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Industrialization and Employment: The Role of Small and Medium Sized Manufacturing Firms

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I. Introduction and Summary

This paper deals with the contribution which small sized manufacturing units can make to the creation of new employment, or more precisely with the question: "Should small and medium sized enterprises (SMEs) be encouraged in the interest of enhancing the employment effects of industrialization?" It explores the importance of firm size in shaping industrial employment policy, and in doing so it necessarily takes note of the facts that (a) most industries with below average capital intensity have more small production units than industries with above average capital intensity and (b) the design of large scale firms also plays a key role in employment policy since capital-labor substitution appears to be possible.

In analyzing the employment consequences of industrial development, the investment per job created (both direct and indirect) is a key variable. There is ample statistical evidence that firm size and investment per job are positively correlated. But this relationship is not necessarily causal. It extends across industry: variations in investment per job across industry may be as large as such variations associated with firm size within individual industries (Sec. II). Further, investment per job may vary with the growth of the firm, the technological development of the product and, of course, the size and maturity of the economy. The possibility of economic capital-labor substitution in more capital intensive and larger production units also requires that attention be paid to the role of these large units in employment creation and hence to the question of a proper balance between the large and small scale sectors (Sec. III).

Several factors will need to be considered in establishing a proper balance in the industrial sector, including availability of natural and financial resources, both private and public, the use of domestic raw materials and components and the importance of export growth. Export oriented industrial growth is frequently found to be more labor intensive than import substitution, but the role of SMEs in export development essentially remains to be explored.

Remark: In preparing this paper the author has benefitted from discussions with several of his colleagues at the World Bank, including Mariluz Cortes, David Gordon, Jacob Levitsky, Ian Little, Howard Pack and Robert Steinberg. The paper does not necessarily reflect the official views of the World Bank, of which the author is a staff member.
A positive industrial employment policy calls for action on several fronts: emphasis on industrial branches with below average investment per job requirements, institutional support to SME development and encouragement of capital-labor substitution in large scale units (Sec. IV). Industrial employment policy will hardly provide a "quick fix," and other sectors (construction and service industries) are often more important as employment generators. Further, the role of industry must be seen as part of a comprehensive macro-economic employment strategy. Within such a strategy, industrial policy should be designed to enhance the employment elasticity of manufacturing growth over a period of years.

The final section (V) discusses some further issues and topics for research in industrial employment generation, including a more systematic analysis of what is a proper balance between large and small scale sectors and the effect of this balance on the employment elasticity of manufacturing growth, the efficiency of SMEs, institutional support for SMEs, and the importance of technological assistance, income distribution and regional considerations.

Many non-economic arguments have been made in favor of the development of small firms. Many of these are of the "Small is Beautiful" variety. Others mention the adoption of "appropriate technology", quality of life or philosophy of development [Neck 1977, p. 11; Petersen 1977, p. 48]. An important argument also stems from a growing hostility toward large size in general, a feeling that large sized operations in both business and government are uneconomic, inefficient and often counter-productive, operating at levels of decreasing returns to scale and subject to X-inefficiency. While this paper does not attempt to assess these arguments, it should be emphasized that economic reasons in themselves are sufficient to call for strong policy support to SMEs. These reasons go well beyond the creation of manufacturing employment. SMEs are essential for the sound development of the industrial sector as a whole, innovation, entrepreneurship, more equitable income distribution and the growth of manufacturing production outside the main centers. In short:

(1) A healthy development of the industrial sector requires both large and small firms. Because of technical, managerial or market considerations, firms in some industrial branches tend to be larger than in other branches. Hence, discriminating against SMEs would bias industrial development in favor of those branches in which large enterprises dominate.

(2) SMEs are breeding grounds for entrepreneurs and for innovations. Put SMEs at a disadvantage, and the country's industrial development may be poor in entrepreneurial talent and in innovations. In fact, indigenous talent and techniques are likely to be found in small firms and genuine development must start from them.

(3) Smaller firms use simpler technology, are less capital intensive and hence are more effective vehicles for creation of employment in the industrial sector. This is a crucial consideration even if the industrial sector
- under any policy - may be less important as a source of a new employment than other sectors such as construction and services.

(4) In the absence of institutional support for small firms, the larger ones will get all the advantages, viz in credit allocation, technological support, government procurement, provision of infrastructure, etc.

