator of those characteristics of firms that may be of interest to policymakers. If one were searching solely for labor intensity, then it would be better to study techniques than size. Of course, traditional or handicraft techniques are highly labor-intensive, and units are generally (though not always) very small. But very small modern factories or workshops may be very capital-intensive. This was pointed out long ago by Dhar and Lydall (1961).

10. Surveys were also made for powerlooms and handlooms, but the data generated did not permit interesting size comparisons within these weaving methods because of insufficient variation in size of enterprise, insufficient variation in capital-labor ratios, or both.

11. The analysis is discussed in depth in Little, Mazumdar, and Page (forthcoming, chaps. 9–12).

12. Soap had to be excluded because the unrestricted translog function was insufficiently well-behaved to permit reliable estimates of the elasticity of substitution.

Small size certainly does not indicate high capital productivity. Indeed, the figures suggest that small firms rather often have both low capital and low labor productivity. Capital productivity and total factor productivity peak in the medium size range of 50–500 workers in most industries. However, census and survey returns based on annual figures tend to bias results against the small. Where firms can be ranked by capital employed, the results tend to be rather more as expected (capital intensity and labor productivity rising, and capital productivity falling monotonically, with size), but nevertheless usually with such variance within size groups as to make intergroup comparisons statistically insignificant. It should, moreover, be noted that when firms are grouped by capital size, there is a bias *in favor* of the small. This is because small groups, at least in censuses, will include firms with highly depreciated capital.

Our own enterprise surveys were almost free of the biases referred to. Sick firms with skeleton staffs were not observed. At least a year's operation was required, and there was no surprising preponderance of very young firms. The *undepreciated* value of capital was used in the Indian surveys, and commercial value in the Colombian surveys. These surveys did not provide evidence that small firms employ resources more efficiently (either technically or from a social point of view) than large firms, nor even that they are reliably more labor-intensive. If our research can be held to suggest anything about size and economic or social desirability, it is that beauty is to be found mostly in the middle of the size distribution.

III. Labor Markets

One of the arguments in support of small-scale enterprises has been that they pay low wages that are closer to the social cost of labor than the higher wages paid by large enterprises. While doubt has already been cast on whether small enterprises will in fact be more labor-intensive—as theory suggests they should be if paying lower wages—this argument is worth examining in its own right.

Before proceeding it must be noted that the social cost of skilled workers is greater than that of the unskilled. There is no prima facie distortion unless labor of similar skills is paid differently for similar work in enterprises of different sizes. The crudest control is to restrict comparisons when possible to those classified as either skilled or unskilled. Further to this, allowance can sometimes be made for differences in age, sex, job experience, and education. In the following, differences in skills that have been controlled for when making comparisons will be noted.

For manufacturing *in the aggregate,* there is no doubt that small enterprises (say, with less than 50 workers) pay lower wages than large enterprises (say, with more than 500 workers), and that the differentials are too great to be plausibly attributed to differences in skill or capability. These differentials vary by country and are smaller the more developed the country. In the countries for which evidence was readily available, they were greatest in India and Indonesia (on the

order of 100 percent for similar workers); much lower in Korea, Malaysia, and Colombia (30–50 percent); and still less in the industrial countries (25–30 percent).[13] There are "natural" (that is, noninstitutional) reasons for differentials which apply more strongly in developing countries and therefore explain country differences, at least in part. In general, differentials are not distortions to the extent that they are explained by these noninstitutional reasons.

The most important natural reason is that a stable labor force that can acquire firm-specific and industry-specific skills is relatively important for large firms, and for industries in which large firms predominate. One reason for this is that large firms are, in the aggregate, relatively capital-intensive.[14] Machinery and equipment would be wasted and even damaged if associated with an unstable labor force, and there is evidence that labor turnover is higher in small firms. Another reason is that large firms usually produce higher-quality products, and that the scale of their marketing requires the goodwill associated with branded products of uniform quality. A relatively skilled and reliable labor force is needed if these desiderata are to be achieved.

Relatively high wages must be paid to get the reliable labor force which large firms want. This is particularly the case in the poorest countries. Mazumdar (1984b) has argued that large wage differentials existed in the Bombay cotton mills before there was any institutional reason for this, such as the strength of trade unions or governmental influence. The mills needed to attract permanent migrants, who had a higher supply price than transient workers. Small units, especially in handicrafts, services, and construction, had a comparative advantage in the use of cheap, transient labor; in countries such as India and Indonesia there is still a large supply of transient migrants, which keeps wages very low and turnover high in such activities. In countries like Colombia, Korea, and Malaysia, the urban labor force is more settled, and it is relevant that differentials have narrowed considerably in Korea with the very rapid growth of demand for urban labor (whereas they appear to be widening in India).

In the developed countries, labor forces are generally more skilled and homogeneous. But even where transient migration is a thing of the past, and the labor force is literate and manually adept, large firms demanding firm-specific skills may still need to pay relatively high wages to achieve the stability they require. Finally, it may be that even a stable labor force will increase its productivity if paid more, in which case the lowest wage that is required for stability may not be the least-cost wage (the so-called efficiency wage argument).

Indeed, there are so many natural economic reasons for wage differentials,

13. The general survey of this evidence, in Little, Mazumdar, and Page (forthcoming, chap. 4), is derived from Deshpande (1979), India (1979), *Indian Labor Journal* (1981), and Mazumdar (1984b), for India; Manning (1979) and World Bank (1979) for Indonesia; Park (1981) for Korea; Mazumdar (1981) for Malaysia; Cortes, Berry, and Ishaq (forthcoming); and Mohan (1981) for Colombia; and Lester (1967) and Wilkinson (1973) for developed countries.

14. It is hard to separate the influence of size from that of capital intensity. Small, capital-intensive firms are also likely to pay relatively high wages.

Table 3. *Average Annual Wage of Unskilled Workers in Firms in Five Indian Industries*
(rupees)

Size (N = number of workers)	*Printing*	*Machine tools*	*Soap*	*Shoes*	*Powerlooms*
$N \leq 10$	2,364	2,172	2,664	—	—
$10 < N \leq 25$	2,436	2,316	2,832	2,256	1,140
$25 < N \leq 50$	2,604	2,700	2,964	3,000	1,428
$N > 50$	2,292	2,544	3,240	—	2,244

Source: Little, Mazumdar, and Page (forthcoming, table 14-3).

including the relative disutility of jobs, that it is only if there is evidence that they are produced or widened by trade unions or by governmental pressure or legislation that there is a prima facie case for saying that higher-paid workers are, from a social point of view, paid relatively too much. In India there is some evidence that government intervention helped to create a labor aristocracy in the textile industry in the interwar period, although quite large wage differentials clearly existed long before. There is also evidence that labor legislation and the awards of industrial tribunals have widened differentials, especially for large firms, in the postwar period (Subramanian 1979). In Colombia, as in other Latin American countries, the proportion of fringe benefits rises sharply with size, and this is probably a distortion that results from legislation (Cortes, Berry, and Ishaq, forthcoming). In the other countries mentioned there seems to be little or no institutional influence operating. An exception may be that foreign firms usually pay relatively high wages, and it is difficult to attribute this to anything other than government influence or political prudence.

