PART I
Chapter 1

INTRODUCTION : A HISTORICAL PERSPECTIVE

"We are suffering, not from the rheumatism of old age, but from the growing-pains of over-rapid changes."

Keynes

All the developing countries are confronted with the problems of economic development. They have faced the problems of choice: how to use the resources? In which direction? Agricultural development or industrialisation first or simultaneous development of agriculture and industry? Development through mechanisation of agriculture and installation of heavy industry for mass production or production by the masses in agriculture and industry?

Interrogatives are easier posed than answers suggested. What is, however, necessary is a historical perspective for a proper grasp of the development process. Mankind has made a long, a very long march from the days of Adams, from two thousand years before Christ, as Keynes dates it, to this age of automation and cybernetics. What mankind has achieved in this long march is progress in every field which has raised the average standard of life "about four fold" as stated by Keynes in his Economic Possibilities for our Grand Children written in 1928, now probably five or six fold.
(1) Natural Economy

During this linear period human society has traversed many a rugged path, with bursts, retreadiness and pauses. Man in the natural economy or what Karl Buecher calls domestic economy and Rodburtus calls ÖKOS economy\(^1\) of pre-medieval and medieval ages, produced everything he needed to satisfy his few wants. The clan or community occupying a definite territory produced the goods for themselves. The ancient Indian communities, for example, occupying areas from 100 up to several thousands of acres, each formed a compact unit producing all it required.\(^2\) This type of natural economy blended agriculture and industry together, that is, production of food stuff and processing of food and other materials into consumable form were done side by side. The industry that processed the raw materials produced within the household or community has been termed Domestic Industry.\(^3\) Such industries are necessary adjuncts of a natural economy. The characteristic feature of such an economy and of industry is that the goods produced remain mere goods, that is, they are produced and consumed within the household or the village community and are not exchanged.

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3. Lenin, V.I., Development of Capitalism in Russia, Progress Publishers, Moscow, 1967, p. 335
(2) **Artisan Industry**

With the march of civilisation wants as well as productive skill of man increased and exchange of goods became a natural necessity. Goods produced became more than the domestic or community needs, that is, human skill could produce a surplus over consumption; nor all the wants could be satisfied within the household productions. So, there arose the Artisan production, that is production to meet others' wants. Such artisan production served as a supplement to peasant farming. "A certain percentage of rural population consists of specialist-artisans engaged (sometimes exclusively, sometimes in conjunction with agriculture) in tanning, boot-making, tailoring, blacksmithy, dyeing of homespun fabrics, finishing of peasant-made woollen, flour-milling etc." With the growth of artisan industry or handicraft there arose division of labour as between different trades and vocations. In our country such division of labour took the form of caste system. The castes living in a village or a group of neighbouring villages are bound together by economic ties. "Generally, peasant castes are numerically preponderant in villages and they need the carpenter, blacksmith and leather-worker castes to perform agricultural work. ... ... Artisan castes produce goods which are wanted by every one ... ... The essential artisan and servicing castes (Brahmin, 4. **Lenin**, op. cit., p. 336. Also **Marshall**, **Principles of Economics**, Macmillan, 1956, pp. 183, 228, 246
Barber, washerman, water-carrier, etc.) are paid annually in grain at harvest. In some parts, the artisan and servicing castes are also provided with free food, clothing, fodder and a residential site. This type of relationship is found all over India and is called by different names: Jajmani in the North, Bare Balute in Maharashtra, Hirasi in Madras and Adade in Mysore.  

(3) Manufacturing

While in our country division of labour on the basis of caste and community worked as a brake on vertical labour mobility, in the western countries it led to the improvement of the tools of production and subsequently the invention of machinery. Invention of machinery in its turn ushered in a rapid upsurge in manufacturing. The transition from handicraft to the manufacturing stage took place in two ways, viz., (1) through the process of assemblage of products of handicrafts in some workshop by an undertaker himself, example is the production of carriage which is an assemblage of the products of independent artisans such as wheelwrights, harness-makers, locksmiths, upholsters, turners etc., and (ii) the undertaker employs in one workshop a number of artificers who do the same kind of job in the handicraft like way as in the case of handmade paper, type and needle making.  

