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SMALL INDUSTRY: SOCIO-ECONOMIC ASPECTS OF ITS
PROMOTION IN ASIA

by

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15	A.C. Kelley & J.G. Williamson, "The Prospects for Regional Economic Cooperation and the Rate of Household Savings in the LDC's" (March, 1967).

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SUMMARY

Policies for economic development in Asia continue to stress the importance of promoting small business enterprises for a variety of reasons--economic, political and social. The economic rationale of this promotion is based on an assumption of their economic advantage in terms of capital-saving and labor-intensity. Available statistical evidence, however, suggests that the promotion cannot be supported on economic grounds. There is, moreover, a conflict between the various objectives of promotion which may invalidate some or all of them.

There is a need for more extensive studies of the operating conditions of small units and an examination of the non-economic benefits which are alleged to accrue from their promotion. It is also necessary that the role which small units are to play in the overall development strategy be decided upon and that promotion, rather than be isolated into a separate category, be integrated into the overall development plans. Efforts to arrive at an overall optimum size of firm which includes all aspects bearing on firm size are unlikely to be successful--the statement of the factors bearing on this optimum provide, however, a useful theoretical frame.

It may be that development policy should stress "disability-removing" rather than direct protection of small industry. Both in terms of individual country plans and the need for an overall regional view, small industry promotion must be based on sounder theoretical premises than hitherto.

INTRODUCTION*

As economists qua economists our treatment of many phenomena remains very incomplete, especially as we do not have a general model of interdependence in which "non-economic factors must enter into the theoretical system as variables, with causal relationships flowing to as well as from them."¹ When thinking of small industry as a phenomenon, the strictly economic aspect of optimal resource allocation is evidenced in the response to a capital-scarce and labor-abundant pattern of resources. But just as economic variables are subject to, and interact with, social, political and cultural factors, so small manufacturing units are a function of complex social and cultural characteristics. In highly planned economies they may represent a conscious choice of a certain socio-economic unit of activity, or in other developing countries a partial adaptation to industrialization. It is argued implicitly in this paper that there is a vital, and little understood, relation between the environment in which productive activities take place and the environment in which human resources, which undertake these activities, emerge. By considering the phenomenon of small industry in a broader context than that of economic efficiency this relation is indirectly confronted.

The concern for small industry is nowhere more prominent than in the development plans of Asian countries but much of the attention paid

* My thanks go to Mr. Keshav C. Sen for invaluable help throughout the long gestation period of this paper--help which was extended on many levels. I wish also to thank Professors Hla Myint, Theodore Morgan, Robert E. Baldwin, Everett D. Hawkins, and Kai-Loo Huang for their suggestions for improving the paper.

¹ Everett E. Hagen, "Turning Parameters into Variables in the Theory of Economic Growth," American Economic Review, Papers and Proceedings (May, 1960), p. 623.

to it has been concerned with practical questions such as quality of products, design, marketing, financing institutions, export promotion, and the like, and there remains an almost total lack of wider theoretical propositions. A large number of Asian countries have already written into their development plans a set of measures for small industry promotion but, to judge by some of the conferences and reports,² it seems that the programs have been set up on the strength of frequently stated yet untested and unexamined propositions as to the role of small industry in development. There has been little or no examination of efficiency or optimality, nor any effort to carefully define the role which small enterprises should play in overall development strategy.

This paper is a beginning attempt to fill this gap by bringing to bear some theoretical notions and empirical evidence to the problem. The first part focuses on the general significance of small industry in Asia in comparison with more industrialized countries, and examines some of the common arguments used in promoting it. The second part states some criteria for evaluating optimality and considers the complex set of factors which determine this optimum in the real world. The constraints on this optimum raise the larger question of the role of small industry in the process of socio-economic change. This section includes a brief discussion of the role of entrepreneurship as a crucial agent in the process of change. The third section makes explicit the assumptions necessary for a policy of promoting small industry and outlines some basic elements in a development policy. The paper does not offer a

²See, for example, Symposium on Small Business Development (Tokyo: Asian Productivity Organization, 1964), 3 volumes. All the contributions have a basic air of practicality which is found in ILO and ECAFE reports too.

"theory" of small industry; its chief purpose is to organize the available evidence in such a way as to shed some light on the theoretical problems associated with the existence of small industry, and to place some of the commonly held assumptions into more critical light.

I.

MANUFACTURING INDUSTRY IN SOUTHEAST ASIA

1. Quantitative Aspects

As shown by Table 1, from the most recent ECAFE report, manufacturing industry is subordinate to agriculture in the economies of every country except Japan, both in terms of the population employed in it and its contribution to national product.

However, the sectoral rates of growth over the period 1952/54 to 1961/63 show that the manufacturing sector is growing in these same countries, and at a faster rate than agriculture. It is growing (Table 2) at more than double the rate of Taiwan, three times as fast in India and at eight times the rate in Pakistan.

There is considerable variation in the definitions of small industry, both in terms of the units considered eligible for administrative purposes and those used in gathering and interpreting statistics. In India the government's program for small-scale industry assists units having no more than RS. 500,000 (about \$100,000) of fixed capital and in some cases no more than RS. 1,000,000 (about \$200,000). Formerly there was an employment limitation of no more than 50 employees with power or 100 without power, but this was removed in 1960. There are separate programs for smaller village and craft units. For statistical purposes the 1952 ECAFE Working Party defined small industry as follows:

Table 1: Distribution of Population and National Product between Agriculture and Manufacturing Industry in Southeast Asia

	Average Percentage Share of Gross National Product, 1961-63			Percentage Distribution of Economically Active Population			
	Agricul- ture ^a	Manufac- turing	Other ^b		Agricul- ture ^c	Manufac- turing	Other
Burma	32.5	14.8	52.7		--	--	--
Indonesia ^d	62.0	6.9	31.1		--	--	--
Cambodia	--	--	--	1960	71.0 ^e	--	--
Taiwan	29.0	20.3	50.7	1956	55.5	12.1	32.4
India ^f	44.1	15.8	40.1	1961	73.8	9.6	16.6
Malaya	36.7	12.6	50.7	1957	58.6	6.3	35.1
Philippines	32.6	16.1	51.3	1948	61.0 ^e	--	--
Thailand	36.4	11.4	52.2	1960	82.3	3.4	14.3
Viet Nam	33.1	11.2	55.7	1960	71.0 ^e	--	--
Japan	14.0	30.5	55.5	1960	32.8	21.7	45.5

^aincludes forestry and fishing.

^bincludes commerce, services, infrastructure.

^cincludes forestry, hunting, fishing.

^d1952-54 to 1961.

^epopulation dependent on agriculture.

^f1952-54 to 1961-62.

Source: Economic Survey of Asia and the Far East, 1964 (Bangkok: United Nations, 1965), pp. 25, 78.

Table 2: Percentage Average Annual Increase in Agricultural, Industrial and Manufacturing Production 1952/54-1961/63

	Agricultural	Industrial	Manufacturing
Thailand	5.2	---	---
Taiwan	4.1	11.0	11.5
Malaya	4.0	---	---
Philippines	3.4	---	8.9
Japan	3.3	14.1	15.0
Ceylon	3.0	5.2 ^a	5.0 ^a
India	2.5	7.4	7.2
Burma	2.1	---	---
Pakistan	1.6	12.7	12.9
Indonesia	1.2	---	---

^a1952/56-1961/63.

Source: ECAFE, op. cit., p. 14.