Although wages rise with size, they do not always do so in a smooth fashion. There is some evidence of a wage cliff at around 200 workers. For instance, in India the Annual Survey of Industry (1978–79) shows a wage jump at 200 workers, and Mazumdar (1984b) found some evidence of a cliff in his Bombay labor survey (after controlling for the quality of labor). In Colombia also, evidence was found of a cliff at 200 workers (Cortes, Berry, and Ishaq, forthcoming). Such a cliff could be an indication of institutional forces coming into play, a suggestion supported by the fact that the Korean data show a rather steady progression of wages with size (see Ho 1980, sec. V). However, the evidence is weak.

So far, I have been considering industry or manufacturing as a whole. The only disaggregated data available come from the research surveys. As can be seen from table 3, only in powerlooms was there a very large differential, with firms with over 50 workers paying about double those with 11–25 workers. Very large differentials seem to be a feature of the Indian textile industry.

In the two World Bank surveys of metalworking and food processing firms in Colombia, earnings of unskilled workers, including fringe benefits, were 30–50

percent higher in the largest than in the smallest enterprises (Cortes, Berry, and Ishaq, forthcoming, chap. 2).

These surveys were essentially of small and medium-size firms with up to 200 employees, thus excluding those beyond the wage cliff—if there is a wage cliff. The wage differentials are certainly far lower than for manufacturing as a whole when large firms are included, but it is not clear whether this is the result of disaggregation or of the exclusion of large, especially very large, firms. Finally, although the data above relate to unskilled workers, the arbitrary nature of this classification means that there may still be skill differences which account for part of the differences in earnings.

Nothing very firm can be concluded about distortions in the labor market from the evidence presented. A positive relationship has been found between wages and firm size. There is clear evidence of institutional factors at work in India, and probably also in Colombia, that make the wages paid in small and medium-size firms closer to an optimal social wage than those in large and very large firms in these countries. It seems likely that institutional factors are less significant for firms with up to about 200 workers, and this accords with the evidence of smaller differentials in this range. As has been pointed out, such differentials might be expected to arise quite naturally from differences in firms' demand functions for labor. It is arguably the case that in most industries and countries there may be little labor market distortion as between small and medium-size enterprises.

IV. Capital Markets

Are capital markets distorted in a way which penalizes small enterprises? Although our surveys produced some information about the extent and sources of borrowing, they yielded no reliable information on costs. Consequently our response to this question is more speculative and less firmly based than one might wish.

To establish the existence of distortions, it is not sufficient to show that loans to small enterprises bear high rates of interest (except, perhaps, for loans from friends and relatives), or that they are unobtainable. The reason is that the costs of lending to small borrowers are high, often prohibitively high. Capital markets cannot come near to satisfying the conditions of perfect competition. Even when lenders are highly competitive, any loan involves unique elements. The lender has to assess the probability of repayment, which ideally requires intimate knowledge of the borrower and of the project for which the money will be used. Different lenders will assess the probabilities differently, as well as having different attitudes toward risk.

The riskiness of a portfolio of loans may be reduced by investigation of borrowers and projects. In principle, there is an optimum amount to be spent on such character and project analysis. This obviously approaches zero with very small loans, which is why such lending is largely confined to friends and rela-

tives. Collateral is another way of reducing the risk of nonrepayment and hence increasing the present value of a loan. This is less costly to arrange than investigation, and it is therefore not surprising that bankers usually demand collateral, but many would-be borrowers are unable or unwilling to provide it. Finally, higher interest charges will only raise the expected value of a loan up to a point, with higher interest rates reducing the ability, and perhaps the willingness, of a borrower to repay. Moreover, high interest rates may increase the portfolio proportion of dishonest or overoptimistic borrowers, and of risky projects (adverse selection). The upshot is that there is probably some maximum rate of interest beyond which rate increases would reduce the expected present value of the lender's portfolio. If such an optimum interest rate does not cover expected costs, then there will be no market at all.

Even in less extreme circumstances, some good projects will not be realized because their proposers are wrongly deemed not to be creditworthy, no chargeable rate of interest being judged capable of compensating for the risks. But such "imperfections" in intermediation are inevitable, since the future is uncertain and people are unreliable. The existence of imperfection does not imply that improvement is possible, though of course it may be.

In considering the case for policy, it becomes important to understand the reasons for imperfection. It has often in the past been attributed to a lack of formal lending institutions, to bankers' pessimism or excessive risk aversion, and to monopoly, rather than to the more fundamental reasons described above. As a result, governments have put ceilings on interest rates, and have tended to suppress informal lending institutions, while also often subsidizing banks and giving them directives to lend in particular directions. New-style institutions specializing in long-term industrial lending were intended to overcome the pessimism of traditional bankers. But high interest rates for some borrowers, as well as lack of access for others (even some who would have succeeded, and easily paid their debts) may just as well be signs of a healthy loan market as of a badly operating one.

How does all this relate to small enterprises? For any given expenditure on administration, appraisal, and surveillance, the cost varies in inverse proportion to the size of the loan. Not only this, but the amount of appraisal and surveillance needed to attain a given degree of risk is higher for small enterprises because their promoters and managers are generally less experienced than their counterparts in larger enterprises. If the loans are for new ventures or start-ups, the risks are still greater. The promoter has no track record to go by, and fund collateral cannot normally be offered. Furthermore, it is well known that a high proportion of new businesses fail within a few years. (Indeed, a high failure rate at this stage may be regarded as "healthy.")

The costs of reducing the risk of nonrepayment vary with the type of lending institution. The large, formal institution with little or no access to the local grapevine or personal information, and with no way of bringing moral influence to bear on debtors, is at one end of the spectrum. Friends and relatives lie at the

other end. In between is a wide variety of informal institutions, which have or are able to acquire local knowledge at little cost and are more or less capable of exerting pressure on debtors.

