# CHAPTER NINE: INDUSTURIAL POLICY

 Chapter overview

***Dear learners, now we are on the last chapter that deals with industrial policy.*** *Government influence on economy is quite pervasive almost in every country of the world. This is not only because government regulate the economy but also the role of being a producer of goods and buyer for them and as an employer.*

**Objectives**

**After reading this chapter you must be able to;**

* + Define the concept of industrial policy and explain the need for the intervention in the industrial sector
	+ Discuss different approaches and forms of intervention in industry.
	+ Broadly discuss key issues in the debate on industrialization.
	+ Explain the industrial problems and strategies of Ethiopia.
	+ Mention and briefly discuss the specific objectives of industrial policy in Ethiopia.
	+ List and discuss different promotional measures for undertaking industrial policy in Ethiopia.
	+ Identify incentive instruments to for industrial policy in the Ethiopian context.
	+ Recognize measures of control, institutional requirements and macro & sectoral policies to be taken in to account for effective formulation and implementation of industrial policy in Ethiopian.

## 9.0. Introduction

According to the United Nations Industrial Development Organization (UNIDO), quoted in Dr. Eshetu Chole (1986:p.2), Industrialization defined as “the process of economic development in which a growing part of the national resources is mobilized to develop technically up- to- date diversified domestic economic structure characterized 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”. This definition states that industrializing is a sustained process. It requires the application of modern science and technology to the production process. In the process of industrialization manufacturing sector plays the leading and dynamic role. It also brings about structural transformation of the entire economy in terms of the composition of output and pattern of employment.

Industrialization is advocated on the ground that it can strengthen the economy and offer substantial dynamic benefits that are important for changing the traditional economic structure of the less developed economies. Industrialization is regarded as an important policy to affect fundamental economic and social changes in least developed countries (LDCS), which are taken as a necessary condition to improve their growth potentials. It is taken as a basic strategy for achieving a faster rate of economic growth and a higher standard of living in many developing countries. LDCs should establish their own industries in order to produce consumer goods, capital goods and other essential materials instead of highly being dependent on imported goods. Industrial development can also provide a base for rapid and continuous increase in the income of the people. Through industrialization LDCs can improve their terms of trade. The income elasticity of demand for agricultural goods is (mostly the export of LDCs) low while the income elastic ties of demands for manufacturing goods is (which are the imports LDCs) very high. As a result of these disparities in export and import elasticity, LDCs will face a chronic balance of payment deficit and the term of trade goes against these countries. Industrialization provides job opportunity for an excessive population of LDCs. It is sometimes regarded as the major way of solve the problem of unemployment and under-employment in developing countries. It is possible to expand and diversify other sector of the economy of LDCs through industrialization. In general Industrialization can alter the present economic and social structure of many LDCs; which is not conducive for achieving a higher level of economic development. It can reduce the problems of raw materials, unemployment, capital goods, foreign currency and the like, industrialization is considered as necessary condition for attaining higher level of economic growth.

Industrialization is capable of generating these all because of its some unique features. A number of distinct features of the manufacturing industry enable it to play a dynamic role in terms of economic development. This includes among others,

***Economies of Scale:***Industrial production is particularly subject to economies of scale. The cost per unit of production is inversely related to the volume of production. Large firms incur less unit cost than smaller ones. But this is not true to the some extent in agriculture, or indeed in many services. So the move to industrialize would significantly increase the production efficiency of developing economies, thereby accelerating growth.

***Externalities and linkages:***Another reason for supposing that industry is particularly important for economic development is that externalities are more significant than in other sectors. The setting up of one activity creates benefits for others, thereby introducing positive externalities. A more specific application of this is the notion of linkages. The setting up of an industry creates both backward and forward linkages. While the demand for inputs creates backward linkages, the provision of services downstream, such as whole selling and retailing, maintenance, etc., form forward linkages. Industry, particularly manufacturing, creates more linkages than other sectors (particularly agriculture) and can therefore give a much greater impetus to economic development. *Productivity increases:* Industry is also characterized by more scope for increases in productivity than other sectors. It has been historically observed that the faster manufacturing output increases, the greater the rate of productivity growth, reflecting increased learning and the incorporation of new, higher productivity technology, which depends on the rate of growth of output. Also, since the industrial sector provides machinery and equipment for other sectors, increases in productivity in manufacturing can reduce costs elsewhere in the economy, thus contributing to the development of other sectors.

##  9.1. Government Intervention

Given the limited theoretical basis for industry policy, government involvement is very much a matter of judgment and it is not surprising that there are many differences of opinion about the best approach to adopt. Moreover, these approaches cannot be precisely evaluated. Nevertheless, certain desirable features of an industry policy can be specified. First, any policy should be capable of performing well in an environment where transaction costs are the norm, and where economic agents lack knowledge and are continually having to adapt to change. Secondly, the opportunity cost burden of the policy must not exceed any perceived, potential benefits, having regard to its static and dynamic effects on the industries involved and also on the rest of the economy.

Four distinct approaches to industry policy can be identified:

1. Laissez-faire

2. Supportive

3. Active

4. Planning

The ***laissez-faire approach*** is founded on the presumption that information flows are perfect, and holds that the market is a better judge of desirable actions than government agencies. Most types of intervention commonly pursued under the name of industry policy are rejected. Appropriate policies are those aimed at strengthening and promoting a competitive environment (for instance, through the control of monopoly or measures to remove ambiguities in the assignment of property rights).

The ***supportive approach*** also believes in the underlying superiority of market forces, but acknowledges the presence of imperfect information and transaction costs. Proponents of the supportive approach would agree with the laissez-faire approach in advocating policies to help markets function more effectively, but would often disagree over the form of desirable measures. In particular, the supportive approach would argue for intervention to improve the allocation and enforcement of property rights, to encourage education and entrepreneurship in order to foster the process of economic change. This approach also recognizes that external constraints may force the adoption of less desirable, or 'second-best', policies. For example, if Japan were to adopt protectionist measures then Ethiopia would be justified in adopting similar policies, with the ultimate intention of enforcing trade liberalization.

The ***active approach*** argues for wider and more direct government involvement in the industrial sector. This approach differs crucially from the previous ones in that market judgments are often supplanted by those of government agencies. Selected industries would typically be given financial support to promote restructuring and be protected from external competition by tariff and non-tariff barriers. Although protected from external competition, measures would again be taken to promote competition domestically.

