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Country Development Strategy Statement

FY 1984 Annex

Industry Sector Strategy for A.I.D.

Egypt

February 1982

Agency for International Development
Washington, D.C. 20523

BEST AVAILABLE

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FY 1984 CDSS ANNEX

EGYPT: INDUSTRY SECTOR STRATEGY FOR A.I.D.

USAID/Cairo

February 1982

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Annex to FY 1984 Egypt CDSS

EGYPT: INDUSTRY SECTOR STRATEGY FOR A.I.D.

This annex examines the main features of Egypt's industrialization relevant to A.I.D.'s strategy and programs, describes some of the policy changes needed to rationalize and speed up Egypt's industrialization process, and sets out a USAID strategy of assistance to Egypt's industrial sector.

I. ANALYSIS

A. Rationale for USAID Concern With Egypt's Industrial Sector

1.01 USAID is concerned with Egypt's industrial sector because industrialization is a major political objective for Egypt, because industry is the obvious source of self-sustaining economic growth for the country, because it is an important potential source of foreign exchange earnings, and because it is the major locus of future employment growth.

1.02 A fundamental reason for U.S. interest is that industrialization is a political objective of the Government of Egypt itself and of most politically aware Egyptians. Despite the long history of modern Egypt's attempts to industrialize, dating back to Mohamed Ali's efforts of the 1820s, Egypt has a remarkably small industrial base for its level of sophistication as a developing country. The Government of Egypt has directed a considerable share of planned investment since the 1950s into industry in its contemporary effort to achieve Mohamed Ali's goal. These efforts will continue, but the Government of Egypt needs to establish a policy framework more conducive to creating a pattern of industrialization that offers reasonable prospects of success.

1.03 Recent economic growth in Egypt has been led by exogenous factors: Suez Canal fees, petroleum exports, workers' remittances, and a construction boom financed in part by international aid flows and foreign investment. These factors have been reinforced by the Government of Egypt's attitudes and actions, for example: ensuring the technical competence of the Suez Canal Authority; coopting the international oil companies into the production and marketing of Egyptian petroleum; until now, permitting the conversion of workers' remittances in the own exchange market at more favorable rates than the official rate; and by encouraging (or at least permitting) the operation of a relatively free market in construction. Industry has expanded less rapidly than the leading sectors of the economy: the Government of Egypt's attempts to encourage industrial development, through Sadat's opening up of the economy to foreign investment and such tactics as the establishment of the industrial free zones, have not been sufficient to counterbalance the remaining mass of restrictions on free market operation of both public and private sector industry. Industry offers major scope for growth if

the private sector is permitted to expand its range of activities, if the public sector enterprises are run more efficiently, and if the policy framework in which industry operates is improved. Indeed, industry is the domestic sector that holds out the greatest hope for self-sustaining growth. Any major expansion of the value of agricultural output will be largely dependent on processing by agro-industry for the domestic market and for export. The growth of services is normally linked to the expansion of commodity production and needs an expanding commodity base. In addition, productivity is usually higher in industry than in other sectors, so that expansion of industry offers a direct prospect for raising average earnings.

1.04 Expansion of industry is also important for creating employment possibilities for both men and women to absorb increases in the labor force. Direct employment effects will be enhanced if price/cost signals are correct and Egypt expands relatively labor intensive lines of production in accordance with the country's relative factor endowments (plentiful manpower, scarce capital) and comparative advantage.

1.05 Development of export-oriented industry is needed to ease the foreign exchange constraint on expansion of industry itself and of other sectors which will result from the slower growth anticipated for foreign exchange receipts from petroleum exports, workers' remittances, and Suez Canal tolls. Foreign exchange is required for imported raw materials for domestically-oriented production as well as to cover the import requirements for consumption generated by incomes of workers in non-tradeable domestic activities such as construction. The indirect employment effects of manufactured exports through alleviating the foreign exchange constraint on growth of other domestic sectors may be as important for total employment as the direct employment effects of industrial production for export.

B. Current Status of Egyptian Industry

1.06 This section takes a quick look at several of the salient aspects of Egyptian industry reflected in the data presented in Annex A below. Data for 1980 are in most cases not yet available.

1. Value Added, Employment and Gross Investment

1.07 In the last half of the 1970s, around 17 percent of Egypt's gross domestic product (GDP) at factor cost originated in manufacturing and mining (excluding petroleum), with the share declining from 17.2 percent in 1976 to 16.6 percent in 1979 as a reflection of the rapid growth of some of the other sectors (petroleum, Suez Canal, transport, and trade and finance) (see Table 1). Industry has not been a motor of growth in recent years; the average annual rate of growth of value added in industry from 1976 to 1979 (7.2 percent) was below that for aggregate GDP (8.5 percent), although the Ministry of Planning projects growth in industry for 1981/82 at a rate higher than that for GDP.

1.08 The share of industry (including petroleum) in total employment came to 12.8 percent in 1979, rising steadily from 1976. The annual growth rate of employment in industry (including petroleum) from 1976 to 1979 (4.0 percent) was above that for total employment (3.1 percent).

1.09 The share of industry in total gross fixed investment reached 30.5 percent in 1977 but declined to 24.4 percent in 1979.

1.10 Half of gross value added in manufacturing in Egypt in 1975 originated in the production of basic consumer goods, about 41 percent in the production of intermediate goods, and 9 percent in the production of consumer durables and equipment (see Table 2).

2. Pattern of Ownership and Political Climate

1.11 Two-thirds of gross value added in manufacturing originates in public sector enterprises and only one-third in the private sector (see Tables 3 and 4). Using the manufacturing branch categories of the Cairo University Development Research and Technological Planning Center as frame of reference (Table 3), in 1977 the public sector predominated in beverages, tobacco, spinning and weaving, paper products, rubber products, chemicals, non-metallic products, basic metals, metallic products, non-electrical machinery, transport equipment, and other manufacturing. The private sector predominated in foodstuffs, clothing and footwear, printing, and leather products. The Ministry of Industry data (Table 4) identify wood products as a separate sub-branch where the private sector predominates.

1.12 The present ownership structure of industry in Egypt is the legacy of the wave of nationalizations carried out by the Nasser government in 1961, and justified *ex post* by the National Charter of May 1962. The National Charter affirmed that:

- the economic infrastructure, and the majority of heavy and medium industries and mining should be publicly owned;
- banks and insurance should be only in the public sector;
- all of import trade and three-quarters of export trade should be in the public sector;
- the ownership and control of internal trade could be in the private sector, but that the public sector would take control of at least one-quarter by 1970;
- land, buildings, construction, and light industry would be in the private sector but subject to rent control and land reforms.

At the present time, the public sector owns most of modern industry, banking, insurance and financial intermediaries, and a large proportion of construction firms, modern transport, and wholesale trade. Private sector ownership is limited to: rural and urban dwellings; small scale industry; most of retail trade; and part of transport, construction, manufacturing (leather, wood, printing), and wholesale trade.[1/]

1.13 As a result of the Nasser period nationalizations and the intervening 20 years of experience, public sector industrial enterprises are now essential to the functioning of the Egyptian economy: the major share of value added in industry originates in the public sector enterprises; the major portion of sunk investment in industry is in public sector plants; and public sector enterprises account for 60 percent of total employment in industrial establishments employing 10 or more. This high figure is, of course, partly due to redundancy of manpower in the public sector enterprises. In the short term, the fact of labor redundancy itself offers a potential for significant increases in total productivity if management is improved and if the price structure is rationalized.

1.14 Perhaps most important is the fact that at the present time, the public sector industrial enterprises produce essential inputs for medium and small scale private sector enterprises so that private sector industrial output and employment are often intimately dependent on public sector industrial output.

1.15 The "opening up" of the economy outlined in Sadat's October Working Paper presented to the People's Assembly in April 1974 and its sequel, Law 43 of 1974, has encouraged participation by foreign investors in Egyptian manufacturing but has not changed the basic structure of industrial ownership. Egyptian attitudes toward the open door policy have been ambivalent. The Government of Egypt is eager to obtain an inflow of investment funds into Egypt but is hesistant about its own loss of direct control of the economy that foreign investment may imply. The more efficient public sector enterprises are eager to establish joint ventures under Law 43 since the constraints imposed upon them by the central government are loosened once they become Law 43 companies. Private sector entrepreneurs would usually also welcome foreign investor participation but may lack enough capital of their own to present themselves as viable partners. In addition, the licensing of private sector participation in industry is still tightly controlled so that the energies of Egyptian entrepreneurs in the domestic economy have been directed toward trade, services, and construction rather than into industry.

1.16 Too often, many Egyptian government officials and their university counterparts tend to regard the private sector with hostility, as exploitative, non-productive, and profiteering. These labels are applied especially to traders. Since private sector entrepreneurs are

kept out of industry by the licensing system (administered by government officials), private sector energies have been channeled into trade (particularly importing). The imports visible in shop windows are "unproductive" luxury goods, and the bias is reinforced.

