

SOME ISSUES ON INDUSTRIALISATION STRATEGY

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Abstract

Since industrialisation is a means, not an end, to economic development, formulation of industrialisation strategy is a complex task that requires careful analysis of existing situations and vision about the future. This is true in the case of Ethiopian industrialisation process as well.

1. INTRODUCTION

The process of industrialisation has played a key role in the economic development of the industrialised countries. It triggered a chain reaction of technological development, which in turn augmented the material and spiritual wealth of their societies.

Substantial effort has gone into the development of industry in the less developed countries (LDCs). LDCs have been giving priority to industrial development because industrialisation has rightly been considered as synonymous with economic development. For Most LDCs industrialisation has still remained a far cry while some countries of Asia and Latin America have successfully industrialised.

This may signify, among others, the fact that industrial development is not associated with the number of establishments. It requires the formulation and implementation of development policies and strategies. The success of industrialisation process depends on the extent to which explicit and focused industrial development strategies are formulated and implemented in line with the objective conditions of a country. The problem, however, is that elements of industrialisation strategy are many, complex and interdependent.

A conscious attempt at industrial development in Ethiopia started in the early 1950s when the country started to develop its economy through the initiation of five-year development plans. After a history of half a century, however, the industrial sector is yet to make a meaningful impact on itself and the national economy at large.

In this paper, an attempt is made to briefly assess the pros and cons of industrialisation strategies. Since the elements of industrialisation strategies are

diverse and complex, it will not be possible to examine all of them in a paper like this. Consequently the paper aims at examining three elements of industrial development strategies which, in our opinion, are relevant to the conditions of a less developed country like Ethiopia.

Accordingly, in the second part of the paper conceptual issues on three elements of industrialisation strategies, namely inward versus outward orientation, large or small-scale industry and labour or capital intensive technology have been briefly outlined. In the third section an overview of the industrial sector in Ethiopia is discussed followed by a concluding remark in the fourth section.

2. ISSUES ON INDUSTRIALISATION STRATEGY

Defining the concept of industrialisation is a difficult task as it is a multifaceted phenomenon, the approach of which is different in different countries and in different socio-economic and political conditions. In 1963, after long discussion, the UN committee on Industrial Development defined industrialisation as follows:

Industrialisation is a process of economic development in which a growing part of the national resources is mobilised to develop a technically up-to-date, diversified, domestic economic structure characterised by dynamic manufacturing sector having and producing means of production and consumer goods and capable of assuring a high rate of growth for the economy as a whole and of achieving economic and social progress (Tyagunenko 1973).

This definition seems to be very broad as it does not provide a clear-cut answer to the problem of defining industrialisation. Nevertheless, it emphasises the fact that industrialisation is a phenomenon, which is not an end but a means towards economic development. And industrialisation can apply to the product, the transformation process or to a country as a whole. In this regard, some economists argued that industrialisation is an outcome or accompaniment of economic development. It denotes a set of policies, which may be seen as a means towards economic development (Sutcliffe 1971).

Whatever definition is given to it, one thing is evident, that is, in our opinion, industrialisation is a dynamic process through which man has attained, in a short span of historical period, the present stage of scientific and technological development.

The experience of the now industrialised countries has demonstrated the critical role industrialisation, particularly manufacturing industry, plays in the process of economic development. Industry is considered as the vehicle for the development of their economies, particularly agriculture, faster than any other economic sector. It is argued that, industry can draw the hidden unemployment off the land and thereby increase agricultural efficiency. Moreover, farmers would be stimulated to produce more only

when industry provides enlarged markets and better prices for their produce. What is more, manufacturing industry, and especially large scale and heavy industries, can save foreign exchange, raise output per head and create investment capital much faster than any other economic sector. And the growth of industry will spread modern attitudes and enterprises in a country (Robinson 1965).