A small-scale industry is one which is operated mainly with hired labour, usually not exceeding 50 workers in any establishment or unit not using any motive power in any operation, or 20 workers in an establishment or unit using such power not exceeding 50 horse-power.³

The three commonly used criteria differentiate small units according to the number of employees, amount of capital used and use or non-use of power. One researcher,⁴ whose findings are examined below, uses the following definition: he includes firms with fewer than 50 workers and a capital investment of less than \$60,000 in the category of small industry and those with 50-299 workers and a capital investment not exceeding \$70,000 as medium-sized. Whilst a break-off point of 50 workers is fairly general, it has been observed by those in the field that in Asia this is already a substantial concern and that a limit of 20 might be more appropriate.⁵ This can be overcome by a careful break-down of small industry. It may be thought of as covering the following types of units:⁶

- (1) cottage industry making local raw materials into everyday articles for home use;
- (2) cottage industries for a local market of limited size;
- (3) small-scale hand industry for the domestic mass market;
- (4) handi-craft industry for luxury, foreign or domestic mass markets;
- (5) small-

³Quoted in Economic Survey of Asia and the Far East, 1958 (Bangkok; United Nations, 1959).

⁴M.C. Shetty, Small-Scale and Household Industries in a Developing Economy (Bombay: Asia Publishing House, 1963), p. 10.

⁵This was pointed out to me by Professors Everett D. Hawkins and Kai-Loo Huang.

⁶See T. Herman, "The Role of Cottage and Small-Scale Industries in Asian Economic Development", Economic Development and Cultural Change (July, 1956), pp. 356-70.

scale powered industry. Categories (1) and (2) are of lesser economic significance.

Small enterprises already play an important role in the economies of Asian countries. For example, in India, in 1960, there were 36,400 small, registered factories employing nearly 1-1/2 million workers (or 38% of registered factory employment) with 17% of the fixed capital of all factories, providing 33% of gross manufacturing output and 25% of value added by manufacture.⁷ In 1954, 9.6% of national income was derived from small units compared to 5.8% from large units. In the Philippines, small industry contributed some 12% of total-value added by manufacture. Table 3 shows the distribution of total population between small and large units for various Asian countries.

Table 3: Employment in Manufacturing by Size of Unit

	Total Popu- lation (million)	Small-Scale ^a (millions)	%	Factory (millions)	%
Burma (1931)	14.6	.50	3.4	.1	.7
China	582.6	20.00	3.4	3.0	.5
Taiwan	8.0	.15	1.9	.5	6.3
Hong Kong	2.2	.15	6.8	.1	4.1
India	361.0	20.1	5.6	3.0	.8
Indonesia (1938)	70.0	2.5	3.6	.3	.8
Japan	84.0	5.3	6.3	3.6	4.2
Pakistan	75.0	5.0	6.7	.2	.3
Philippines	20.2	.3	1.5	.2	1.0
Viet Nam	25.0	1.5	6.0	---	---

Note: For various years, 1947-54, and as indicated.

^aIncludes cottage, handicraft industries and small-scale with 50 workers or less and hand-power or 20 workers and motive power.

Source: T. Herman, op. cit., p. 358.

⁷Report of the International Perspective Planning Team on Small-Scale Industries (New Delhi: Government of India, 1963).

Table 4: Estimated Size Distribution of Manufacturing Establishments and
of Employment in Manufacturing in Four Countries
(For 10 and more employees)

Employees per establishment	% Establishments				% Employment			
	India 1956	Japan 1953	G.B. 1956	U.S. 1955	India 1956	Japan 1953	G.B. 1956	U.S. 1955
10-19	61.4	55.3	36.8	32.2	15.4	16.1	6.3	3.9
20-49	25.7	29.6	32.6	32.2	14.4	19.2	10.8	8.8
50-99	6.7	8.4	14.7	16.2	8.7	11.8	11.5	10.5
100-249	1.2	1.3	3.4	4.5	6.9	8.8	12.5	14.0
500-999	0.7	0.7	1.8	2.0	8.5	10.3	13.0	12.5
1000 +	0.8	0.5	1.7	1.5	36.3	20.8	29.8	34.7
Approximate number of establishments employing less than 10 persons	5,000	320	120	150	12,000	11,000	400	500

Source: P.N. Dhar and H.F. Lydall, The Role of Small Enterprises in Indian Economic Development (Bombay: Asia Publishing House, 1961), p. 29.

Comparisons with industrialized countries show that the small unit is a persistent phenomenon (Table 4). Hoselitz points out that between 40% and 50% of the labor force of post-war Europe works in enterprises of less than 50 workers, and that these enterprises are concentrated in certain fields of production in particular: leather, construction, paper, chemical and food processing. Moreover, over a period of 35-75 years in France, Germany and Japan, whilst handicraft industries showed a decline, small units (in terms of labor employed) remained steady and in Japan actually increased at a faster rate than the growth in the total labor force.⁸

⁸1950-55 total employees grew by 29.5%, firms with 4-49 workers by 33.4%. Bert F. Hoselitz, "Small Industry in Underdeveloped Countries", Journal of Economic History (December, 1959), p. 605.

General reasons which account for the continued existence of small units in industrial and in underdeveloped countries include: (i) relative distribution of productive factors: labor abundance and capital scarcity, (ii) smallness of market, (iii) non-transportability of goods, (iv) market requiring constant adjustment of goods produced, (v) local monopolies, (vi) subsidiary or ancillary firms, (vii) factors contingent on skills and aspirations of owners-entrepreneurs, (viii) technical and cost characteristics of certain types of production and (ix) specialized demand.

2. Arguments Used in Connection with Small-Scale Enterprises

Small industry figures in the development plans of many of the economies of this region. The strands of the arguments used are illustrated in the 1956 Industrial Policy Resolution of India which states that small industries

provide immediate large scale equipment; they offer a method of ensuring a more equitable distribution of the national income and they facilitate an effective mobilization of resources which might otherwise remain unutilized. Some of the problems that unplanned urbanization tends to create will be avoided by the establishment of small centers of industrial production all over the country.⁹

These strands may be distinguished as the employment, decentralization, social and political, and latent resources arguments.¹⁰

a. The Employment Argument

This view suggests that small industry deserves encouragement to absorb the underutilized resources of rural areas. Whilst it ties in Nurkse's "maximum employment absorption" notion, which rested on the

⁹ Reprinted in Second Five-Year Plan (Delhi: Government of India, 1956), p. 47.

¹⁰ Dhar and Lydall, op. cit., pp. 11-32.

assumption of disguised unemployment and forced savings, it overlooks an essential issue: allocation, of making the best use of scarce resources. However, the employment argument becomes an output argument if it is interpreted to mean that the enterprise maximizes output from scarce capital and entrepreneurship, with the giving of extra employment as a necessary corollary.

The main line of reasoning suggests that small units utilize the comparative advantage of developing countries in their labor abundance and paucity of capital. One author writes that cottage and small-scale powered industries

require little capital, maximize employment, raise local purchasing power, earn foreign exchange and/or conserve it against imports, save transport costs where using local raw materials, preserve hereditary arts and skills, and give training for the introduction of needed heavy powered industry.¹¹

The notion that small industries maximize employment and economize on capital has been put to the test with Indian data. In the next section an appropriate criterion for evaluating the contribution of small as opposed to larger units will be discussed. Here the data as given by various surveys is merely presented.

Output-capital ratios for different sizes of unit have been collected by Dhar and Lydall. Their investigations show the following:¹³ (i) with data for ten industries, from the 1956 Census of Manufactures, the

¹¹Herman, op. cit., p. 359.