(5) Conversely despite the discrimination against small firms in many less developed countries (LDCs) they are surviving and demonstrating that they are at least as efficient as the larger industries which receive more favorable policy treatment.

Finally, no paper on SMEs can ignore the importance of properly defining what is small. Even a cursory review of the literature and some case studies suggest how crucial and operationally significant definitions of size are. The operational relevance has also brought a great variety of definitions [IBRD 1978, p. 18]. This paper generally accepts the definitions used in the sources quoted. As a rough guide, the author would suggest upper limits of 50 workers or assets of $250,000\(^1\) for small enterprises and limits roughly 4-8 times higher for medium sized firms. Firms with less than 5 workers or $25,000 in assets are regarded in the artisan sector which deserves separate analysis. Rather than agreeing on precise limits, it is important to adopt definitions which are meaningful for the implementation of policies toward SMEs. Hence, the important question is what type or size of firm requires special attention in the provision of credit, i.e., needs the support of specialized credit institutions, or technical and technological assistance. The precise limits may change over time, and in fact at any given time may not matter too much [Peterson 1977, pp. 58 f.].

II. The Labor Intensity of Small and Medium Sized Enterprises

There is ample statistical evidence that small and medium sized enterprises tend to be more labor intensive - i.e., have smaller investment per job on average or on the margin - than large scale enterprises.

The correlation between firm size and capital intensity has been established in several studies\(^2\). For example, this relationship has been demonstrated for a sample of investment projects receiving financing from a group of development banks in LDCs. One such study [IBRD 1976] deserves special attention because it gives attention to both direct and indirect employment effects as well as income distribution. The study analyzes the economic characteristics of a sample of 29 investment projects. The data for aver-

\(^1\) $ = US $.

age capital investment per job created (direct and total) in different sizes of enterprises were as follows (1974, US dollars):

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\begin{array}{l|c|c|c}
\text{Enterprises}^a & \text{small} & \text{medium} & \text{large} \\
& (25-250) & (250-2,000) & (2,000 +) \\
\hline
\text{Direct employment} & 4,800 & 7,200 & 8,000 \\
\text{Direct and indirect employment} & 4,200 & 4,000 & 15,000 \\
\end{array}
\]

\(^a\)In parentheses total fixed investment in $1,000.

Indirect employment effects were positive for investment in small and medium sized firms and hence the capital investment per job (direct and indirect) was less than that for direct employment only.

Conversely, the indirect effects were negative for large firms, mostly because of the jobs lost to importation of machinery. The study draws attention to the fact that indirect effects were largest for medium sized enterprises, caused primarily by the use of domestically produced inputs (and machinery). Investment cost per direct job averaged $7,000, with the following industries represented: metal mechanics, food and beverages, paper, chemicals, textiles, non-metallic minerals. Of those, the first had the lowest (below average) investment cost per direct job, while the food and paper industries had the largest indirect employment effects (with indirect employment generation being more than double direct employment generation). Two further findings are worth noting: For projects of small firms, a relatively larger share (22 per cent) of income accrued to unskilled workers as compared with large firms (7 per cent), hence investment by small firms had a more favorable income distribution effect. Secondly, although small firms were found to procure significant amounts of their inputs from abroad, it is through the structure of their domestic inputs that they were able to achieve a more favorable impact in terms of employment generation.

It is worth noting that the $7,000 average investment costs per job for Colombia was low when compared with the averages established for similar Bank studies on other countries, viz Korea ($13,200), India ($9,000), Liberia ($9,200), Zaire ($21,000) and Sudan ($34,000) [see also IBRD 1978, Table 2.8]. Inter-country comparisons are difficult to make, varying with the nature of industries, the cost of new plants versus plant expansion, the inclusion of infrastructure and other elements (consultants, training, interest during construction). However, the high level of capital per job created in several African countries appears to be a general phenomenon of concern. J. J. Stern [1977] has calculated the capital-labor factors for groups of countries with increasing per capita income.

\(^1\) In addition, on investment by small firms a larger proportion of income accrued to the government (76 per cent compared to 54 per cent for large firms).
The reasons for the correlation between firm size and capital intensity are varied - and have implications for employment policy. Among the various reasons the following are noteworthy:

(1) The firm is in a capital-light industry (compare say the clothing with the chemical industry) and firms in this industry tend to be smaller than in others. In fact, many capital intensive industries intrinsically require larger scale operations because of the indivisibility of the capital investment and the magnitude of the minimum economic output.