The ***planning approach*** is a more extreme version of the active approach. Its rationale is that welfare can be improved through centralized planning. It argues that central planners are in a better position - because of their superior, economy-wide information - to make welfare-enhancing decisions than individual firms. This advantage is greater where information flows are imperfect and where the economy is changing rapidly. Intervention is much wider-ranging and more comprehensive than under the active approach.

These policy prescriptions vary because of different perceptions about the efficiency of markets and the ability of government agencies to identify and to correct market failures. The basic dichotomy in these views is between advocacy of non-interference (the laissez-faire and supportive approaches) and advocacy of a large element of government involvement which includes targeting policies to particular firms, sectors or activities (the active and planning approaches). In the laissez-faire and supportive approaches, the state is acting as an adjunct to the market, working at the edges of the market system whilst in the other approaches the state acts to shape the industrial landscape, taking a leading role in the industrial economy - a proactive rather than a reactive role. The greater is the belief in the efficacy of the market and in the impotence of government agencies, the greater the tendency to reject intervention and to favor an essentially 'hands off' industry policy. Similarly, the greater is the doubt that the principal objective of politicians is the enhancement of society's welfare, the greater the tendency to advocate an industry policy that involves minimal government intervention.

The choice between the laissez-faire-supportive approaches and the active-planning approaches therefore turns on views as to which uses information more efficiently, state agencies or the market. Whilst it is undoubtedly true that state agencies have the ability to be better informed about government intentions and have wider sources of information than an individual agent, this does not necessarily imply that they have an informational advantage. One of the main strengths of the market mechanism is its ability to collate and to make full use of widely dispersed information. Although each agent commands but a tiny fraction of total information, by responding to price signals from the market each agent reacts as if he were much better informed.

Even so, most governments have chosen to intervene heavily in the operation of industry. In some cases, intervention has taken the form of accelerative policies designed to improve the speed at which the market operates. In others, a declarative policy stance has been used to retard the operation of the market. More commonly, both stances have been adopted simultaneously for different areas of the economy. Few governments have chosen to make use solely of neutral policies (aimed simply at reinforcing the efficiency of the market). These would be more consistent with a laissez-faire or supportive approach, although they have sometimes been included as part of an active or planning approach. Table 9.1 summarizes the types of policy consistent with these different approaches.

 **Accelerative industry policy**

The objective of *accelerative industry policy* is to speed up the innova­tion process by providing financial support to the most promising firms, markets or technologies. The premise behind such a policy is that an economy benefits from adopting innovations ahead of its trading rivals. This owes little to traditional arguments about interven­tion to correct market failure. Moreover, the essentially dynamic nature of the intervention proposed means that neoclassical theory has little to contribute

 **Table 9.1 Taxonomy of industrial policy**

**Policy approach** **Policy form**

Laissez faire Very limited intervention through neutral policies

Supportive Neutral policies

Active Accelerative and/or declarative policies

Planning Accelerative and/or declarative policies

However it is doubtful whether such government intervention to accelerate the introduction of desirable new products and processes is worthwhile. Three main problems can be identified. *First*, uncertainty and information costs make the correct anticipation of market trends, technological developments and new market opportunities very difficult. In an uncertain environment the greatest chance of success comes from those who are best able to gather relevant information. These are the entrepreneurs most closely involved with a particular area. Government agencies are less likely to have the necessary specialist information about particular market developments. *Secondly*, having identified areas to support, how should the policy is implemented? General support to all new firms in a favored area would lead to a considerable waste of resources given the high failure rate of new firms. Directing funds to potential 'winners' is ruled out by the absence of a mechanism to identify such firms. Advocates of selective intervention may argue that uncertainty can be reduced by supporting firms with a proven record, but past success is not a reliable guide to future performance. *Thirdly,* the opportunity cost of accelerative policy must be taken into account. While favored firms are nurtured, the development of other sectors is hampered. Extra taxes or higher interest rates are imposed on firms and their customers to finance industry policy, resulting in an overall reduction in the demand for goods and services. These other sectors, although not apparently promising, may turn out to be the real winners.

**Declarative industry policy**

Declarative policies can be of two types. If an essentially viable concern is facing *temporary* financial difficulties, bankruptcy or liquidation may be avoided by providing assistance to help it rationalize production methods or to improve its product range. In the case of a firm facing *permanent* problems, the intention of declarative industry policy is to moderate the externality effects of its closure and to attain a better utilization of resources. Proponents argue that, while economic forces may quickly lead to a firm's collapse, markets operate too slowly in re-absorbing displaced resources. Instead of suggesting intervention designed to enhance market forces they seek to maintain the employment of resources in their current use. They propose intervention because of the length of time markets will take to re-establish equilibrium. Neoclassical theory can give little support to this because it implicitly assumes that adjustment is instantaneous.

Declarative policies have been justified on social grounds, the argument being that preventing (or slowing down) firm closure leads to the attainment of a more equitable and less divided society. However, the most frequent justification for support to failing firms is that their collapse will lead to adverse effects on economic welfare. Externalities may arise from the closure of a major employer in a particular locality, causing a large proportion of the population to become unemployed with consequent ill effects on the rest of the community. There may also be *domino effects* on other companies. For instance, the failure of a motor manufacturer will harm firms supplying components to the motor vehicle industry. It would also lead to difficulties among firms involved in the distribution of motor vehicles. These domino effects would also follow from the failure of a small firm although, in most cases, declarative policies have been biased in favor of large firms. The explanation for this is probably political, stemming from the widespread publicity given to the failure of large firms. Moreover, smaller firms are generally less experienced in lobbying for government assistance.

Despite the externalities generated by the premature collapse of a potentially viable firm, the economic case for government intervention to help it through its temporary difficulties is dubious. If financial markets are efficient, a basically sound company should be able to obtain financial support from the private sector. Conversely, if a firm cannot convince lenders of its basic soundness, then government resources should not be advanced to try to improve its operation. Even if financial markets do sometimes fail to recognize an inherently successful company (for example, because of transaction costs) this does not invalidate the basic argument. The government is likely to be at an informational disadvantage compared with firms already operating in similar lines of business. Such firms are more likely to possess the information on future demand relevant to identifying a failing company, taking it over and turning round its performance. Furthermore, financial support from the government may fail to promote efficiency, for it enables management, which has demonstrated its incompetence, to retain control of the company.).