5. Publications Division, Govt. of India, India, Social Structure, published as forth series from Gazetteer of India, 1969, pp. 13,14. Also Gadgil, op.cit., p. 159
The important feature of this stage of production is the differentiation of the instruments of labour, that is, implements of a given sort acquire fixed shapes, adapted to each particular application and is marked by the specialisation of those instruments giving to each special implement its full play only in the hands of a specific detail labour. This differentiation of instruments of production creates the material conditions for the invention of machinery which consists of a combination of tools in a particular mechanism, that is, tools are converted from being manual operation of man into implements of a mechanical apparatus and are entirely emancipated from the restraints of human strength. The product is entirely made by a simple machine which performs the various operations previously done by the handicraftsman with his tools. The introduction of machine makes large scale production possible. "As time progresses the construction of machines becomes better and better and the use of waterfalls as energy brings about the transformation of plants into factory or mill manufacture."

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7. Marx, op. cit., p. 323

* Paul Mantoux defines a machine as 'a mechanism which worked by any motive power, executes the elaborate movements of a technical operation which it had previously taken one or several men to do.' The Industrial Revolution in the Eighteenth Century, Jonathan Cape, London, 1948, p. 194 (10th impression)

8. WOŚCZOWSKI, Stanislaw, Small Industry in Economic Development of Contemporary Countries, Stanford Research Institute, Misc. Paper No. 5, 1960, p. 28 (Mimeographed)
(4) Decline of Traditional Handicraft

The beginning of mechanisation of production is said to have occurred in the textile industry and the process took place during the eighteenth century. During this period manufacturing took the form of small plants and its evolution led to the gradual outstripping of artisan production by a form based on more mass production, more developed division of labour and steady increase in the application of machines and mechanisation of production.

The late seventeenth and early eighteenth centuries are marked by crossing over the threshold of what Prof. Rostow calls the traditional society based on 'Pre-Newtonian science and Technology' and entrance into the domain of mass production on large scale. As a result the role of small industry declined and handicraft of the traditional type lost more and more of its pre-dominant position as producer of goods, its domain being confined to artistic products of individual needs. The process did not remain confined within the territories of the present day advanced European countries


9. WOŚCZOWSKI in his doctoral dissertation cited earlier gives a vivid description of the historical process and its influence on changes in production technique, Ref. ch. V

alone. It was spread into far away lands by, to express in
the words of Prof. Hagen, 'the wind of trade and on the boots
of conquering armies.' Handicrafts and traditional
industries of the backward and colonial countries were ousted
by the natural process of competition by the products of large
scale manufacturing industries and by a deliberate policy of
the imperial country which in order to encourage her rising
manufactures, ruthlessly suppressed the traditional industries
as well as their products.

How this policy of ruthless suppression of the home
industries in our country was pursued with tenacity by the
imperial country have been emphasised by different writers.
Dr. Bowring, a British Commoner, while observing in 1835, the
"terrible wretchedness of the poor Indian weavers, reduced to
absolute starvation", maintained that the Dacca muslins,
celebrated over the whole world for their beauty and fineness
were annihilated by the "presence of the cheaper English
manufactures." Romesh Chandra Dutt observed in the
following how the Indian manufactures were discouraged by the
imperial country. "It is unfortunately true that the East
India Company and the British Parliament, following the
selfish commercial policy of a hundred years ago, discouraged
Indian manufactures in the early years of British rule in

Faffer and Simens Ltd., Bombay, 1962, pp. 3-6

12. Made available by Marx - The Poverty of Philosophy,
Moscow, 1954, pp. 246-47
order to encourage the rising manufactures of England. Their
fixed policy pursued during the last decade of the eighteenth
century and the first decade of the nineteenth was to make
India subservient to the industries of Great Britain ... This policy was pursued with unweaving resolution and with
fatal success."  