(2) The firm is still in an early phase of development. It may initially be run by a single owner-operator. As it grows, it may have to take on more workers and specialist supervisors (technical, procurement, marketing), and the owner may progressively move farther away from operations. In the process of growth, costs per units may first rise as overhead costs increase and subsequently fall as management becomes more able to cope with problems of size. As output expands, the firm can adopt technologically more advanced methods (may in fact develop them if it is an innovating firm) and use more capital per worker [Peterson 1977, p. 106 f.]

(3) The country is in an early phase of industrialization, and all firms are relatively small (e.g., most African countries).

(4) The country has a relatively small market, and firms in smaller countries tend to be smaller than their counterparts in larger countries.

(5) The firm is situated in an industry which permits labor-capital substitution, either in processing or in auxiliary activities (material handling, packaging, shipping). The manager (owner) is responsive to factor cost considerations and the country does not interfere with economic factor pricing.

The last of these points extends to small as well as large firms. Its relevance for the larger firms is elaborated in the next section. The first point - the location of small firms in capital-light industries - has caused confusion in much of the discussion about employment generation and firm size. The correlation between firm size and capital-labor ratios, while statistically significant, extends across industries and will have to be interpreted with care when applied to policy formulation. Variations in capital-labor ratios among firms of different size within an industry may well be less marked than variations in capital intensity among industries.

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1 See Bain [1966], as quoted by Scherer et al. [1975, esp. Ch. 3: "The Determinants of Plant Size"]. Scherer concludes that in multiple plant operations the larger the market controlled by the leading three sellers, the larger were the average top 50 per cent plant sizes [p. 384]. Systematic variables accounting for observed variations in multi-plant operations were market size and relative importance of transportation costs [p. 388].

2 See, for example, data in IBRD [1978, Annex Table 1:4] quoted from Government of India [1965]. Fixed capital per employee varies by a factor of 10 or more as between small and large firms in tobacco manufacturers, basic chem-
The fact that plants in capital-light industries tend to be smaller than those in capital intensive industries has been known for a long time. In his "Modern Small Industry for Developing Countries," E. Staley [1965, Table 6.2] showed that the share of small factory employment in total factory employment is below average for such relatively capital intensive industries as chemical, petroleum, basic metals, machinery and transport equipment. On the other hand, this share is above average for less capital intensive industries such as food products, beverages, clothing and footwear, and furniture.

Chenery pointed out in 1960 that on the basis of inter-country inter-industry comparisons, capital intensive industries (viz, chemicals, transport equipment, metals, paper, petroleum products) have above average "scale effects" and also high growth elasticities (i.e., tend to grow more rapidly than other industries as GDP grows [Chenery 1960, p. 638; as quoted in Staley 1965, p. 142]. On the other hand, industries with below average "size elasticity" (leather products, food and beverages, clothing and wood products) do relatively well in small markets and are characterized by predominantly small firms.

III. Large Scale Firms and Employment Generation

The argument thus far is that small firms are more labor intensive than large ones, and small firms will be found predominantly in selected industries - those where capital investment per job is below average. While a positive industrial employment policy calls for support for SMFs, there are several reasons why the role of larger scale firms in employment generation also needs to be considered:

(1) There is no reason why all countries should want to confine their industrial development to clothing, shoes, food and woodworking, or light metal working and textiles. Depending on their economic size, resource endowment or the relative abundance of capital, countries may want to include the "heavier" industries, in which firms tend to be larger and more capital intensive. Thus, countries which have an inherently strong capital position (e.g., Nigeria, Venezuela), those which can have resource-based industries (e.g., oil, gas minerals) or have large domestic markets (e.g., Brazil, India) will in any case want to include the "heavier" industries.

... and steel. But the same or larger variation factors can be observed among small firms in different industries (e.g., tobacco on the one hand and basic chemicals and steel on the other); and similarly for large firms.

1 For a ranking of industries by direct and total (direct and indirect) employment effect, see Stern [1977]. Further evidence on industries in which small firms dominate is given in Staley [1965, Table 5.2: "U.S. Small Plant Industries"], in which small plants are defined as having less than 100 workers.
While in the early sixties, small industry could be considered a promising vehicle for the small economy, many countries have since then passed the threshold where industries with larger capital installations are justified and hence many more large scale plants have been established. Many countries are anxious to diversify their industrial structure and have good economic reasons for doing so. A number of them are now engaged in the development of the heavy machinery industry (e.g., Brazil, Korea and Mexico).