As with firms in temporary difficulties, support cannot be given to every firm in terminal decline, otherwise the economy would strengthen and become progressively uncompetitive. Since funds are likely to be limited, selection is required and here the government encounters another information problem. Choice of unsuitable subjects will lead to a waste of resources.

In most cases, it is expected that financial support will be required for a short period, but the process of readjustment is often protracted. Devoting resources (particularly over long periods) to the pursuit of declarative policies incurs significant opportunity costs. Again, the success of companies elsewhere in the economy will be hampered by higher taxes or higher interest rates causing a reduction in demand for their goods and services. In other words, the financing of declarative policy generates its own domino effects leading to the contraction, reduced growth or even accelerated failure of companies in the unsupported sector. In principle, it is impossible to say how the domino effects of government policy on the employment of labor and capital compare with the domino effects consequent on the natural decline of firms. However, the overall effect is to reduce welfare because resources are switched from areas where revenues exceed costs of production to areas of failure, implying revenues below cost. There is also the cost incurred in the administration and implementation of the policy.

There is a real opportunity cost - in the form of a burden placed on the rest of the economy - incurred by the pursuit of declarative industry policies and their 'success' or 'failure' can be established only after taking these costs into account.

What is the alternative to declarative policies? In the absence of government support the assets of the failing firm would be sold to the highest bidder. It can be argued that this would be a better way of ensuring an efficient use of resources because the entrepreneur willing to pay the most for the firm will be the one (often already operating in a similar area) which sees the most profitable uses for the resources of the failed company. Company failure is an important' aspect of the competitive process, serving to transfer resources from the hands of a management which has incorrectly predicted market developments.

**Neutral industry policy**

Neutral policy seeks to improve the market framework within which economic agents operate. This type of policy is consistent with economic theories that explicitly recognized the presence of transaction costs. It is often advocated by those who recognize the difficulties involved in trying to pursue accelerative and declarative policies. The task of government should be to try to create an economic, social and political environment that is conducive to efficiency and new initiatives. The government may not be responsible for picking 'winner' industries, but for increasing labor mobility, improving long-run employment prospects, and hence reducing the resistance to change. Specific examples of neutral policy include attempts to ensure that prop­erty rights are clearly assigned. The more certain it is that the legal system will enforce such rights (and the cheaper it is to seek legal remedy against infringement), the greater the incentive for citizens to acquire private property. Similarly, the easier and cheaper it is to transfer rights over property, the more desirable it is to own property. Following Coa­se’s work, clearly assigned property rights would help to eliminate many cases of market failure. The pursuit of increased competition - for instance, by the elimination of institutional barriers which prevent the entry of new firms - could also be regarded as a neutral policy. Stimulat­ing competition within the legal profession might be particularly beneficial. This would improve the efficiency of the system for enforcing property rights.

In developing their industry policies governments have often paid little attention to economic arguments. One reason is because of a difference in objectives. Economists are concerned with the enhancement of economic welfare, but this may not ensure re-election for the politician. Secondly, neoclassical economics has little contribution to make to many of the issues which governments usually consider vital. This is because traditional analysis is unsuited to problems where change is endemic because of its generally static thrust and tendency to ignore problems of uncertainty and lack of information. Thirdly, the approach of the new institutional economics, which can explicitly deal with such an environment, is generally hostile to the type of unplanned intervention favoured by politicians.

Many governments have adopted an active or planning approach to industry. Evidence from particular countries appears to suggest that accelerative industry policies have been more successful than declarative ones. For instance, some of the strength of Japan's successful industries stems from that country's willingness to phase out less successful ones

However, it is impossible to say categorically whether these successes and failures are directly attributable to government policies. It is also impossible to judge how successfully an economy might have developed without the opportunity cost burden imposed by the opera­tion of industry policies. The opportunity costs associated with accelerative and declarative policies are likely to be high. Given that markets fail and that there is a need for some government intervention in industry, neutral policies as part of a supportive policy aimed at improving the operation of market forces would appear to be the most promising.

* 1. Reviews of focuses of the Ethiopian Industrial Policy
		1. An Overview of Industrial Problems and Strategies

Ethiopia's industrial base and economic development are the lowest even by African standard. There are various constraints to the country's industrial development. Among the many constraints the most notable ones are:

While, the sector has been dominated by capital-intensive technology, and it is fully dependent on foreign capital goods and to a large extent for raw materials, its foreign currency earning capability has been limited; the foreign currency earning of Ethiopia is based upon primary agricultural outputs but as the country is by and large a price-taker in the international market for these products, the country finds it difficult to generate all the foreign currency required for its industrial development; obsolescence of machinery and equipments, and the low level of local technological development; lack of technological information; lack of skilled labor; low demand for Industrial goods which emanate from low level of income; low quality of locally manufactured goods and hence consumer bias against local products; lack of well developed infrastructure and under capacity performance. Manufacturing sector of Ethiopia is structurally unbalanced and technologically backward, resulting in a state ofdeclining productivity and deteriorating competitiveness. The policies pursued in the past failed to initiate appreciable industrialization in the country. On the other hand, experiences ofsuccessful industrializes, clearly underline the need for a guided industrial policy.

Toenhance industrial development the governments of Ethiopia have been pursuing different development strategies. In the Imperial era import-substitution strategy was formally pursued. Industrialization of the time was characterized by the promotion of foreign investment, the establishment of large and medium scale foreign-owned enterprises active in import substitution production and strong growth. A series of policies were formulated topromote foreign investor participation. These incentives included 5 to10 years tax holidays, low duties 'for imported raw materials and export value-added goods, tax exemption on dividends and the expatriation of profits and proceeds obtained from sale of assets etc. As the effort was concentrated on large and medium scale industries the small-scale industry was almost neglected. The trend of the industrial development took a new turn since the mid 1970’s when the strategy for industrial development was pursued by the sole involvement of the government and the private sector was discouraged. The 1974 coup has made it possible forall major industrial operations tocome under the direct control of the government and the private sector was discouraged. This led torestructuring, reorganizing and centrally planning of industrial development. Private ownership was mainly limited t*o* small-scale and handicraft industries. The import-substitution strategy adopted by the Imperial government, however, was further pursued. In the post 1991 period the change in government brought about significant change in industrial policy in favor of liberalization and privatization of the Industrial sector especially the manufacturing sub-sector. The current industrial development strategy is based upon the overall economic development strategy known as ADLI. The major goals of the ADLI are the use of labor-intensive technology and local resources; promotion of economic efficiency; achievement of international competitiveness in areas of clear comparative advantage in Industrial exports; development of domestic technological capabilities forthe production of intermediate Inputs, spare parts and capital goods etc.