1.17 Present controls on industry date back to the period of Nasser's Arab socialism. The ideological heritage of Nasser, still strong among the middle class professionals, is reinforced by the bureaucratic and economic vested interests established over the last 20 years in government and in the public sector enterprises. Resistance to liberalization of the economy is therefore widespread. Although lip service is paid to the broad objectives of moving toward market conditions, the specific actions needed to reach these objectives do not find wide acceptance. And even when policy changes are accepted, the Government of Egypt has great difficulties in getting its administrative machinery to move in the direction of implementing them.

1.18 In spite of the general constraints on their activity, private sector industrial enterprises showed more rapid rates of growth in value of output between 1976 and 1980 than did public sector industry. 2/ Employment data are not particularly reliable, but private sector industrial enterprises appear to have been a significant vehicle for growth in employment at a time when public sector enterprises are being permitted to work off some of their redundant labor force. The potential for private sector industry to compete with the public sector is strong even within its present constraints; it will be still stronger if the extent of discrimination against the private sector is reduced.

3. Structure of Industrial Output and Exports

1.19 The range of Egypt's industrial output is indicated by the Ministry of Industry data on selected industrial products (see Table 5): spinning and weaving of cotton; foodstuffs, beverages and tobacco (sugar, cheese, preserves, cottonseed oil, oilseed cakes, soft drinks, beer, cigarettes); chemicals and rubber products (sulfuric acid, superphosphate and ammonium nitrate fertilizers, tires); engineering products (automobiles, trucks and tractors, buses, refrigerators, television sets), metallurgical products (reinforcing bars, steel sections, steel sheets, cast iron products, aluminum); mining products (phosphate).

1.20 Egypt's principal manufactured exports (see Table 6) include cotton yarn, cotton fabrics, cotton waste, carpets, knitted goods, clothing, made up textiles, fruit juices, alcoholic beverages, cigarettes, perfumes and cosmetics, essential oils, pharmaceuticals, leather products, footwear, printed books, wooden furniture, a bit of cement, iron and steel sheets, and aluminum bars.

1.21 The public sector accounted for 83 percent of the total of Egypt's industrial exports estimated for 1980: 95 percent of textile exports and 72 percent of other exports (see Table 7). However, private

sector industrial exports are growing faster (22.9 percent per year in current LE from 1977 to 1980) than public sector industrial exports (19.2 percent per year). Private sector exports to convertible currency areas have risen at a considerably higher annual rate (37.1 percent) than public sector exports to convertible currency areas (20.4 percent) or to bilateral account countries (16.1 percent).

4. Comparative Advantage

1.22 A number of studies have been carried out recently by the Ministry of Economy measuring the performance of Egyptian manufacturing enterprises using shadow prices for factor inputs and world prices for intermediate inputs and final outputs. These calculations permit a ranking of enterprises as producers and a rough evaluation of Egypt's comparative advantage (or lack thereof) in existing lines of production.

1.23 The set of data prepared by Heba Handoussa for 1977 and 1978 (see Table 8) ranks some of the public sector enterprises by financial rate of return (FRR) and then presents the social rate of return (SRR) after shadow pricing inputs and outputs, the effective rate of protection (ERP) received by the producer, and the domestic resource cost (DRC) of a dollar of manufactured exports or of import substitution. The use of social rate of return results in some marked changes in ranking compared with financial rate of return. Of the cases in the Handoussa list, aluminum, food canning, carpets, and cotton spinning showed major positive effective rates of protection; cement, fertilizer, tobacco, and some food processing and beverages showed high negative rates of protection. Domestic resource cost for most of the enterprises fell between the official exchange rate and the going parallel market rate at the time.

1.24 The standard calculation of domestic resource cost divides domestic resources used (in L.E.) by domestic value added at international prices (in $) to derive an L.E. per $ estimate. An alternative formulation of the domestic resource cost calculation used by Kheir El Din measures the ratio of domestic resources used (in L.E.) to domestic value added at international prices (in L.E. at the official exchange rate) (see Table 9). DRC ratios between 0 and 1, which indicate advantageous lines of production, appear in Kheir El Din's calculations for cement, cosmetics, food flavors, and some processed foods.

1.25 In addition to product and enterprise specific calculations, the study by Kheir El Din and Robert Lucas for the 1981 Boston University Industrial Sector Strategy Assessment Project[3/] also presents a set of effective rates of protection and domestic resource cost ratios by branch of manufacturing derived from the 1977 input-output table for Egypt using social costs and shadow prices (see Table 10). The effective rates of protection data show the following: three traditional manufacturing sectors (food, textiles, and non-metallic products whose major component

is cement) receive negative protection; leather products show up with a strong negative effective rate of protection because of a negative value added at world prices due to domestic price controls on shoes; beverages, wood products, electrical machinery, and means of transport show high rates of effective protection. Domestic resource cost ratios fall between 0 and 1 for food processing, spinning and weaving, and non-metallic products. Beverages, wood products, basic metals, electrical machinery, and means of transport show disadvantageously high DRC ratios.

C. Egypt's Need for Industrial Expansion

1.26 The expansion of industry offers an important partial solution to at least three of Egypt's closely linked problems: the need to increase employment opportunities; the need to increase the volume of goods available for domestic consumption and investment; and the need to increase foreign exchange receipts by exporting industrial goods produced in Egypt.

1. Employment

1.27 At present the labor market in Egypt is relatively tight[4/], primarily because of a decline in the supply of labor due to emigration of workers to the oil producing Arab countries as well as to Jordan and Sudan, but also because of an increase in the demand for labor due to high levels of internal demand and output in construction, services and to some extent manufacturing. However, the prospects are that some time in the not too distant future these factors will not be able to offset the increase in the labor force resulting from a projected 3.0 percent per year natural growth in Egypt's total population[5/] and the pressures for increased female participation in the urban labor force.

1.28 According to the estimates made by Gustav Papanek for the Boston University Industrial Strategy Assessment Project[6/], the number of new entrants to the labor force will come to about 440,000 per year by the mid-1980s. Even if net emigration continues at the 1979 level of 150,000 per year, most of the jobs needed to avoid increases in unemployment will have to be created in industry:

- Employment in agriculture, which has been Egypt's traditional employer of last resort, leveled off after 1972 and has actually been declining since the mid-1970s (to the point where the Government of Egypt keeps trying without success to prevent the emigration of agricultural laborers to take up more lucrative employment in the Gulf states and elsewhere). With almost absolute constraints on the expansion of cultivable land area in Egypt, despite efforts to reclaim desert lands, a further decline in the agricultural labor force is, nevertheless,

desirable from the point of view of productivity and per capita incomes. There may, however, be some prospect for expansion of agricultural employment in high value fruit and vegetable production for the food processing industry and for export.

- Government and, to a lesser degree, public sectory industry, are already crowded with redundant workers, whose numbers should be reduced and not increased.

- Employment in construction has increased rapidly since the mid-1970s but is likely to be vulnerable to exogenous factors such as foreign aid, foreign investment, workers' remittances, and government construction and reconstruction programs.

- Some expansion in employment in trade, transport and services is likely and desirable, but these in part reflect trends in industrial output.

Papanek estimates the increase in employment in industry (manufacturing and mining) needed by the mid-1980s to be around 300,000 per year, which is almost 3.5 times the number of new jobs in industry in 1985 implied by projecting the 1979 level of employment in industry to 1985 at the 1975-1979 growth rate of 4.4 percent per year. The target magnitude will depend on actual developments in emigration and in the absorption of labor into agriculture, but the need for more rapid expansion of employment in industry is clear.

2. Consumption and Investment

1.29 With rising incomes, consumer demand for industrial goods is increasing. Increased productivity in existing lines of production and a widened range of domestic production at competitive prices will help ease the satisfaction of consumer demand in Egypt for goods that are now in relatively short supply.

1.30 Most of the equipment items entering into investment in Egypt are imported. With the development of local engineering production, an increasing share of equipment purchases could be supplied by domestic producers.

3. Exports of Industrial Goods

1.31 Egypt needs to expand industrial exports both to ease future balance of payments constraints and to sharpen incentives to efficient production. An increase in economically efficient production of tradeable goods in the commodity producing agricultural and industrial sectors will make it possible to supplement stable or declining foreign exchange receipts from petroleum exports, Suez Canal tolls, and workers

remittances as well as to help contain prospective increases in imports. At the same time, competing in export markets will put greater pressure on producers to be efficient than does protected import substitution.

1.32 The two effects will combine to help increase employment opportunities in the Egyptian economy: since manufactured exports are likely to be labor intensive, they will have a direct effect in expanding employment; and manufactured exports will ease foreign exchange constraints on expansion of domestically oriented activities which also create employment.

