

# High Cost of Industry in Developing Countries – Causes and Remedies

*Why are industrial costs of developing countries well above international levels? What can be done to lower cost and increase efficiency? The author discusses some lessons of experience.*

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**I**N THE past two decades many developing countries have made massive investments in new industries and the infrastructure needed to support them. Often started in an environment that was socially, culturally, and economically unaccustomed to manufacturing activity, these industries have, at least in the initial phase, been unable to compete with industry in developed countries. The high cost of industry in the less developed countries often contrasts sharply with both the realized and potential productiveness of their agriculture.

High manufacturing costs put the developing countries at a disadvantage in competing with more developed nations and in getting the most in goods produced from their investment. Despite this cost disadvantage, many have found it hard to conceive of development without substantial industrialization efforts, not least because of the secondary benefits these are believed to bring—such as training and education or, more broadly, the transformation of society. The modernization of the economy and the formation of a technostucture, i.e., a highly trained force of workers with varying skills and qualifications, fully employed, and using up-to-date techniques, must necessarily extend to all sectors of the developing economy, to agriculture as well as manufacturing. But industry has often been expected to play a central role in the modernization of the economy. It is, therefore, important to know under what conditions industry in developing countries becomes efficient.

## *Exports Indicate Efficiency*

One way—perhaps the most telling way—of testing efficiency is to study the export performance of industrializing the less developed countries (LDC's).

In an earlier review of developing countries' export experience I singled out a few strategic factors which appeared to underlie unusually favorable export growth.<sup>1</sup> The *small* countries, or more precisely the countries with small shares in commodity markets, fared best in commodity trade. Export growth and agri-

<sup>1</sup> "The Export Performance of Developing Countries," *Finance and Development*, Vol. 5, No. 1, March 1968.

cultural growth went hand in hand. The most dynamic component of exports was *minor* exports, the many small and often new items other than the major internationally traded commodities, and these appeared especially sensitive to domestic price stability. The countries with relatively light and small-scale industries have performed better than those emphasizing development of complex and heavy industry. The latter had often experienced strong inflationary pressures (accompanied by periods of exchange rate overvaluation) which, in turn, put a damper on export growth.

Welding at the FUNDIDORA plant, Monterrey, the largest private steel company in Mexico: "Industry has often been expected to play a central role in the modernization of the economy." The modern facilities illustrating this article all have been financed with the assistance of International Finance Corporation investments.





The Malayawata steel plant, the first major steel facility and the largest industrial installation in Malaysia: "Some countries find themselves with far too many firms, all of them too small for efficiency."

These general findings stress the advantage of "openness," (or outward orientation), and of "smallness" in international trade position. They further underline the importance of price stability and of resource allocation—in particular in the election of light as against heavy industry and the proper emphasis on agriculture.

### *The Special Role of Capital Goods Industries*

In any judgment about a country's present or prospective competitive strength, the capital goods industries are of special importance. Their development requires the solution of the more difficult problems of organization, management, labor training, component supply, and markets. Their financial requirements bulk large in the development program and present a special burden on monetary and fiscal policy and development finance. The very policies pursued to meet these requirements may—if they enhance inflationary pressures—have a detrimental impact on the country's cost levels and competitiveness in international markets. As long as these industries continue to have high costs, they will place a burden on the rest of the economy, reflected both in the need for financial subsidies and the high cost of materials supplied to other industries.

The experience of capital goods industries in developing countries suggest a number of different factors which tend to influence their competitive strength in the process of growth.

### *Start-Up Costs*

First, and perhaps foremost, industries must pass through a start-up period—following construction of the plant—during which their production costs are high by international standards. The special costs incurred in this period are often associated with "infant industry"

arguments or the "learning period." The firm must train workers as well as management, get the plant operations started and build up volume to capacity, adapt production processes to local conditions, and open up supply channels. After some years of production the firm will want to upgrade the quality and size of its production.