In the following section brief highlights of some the issues that need careful consideration in formulating an active industrial policy for the country by drawing lessons from successful late industrializes and firmly based on the concrete conditions that currently prevail in the country's manufacturing.

* + 1. Specific objectives of industrial policy in Ethiopia

While the overarching long term objective of industrialization remains high employment, thereby improving the standard of living of the population, industrial policy should primarily identify the specific objectives/goals to be achieved over a defined period of time. Countries differ in their industrial structure, technological status, efficiency, competitiveness, etc. This in turn leads to differences in their specific objectives. Most manufacturing industries in Ethiopia are technologically backward and the sector as a whole has very weak sectoral linkages and internally an unbalanced structure. As a result, it is dependent almost entirely, on the rest of the world for its intermediate inputs and capital goods; it has very low and declining productivity; and internationally, it is least competitive. This characteristic, therefore, suggests what the specific objectives should be. Successful industrialization in Ethiopia, therefore, should basically achieve the following objectives.

* Create a more complete structural linkage between manufacturing and agriculture
* Create an internally balanced manufacturing sector
* Enhance the productivity and efficiency of firms
* Develop dynamic comparative advantage of industries

**(a) Sectoral linkages**: A unique feature of manufacturing is its position vis-à-vis the other sectors of the economy. It is the only sector that has a linkage with all other sectors of the economy, including agriculture, mining, transport, communication and services through its input-output structure, i.e., demand for raw material inputs and supply of intermediate and capital goods. In the Ethiopian context, the backward linkage of manufacturing with agriculture is significant. The manufacturing sector largely feeds on domestically produced agricultural raw materials. However, its forward linkage with agriculture is loose. Traditional agriculture requires a great deal of modern technology inputs including fertilizer, pesticides and insecticides, labor saving improved farming and harvesting implements, and transport supporting facilities to enhance productivities. In this respect, the manufacturing sector failed to supply such implements to agriculture. As a result, agriculture heavily depends on outdated traditional farm implements and inputs and on imports for its intermediate inputs capital goods. So, a prime and immediate objective of industrialization would be to meet the demand for inputs and capital goods of agriculture.

**(b) Balanced structure among industries**: the structure of industries within manufacturing, i.e. structural linkages among consumption, intermediate and capital goods industries is grossly unbalanced. As the sector is overly dominated by consumption based firms, demand for capital goods and intermediate goods are largely met through imports. The linkages among industries are very weak. Critical intermediate inputs are largely imported. A developed manufacturing sector satisfies its own intermediate inputs and capital goods from within. Another important objective of industrialization, therefore, would be to create a structurally balanced manufacturing sector, less dependent on the external economy at least for critical and timely inputs, and more vibrant and dynamic internally.

**(c)** **Productivity and efficiency**: Survey results have shown that productivity and profitability of most firms have been declining for long, rendering them less competitive even in the domestic market, thereby operating at a level less than full capacity. Because of technological backwardness, most firms are inefficient. Another central objective of industrialization, therefore, is to enable firms update their technology, improve their managerial and labor skills, and enhance their marketing capability so as to move to a high productivity and efficiency frontier. It should be underlined that an industrialization strategy in countries such as Ethiopia should not be simply picking winners and dropping losers. Given the underdeveloped nature of the sector, Ethiopia cannot afford to abandon firms and waste the few experienced managers and workers. So the strategy should be to support firms in all possible accounts while simultaneously pressurizing them to improve their productivities irreversibly, and remain in the business.

**(d) Dynamic comparative advantage**: Ethiopia's comparative advantage today lies in its natural endowments, mainly agriculture and cheap (and trainable) unskilled labor force. However, given the low level of labor productivity and the weakness of agriculture, even this cannot be relied on for long. Dynamic industrialization primarily requires developing technologically leading industries which could create positive externalities and spillover effects for other industries. The competitive edge of today's industrialized economies lies on dynamic comparative advantage, which is essentially superiority in technological capability -high tech industries and technically skilled labor. Thus developing broad based technological capability in order to emerge efficient and competitive in the long-run, should be the central objective of industrialization in Ethiopia.

### 9.2.3. Selection of industries for promotion

As noted above, most manufacturing firms are structurally weak and inefficient. In this respect, promoting manufacturing industries in Ethiopia would involve considerable financial, human and other resources that could not be easily affordable. It would be beyond the capacity of the state to support many industries simultaneously. Effective industrial promotion, therefore, can only be carried out selectively, on priority basis, and in phases or sequences.

Moreover, selection of firms/industries should be based on a set of identified criteria, which would satisfy the specific objectives outlined above. Accordingly, industrial groups which satisfy the basic objectives, and hence which should be given more priorities than the rest, include the following:

(i) **Industries producing modern technical inputs to agriculture**: This involves firms manufacturing fertilizers, pesticides, insecticides and improved implements. There is little disagreement on the critical role that technical inputs play in raising productivity. Currently, only less than half[[1]](#footnote-2) of the farmers in the country (much less in terms of acreage) use fertilizer. Moreover, the rate of fertilization is much less than the recommended minimum. Increasing the productivity in agriculture significantly, therefore, demands augmenting the level of fertilizer input exponentially.

Moreover, as the merit of inorganic fertilizer is becoming questionable worldwide, the applicability of alternative inputs (organic fertilizer) is widely under consideration. It is, therefore, essential that Ethiopia shifts to such alternative inputs not only to enhance productivities, but also to maintain and further promote its agricultural export. This calls for producing such technical inputs which are suitable to the specific soil condition of the country in large scale.

Also, Ethiopian subsistence agriculture is dominated by micro size plots, largely less than a hectare. While application of mechanized farming is not easily practicable because of small size farms and difficult terrain, as well as the problem of affordability, farmers are still deploying age old farming and harvesting tools and techniques. In many countries the green revolution has already introduced various labor-saving, low cost and productivity augmenting appropriate implements. In Ethiopia little has been done in this particular case.

