The Role of Government in Accelerating Industrial Development in Developing Countries

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ABSTRACT. This paper attempts to throw some light on the role of the government in promoting industrialization in developing countries in general. It deals with: i) the conditions under which governments are likely to make their best contribution to industrialization in a market-oriented economy and to give particular emphasis to the services that government provide directly; ii) to take a preliminary look at government’s indirect role of intervening to influence the way markets work, iii) to draw lessons from different countries’ experience, and iv) to summarize the main findings of the paper.

Introduction

Practically all societies at early stages of their development have viewed industrialization as the main vehicle for improving living standards. It is not surprising, therefore, that governments have played an active role in promoting industrialization. This paper attempts to throw some light on this role and evaluates the various government policies in support of industrialization in developing countries in general.

The paper is divided into four sections. Section one considers the conditions under which governments are likely to make their best contribution to industrialization in a market-oriented economy and puts particular emphasis on the services that governments provide directly. Section two takes a preliminary look at government’s indirect role of intervening to influence the way markets work. Section three draws lessons from different countries’ experiences. Finally Section four summarizes the main findings of the paper.
Section One  
Government Contribution to Industrialization

The fundamental goal of economic development is to improve the welfare of the masses. Many governments have sought to use industry as an instrument to achieve this objective. The role of the government in accelerating industrialization varies greatly according to ideology, political structures, administrative capacity and the level of development. But despite this variation, governments have often been central to the industrialization process, whether as economic ringmaster in laissez-faire Britain of the past century or as central planner and provider in today's Soviet Union. Most developing countries, have tended also to rely on the private sector and on markets in their effort to industrialize.

The role of government in promoting industrial development in developing countries is vital for the following reasons:

1. The government has to see the rules of the game, which define the use, ownership, and conditions of transfer of physical, financial and intellectual assets. Irrespective of the type of economy - whether it favours private enterprise or is a command economy - these rules impinge on economic activity. The more they are certain, well defined, and well understood, the more smoothly the economy can work and the greater the chance of success of industrialization. (1)

2. The government must play a major role in education, including providing the basic skills of literacy and numeracy that are vital in modern industrial labour force. Lack of education, rather than physical assets, is the main bottleneck in industrialization.

The transition from a primarily agricultural and trading economy to an industrial economy requires, at least in the initial stages, an increase in the skills of the labour force. To use foreign technology effectively, producers must examine the choices available, make intelligent selections and adapt them to local conditions. All of this calls for education.

Also, the government can help, at least in the early period of industrialization, to promote industrial research and technological change, for example by setting up demonstration factories. Education spurs the process of industrialization by imparting skills, improving health, and allowing more women to enter the labour force. Education and investment in technological knowledge go hand in hand. Countries that neglect any one of these forms of investment may not be efficient in industrializing. China, Hong Kong, Korea and Singapore have all achieved a significant level of economic growth. All adapted a balanced investment strategy that included education along with increased physical capital and technological transfer. (2)

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3. The government may have to play an important role in advancing technology which is vital to the industrialization process. Often technological knowledge is a commodity that can be traded like many others, but it has some peculiarities which sometimes make trade difficult. These are frequently used to justify government intervention. Producers of technology often face high risks, since the outcome of innovation is uncertain and technologies can sometimes be easily copied. Purchasers of technology also face risks, because they often can not know just what they have bought until they acquired and used it. Thus firms may expend less technological effort than desirable if they are unable to reap the outcome for themselves. Governments can deal with the externality problem in several ways. (3)

   a) The government may allow firms to register patents.
   b) The government may subsidize technological effort.
   c) The government may attempt to promote specialised agents for technological development, usually publicly supported research and development institutes.
   d) The government may seek to establish technology information centres which could charge private users a small fee for access to their data bank.

4. The government must provide the physical infrastructure of industry; transport, communications and power systems. Although some parts of such systems can be, and are, profitably operated in the private sector in many countries, government provision of large systems in most developing countries is usually the only feasible option.

   Government involvement in the provision of transport, communication and power occurs for several reasons:

   a) There is a public goods argument in cases where user fees are difficult to collect, although governments can sometimes levy indirect user charges—they might finance roads, for example, from the revenues derived from gasoline taxes and license fees. (4)

   b) Large projects, telecommunications, railways and electricity and gas production, for instance - may involve economies of scale. In other words, a single investment might be more efficient than a number of competing investments.

   c) The preference in most countries for public enterprises may reflect a belief that control is better exercised through ownership than through regulation. (5)

   d) For large projects, underdeveloped financial markets or political risks might deter private investments.