The notion that manufacturing industry plays a key role in the process of economic development and growth has been a popular view among economists such as Kaldor, Chenery, Weiss and others. Those who stress the importance of manufacturing industry in the overall growth of the economy argue that the growth of the manufacturing sector not only stimulates productivity in manufacturing sector but also stimulates productivity in the other sectors of the economy. For example, a study carried out by Chenery and others based on international cross sectional analysis indicated that there is a strong association between the size of GDP and of the manufacturing sector, the assumption being that causation ran from the growth of the latter to that of the former. Moreover, some economists attribute the role of manufacturing as an engine of growth to what they term the "dynamic increasing returns in manufacturing" resulting from the dynamic relationship between the growth of output and the growth of productivity, which is attributable to greater skill and development or "learning by doing" and to technological development (Weiss 1984).

The uniqueness of manufacturing industry is that in the first place unlike the other major sectors, (i.e. agriculture and services), manufacturing is characterised by potentially much higher inter-sectoral linkages because, "when its aggregate output expands there is a far greater scope for the division of labour and specialisation within the sector itself." Secondly ".... manufacturing sector produces the capital equipment used by all sectors. Indigenous technical progress within manufacturing, induced either by its own expansion or by the expansion of other parts of the economy, will feed back to all users of capital equipment and thus raise the technical level of all sectors of the economy" (Weiss *ibid*).

Although the view "manufacturing as engine of growth" has much relevance in the context of the industrialised countries, its relevance to the developing economies is yet to be seen. There are few works carried out on this issue. One study undertaken by Vladimir Brailovsky based on a regression analysis on the role of industrialisation in Mexico, for example, showed a high correlation coefficient as well as high long term output elasticity for the industrial sector than other sectors of the economy, except commerce which according to him is ancillary to the general behaviour of industry (Brailovsky 1980).

It is true that many LDCs have made substantial effort to develop their industries. But the question is to what extent their efforts have resulted in the creation of a manufacturing sector that so far has become an engine of growth. This question is valid for most LDCs because, in spite of their effort to establish industries and the fact that some growth rate of industrial output was registered, their industrialisation

process has remained a far cry. What is more, the development gap between LDCs and the industrialised countries is widening rather than narrowing.

Such state of affairs may signify the fact that industrialisation cannot come about by a simple increase in the number of industrial establishments. The industrialisation of a country involves development of ability to master the whole industrial production process not only in terms of producing finished goods but also fabrication of machinery and equipment, skill to operate and maintain machines and ability to organise, administer and manage factories as well as marketing of outputs.

Consequently, industrialisation requires focused approach, which is based on sound economic policy and strategy. The formulation of explicit industrialisation strategy therefore becomes an important component of the industrialisation process. The formulation of industrial development strategy depends on the objective conditions of a given country. Size of domestic market, natural resource potential, availability of skilled manpower and finance, among others, may influence the development of strategies.

The problem is that the formulation of industrialisation strategy is not an easy task. Since some elements of industrialisation strategy are not independent of each other, they cannot be chosen freely. For example, for a predominantly agricultural country, the development of agriculture or industry cannot be viewed as alternative development strategy. Both must develop. The question is how to develop them. Even within the industrial sector it is difficult to develop heavy industry like iron ore smelting based on small scale or labour intensive process. Moreover, since elements of strategy are many and diverse it becomes impossible to discuss them all in this paper. Consequently three elements, among others, of industrialisation strategies are discussed in the remaining part of this section.

2.1. Inward Versus Outward Orientation

The issues of adopting inward- or outward-oriented industrialisation process have been of the problems of industrial development strategy. Historically, with the exception of Britain which oriented its industries to export markets—basically its colonial markets, for most of the industrialised countries, including the USA and Germany, the development of light industry, especially textile industry, had been the basis of industrialisation. Through time, as demand for equipment grew, other industries like heavy and engineering industries emerged. In the case of Britain, the first country to industrialise, for example, thanks to its colonial empire was able to orient its light industries toward export markets. On the other hand, in countries like USA and Germany industrialisation was based on the domestic market, i.e., light industries. In the first half of the 19th century, this historical pattern of industrial development was reversed in the U. S.S.R. as this country was able to industrialise through the initial development of heavy industries.

In the second half of the last century, some countries were able to industrialise by adopting export-oriented industrialisation strategy. Due to the success story of only few countries and the failure of most countries the once popular inward-orientation has increasingly been judged to be a failure.