(5) Technological Revolution and Employment

We now live in the age of technological revolution
and it is difficult to predict when and where this revolution
will end. The technological revolution is not confined alone
within what is called "energy converters", that is, machines
and equipments that eliminate or reinforce human or animal
muscle power; its domain has gone far off to what is called
"information converters" which eliminate or reinforces human
brain power, that is, men's acquired skill in reading, writing
and reaching conclusions along definite lines of reasoning is
done by machine. In the context of this revolution of
automation and cybernetics*, the role of small scale

Publications Division, Delhi, 1976, pp. XXV-XXVI

14. Stieber, Jack, ed., Employment Problems of Automation and
Advanced Technology, Proceedings of the Geneva Conference,
1964, International Institute for Labour Studies, Paper by

* The term automation was coined in 1917 by Del Harter, Vice-
President of the Ford Motor Company as "automatic handling of
parts between progressive production processes" and
cybernetics was coined by Norbert Wiener, MIT mathematician
who defined it as "something like a modern high speed-
production units in the distant future is a matter of great speculation.

The most prominent aspect of this development in technology is that it has multiplied the power available to the human community by hundreds of times to increase the production of goods and services, and has relieved men for the first time in human history from the task of serving as mere power generator and saved him from becoming a beast of burden on the one hand and on the other, it has reduced the number of persons required to produce a given quantity of goods and services per unit of establishment. This advancement in science and technology is no doubt, leading us towards a "Push Button civilisation" where production will be done by men in the keyboard. Certainly this type of production requires not only less hands per unit of establishment, it also entails shrinkage in labour requirement for the economy as a whole. This leads us to the ever confronting problem of technological unemployment which has posed a threat to the very fabric of the social system.


* Technology may be defined as the application of scientific methods and results of scientific research to the problems of industry, agriculture, management, medicine, defence and administration. Ref. Narasimhaiah, H., This won't do! Let us go Humanistic, article in Yojana, Aug. 15, 1983, p.10
It is, however, to be recalled that application of advanced technology in the field of production and subsequently it leading to unemployment among the working force in a country is not a new phenomenon. History of industrial development is replete with examples of smashing machines during the second half of the eighteenth century culminating in passing of Acts (1779) to control and prevent such riots against machinery as well as attempts for prohibiting the use of machinery in industry through legislation (1780) in England. It is common place that application of machinery or advanced technology used in the relative sense displaces labour and any social system with a scruple for human welfare must provide for the displaced force with jobs enabling them to earn a decent living. In this context we are also to note carefully whether total employment has increased since the beginning of the industrial revolution till this age of automation. It is universally agreed that employment along with the growth of labour force is increasing pari passu with the application of modern technology. "Unemployment is lowest in the most technically advanced countries of the West and labour shortage is considered a mere imminent risk than technological or structural unemployment." Of course, there arises the technological or structural unemployment problem "due to our

discovery of means of economising the use of labour
outrunning the pace at which we can find new uses of labour."
But this is only a temporary phase of maladjustment. All this
means in the long run that mankind is solving its economic
problems.  

Thus every step in technological advancement from
simple tools to automation defined as the technique of mass
production with few hands has created pains of readjustment
through all the ages. No doubt, Papin's steamheat made some
FULDA hostmen unemployod. Jacquart's loom had thrown out of
job the Lyon silkworkers. But we are to recall that thanks
to the application of improved technology and improved
technology alone that the 16-hour working day was reduced to
12-hour, it was further reduced to 10 and 8-hour day and the
7-day week was reduced to 6-day week and in some countries
(Soviet Union) now 2-days to 5-day week. Keynes even
visualised a 5-hour working day as "quite enough to satisfy
the old Adam in most of us." And all this has been taking
place through readjustment of the labour force, shifting the
workers from one occupation, sector, industry or establishment
to another. No doubt, this readjustment and shifting process
causes in the short run many a problem and even untold
hardships for workers leading to riots against the use of
machines and improved technology. But in spite of these