¹²Dhar and Lydall point out that the statistics must be interpreted with some caution (i) as they exclude firms with less than 20 employees (which account, according to their own estimates, for 99% of all establishments and 78% of all employees); (ii) the method of varying capital (book value of fixed capital in the firm's accounts, plus the value of stocks, plus cash in hand at the bank) is unsatisfactory.

output-capital ratio increases or remains constant and, in no instance, declines with an increase in the size of the firm (Table 5); (ii) comparing firms with less than 50 workers with those with more than 50,¹³ and matched for the same product, shows only three cases out of fifteen in which the larger unit had a smaller output-capital ratio (on a one-shift basis) and only one when operated on a two-shift basis; (iii) combined data from various surveys¹⁴ gave an average gross output-capital ratio of 0.6 for all industries, for establishments employing less than 20 workers, confirming "the general impression that very small firms have a more favorable output-capital ratio than those (of medium size) recommended in the Model Schemes. But, when they are compared with large factories operating on two or three shifts the outcome is indeterminate."¹⁵

Table 5: Output-Capital Ratios in Different Sizes of Factories, 1956

Industry	Average Daily Number of Employees				
	20-49	50-99	100-249	250-499	500+
Wheat flour	0.23	0.44	0.35	0.80	----
Rice milling	0.23	0.34	0.30	(0.24)	----
Vegetable oils	0.20	0.24	0.22	0.30	(0.31)
Soap	0.13	0.18	0.55	(0.09)	0.71
Tanning	0.28	0.39	0.38	0.55	(0.32)
Cotton textiles (spinning, weaving)	0.24	0.50	0.23	0.41	0.63
Woollen textiles	0.14	0.34	0.15	0.34	0.51
Bicycles	0.51	0.58	0.39	0.51	0.49
Electric fans	0.36	0.33	0.53	0.41	0.30

Figures in brackets relate to one factory only.

Source: Census of Indian Manufactures, 1956 (Government of India) given in Dhar and Lydall, op. cit., p. 14.

¹³From studies by the Planning Division using ex ante estimates of output from given capital.

¹⁴Including the Delhi survey (of Dhar, see footnote 23 below) and the National Sample Survey, 1953-1954.

¹⁵Dhar and Lydall, op. cit., p. 19. The Model Schemes referred to were an experiment carried out by the Indian Government for promoting small industry.

They conclude that: (a) for enterprises employing more than 20 workers the output-capital ratios increase with the size of the firm; (b) for those employing less than 20 workers, the output-capital ratio is generally more favorable than for firms immediately above them, but not necessarily in comparison with factories on a two to three shift basis; (c) the most capital-intensive unit is the small factory using modern machinery and employing up to 50 workers.

This conclusion, which contradicts the widely held view that smaller units use less capital and more labor than larger units, is partially explained in the distinction between "traditional" and "modern" types of industry and by the fact that only the latter were considered in this study. Unlike the unmechanized type, these would tend to be more capital intensive and also subject to economies of scale as the size of enterprise is increased. Other explanations might be sought in their varied, and somewhat unvalidated, data.

b. The Decentralization Argument

This contains the following strands: (i) avoidance of overconcentration of population in large cities; (ii) avoiding migration and its social effects, keeping localities vigorous; (iii) the (alleged) greater facility for decentralization in small towns and villages. Small, modern firms, it would seem, tend automatically to concentrate in cities due to their dependence on markets and raw materials. Moreover, they very often produce a luxury good which is dependent on a very wide market. Of the employees of the two most modern industries in India (chemicals and engineering) 75% of the employees of the small firms¹⁶ live in city areas.

¹⁶Firms with 10-49 employees (with power), or 20-99 employees (without power).

But, as the following Table shows, the pattern of decentralization is not a clear one. It shows in fact that nearly half of those working in large-scale enterprises live in rural areas and that the least important category of small industry is the only one with a greater rural than urban concentration (Table 6).

Table 6: Distribution of Employment by Type of Enterprise and Urban or Rural Residence, 1955

Type of Enterprise	(India)		Total
	Rural	(Thousands) Urban	
1. Employing less than 10 with power or 20 without, using mainly household labor	8,068	2,821	10,889
2. Employing less than 10 with power, or 20 without, using mainly hired labor	833	897	1,730
3. Employing 10-49 with power, or 20-99 without	197	298	495
4. Employing 50 or more with power, or 100 or more without	1,438	1,650	3,088
Total:	10,536	5,666	16,202

Source: Dhar and Lydall, op. cit., p. 3.

As far as village industry goes a difficulty lies in the fact that stimulation has a substitution effect in favor of the products of the cities and this can only be averted by imposing discriminatory taxes on city products or by subsidizing village products. But such action may lead to a misallocation of capital by changing the capital-output ratio in a direction unfavorable to the assisted industries. An alternative would be to attempt to modernize local enterprises; whilst this would cause local unemployment it would also lead to the growth of one village as an industrial center. Large firms might also be induced to go into

underdeveloped towns in the hope of inducing linkages and complementarities. In short the actual means of decentralization are more complicated than the arguments used would imply. There is clearly a conflict between maintaining a balance between city and rural areas on social and political grounds, which in themselves may be quite valid, and the economic implications of this policy.¹⁷

c. The Social and Political Arguments

These are the most frequently used arguments. In India they have the philosophic backing of Gandhism and center around notions of democracy and of equality. The dictum of the Karve Committee¹⁸ -- "the principle of self-employment is at least as important to a successful democracy as that of self-government" -- is typical of the former. The latter is dependent on the idea that there are smaller income differentials between employees and employers in small industries, and that total income is generated more widely over the population.¹⁹ This, even if true, overlooks the fact that equality may hamper the long-run growth of the economy by slowing down the rate of savings, spreading the total income more widely

¹⁷An interesting side question is whether the efficiency of small enterprises is constant between urban and rural areas. One study suggests that rural enterprises may be less efficient. See National Council of Applied Economic Research, Survey of Handloom Industry in Karnataka and Scholapur (Bombay: Asia Publishing House, 1959), p. 54.

¹⁸Report on Village and Small-Scale Industries (New Delhi: Government of India, 1955). Quoted by Dhar and Lydall, op. cit., p. 10.

¹⁹"Increase in local incomes from decentralized small manufacturing can spread the benefits of industrialization and help rural communities to rise above their present level. The integration of small industry into rural life is likely to increase total income all around, and thereby create a wider market for all industrial products."

H.G. Aubrey, "Small Industry in Economic Development", Social Research (September, 1951), p. 304.

over the population. There is again a clear conflict between social and economic goals, growth versus equality, individual versus social time preference.²⁰

d. The Latent Resource Argument.

This line of argument asserts that small-scale industry would generate latent reserves of skilled entrepreneurs, workers and managers as (i) there are a large number of entrepreneurs who have the capacity, given the opportunity, to manage larger or more efficient enterprises; (ii) there are a large number of potential entrepreneurs whose skills are not being made use of; and (iii) there are reserves of idle saving which would be drawn into productive use if owners could set up their own businesses.

It is argued in the third part of this paper that the overall socio-economic environment will account for the emergence of entrepreneurs and that alterations in key aspects of this environment will have a crucial effect on this emergence. What is hard to establish in terms of this argument is whether a country suffers a shortage of entrepreneurs or of efficient entrepreneurs and whether the entrepreneurs have enough talent to develop firms beyond the smallest size. India, for example suffers from a lack of medium-sized enterprises: 36.3% of the firms have at least 1,000 workers and 30% only 10-49 workers. It may well be that an optimum size of firm is in the 50-499 employee category and that development programs should be concentrated into this group.²¹ There is a need

²⁰There is scope for detailed studies of the social conditions surrounding small industry, as for example, Social-Aspects of Small Industries in India, UNESCO Research Center on Social and Economic Development, Delhi, 1962.

²¹This is the conclusion reached by Dhar and Lydall, op. cit., p. 31, with regard to India. It is questionable as to why they regard this as an optimum size since their criteria are not all stated.

to establish in all cases the type and size of unit to be promoted in relation to existing human resources and factors relating to optimum size.

Summary:

Indiscriminate promotion of small industry cannot be substantiated on empirical grounds and many of the general arguments advanced are based on conflicting or unsubstantiated theoretical premises. The more influential essays²² on small industries would seem deficient in two main ways: (i) in neglecting the crucial problem of economic efficiency and the size of the unit; (ii) in paying insufficient attention to alternative policies for the encouragement of small industry. These are the subject of the following two sections.