Within most industries, even those with high capital investment per job, there is still a wide variation in economic plant size. Scherer et al. [1975, p. 30] present estimates of the percentage increase in unit production cost when plants are built at one third of minimum optimum scale in 12 industries. In half of these the cost rises by only 5 per cent or less and in only one of them (cement) does it rise by more than 11 per cent. Further, in many cases it would seem that the increase in production cost may be offset by economies in non-production activities (particularly marketing or transport costs).

The search for ways of increasing labor use in large plants is an essential element in industrial employment policy. There is apparently wide scope for capital saving - and employment enhancing - techniques in the large plant. Much of the evidence has been gathered by economists working in tandem with engineers. Technological considerations place less rigid claims on capital than has often been assumed and the decomposition of the production process into its component parts permits flexibility in capital-labor substitution, particularly in the auxiliary elements (e.g., material, handling, packaging) and often also in the choice of equipment. From a survey of data in available studies on six industries, Howard Pack estimates that as a result of capital-labor substitution, employment could increase by 2.4 times on a given amount of investment. Actual achievement of effects of this magnitude will obviously depend on many factors, including flexibility in industry selection, management and labor skills, equipment selection and procurement, plant and process design, adequacy of infrastructure, etc.

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1 This author, in a 1967 study, found 10 countries out of a group of 29, which exceeded the minimum economic size for large scale industrial development (defined as 1963 GDP of $4 billion or about $7 billion in 1975 dollars). In 1975, some 15 countries of this group had GDPs over this mark. See de Vries [1967].

2 Beer brewing, cigarettes, cotton and synthetic hand woven fabrics, paints, petroleum refining, non-rubber shoes, glass bottles, portland cement, integrated steel, antifriction bearings, refrigerators, automobile storage batteries.

3 This survey, still being completed at the World Bank, is based on work by Cooper, Rhe- Westphal, F. Stewart, Timmer, and a group at the University of Strathclyde. The industries are sugar refining, maize milling, cotton yarn, woven cotton cloth, beer brewing, and men's leather shoes. - See also Pichett [1977].
The achievement of greater employment generation also requires a flexibility in attitude in the design, execution and operation of industry. In the developing countries, even the relatively more advanced ones such as Brazil, the attitude of the foreign owned (often multinational) enterprise is particularly important. It has often been said that the harbingers of foreign technology base their decisions on the high cost of labor elsewhere and hence adopt inappropriately capital intensive solutions. It would seem that this argument is too simplistic. All too often it is the "foreigners" who are interested in cost saving and have the capability of adaptation (including the application of cheaper used machinery or the lower cost supplies of capital equipment). In practice, it may be experience with machinery and older techniques which enhances the industrial operator's ability to adjust foreign technology to local circumstances [Pack 1976]. These observations are shared by the work of Little, Scitovsky, Scott [1970] and Vernon [1977]. This is not to deny the importance of encourag-

1 The following quotes are especially noteworthy. Little, Scitovsky, Scott [1970], p. 57: "In general, however, the Latin American countries are freer from such problems. They relied primarily on private foreign capital, of which one-half (in Mexico) to three-quarters (in South America) was direct investment by foreign companies; and whatever the political objections to direct investment, it does bring with it managerial and technical know-how. Part of this know-how is manifest in greater reliance on careful calculations of costs and profitability than is customary in developing countries; and one of the outcomes of such calculation seems to be the frequent use of second-hand equipment in the plants owned and managed by foreign companies. In a world where equipment manufacturers offer little or no choice between more and less capital-intensive models, this may well be the best way of adapting production techniques to the low labour and high capital costs of developing countries. Unfortunately, however, the use of second-hand equipment by foreign companies is not infrequently resented by people in the countries concerned, who tend to look upon second-hand equipment as hand-me-down equipment. A further advantage of second-hand equipment may be that it commits its user to the method of production it embodies for a much shorter period than new and more expensive equipment. In fast-developing countries with fast-expanding markets, this can be an important advantage.