18. Keynes, J.M., Collected writings, vol. IX, Macmillan,
1972, p. 323
19. Ibid., p. 329
hardships "it should not be forgotten that during the nineteenth century the trade unions of all countries inscribed the demand for the 8-hour working day upon their banner."\(^{20}\)

Individual hardship and unemployment are not caused by the application of technology but by the defects of the social system. It is held that if the total level of manufacturing and servicing reached by the human community were fixed, automatic and power machines or in fact any tool increasing the efficiency of labour would indeed render some people jobless. But contrary to it, the level of manufacturing and servicing also increases simultaneously. The construction of a particular machine, its maintenance and repair and distribution and transportation of goods produced by the machine create new job opportunities. To cite a concrete instance, while the amount of power machinery per worker in Japanese factories\(^{21}\) doubled, the number of workers had tripled during 1914 to 1935-38. Thus using a machine while raising the productive power of the community as a whole makes it richer on the one hand and permits its members to engage in other creative activities, on the other, which the community could not afford before. Therefore "an economic and social system which cannot accommodate advances in

\(^{20}\) Stieber, op.cit., Paper by Otto Mauloh, p. 201

technology which increase the wealth of the community is simply a bad system. It is madness to insist that the advances which makes society wealthier as a whole must be rejected because some fraction of this society will actually be poorer as a result. If the latter is really the foreseeable consequence then the only sane answer is to change or modify the economic system." 22

As a matter of fact in the Socialist countries, there are no fears that technological innovations will generate unemployment. On the contrary, further development of automation is regarded as essential to maintain high rates of economic growth and proceed to a further reduction of working hours under conditions of growing manpower shortage. 23

"Problems of readjustment of workers affected by technological progress are solved in the socialist countries by various means; the employer is bound to offer a suitable job corresponding to the skill of the discharged worker; also there is a vast system of gratuitous education and training at any level and the employer is to pay compensation for a possible loss of income during the retraining period." 24

Thus, in the historical perspective, it seems undeniable that the benefits to humanity have outweighed the

22. Denesynski, S. has argued out the case in his work cited earlier pp. 60-69
24. Ibid., p. 45
harm that technology has also wrought. Therefore, improvement of technology and its application in production are essential conditions for improving labour productivity as well as for raising the standard of living. But as already noted, application of improved technology needs less man behind the machine or employment potentiality is reduced on the one side and production of goods, on the other comes out on a mass scale.

(6) **Technological Revolution and Small Industry**

But it is also to be noted that technological development and mass production could not eliminate totally small scale agriculture, small business, small scale industries and handicraft or artisan industry in any country of the world. In the field of agriculture, although the trend was towards large scale farming after the enclosure movement during the eighteenth century in England, small farming did not disappear. In the U.S.A. too, "the reduced area of improved land per farm in every division except the North Central shows at any rate that capitalism in American agriculture does not generally imply large farm." In fact intensive and scientific cultivation makes scope for small farms although capital per acre increases.26


In the field of enterprises other than agriculture, small units survive where skill of some final process requiring personnel service is essential. Example is the ordinary work of photography — an enterprise although passing over to large companies, the more artistic work remains in the hands of independent artists. Likewise repair workshops, builders, carpenters, plumbers and printers, retail trade, fine arts, recreative and personnel services (of lawyers, physicians, teachers and priests) are least amenable to the concentrative forces of large scale production.

"All these small business in agriculture, mechanical trades, mining, retail trade, the arts and professions survive because of certain features in the materials or processes involved which give importance to those personal qualities of skill, care, judgment and character incapable of being evoked, controlled and applied effectively under the routine economy of the large business." To all these must be added "the independent spirit of the genuine artist or craftsman which even in such largely routine work as carpentry, shoemaking or retail shopkeeping, is often strong enough to induce a man to remain a small independent producer with a precious unprofitable business rather than become a mere cog in the capitalist machine." 27

Apart from these genuine survival of small units, there are other numerous forms of small business like sub-

27 Hobson, John, ibid., p. 133
standard sweet-shops, brush-wood-cutting, grass-hopping, match-box selling in the stand etc. Such forms of business exist for lack of better alternative where marginal productivity of labour measured in terms of income, might have been higher. Adherence to such inferior occupation in absence of a better alternative has been termed by Mrs. Joan Robinson as "Disguised Unemployment."  