Start-up costs in developing countries are higher than in well developed industrial countries. They may even exceed fixed plant costs. They require special financing arrangements lest production costs reflect for an unduly long period the disadvantages of getting started in an underdeveloped country.

Even after an initial start-up period LDC prices often will continue to be above those prevailing in international markets. The reasons why price differentials continue may differ greatly from product to product or country to country. They may be related to government policies or to the economic conditions characteristic of many LDC's.

### *Scale of Operations*

A second factor influencing the cost level is the size of the plant or, more generally, the scale of operations. A greater volume of production may make possible economies through better utilization of existing plant. It may also induce more capital-intensive techniques, better management and organization of work, and more specialization of production workers. Furthermore, when needed in larger quantities raw materials may be purchased at lower prices—a factor which is of special importance to, for example, the electrical equipment industry. Larger production units may also facilitate the adoption of new technologies, an important factor in many industries, especially those producing complex equipment.

The scale of operation has often been identified as the single most important factor underlying cost efficiency. But it may be well to recognize that certain types of capital equipment can be economically produced in small runs, sometimes to individual specifications, e.g., heavy trucks, heavy generators, or overhead cranes. Thus, while size is an important factor, it is not a universal or exclusive condition for competitive production.

### *Financial and Commercial Policies*

Exchange rate policy is of crucial importance to the competitiveness of industry in developing countries. Some countries have maintained unrealistic exchange rates, either over longer periods of time or intermittently, as adjustment in exchange rates lag behind inflationary trends. In the past, a tendency toward overvalued currencies has prevailed in some countries which

have emphasized industrial growth through import substitution. Industrial efficiency will be impaired by excessive reliance on centralized controls needed to bolster the exchange rate. Furthermore, overvaluation of the currency is bound to put an obstacle in the way of growth of production through exports.

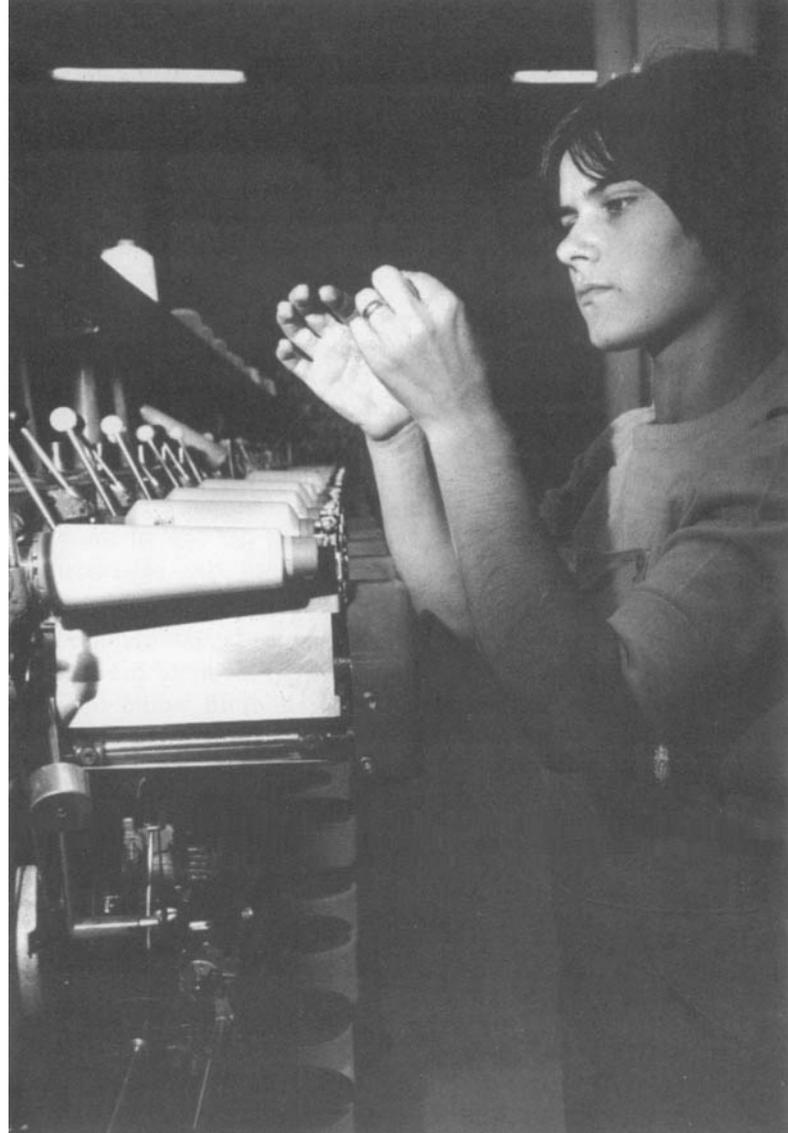
The degree of protection will be influenced by the level at which the exchange rate is maintained. In some instances the basic rate of exchange may be accompanied by surcharges or uniform duties applicable to broad categories of imports, while the basic rate itself is applied to most exports and in effect acts as a penalty on them. Such practices are not equivalent to maintaining a depreciated basic rate and doing without some or all of the surcharge. Countries producing capital goods would tend to be especially adversely affected. In their present phase of development they are able to diversify by increasing exports of new products, both manufactured and agricultural, which may be particularly sensitive to a more favorable exchange rate.