The technical and managerial know-how of the local plants of the big international companies has, of course, other advantages and manifestations as well. They are typically run with exemplary efficiency and provide valuable training not only for their labour force but also for the locally recruited managerial and engineering staff. Many of these firms maintain a training programme and training school for their work force; and the foreign management's concern with profitability, and with efficiency for the sake of profitability, are not the least important part of the example they set in managerial know-how." Vernon [1977]: "Much more in dispute is another asserted link between multinational enterprises and the use of capital. It is contended that, when producing the same products on the same scale, multinational enterprises tend to choose
ing: (a) indigenous industry and technology rather than supplementing it by large units of foreign technology with minimal links to the existing society and economy, and (b) the ability of adapting foreign technology to domestic circumstances.

IV. Enhancing Industrial Employment Effects: Toward Balance between Large and Small Industry

The picture emerging from the foregoing two sections suggests that a positive employment policy must be concerned with several aspects of industrial development:

(1) Concentrate on predominantly labor intensive industries. Firms in these industries are predominantly small. Hence, if public investment resources are involved, they may, therefore, have to be spread over many more units than is the case with capital intensive industry. For this - as well as other reasons - government planners and financiers have often favored the capital intensive sector.

(2) Within each industry, encourage the adoption of low capital or labor intensive technologies in the various components of the production process. This policy objective requires a wide range of measures, often of an institutional nature. "Correct" factor pricing has, of course, received much attention among economists, and there are those that argue that this is all that's really necessary. In some cases lower interest rates and tax benefit have been granted to labor intensive industries, sometimes in an effort to offset the advantages enjoyed by capital intensive industry. While correct factor pricing is essential, evidence suggests that other forces are important as well: attitudes of owner-entrepreneurs, engineering con-

production techniques more capital-intensive than those chosen by national firms. Such a pattern would not be surprising, since multinational enterprises may be paying less for their long-term capital. But the evidence in support of the conclusion is not very consistent. Some studies support the conclusion, some are inconclusive, and some point to exactly the opposite pattern, suggesting that the subsidiaries of multinational enterprises are more adaptive than their local competitors" [p. 55].

"Although comparatively little effort has gone into innovating for the special conditions of the developing countries' markets, however, in one sense the needs of these countries are sometimes served only too well. Many of the new technologies, although developed in response to the needs of the rich countries, have proved in dollars-and-cents terms to be the most efficient for the poor countries as well. Technologies that are saving of labor, for instance, prove also to be saving of capital. In such cases anyone in the poor countries choosing a technology on the basis of simple cost considerations has to choose the capital-intensive technology. Unless the capital so saved is then clearly routed to other job-creating uses, the choice of the investor could easily be interpreted as adding to the country's unemployment problems" [p. 56].
sultants and national and international sources of finance, rigid prescriptions for products or techniques, pressure from established equipment suppliers, the country's ability to absorb and adopt imported technology and the strength of its technological assistance institutions, the availability of adequate information on simpler technologies (identifying the need for information and delivering it when it is required), the ability to employ used equipment, etc.¹. Development banks can play a role by encouraging the use of low-capital technologies when loan applications are considered. Technological assistance agencies, if well equipped, could play a more important role in the lending process.

(3) Increase the utilization of existing plant, inter alia by working more shifts [Schydowski 1976].

(4) Provide institutional support for SMEs. Without such support the larger firms will get all the advantages, viz in credit and foreign exchange allocations, technological support, government procurement, infrastructure, etc. Essentially the country's financial, technical and technological assistance institutions must become equipped to deal with small firms. Encouragement should also be given to closer links between large and small sized firms by increasing subcontracting arrangements. Much can be achieved by government encouragement (in procurement; persuasion) and appropriate legal arrangements. In LDCs, subcontracting will also strengthen the links between the formal and informal sectors and hence help develop the latter.

None of these policy areas lend themselves to quick action. Some of the institutional measures required take several years before they begin to bear fruit². Perhaps it is well to recall that manufacturing industry as a source of employment creation is usually less important than the services and construction industries. Within a framework of macro-economic policies, one has to consider the policies and institutional measures mentioned as affecting the structure and employment elasticity of industrial growth over a period of years.

In practice, the composition of industrial investment by branches is often heavily influenced by decisions on one or a few large capital intensive

¹ On the problems of used equipment see Cooper, Kaplinsky [1974] and James [1974].