Thus three conditions favour the existence of small production units amidst large scale production. First is the spirit of the individual producer who prefers to remain independent rather than become subservient by selling his labour power to a master. Secondly compulsion of the social conditions keep certain percentage of the country's population in less remunerative 'hand to mouth' vocations which they desire to leave at the first chance available and take up a more lucrative job but for the absence of which they cling to the former. The third and the most important is the contribution of the productive forces themselves, that is, the productive forces, thanks to human skill and ingenuity, have led to numerous technological development and inventions towards the end of the nineteenth century which helped reversing the trend from large scale production towards small size of the production units.

Lenior's internal combustion engine (1860) and Siemens's electric motor (1867) are the two most important inventions in reversing the trend from large scale production in concentrated form in certain localities towards small scale production over a dispersed area. While the combustion engine, particularly the petrol and diesel engines facilitated the location of industrial units away from major centres of communication, that is, industrial dispersal towards rural and less developed areas was made possible, the electric motor enabled a combination of individual production with machine power. "The classic example of the electric motor as a new base of industry is the rapid economic development of Japan at the end of the 19th and the beginning of the 20th century which is still being continued and which is based to a large extent, on modern handicrafts with the application of new techniques in the form of Japanese household industry." 29

The other technical factors that helped survival and improvement of small manufacturing units are said to be the production of alloys of lighter metals, pre-fabricated materials and unlimited applicability of plastics. The construction of small, relatively light but highly efficient machine like the Lathes, Planning machines, drill presses, semi- and partly automatic machines that took place almost simultaneously further improved the situation. The new

29. Wosnemowski, Stanisław, op.cit., pp. 50-51
inventions and technological developments have facilitated the modernisation of traditional industries in which relatively large gains in productivity can be had without heavy capital installation.

Hence the process of economic development and the requirements of human civilisation themselves have created conditions for the existence and continuance of small industry defined in terms of employment per establishment. Rather as a result of improved technology, automation, nuclear energy and cybernetics, small industry will rise to importance in the future and large scale industry with thousands of hands required to produce a given quantum of goods and services will become "relics of technological backwardness."

This is why, small scale industry does play and is playing an important role even in highly industrialised countries like the U.S.A., U.K., Canada, West Germany, Japan, Sweden and Switzerland. Small industries are also playing dominant role even in the socialist countries where large scale production is considered to be a necessary condition for the application of modern technology and the most effective utilisation of resources.31

The following table gives the role of small scale industry as percentage of total industrial establishments in