A higher level of general protection may itself be a cause of industrial inefficiency. Protection, especially when exercised through quantitative controls, will shield industry from outside competition and give it an inward orientation. This may be reflected in the structure of industry, small production volumes, high profits, tardiness in adopting new techniques, and so on.

Industries which seemed to have unduly high costs have, in practice, become competitive after adjustments were made in exchange rate policies. In recent years such changes have been made by a number of developing countries which have been establishing capital goods industries. Chances for maintaining realistic rates may be better once a country has passed through the initial and more difficult phases of its heavy industrialization.

Inflation accompanying substantial industrial investment and growth exerts pressure on internal cash generation of firms not able to increase the prices of finished goods as fast as the prices they must pay for inputs. The industrial enterprise is accordingly sensitive to the provision of short-term credit. Capital markets provide little help, since their functioning is handicapped by inflationary conditions.

Faced with inflationary pressures governments must often take measures to moderate the pace of expansion. These measures, affecting public expenditures as well as credit extension, impinge heavily on the demand for capital goods. LDC industries, confining their sales to the home market, are not able to offset domestic fluctuations by means of larger exports. Industries in several LDC's have probably been subject to more severe fluctuations than their counterparts in industrial countries. These fluctuations have aggravated the problem of excess capacity and high costs.



The thread department of the SIFAS textile plant at Bursa, Turkey: "Large production units may also facilitate the adoption of new technologies."

### *Development Policies*

Development policies will affect cost efficiency in various ways. One pertinent example is the impact of government policies on the structure of industry. Some countries find themselves with far too many firms, all of them too small for efficiency. The governments of these countries began by providing home producers with heavy protection. Then they sought to obtain competition by permitting several firms under the protection umbrella. The final result has often been high protection and low utilization of capacity. A classic example is the Argentine automobile industry.

In some countries the structure of industry can be made more rational through collaboration between government and business. This might involve consolidation of separate firms and larger production by individual units. At the same time, the industry may be encouraged to select product designs which will maximize cost efficiency in smaller production runs, e.g., by making less frequent model changes or using the same chassis for different vehicles.

Governments can also influence costs by requiring that the local component of production should not fall below a specified minimum. Since imported materials may be cheaper than domestic materials, the costs of inputs will go up as producers switch to domestic supplies. In some industries the cost differential rises sharply when the domestic content exceeds a certain proportion (e.g., 60 per cent in truck production) and begins to include the more complex components. The minimum domestic component is frequently determined without sufficient regard to cost considerations. Furthermore, international firms may control the prices of inputs of their subsidiaries, and set them at a level which appears high when compared with the cost of the final product. The premium thus charged may be increased as the import component is reduced.