For LDCs, the motive for industrialisation lies in the belief that that was how all developed countries have developed. This coupled with the depression of the 1930s and economic and political nationalism in the newly independent LDCs led to the adoption of inward-oriented industrialisation strategy based on import substitution. Inward-oriented strategy depends heavily on the nature of domestic demand. As a result, the strategy starts from the production of consumer goods, since such products have gained foot in local markets, and in the long run it would be possible to develop capital goods and heavy industries locally as was the case in the industrialised countries. This assumes that the relative measures applied to encourage such industrial restructuring, mainly in the form of protection, would change accordingly. But in LDCs once tariffs are imposed their levels and forms were not altered to reflect industrial priorities. Consequently, protection of consumer goods have become a permanent feature of industrial policy which ran counter to the original concept of a sequential process - moving from consumer goods into intermediates and then to capital goods (Balance et al., 1982).

Additionally, inward-oriented strategy based on import substitution was followed not as a deliberate industrialisation strategy but either accidentally or due to shortage of foreign exchange in most LDCs to import finished goods. Even then it had not been possible to reduce imports and thereby save foreign exchange. As far as in the 1970s, Cukor observed that " In the last ten to fifteen years, industrial production has increased at an annual average of 6 to 8 per cent, industrial imports at 3 to 4 per cent. A 4 per cent compound annual growth rate means in ten years nearly 50 per cent, and in fifteen years 80 per cent growth; i.e., there is no import reduction at all in absolute sense" (Cukor 1974).

The problem has not only been import dependence, but also the new industries became more capital-intensive, inefficient and uncompetitive.

It would be a mistake to write off inward looking industrialisation strategy as a failure. This becomes significant when one examines the prospect of the much-acclaimed outward-oriented strategy.

The issue of outward strategy is based on the theory of comparative advantages. The argument is that, since at the early stages of development manufacturing export tends to be more labour intensive and less skill intensive, export-oriented strategy enables to economise skill and capital, and simultaneously increases job opportunities and acquisition of technical and managerial know-how. What is more, since industries will not be constrained to small domestic markets, they can reap the benefits of economies of scale (World Bank 1979). The other argument based on the success

story of the newly industrialised countries of South Korea, Taiwan, Hong Kong and Singapore is that faster economic growth was related to export performance. Krueger, for example, argues that growth rate of GDP is directly related to export promotion (Krueger 1983). Additionally, Balassa, after analysing the effect of the external shock of 1974-76 and 1979-81 which was triggered by sharp increase in petroleum prices, argued that economic growth has been better in outward looking than in inward looking economies (Balassa 1984).

Although this strategy seems to be attractive in principle, it could be a high-risk strategy, as it involves dependence on external factors especially foreign markets. Given the fact that many countries follow protectionist policy; the rate of tariff increasing with the degree of processing; the question is how to enter into the export markets.

What is more, if all LDCs adopt export led industrialisation strategy like the newly industrialised countries of Asia, this will cause spectacular increase in the pressure of LDCs exports on the developed economies to follow protectionist policy. Additionally, Sutcliffe argued that it is unlikely that many LDCs attempting the strategy of exporting, often the same or similar goods, can succeed together since they will compete with each other. In the short run, exporting also involves establishing sales organisations, service facilities, export credit financing and other information and infrastructure facilities the absence of which would make the implementation of this strategy a very difficult task for most LDCs. Moreover, before exporting there must be some industrial base which at its initial stage must depend on the domestic market. Then this implies that outward orientation has to be preceded by inward orientation.

The view of some writers is that in resource rich countries with large domestic markets it may be viable to adopt inward looking strategy as it may be possible in many industries to achieve economies of scale without access to export markets, which reduces the barriers to backward integration and leads to greater diversification and capacity to industrialise. Over time as markets grow even smaller countries can gear their industries to the domestic markets. Thus time and size can overcome the inefficiency of inward looking development, the larger the country the shorter the time required (see, for example, Roemer 1981).