Therefore, manufacturing industries in these areas, specifically those engaged in the production of fertilizer, pesticides, insecticides and improved farm implements have to be encouraged. Promoting such firms has many advantages. Primarily, it supports the food security and poverty reduction programs. It also creates a regular and reliable supply of inputs, and labor being relatively cheap; it can also be expected to lower production costs, at least, in the longer term. It further reduces import costs substantially. Currently fertilizer import alone accounts for nearly four percent of the value of total imports.

**(ii) Industries producing intermediate and capital goods**. Lack of investment coordination created a structural imbalance (imbalance among consumption, intermediate and capital goods supply). While intermediate inputs supplying firms are few, capital goods industries are largely lacking. This resulted in heavy dependency on imports for intermediate and capital goods. Some of the intermediate inputs, such as chemicals, are so critical that lack of them could significantly retard production. Therefore, industries which produce critical intermediate inputs and capital goods should be given due priority for promotion. Such industries, with relatively high potential linkages, include basic chemicals, iron & steel, cutlery & hand tools, basic and general purpose machinery, paints, varnishes and mastics, etc.

Promoting such industries will significantly induce more new entrants through the forward and backward linkages effect, thereby expanding the sector, and hence creating more employment. Since such industries lie at the center of the linkages, they have strong spillover effects setting the required technological and quality standards.

Except fuel and spare parts, the remaining import demand of the sector constitutes intermediate inputs. Promoting industries with high linkages, therefore, will substantially reduce the import demand of the sector as a whole. This leads to a structural change towards a more independent and internally vibrant manufacturing sector.

**(iii) Import cost reducing and export promoting industries**. A major challenge of industrialization at least at the initial stage, is the massive import demand, which far exceeds export earnings. Therefore, promoting both import substituting (or import cost reducing) and exporting activities is not only complementary and reinforcing, but also necessary.

Though most manufacturing industries use imported inputs, the import demand of some industries is relatively much larger than others. In most cases, the demand of such industries would be met if the internal structural problem of the sector is resolved, i.e., if the capacity of intermediate goods producing industries is augmented substantially. There are, however, industries with relatively weak linkages but high import demand. Industries such as battery manufacturing, basic iron and steel, etc. are largely import intensive. Therefore, establishments producing inputs to industries such as metal casting foundries, iron bar and iron sheet industries, chemical industries, etc., have to be the focal point for promotion.

Promoting export oriented industries is a well recognized strategy. Ethiopian manufacturing is least known for its export performance. Currently, export is literally a single industry's affair - that of the leather tanning. Other industries making limited export effort include sugar, textile, meat and fruits processing. Most of these export oriented industries are natural-resource-based agro industries, hence exploiting the existing comparative advantage of the country. Capitalizing on this natural resource potential, promoting such agro-based exporting industries is obviously justifiable.

Export promotion, however, should not be limited to these industries alone. Export diversification is essentially a key strategy. Even more important is exporting of intermediate inputs, though the short term prospect, at least in large scale, is limited. Despite this, export promotion should be open equally to all industries capable of making the effort.

**(iv). Efficient and innovative firms**: irrespective of the above categorization, there are firms which emerge efficient and innovative on their own effort. Such firms could be exemplary, and their experience could be diffused to other firms if supported and promoted to expand their scope and scale of activities. From time to time, a number of such innovative firms have emerged in the manufacturing sector. For instance, successful ventures such as manufacturing of elevators through reverse engineering and adaptation, truck and trailers manufacturing, building a water based machine cooling system in a plastic products manufacturing enterprise, and the like have been witnessed. [UNCTAD, 2000] There are also related ventures in experimenting with alternative sources of energy, such as solar energy. Recently emerging enterprises engaged in electronics industry, such as computer assembly, TV assembly have to be encouraged to move into manufacturing of parts. For instance, the lack of policy to support and encourage the few auto assembling firms to move into higher value added manufacturing stages, has left this industry in limbo with little technology transfer to other industries. Also, the high-tech skill said to be the mark of Ethiopian Airline is confined within itself without any spillover effect to other industries for decades. Hence, encouraging and promoting such enterprises so that they could expand and extend their activities to manufacturing would allow other industries/firms to benefit from their innovative experiences.

**(V) Strategic industries:** the relatively cheap and reliable supply of agricultural products, which make up the bulk of the raw material inputs for agro-based industries, such as leather, textile, sugar, meat, fruits and vegetables processing industries, along with cheap and trainable labor, provide the static comparative advantage of the manufacturing sector. However, industrialization, in the main, is creating a long-term dynamic comparative advantage, i.e., building technological capability - expanding technologically leading industries and creating technically skilled labor force. Promoting strategic industries which could generate technological externalities to all other industries is the central long-term strategy of industrialization.

Such industries involve electrical and electronics, chemical, iron casting foundries, iron sheet, iron bar, aluminum manufacturing, machinery manufacturing, precision instruments, and other engineering industries. In Ethiopia, however, strategic industries are largely missing and they have to be created, nurtured and developed through new investment. This should be primarily the focus area for public investment as well as FDI.

The categories outlined above are quite broad. A large number of industries and firms fall under these categories. But as intervention resources are limited only a few activities should be promoted at any one time. This implies that there is a need for further prioritizing industries and firms. For instance, even after selecting chemical industries, it may be necessary to identify further a few relatively more important chemicals for promotion in the first phase, to be followed by others at a latter phase. Drawing such priorities requires more detailed studies of each industry identified for promotion.

However, it should be underlined that promoting a single industry has practical limitations and could be less beneficial than promoting a group of closely linked industries. In practice the latter is advantageous and often preferable. This is so particularly when an industry has both forward and backward linkages.

Moreover, promotional activity is not passive. It is rather, a very active exercise. It requires aggressively challenging industries/firms to improve, actively move to a higher stage, to be competitive and become more professional in return for active support or else face the consequences.

* + 1. Promotional Measures

Now that the industries to be promoted are identified, what is the role of the state in promoting the industries? What are the measures that the state could undertake in the Ethiopian context? It should be underlined that intervention should be comprehensive. There is little outcome if investment is encouraged while ignoring marketing activities; it is also less useful to upgrade the hardware technology of plants while the skill of workers remain rudimentary. So interventions, or promotional measures must be undertaken in all markets, including product market, input market, capital market, technology market, skill market and foreign direct investment. Moreover, interventions in all markets should be closely coordinated. One without the other may be ineffective even counterproductive. Moreover, as noted above, interventions could simultaneously involve broader and linked group of industries or selectively, a single industry, firm, or product.