Greater stability in procurement of capital equipment needed in the public sector would facilitate production planning and capacity utilization. Both would tend to make the industry's operations more efficient.

Adoption of these and other development policies favoring greater efficiency in manufacturing production will not, of course, establish overnight the same conditions as prevail in advanced industrial countries. Even under the best of policies there are factors which can be changed only as the country becomes more developed. These are the factors associated with the hard-core infant economy argument—the scarcity of skills, management, capital, the high cost of transport and supplier industries, lagging technology, and so on.

### ***Competition from Developed Countries***

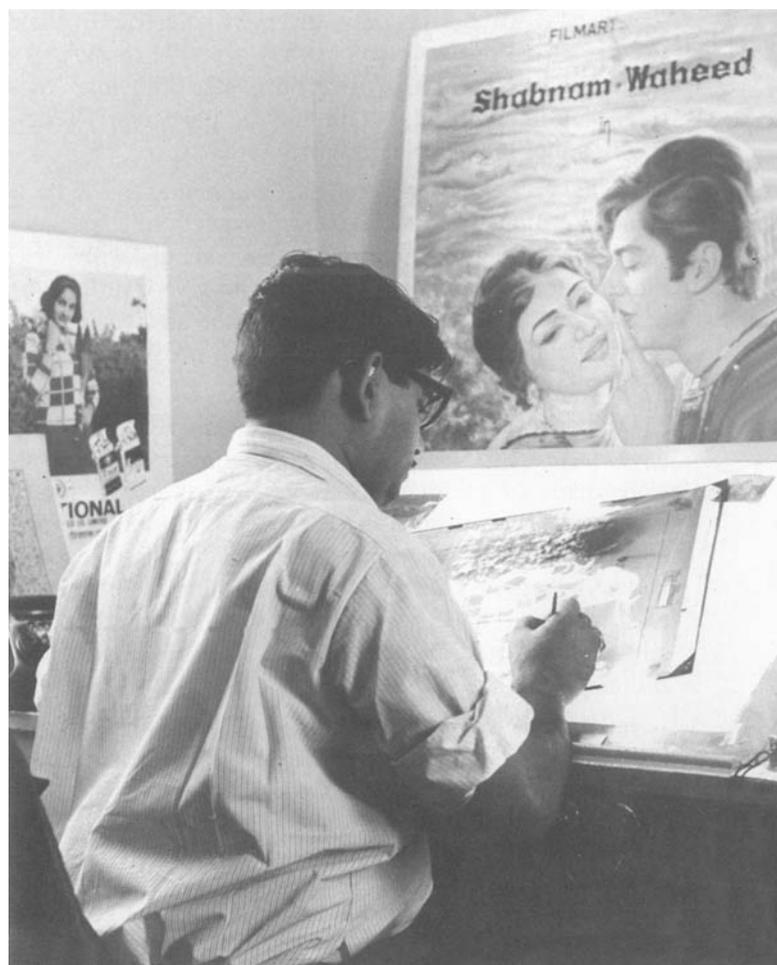
The cost-increasing factors in the developing countries must be seen in an international context. In the developed countries and on international markets a number of cost-reducing factors have been operating in recent years.

The economics of the capital goods industries in the *developed* countries differs from product to product. But because of its capital-intensive nature and the key role of technological factors in improving efficiency, many industries are characterized by a high degree of concentration. Furthermore, over the past several years *increased competition* within the United States or such regional blocs as the European Economic Community (EEC) or the European Free Trade Association (EFTA) has forced firms to consolidate with larger units or close down less economic units.

For some products, there exists restraint on entrance into national markets which make it possible for domestic prices to exceed export prices, sometimes by as much as 25 per cent. Such price differences may be maintained through industry control of markets or through government regulation of procurement (e.g., of electric power equipment).