The problem, however, is that it is not the size of the domestic market which matters but it is that of distribution. If the vast majority of the population cannot consume what the industry produces, the capacity to industrialise will be limited. For small and resource poor countries some writers suggest that the possibility to industrialise is through export orientation. For example, according to Little and others (1970), "for very small countries with few national resources and little experience of manufacturing or trading, the problems are difficult, though a solution of them can probably best be found in developing exports (Little et al., 1970). Here again what would be the prospect of exporting for small, resource poor and land-locked countries, like, for example, Rwanda or Burundi, etc.? In this regard it is necessary to critically analyse

and adopt any one of these two strategic options in line with the objective conditions prevailing in a country.

2.2. Scale of Operation

The second problem of industrialisation strategy is the choice between small-scale and large-scale plants. The development of small-scale industries, it is argued, would have a number of advantages. First, since due to the small geographical size of most LDCs and low purchasing power of their population their domestic markets are limited and hence small-scale industries would be appropriate to exploit economies of scale. In some cases even cottage industries would be sufficient to meet the marginal needs of the rural areas. Secondly, since such industries have large capacity for labour absorption per unit of capital, they will assist to cope with the growing unemployment problem. Thirdly, since small-scale industries do not require much capital, it is easier to set up many industries in many regions with a relatively smaller investment.

Writers like Cukor, however, urge caution about the viability of developing small-scale industries. In LDCs the role of traditional handicraft, cottage and small-scale industries is significant although as a result of the introduction of modern industry they are now diminishing. Their major feature is that they do not use mechanical power, mainly employ family labour and are largely located in the countryside. In this respect the argument in favour of developing them seems plausible. The problem however is that, as Cukor observed, handicraft and small-scale industries cannot become the basis of industrialisation; they cannot be developed into up-to-date industries since they require different equipment, to a considerable extent different technical knowledge and special production organisation. They will disappear as industrialisation develops. Even in the case of small-scale industries which use modern machinery, if the infrastructure requirement to establish them—as their capacity is too low to distribute their output from one or two establishments—in different regions is taken into account, the case for their lower investment requirement will be weakened considerably. Moreover, some products cannot be carried out by small scale industries because they are either technically impossible, i.e., chemical industries, or they may require large economies of scale, i.e., iron and steel industries. What is more, the question of industrialisation strategy is not a question of size of plant but the application and adoption of modern technology which can be applied mainly in medium- or large-scale industries than in small-scale industries.

It is not right to ignore the role of small-scale industries in industrial development. The expansion of handicraft and small-scale industries in the countryside and smaller towns would contribute towards not only the reduction of existing urban unemployment but also the integration of the rural areas and small towns into an expanding national economy (Mcbain and Picket 1975). A balance must, therefore, be struck between small and large industries. One possibility would be to select areas where small-scale industries can contribute to the industrialisation process and to channel them accordingly.

The dynamism of small-scale industries is their ability to create a viable entrepreneurial class that is capable of going into large-scale operation. Thus "small scale enterprises should be encouraged to expand the scale of operation and to diversify into different areas of industrial activities so that they can positively influence the long-term characteristic of the industrial sector" (Solomon 1992).

2.3. Choice of Technology

The third important element of the problem of formulating industrialisation strategy is choice of technology. Industrialisation in LDCs is based on imported technology. This has contributed to the problem of assimilating and developing modern technology. According to Marsden, "In the industrial nations which have initiated technological change themselves,.... innovations are widely diffused throughout the economy, while in developing countries innovation may take the form of an alien transplant that kills off competing activities in the traditional sector. This is because the indigenous industry lacks skill, material and finance for innovation. In fact decades or centuries of development cannot be compressed into a couple of years." (Marsden 1991).

Moreover, as the sources and costs of modern technology are different so also are the type of technology. Also, the choice of technology is not a question of costs or resources but it is a question of which type of technology to select. According to the views of many writers, the choice of technology should be based on the relative factor intensity in the importing country. The argument is based on the theory that LDCs have abundant labour and shortage of capital. Thus an efficient technology implies the one that uses the most abundant factor of production, i.e., labour. The problem, however, is that if labour-intensive technology is to be selected, it involves, in the short run, faster growth rate of consumption and a slower growth of saving which implies slower growth of production in the long run. On the other hand, if capital-intensive technology is adopted, it means, in the short run, lower consumption and higher saving implying faster growth of production and higher consumption in the long-run.