I now turn to a very brief overview of capital markets and loans to small enterprises in developing countries, based on numerous surveys of both borrowers and lending institutions. The picture that emerges accords well with the above a priori account of the nature of capital markets.

The vast majority of private sector firms start very small in terms of both capital and number of employees. The initial capital is predominantly provided by the promoter's own savings, with a leavening of contributions from friends and relatives.[15] Bank loans are very rare, and recourse to moneylenders is also rare. Bank loans are available in modern industries for which the firm start-up size is not so very small, or if the entrepreneur is already established and running other businesses and hence has an observable reputation. (India is, to a limited extent, an exception, and I examine its case below.) As a firm grows in size, if it grows at all, the probability of its borrowing from banks increases quite rapidly.

If special institutions exist to lend to small and medium-size enterprises, and (as is usual) interest rates are controlled at very low levels, the loans go predominantly to enterprises at the upper end of the permitted size range. When loans have been made to very small and new enterprises by development banks, the default rate has been high—often catastrophically high (Levitsky 1983, Rangarajan 1980). (This result is common for similar institutions in developed countries.) This is not to say that it is impossible to lend profitably to the very small. There are some examples of success, mostly in the shape of either small, private, locally based and managed banks or clubs and cooperatives that can exert pressure on defaulters. Here loans are made on the basis of the character and experience of the recipient rather than any analysis of the business or project.

What can we say about the cost of capital? Most developing-country governments control interest rates and influence the allocation of credit. In general, this favors the large over the small. Credit is usually rationed in favor of large-scale modern industry and exporters. This either drives up interest rates to small enterprises, or, if lenders' rates are effectively controlled, enables fewer to obtain credit. The smaller the enterprise, the more likely it is to be denied credit. To be sure, in some countries there are special schemes for subsidized lending even to the very small, but the proportion of small enterprises reached by such schemes is invariably minute.[16]

However, the cost of loans is not the same thing as the cost of capital. As we have seen, very small enterprises rely predominantly on their own savings or those of friends or relatives. What is the private opportunity cost of such finance? This is hard to say. There may be opportunities for small savers to lend at

15. For some illustrative percentages, see Little, Mazumdar, and Page (forthcoming, chap. 15).
16. For an empirical examination of these issues, see Levitsky (1983).

high rates in informal markets. But this requires know-how and may be very risky. Not everyone is cut out to be a moneylender. The only reliable outlet is usually a savings deposit, and in many countries the interest rate on deposits is controlled at a level that results in a negative real yield. Thus controlled credit markets can result in an excessive stimulus to the formation of small business.[17]

The tentative conclusion seems to be that the controlled capital markets of most developing countries are likely to penalize the large-small or medium-size firms (covering about 20–100 workers) that aspire to rapid growth and therefore cannot rely on their own finance. Unless they are in a specially favored sector, either interest rates will be higher or access more difficult than with free capital markets.

V. Relative Factor Costs and Factor Proportions

It has been shown that the cost of capital may be very low for very small firms, since they predominantly use their own savings for which other outlets may have very low yields. But it seems likely that the cost of capital varies greatly from one such enterprise to another, and this could help explain the variance of capital intensity (which is particularly high among the small size groups). Use of institutional finance rises quite rapidly as size increases. Even when there are low interest rate ceilings, banks often find other ways of charging more for loans. Unless government regulations can effectively prevent it, the cost of institutional finance almost certainly falls as size increases.

It was also shown for manufacturing as a whole wages tend to rise with size, but that within the range of up to 100–200 workers, the rise is relatively moderate, and that some surveys of narrowly defined industries show little or no rise in returns to unskilled labor through this range.

It can also be argued with some force that capital intensity causes variations in relative factor costs. There are independent reasons for variations in capital intensity, deriving from the quality and nature of the product even within narrowly defined industries, and it has been shown that capital-intensive firms are likely to want to pay high wages. This does not, however, preclude causation working in the opposite direction, and both directions of causation may operate simultaneously.

At a disaggregated level, the Indian surveys of particular industries found little significant variation of capital intensity with size (up to about 200 workers) while wages rose moderately or not at all (see tables 1 and 3). The exception was a large jump in capital intensity for shoemaking firms with over 100 workers, but unfortunately we have no wage data for these. Unfortunately again, the

17. It may not be a coincidence that the number of small manufacturing businesses ceased to grow in Korea at a time when deposit rates were permitted to rise to very high real levels. But good employment opportunities also reduce the rate of formation of new enterprises—the reverse of what is observable in Europe today.

surveys yielded no figures for the cost of capital, though in light of the controls on interest rates it may be surmised that any rise in capital costs would be moderate. Another exception was powerloom firms, in which wages rose rapidly with size, but there are no figures for these on capital intensity by size. It is clear that these Indian surveys did not produce data which could either confirm or refute the presumption that varying factor costs cause variations in capital intensity. As the surveys did not yield usable data on capital costs, it was not possible to generate correlations between factor proportions and factor costs. This would seem to be a fruitful area for future research.

The 1968 Korean census was remarkable in that among 213 industries, labor intensity peaked with about equal frequency over all size classes up to 500 workers (Ho 1980, p. 58). Unfortunately, the disaggregated earnings data from this census have not been analyzed, and there are no figures for the cost of capital, so again there are no figures for relative factor costs. However, it would be surprising if these relative costs did not favor a rise in capital intensity in many cases. The Korean result thus invites further investigation at the disaggregated level.

VI. Explaining Technical Efficiency, Profitability, and Growth

The Indian surveys produced enterprise data for technical efficiency (the total productivity of factors), profitability, and the growth rates of employment and sales. These were correlated with the size and age of the firms, the age of the equipment, changes in capacity utilization, and various attributes of the entrepreneurs and the work force.[18]

There were wide variations in technical efficiency. As was mentioned in section II, the only industry for which size was significant was machine tools, in which large firms were more efficient. The best explanatory variable for firms' technical efficiency was the firm-specific experience of the labor force. (This corresponds with Stiglitz's basic theoretical model [1974] and with empirical evidence from other countries found by Chapman and Tan [1980] and Knight and Sabot [1982].) Its coefficient was positive in all of the four cases examined, and significant at the 1 percent level in three. In the latter three cases the elasticity was close to 0.2, that is, a 10 percent rise in the average length of service of the work force was associated with a 2 percent reduction in costs. This confirms the importance of a stable labor force, and the value to a firm of paying a relatively high wage (but there is no estimate of the wage elasticity of length of service). More surprisingly, managerial experience (industry-specific, not firm-specific) was significantly positive (at the 5 percent level) only in soap. This may have been because the manager was also usually a worker. The coefficient was actually negative in machine tools, though barely significant, which suggests

18. For a detailed description of this analysis, see Little, Mazumdar, and Page (forthcoming, chaps. 11, 12).

that in some industries older managers may get out of date. The literacy of the manager was positively significant, but any further education proved irrelevant.