² For example, building an effective technical and technological assistance force requires several years of persistent effort. Among the more promising institutions, Mexico's Infotec, a technological assistance service, is now being integrated into that country's SME development program. It is only now starting to build essential field offices outside the major urban areas. It was started in 1972. The Canadian IDRC-sponsored Technonet in 10 Asian countries, centered in Singapore, was also started in 1972 and has been instrumental in setting up a network of assistance and information agencies, and has provided training for over 1,500 industrial extension agents in member countries.
projects. It is generally recognized that economic rate of return (ERR) calculations are essential in arriving at decisions on these projects. These calculations will need to be supplemented by other data, in part because: (a) uncertainties involved in ERR calculations (viz, in most cases costs are underestimated and hence ERRs tend to be overstated), and (b) we don't have sufficient comparable data for other projects especially small ones. Thus, allowance should, for example, be made for (a) the direct and indirect employment effects, (b) use of local raw materials and (c) exports. Further, the decision as to one or a group of major industrial projects must, of course, be taken in the framework of a broader industrial sector development plan. Such a sector plan must necessarily consider:

(1) effects of the plan on employment, use of local raw materials and exports;

(2) domestic and external financing required for investment or renovation;

(3) balance between major branches of industry; intermediate, capital and consumer goods; capital intensive and labor intensive branches. Usually special attention is given to "basic" industries, e.g., steel, chemicals, fertilizers (with high capital labor ratio); engineering (medium range of capital intensity); textile, clothing and shoes; food processing, woodworking; and industries based on the country's special raw material endowment;

(4) infrastructure requirements;

(5) institutional support, marketing; technology; design; technical assistance; credit arrangements.

It is, of course, quite common that countries find themselves in a situation where they must economize on financial resources (both domestic and external); develop and expand exports; and seek ways of providing more industrial employment. In such a situation the government or the industry authorities may be facing a choice whether or not to proceed with one or more major capital intensive industrial projects. Often they may want to attain greater managerial and financial independence for major industries now subject to government intervention. In practice, financial considerations may lead to the postponement of "heavy" industry projects (as, for example, the Sines Project in Portugal). Such postponement is never popular but it may actually be quite consistent with the objectives of employment creation and industrial output growth, provided simultaneously attention is given to stimulate industries with lower capital investment per job created, particularly, SME and export industries.

In these situations the choices are very difficult and decisions may be taken which do not favor employment creation, for example, when the country proceeds with some highly capital intensive projects because external financing is available, the project supports activities in other sectors (e.g., fertilizer and modernization of agriculture), or develops local resources for exports (e.g., in the paper and pulp industry). In other situations the
country may not feel the financial pinch to the same extent, or employment creation has not yet received central attention. For example, Nigeria appears to have had little concern thus far with the capital intensity of its industrialization and has as yet given limited attention to SME development.

Once external finance is available, it is often easier to proceed with certain capital intensive projects than to develop the policies and institutional mechanism which place greater reliance on labor intensive and export industries. This consideration places a burden on governments as well as external finance agencies. It is for this reason that the World Bank is making a special effort to help develop capital-light small scale industries.

V. Further Issues and Topics for Research

Following are some of the topics where research would enhance understanding of the role of SMEs in employment policy.

(1) Balance between large and small industry. Healthy industrial development requires close interaction between large and small scale industry. The significance of this interaction extends well beyond the old backward linkage argument: training of entrepreneurs, innovation, raising of wages and technology in the backward sectors of the economy, income distribution, regional development, integration between formal and informal sectors, etc. One can test the balance of industry and the interaction between large and small industry by assessing the effectiveness of supporting institutions, policies, extent of subcontracting and linkages, etc. But there is no clear-cut measure of what is a reasonable share for SMEs. It depends on a variety of factors, e.g., size of the economy, structure of industry, stage of development, policies, institutions, social customs (paternalism), importance of artisans, etc. As countries develop their industrial sector, SMEs may continue to be important but small factories will be modernized along with the rest of the sector - hence the SME sector in the industrial countries is quite different from that in the semi-industrial or least developed countries. It has been argued that excessive centralism, official desire for bigness, will be detrimental to employment generation and SME development in particular. On these grounds Rein Peterson [1977, p. 67, Table A 2] finds that SMEs in Canada are relatively less important than in the United States and have in fact declined over the years 1929-1973. But for many countries the variations in the share of SME output and employment are not easy to explain. Three countries in a comparable state of development, and perhaps social customs, have sharply declining SME shares: Portugal, Argentina and Mexico in that order. The differences might be explained in part by historic developments and the impact of more recent public sector policies on industrial structure (or conversely the lack of emphasis on SME development). But even granted this, it should be noted that Portugal's important SME sector contains many inefficient and obsolescent firms and has so far made little
contribution toward employment creation during the recovery period since 1973. And while Mexico only recently began to intensify its efforts at SME development, it would be difficult to argue that its industrial development has been less efficient than that of Argentina.