30. Woszczewski, S., op.cit., pp. 31-32
the industrially as well as technologically developed countries.

### Table 1.1
Small Industrial Establishments in Advanced Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Percentage of manufacturing units</th>
<th>Percentage of industrial employees</th>
<th>Percentage of industrial output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. U.S.A.</td>
<td>1954</td>
<td>91</td>
<td>27</td>
<td>23</td>
</tr>
<tr>
<td>2. U.K.</td>
<td>1954</td>
<td>95</td>
<td>33</td>
<td>N.A.</td>
</tr>
<tr>
<td>3. W. Germany</td>
<td>1953</td>
<td>89</td>
<td>27</td>
<td>23</td>
</tr>
<tr>
<td>4. Japan</td>
<td>1952</td>
<td>99</td>
<td>59</td>
<td>37</td>
</tr>
<tr>
<td>5. U.S.S.R.</td>
<td>1955</td>
<td>66.6</td>
<td>8.3</td>
<td>N.A.</td>
</tr>
<tr>
<td>6. East Germany</td>
<td>1956</td>
<td>79.6</td>
<td>16.4</td>
<td>14.6</td>
</tr>
<tr>
<td>7. Poland</td>
<td>1956</td>
<td>93</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>8. Yugoslavia</td>
<td>1956</td>
<td>52.8</td>
<td>9.8</td>
<td>N.A.</td>
</tr>
<tr>
<td>9. Bulgaria</td>
<td>1955</td>
<td>40.5</td>
<td>5.6</td>
<td>N.A.</td>
</tr>
<tr>
<td>10. Romania</td>
<td>1957</td>
<td>17.3</td>
<td>2.3</td>
<td>N.A.</td>
</tr>
<tr>
<td>11. Canada</td>
<td>1950</td>
<td>79</td>
<td>21</td>
<td>N.A.</td>
</tr>
<tr>
<td>12. Sweden</td>
<td>1950</td>
<td>73</td>
<td>23</td>
<td>N.A.</td>
</tr>
<tr>
<td>13. Switzerland</td>
<td>1950</td>
<td>73</td>
<td>27</td>
<td>N.A.</td>
</tr>
<tr>
<td>14. Belgium</td>
<td>1950</td>
<td>76</td>
<td>26</td>
<td>N.A.</td>
</tr>
<tr>
<td>15. India</td>
<td>1963</td>
<td>91</td>
<td>39</td>
<td>21</td>
</tr>
</tbody>
</table>

Sources:

1 to 4: Maley, Eugene, Planning and promoting of development of Modern Small Industry, reprinted from Planning for Economic Development in the Caribbean, 1963, Table 1, p. 79

5 to 10: Wyszczewski, S., op.cit., Table 34, p. 23

11 to 14: Neilsen, A., Development Possibilities for Small Scale Industry in Specific fields of Industrial Activity, U.N.O., 1966, Table 1, p. 5

15: Development Commissioner, Small Scale Industries, Small Scale Industries in India, Govt. of India, New Delhi, 1968, pp. 6-7 (India has been cited for comparison.)
It is to be noted that we have not defined so far small scale industry although we have used the table on small scale industry in a developed countries. The concepts of small scale industry, handicrafts, artisan industry, household industry and cottage industry have been defined by different writers at different times from their own standpoint and Governments and other agencies too have done the same for administrative and policy making purposes. Without entering into the widely discussed concepts of these industries at this stage* it may be stated for the sake of brevity that the Stanford Research Institute engaged for the last three decades in basic research and technical assistance for "Small industry", used the criterion of less than 100 employees in manufacturing establishment. Thus the data given in the foregoing table used by Dr. Eugene Staley, then Director of Stanford Research Institute, are based on the Stanford Research Institute criterion of less than 100 employees per manufacturing establishment. Dr. Stanisaw Woszczenowski of the Warsaw Institute of Small Industry and Handicraft has also used in his doctoral dissertation "employees up to 100 persons with the exception of artisan workshop" criterion for "Small Industry." Neilson, however, uses 11 to 50 employees as the distinguishing mark between small and large industry. As for

* This issue has been discussed in Chapter VII

32. Staley, E., op.cit., p. 73
33. Woszczenowski, S., op.cit., p. 1
34. Neilson, A., op.cit., p. 5
India, the investment criterion of Rs. 5 lakhs makes the
demarcation for small industries.

It is also to be noted that the countries listed in
the foregoing table are all developed ones excluding India
and there the small industries are the modern industries, that
is, they are all based on up-to-date technology; even
handicrafts or "Handwerk" in Germany are based on modern
technology and they are continually adjusting themselves to
"industrial and technical revolutions." 35

(7) The Japanese Small Industry

The case of Japanese small industries is most often
referred to in our country as and when we talk of small and
cottage industries as a topic, rather many scholars and
policy makers desire to "place the lessons of Japanese
experience in a truly Asian perspective," 36 But what the
"literally intellectuals" as distinguished from the
"scientists" to express in the words of Lord Snow 37 emphasise
is the labour intensive nature of the industries and lose
sight of the continual process of modernisation of Japanese
life and industry. Thorstein Veblen had observed in 1943