II

Factors Relevant to Optimum Size of Manufacturing Unit

Economic theory postulates an optimum size for a unit of production based on the notion of some point, which can be identified on the cost curves, at which diminishing returns become operative. The optimum is not only a continuously moving one--especially for a country in the process of industrialization--but there are many factors which bear on its determination. There are a series of non-economic suboptima--technical, administrative and personal--which may actively compete with the economic

²²For example, H.G. Aubrey, op. cit.; J.E. Stepanek and C.H. Prien, "The Role of Rural Industries in Underdeveloped Areas," Pacific Affairs (March, 1950), pp. 65-76. For a complete bibliography on the subject see Marian Crites Alexander-Frutschi, compiler, Small Industry: An International Annotated Bibliography (Glencoe: Press Press, 1960).

optimum. The factors which bear on the general determination of an optimum may be thought of as constraints, or all the factors may be thought of as tending to an overall "multiple" optimum. There are a large number of variables which we may term institutional since they refer to the total socio-economic context of values, institutions, ideology, aims of government planners. Thus a clear distinction must be made between the optimum size of plant, to which only the given state of technology and the cost curves are relevant, and the optimum size of the firm which embodies organizational aspects of production and is a function of institutional and other non-economic factors. These will be treated separately.

A. Theoretical Basis: Economic Factors

The theoretical case for the existence of small-scale industry rests on the notion that the long-run average cost curve of the firm turns upwards after a minimum point has been reached and does not continue downwards. If the curve went parallel or asymptotic to the axis this would imply a tendency to a pure, one-firm monopoly situation--as a result of continuously increasing returns.

A debate on the apparent inconsistency between increasing returns and the theory of competition took place in the 1920's and 1930's.²³ Marshall had attempted to explain the inconsistency in terms of a sociological law--the "decay of faculties" of the entrepreneur. Rigou explained it in the distinction between external economies operative for the industry as a whole and those that were operative for the firm alone. Robertson argued that, when an industry was not expanding and the economies of large scale were absent, it was impossible to have both a competitive

²³Between Robertson, Clapham, Staffa, Young, and Pigou et alia in the Economic Journal between the years 1922 and 1930.

equilibrium and increasing returns.

These concepts can however be made compatible by examining the technological factors underlying different scales of production.²⁴ Since 1914, some forces have tended to make for a large and others to make for a small scale of production. The latter are the "decentralizing techniques" of 20th century technology: (i) new sources of power freeing the individual machine from both its source and power and speed of operation in relation to that source; (ii) new types of raw materials, and lighter metals which have led to new production processes; (iii) new machines for specialized techniques; and (iv) new transportation modes, freeing an individual industry from dependence on railways and canals. The effect of these techniques had been to reduce the scale of operations at which diminishing returns set in, such that an optimum is reached long before monopoly is reached. In some cases the size may be even less than medium size.

Even in developed countries it had been shown that there may not be any direct correlation between size of plant and efficiency of operation.²⁵ In Asia there is a general lack of data and the evidence is conflicting.

Indian Data

Studies have been made on the effect on alternative techniques in the cotton-weaving industry.

²⁴J.M. Blair, "Does Large-Scale Enterprise Result in Lower Costs, Technology and Size?" American Economic Review, Papers and Proceedings (May, 1948), pp. 121-153.

²⁵T.N.E.C. Monograph No. 13, Relating Efficiency of Large, Medium and Small Business (Washington D.C: 1941). There may however be some correlation between firm size and profitability: see Marshall Hall and Leonard Weiss, "Firm Size and Profitability", University of Wisconsin, 1965 (mimeo).

Table 7: Alternative Techniques in the Cotton Weaving Industry

	Handloom			Powerloom	
	I Throw shuttle	II Fly shuttle	III Semi- Auto- matic	IV Non- Auto- matic	V Automatic
Capital cost per loom	Rs. 5	50	250	1,500	5,000
Workers per loom	1-1/4	1-1/4	1-1/4	1/2	1/16
Capital cost per worker	Rs. 4	40	200	3,000	80,000
Net value added per loom per year	Rs. 262.5	450	2,250	2,250	2,250
Net value added per worker per year	210	360	1,800	4,500	36,000
Ratio of surplus per worker to capital cost per worker	(-)97.5	(-)6	6	1.1	0.4

Source: Shetty, op. cit., p. 47.

The criterion which Shetty uses to evaluate is that of the ratio of surplus per worker to capital cost per worker²⁶ and he thereby concludes that the third technique is to be preferred to the more modern ones. However this is probably not the most accurate criterion: net value added per worker is more relevant²⁷ and this increases steadily with the transition to more modern techniques. The transition from IV to V is however improbably large, being nearly a tenfold increase.

A study of the engineering industry²⁸ showed that small units were

²⁶"In the context of an underdeveloped economy that technique of production would be ideal which, while maximizing the surplus capital-cost ratio, would also provide for the maximum employment," Shetty, op. cit., pp. 46-47.

²⁷Under special assumptions.

²⁸A sample survey conducted in Bombay. See D.T. Lakdawala and B.V. Mehta, "Small-Scale Units in the Engineering Industry," Times of India Supplement, 28 February 1958.

considerably less capital intense than larger ones having an average capital-output ratio of 0.72 as compared to 1.6 for the Public Limited Companies. Moreover value added per worker showed no tendency to increase with the size of the firm enabling Shetty to conclude that in this engineering group "labor productivity is not necessarily a function of capital intensity."²⁹ However he does not explain the fall in value added of 32% between firms with 20-49 workers and those with 50-99 workers which is large enough to raise doubts about the data.

A study of small firms taking all industrial groups together³⁰ suggests that net output per unit of investment is two to three times as high in the lower range of small-scale industries, except for the very smallest enterprises and cottage concerns. Firms employing up to four workers represent the most uneconomic size from the point of view of both capital-intensity and labor productivity, those with between 5-10 workers seem to represent a very efficient size of operation. Further data show that as the size of the establishment increases gross output increases but net output does not increase in any consistent manner, rather it varies with the industrial group and in nearly every instance shows a decline in the 10-14 worker scale.³¹

Dhar's study of Delhi industries³² includes a comparison between

²⁹Shetty, op. cit., p. 50.

³⁰Using data for over 700 firms with up to 19 workers in Moradabad. See B. Singh, The Economic of Small-Scale Industries (Bombay: Asia Publishing House, 1961), pp. 54-56. He asserts: "If small-scale industries are to be assigned a role in the planned development of under-developed countries their techniques must satisfy the criterion of lower capital-intensity per unit of output." (p. 3)

³¹This evidence is contained in the tables given by Singh who offers no explanation for it.

³²P.N. Dhar, Small-Scale Industries in Delhi (Bombay: Asia Publishing House, 1958).

power-using and non-power-using firms. It reveals that capital-output ratios tend to decline as firms increase in size but the switch to power does not uniformly involve an increase in the capital-output ratio (Table 8). The latter contradicts the notion that advances in technology are accompanied by increases in the capital-output ratio. For value-added per workers, productivity of labor does not rise with use of power or increased size of firm and considerable variation is found between different types of manufacturing. Three industries out of eleven show greater productivity in power-using units, two do not, and others vary within the size of unit irrespective of their use of power.³³

Table 8: Capital-Output Ratios: Power-Using and Non-Power-Using

Industry	Capital-Output Ratios		
	Non-Power-Using	Power-Using	% Increase or Decrease
Printing Presses	0.76	1.71	-3.0
Light Engineering	0.88	0.85	-3.0
Electrical Goods	0.89	0.90	1.0
General Engineering	0.54	0.72	33.0
Hosiery	0.65	0.66	1.5
Foundaries	0.72	0.65	-10.0
Drugs	1.16	1.50	29.0

Source: Dhar, op. cit., p. 73.

Other Data

One further study might be mentioned. Hoselitz, using the techniques of Kuznets,³⁴ has developed inter-sectoral comparisons of labor productivity for Japan and Norway showing the differences due to size between agriculture and manufacturing activity.

³³ Ibid., p. 77.