The age of the enterprise, after controlling for the experience of the labor force, was a negative influence on efficiency in all cases. This is very probably because the age of the enterprise reflects the vintage of the equipment.[19] In the two cases in which capital vintage could be measured directly, the coefficient was, not surprisingly, significantly negative.

I now turn to profitability. This was simply defined as value added less the wage bill, divided by the value of capital. Thus "profits" were gross of both interest and depreciation, and they might better be termed the "economic surplus." The Indian surveys show little relationship between profitability and size. In machine tools and metal casting, the smallest group (6–10 workers) showed significantly low profitability compared with the largest (51 plus workers); in printing, it was exactly the reverse. But there was some indication that capital-intensive firms were less profitable than labor-intensive ones in soap, metal casting, printing, and shoes. There was also a tendency for the variance of profitability to be greater in the smaller firms. I cannot from this evidence generate any strong dynamic argument to the effect that one size group yields more economic surplus than another. However, given the fact that failure rates are much higher among small firms, which is not allowed for in the analysis, it could be argued that small firms yield less economic surplus.

An attempt was made to explain profitability in terms of the same variables as technical efficiency (Little, Mazumdar, and Page, forthcoming, chap. 12). No significant variable was found in the case of metal casting. In machine tools, the age of the firm and the experience of workers were both significant (1 percent level). In soap, only high school education was significant (1 percent level); it explained 22 percent of the variance. In shoes, college education was significant (1 percent level); together with high school education (almost significant at the 10 percent level), it explained 9 percent of the variance. It is interesting that, although their explanatory value was low, intermediate and higher education were often significant for profitability (and growth, as will be shown), while only literacy was significant for technical efficiency. Presumably differing types of educational experience will be important for efficiency and profitability; for example, social contacts yielded by higher education may improve access to markets but may have little impact on technical efficiency. It is also notable that the experience of the work force—the most successful variable for technical efficiency—did not affect profitability.

I now turn to growth rates. These are of interest in light of the argument that the small firm sector is an important source of economic, and particularly employment, growth. It cannot be too strongly emphasized that only surviving enterprises were sampled. Consequently the average growth rate of any initial

19. It should be recalled that the measurement of capital was the undepreciated constant price cost of fixed assets, plus working capital.

Table 4. *Percentage of Sample Indian Firms in Very Small Size Group and Average Ages of Firms*

Industry	*At founding*	*At time of survey*	*Average age*
Shoes	91	65	12
Soap	83	63	19
Printing	83	34	16
Machine tools	74	6	6
Powerlooms	65	20	8
Metal casting	41	15	31

Note: Very small firms are those with 1–10 workers.
Source: Little, Mazumdar, and Page (forthcoming, table 12-11).

cohort is exaggerated and the smaller the size the more it is exaggerated. The mean employment growth rate of survivors over their lives was very high in powerlooms, shoes, machine tools, and printing (from 15 to 27 percent), lower in soap (7.1 percent), a slow in metal casting (0.7 percent). Most firms, except those in metal casting, started very small, with 10 or fewer workers.

Table 4 shows the percentages of surviving firms that started very small (1–10 workers), and the percentages that were very small at the time of the survey, together with average ages. There was a large fall in the proportion of the cohort in the very small size class in all industries except shoes and soap, and even in these two industries, in which small firms are utilizing primitive techniques, a substantial proportion have "graduated."

The growth rates shown in table 5 reflect the fact that young survivors grow much faster than older firms, except in the very sluggish metal casting industry. The variance of growth rates is also higher for the small. If the failed firms could also have been included, the growth rate of employment attributable to the initial cohort of the small would undoubtedly have been very much smaller, and it could even have been less than that of larger firms.

As with technical efficiency and profitability, attempts were made to explain growth differentials by reference to the characteristics of firms. In the case of

Table 5. *Mean Employment Growth Rates by Age of Firms in Indian Survey*

Age (years)	*Machine tools*	*Powerlooms*	*Printing*	*Shoes*	*Soap*	*Metal casting*
1–5	41 (7)	47 (6)	71 (8)	48 (20)	19 (3)	4 (3)
6–10	24 (21)	9 (22)	17 (16)	13 (24)	11 (7)	6 (6)
11–15	16 (14)	7 (9)	10 (7)	4 (7)	7 (6)	5 (4)
16–20	9 (19)	n.a. (0)	9 (11)	6 (15)	8 (9)	7 (9)
21–25	10 (10)	n.a. (0)	1 (2)	3 (1)	4 (14)	2 (5)
26 plus	8 (4)	n.a. (0)	4 (10)	2 (8)	3 (8)	(9)

n.a. Not applicable.
Note: Figures are annual compound growth rates based on the firms' initial size. Figures in parentheses are number of firms.
Source: Little, Mazumdar, and Page (forthcoming, table 12-15).

growth, however, initial rather than final size was used to categorize firms. The dependent variable is the growth of sales.[20] For machine tools, no variable was remotely significant. For metal casting, only initial size was (negatively) significant (1 percent level). For printing, age was negatively significant (1 percent level), and graduate education positively so (5 percent level); the two together explained 20 percent of the variance. For soap, age and graduate education were similarly significant (5 and 10 percent levels), and so also was the experience of the entrepreneur, 30 percent of the variance being explained. For shoes, age and initial size figured negatively, and college education positively, 11 percent of the variance being explained (but all only at the 10 percent level). Thus, as with profitability, intermediate or higher education was clearly significant for three industries. It is somewhat surprising that education played no role in the two metalworking industries, either for profitability or for growth.

Except for the confirmation that the education of the entrepreneur is of some value in explaining profitability and growth, the regression analysis yielded little. That age or initial size (the two being closely related) were prominent in explaining the growth of surviving firms is only common sense. Initial size and the education of the entrepreneur were also closely related. Clearly the better educated either have more money, are better placed to tap sources of money, or both.

VII. Indian Policies

Indian small-scale enterprise policies are of particular interest because India is the only country with a really extensive set of policies supporting and protecting many kinds of small enterprise, while also being the country where very large enterprises (over 1,000 workers) dominate manufacturing *factory* employment to a greater extent than any other country in the world—including the United States.