1.33 On the basis of the rather shaky study on Egypt's comparative advantage cited above, Robert Lucas of Boston University takes a preliminary stab at identifying existing industry sub-branches and products "where further investment seems warranted" 7/ and which by extension are capable of generating exports. Lucas' list contains the following products, which are generally based on local materials and/or are labor intensive:

Food processing:

- Food flavors
- Vegetable oils
- Jams and marmelades
- Biscuits
- Confectionary
- Starch

Soft drinks and sodas

Textiles:

- Rayon filament
- Nylon carpets

Leather products (especially bags)

Cotton Underwear

Cosmetics

Cement

Bicycles

The list does not take into consideration goods not yet produced in Egypt but which could be exportable.

D. Constraints on Industrial Expansion

1.34 Egypt's industrial expansion is inhibited by a number of factors, among them price/cost distortions, institutional constraints, administrative restrictions on private sector operations, inefficiencies of public sector industry, the narrowness of the domestic Egyptian market, and the difficulties of breaking into export markets.

1. Price/Cost Distortions

1.35 After almost 30 years of administered pricing related to political objectives, the Egyptian economy is riddled with anomalies in the relationship between fixed prices and subsidized costs. Wages in the public sector enterprises are set by civil service standards which are frequently not really applicable to the industrial skills being compensated. Supplements to wages and salaries (social charges) weigh heavily in compensation of employees in both public and private sector enterprises. Minimum wage legislation sets a floor to wages that is almost irrelevant in a period of market buoyancy but can have a jolting effect on enterprise costs when sudden jumps in the minimum wage are decreed. The low price of electricity and the unchanged price of petroleum products sold domestically represent all pervading input subsidies which distort investment and market decisions. Expensive long staple Egyptian cotton is supplied at subsidized prices to Egyptian textile mills to produce low quality price-controlled cotton goods for local consumption. Rationed credit is provided (particularly to public sector enterprises) at interest rates which are clearly below market rates. Foreign exchange is made available to public sector enterprises at an official exchange rate that at present represents a subsidy to the recipient enterprise, while private sector enterprises pay relatively free market rates for foreign currency in the own exchange market. As pointed out above, price controls on shoes result in a negative domestic value added for the leather products branch when inputs are valued at world prices. The longer such a system of price controls and offsetting subsidies lasts, the more difficult it will be to rationalize the results subsequently.

2. Institutional Constraints

1.36 Industrial expansion is also constrained by a variety of institutional factors. Job skills are often lacking in both the public and private sectors, owing in large part to the large exodus of skilled labor to higher paid jobs in the Middle East, and to the generally low quality of Egypt's vocational education. Adaptation of new technologies in a number of subsectors has fallen behind or is behind developments in other industrialized countries. Quality control and insufficient knowledge of marketing information inhibit export activities. In another area modern management techniques have not been adequately advanced. Of course a number of these constraints can be addressed by such

considerations as profit levels, management incentives and the like. At the same time, however, a strengthening of the institutions, both public and private, which support or promote skills, technology, and managerial development is essential.

3. Restrictions on Private Sector Operations

1.37 As noted earlier, there are a number of philosophical and structural biases against the private sector in Egypt stemming from the Nasser period. There are also specific biases against the private sector as compared with the public sector in terms of access to credit and raw materials, pricing of inputs, and exchange rates for foreign currency.

1.38 Expansion of private sector manufacturing is hampered most, however, by the administrative restrictions imposed by the Ministry of Industry, starting with the decision to reserve certain manufacturing activities for the public sector. The phenomenon is nicely illustrated by the recent history of refrigerator and washing machine production in Egypt. Domestic production of refrigerators is at present restricted to one public sector company producing under the brand name of Ideal. Since domestic demand is far in excess of the production of Ideal, in the mid-1970s a number of proposals for expanding production were submitted to the Ministry of Industry, which decided to expand production through a joint venture between Ideal and Thompson of France[8/], keeping Ideal (whose director at the time was at the same time Minister of Industry) as the sole producer in Egypt and rejecting joint-venture proposals by General Electric and others. The workers of Ideal then went on strike against the proposed joint venture, on the grounds that Ideal did not need foreign technical input and that Thompson was putting in only a minimal amount of capital; the strike forced abandonment of the joint venture. Consequently, after perhaps five years of discussion and negotiation, in 1980 there had still been no expansion of the domestic production of refrigerators in Egypt. More recently, Ideal has expanded production somewhat, assembling components from abroad. The joint venture idea has been abandoned but there has been recent talk of buying a license from abroad to acquire new technology. In December 1981, the current Chairman of the Board of Ideal announced the company's intention to produce one million refrigerators a year "over the next three years."[9/]

1.39 By way of contrast, the decision was taken in 1978 or 1979 to open up production of clothes washing machines to the private sector, and there are now dozens of small producers designing and manufacturing a variety of washing machines (whose motors are imported). In the speech quoted above, the Chairman of the Board also announced that Ideal would start production of a "mini" washing machine in January 1982 and intended to open a production line to produce fully automatic washing machines, also "over the next three years." Market entry is clearly asymmetrical: the public sector has access to any domestic market; private sector access is subject to administrative veto.

1.40 A new private company law issued on October 14, 1981, to take effect in April 1982, is intended to ease some of the legal restrictions on company operations. The new law modifies several provisions introduced in 1961: it reduces the number of employees on the Board of Directors from four to one; it repeals a provision setting a maximum salary at L.E. 5000 although it specifies that the Council of Ministers may impose minimum and maximum limits; it permits a change in a company's line of production; and it provides some protection to shareholders. However, to make the law effective the government will have to issue the executive regulations actually implementing it. There is some uncertainty as to when the regulations will be issued.

4. Inefficiencies of Public Sector Industry

1.41 Redundancies in the public sector enterprise work force are one of the major causes of inefficiencies in public sector industry operations. Overstaffing on a large scale dates back to the 1961 - 1962 nationalizations when working hours in public enterprises were officially cut back from 48 hours per week to 42 and additional workers were hired beyond replacement needs. Law No. 14 of 1964 guaranteeing employment for intermediate level and university graduates further increased the pressure on the public sector enterprises to hire excess personnel. Forced hiring by the public enterprises was terminated in 1978 (redirecting the flow of graduates to the government agencies). Since then the public enterprises have begun to reduce the volume of their surplus manpower and, as a consequence, to improve their profit position. Redundancies nevertheless remain large in many firms and are not likely to be eliminated simply by attrition.

1.42 Related to manpower redundancies in Egypt's public sector enterprises is the lack of flexibility in the system of personnel incentives at all levels from manager to the shop floor. At the manager level, an incentive system needs both monetary and non-monetary components to be effective, with monetary incentives tied to performance measured against a reasonable set of criteria. The bonus has to be big enough to affect managerial behavior; the performance level to be rewarded should be sufficiently high to require extra effort; and progressively higher levels of bonus should be triggered by progressively higher levels of performance.[10/] At the shop floor level, what is needed is a less rigid system of wage determination than that at present in force.

1.43 Under Public Sector Labor Law No. 48, 1978, the board of directors of a public sector enterprise has the authority to determine wages and salaries in line with job evaluations for incentive and recruitment purposes within maximum and minimum wage levels set by the government. In fact, the lower paid workers benefit from cost of living allowances and minimum wage legislation, while incentive wages have in too many cases become accepted supplements to employee income rather than

rewards for increased and improved performance. Overtime and incentive pay have frequently become vehicles for general wage-drift, partly to compensate for increases in the cost of living, rather than instruments for rationalizing the employment structure of enterprises. Two exceptions exist: some enterprises have succeeded in introducing piece-rate work; and temporary appointments can be made at special salaries.11/ There are at least some public sector enterprises that have used these exceptions to allow "incentive payments" more truly to serve as incentives.

1.44 The report of the 1980 ILO Employment Strategy Mission to Egypt suggests that pay differentiation between specializations should be introduced to help adjust supply to higher demand for specific types of skills such as engineers and technicians of various kinds. In fact, this is already occurring in some public sector enterprises. Among blue-collar workers in public sector enterprises, however, there is likely to be resistance to changing existing wage differentials on equity grounds. One possible avenue for change is collective bargaining. Since wage differentials are much greater in larger scale private sector enterprises than in the public sector enterprises, collective bargaining on an industry-wide basis including both private and public sector enterprises in any given industry might lead to an acceptance by blue-collar workers of wider differentials in the public enterprises.12/

1.45 A further basic cause of economic inefficiency in Egypt's public sector enterprises is the administered rather than market oriented investment decisions that emerge from the planning process itself. Industrial investment is planned in terms of material balances, a "naive" input-output technique developed by Soviet planners in the 1930s and exported to India and Egypt in the 1950s by economists from the Sorbonne in Paris. Decisions on what commodities should be produced domestically are taken by filling in gaps in production of goods needed for final consumption or intermediate luses, but often without serious consideration of relative costs of alternative lines of production or of costs of domestic production relative to the cost of imports. These decisions are imposed upon (or willingly adopted by) public sector enterprises and financed by direct access to the central government's investment budget. Furthermore, subsequent implementation of the investment decisions is subject to a variety of ideological, political and personal interests. The consequences for the economic rationality of the structure of investment are eminently unfavorable. In addition, current operations of the public sector firms are hampered by the administrative restrictions imposed by the General Organization for Industry (GOFI).