In the face of the existing unemployment problem in LDCs the choice of labour-intensive technology seems to be plausible. But the question is to what extent industrialisation, especially manufacturing industry, can provide direct employment. Unfortunately the multiplier effect of manufacturing industry is much more significant than any direct contribution industry can make to the alleviation of mass unemployment (Galenson 1971). What is more, the problem of industrialisation strategy is not only that of employment creation but also mainly technological development, which plays a crucial role in the industrialisation process.

The type of product or priorities within the industrial sector also determines the type of technology to be employed. There may be some scope to use labour-intensive technology in some industrial branches like garment, footwear, etc.; while in other branches like metallurgy, chemical, etc., the option is capital-intensive technology.

Thus the balance of advantage between the two will be different for each branch of manufacturing and, even for each country.

The foregoing discussion has attempted to outline three key elements of industrialisation strategies. In fact there are other elements of strategies like financing industrialisation, foreign capital investment, choice between light or consumer goods and heavy or capital goods industries, etc. Moreover, the advantages to be gained between different strategies could vary from time to time and from country to country. Nonetheless, the starting point of planning a strategy for industrial development is to "find out what special advantages the country has, then make the most of them" (Bryce 1985). The other facet of the problem of industrialisation strategy is that it is impossible to develop everything simultaneously. It is, therefore, necessary to develop priorities. This is truer for poor LDCs such as Ethiopia.

3. PERFORMANCE OF THE INDUSTRIAL SECTOR

To start with, any attempt towards making a meaningful examination of the performance of the industrial sector in Ethiopia should consider the effect of political transitions the country has gone through in the early 1970 and early 1990s. The political transitions in the country before and during the 1970s, 1980s and 1990s were characterised by three different socio-economic environments.

The pre-1970 industrial development policy focused on the creation of enabling environment by encouraging private investment. Thus, industrial development was based on private ownership while the government played a catalyst role.

A centralised economic policy environment and civil war characterised part of the 1970s and 1980s. The performance of the industrial sector, therefore, reflected the objective realities of the time.

The 1990s are associated with the creation of enabling environment that are much better than the 1980s and second half of 1970s. The economic reform programme initiated by the government, particularly since 1992/93 has shown some positive impact on the performance of the industrial sector. Consequently, the performance assessment of the industrial sector in the 1990s has been assessed using some key indicators like number of establishments, structure, input utilisation and technology as outlined below.

3.1. Number of Establishments

If the performance of the industrial sector is to be judged by the change in the number of establishments, it appears that the sector has performed well (see, Table 1).

Table 1. Number of Manufacturing Establishments (1990/91–1995/96)

Year	Number of Establishments			Annual Growth Rate (6%)		
	Government	Private	Total	Government	Private	Total
1990/91	150	131	281	-	-	-
1991/92	152	126	278	1.3	(3.8)	(1.1)
1992/93	152	131	283	-	3.8	1.8
1993/94	154	323	477	1.3	146.6	68.6
1994/95	157	327	484	2.0	1.2	1.5
1995/96	169	473	642	7.6	44.7	32.6

Source: CSA, Result of Survey of Manufacturing and Electricity Industry, 1997.

As can be observed from the table, the number of establishments constantly increased from 281 in 1990/91 to 642 in 1995/96. This implies an average growth rate of 19.25% per annum during the period under review.

A look at the figure, however, makes one doubt the veracity of the information. The government has officially withdrawn from investment in manufacturing and it is even reducing its ownership through privatisation. On the other hand, the table indicates that the number of government-owned establishments has grown from 150 in 1990/91 to 169 in 1995/96 showing an annual average growth rate of about 12%. It is true that the implementation of some projects, like Tabor Ceramics, Bedele Brewery, Aluminum Sulfate and Alkyd Resin were completed in the 1990s, although the number of such projects cannot reach 19.