(2) The foregoing observation raises a question about the efficiency of SMEs. If they do promote employment, is this at the cost of efficiency and hence of growth in output? On this point more research and surveys of SMEs experience is called for even though some tentative observations can be made. Account must be taken of changes in efficiency as the firm grows. SMEs, at least those that survive, are most likely more efficient (and more profitable) than large scale enterprises: compared with the latter SMEs and particularly the smaller scale firms, often face adverse institutional support and less favorable factor prices. Many small industries flourish despite an unfavorable policy environment. Further, as mentioned earlier, Scherer et al. [1975] found that plant size in many industries may fall well below "minimum optimum size" without significantly increasing the per unit production cost.

(3) The policy recommendations in Section IV suggest that countries emphasize industry branches with below average capital intensity, provide institutional support for SMEs and encourage labor-capital substitution in large-scale units. One might add that export orientation is frequently more labor intensive than import substitution. The impact of these policies on employment growth has been analyzed for individual countries, for example, Korea. There is need for a comparative cross country analysis testing, for example, the relationship between the importance of the SME sector or industry branches with relatively light (below average) capital intensity on the one hand, and the employment elasticity of manufacturing growth on the other.

(4) A further area for research is the proper institutional support for SME development, in particular the role of technical and technological assistance, the function of credit and finance agencies, and special assistance to SMEs in the export sector. Provision of technological assistance appears essential in guiding SMEs toward low capital technology (or choice of equipment) where this is indicated by market size, labor and

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1 Staley [1965, p. 17, Table 1-2] finds that SMEs (with employees below 100) were roughly comparable in the United States, the United Kingdom and West Germany with respect to their contribution to output and manufacturing employment; SMEs' labor productivity was in line with that of the larger firms. In Japan, however, the share of employment in SMEs was larger than in Europe, but labor productivity was below that in the large-scale sector. Staley [1965, p. 19, Table 1-3] also observes a large variation in the SMEs' share in employment and value added in different LDCs, as does Morawetz [1974, p. 71, footnote 69].

2 The relationship between trade strategies and employment growth is the subject of a research project sponsored by the National Bureau of Economic Research under Anne O. Krueger. On Korea, see Westphal [1976].
management skills. In this area, world wide "networking" must be anchored into local institutions providing "fact to face" assistance. The benefits derived from technological assistance as distinct from the impact of other factors (credit, factor pricing) is a virgin area for research; technical experts generally feel that SMEs benefit from more adequate information and assistance. The reasons why in some countries (e.g., Japan, East Asia) SMEs became important in exports and subcontracting with large-scale firms and not in others remain to be investigated. In export development SMEs deserve special support in marketing, design as well as product development and standardization.

(5) The need for technological assistance may in itself be a test in a proper definition of what constitutes a small enterprise. One can argue that once an enterprise is capable of obtaining technological information on its own, either by direct contacts abroad (licensing, partnership, joint ownership, visits) or with the assistance of a suitable technical information agency, it has moved out of the small scale category even though it may have less than 50 workers. Many LDCs have now reached the point where technological assistance is critical to the next stage of industrial development (and the provision of productive manufacturing employment).

(6) Distribution of income and regional development have important consequences for SME development. As is well known, an increase in the income of the poorer segments of the population may disproportionately increase demand for labor intensive products of the SME sector. Similarly, regional development may strengthen smaller local markets and benefit SMEs. But little empirical evidence has been accumulated in this area. On the other hand, in the absence of income redistribution, assistance to small scale enterprises may lower the price of inputs into capital intensive industry to the benefit of higher income consumers (and workers); hence, in the absence of accompanying policies to assist the poorer segments of the populations, "interaction" between large and small scale industry may primarily benefit the former.
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