5. Virtually all governments provide at least some commercial goods and services through state-owned enterprises. These enterprises are important producers of a broad range of industrial products such as steel, fertilizers, automobiles and petrochemicals. Governments have created them for a variety of reasons:

a) To spearhead industrialization in countries with virtually no large-scale industry.

b) To promote industries deemed to be of strategic importance.

c) To save threatened jobs.

d) To reduce the presence or prevent the entry of foreign-owned firms.

The state-owned enterprises would seem to operate efficiently when competition has been greater, when managers have had more financial autonomy, when poor performers have been removed and good ones have been rewarded, and when government interference with day-to-day operations has been reduced. (6)

6. Governments often intervene in markets to improve economic performance, to limit abuses (such as fraud and pollution), and to protect public health.

7. The government must take steps to increase the information available to producers and to protect consumer welfare. Governments have a comparative advantage in collecting and disseminating certain kinds of information, especially in developing countries, where information is scarce and education is poor. All governments provide basic statistical and other information on their own activities and on the economy in general. The government may also play a useful role as a clearing house for information and forecasts on domestic and foreign markets and technologies.

8. Governments also need to regulate to protect welfare through various regulations such as checking weights and measures, establishing health standards for food and drugs and air, land and water pollution, requiring product safety standards and product guarantees and imposing safety standards in the work place. (7)

9. The government may have to regulate financial markets to prevent abuses such as insider trading, to require companies to disclose more information and to require financial institutions to insure their smaller depositors. Fiscal and monetary policies are often employed to promote economic health and to achieve a variety of desirable social goals.

Experience suggests that the governments of market economies which have efficiently industrialized have, by and large, observed the hierarchy of priorities described above. They have established clear rules of the game, contributed judiciously to the construction of an industrial infrastructure, and otherwise intervened sparingly and carefully.

Some developing countries, however, have undermined their industrialization efforts by approaching these choices in reverse. In the more extreme cases, public intervention in markets has been heavy, but fragmented and in pursuit of conflicting objectives. (8) The rules of the game have been uncertain: These characteristics together, in many cases alongside an inadequate infrastructure - have resulted in poorly chosen industrial investments, high costs of doing business, and the devotion of substantial private resources to getting around the rules or obtaining special economic privileges.


Section Two
The Indirect Role of the Government in Correcting Market Failures

Governments intervene to ensure successful industrialization because markets fail to allocate resources efficiently that is, in a way that equates social marginal costs with social marginal benefits. There are many problems associated with market failure: the rise of monopoly, misdirection of investment, externalities etc. This section will examine the indirect role of government in correcting market failures.

1. Enhancing Competition

Monopoly exists when a single seller (pure monopoly) or a small number of them (oligopoly) can restrict output and raise prices in the absence of competition. Monopoly, however, is sometimes the most efficient way to allocate resources. Electric power and telecommunications networks, which benefit from economies of scale up to very high levels of output, are often taken to be natural monopolies of this kind. Governments may need to regulate prices in monopolized markets or devise policies to encourage new entrants. Many countries have adopted price controls. Often they have found that such controls are difficult to enforce because black markets mushroom and drive large sections of the economy underground. In addition multi product firms, such as those in the textile industry tend to compensate for price controls on one product by expanding production of uncontrolled products. As a result fewer "essential goods" are produced in favour of more "nonessential goods". For these reasons, governments try to rely more on subsidizing the consumption of essential industrial products. Well-targeted subsidies are preferable to price controls; although such subsidies reduce prices for consumers, they do not lower incentives to producers. But subsidies have often led to budgetary deficits and, in turn, to high inflation. Furthermore, once installed, subsidies can hard to remove. In Egypt in 1977 the government's attempt to reduce subsidies on a range of basic commodities led to riots.