One plausible reason may be that two establishments, which had one management and hence considered as one, were split into two or more autonomous entities under the new public enterprise management structure and were registered as additions to the number of government establishments in the CSA survey.

Expansion of coverage of the CSA survey may also be one reason for the growth in the number of the establishments rather than the construction of new factories.

Even if the data is doubtful it indicates the fact that the number of private establishments has increased during the period under consideration. On the average, private-owned establishments increased by an average of 31.8%. Given the long gestation period of industrial projects, the implementation of some of the new establishments may have started prior to 1990. Even then the change in the pattern of ownership is evident. The reason appears to be the market friendly policies introduced by the government.

The use of changes in the number of establishments as an indicator of industrial development has its own danger. Industrial development does not mean a mere addition to the number of establishments. It rather implies acquiring skill and know-how in the management, operation and fabrication of capital equipment. In light of

this, one cannot help but wonder and doubt the results achieved not only in the 1990s but even before that.

3.2 Structure

Production of light consumption goods is the other facet of the manufacturing sector (see, Table 2).

Table 2. Gross Value of Production 1992/93–1995-96

Sector	Value (In Birr)			
	1992/93	1993/94	1994/95	1995/96
1. Food	521,595	717,920	978,128	1,316,744
2. Beverage	471,911	601,473	792,464	863,946
3. Tobacco	188,537	119,227	199,936	244,188
4. Textile	454,095	722,131	651,181	770,968
5. Leather	288,033	376,970	601,358	634,500
6. Wood	28,746	59,969	65,995	66,595
7. Paper and Printing	141,835	208,496	200,807	291,564
8. Chemicals	376,207	472,879	443,633	503,785
9. Non –metallic minerals	127,839	223,418	336,652	419,673
10. Metal	200,023	486,220	467,762	687,134
Total	2,674,167	4,010,703	4,930,487	5,799,104

Source: CSA, Result of Survey of Manufacturing and Electricity Industries, 1997.

As can be observed from the table, the three dominant sectors, namely food, beverage and textiles, between them accounted for about 51% of the total gross value of production in 1995/96.

On the other hand, the sector normally referred to as industrialising industries due to their strong forward linkages, namely the metal and chemical sectors have registered some growth during the reporting period. There are encouraging developments, particularly in the chemical sector because of the commissioning of projects like Caustic Soda, Aluminum Sulfate and Alkyd Resin, which produce intermediate inputs used by other industries.

Here again the dominance of the manufacturing sector by the production of food, beverage and textile is the reflection of the low level of industrial development in the country. What is more, if industrial output is disaggregated, most of them are categorised under commodities normally used to satisfy basic needs. This may be the reflection of the low living standard of the population.

3.3. Input Utilisation

Since the manufacturing sector mostly involved the production of final consumption goods, there is a low level of integration. As a result the linkage within and outside of the sector is very weak.

The reason is usually ascribed to the high level of protection accorded to the producer of consumer goods as well as import duty exemptions extended to the import of capital equipment and intermediate goods. This has reduced the incentive for local production of capital goods and intermediate inputs (MOI 1993).

Most of the manufacturing establishments like food processing, beverage, sugar, spices, meat canning, textiles and leather products have strong potential backward linkage with the agricultural sector. However, Ethiopia, having a comparative advantage in the production of goods that are labour-intensive and agricultural products, has not been able to exploit this opportunity.

The dependence of the industrial sector on imported raw materials is shown in Table 3. As can be observed from the table, the ratio of imported inputs to total raw material cost is around 45% on average.

Given the low level of industrial development and low inter- and intra-sectoral linkages of the sector, the import ratio cannot be judged as very high. At the early stage of its development, industrialisation is highly dependent on foreign source for capital equipment and inputs. The least input dependent sectors are food, beverage, leather and wood. On the other hand, the metal and chemical sectors are import-intensive.