³⁴ See Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations," Economic Development and Cultural Change, Supplement to Vol. V, No. 4 (July, 1957).

Table 9: Inter-Sectoral Comparisons of Labor Productivity for Japan and Norway

	(1) Small-Scale: 1-49 workers (S)	(2) Large-Scale: 50+ workers (L)	(3) $\frac{S}{L}$	(4) ^c Agri- culture (A)	(5) ^d Non- Agri- culture (NA)	(6) $\frac{A}{NA}$
Japan						
1950 ^a	0.62	1.47	0.45	0.50	1.37	0.34
1950 ^b				0.85	1.06	
Norway						
1950/52 ^a	0.77	1.24	0.62	0.58	1.15	0.50
1950/52 ^b				0.66	1.10	0.60

^aunpaid family workers included

^bunpaid family workers excluded

Source: Hoselitz, op. cit., p. 609.

^cincludes fishing and forestry

^dincludes mining, manufacturing, construction and all services including government

The first three columns of the table show relative productivity per worker in small and large industry (where large is defined as plants with 50 workers or more); columns 4-6 show corresponding data for relative productivity per man in the agricultural and non-agricultural sectors.

Table 9 shows that (i) productivity per worker in small-scale units is half that of large-scale; (ii) small-scale industry approximates more closely to the agricultural sector in terms of productivity; (iii) the ratio in productivity between agriculture and non-agricultural production tends to narrow as per capita GNP rises. Part of this disparity is explained by the large number of unpaid family workers who are included in the work force in the agricultural sector. On the basis of other computations Hoselitz asserts that productivity in cottage industries is less than one-fifth of that in large-scale factory industry, an even greater disparity than that between agriculture and non-agriculture.

Evidence which constitutes a severe indictment against small industries as an avenue to economic development.

Power's Criterion

So far there is little evidence to support a case for small industry. But, in view of the variety of both the data in the above studies and the criteria which the authors use to evaluate small industry performance, the theoretical problem still remains.

An interesting comparison of data on the basis of a consistent criterion has been made by Power.³⁵ To compare the relative merits of small versus large units he uses a criteria of the rate of growth of output which he derives as follows. Assuming that capital is scarce and labor abundant, for small units to be economically advantageous they must have a lower capital-labor as well as capital-output ratio. One may think of substituting a smaller unit for a larger one in terms of the following effects: (i) an employment effect; (ii) an output effect; and (iii) a savings effect. All three together have a growth effect; this latter is also an employment effect since a lower capital-output ratio, but increasing labor's share of income, implies a lower savings propensity and thus a slower long-run rate of growth and higher unemployment. The short-run employment effect depends on the labor-capital ratio (L/K) of small opposed to large firms; the output effect depends also on this and on labor productivity (Y/L). The product of $(L/K \cdot Y/L)$ yields Y/K , the output-capital ratio. If this magnitude is constant it can be multiplied by the proportion of output saved S/Y , in the Harrod equation, to yield the rate of growth of output $L/K \cdot Y/L \cdot S/Y$; this can be shortened

³⁵ John H. Power, "Small Industrial Enterprise in Bombay, Delhi and Karachi," Pakistan Development Review (Autumn, 1962), pp. 433-448.

to simply S/K--which serves as the criterion to judge the contribution to growth of small versus large units.

Using this criterion it is interesting to compare the findings of a few studies in which all the necessary information was collected. A survey in Karachi³⁶ shows a remarkable capital-saving ratio among the smallest firms (of less than 10 workers), with a capital-output ratio far below the others in all four industries studied. The next size up (10-19 workers) showed an inferior performance as more investment was utilized without any increase in labor productivity (Table 10). Firms larger than 100 employees had a poor performance due probably to higher wages and underutilized capacity.

On its face the evidence suggests that, to maximize economy in the use of capital, industrial firms should be very small, using little equipment and primitive methods, with a high proportion of owner-family labor, low pay and long hours; or, if modern methods and equipment are used, they should be a medium-small size, employing at least 20 but not more than 100 workers.³⁷

Dhar's Delhi study, using similar data and a proxy for savings, also suggests that small firms are economical in the use of capital, having extremely low capital-output ratios and very high surplus-capital ratios (Table 10).

Dhar and Lydall's later research--which has already been referred to above--produces conflicting evidence: in six out of nine industries there is evidence of economy in the use of capital as size increases. Power explains this inconsistency by including the 10-19 worker class in the category of "small modern factory" and by making allowances in his data

³⁶Gustav Ranis, Industrial Efficiency and Economic Growth: A Case Study of Karachi (Karachi: Institute of Development Economics, 1960).

³⁷Power, op. cit., p. 437.

Table 10: Savings-Capital Ratios: Karachi, Delhi

Industry by No. Workers	Capital/ Worker K/L	Output/ Worker Y/L	Capital/ Output K/Y	Saving/ Output S/Y	Saving/ Capital S/K	Profit/ Capital P/K
KARACHI						
0-9	1,964	2,269	0.87	---	---	67.4
10-19	6,018	1,964	3.06	21.9	7.15	14.5
20-49	7,414	2,708	2.74	35.5	12.96	18.4
50-99	7,693	3,209	2.40	40.4	16.85	21.7
100 +	9,265	2,652	3.62	28.5	7.88	11.9
Total	8,868	2,591	3.42	29.2	8.54	13.0
DELHI						
	K/L	Y/L	K/Y	S'/Y ¹	S'/K ¹	
0-9	1,154	1,307	0.88	44.5	50.4	
10-19	1,314	1,804	0.73	43.5	59.8	
All	2,480	1,600	0.78	43.9	56.2	

¹In lieu of information with regard to savings, the "surplus" (value-added plus wage bill) is used to indicate the savings potential, S'.

Source: Ranis, op. cit., and Dhar, op. cit., quoted in Power, op. cit., p. 444.

for the inexperience of larger firms!

Some further insight into the operating conditions of small firms is provided by a Bombay study³⁸ which showed 50% excess capacity in one-third of all the small firms investigated--73% of the cases, moreover, were due to lack of demand for the goods being produced. This seems to invalidate the case for encouraging small industry in urban areas, since there is already excess capacity, and the solution would seem to be, ceteris paribus to increase employment in larger enterprises. Since the small firms generally use only internal finance, the total saving in the economy is increased and some output is produced which would not be produced otherwise. This, however, would not appear to validate the case

³⁸D.T. Lakdawala and J.C. Sandesara, Small Industry in a Big City: A Survey in Bombay (Bombay: Vora and Company, 1961).

for small industry promotion.

On the basis of information which was summarized in Table 10, Power asserts that (i) very small firms use much less capital per worker and that the short-run effect of favoring small firms over larger ones would be substantial; (ii) whilst labor productivity is low for these firms, it is not so low as to completely off-set their favorable capital-labor ratios. Thus, he adds cautiously,

(The) very smallest firms, because of their low investment per worker, implying backward techniques and manual operations, as well as their low pay and long hours, do save capital and do have a saving potential in relation to their capital that is not below that of larger firms.³⁹

Summary

The conflicting nature of the evidence available precludes any rigorous conclusion as to the relative efficiency of the small as opposed to the large enterprise. In view of the market imperfections prevailing in developing countries the statistical discrepancies are hardly surprising. Part of it must, in any case, be sought in other spheres in

intangible factors like managerial skills, morale of workers and the nature of equipment and raw materials... These problems lead beyond the technical and engineering bounds into questions of appropriate economic organization, quality and outlook of entrepreneurs and managerial skills.⁴⁰

B. Non-Economic Factors

This section is concerned with some of the "intangible factors" which are relevant to the optimum size of the firm as distinct from that of the plant. Between the size of each there exists a complex inter-relationship.

³⁹Power, op. cit., p. 441.

⁴⁰Dhar, op. cit., p. 82.