Entrance to international markets is, of course, not subject to the same restrictions as apply to national markets. For some producers sales on export markets account for only a small portion of their production. Where overhead costs form a high proportion of total cost, or where demand for the final product is subject to marked fluctuation (as is common with capital goods), there is a strong inducement, especially in slack times, to offer for a small portion of output lower prices high enough to cover variable costs. Thus, industry in the LDC's is often faced with competing prices well below those prevailing in industrial countries.

The existence of some monopolistic tendencies in the developed countries should not obscure the fact that,



**Retouching a lithograph negative at the Packages Ltd., plant at Lahore, West Pakistan: "The cost-increasing factors in the developing countries must be seen in an international context."**

especially as concerns trade in manufactured goods, industrialized economies are generally more "open" than underdeveloped countries. Indeed, for several capital goods industries the competitiveness and efficiency in developed countries has increased steadily. Thus, while industries in LDC's are lowering their costs, prices of competing industries in developed countries may also have come down in the past five to ten years.

Generally, the developed countries will tend to be more efficient in industries requiring complex technology or capital-intensive techniques. Many capital goods industries are of this kind. Accordingly, effective protection of capital goods is often low compared with other products (intermediate and consumer goods).

### *Minimum Conditions of Greater Efficiency*

It will be clear that there is a wide range of factors which make for industrial competitiveness. The export experience of LDC's generally underlines the need for price stability as a factor in expansion of minor exports and the importance of small-scale as against heavy industry as a factor in the competitive strength of less developed countries. International comparisons of the experience with heavy industry suggest various cost-reducing factors operating in essentially different spheres. They are exemplified by three minimum conditions that are satisfied in most situations of reasonably efficient production:

- the producing country has a realistic exchange rate;
- the firm is reasonably well established—having passed through a start-up period of, say, five to seven years;
- the number of firms in the industry is not excessive.

The last two conditions also imply that the more efficient firms have established themselves in markets which may be considered large by LDC standards.

Taking a closer look at available cost data it would seem that even where these minimum conditions are satisfied domestic prices may still be as much as 15-25 per cent above comparable import prices. Such cost differentials may persist even under reasonably favorable circumstances and policies, as a result of the more deep-seated disadvantages characteristic of developing countries. Moreover, in countries where some industries are beginning to be competitive, others may be a long way from the goal—with protection margins going from 0 to 50 per cent, even in the more firmly established industries.

These price margins are based on a comparison of finished goods prices. They may be substantially smaller after appropriate allowance is made for the excess cost (compared with international levels) of raw material inputs which is beyond the control of the individual

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firm. In countries such as India, which make special provision through tax rebates or subsidies for these excess input costs, industry may be export-competitive even though its domestic prices are well above international levels.

### *Commercial Policy and Integration*

The foregoing discussion has immediate relevance for issues of protection in developing countries. Since agriculture is generally less protected and already produces, on the whole, the greater share of exports, these issues concern primarily manufacturing industry. The observations about the competitiveness of the capital goods industries can be extended to manufacturing industry in general. Studies of other industries suggest a level and structure of effective protection similar to the capital goods industries. However, in several countries capital goods are kept cheap and consumer goods industries receive more protection.

Of the various cost-reducing factors, no single one can be identified as being generally the most important. Each country and each industry will have its own mix of such factors. And for each, a different mix of measures may be needed to enhance competitiveness and promote exports. Thus, no individual type of measure will, as a rule, suffice in an effort to increase industrial competitiveness. This observation has important implications for the role of integration in industrialization and export promotion.

The case for integration is commonly based on the larger and therefore more economic size of industry made possible by the wider, integrated market. But it must be recognized that even the combined markets of several developing countries may be small in comparison with industrial countries. One would therefore hope that integration will be outward rather than inward looking. Furthermore, commercial policy must be supplemented by measures in the financial sphere as well as domestic development policy mentioned earlier.

Finally, if integration is to be an effective instrument of development it must extend to consultation on and harmonization of external financial policies and to many tenets of domestic policies, e.g., industrial structure, industrial and infrastructure investment, education and training of skills essential in industry, and stabilization and harmonization of investment plans.