35. Zelle, Dr. Arnold, Handicraft in Germany, p. 10, Press
and Information Office, Federal Government of Germany, 1963

36. Vepa, R.K., Small Industries in Japan, Vora & Co., Bombay,
1967, p. x

37. Made available by E.F. Schumacher in his 'Small is
Beautiful' Radha Krishna, 1978, p. 71
about Japan's continual change in the following words. "It should then, confidently be presumed that, as Japan has with great facility and effect taken over the occidental state of the industrial arts, so should its population be due, presently and expeditiously to fall in with the peculiar habits of thought that make the faults and qualities of the Western culture - the spiritual outlook and the principles of conduct and ethical values that have been induced by the exacting discipline of this same state of the industrial arts among the technologically more advanced and mature of the Western people." 

This observation of Veblen, particularly regarding spiritual outlook and ethical values seems over enthusiastic. According to Ginjiro Fujihara, a captain of Japanese industry, although in many respects "Japanese customs and manners have undergone radical transitions", "the people as a whole retain their racial traits essentially intact". In this respect, "adopting any line of European civilisation, the Japanese people endeavor to assimilate and improve it." Actually what the Japanese had accepted from the West was the industrial art and the American economist Prof. Lockwood also admits that "characteristically, Japan assimilated the applied


arts of the West more readily than the spirit and social ideals of European culture." Anyway, although the process of Westernisation of the Japanese economy started before the opening of the Meiji era (1868), the economy was "exposed to the rising tides of Western influence" of a "feverish process of modernisation" through several channels during the first two decades after the Meiji Restoration. According to Prof. Lockwood, hundreds of foreigners came to Japan as technical experts hired by the new Government, others came as traders, missionaries and educators. Japanese were sent by the Government or had gone individually to study ship and machine building and other trades abroad. "They studied British textiles or metallurgy, American railways, French law and German military science". As regards the Western impact on the economy, a Japanese official report said that "the foreign mania raged everywhere and everything was manufactured in imitation of foreign articles."\(^4^0\) Through this process of westernisation the Japanese economy as a whole starting from agriculture and traditional industries to the establishment of heavy and large scale industry was restructured on modern lines. Needless to emphasise that the major role in this respect was played by the Government of Japan at a time when the West was still jubilant in the hey day of laissez faire.

As regards Japanese small industries with less than 5 workers which employed nearly 3 million men, women and children out of 29.6 million gainfully employed persons (all manufacturing and construction together absorbed nearly 6 million) in 1930, they had shown great "strength and staying power" in the face of expanding large-scale industries due to "modernising the production technique of the small establishments" and owing to their close connection with large-scale organisations which provided the former with raw materials, better marketing arrangements, credit and cheap electric power. While labour productivity index for manufacturing as a whole increased from 100 in 1910-14 to 263 in 1935-38, in the small plants of five or more operatives, output increased over 100% "resulting from greater mechanisation and other improvements." 41

However, as it needs particular stress, small industries, particularly textile, clothing, wood and leather industries in Japan for example, employ larger amount of labour and work longer hours as compared with their Western competitors and therefore Western economists label these industries as "labour intensive". In our country many economists and policy makers, finding a similarity of labour abundance and capital scarcity both in Japan and India, are apt to emphasise this labour intensive nature of Japanese

41. Ibid., pp. 111-112, 121-122, 213
small industries in the Indian perspective. But the concept of labour intensity is itself a relative one. When we Indians talk of labour intensive industry naturally the idea of cotton spinning in the Tahli, hand pounding of rice and the like comes to our mind. But Western economists, e.g., the United Nations Economic Commission for Europe use the term with reference to the "use of motive power per worker" and American experts use it with reference to the "consumption of energy", i.e., coal, fuelwood, oil and other energy sources converted to "Kilowatt-hour of electricity". In terms of these concepts while the U.S.A. and the U.K. used in 1939 and 1930 respectively 4.8 and 2.4 horse-power per worker and 34,449 and 18,173 kilowatt energy in 1937, the Japanese worker had used only 1.7 motive horse-power in 1936 and 10,077 kilowatt energy in 1937. In these respects, therefore, Japanese industries as compared with their Western counterparts, are certainly labour-intensive. But to equate the Japanese labour-intensive small industries with the age-old techniques of Indian cottage and village industries with a view to encouraging them would be an ignomrous' blunder.