2. Directing Investment Towards industrialization

The government may have to intervene, through regulations and fiscal incentives to guide private investment in industry. This has taken place at one time or another in many countries, including Benin, Brazil, Ethiopia, India, Indonesia, Liberia, Malaysia, Mauritania, Mexico, Pakistan, Sri Lanka, Tanzania, Togo and Zambia. This intervention reflects the view that markets fail to allocate resources according to national priorities. These priorities are often in development plans, and the regulatory and tax systems are used to ensure that plan priorities are reflected in the pattern of private investment. Other objectives include the prevention of industrial concentration, the promotion of regionally balanced industrial development and public sector control over

(12) R. Wade, op cit., p.167.
key industry. The most common tool of investment regulations is the industrial license. Under such system governments grant licenses for the creation of new industrial capacity according to their projections of future demand. The systems are often too complicated and tend to be implemented without previous planning. Also, licensing usually favours large firms over small ones because large firms tend to be better informed and can allocate more resources to deal with the licensing system. Moreover, to administer the licensing system effectively, the country needs a large number of skilled labour. This carries a high price, particularly in African economies, where skilled manpower is scarce.\(^{(14)}\) Furthermore, industrial licensing can engender corruption especially when the interpretation of rules is left to the discretion of a new officials.

Instead of using rigid systems to influence the pattern of investment, the governments of the developing countries should encourage new entrants and thus put pressure on the existing inefficient producers to improve efficiency. Governments which encouraged competition and avoided using rigid systems found that resources have been better able to respond to changes in incentives following trade liberalization and to flow to industries offering the highest financial returns.\(^{(15)}\) Firms in these countries are motivated to be more competitive since there are few legal restrictions to entry by new firms.

Governments in developing countries may also regard the regulation of foreign investment as a necessity for promoting industrial development. These regulations may require exclusion of foreign investment from some sectors, limitations on foreign equity participation, domestic content minima, export obligations, employment quotas, establishment of research and development facilities, training of nationals, appointment of host-country nationals to senior managerial positions, ceilings on repatriation of profits and royalties, and limits to duration of technology licensing agreements. At the same time, governments offer foreign investors a wide variety of incentives such as tax holidays, tax concessions, accelerated depreciation allowances, duty-free imports of capital goods, investment subsidies and guarantee against expropriation. This mixture of restrictions and incentives reflects an ambivalence on the part of some developing countries. On one hand fear that foreign direct investment may undermine their sovereignty, limit their tax revenues, displace domestic firms, blunt local initiative, introduce inappropriate technology, pollute the environment and squander exhaustible resources. On the other hand, they recognize that foreign direct investment augments domestic investment, transfers new technologies and avoids some of the risks of external borrowing. Many of the concerns about foreign direct investment arise when countries use protection to stimulate local output.\(^{(16)}\) Foreign (as well as domestic) investors can then earn financial returns that are much higher than the economic returns to the country. Thus, protection attracts foreign direct investment. But this can mean a net loss of foreign exchange for the developing country if the sum of repatriated profits and imported inputs exceeds the foreign exchange saved through local production. In such circumstances foreign direct investment can even reduce a country’s real income.

Many controls on foreign investors, therefore take the benefits from protection that accrue to foreign firms and channel them to groups within the country's such as organized labour, shareholders or domestic entrepreneurs. But this may deter foreign firms from investing in the first place. Controls seem to matter more than incentives to foreign investors. Most regard incentives as volatile and transitory. Empirical studies suggest that a country's natural resources, its recent growth performance and its political and economic stability are the factors that attract foreign investment. Countries that follow outward-oriented strategies tend to have fewer problems with foreign direct investment. Since a country following an outward-oriented strategy does not discriminate between import substitution and exports, it tends to attract foreign firms wishing to take advantage of its resources. Foreign investments, therefore, are more likely to align themselves with the country's comparative advantages and to augment domestic resources in fostering efficient industrial development.

3. The Role of Government in Coping with Externalities

Externalities occur when economic activities have spillover effects. For example, a polluting factory inflicts a negative externality on those who live downwind. In contrast a firm which invests in acquiring technical knowledge produces a positive externality when this knowledge passes outside the firm. In both cases, private costs and benefits are different from social costs and benefits.