5. Demand Limitations

1.46 Among the obstacles to more rapid growth of manufacturing industry in Egypt is the narrowness of the domestic market. Despite the absolute size of the population (40 million souls are not a negligible

quantity), incomes are low and purchasing power for goods and services beyond the basic needs for food, shelter and a minimum of clothing is limited. For categories of goods whose output is in plentiful supply (e.g., footwear), production capacity is well in excess of even potential domestic demand. The demand of the higher income groups for sophisticated consumer goods is likely to turn toward imports which have a certain snob appeal. In many cases such demand is not large enough for any particular item to justify domestic production of an import substitute.

1.47 Production for export offers a solution to narrowness of the domestic market, but it is not an easy solution. Export markets are not easy to break into, competition is keen once entry is achieved, tastes in the industrialized countries are volatile and further subject to rapid change due to massive pressure from the advertising media. Exports require not only competitive prices at the producer level, they also require a rational exchange rate, appropriate financial incentives, and active marketing by Egyptian exporters determined to penetrate highly competitive export fields.

E. General Issues

1. Economically Efficient Industrial Output

1.48 Employment patterns are determined largely by product patterns. The aim of industrial planning should be the creation of a pattern of economically efficient industrial output. In view of Egypt's factor endowments, this implies a relatively labor intensive pattern of output which takes advantage of Egypt's plentiful labor supply and relatively low wages. It does not, however, exclude goods whose production is relatively capital intensive if their production makes efficient use of domestic resources and particularly if such goods are essential inputs for labor intensive commodity production further down the line. (The classic example of such a good is plastic raw materials whose production from petrochemicals is highly capital intensive but whose downstream uses are labor intensive.)

1.49 Economic efficiency implies reliance on markets to determine the prices upon which consumers, investors, and public officials make their decisions. (Technological efficiency implies maximization of the value of output for a given set of inputs, given the price system.) Reduction in the extent of non-market distortions in factor prices is an essential prerequisite to rational choice of industrial projects, since relative factor prices affect both product choice and technological choice.

1.50 Since labor is complementary to capital as an input to increased production, foreign aid which increases the availability of capital in an expanding economy leads to, and in fact may be essential to, the creation of additional employment opportunities. Nevertheless, we should be aware

that there is also an implicit bias toward capital use inherent in providing foreign aid for recipient country investment: easing the supply of investment funds will tend to lower interest rates, thereby reducing the cost of capital relative to the cost of labor. The bias will be intensified if, in addition, the imported investment goods funded by foreign aid are made available to the investor at an exchange rate lower than the free market rate, implying a subsidy to capital. The provision of industrial infrastructure also represents an indirect subsidy of capital, but it is usually external to the enterprise.

1.51 Product choice for the private investor depends to a great extent on expected rates of return. For the government planner, new product lines leading to a "balanced" domestic input-output structure may be intrinsic and independently desired goals. The criterion of acceptable rates of return should be imposed on the government decision makers as a planning device if they are not directly subject to market discipline.

1.52 Economically efficient production of tradeable commodities implies compatibility between import substitution and export promotion: if a product is economically exportable it is the equivalent of an import substitute; if an import substitute is economically efficient, it is exportable.

1.53 In general, it is desirable to promote Egyptian production of industrial goods for both consumption and investment; but the more sophisticated industrial goods may not yet be within the range of Egypt's comparative advantage.

2. USAID Support to Public Sector Enterprises

1.54 Initially USAID's support to the public sector reflected a need to mount a program in a sector of obvious political and economic importance to Egypt. After years of economic mismanagement during the Nasser era, deferred investment, and lack of access to foreign exchange, the entire sector was operating at a low level of efficiency. Early program interventions were concentrated on the supply of basic raw materials, intermediate goods and spare parts under the Commodity Import Program and a limited number of discrete investments. More recently, a three-part approach has been developed: a continuation of the Commodity Import Program support in the form of raw materials, intermediate goods and spare parts; rehabilitation and debottlenecking activities designed to improve efficiency of existing plant (investments in new plant and expansion being limited primarily to the private sector); and concentration on the institutional support aspects of industry (in both the public and private sectors), including vocational training, management upgrading, technological adaptation, etc..

1.55 In view of A.I.D.'s current emphasis on promotion of private sector activity in countries receiving U.S. assistance, what is the justification for future U.S. assistance to Egypt's public sector industrial enterprises? The answer is that public sector industry in Egypt represents such a large and permanent portion of the economy that any donor concerned with potential growth, employment, export earnings, and ultimately expansion of the private sector (given the historical interlinkages between the public and private sector) perforce needs to be concerned with greater efficiency and productivity in the sector. For the donor, however, the operative question should center less on the question of public ownership and more on whether the public sector can be brought over time to a level so that it (or parts of it) can compete favorably on essentially market terms.

F. Desirable Policy Changes

1.56 There are a number of policy changes which, if adopted, would help the expansion of production and employment in Egyptian industry. The statement below distinguishes policies that apply to industry in general from those applying specifically to the private sector and those applying directly to the public sector enterprises.

1.57 USAID's approach to promoting appropriate policy changes is that we should define the direction and general nature of industrial policy reforms the U.S. will support, but should look to the Government of Egypt to propose specific policy solutions. The basic objectives of USAID in the area of industrial policy reform are two-fold:

- to support the expansion of the private sector share of industrial production, both in areas where the private sector is already significant and into areas of industrial production monopolized or dominated by the public sector;

- to support policies which promote increased efficiency and productivity in the existing public sector industries.

1. Industry in General

1.58 One set of general policy changes would be those leading to the gradual elimination of the cost and price distortions discussed earlier. Such changes would include:

- reduction or elimination of the current implicit subsidy on petroleum products and on electricity;

- adjustment of anomalies such as the coexistence of an implicit tax on cotton sold to domestic spinners and a

subsidy on yarn or fabrics, or such as tariffs on imported inputs important to the production of a good receiving heavy protection[13];

- introduction of capital cost considerations into enterprise operations (particularly in the public sector); raising of the prime interest rate to, say, 5 percent above the inflation rate (i.e., charging borrowers a real interest rate of, say, 5 percent) in order to discourage excessive capital intensity;

- introduction of user costs high enough to reduce the subsidy on public utilities (water, sewerage);

- rationalization of the system of purchase prices for farm products from domestic producers, making implicit subsidies to consumers explicit as a partial adjustment to the price distortions created by the political imperative to subsidize low income urban consumers.

1.59 Another general set of desirable policy changes would establish effective export incentives for industrial (and other) goods. As stated by Paul Clark, the central aim of industrial export policies should be to raise the profitability of export sales relative to domestic sales.[14] Specific export incentives will have to be devised to offset existing handicaps to expansion of industrial exports. Such handicaps include: the presumably temporary downward pressure on the exchange rate exerted by exports of petroleum and receipts of workers' remittances; the likelihood that domestic price inflation will exceed international price inflation without any offsetting devaluation of the official exchange rate for foreign currencies; and the cost raising effects of import substitution. Possible export incentives include:

- upward adjustment of the official exchange rate applicable to public sector transactions, and continuation of the own exchange system to permit giving industrial exports the higher exchange rate ruling in the relatively free own exchange market;

- establishment of a system of tax rebates, to replace the inadequate customs drawback scheme currently in force, that will offset domestic protection on material inputs used in production for export;

- introduction of a special export credit at a preferential interest rate, e.g., to finance the time lag between shipment of exports and receipt of payment from foreign customers.

1.60 As described by Paul Clark, two elements would enter into the calculation of the amount of the tax rebate for an exported product: the rebate would include both customs duties (and associated import taxes) and domestic excise taxes (and similar indirect taxes) that are embodied in the costs of inputs; and it would refer both to imported inputs used directly by the producer and to the indirect import content of domestically supplied inputs. The amount of direct and indirect imports should be calculated marginally, recognizing that for many materials that are partly imported and partly produced domestically, the marginal source is imports. A standard tax rebate should be estimated for a particular kind of product, using standard information about the composition of inputs and the marginal share of imports, thus avoiding the necessity to estimate or justify the rebate for each individual company. With a standard rebate for each kind of product, stated as a percentage of its value, an exporter would simply have to demonstrate the kind of product being shipped in order to become eligible for the rebate.15/

1.61 It should be realized, however, that export incentives will not eliminate the effects of distortions in internal price signals (particularly Egypt's subsidized energy prices); input price distortions will be incorporated into exports that do not represent real comparative advantage.