The influences with which we are concerned are the influence of social organization, the management function, personal factors, the goals of the State and other institutionally determined variables. Social organization can influence firm size in the matter of family and caste connections in India and the role of the "oyabum-kibun" (or boss-henchman system) in Japan. It will influence the attitudes and the commitment of the labor force as well as that of the management.⁴¹

A clear distinction between entrepreneurship and management cannot be drawn. Entrepreneurship is normally thought of as involving risk-taking to some degree, whereas management may be concerned with only the adaptation of the firm in the face of changes in the external environment.⁴² The manager can play an important role in the speed with which change is adopted.

Certain stages may be distinguished in the development of the management function: owner-manager, partial delegation of functions and complete sub-division of functions. There will be an optimum size of unit of each stage: in owner-managed enterprises personal and managerial interests will coincide and their economic optimum may not be reached if the capabilities of the owner-manager are not equal to expansion; in very large enterprises an administrative optimum may not coincide with an economic optimum and there may be diminishing returns; certain specialized forms

⁴¹W.E. Moore and A.S. Feldman, Labor Commitment and Social Change in Underdeveloped Areas (New York: Social Science Research Council, 1960).

⁴²Although by equating their functions with those of a modern business organization much of the conceptual problem can be avoided. See Frederick Harbison, "Entrepreneurial Organization as a Factor in Economic Development," Quarterly Journal of Economics (August, 1956), pp. 364-380.

of management technique however, cannot be used until a firm had reached a certain size.

There is complementarity between the growth of technical knowledge and managerial capacity.⁴³ In underdeveloped countries the most appropriate technical knowledge is that which (i) takes least time to acquire, (ii) requires least initial investment, (iii) reduces the gestation period, (iv) needs less specialized and less skilled technicians, (v) saves raw materials, (vi) expands production horizons, and (vii) has maximum desirable feed-backs, spill-overs and complementarities.⁴⁴ Much technical knowledge must depend on the State for its diffusion in poor countries. It may be that it can only be utilized with a lot of capital investment or after changes in social and productive organization.

Managers may not approximate to "economic man". They may not see the connection between high profits and an expanding market and will try for the highest profits through high prices in the existing market at existing levels of productivity.⁴⁵ Certain parameters of profit expectation differ according to the institutional framework; uncertainty is affected by reliance on world trade, market conditions and smallness and vulnerability of the domestic market. The structure of interest rates in many countries of South America reflect a preference for short-term profits and a "get-rich-quick" philosophy. Recent economic experience, the

⁴³C.N. Vakil and P.R. Brahmanand, "Technical Knowledge and Managerial Capacity as Limiting Factors on Industrial Expansion in Underdeveloped Countries", in L.H. Dupriez, ed., Economic Progress (Louvain: 1955).

⁴⁴Ibid., pp. 280-281.

⁴⁵A. Lauterbach, "Managerial Attitudes and Economic Development," Kyklos (Fasc. 2, 1962), pp. 374-398.

availability of credit, reliance of foreign investment--these will all affect the nature of managerial attitudes and the consequent sizes of enterprises.

The aims, policies and ideologies of the State will partly influence the industrial framework through general institutional conditioning and partly through policies of incentives and assistance to industry of different sizes. In the latter, the State may actually determine the optimum size attained in various branches of manufacturing. In India the ideological influence has been very strong. Gandhi's thought was influential in tending to a belief in decentralization, the appreciation of traditional methods of production, the virtues of quality, artistry, craftsmanship, etc. The National Planning Committee refer to the "art-reviving and propaganda value" of cottage industries.⁴⁶ The influence in this realm will depend on the impact of particular socio-political views relating to democracy and the social implications of differing techniques of production.⁴⁷

The picture that emerges is of the inter-relation of a wide range of economic and non-economic factors which bear on the determination of the optimum size of the firm. The firm is very much a part of the social and institutional environment, it interpenetrates into the fabric of a society; it may be thought of as a place where social systems intersect.⁴⁸

⁴⁶ National Planning Committee, Rural and Cottage Industries (Bombay, 1948).

⁴⁷ For elaboration see Keshav C. Sen, "National-Building and Regional Integration," Research Paper #8, AID-University of Wisconsin Project on "Economic Interdependence in Southeast Asia" (May, 1966), mimeo.

⁴⁸ This idea is developed in Arnold S. Feldman, "The Interpenetration of Firm and Society," in Social Implications of Economic Development (Paris: International Social Science Council, 1962).

C. Case Studies⁴⁹

1. Japan

The Japanese economy is a striking illustration of the importance of small enterprises as a permanent phenomenon, as opposed to a transitional stage of evolution. Smaller factories represent 99.58% of all establishments, employ 70.91% of all persons employed in manufacturing industries and account for 54.07% of total value in output. It has been further estimated that 60% of all exports derive from small concerns.⁵⁰

The continued growth of small establishments, as a percentage of the total activity in manufacturing was noted above.⁵¹ This growth has been explained in a number of ways: (i) the lack of a stable, large and uniform demand for many of the commodities of Japanese industry rendering large investment risky; (ii) the boss-henchman system in some manufacturing lines--namely a single person who performs all the coordinating functions of many smaller entrepreneurs including supplying of the raw materials, credit, marketing and allocation of orders among firms;⁵² and (iii) the elaborate system of sub-contracting. The following Table suggests the importance of this phenomenon (Table 11).

⁴⁹Choice is determined on the basis of available data and is intended to be illustrative rather exhaustive.

⁵⁰This and the preceding figures are taken from The Smaller Industry in Japan (Tokyo: Asia Kyokai, 1957).

⁵¹See page 8 above.

⁵²John W. Bennett, "Economic Aspects of the Boss-Henchman System in Japanese Forestry Industry," Economic Development and Cultural Change (October, 1958), pp. 13-31.

Table 11: Dependence of Big Industries on Sub-Contracted Industries in Terms of Production Cost

Sewing Machines	40%	Weaving Machines	28%	Other Industrial	
Ammunitions	40%	Automobiles	28%	Machines	21%
Bicycles	31%	Optical & Precision		Communications	
Gauges	30%	Instruments	26%	Apparatus	20%
		Motor Bicycles	25%	Watches	19%

Source: The Smaller Industry in Japan, op. cit., p. 101.

In addition to these industries, in the case of rolling stock and ship-building sub-contraction account for as much as 70% of production cost.

This ancillary role has a number of advantages: (i) it avoids the need for heavy "block" investments by dispersal through smaller units, leaving larger units to utilize their capital for expansion and diversification of their output; (ii) small industries have a ready market and can concentrate on improvements in quality and precision; (iii) larger industries have lower costs due to smaller overheads and lower wages of small firms which supply them and they also benefit from the frequently better labor relations in smaller firms.⁵³

A structure with an elaborate system of interdependence amongst small firms, a fine division of labor, strong regional concentration and sub-contracting from large firms, is not typical of an underdeveloped economy. Japan is untypical too in that it has fewer firms per head of population than most of the other Asian countries.⁵⁴ Japanese industry is an example of "spontaneous complementarity" of large and small units over a wide range of commodities, and the continued proliferation of small industry reflects

⁵³ One writer asserts that this phenomenon is an aspect of monopoly capitalism seeking protection against unstable markets and also helping to maintain the wage disparity between firms. See Keizo Fujita, "Management Structure of Small and Medium Enterprises," Asian Affairs (June, 1957), pp. 123-142.

⁵⁴ 4.1 establishments per 1,000 population (1952), compared to 1.8 in the U.S. (1954). Joseph E. Stepanek, Managers for Small Industry (Glencoe: Free Press, 1960), p. 33.

a complex heirarchical social structure rather than the relative distribution of productive factors.

2. India

Whilst the Japanese case demonstrates a largely spontaneous development, in India the relative labor abundance of factor resources has been combined with a deliberate government policy for the promotion of small industry. A feature is the preponderance of small firms in some important fields of production (Table 12).