Table 3. Ratio of Imported Inputs to Total Raw Material Cost

Industrial Group	92/93	93/94	94/95	95/96	96/97
Manufacture of food products and beverage	0.170	0.179	0.121	0.207	0.174
Manufacture of Tobacco Products	0.827	0.663	0.822	0.944	0.844
Manufacture of Textiles	0.573	0.669	0.564	0.383	0.367
Manufacture of wearing apparel, except fur apparel	0.216	0.330	0.390	0.400	0.309
Thing and dressing of leather; manufacture of footwear, luggage and hand bags	0.229	0.225	0.151	0.201	0.226
Manufacture of wood and of products of wood and cork, except furniture	0.283	0.313	0.443	0.429	0.454
Manufacture of paper, paper products and printing	0.598	0.751	0.679	0.709	0.704
Manufacture of chemicals and chemical products	0.774	0.783	0.755	0.774	0.751
Manufacture of rubber and plastic products	0.911	0.939	0.938	0.950	0.947
Manufacture of other non-metallic mineral products	0.563	0.579	0.538	0.418	0.307
Manufacture of basic iron and steel	0.969	0.988	0.974	0.993	0.994
Manufacture of Fabricated metal products except machinery and equipment	0.822	0.911	0.843	0.901	0.930
Manufacture of machinery and equipment N.E.C.	0.889	0.985	0.902	0.686	0.900
Manufacture of Motor vehicles, trailers and semi-trailers	0.689	0.962	0.910	0.915	0.851
Manufacture of Furniture; Manufacturing N.E.C	0.218	0.315	0.301	0.212	0.224
Total	0.443	0.551	0.459	0.476	0.442

Source: CSA, Report on Large- and Medium-Scale Manufacturing and Electricity Industries Survey, 1998.

As far as industrial export is concerned, it is characterised by two factors. Firstly, industrial export is dominated by export of semi-processed hides and skins. Out of the total export earning of about Birr 655.4 million in 1995/96, for example, Birr 384.7 million or 58.7% is accounted for export of semi-processed hides and skins. What is more, leather goods accounted for 0.3% of the total manufactured export or no more than 0.5% of the total export of the leather sector. This indicates that the country does not maximise value added even from export of leather.

Secondly, the sector as a whole, when compared to the value of its export, is rather import dependent. The value of manufactured export in 1995/96 was 50% of the total cost of imported raw materials. This implies that the sector covers only 50% of its foreign exchange requirement. If import of capital equipment, services and spare parts are taken into account, the self-financing capacity of the manufacturing sector would rather be minimal.

3.4. Technology

Much of the country's industrial plants are obsolete due to long years of service. According to the former Ministry of Industry, nearly 75% of the public enterprises in operation were found to be over 20 years old, and capital equipment of some were second-hand at the time of implementation (MOI 1993).

A survey conducted by Price Waterhouse in 1998 indicated that almost all manufacturing establishments in the public sector are over 10 years old. The capital equipment for over 80% of the public enterprises was found to be over 15 years old.

Under conditions of old capital equipment, the use of capital labour ratio may not indicate the actual capital intensity of the industrial sector. In addition to the difficulty of determining appropriate capital labour ratio, ratios based on net book values, most of which are depreciated, cannot give a clear picture of the extent of the capital intensity of the industrial sector. Consequently, it may be more appropriate to see change in capital stock through time. Comparing changes in the cumulative net book value with addition in labour would have been better to see the capital intensity of the sector. This, however, has not been possible due to lack of data.

The alternative approach, though may not be of much value with regard to a priori existing establishments in determining capital intensity, is to use the cost of employment creation through capital investment. This was calculated using information provided by the Ethiopian Investment Authority (see, Table 4).

As can be observed from the table, the cost of employing one worker (be it permanent or temporary) ranges from a minimum of about Birr 89 thousand in 1995/96 to a maximum of Birr 140 thousand in 1994/95. Except in 1995/96, the cost of employment creation had been over Birr 100 thousand. The average employment creation cost over the six-year under review was about Birr 117.2 thousand.