Indian concern for handicrafts dates back at least to the early years of this century. Under the influence of M. K. Gandhi, *khadi,* the almost vanished art of hand spinning, was resuscitated and became a political and cultural symbol (Gandhi 1940). No other country has for three-quarters of a century revived and expanded primitive methods of making not only cloth, but also sugar, soap, and several other products. In the 1950s, however, India also became notable for its insistence on the importance of heavy industry, under the influence of J. Nehru and his close adviser, P. C. Mahalanobis. Although Nehru's views prevailed for the vast bulk of industrial investment, Gandhian thinking has continued to be influential. The Mahalanobis heavy industry model reserved a place for the Gandhians in that "small and household industries" were supposed to supply the

20. Growth of employment was also used as the dependent variable. The results were very similar to those reported.

increased demand for consumer goods with very little investment but greatly increased employment.

The Gandhians wanted an expansion of traditional, mainly rural, manufacture rather than the creation of modern small urban factories, and a series of boards was established in about 1950 to support traditional industries. It was not until rather later that the Small Scale Industries Board was established to encourage small factories producing modern products—"small" at the time excluding enterprises with over Rs500,000 of fixed assets (Rs100,000 without power) or over fifty employees. By the beginning of the second five-year plan (1956), the main administrative framework for government encouragement of both traditional and modern small enterprises was in place. Thus, a pattern for policy was established that has held ever since. These policies protect traditional manufacturers by taxing and banning the expansion of medium- and large-scale enterprises that compete with them, by directly subsidizing them or exempting them from taxes, and by giving them preference in government purchases.

However, from the second through the fifth five-year plans the amount spent on these policies was a small and declining proportion of the amount spent on "organized" industry. The traditional or village industries got the lion's share and, except in the case of textiles, probably also benefited most in the 1950s and 1960s from those protective measures that did not involve public money. But in the late 1970s there were moves to preclude larger enterprises from increasing their output of a greatly expanded number of modern products (over 800 at the peak), with the intention that growth of production would then be achieved by increases in the number of small enterprises. These products were predominantly in the light engineering and chemicals industries. Apart from this product reservation, powerful encouragement was given to SSEs by exempting them from excise taxes, or by reducing the rates of taxes that depended on their volume of output.

Since the nationalization of the commercial banks in 1969 there has been increased pressure on them to lend to small enterprises, with an impressive increase in such loans. The number of recipients is estimated to have risen from 57,000 in 1969 to 301,000 in 1977 and 794,000 at the end of 1980, and the proportion of total bank credit accruing to the small has risen from 8 to 13 percent (Ojha 1982; Rangarajan 1980). These loans are made at preferentially low rates of interest. The normal result, that of reducing the amount of credit available to the favored group, has been avoided by forcing the banks to devote a certain proportion of their advances to priority sectors (including SSEs) and by compensating the banks for the increased risk through a Reserve Bank of India guarantee scheme. However, despite these efforts, I would estimate that only a very small proportion, perhaps 3 percent, of very small manufacturing enterprises (less than 20 workers) got loans in 1977. Although reported default rates are low by comparison with much experience elsewhere, the expansion has been too recent to assess the real costs, let alone the benefits.

At this point it must be noted that over the years the official definition of small

has been changed frequently. The employment limit of fifty workers was removed early on. Now the limit is Rs3.5 million in fixed assets (or Rs4.5 million for "ancillary" units). Since the value of fixed assets is usually half or less of the value of total assets, it is clear that many enterprises are included that are medium-size in the sense that they employ more than fifty workers.

What have been the results of these policies? It was stated at the beginning of this section that Indian factory employment is heavily concentrated in very large establishments. This is, of course, consistent with a high proportion of total manufacturing employment being in households and workshops, as is indeed the case. The dearth is especially in small and medium-size factories. This was noticed long ago. In 1961 Dhar and Lydall wrote: "A peculiarity of the Indian distribution is that, while it has a high concentration of *establishments* in the lower size group, it has a high concentration of employees in the highest size group. Indian industry . . . is somewhat thin in the middle. . . . This is rather an important conclusion, for the medium sized firm (say 50–99 employees) is very often close to the optimum size, especially in the lighter manufacturing trades" (pp. 30–31).

In about 1960, the contrast between India (and Pakistan) and Korea and Taiwan (and even Japan) was enormous. Broadly speaking, Indian factory employment was concentrated in establishments of over 1,000 workers, and East Asian employment in factories of less than 50 workers.[21] In the 1960s and 1970s, medium-size and medium-size-to-large factories with 100–1,000 workers grew relatively fast in India, while employment in the East Asian economies became much more concentrated in the range 100–500 workers. The contrasts are thus no longer quite so extreme, but nevertheless the extraordinary dominance of the large unit in India is still far from being eliminated. For instance, the range 50–500 workers accounts for well over half of factory employment in the three East Asian economies, while in India it accounts for less than a third.

It is doubtful whether the partial filling of the middle size range in India owes much to the small-enterprise policies described. First, in the 1960s the main beneficiaries were very small traditional units, the thrust in favor of small modern factories occurring only in the second half of the 1970s. Second, enterprises in the range 500–1,000 workers, and most in the range 100–500, will be outside the range of the "small." Indeed the policies both present a barrier to organic growth above the size determined by the value of fixed assets that defines the small and seem certain to create an artificial trough in the size distribution, even if that trough occurs at a rather larger size than before.

The effect of policies on three industries, textiles, sugar, and light engineering, are now considered in more detail.[22] In the 1950s, the government banned the installation of new looms by the textile mills, except for replacement or export

21. See Little, Mazumdar, and Page (forthcoming, chap. 6) for a presentation of the evidence and for the measure of concentration used.

22. The textile industry findings reported here are based on a study by Mazumdar (1984a); the remainder of this section is derived from Little, Mazumdar, and Page (forthcoming, chap. 4).

production. It later reserved synthetic cloth production for the powerloom and handloom sectors, which also paid no excise duty (unless, *in theory,* more than five powerlooms were operated).[23] The intention was mainly to promote handloom production, it being envisaged in the second five-year plan that only 10 percent of increased cloth production would come from powerlooms. The outcome was different. From 1956–81, mill production fell from 4.9 to 3.1 billion meters (billion is 1,000 million). Small-sector output rose by 3.3 billion meters, but three-quarters of this increase came from the powerlooms, which the surveys showed to be much more profitable. Powerlooms have a further advantage in that handlooms are not very suitable for weaving the synthetic cloth that is denied to the mills. It is not even certain that handlooms have, on balance, benefited at all from the government's policies, for their production, which rose at 2 percent per year, was also rising slowly in the first half of this century, being "protected," as now, by very low wages. Mill wages are now between two and two and a half times those paid by the master weavers who control both powerlooms and handlooms.