Table 12: Distribution of Registered Factories and Scale of Operation, 1954

Industry	% of small-scale to total factories	% of small-scale to total (average daily) employment
Manufacture of metal products (ex. machinery & transport equipment)	86	40
Basic metal industries	78	10
Petroleum and coal products	62	16
Leather (ex. footwear)	86.5	42
Chemicals	58	20
Textiles	69	4.5
Printing and allied	85.5	36.5
Products allied to agriculture	53	24

Source: Selected from Shetty, op. cit., pp. 20-21. In his table he does not define "small-scale".

In its support of small industries the Government accepted the notion of restricting the total capacity of some lines of modern factory production. The Karve Committee shoe recommendations were never fully implemented, suggested restrictions on the expansion of current production in cotton weaving and the hand-pounding of rice, on the expansion of productive capacity in the leather and vegetable oil industries and differential

excises on larger units. Dantwala, examining the opportunity cost of these suggestions, found many of them unsound, particularly the restriction on the cotton industry to permit the expansion of handloom manufacturing.⁵⁵

Small scale industry promotion is conducted at both a national and a regional level with an elaborate network of institutions for their financing and improvement. The literature on the latter is extensive.⁵⁶ In India, particularly, national planning discussions relating to small units have clouded the technical issues in a concern for semi-ideological arguments. There is a considerable need for elaboration of the theoretical bases of their promotion policies.

3. Thailand

Thailand is included here since it has developed a policy towards small industry, including a body of governmental institutions, which is quite typical in Asia, and can be compared to the Philippines, South Korea, and Taiwan.

The World Bank Report of 1959 stated, with regard to small industry: "There can be little question of the larger scope for further expansion of these activities. They should steadily increase in both absolute and relative importance in the economy with appropriate government policies to encourage their growth".⁵⁷ This advice seems to have been uncritically accepted for the Government's Six Year Plan seeks

⁵⁵M.L. Dantwala, "The Case for Village and Small-Scale Industries," Indian Economic Journal (January, 1956), pp. 269-278.

⁵⁶For example, P.M. Bandari, A Guide to Small-Scale Industries (Government of India: 1962); Seminar on the Financing of Small Industry in India, Report of Proceedings (Bombay: Bank of India, 1959).

⁵⁷A Public Development Program for Thailand, International Bank for Reconstruction and Development (Baltimore: The Johns Hopkins Press, 1959), p. 10.

to promote and assist small-scale industries by provision of technical and extension services and by creating and finding markets for their products. The aim is to build these cottage industries into a base for future development of medium and small-scale industries.⁵⁸

This policy is currently pursued with the following types of assistance:⁵⁹ (i) Small Industries Service Institute, which provides extension services to entrepreneurs, was set up with assistance from the U.N. Special Fund in 1965 and offers expert services, equipment and fellowships for technical training; (ii) Small Industry Loan Office since 1964 has offered loans to firms with fixed assets of less than \$100,000 of the following sorts: cottage or home industry, manufacturing, handicraft or servicing industry; loans of more than \$25,000 are offered at 9% interest rate per annum; (iii) Industrial Estates: on the basis of a report by the International Development and Engineering Associates an estate of 1,000 acres is shortly to be established near Bangkok; (iv) Marketing Organization: this has been recently converted with a budget of \$45,000 per annum; in 1963 an Industrial Design Center was also established by the Department of Industrial Promotion. The overall program of development is a common one, and has parallels in most of the countries of Asia. Treating small industry as a completely separate category, without examining roles or optimum size, it established a series of institutions designed to carry out promotion on an ad hoc basis.

D. Human Resources and Entrepreneurship in Manufacturing

This section touches briefly on a most important aspect of development

⁵⁸The National Economic Development Plan 1961-1966, Second Phase 1964-1966 (Bangkok: Government of Thailand, 1964), p. 83.

⁵⁹S. Changkasiri and T. Sivaranon, "Small Industry Development in Thailand," in Asian Productivity Organization, Symposium on Small Business Development, Vol. II (Tokyo: 1964), pp. 88-100.

and one which has not been treated very fully in relation to small-scale industries.

Entrepreneurship is a part of what Harbison and Myers refer to as "high level" manpower, a concept used to cover critical skills and competence in a country and including administrative, professional and managerial groups along with "qualified" teachers, subprofessional technical personnel and top-ranking political leaders.⁶⁰ On the basis of available statistical information on the number of teachers, dentists, engineers and scientists per 1,000 population and of education enrollments, they are able to classify countries according to a complete index. The Asian countries fit into their groupings as follows (the actual value of their human resource index is given brackets):

<u>Level I, Underdeveloped:</u>	-----
<u>Level II, Partially Developed:</u>	Indonesia (10.7); Burma (14.2); Malaya (23.7); and Pakistan (25.2)
<u>Level III, Semi-Advanced:</u>	Thailand (35.1); India (35.2); and Taiwan (53.9)
<u>Level IV, Advanced:</u>	United Kingdom (121.6); United States (261.3); and Japan (111.4)

The human resource index does not closely correlate with level of Gross National Product in these countries. For the years 1957-58 these same countries are ranked according to their GNP (in \$U.S.) as follows: Burma (57); Pakistan (70); India (73); Thailand (96); Indonesia (131); Taiwan (161); Japan (306); Malaya (356); United Kingdom (1,189); and The United States (2,591).⁶¹ On the basis of available data there is no

⁶⁰ Frederick Harbison and Charles A. Myers, Education, Manpower and Economic Growth (New York: McGraw-Hill, 1964), p. 33. Note that their indices ignore differences in the quality of human resources.

⁶¹ Ibid., p. 42.

indication that the supply of entrepreneurs correlates with the general level of economic development. Managers of industrial enterprises appear to number from 2 to 5 per 1,000 total population in most countries--industrially developed or newly industrializing. However, the number of enterprises appears to rise sharply during the first stage of industrialization and then to level off or perhaps decline with further development.⁶²

As the experience of several countries (most noticeably Pakistan)⁶³ shows, it is the quality rather than the absolute numbers of entrepreneurs which may form the constraint. Part of the problem of industrialization is the transition from "personal" to "functional" management for firm sizes beyond the single owner size.⁶⁴

Just as the firm interpenetrates into society, so there exists a complex interaction between the supply of entrepreneurs and the societal context. Whilst a lot has been written as to the role of aspects of man's personality in engaging in certain forms of economizing activities, we might alternatively regard personality as an aspect of behavior--which has been patterned by the conditioning processes in the social environment. Changing these key aspects will thus change behavior.⁶⁵ In the current state of our knowledge it is not possible to assert in what way precisely the growth of entrepreneurs occurs and exactly how firms arise from this complex of circumstances and factors. In any case the human

⁶²Stepanek, op. cit., p. 35.

⁶³Papanek asserts that no more than about 1,000 entrepreneurs were responsible for the activity which led to a big spurt in GNP during the 1950's. See Gustav F. Papanek, "The Development of Entrepreneurship," American Economic Review, Papers and Proceedings (May 1962), pp. 46-58.

⁶⁴Management of Industrial Enterprises in Underdeveloped Countries (New York: United Nations Department of Economic and Social Affairs, 1958).

⁶⁵Although the samples were small: 13 and 7 firms respectively (unweighted data). See Alec P. Alexander, "Industrial Entrepreneurship in Turkey: Origins and Growth," Economic Development and Cultural Change (July, 1960), pp. 349-366.

agents which undertake production play a vital role in the industrialization process. This is strongly indicated in the following studies, which are referred to very briefly.