Private investors will not undertake socially desirable investments which take time to come on stream or require a long learning process. The problem on how to finance a project in its initial, loss-making stage especially where a learning process is involved, is a common one. This may indeed be a problem if capital markets do not exist or do not work properly, as is frequently the case in developing countries. Also, entrepreneurs may fail to invest in projects that generate benefits for the rest of the economy because the investor would not be able to capture the benefits.\(^{(17)}\) One example of this would be investment in technical skills, embodied in individual workers who could then take their skills to a new employer. There would be no market failure if the firm were able to charge the workers for their training, but if this is prevented by laws, trade unions, or social convention, the private value to firms of investment in training will be less than the social value, and there will be underinvestment. In these situations government intervention may be warranted. However, this intervention should attack the problem of market failure nearest to its source. This may mean policies to make financial markets work better, to provide education or to establish a patent law rather than measures directed at particular firms or sectors. Also, the infant industry agreement could be pushed too far. Protection may prove counter productive in several respects. In many developing countries protection has become more or less permanent, so that the stimulus for infant industries to mature is removed. Indeed it has always created a gap between local costs and world prices too wide that it is unlikely ever to be bridged.\(^{(18)}\) Protection raises prices and therefore reduces domestic demand for the protected goods. By the same token, protection provides no stimulus to exports. This, in turn, inhibits the achievement of lower costs through greater economies of scale. To be effective, infant

\(^{(17)}\) G. Ruth, \textit{op. cit.}, p. 126.
industry protection must be implemented with a preannounced and credible time table for withdrawal and should be selective.

4. Government Policies Affecting Capital and Labour Markets

The government intervention in the capital and labour markets tend to have a direct bearing on industrial development in developing countries. In the majority of these countries, governments regulate interest rates to encourage investment in some sectors. Interest rates control also help governments finance their budget deficits, many state-owned enterprises rely on low-interest loans from the banking system and many governments require banks to buy low-yielding government bonds or place some of their assets in low-interest reserves with the central bank. Although interest rate controls and selective credit policies may serve specific purposes, they tend to have broad and, on the whole, unfavourable effects on the behaviour of savers, lenders and borrowers.

Also, government intervention in the labour markets, particularly through minimum wage legislation, is an important influence on real wages in manufacturing. Minimum wages, in conjunction with wage indexation can result in reducing employment and increasing the inequalities between the formal and informal sectors. These policies can also reduce wage differentials between skilled and unskilled workers and thereby reduce incentives for education and training.

Section Three
Countries' Experience with Government Role in Promoting Industrial Development

Most observers, however, stress the importance of strong, capable and honest government in these countries, close government industry relations (with a strong national consensus on economic goals), and domestic markets large enough to allow substantial competition. They also cite the selective use for import protection, concessional credit, policies to reorganize firms, and, in some cases, direct private investment to promote specific industrial activities. In some countries, intervention appears to have been the outcome of a collective decision-making process in which government acted as an agent for the exchange of information between firms. The pattern of public intervention has differed from country to country and overtime; for instance, in Korea, import protection was more important up to the 1960’s than it is now.

The success of some East Asian countries can also be attributed to the fact that they have, by and large, implemented policies that did not, in aggregate, discriminate between broad groups of industrial activity. For instance, the net effect of the incentives is more neutral between import substitution and export activities in Korea than in the great majority of the developing countries.

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Western Europe's largest economies have in fact pursued active industrial policies since the 1960's. Often these policies put greater emphasis on "first aid for ailing" (21) in France indicative planning was accorded some success in modernizing leading industrial sectors for a decade or two after World War II. The development of civil nuclear energy and the modernization of telecommunications are attributed to the public sector success. Intervention has been conspicuously less successful in such sectors as machine tools and steel. (22)

The role of government in facilitating transactions between economic agents in developing countries, where the level of information is often deficient and the policy making process often fragmented and ad hoc, is not an easy one. Moreover, although economic principles play a useful role in indicating the general conditions under which government action will be most productive, identifying the specific cases in which these principles apply and devising effective measures are often difficult. However, a clear hierarchy of priorities emerges for market-oriented governments seeking to industrialize effectively. First, developing the web of complex activities and relationships that characterize a sophisticated industrial sector becomes difficult, if not impossible, in the absence of clear, evenhanded and predictable rules of the game. These rules must be the primary concern of governments since only governments can provide them. Second, an efficient and adequate supply of infrastructure services such as transport, communications, power, and education is also vital to modern industry. Governments must make sure these needs are effectively met, but this does not always mean that the government should be the provider. In some cases, it may be more appropriate to regulate private monopolies in others, to allow competition among providers. Finally, governments also intervene to change the way markets work. For instance to prevent abuses, to improve welfare and to improve the pattern of investment or output. It is there that the government's task is most difficult. The dividing lines between measures that improve and those that worsen the conditions under which the private sector operates is often fine. Governments should use their scarce resources carefully. What is important is the particular way these resources are deployed rather than the right or wrong level of their development.