The central question in considering the social value of the government's textile policies is thus whether powerloom production has been *socially* more profitable than mill production. A crude cost-benefit analysis—crude because a good analysis of the relevant mill costs never seems to have been made—suggests the opposite. Ignoring the distributional consideration that millworkers are wealthy compared with powerloom operatives, a switch from powerlooms to mills appears to have a high social yield at any plausible shadow wage rate. If direct employment in weaving alone is considered, it is true, of course, that given the level of mill wages, the policies have led to an increase in employment, since powerlooms use about three times as much labor per unit of output (and pay less than half the wages). But the cost-benefit analysis indicates that this employment has been "bought" too dearly. Furthermore, taking the government's textile policies as a whole, it is certain that exports of both textiles and, more important, clothing, which is highly labor-intensive, have been seriously damaged. The impact of this in reducing employment could well have offset the increased employment generated in the powerloom sector. Finally, everywhere else in the world the poor person consumes cheap, durable synthetic cloth, while cotton has become a luxury. This suggests that the policies may not have been in the best interests of the poorest—or other—classes of consumers, an effect that must also be taken into account in assessing their overall welfare effect.

Sugar policies have both differences from and similarities to textile policies. For textiles, the intention was to promote the traditional sector, while the main beneficiary was actually a sector somewhere in the middle. For sugar, the promotion of the intermediate product (*khandsari*) was intentional, and the tradi-

23. Powerlooms are similar to the nonautomatic looms used in the mills. Often they are bought secondhand from the mills, although new looms are also produced for the "powerloom sector" that are cheaper and of lower quality than those normally bought by the mills. The powerloom sector thus consists of small units that operate, with power, a few relatively old or cheap looms.

tional labor-intensive product (*gur*) was neglected and suffered. Unlike textiles, the labor input is quite small for both the sugar mills and *khandsari* units. There was more official analysis of the alternatives (but not of *gur*) than in the case of textiles, but it was not objective. *Khandsari* won the day as the result of intermediate technology enthusiasm and probably the lobbying of the main beneficiaries, who fall among the wealthier sections of rural society. The main losers have been the exchequer and the *gur* industry. Subsequent intensive and careful cost-benefit analysis shows mill production to be superior to *khandsari* on any reasonable assumptions.[24]

Small and medium-size light engineering enterprises have been the other most important beneficiaries of the government's product reservation policies. The effects on the production of diesel engines, bicycles and their components, and handtools have been scrutinized. The finding is that the policies have had quite dramatic effects on the structure of these industries and on the adoption of technology. SSE reservation has resulted in reductions in the linkages between small and large enterprises, including the development of specialized subcontracting firms, although specialization by small enterprises and links between them remain important. The adoption of new products and processes has been inhibited, with consequential effects on exports, especially in the case of diesel engines and bicycles.

What is there to offset these disadvantages? These industries produce mainly capital goods, which reduces the potential to claim good distributive effects on the consumer side. Also, enough has been learned of the unreliability of any purported relationship between size and labor intensity within narrowly defined industries to indicate that any claim that the employment of unskilled labor has been promoted is unlikely to be sustainable.[25]

More generally, it seems clear that product reservation policies reduce competition both within the large- and small-scale sectors of the industry and between them. It prevents organic growth of establishments through the size barrier and artificially drives the large-scale sector to concentrate on higher priced goods, for which quality differentials are important.

VII. Afterthoughts, Summary, and Conclusions

Household manufacturing, which is confined to a few industries and is most prevalent in rural areas, has declined, relatively if not absolutely, in all the economies examined (India, Korea, Malaysia, the Philippines, and Taiwan). Workshops (1–5 workers) have also declined, except possibly in India. Yet cottage shop manufacturing still accounts for over half of manufacturing employment in the poorer countries (India, Indonesia, the Philippines, and most of

24. This paragraph is based on the work of de Haan (n.d.), which is more extensively reported in Little, Mazumdar, and Page (forthcoming, chap. 4).

25. This paragraph is based on the work of Berry, reported in Little, Mazumdar, and Page (forthcoming, chap. 4).

Africa). There has also been a relative fall in employment in small-to-medium-size factories (5–100 workers) in the more rapidly industrializing economies (Colombia, Korea, Malaysia, Singapore, and Taiwan). By contrast, in India the number of enterprises in the range 10–100 workers has risen since 1960 relative to large ones, especially those with over 500 workers, which partly redresses a previous anomaly.

The relative decline of small-scale enterprises in most developing countries, including many not mentioned here, has been accelerated by the industrialization policies adopted in these countries. Protection, investment incentives, credit control, and the promotion of industry in the public sector have all discriminated against the small. But another factor was important for the highly export-oriented economies of East Asia. Big firms have economies of scale in export marketing, and it is generally true that most small units export little or nothing (although evidence from such countries as Korea suggests the potential of medium-size units as exporters). This partly explains the very rapid decline of small firms in these countries (other probable explanations are good job opportunities and high deposit rates of interest). This decline in SSEs was compatible with a pattern of development that was highly labor-demanding.

In most countries there have been some countervailing measures in support of SSEs. But these have only scratched the surface and have had very little impact relative to the general economic policies of governments. India is a special case. In the factory sector (ten or more employees), employment has been and still is concentrated in very large establishments to a greater extent than in any other country that I know of (including the United States). At the same time much small-scale "traditional" manufacturing, especially in households and workshops, has been protected and subsidized. In recent years, however, small- and medium-scale modern enterprises have also been enthusiastically and forcefully promoted over a wider front, especially in light engineering and chemicals.[26]

In surveys of narrowly defined industries, the idea that small, especially very small, manufacturing enterprises are relatively efficient users of resources in labor-abundant economies has been found to have no general validity. If anything, medium-size firms come out best. But size as such, especially when measured by employment, is a poor indicator of any attribute of social importance. In any case, as shown in section II, such differences in labor intensity as there are between size groups within an industry are dwarfed by differences between industries. This implies that, for manufacturing as a whole, small and very small firms are labor-intensive because labor-intensive industries have a relatively high proportion of small enterprises.

Apart from efficiency of resource use, other claims have been made for SSEs, such as that they are more innovative than larger firms. The available evidence, coming from developed countries, tends to suggest the opposite.[27] The most

26. It was reported in the Indian press that, in 1985, there was a reappraisal, and that there may be some backtracking on SSE promotion.