2. Private Sector Enterprises

1.62 One set of desirable policy changes affecting private sector industrial enterprises would be a relaxation of restrictive provisions in legislation concerning private sector companies. The new company law which becomes effective in April 1982 deals with some of the legislative restrictions currently in force; actual effects will depend in part on the way the law is administered. A proposed change in the income tax law to reduce or eliminate discrimination against profits as compared with income from interest would stimulate the flow of savings into investment in private sector productive activities.16/

1.63 A basic change in policy would be to ease the licensing system for entry into fields of production now reserved for the public sector by administrative decision. There are pressures in this direction from within the groups advising the Ministry of Industry on new lines of production. These should be identified and supported.

1.64 Equal access on market terms to investment financing by both private and public sector enterprises would be another desirable policy change. In view of the recommendation concerning interest rates made above, this equality of treatment should be achieved by making lending terms harder for public sector enterprises and not by making them easier for private sector enterprises.

1.65 Equal treatment for the private and public sectors with respect to access to raw materials and to foreign exchange, and to the prices for such imports, would be another desirable change.

1.66 The promotion of small scale industrial enterprises deserves special attention in any strategy for industrial development in Egypt. In practice, this would imply an expansion of the activities of the Small Scale Enterprise Department of the Development Industrial Bank or the creation of additional institutions to provide credit and technical assistance to small scale industrial enterprises.

3. Public Sector Enterprises

1.67 Desirable policy changes affecting the operations of public sector enterprises would include:

- granting of greater autonomy to public sector enterprise managers;
- establishment of an evaluation and incentive system for public sector enterprise managers to go along with their greater autonomy;
- financing of investments on banking criteria rather than on the basis of the Ministry of Industry's administrative and budget decisions;
- clearer rationalization for and delineation of industry sub- branches "reserved" for public sector enterprises.

a. Greater Autonomy

1.68 Greater autonomy for public sector enterprise managers implies several components:

- The component most relevant for the current financial results of the enterprise would be greater flexibility in the setting of output prices and greater freedom in shopping around for lower input prices. In effect this would be an element in the reduction of price distortions called for above.
- A component relevant to the day to day management of the enterprise would be greater flexibility in hiring and (in particular) firing personnel. After two decades of extreme bureaucratization of the personnel system and the building in of innumerable vested interests, this would be particularly difficult to carry out.

- A component relevant to the pace and direction of future growth of the enterprise would be greater autonomy in investment decisions and in access to investment financing. In order to make this last suggestion operational, access to investment financing would have to be constrained by economic rationality and justified by future profitability.

- Implicit in the previous component is greater autonomy in deciding on the enterprise's product mix, including the option of dropping a product line which is unprofitable to the enterprise but considered "essential" by the government. A necessary check on the public sector enterprise manager's autonomy should, however, be competitive entry by the private sector.

b. An Evaluation and Incentive System

1.69 Setting up an evaluation and incentive system for public sector enterprise managers would have two elements:

- establishment of effective criteria of good management, after taking account of exogenous factors such as price changes and quantity of capital and after allowing for noncommercial objectives imposed on the enterprise by the government as the representative of society;

- establishment of an incentive bonus system (as distinct from merely linking some portion of compensation to a performance indicator).17/

c. Capital Financing on Banking Criteria

1.70 Greater autonomy in investment decision-making would require a change in the present system of financing public sector enterprise investments, with greater emphasis on banking criteria and less reliance on administratively determined central government investment budget allocations. Financing of the investments of Egypt's public sector enterprises on the basis of investment banking criteria would require a major change in the present mode of operation of the Ministry of Industry and of the General Organization for Industry (GOFI), namely a shift from straightforward allocation out of the government's investment budget to borrowing from the banking system on commercial criteria. Funding public sector enterprise investments through a National Investment Bank instead of through the national budget would not automatically achieve this objective if the former merely acts as a

surrogate for the latter. The National Investment Bank would have to apply investment banking commercial criteria seriously in order to effect a change.

d. "Reserved" Sectors

1.71 The rationale for "reserving" sub-branches of industry for public sector enterprises should be re-examined by the Government of Egypt. Some sub-branches considered essential (for defense reasons, or because they produce "essential" basic or intermediate goods) will continue to be reserved for the public sector, protected against outside entry, and subsidized against commercial losses. Such sub-branches should be better delineated. In the other sub-branches now reserved for public sector enterprises, the degree of protection and subsidy should be reduced, and the door opened to private sector competition.

II. STRATEGY

A. Objectives and Instruments

2.01 As has been stated previously, USAID is concerned with Egypt's industrial sector because industrialization is a major political objective for Egypt, because industry is the obvious source of self-sustaining economic growth for the country, because it is an important potential source of foreign exchange earnings, and because it is the major locus of future employment growth.

2.02 This last point merits special emphasis. As the employment annex to this CDSS points out, under all but the most optimistic of projections, Egypt will face an increasingly serious employment problem in the not too distant future. Egypt's future economic health and likely its continued stability will depend in large part on its ability to bring about self-sustaining productive employment for its growing labor force. Thus, employment is a major element of this industrial strategy.

2.03 The question remains, however, how is future employment to be provided in the industrial sector? In the past the public sector industries (along with the Government) were the employers of last resort. More recently, overall employment levels in public sector industries have remained relatively static and there have been some attempts at rationalization of employment within these levels. The question of employment is increasingly an issue of public debate. While the debate continues, there is at this time no consensus within the government as to how the industrial sector can best serve employment needs -- whether, for example, employment objectives can be realized through a statist "directed" approach or through a more liberalized market orientation. It is USAID's view and the central thesis of this strategy, however, that employment goals will be effectively realized best through a policy of rational self-sustaining growth which maximizes the productivity and efficiency of both the private and public industrial sectors. The former will in the short term provide most of the new jobs; in the latter case, public sector manufacturing, with an estimated 67.6% of the industrial labor force, offers an opportunity to rationalize the existing labor force plus expand employment opportunities in the future.

2.04 Expansion of the industrial sector can be realized through the interaction of several factors:

- increased total investment and savings on a continuing basis in the public and private sectors;

- improved efficiency in the industry sector, both public and private;

- the development of the infrastructure supporting industry, and of those branches of agriculture which provide inputs to and demand for industrial output;

- improved performance of the various institutions that manage and/or control the factors cited above.

2.05 Achievement of these objectives will be influenced heavily by three sets of policy instruments:

- the reliability of pricing signals for consumption, production, savings and investment, and international trade which affect the quality of investment;

- improved institutional structure and incentives for public sector industrial enterprises;

- increased freedom for and reduced discrimination against the private sector.

In short, industrial growth will not be brought about by investment alone. It will also be dependent upon a complex set of changes in policies and procedures and, perhaps most importantly, changes in attitudes on the part of the Egyptian government.

2.06 USAID's basic objectives in the area of industrial policy reform are to support the expansion of the share of the private sector in industrial production, and to support policies which promote increased efficiency and productivity in existing public sector enterprises. Before discussing our proposed prescription in any detail, it is first necessary to look briefly at a number of considerations which must be weighed in developing an industrial strategy.

B. Factors Influencing an AID Industrial Strategy

1. The Climate for Change

2.07 Historically policy change has been slow in Egypt, particularly in recent years. Egypt's economic history since the mid-nineteenth century has been characterized by periods of slow but almost inexorable drift toward economic disaster from which the country has each time been rescued by intervening factors such as changes in international allegiances and changes in international marketing conditions. Partly because of this history and partly owing to other factors, including the legacy of the Nasser era, the climate for change is not strong at present in Egypt. There is ambivalence toward the open door policy at best. At worst there are strong interest groups which passionately oppose freedom in the market place because of philosophical differences and/or vested interests. Thus we can expect slow movement in directions we think are

desirable. In some areas, GOE policy may seek the same objectives we have stressed but use other mechanisms than those we would consider most appropriate. In addition, even if a set of policies were agreed to tomorrow, experience dictates that implementation would be slow and uneven.

2. The U.S. Posture

2.08 At the same time we recognize that the leverage the United States can bring to bear to bring about policy change is limited. The total aid level is fixed and this can be shifted around in various sectors only relatively gradually and after considerable consultation. Further, given the political nature of our relationship with Egypt, it would be difficult to absent ourselves from an important sector of the economy if the Government of Egypt desires our involvement. In any event, we do not see the United States as taking an either/or posture as we believe that limited progress will continue in the industrial sector (as witnessed by the new companies tax law, the new income tax laws, the draft public sector reform bill, and some interest rate changes). Our strategy ought to reinforce this movement while at the same time attempt to work on breaking production bottlenecks and other relatively "neutral" activities, i.e., those not particularly dependent upon market signals.

2.09 Another important aspect of the U.S. posture is our relationship to Egypt's public and private sectors. While our clear preference (and the relative weight of this strategy) is biased toward the private sector, at the same time we recognize that an effective strategy for the industrial sector in Egypt must address both the public and private sectors because of the former's total share in the economy, because of the large gains in productivity which we believe can be brought about through relatively small interventions, because of the high level of sunk cost, because of the possibility over time of rationalizing and increasing employment levels in public sector enterprises, and because of the production linkages between the public sector and the private sector, e.g., the role of public sector enterprises in producing inputs used by private sector industry and in processing its outputs.