A number of measures are identified below. While some of these have common features for many developing economies undertaking industrial policy, others are specific to the Ethiopian manufacturing sector.

* + - 1. **Identify the specific problems constraints of and criteria selected industries**

Survey results have indicated that most firms have little idea about the internal critical problems of their plants or firms, particularly technical aspects. They have little information or knowledge outside their own firm. The same is true with respect to the new technology on the market, productivity levels of sisterly firms in other countries or at international level, new management techniques, labor skills, new product qualities and mixes of improved raw materials to improve product quality, etc. Lack of such knowledge leads managers to think that their main problem is lack of market and shortage of raw material. So, identifying the major problems and critical constraints of selected industries and firms is precisely the initial major undertaking of the industrialization process.

This requires establishing teams of experts which form the nucleus of the office which will run the industrialization process (for details see below under institutional requirement). Such teams should be composed of versed experts in each industrial activity, involving largely engineers in various fields (chemical, electrical, mechanical, and hydraulic, etc.), industrial chemists, production managers (in textiles, leather, foundries, etc.), economists, etc. It is these teams of experts which will visit each firm, identify their problems with respect to technological status, labor skill, product quality, managerial techniques, etc., and recommend what specific promotional measures should be undertaken, what instruments to use, what incentives to provide, for how long and to what extent, etc. It is these teams which will recommend the type of technology, the size of the firm, labor skill, product quality, etc., for new investment in a specific industry. In short, these teams involving experts of international standard with full information access to and knowledge of manufacturing technology will lead the industrialization process in the country.

Once detailed recommendations are in place, promotional measures appropriate for each industry/firm could be outlined or planned. Leaving such specific promotional measures to be determined by final studies, relatively broad promotional measures which could be undertaken in the context of the Ethiopian manufacturing sector are identified below under each market.

* + - 1. Product market

Promotional measures in the product market are related to investment, production, and marketing.

**In the area of investment:**

* **Coordinating investment and production horizontally and vertically**. This creates interdependency and close structural linkage between domestic industries thereby reducing external dependency. As such,
* it economizes scarce investible/capital resources;
* it reduces unnecessary or wasteful competition; and
* it creates markets through increasing linkages.
* Targeting products (hence firms/industries) and actively **seeking for investors.**
* **Setting the minimum optimal size of firms** for new investment which would enable them to be internationally competitive.

**In marketing:**

* **Maintaining a higher tariff margin** to limit the volume of imports for targeted products, to provide space or learning period (improving the practice of application of new technology, capability/skill build up, improving marketing techniques, etc) to new investments as well operating industries selected for promotion, particularly industries such as chemical, machinery, iron and steel, and other engineering industries
* **Reservation of markets** (such as government purchase) for targeted export or other products
* **Providing a computerized databank** on foreign markets, buyers and suppliers, and on supply potentials of Ethiopia. The Ethiopian Export Promotion Agency could handle such activities. The government can as well implement this through private organizations such as Ethiopian and Addis Ababa Chambers of Commerce by providing financial support.
* **Targeting exports.** To further augment exports, the government can set export targets for firms, not only for those identified above as exporting industries, but also any firm, in return for a favorable price and guaranteed sales/market domestically or any other incentive as discussed below, including subsidy.
	+ - 1. Input market

Intervention in the input market encourages the development of firms/industries through enriching their linkage on the input side. The following interventions are relevant.

* Promoting **subcontracting** to encourage specialization and structural linkages between industries. For instance, auto assembly industries have no local content, despite the fact there are vehicle body manufacturing firms, battery assemblers, etc. There is a need to make a study in this connection and promote the activity.
* Providing **industrial infrastructure** to ease supply side constraints. The recent attempt to locate an industrial site with better infrastructural facilities for new investment is commendable. However, it is also important to provide infrastructural priorities for the already established firms such as energy and communication lines. It may as well involve support for relocation, to newly identified industrial sites, wherever it is initiated.
	+ - 1. Capital markets

The critical role of capital/financial markets in promoting industrialization is well known. In this respect, apart from the general measures of strengthening financial institutions, both private and public, further effort would be required to cater the large financial resource that industrialization demands. In the Ethiopian context this may include establishing various financial institutions including the following.

* Reorienting the functions of the Commercial Bank of Ethiopia to provide the required finance for targeted/selected industries.
* Establishing an industrial development fund. This is not new for Ethiopia, as the Development Bank of Ethiopia has been providing a similar service to the industrial sector
* Establishing specialized funds such as science and technology promotion fund, technical assistance fund, etc.
* Establishing and encouraging, long term capital markets, venture capital companies, credit guarantee companies, and related specialized financial institutions.

In line with this, the government can facilitate finance for targeted activities using different financial mechanisms.

* Targeted industries may benefit from direct credit from state owned banks or government guaranteed private, local or even foreign banks.
* Special credit scheme for selected industries and activities. Investments in targeted industries, such as strategic industries, have to benefit from special long term credit schemes, including credit subsidy, longer grace period, etc.
* Finance linked to specific performance criteria. Targeted performances, such as export, productivity improvement, adopting new technology, positive externalities, etc., could benefit from priorities in financial credit at favorable terms.
* Provision of matching grants. Large capital and technology requiring investments, targeted by the state, may benefit from matching grants.
	+ - 1. Technology market

Promoting technology is the core strategy of an industrial policy. In the Ethiopian context, it is even critical. However, intervening in the technology market is also most challenging and expensive. Apart from the general provisions of technology infrastructure, such as metrology, standards, quality and testing; the government should promote technology using diverse schemes as outlined below.

* The government should have a **mechanism to support all forms of foreign technology transfer to Ethiopia.** In other words, it should help firms locate, purchase, and adopt new foreign technology. It should provide technical advice and guidance in terms of identifying appropriate technologies in all industries. The choice of labor intensive type technology should be weighed against possible efficiency (hence competitiveness) tradeoff, which could come with high-tech capital intensive technology types. Moreover, the rise in wages (including environmental issues) may necessitate, even in the medium term, moving out of labor to capital intensive type industries.

Direct support should be provided to strengthen targeted technology imports to reduce prices and strengthen the position of local buyers through different transfer agreements such as purchase of equipment by itself or with knowhow and technology assistance, contracts for blue prints and patents, hiring consultants, etc.