27. See Little, Mazumdar, and Page (forthcoming, chap. 2) for a brief survey of the evidence.

interesting of the dynamic arguments is that SSEs form a seedbed for entrepreneurs, again an argument mostly made by SSE proponents in developed countries.[28] But, while true, it says nothing about how large the seedbed has to be. In most developing countries, this argument would seem to lack all force, since there is still an enormous numerical preponderance of very small firms, and the rate of formation is very high (given the high failure rates). Even in Korea, when the proportion of employment in small manufacturing enterprises declined drastically, there was no fall in absolute numbers, and many new firms were created.[29] Potential entrepreneurs seem to abound, and more than enough somehow find the resources to make a start. Africa south of the Sahara may, however, be an exception to this generalization.

In theory, low wage costs and high capital costs per unit of output will tend to result in labor-intensive methods (though the within-industry elasticity of substitution between capital and unskilled labor may often be fairly low—less than unity). Do small firms have these attributes? There is no doubt that earnings are generally lower in small enterprises, and this is usually matched by lower labor productivity. To a considerable extent this is because the workers are less able, but even allowing for this, earnings are lower. The increase in earnings with size is not uniform, however, and for unskilled labor in some industries it is quite small and even nonexistent within the small-to-medium-size range. There is some evidence from Colombia and India of a discontinuity around the 200-worker size. This may result from the greater influence of institutional factors on larger firms.

Labor markets cannot be considered to be distorted just because larger firms pay higher wages. There are many good economic reasons for this. Where wages are pushed up by trade unions or government action, however, there is a distortion. There is no doubt that some manufacturing wages are too high from a social point of view (for reasons of both income distribution and employment) in many developing countries, but this observation applies more to large and medium-size-to-large firms than to firms within the small-to-medium-size range.

The common idea that the costs of capital is very high for small enterprises is overly simple. Loans in a free market would certainly cost a lot (or be unobtainable, that is, infinitely costly) for small enterprises. For the lucky few in countries with loan programs for the small firm, they are very cheap because they are heavily subsidized, but concomitantly, the coverage of such schemes is minute. Far more important, however, is the fact that capital and loans from institutions are not the same thing. The opportunity cost of personal savings (entrepreneurs' own, or those of relatives) is often very low because of low rates available on deposits—and very small firms rely almost entirely on such savings. It is only

28. A sufficiency of new starts is more likely to be a problem for developed countries since informal capital markets hardly exist and the initial investment required is higher relative to income levels.

29. A survey in 1973 found that out of a stock of 21,045 small manufacturing firms, 2,510 had been formed in the previous eighteen months. The average initial investment of the new starts was far higher than in the less advanced developing countries (see Ho 1980, pp. 71–77).

when an enterprise cannot grow as fast as it would like using only self-finance that the cost of loans will be the same as the marginal cost of capital. For such firms, the cost of capital falls as size increases (or capital becomes more easily obtainable if interest rates are controlled).

Taking it as agreed that development has been less labor-demanding than was desirable, it may be asked both to what extent government policies are responsible for this result and how they should be reformed. It has been shown that policies have discriminated against small-scale enterprises. But the implication of what has been said is that this has very little to do with the excessive capital intensity of manufacturing that prevails in many developing countries. What is important is first that the pattern of industrial output has been twisted in favor of capital-intensive industries, and second that encouragement has been given to the choice of capital-intensive techniques, whether by small or large units.

International trade delinks domestic demand from domestic supply. For a given pattern of domestic demand, the labor-abundant country should import capital-intensive products and export labor-intensive ones. There is no need to retell here the story of how most developing countries have abrogated this principle with excessive import substitution policies. Shifting the pattern of domestic demand is also important. The government's own purchases, whether on capital or current account, are a large part of total demand. Apart from this, measures to make income distribution more equal will probably shift production in a labor-intensive direction, for the things demanded by the poor—food, clothing, and shelter—are made in a relatively labor-intensive manner. These aspects are self-reinforcing, in that the use of labor-intensive production methods benefits poor, unskilled workers and their dependents. It is no accident that the countries that have had growth led by exports of labor-intensive manufacturers are among those with the most equal distribution of income.

Apart from their effect through the pattern of output, government policies may be argued to have promoted capital intensity directly. Capital has been made cheap in numerous ways. Real interest rates have been held very low and have often been negative. Exchange rates are widely overvalued, while imported machinery is exempted from import duties. Other tax concessions, such as accelerated depreciation, favor the use of capital. Government investments often ignore prices, and the most modern, capital-intensive methods are chosen for reasons of prestige or to satisfy the pride and prejudice of engineers. At the same time the predilection of large enterprises to pay high wages has been reinforced by governments. In many countries and cases the shift in the relative prices of capital and labor has been enormous.

Indian policies have had all these defects, and Indian capital-output ratios are among the highest in the world. But India is also exceptional in the extent and range of its policies that directly support SSEs. These interventions share several features. They have been romantic, rather than economic. They were not based on detailed objective inquiries into costs and benefits, and in some cases no such analysis seems to have been conducted at all. Even the most direct consequences

of intervention have been badly misjudged (powerlooms versus handlooms), and indirect consequences have been ignored in every case examined. There is not even any assurance when such indirect effects are allowed for that overall employment was promoted, or that the policies thus offset the unquestionably adverse effect on employment of the general thrust of measures taken to promote industrialization.

One particular intervention, common to India and many other countries, deserves further mention: the endeavor to make formal credit institutions reach down to very small enterprises. It is very doubtful if this is sensible. It is certainly proper to encourage banks to make risky loans by permitting them to charge what they like. To go further than this implies subsidization. Why should banks be subsidized to compete with informal markets or with the friends and relatives of entrepreneurs, which are more efficient suppliers of small loans to the very small, in the sense that the costs that they face in assessing and policing loans are relatively low. There may sometimes be a case for bank support to, rather than competition with, informal credit institutions. But it should not be so large as to change their nature and so become a kiss of death.

In an uncertain world with would-be borrowers of unknown reliability and capacity, it is inevitable that some good projects will not be financed. There is nothing wrong with a situation in which both inexperienced entrepreneurs starting up in a small way and small established entrepreneurs are unable to get institutional credit. Easy access to such credit has in many cases resulted in a very high proportion of defaults. The *lack* of institutional credit can be seen as a filter that arguably does more to eliminate dishonest, incompetent, and sluggish would-be borrowers than it does to prevent potential climbers from setting foot on the mountain of success. There is no shortage of new starts in most developing countries, and of these only very few get institutional credit. And if there were any shortage, the first step to overcome it should surely be the removal of institutional obstacles, such as these blocking access to power, materials, and land. Institutional credit is better seen as a means of facilitating the expansion of firms that have passed the survival stage and have acquired at least the beginnings of a good track record.