2.10 In addition, we need to take into account the private sector's reputation in Egypt (sometimes deserved) for rapacity and for sweatshop conditions. This is obviously an area which can only be policed by the government; however, we need to be sensitive to these concerns.

3. Information and Analysis

2.11 Another important factor is that we have a number of important gaps in knowledge. We do not know, for example, despite the seeming logic of an export orientation, just how realistic this is in terms of actual markets. In part this reflects our incomplete knowledge of where Egypt's comparative advantage lie. The effects of changes in factor

prices are also not known. Another area of incomplete knowledge is where the best investments lie in terms of labor intensity. This calls for a strategy which explicitly takes into account lack of knowledge and permits future adjustment as gaps are filled in.

4. Internal AID Concerns

2.12 There are also a number of internal AID concerns which need to be given weight in a strategy. One is our recognition of the importance of increasing employment opportunities in Egypt. At the same time there is the realization that our funding levels by themselves will not have a great direct effect on growth and employment We need, therefore, to use our investment in a way to maximize our influence on the rest of investment in the sector, both public and private, domestic and foreign. At the same time we need to be concerned about our management of AID resources - to avoid becoming bogged down in individual investments, for example, to the detriment of broader goals. Finally, we have to be alive to the various strands of U.S. foreign and domestic policy which relate to an industrial strategy, for example, the sensitivity of U.S. producers of competing products to potential Egyptian exports of textiles, shoes, citrus, etc.

5. Policy Changes

2.13 Finally, we need to look realistically at the set of policy changes that we believe are desirable to seek, i.e., which of these are amenable to change both in the near and longer term, and which ones we can (or should) not expect to influence at least in the near future.

2.14 At the same time, we recognize that in addition to changes in macro policy, improved institutional performance will also be important to expansion of the industrial sector. Thus while we will be seeking important policy changes we are and will be working on improving the effectiveness of institutional services such as vocational training, management training, industrial technology, improvement of the business climate, tax policy, quality control, etc.

C. A Conceptual Framework

2.15 It is widely recognized that firms in the public sector operate inefficiently from a technical point of view and have few incentives to behave otherwise. They are still saddled with excess manpower and are subject to centralized direction on production, financing, and investment decisions which leaves little autonomy to the managers to change their mode of operations and use resources efficiently. Nevertheless, in some instances changes are occurring. The manpower problem is gradually diminishing through attrition. According to the Boston University study, the level of competence at the managerial level is relatively high, and some managers are beginning to institute incentive pay structures to

induce better performance from workers. In addition, there is currently under consideration a public sector reform bill whose aim is to change the institutional structure and presumably improve the operations of public sector firms. (Nothing is yet known about the final form this bill will take.) These changes are promising but fall far short of what is necessary to make of the sector a vibrant, technologically efficient and well managed part of the economy.

2.16 From an economic efficiency point of view, private sector industry suffers from one of the same problems that does the public sector, namely, administered prices for some of its inputs and outputs (although in the case of electricity, private sector enterprises often pay more than the public sector). Thus, in certain cases, what appear to be profitable ventures when actual prices are used for calculating revenues and outlays would become unprofitable if world market prices or unsubsidized prices were used. The private sector also suffers from discriminatory pricing for some of its inputs, particularly electricity and foreign exchange, as compared to the public sector.

2.17 In all other respects, however, the private sector operates very much like the private sector in any economy with one glaring exception: the government sets strict limits on the activities it can invest in. The Ministry of Industry must give approval to every private investment project. The Ministry's philosophy has been to reserve for the public sector virtually everything in which it is already engaged plus any new areas over which it wishes to retain control. It thus shields the public sector firms from direct competition by private entrepreneurs.

2.18 In spite of these restrictions on entry (and the discriminatory prices), the private sector is viable and growing. Although it is likely this trend will continue, it could undoubtedly be accelerated if the private sector were to receive assistance in the form of an expanded set of investment opportunities and reduced restrictions on its operations, or financial assistance. It is probable that elimination of restrictions is more important than financing at present but this may not always be true, particularly if investment licensing is liberalized, since liberalization in itself will create increased demands for investment funds.

2.19 The GOE policies that AID might seek to change if more efficiency is to be introduced in the economy have been discussed thoroughly in the initial section of this paper, but it may be useful to list them briefly here in three groups - those directly affecting public sector industries; those directly affecting private sector industries; and those affecting both:

A. Public Sector:

1. Hiring and employment policies for public companies.

2. Incentive structures in public companies:

   a. Pay for managers and workers.

   b. Lack of autonomy for managers.

3. Institutional arrangements in the public sector, e.g., centralized financing and centralized decision-making on investment without regard to the cost of capital.

B. Private Sector:

1. Private sector investment licensing; access to inputs, credit, foreign exchange, and imports.

2. Discriminatory pricing and availability of inputs between private and public sector (discrimination against private sector).

3. Tax treatment.

C. Private and Public Sector:

1. Non-equilibrium exchange rates, tariff structure, and effective protection.

2. Lack of export incentives (e.g., tariff rebates on inputs to production for export).

3. Pricing policy on industry sector goods.

4. Pricing policy on energy.

5. Pricing policy in the agricultural sector.

6. Interest rate policy.

2.20 In looking at the three policy instruments mentioned earlier - improved price structure, improved public sector institutional structure, and increased freedom for the private sector - it is apparent that there is a kind of hierarchy among them. The price structure problems are all-pervasive and affect many activities, both private and public. They are indicative of economic inefficiency. The public sector institutional problems, however, are in part separate from the price problems and can be attacked independently. They are indicative of managerial

inefficiency. Many of the private sector problems are also independent of the price distortions and consist simply of barriers or impediments to private sector activity. There is no indication, however, that the private sector is technologically inefficient.

2.21 It would seem that a logical strategy for AID, with respect to these three targets, would be to approach this hierarchy in reverse order, seeking first to increase, as much possible, the potential investment opportunities for the private sector and to expand that area of the economy where production and investment can be expected to be efficient, and in the public sector to continue and to build upon efforts to improve management, introduce technology and upgrade skills as well as to look for opportunities to break production bottlenecks. At the same tme, AID should seek changes in the other areas with the certainty that the resistance will be great, particularly at the level of changing the price structure where the social adjustment to an immediate shift to a market determined free price system would be massive, both for the consumers and the public sector industries. Effort should nevertheless be begun, even if on a graduated basis.

2.22 Resistance should be less to changes in the public industry structure and policies than to changes in price structure. Here there are two tactics that can be used. The first is persuasion, using as leverage decisions on allocations of AID funds to nudge the public sector toward becoming more technologically efficient and toward using a market determined cost of capital and exchange rate in making production and investment decisions. The second is to rely upon competition from the private sector to help accomplish the same goals. Competition will force the public sector industries to become more efficient, although the full effects of competition will not be felt unless certain discriminatory policies against the private sector are also removed.

2.23 We thus arrive at a framework within which a short-run and a long-run industrial strategy can be formulated. AID's initial target is the diminution and eventual elimination of factors which hamper private sector activities while at the same time in the public sector we seek to strengthen those factors which promote greater efficiency in the absence of full pricing changes. Building upon this base and, with further analysis, AID's longer-term targets should become a broader array of structural adjustments.

D. The Strategy

2.24 Essentially what we are proposing is a two-step strategy -- the first phase of which would seek to set the stage for and facilitate the second. The first would seek to reduce the extent of discrimination against the private sector in order to place the public and private sectors on as equal terms as possible, not only to free up restrictions on growth in the private sector but also through competition to exert

pressure on public sector industry to become more competitive. Emphasis in the public sector would be initially to improve institutional and technological performance in such areas as vocational training, management training, tax modernization, industrial technology, quality control, etc., and on introducing capital cost considerations into the sector. At the same time during the first phase we would seek to fill gaps in knowledge in areas (e.g., comparative advantage) which will be important to the second phase.

2.25 The second phase would see our efforts in the private sector expanded. To the extent possible and desirable, we would focus more selectively on investments to encourage exports. To the extent feasible, labor intensity should be taken into account as a criterion of choice. In the public sector we would seek to move more from financial terms to economic terms and the size of individual investments would increase related to movements on structural reform, e.g., factor pricing (particularly energy pricing), managerial autonomy, public sector finance. For both sectors we would look more fundamentally at specific options for an export orientation vis a vis continued emphasis on import substitution.

2.26 During the second phase, we would seek to concentrate investments to the degree possible on the smaller size level of enterprise in the private sector and on noncapital-intensive production in increasing measure in the public sector, both of which should encourage labor intensity and growth in the sector. The second phase concentration on export orientation to the extent feasible should, by focusing on Egypt's comparative advantage, increase employment. However, of far greater consequence to employment than AID's specific investments will be the policy changes which we will attempt to bring about during phases 1 and 2.