In this regard the government should compile a database on sources and prices of technology supply

* Special incentives to firms to develop indigenous own product development capability through reverse engineering and adaptation.
* Hiring of foreign experts to help industrial technology development. The success of a vehicle body manufacturing enterprise here in Ethiopia by hiring an expatriate knowledgeable in the field is exemplary. The government should encourage employment of technology skilled expatriates through tax exemptions, remittances and other incentives.
* Direct support for research at firm/industry level no matter how preliminary it is. Also establishing and sponsoring basic R&D on industrial related initiatives.
* Engaging in joint venture with foreign firms to acquire difficult and complex technologies.
* Supporting updating, automation, renovation and modernization of existing technology
* Technical support and extension services. This is to overcome informational, technical, equipment, and other handicaps of industries. This would in turn enable industries to undertake consultancy and feasibility studies, product development and design, quality and productivity improvement and acquire modern marketing techniques. To implement this, a mechanism for diffusing new technologies, management techniques and skills to micro and small scale firms has to be installed.

The government should provide training, information, advice on automation, arranges visits to plants to identify technological problems, prepare trade fairs, etc. This requires a well organized center, which should be regularly involved in these activities.

The institutional demand to provide such support services is challenging. Though the currently existing institutions such as Science and Technology Institute, Micro Enterprises Development Institute, etc., could be restructured to provide the required services, various specialized additional institutes and centers in collaboration with the private sector and foreign technical assistance should be established.

* + - 1. Skill Market

Building industrial technological capability is not just adopting advanced hardware technology, but also developing highly skilled labor. In fact the latter is a prerequisite.

Provision of formal higher education by itself may not be adequate, even if it is of high standard. Of course, basic and high standard educational background is essential. However, much emphasis should go for specialized technical skill training. In this regard much effort would be required, as creating a pool of skilled labor force by itself is today a prerequisite to attract foreign direct investment. Promotional measures may include the following:

* Expand and strengthen the comprehensive or technical secondary education system to create workers with basic technical skills.
* Provide more specialized technical training on different categories of industrial technology.
* Provide special incentives for selected skills to reverse brain drain. It is extremely important to provide due attention to higher education graduates in engineering technology and natural sciences.
* Give pre-employment technical skill training for school leavers.
* Arrange customized courses for workers based on the demand and tailored' to the needs of industries.
* Provide on the job training on workplaces using actual work machines and equipment to directly enhance relevant skills in improving productivity, quality, product design, marketing etc. And also, directly support (financial or professional) firms/industries to provide on the job training.

To cater for this, specialized institutes and training centers are required, such as for instance, special industrial technology training institute. However, the institutional demand can as well be met by guiding and promoting private sector investment, which is currently deployed in less useful and quick profit earning training activities.

* + - 1. Foreign direct investment

Attracting FDI may be desirable, but admittedly, it is a difficult task. The requirement for FDI is not only economic. It demands, among other things the existence of political stability and a conducive economic environment. The latter implies good infrastructure, skilled labor, efficient economic governance, highly competitive and attractive incentives, etc. However, success in this field does not always come on the cheap when seen from the perspective of long term development and industrialization. It is not always the case that the interests of host countries and investors coincide. Particularly, while large investment in technologically leading strategic industries, whose benefit accrues in the longer term, is badly needed by developing countries, including Ethiopia, the preference of FDI is in quick and highly profitable natural resource-based industrial activities. So, there is a need to balance or reconcile diverging interests.

In the Ethiopian context, primarily, government has to provide the essential **infrastructure and institutional requirements for FDI**. Moreover, on top of the general facilitation of investors, guarantees and arbitration, government can employ the following promotional measures.

* Encourage **FDI in areas where domestic investment is weak**. When FDI moves into areas with relatively better comparative advantage, such as in resource-based industries, which can easily be managed by domestic investors, such advantages must be compensated by a parallel investment in strategic industries.
* Promote FDI in **export-activities**, particularly in non natural-resource-based industries.
* Provide **generous incentives for FDI with greater externalities in technology and skill transfer**, including design knowledge. In this regard, the government can give due priority and an all round support to proven foreign investors, such as the MIDROCK and sisterly groups so that they can move to high-tech strategic industries.
* Encourage **subcontracting and significant local content in all FDI operation.**
* Encourage existing foreign investments engaged in **simple assembly activities, such as in auto assembly, to move into manufacturing.**
* Encourage FDI in **joint venture** activity, particularly **in advanced technology oriented industries.**
* **Target and encourage lower-tier foreign companies**, particularly those from newly industrializing economies.
	1. Incentive Instruments

It should be underlined that as the objective of industrial policy is not to maintain inefficient firms, **incentives have to be selective, goal specific, measured in magnitude, limited in time, and performance based**. Moreover, the incentive scheme should also be differentiated based on the importance of activities to be promoted. For instance, investing on a strategic industry, say chemical or metal casting, may be given higher priority than investing in footwear. Hence the incentive for the former should be more rewarding than the latter.

Apart from the specific incentives stated above under each market, the remaining instruments are quite diverse and commonly applicable in each market intervention. A number of instruments could be employed simultaneously or separately. For instance, a new investment in say strategic industries may receive subsidized credit as well as tax exemption for some time. The instruments include:

* Taxes (direct and indirect): tax exemption, tax holiday, tax credit, tax reduction/deduction,
* Accelerated depreciation
* Finance: Grants, direct credit, credit priority, low interest credit, long term credit, prolonged grace period.
* Foreign exchange priority
* Priority in infrastructure provision
* Import duty exemption or reduction
* Subsidies
* Free or favorable provision of land
* Reduced electricity charges
* Reduced domestic air cargo charges
* Employing government procurement to encourage new investment or expansion of selected/targeted products
	1. Measures of control

As noted above, promoting industries with a package of rewards should necessarily be based on achievements which are specified, limited in time, and measured to outcome. As promotional programs involve costs and risks, firms are required to share at least some of the costs and risks commensurate with the benefits they receive. As the overarching objective of industrial policy is to develop an industrial sector which is productive and efficient, hence competitive, the benefit basically accrues to firms themselves. Hence sharing the costs and risks is not only logical but also inevitable as the alternative in today's competitive environment is to close down, i.e., go out of business eventually.