Thus to cite a concrete example of the Japanese silk weaving industry, it is not the throw shuttle or fly shuttle handloom much eulogised in our country, but the machine loom that weave the "middle class" goods of moderate quality and

42. Ibid., pp. 179-181
price in Japan. "The typical plant ... uses about 20
machines and has 15 workers."^43

Likewise, the Japanese cotton weaving industry was
differentiated into several branches; firstly, standard
products meant for export were woven in broad power looms,
secondly, piece goods for domestic market were produced in
narrow power-looms and thirdly, other piece goods were
produced in handlooms; while the powerloom groups were
expanding rapidly, the handlooms were declining gradually.
In 1913 out of 2,057 small factories, 1,135 had power driven
machinery and the remaining used domestic looms. ^44 We have
cited purposively the cases of silk and cotton industries,
for, it was the growth and modernisation of these two
industries which pioneered Japan's industrial advance^45 and
at the same time, India had had a glorious heritage of these
industries. When Japan had restructured her silk and cotton
industries in modern lines, the Indian industries struggled
hard for their existence with traditional technique and
ultimately had to succumb in the face of competition with
modern industry.

Further more, "The main plank of governmental effort
towards the small enterprise (in Japan-added) is modernisation

43. Abegglen, J.C., op.cit., p. 53
44. Allen, G.C., A Short Economic History of Modern Japan,
45. Lockwood, William W., op.cit., p. 114
which is recognised as the key to higher productivity, ... Towards this end, modernisation of facilities, equipment, technique and management are considered as essential and consultancy services performed by government and quasi-government agencies ... are largely directed towards this end even today.  

Even in Communist China where small industries defined in their own way as those falling between handicrafts and large industries, which constituted 82 p.c. of the total industries in 1954 and where the policy of "let the flowers of local and small industries bloom everywhere" is followed, emphasis is laid on modernisation of small industry and handicrafts. Some of the most publicised 'phrases' and 'slogans' are "from small to big, from simple to complex, from primitive to modern," "Combine traditional skill with modern technique" and "pass technology to the masses."  

(8) Conclusions

This bird's eye survey of the historical process of development of industry from domestic to cottage or artisan level, from artisan to manufacturing level, from primitive to modern and from small to big leads us to conclude that small 

46. Veps, R.K., op. cit., p. 225
and cottage industries had played a role, is still playing a
dominant role, and will have a role to play in the industrial
development of every country, whether advanced or backward,
developed or developing. But the important point to recall
is that small and cottage industries in the developed as well
as many developing countries does not mean the Charkhas and
the handlooms, or the hand-pounding of rice or the Ghanis
-crushing of oil-seeds but small coal and other mines, blast
furnaces, non-ferrous metal smelters, chemical and granular
fertilizer plants, units for the processing of agricultural
produce, workshops for producing and repairing farm and other
machinery, semi-mechanised and improved tools, plants for
producing cement and other construction materials, coal
carbonisation plants, petroleum and shale-oil refineries,
shipyards producing small steam and other types of boats,
printing shops etc.48

Ours is a developing economy and it is in the
thresholds of industrialisation. Small scale and cottage
industries have been attributed a special role to play here.
The place of small scale and cottage industries in the
economy and the policy of the government should, thus, be
viewed in this historical perspective.

48. Gill, K.S., Surplus Manpower as Source of Capital, article
in the Economic Weekly, Special Number, July 1958, p. 927