1. The First Phase

2.27 Operationally, the first phase would have the following elements:

a. Private Sector Credit

2.28 Building upon FY 82 and prior year experience in private sector lending, we would seek to expand private sector credit operations. Within this context and to the extent practicable, we would place particular emphasis on small and medium scale enterprises and lines of production preliminarily identified as having export potential either from actual practice or rough estimates of comparative advantage. This should heighten employment possibilities.

b. Private Sector Business Climate

2.29 Again building on experience gained in FY 81 and FY 82, we plan to broaden efforts to improve the private sector business climate including such activities as tax law and administration, accounting procedures, functioning of the capital market, export promotion and export free zones, etc.

c. CIP Allocations for Public Sector

2.30 Funding would continue to be provided to the public sector under the CIP for industrial raw materials, intermediate goods, and spare parts.

d. Public Sector Capital Rehabilitation

[redacted]

f. Strengthening Ongoing Activities Affecting Both Public and Private Sectors

2.33 In addition to the public sector activities already mentioned, we would seek to strengthen those already ongoing AID activities such as technology adaptation, management training, skills development, and environmental control which are important to improving the institutional framework in which both public and private sector enterprises operate.

g. The Knowledge Base

2.34 Coincidentally with the other activities listed above, we would seek to broaden the knowledge base in such areas as comparative advantage, export market development, labor intensity, and the sources of private sector investment finance in preparation for the second phase.

2. The Second Phase

2.35 Ideally, the second phase should begin within a year after the first, but this will obviously depend to a large degree on the receptivity of the Government of Egypt to movement on the policies we have outlined above. Programatically, the second phase would involve the following elements.

a. Private Sector Credit and Business Climate

2.36 A first element would be continuation of private sector credit and finance activities and efforts to improve the business climate. We would also attempt to broaden the private sector liberalization measures agreed to by the Government of Egypt during the first phase.

b. Public Sector CIP and Institutional Framework

2.37 As in the first phase, CIP funding for raw materials, intermediate goods and spare parts would continue to the public sector, as would efforts to improve management, technology adaptation, skills training and free zone activity which affect both the public and private sectors.

c. Factor Pricing and Capital Financing to the Public Sector

2.38 In addition, we would consider expanding capital funding to the public sector (essentially raising the levels of individual investments) subject to movement on structural reform, e.g., factor pricing (particularly energy pricing), and/or shadow pricing considerations, managerial autonomy, and public sector finance.

d. Export Incentives

2.39 For both the public and private sectors, we would seek to see specific export incentives established after a thorough review of options such as rebate programs, exchange rate differentials, etc., and have these put into effect where necessary using AID funding, possibly as a foreign exchange offset mechanism.

3. Infrastructure and Agriculture

2.40 This is not a strategy statement on either infrastructure or agriculture, but it is clear that both infrastructure and agriculture interact with industry and that infrastructural improvements and agriculture development will reinforce industrial growth.

2.41 Although the fact that virtually all of Egypt's arable land is cultivated limits the potential for expansion of agricultural output, the structure of agricultural prices in Egypt is itself a severe limitation on agricultural expansion, with nearly all agricultural prices fixed at levels that are in some cases less than half the corresponding world price. These large differences between world prices and Egyptian government purchase prices reduce the amount of inputs to the agriculture sector, while annual investment in agriculture has been falling since 1975. A reversal of these trends due to increases in farmgate prices would increase incomes in agriculture and absorb some of the new pressures to provide employment in industry. Higher incomes in agriculture would also provide a larger domestic market for industrial goods. In the short run, processed and unprocessed agricultural products have a significant export potential, but can be realized only if the benefits of producing for the export market are passed on to the farmers.

2.42 Both infrastructure and agriculture are characterized by many of the same inefficiencies that plague industry. Rationalization of pricing in both sectors, particularly energy and agricultural input-output pricing, will in turn put more pressure on industry and at a minimum will tend to make subsidies in the industrial sector more explicit. For this reason, rationalization of both energy and agricultural input and output prices is of heightened importance.

2.43 By the same token, the changes that take place in the industrial sector can and should have an important effect in bringing about desirable policy changes in infrastructure and agriculture and in the transportation and services sectors as well, giving the industry sector a greater influence than suggested by its 25 percent of total investment. In short, relative success in bringing about change in the industry sector can have a significant impact on overall Egyptian investment. Through its effect on the quality of total investment, the strategy outlined here can have strong effects on both economic growth and employment.

FOOTNOTES

1/ World Bank, Egypt: Economic Management in a Period of Transition, Khalid Ikram, coordinating author, Baltimore, Johns Hopkins, 1980, pp. 21-23.

2/ Paul G. Clark, Private Sector Industrial Development Strategy, Paper for the Boston University Industrial Development Strategy Project, August 1981, Table 2.

3/ Hanaa Kheir El Din and Robert E.B. Lucas, Comparative Advantage in Egyptian Manufacturing, Paper for Boston University Industrial Sector Strategy Assessment Project, August 1981.

4/ ILO, Employment Opportunities and Equity in a Changing Economy: Egypt in the 1980s, a Labour Market Approach, Draft Report of the ILO/UNDP Employment Strategy Mission 1980 organized by the International Labour Office, June-October, 1980, Chapter 3, "Long-Term Trends in The Egyptian Labour Market - From Labour Surpluses to Labour Shortages."

5/ World Bank, Egypt: Economic Management in a Period of Transition, op. cit, Table 6-9, p. 122, uses an estimate of 2 percent.

6/ Bruce Vermeulen and Gustav Papanek, Jobs, Training and Industrial Growth in Egypt, Paper for Boston University Industrial Sector Strategy Assessment Project, August 1981, Ch. II on "Employment: A Crucial Problem for the 1980s". See, in particular, Table 2, p. II - 4 and Table A-8, p. A-22.

7/ Robert E.B. Lucas, Future Directions for Investment in Egyptian Manufacturing: Comparative Advantage, Paper for Boston University Industrial Sector Strategy Assessment Project, August 1981, p. 3.

8/ Federation of Egyptian Industries, Year Book 1978, Cairo, 1978, p. 8 of section on "Engineering Industries."

9/ "Metal Furnishings for Every Family," Egyptian Mail, Cairo, December 19, 1981.

10/ Leroy P. Jones, Improving the Operational Efficiency of Public Industrial Enterprises in Egypt, Paper for Boston University Project on Industrialization Strategy for Egypt, August 1981, Chapter 4, pp. 100-102.

11/ ILO, Employment Opportunities and Equity in a Changing Economy: Egypt in the 1980s, a Labor Market Approach, op. cit., Chapter 10, p. 193.

12/ ILO, ibid., Chapter 11, p. 206-208.

13/ World Bank, Egypt: Economic Management in a Period of Transition, op. cit., p. 267.

14/ Paul G. Clark, Private Sector Industrial Development Strategy, Paper for the Boston University Industrial Development Strategy Project, August 1981, p. 40.

15/ Paul G. Clark, ibid., p. 44.

16/ Paul G. Clark, ibid., pp. 22-23.

17/ See Leroy P. Jones, Improving the Operational Efficiency of Public Industrial Enterprises, op. cit., pp. 100-102. See also Section 4.c above.

APPENDIX TABLES

TABLE 1

Industry Share in Gross Domestic Product, Employment, and Value Added, 1976 - 1979

Category	1976	1977	1978	1979	Annual growth rate (percent) 1976 - 1979	Annual growth rate (percent) 1977 - 1979
A. GDP at factor cost:						
Millions of L.E. (at constant 1975 prices)						
1. Total GDP at factor cost	5,519	5,895	6,519	7,054	8.5	9.4
2. of which: Industry[a]	948	1,012	1,068	1,170	7.2	7.5
Percent						
3. Industry/total GDP	17.2	17.2	16.4	16.6		
B. Employment:						
Thousands						
1. Total employment	9,646	9,886	10,216	10,560	3.1	3.4
2. of which: Industry[b]	1,200	1,247	1,297	1,352	4.0	4.1
Percent						
3. Industry/total employment	12.4	12.6	12.7	12.8		
C. Gross fixed investment:						
Millions of L.E. (at current prices)						
1. Total gross fixed investment	1,450	1,838	2,618	3,346		
2. of which: Industry[a]	379	561	765	817		
Percent						
3. Industry/total gross fixed investment	26.1	30.5	29.2	24.4		

a/ Including mining.

b/ Including mining and petroleum.

SOURCE: Ministry of Planning as quoted in International Monetary Fund, Arab Republic of Egypt: Recent Economic Developments, January 16, 1981, Tables 1, 2, 16, pp. 3, 5, 56.

TABLE 2

Composition of Gross Value Added in Manufacturing
by Industrial Category, 1969/70, 1975
(percent)

Industrial category	1969/70	1975
Basic consumer goods	52	50
Intermediate goods	41	41
Consumer durables & equipment	7	9
TOTAL	100	100

SOURCE: Ministry of Planning as quoted in IBRD, Egypt: Economic Management in a Period of Transition, Khalid Ikram, coordinating author, Baltimore, Johns Hopkins, 1980, p. 243.