Conclusion

The main findings of this study may be summarized in what follows:

1. The process of industrialization needs, for its success, some economic services that only governments can provide, including certain central economic functions - legal, monetary and fiscal - and a welfare net for the poor.

2. The governments of market economies, which have effectively industrialized, helped in accelerating industrial growth by establishing clear rules of the game, contributing judiciously to the construction of an industrial infrastructure and otherwise by intervening sparingly and carefully.

(21) Duchene, Faud G. Sphere (eds.), Managing Industrial Change in Western Europe, France Printer, London 1987, p.94.
3. In some developing countries public intervention in markets has been heavy but fragmented and in pursuit of conflicting objectives. This has resulted in poorly chosen industrial investments, high costs of doing business and the devotion of substantial private resources to getting around the rules of obtaining special economic privileges.

4. Governments may need to regulate prices in monopolized markets or devise policies to encourage new entrants. However, price controls are often difficult to enforce. Well targeted subsidies are preferable to price controls. However, these subsidies often lead to budgetary deficits and, in turn, to high inflation. Furthermore, once installed, subsidies can be hard to remove. Encouraging new entrants into the industrial activities, would seem to be the safest device available to the government for fighting monopoly.

5. Regulatory and tax systems are often used to ensure that plan priorities are reflected in the pattern of private investment, to prevent industrial concentration, to promote regionally balanced industrial development, and to establish public sector control over key industries. Industrial licenses are usually used to regulate investment in industry. However, the system of licensing can be too complicated and is sometimes implemented ad hoc. Moreover, it usually favours the big firms and requires large numbers of skilled manpower for its effective administration. Further more, industrial licensing can engender corruption, especially when interpretation of rules is left to the discretion of a few officials. Governments which encouraged competition and avoided using rigid systems to influence the pattern of investment, found that resources have been better able to respond to changes in incentives following trade liberalization and to flow to industries offering the highest financial returns.

6. Governments attempt to redirect foreign investment to industry through a mixture of controls and incentives. Controls seem to matter more than incentives to foreign investors. Most regard incentives as volatile and transitory. A country's natural resources, its recent growth performance and its political and economic stability are the factors that attract foreign investment. Countries that follow outward oriented strategies tend to have fewer problems with foreign direct investment. These investments are more likely to align themselves with the country's comparative advantage and to augment domestic resources in fostering efficient industrial development.

7. Government intervention to promote industrialization in developing countries is particularly warranted when private investors do not undertake socially desirable investments which take time to come on stream or require a long learning process, and when entrepreneurs fail to invest in projects that generate benefit for the rest of the economy. However, government intervention should be through policies which make financial markets work better, which provide education or establish a patent law rather than through measures directed at particular firms or sectors.

8. Although it may be necessary to give new industries a "breathing space" through protection, the infant industry could be pushed too far. Protection may prove counter-productive in several respects and could become more or less permanent, so that the stimulus for infant industries to mature is removed. Protection should be selective and there preannounced and credible time table for its withdrawal.
9. Experience would seem to suggest that those countries who had successful industrialization in recent decades, had strong, capable and honest governments, close government-industry relations (with a strong national consensus on economic goals) and domestic markets large enough to allow substantial competition.

10. Governments of the developing countries must use their scarce resources carefully when attempting to promote industrial development. The problem is not so much the right or wrong level of resources deployed by the government, but rather the particular way these resources are deployed.

References

دور الحكومة في تحقيق التنمية الصناعية في الدول النامية

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المستخلص: يهدف هذا البحث إلى إلقاء الضوء على دور الحكومة في تشجيع حركة التصنيع في الدول النامية بصورة عامة، ويتناول البحث دراسة العوامل التي تسهم بتفعيل الحكومة لتحقيق نجاح التصنيع في الدول النامية، مع إشارة خاصة للخدمات المباشرة التي يمكن أن تقدمها الحكومة في هذا الصدد، بالإضافة إلى تقويم الدور غير المباشر الذي تلعبه الحكومات في التأثير على جهاز السوق من أجل الإسراع بالنمو الصناعي في الدول النامية، هنا إلى جانب إلقاء الضوء على خبرة الدول النامية التي دخلت مجال التصنيع حديثًا ودور الحكومة في إنجاح هذا التصنيع.

وينتهي البحث خلاصةً لأهم النتائج التي توصل إليها الباحث.