Control measures or performance requirements could be varied depending on the importance of the industry/commodity targeted for promotion. Requirements may include, among others, the following.

* **Level of productivity and efficiency**: An outstanding problem of most firms is low productivity and efficiency, which results in lack of competitiveness and loss of demand even in the domestic market. This is a challenge for nearly all firms. Therefore, targeted firms would be required to improve their efficiency significantly, if they have to benefit from promotional incentives.
* **Product quality:** Irrespective the price level, product quality is the primary prerequisite, particularly for export products. Exporting industries may be required to improve their quality to benefit from the incentive schemes.
* **Level of production**: Despite their productivity or efficiency levels, some industries producing critical products and currently of high import content, such as specific chemical industries, may be required to expand their capacity and volume of production first, and then move to meeting productivity and efficiency criteria.
* **Investment**: As noted above, Ethiopia's manufacturing sector is quite dwarf. A great deal of the industrialization program would only come through new investments, particularly in strategic industries. Therefore, new investments in targeted industries to benefit from generous support and incentives would be the major requirement.
* **Targeted level of export:** In newly industrializing economies, targeting export has been used as an effective mechanism for not only increasing export earnings, but also improving efficiency. In the Ethiopian context too, export targeting could be used as a prerequisite for benefiting a significant state support.
* **Introducing new technology:** Technology heavily influences levels of productivity and efficiency. It is likely that existing firms have to update their technology to improve their efficiency. Therefore, benefiting from the incentive package may require introducing new technology.

Again, at anyone period, requirements could be: one or more depending on the importance of the industry. For instance, a firm may be required to increase its volume of production as well as export. On the other hand, a strategic firm may first be required to increase production to fill the gap in import shortage (foreign exchange saving) and may later be required to increase its productivity level.

* 1. Institutional requirement

Industrialization requires a great deal of organizational, informational, skill and financial resources. A successful industrial policy demands the existence of such capability. As noted earlier, leading the industrialization program should be the prime responsibility of the government. The leading role of the government is not contestable as it is the only institution which has the prerogative to formulate and implement national policy. Moreover, no other institution has a nationwide structure and capability to undertake such a long term program

Perhaps the major challenge in this undertaking is the institutional demand. Primarily a central organ/office to coordinate and lead the program at the apex has to be in place. This office, as noted above, must be composed of all stakeholders, including the government, the private sector, labor organizations, civic society, etc, not only for the sake of transparency, but also for addressing the common interest of all stakeholders which is critical for the success of the program. It is this central organ which will establish the structure of the office and pool together the required human resource for designing, administering and implementing the program. The task of the latter is very challenging as it has to draw a coherent and detailed action plan and also organize various required institutions. Financial, technical/technological, educational, marketing institutions, investment promoting institutions and centers for intervention in different markets need to be established. Such institutions demand a large amount of resources, both financial (including foreign exchange) and human. The demand for both financial and human resources is challenging as it requires experts in varying fields, including engineers (chemical, electrical, mechanical, etc) , statisticians, industrial experts, management experts, economists, financial experts, marketing experts, etc, to design, administer, and monitor the program (i.e., to identify priorities, specify promotional measures and incentives, confirm performances, etc.). Establishing such institutions requires a priori study and as industrialization is a long and painstaking process, it is important that such institutions and staff be permanently assigned to maintain the sustainability of the program.

However, because of the challenge and complexity of industrial policy, some question the capability of governments to successfully undertake such a program. For instance, the World Bank argues that developing country governments are intrinsically unable to act in the national interest, for various reasons including lack of acquiring enough information to select better than the market, lack of skill to design and implement detailed and complex industrial policy, the tendency to gravitate towards sectional interest rather than national interest, corrupt practices, etc. It is true that developing countries, including Ethiopia face some of these shortcomings and constraints. Hence, there is a need for a careful preparation to overcome such shortcomings. In the Ethiopian context, with respect to the information gap on markets, factor conditions, technology, skill requirements and organizational heeds, the experience of industrialized countries could serve as an initial source of information to make selective decisions. Second, the government can utilize its offices abroad, embassies, consulates, etc, as a source of information. In this connection, NGOs can also be viable sources as they have access to external information, outside Ethiopia. Third, private sector associations, such as the Chambers of Commerce, Ethiopian Manufacturing Industries Association and specialized trade associations (Leather tanning, coffee export, etc) along with trade unions, and professional associations, are all valuable sources of information. Also, Ethiopian nationals living al1road could serve as reliable sources.

The lack of skill to design and implement such a complex program is a serious shortcoming. This can be mitigated initially by training staff and hiring skilled and experienced experts from countries which have undertaken an industrialization program. Moreover, experience, along with on the job training, is the best medium for acquiring further skills.

A major challenge also arises from sectional interest (noted above in this section) and corrupt bureaucratic practices. While it is relatively easy to reduce rampant corruption at the lower tiers of government - through supervision and incentives- it is more difficult at higher levels. Today Ethiopia is not free from this problem. As noted above, this is the underlying reason for organizing a leadership entrusted with managing such a program composed of different stake holders. The involvement of all stakeholders will discipline the state and make it accountable to the public, hence improving the quality and outcome of government interventions. Disciplined and competent bureaucracy to avoid rent seeking practices is a prerequisite. Certainly, a corrupt government should not be entrusted with undertaking detailed industrial policy. Transparency in the implementation of the program is one instrument to mitigate the potential abuse of such a program.

* 1. **Integrating macro and sectoral policies with industrial policy framework**

What can be inferred from the discussions is that, industrial policy is essentially a development policy. What is perhaps unique is that, it places manufacturing at the center of the development program. However, because of its linkages to all sectors of the economy, it cannot stand on its own.

What this implies is that, sectoral as well as macro policies need to be consistent with the industrial policy in place. If for instance, agricultural policy, such as land policy, is not revised to allow massive agricultural inputs - fertilizers, insecticides, improved seeds, improved farm implements, then, the industrial policy which accords priority to industries producing agricultural inputs would be of no avail. Similarly, if macro policies, such as financial policy, are not returned to support targeted industries, then the success of the industrialization program would be inevitably limited. If the energy policy does not provide priority to targeted industries, then the industrialization program would be adversely affected.

It is therefore, obvious that industrialization demands revising all relevant development policies and programs to be consistent to the industrial policy in place.

1. Ibid page 292 [↑](#footnote-ref-2)