Table 4 Investment and Costs of Employment (1993/94 – 1997/98)
(Investment & Cost of Employment in Million Birr)

	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99
Investment						
approved	1267.07	1795.96	1328.34	1942.36	4208.09	2307.37
implemented	90.04	177.26	218.31	340.22	978.09	681.76
Total	1357.11	1973.22	1546.65	2282.58	5186.18	2989.13
Employment						
Approved	9029.00	12583.00	14433.00	16624.00	28216.00	15653.00
implemented	1412.00	1540.00	2873.00	4713.00	14569.00	10111.00
Total	10441.00	14123.00	17306.00	21337.00	42785.00	25764.00
Cost of employment for approved projects	0.130	0.140	0.089	0.107		
Cost of employment for implemented projects	0.064	0.115	0.076	0.072	0.121	0.116
					0.067	0.067

Source: EIA, Statistics on Investment in Ethiopia, December 1998.

The costs of employment for projects that have commenced operation indicate that capital invested for every labour employed had been less than Birr 100 thousand. On the average, the cost per employment created during the reporting years was about Birr 77 thousand.

In the absence of a parameter that indicates the optimal cost of employment creation, it would be difficult to make any meaningful analysis on the extent of the capital intensity of the industrial sector.

It would rather be prudent to assess the capacity of the industrial sector for technological development. This is very important as the manufacturing industry is the one that influences and at the same time is most influenced by technological development than any other economic activity. In this regard, the industrial sector has not developed a sound technological base required for its own development as well as for the economy as a whole.

The reason can be explained by the dependence of the sector on imported technology, which is often advanced and complicated. As a result the ability to select and/or encourage appropriate technology is weak. The industrial plants are dependent on parts and components from foreign sources. Industrial projects are also implemented more or less on turnkey basis.

The institutional capacity for technology transfer and adoption is very weak and the impact of the newly established Leather Training Institute is yet to be seen.

In general terms, Ethiopia has not developed its industry. If the country is to create sustainable wealth to its people it has to industrialise. Otherwise, poverty and famine will continue to be the trademark of Ethiopia and Ethiopians for a long time to come.

4. CONCLUDING REMARKS

Given the state of development of the industrial sector, industrialisation strategy in Ethiopia needs to focus on solving the constraints the sector is facing while at the same time mapping the medium- and long-term desired pace and direction of the development of the sector.

The first and important thing, which is necessary for formulating a viable industrial development strategy, is to solve the current problem of information about the sector. Without having knowledge about our current problems and strength we may not be able to have vision about our future.

The industrialisation strategy of Ethiopia need to consider a number of issues. The issue is not that of inward orientation or outward orientation. The issue rather becomes which approach is good to achieve the desired objectives of industrialisation. In a situation where per capita industrial output is very low there is good potential domestic market base for some industries. But in a situation where the industrial sector is import-dependent, foreign exchange earning is also important. Consequently, the issue of industrialisation strategy becomes how to create a domestically diversified and at the same time internationally competitive industrial structure.

Lack of institutional capacity for technological development is one of the major constraints to industrial development. Support institutions play key role in the transfer of appropriate technology, which create capability for sustainable industrial development.

As far as the economic policy of the government is concerned, the private sector is to play a leading role in the management of the economy. In a nutshell, private sector incentive would be the basis of industrial development in the future. This approach will have two implications.

The first implication is the need for creating a vibrant private sector that can shoulder the challenges of industrial development. The Ethiopian private sector, while it is dynamic, is not that vibrant. Thus entrepreneurship development policies must be devised and implemented. Some measures towards this direction are being initiated through the establishment of promotional institutions like the Federal and Regional Micro and Small Enterprise Development Agency, Enterprise Ethiopia programme, etc.

Given the state of private capital, the small and medium enterprises are the backbone of the Ethiopian private sector. Small and medium industries need to be the core of industrial development strategy in Ethiopia. It would be necessary to induce SMEs to grow and expand their business. Thus, it becomes important to design a mechanism

that would enable to identify promising entrepreneurs and speed up their development.

The second policy implication is the creation of partnership between government and the private sector. The partnership can take a form of consultation between the two parties in the formulation and/or revision of strategies. This process will create confidence and motivation on the part of the private sector and will provide a good feedback on matters related to implementation of economic policies and other regulations of the government.

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