The type of skills needed to establish industries may depend on the technical knowledge involved in the produced good and this may affect the type of entrepreneurship forthcoming. A survey in Turkey showed that whereas in the textile industry 71% of the plants were founded by merchants and 14% by craftsmen, in the metal, wood, leather and rubber industries 54% were founded by craftsmen and 37% by merchants.⁶⁶ The importance of craftsmen in the founding of small industries is borne out by evidence from India and the Philippines. One study in Madras stresses the diversity in the social origins of entrepreneurs,⁶⁷ another the large number who were of draft origin in a North Indian town.⁶⁸ Golay stresses the intense individualistic competition between small-scale entrepreneurs and the political involvement of business in government.⁶⁹ Of the firms in the Philippines, only 13.3% are small-scale (20-50 workers) yet, of the managers of these, 87% had no vocational training and 56% became managers by setting up their own establishments.⁷⁰ Finally, a survey of the batik industry in Indonesia showed the importance of inherited business skills within the family in the very small enterprises in this field of production.⁷¹

⁶⁶ An idea developed more fully in John H. Kunkel, "Values and Behavior in Economic Development," Economic Development and Cultural Change (April, 1965), pp. 257-277.

⁶⁷ James J. Berna, Industrial Entrepreneurship in Madras State (Bombay: Asia Publishing House, 1962).

⁶⁸ J.T. McCrory, Small Industry in a North Indian Town (New Delhi: Government of India, 1961).

⁶⁹ Frank H. Golay, "Aspects of Filipino Entrepreneurship," University of Wisconsin, ms. (May, 1965). See also John J. Carroll, The Filipino Manufacturing Entrepreneur, Agent and Product of Change (Ithaca: Cornell University Press, 1965).

When an export industry is established in an underdeveloped country the development impetus which it generates will depend significantly upon the nature of the industry, in particular its production function. Baldwin⁷² measures the development effects in terms of (a) the growth of a money economy, (b) the acquisition of new skills. Contrasting a mineral with a food export industry, the latter has a much higher labor coefficient and a lower skill coefficient, so that whilst the impact of workers spending on the creation of a money market is larger the feedback in terms of development of skills is smaller from a plantation than from a mining industry. This implies a choice not only as to the size of a firm in industrialization but to the choice of industry which is established--in terms of maximum desirable feedbacks.

III

A Development Program for Small Industry

The previous sections have been concerned with an examination of the arguments used in small industry promotion and of the problem of optimum size. The implications of the observations deserve to be at this point restated: (1) before we can say anything about optimum size we must first decide what is meant by small-scale industry, in terms of its size (output, capital, employment) or its function (which markets it feeds); (2) before we can decide on a development policy it is necessary to know precisely

⁷⁰ National Economic Council, Social Implications of Small-Scale Industries in the Philippines, Statistical Survey (Manila: University of the Philippines, 1960), C.P. 60106.

⁷¹ Everett D. Hawkins, "The Batik Industry: The Role of the Javanese Entrepreneur," Entrepreneurship and Labor Skills in Indonesian Economic Development: A Symposium (New Haven: Yale University Southeast Asia Studies, 1961). Of 667 firms in the batik industry (1-40 workers) 90% of the managers had come from families engaged in batik manufacture.

⁷² R.E. Baldwin, "Export Technology and Development from A Subsistence Level," Economic Journal (March, 1963), pp. 80-93.

what role small industry is to play (beginning of a growth industry, focus for limited local economic activity, subsidiary to larger industry, a greenhouse for entrepreneurial talent, etc.), and this implies a clear idea of the objectives of small industry promotion. Once the objectives are clear one might begin to assess the operating conditions of various sizes of manufacturing unit, having decided whether it is intended to maximize social or economic criteria; (3) development policy should then, in the light of optimum criteria, decide on the precise contribution of small-scale units reconciling the various overall economic objectives with the chosen strategy of development and time horizon.

The data surveyed above does not make one very optimistic in terms of these declared aims. First it was seen that there is often a conflict between the social and economic criteria used to advance small industry and, second, that even if purely economic criteria are selected there remains an indeterminacy as to whether small industry is a worthwhile investment. Many of the alleged economic savings cannot be substantiated. The lack of uniform and reliable data prevents driving home any finite conclusions. It seems to be clear, however, that before embarking upon a program of small industry promotion, a developing country should conduct very detailed economic studies as to the operating conditions of various units in various lines of manufacture and in rural and urban areas. And subsequently consider the items above before a program of support is begun.

Assuming that a policy of small industry promotion is both possible and desirable, severe criticisms can be made of the existing approach which tends to give favors in the form of preferences, subsidies and the like, rather than to remove disabilities through helping establish the

right market to goods, providing access to capital and technical advice.⁷³ Such a "developmental approach" is also the basis of the most recent and exhaustive study of small industry by Staley and Morse.⁷⁴ The aim, according to them

is to create economically viable enterprises which can stand on their own feet without perpetual subsidy and can make a positive contribution to the growth of real income and therefore to better living levels. In the developmental approach the emphasis, instead of being negative and defensive, is positive and forward-looking.⁷⁵

There is a delightful vagueness as to the solid implications of a policy based on these precepts. Their five "policy maxims" are (i) to promote modernization; (ii) to promote selective growth; (iii) to promote management improvement; (iv) to promote technological improvement and adaptation of technology to local conditions; and (v) to promote complementarity among different types and sizes of industry.⁷⁶ Their "checklist of environmental factors" includes almost everything which would normally be considered conducive to economic development (e.g., human resource development, good government, an expanding economy). This amounts to an assertion that what is good for development is good for small industry.

It is more interesting to speculate on the more specific program of development. Assuming that we can decide upon an overall development strategy (balanced, unbalanced growth--or both) the problem becomes one of accelerating the level where small industries reach their optimum size.

⁷³Dhar and Lydall, op. cit., pp. 32-34.

⁷⁴Eugene Staley and Richard Morse, Modern Small Industry for Developing Countries (New York: McGraw-Hill, 1965).

⁷⁵Ibid., p. 318.

⁷⁶Ibid., pp. 320-321.

In concrete terms this means setting up industrial advisory services, the training of entrepreneur-managers and supervisory personnel (the "management improvement triad") and the setting up of developmental facilities in the form of factory sites, developmental finance, marketing aids, etc. Attention must be paid to all of the factors mentioned earlier as well as the possibility of availing of complementarities, linkages between localities and between small and large concerns.

Staley and Morse observe how the character of small industry will tend to change as the economy moves from traditional to predominantly traditional, to a more modern level of development: "The artisan industry is transformed...the household industry replaced...small but modern factories to be developed."⁷⁷ Throughout their book, moreover, they emphasize the importance of modern small industry as the key to small industry development, with development policy stressing adaptation of traditional modes of production to more modern ones.

A proposal mentioned by Hoselitz,⁷⁸ for removing the uncertainty factor and general demand insufficiency in setting up small enterprises, is that of a clearing house with which persons within a village or group of villages register their demand for manufactured goods and the objects they can supply. Administrators then adjust incoming supplies of produced commodities to demands registered by participants in this scheme. This is an appealing idea but making up for demand insufficiency alone will not, of course, make up for a lack of capital, entrepreneurship and other factors which hold back development.

⁷⁷Ibid., pp. 22-23. Emphasis their own.

⁷⁸Hoselitz, op. cit., pp. 617-18.

IV

Conclusion

The promotion of small industry in Asia should be accompanied by more intensive investigations into their operating conditions and considerations of their role in the larger context of social as well as economic factors. On the basis of existing studies the issue of returns to scale is indeterminate for small industry as a whole yet there appears to be a good case for the promotion of small industries beyond a minimum size, with the emphasis on the adoption of modern techniques. The data does not unequivocally support many of the economic arguments which have been used to promote small industries.

The optimum size of a firm depends on many factors including the institutional and socio-economic context in which it operates. An optimum in terms of administration may not coincide with an optimum in terms of productive efficiency; this must be worked out separately for each industry and each product.

Small industry has an important role to play in the present and future industrialization of the countries in Asia with which this paper has been concerned. There remains a need to reassess the development policies towards them, preferably by adopting a developmental approach with a definite strategy and which removes aspects of the institutional environment which inhibit small enterprises from developing. At the same time attention should be paid to improving productive efficiency and arriving at a policy mix which meets the needs of various categories of industrial enterprises.