Some will complain that the above amounts to a sermon on the bounty of the price mechanism. Economists are adept at finding faults with free markets that undoubtedly do exist. (Others often find faults that do not exist.) Interventions that probably would improve markets and the allocation of resources can sometimes, though not always, be suggested. Unfortunately, government interventions are very rarely designed to improve the working of markets (or create good markets where they do not exist). Rather, they usually override markets. Even when such interventions are well-intentioned, their poor construction means that the outcome is often unforeseen and the results unfortunate. I have referred to a few of many of the possible examples of this. Someone has rightly remarked that while there is more to development than getting the prices right, getting the prices wrong may be the end of development. Overall macroeconomic and

industrial policies frequently result in massive price distortions that favor capital intensity. Trying to offset this with targeted interventions that favor small firms is, at best, fiddling while Rome burns.

References

Anderson, Dennis. 1982a. *Small Industry in Developing Countries: Some Issues.* World Bank Staff Working Paper 518. Washington, D.C.

———. 1982b. "Small Industry in Developing Countries: A Discussion of Issues." *World Development* 10, no. 11: 913–48.

Anderson, D., and F. Khambata. 1981. *Small Enterprises and Development Policy in the Philippines: A Case Study.* World Bank Staff Working Paper 468. Washington D.C.

Chapman, B. J., and H. W. Tan. 1980. "Specific Training and Inter-Industry Wage Differentials in U.S. Manufacturing." *Review of Economics and Statistics* 62, no. 3 (August): 371–78.

Cortes, M., A. Berry, and A. Ishaq. Forthcoming. *Success in Small and Medium-Scale Enterprises: The Evidence from Colombia.* Baltimore, Md.: Johns Hopkins University Press.

de Haan, H. H. N.d. "The Viability of Small-Scale Industrialization, The Case of Sugarcane Processing." New Delhi: Institute of Economic Growth. Processed.

Deshpande, L. R. 1979. "The Bombay Labor Market." Bombay University. Unpublished report.

Dhar, P. N., and H. F. Lydall. 1961. *The Role of Small Enterprises in Indian Economic Development.* Bombay: Asian Publishing House.

Gandhi, M. K. 1940. *An Autobiography,* 2d ed. Ahmedabad: Navajivan Publishing House.

Ho, S. 1980. *Small-Scale Enterprises in Korea and Taiwan.* World Bank Staff Working Paper 384. Washington, D.C.

India Central Statistical Organization (Industrial Statistics Division). 1979. "Wages and Productivity in Organized Manufacturing Sector, 1960–61 to 1976–77." Bulletin 15D/5 (August). New Delhi: Department of Planning.

Indian Labor Journal. 1981. December.

Kaneda, H. 1980. "Development of Small and Medium Enterprises and Policy Response in Japan: An Analytical Survey." Studies in Employment and Rural Development 32. Washington, D.C.: World Bank Development Economics Department. Processed.

Knight, J., and R. H. Sabot. 1982. "From Migrants to Proletarians: Employment Experience, Mobility and Wages in Tanzania." *Oxford Bulletin of Economics and Statistics,* 44, no. 3 (August): 199–226.

Lester, R. 1967. "Pay Differentials by Size of Establishments." *Industrial Relations* 71, no. 7 (October): 57–67.

Levitsky, J. 1983. "Assessment of Bank Small Scale Enterprise Lending." Washington, D.C.: World Bank Industry Department. Processed.

Little, I. M. D., Dipak Mazumdar, and John M. Page. Forthcoming. *Small Manufacturing Enterprises: A Comparative Study of India and Other Countries.* New York: Oxford University Press.

Manning, Christopher S. 1979. "Wage Differentials and Labor Market Segmentation in Indonesian Manufacturing." Ph.D. thesis, Austrialian National University.

Mazumdar, D. 1981. *The Urban Labor Market and Income Distribution: A Study of Malaysia.* New York: Oxford University Press.

———. 1984a. *The Issue of Small Versus Large in the Indian Textile Industry: An Analytical and Historical Survey.* World Bank Staff Working Paper 645. Washington, D.C.

———. 1984b. "The Rural-Urban Wage Gap, Migration and the Working of Urban Labor Markets: An Interpretation Based on a Study of the Workers of Bombay City." *Indian Economic Review* 18, no. 2: 169–98.

Mehta, B. V. 1969. "Size and Capital Intensity in Indian Industry." *Oxford Bulletin of Economics and Statistics* 31, no. 3 (August): 189–204.

Mohan, Rakesh. 1981. *The Determinants of Labour Earnings in Developing Metropolises: Estimates from Bogota and Cali, Colombia.* World Bank Staff Working Paper 498. Washington, D.C.

Ohkawa, K. and M. Tajima. 1976. *Small–Medium Scale Manufacturing Industry: A Comparative Study of Japan and Developing Nations.* Tokyo: International Development Center of Japan.

Ojha, P. D. 1982. "Finance for Small-Scale Enterprise in India." *Reserve Bank of India Bulletin,* November.

Page, J. M. 1979. *Small Enterprises in African Development: A Survey.* World Bank Staff Working Paper 363. Washington, D.C.

———. 1984. "Firm Size and Technical Efficiency: Applications of Production Frontiers to Indian Survey Data." *Journal of Development Economics* 16 (September–October): 129–52.

Park, Fun Koo. 1981. "An Analysis of Wage Differentials according to Firm Size." *Korea Development Review,* December.

Rangarajan, C. 1980. "Innovations in Banking: The Indian Experience, Impact on Deposits and Credit." Domestic Finance Studies 63, Washington, D.C.: World Bank Development Economics Department. Processed.

Reserve Bank of India. 1979. "Survey of Small Industrial Units 1979." Department of Statistics, *Statistical Report,* vols. 1 and 2. Bombay.

Stiglitz, J. E. 1974. "Alternative Theories of Wage Determination and Unemployment in LDCs: The Labor Turnover Model." *Quarterly Journal of Economics* 88, no. 2 (May): 194–227.

Subramanian, K. N. 1979. *Wages in India.* New Delhi: McGraw-Hill.

Wilkinson, R. 1973. "Earnings and Size of Plant in the Iron and Steel Industry." Cambridge, England: Cambridge University Department of Applied Economics. Processed.

World Bank. 1979. "Cottage and Small Industry in the National Economy: Indonesia." Report 2490-IND (November), East Asia and the Pacific Regional Office. Washington, D.C. Processed.