TABLE 3

Public-Private Sector Breakdown of Gross Value Added
in Manufacturing by Branch, 1977
(in L.E. millions and percent)

Branch of manufacturing	L.E. Millions			Percent		
	Total	Public sector	Private sector	Total	Public sector	Private sector
Foodstuffs	172.6	60.0	112.6	100	35	65
Beverages	16.8	14.3	2.5	100	85	15
Tobacco	33.6	31.4	2.2	100	93	7
Spinning, weaving	220.5	180.5	40.0	100	82	18
Clothing, footwear	86.3	11.4	74.9	100	13	87
Wood products	36.7	3.5	33.2	100	10	90
Paper products	22.9	22.4	0.5	100	98	2
Printing	20.5	9.2	11.3	100	45	55
Leather products	8.9	1.6	7.3	100	18	82
Rubber products	9.1	8.5	0.6	100	93	7
Chemicals	126.2	100.5	25.7	100	80	20
Non-metallic prod.	45.9	34.6	11.3	100	75	25
Basic metals	75.1	69.4	5.7	100	92	8
Metallic products	33.2	20.5	12.7	100	62	38
Non-electric mach.	12.4	10.7	1.7	100	86	14
Electric machinery	43.4	39.9	3.5	100	92	8
Transport equipment	54.6	49.9	4.7	100	91	9
Other manufacturing	57.4	50.9	6.5	100	89	11
TOTAL MANUFACTURING	1,076.1	719.2	356.9	100	67	33

SOURCE: Development Research and Technological Planning Center, Cairo University, as presented in Paul G. Clark, Private Sector Industrial Development Strategy, paper for the Boston University Project on Industrialization Strategy for Egypt, August 1981, Table 1. Data from many official sources have been used in preparing the 1977 input-output table and social accounting matrix.

TABLE 4

Public-Private Sector Breakdown of Gross Value of Output of Industries Under the Supervision of the Ministry of Industry, estimated 1980 (in L.E. millions and percent)

Branch	L.E. millions			Percent		
	Public	Private	Total	Public	Private	Total
Spinning, weaving	1015.9	366.9	1382.8	73.5	26.5	100.0
Foodstuffs	1027.2	432.5	1459.7	70.4	29.6	100.0
Chemicals	414.1	138.3	552.4	75.0	25.0	100.0
Engineering, metals	940.9	188.8	1129.7	83.3	16.7	100.0
Mining, refractory	51.7	49.2	100.9	51.2	48.8	100.0
Wood products	-	119.2	119.2	-	100.0	100.0
Leather products	-	413.7	413.7	-	100.0	100.0
TOTAL	3449.8	1708.6	5158.4	66.9	33.1	100.0

SOURCE: Ministry of Industry as reported by IMF, quoted in Paul G. Clark, Private Sector Industrial Development Strategy, paper for the Boston University Project on Industrialization Strategy for Egypt, August 1981, Table 2. Estimates for 1980 are based on first 6 months of the year. Coverage of Law 43 companies is incomplete so that private sector trends are probably understated.

TABLE 5

Output of Selected Industrial Products, 1973 - 1979
(in thousands of metric tons unless otherwise stated)

Product	1973	1974	1975	1976	1977	1978	1979
Spinning and weaving:							
Cotton yarn	182	179	181	193	210	212	218
Cotton textiles (million sq. meters)	829	829	843	873	905	918	950
Foodstuffs:							
Sugar	633	577	526	576	614	629	632
Cheese	135	135	153	147	149	161	160
Preserves, fruits, vegetables	24	18	24	48	41	40	51
Cottonseed oil	160	170	161	160	166	169	168
Oilseed cakes	600	540	720	417	430	431	433
Soft drinks (million bottles)	600	660	784	960	984	1,389	1,424
Beer (million liters)	32	29	29	30	39	42	36
Cigarettes (billions)	23	23	21	28	25	27	30
Chemicals:							
Sulfuric acid	23	30	36	28	27	30	31
Superphosphate	419	465	520	493	513	502	483
Ammonium nitrate[a/]	210	320	400	530	622	698	851
Tires (thousands)	860	814	923	859	920	857	933
Engineering products:							
Cars (units)	5,590	8,169	11,576	9,799	13,991	14,562	15,670
Trucks and tractors (units)	2,761	2,342	2,825	3,807	4,451	4,101	5,087
Buses (units)	413	360	305	307	475	465	552
Refrigerators (thousands)	39	55	109	112	129	138	190
Television (thousands)	49	68	77	88	147	166	228
Metallurgical products:							
Reinforcing bars	226	232	219	202	230	249	302
Steel sections	87	81	106	151	128	157	177
Steel sheets	167	125	211	156	235	229	264
Cast iron products	53	55	66	63	78	109	112
Aluminum	**	**	**	54	90	101	102
Mining products:							
Phosphate	540	499	428	392	468	483	527

** Not applicable.

a/ Thirty-one percent nitrogen.

SOURCE: Ministry of Industry, as quoted in World Bank, Egypt: Economic Management in a Period of Transition, Khalid Ikram, coordinating author, Baltimore, Johns Hopkins, 1980, pp. 429-430, and IMF, Arab Republic of Egypt: Recent Economic Developments, January 16, 1981, Table 24, p. 64.

TABLE 6

Value of 22 Principal Manufactured Exports, 1979
(in L.E. millions)

Product	Value (L.E. millions)
Cotton yarn	130.1
(excl. East Europe)	(45.5)
Cotton fabrics	41.0
(excl. East Europe)	(34.0)
Cotton waste	10.5
Carpets, etc.	5.1
Undergarments, knitted	3.2
(excl. East Europe)	(2.6)
Outergarments, knitted	4.4
Clothing	5.7
(excl. East Europe)	(2.0)
Made-up textiles	4.8
(excl. East Europe)	(4.5)
Fruit juices	3.9
Alcoholic beverages	3.5
Cigarettes	0.5
Perfumes, cosmetics	7.1
Essential oils	6.9
Pharmaceuticals	1.4
Leather bags, etc.	0.6
Leather clothing	2.4
Footwear	3.8
Printed books	3.8
Wooden furniture	2.6
Cement	0.1
Iron & steel sheets, etc.	7.0
Aluminum bars, etc.	31.0
TOTAL OF ABOVE CATEGORIES	278.8

SOURCE: CAPMAS, Monthly Bulletin for Trade Statistics, January - December 1979, as quoted in Paul G. Clark, Private Sector Industrial Development Strategy, op. cit., Table 8. The figures excluding exports to Eastern Europe are from the Cotton Textile Consolidation Fund.

TABLE 7

Public-Private Sector Breakdown of Industrial Exports, 1977 - 1980
(in L.E. millions[a/] and percent)

Export category	L.E. millions				Percent	
	1977	1978	1979	1980 (est.)	1980 (est.)	Average annual increase, 1977 - 1980
Convertible currency	249.0	370.5	337.3	459.9	74	
Public sector	218.9	338.3	298.5	382.3	62	20.4
Textiles	(63.2)	(134.6)	(110.1)	(157.3)		
Other	(155.7)	(203.7)	(188.4)	(225.0)		
Private sector	30.1	32.2	38.8	77.6	13	37.1
Textiles	(3.8)	(4.1)	(7.0)	(14.0)		
Other	(26.3)	(28.1)	(31.8)	(63.6)		
Bilateral accounts	111.2	106.8	121.2	159.9	26	
Public sector	85.1	80.6	98.2	133.2	21	16.1
Textiles	(79.4)	(75.0)	(91.9)	(126.9)		
Other	(5.7)	(5.6)	(6.3)	(6.3)		
Private sector	26.1	26.2	23.0	26.7	4	0.8
Textiles	(5.5)	(3.9)	(1.8)	(0.5)		
Other	(20.6)	(22.3)	(21.2)	(26.2)		
Total industrial imports	360.2	477.3	458.5	619.8	100	
Public sector	304.0	418.9	396.7	515.5	83	19.2
Textiles	(142.6)	(209.6)	(202.0)	(284.2)		
Other	(161.4)	(209.3)	(194.7)	(231.3)		
Private sector	56.2	58.4	61.8	104.3	17	22.9
Textiles	(9.3)	(8.0)	(8.8	(14.5)		
Other	(46.9)	(50.4)	(53.0)	(89.8)		

a/ Beginning in 1977 convertible currency exports and parallel market imports are at the parallel exchange rate of L.E. 1 = U.S. $1.4286; bilateral accounts exports and imports are at the official exchange rate of L.E. 1 = U.S. $2.5556.

SOURCE: Paul G. Clark, Private Sector Indulstrial Development Strategy, op. cit., Table 7, quoting Ministry of Industry, as reported by the IMF. The figures cover only industries under the Ministry's supervision. Ministry officials indicate that coverage of Law 43 companies is incomplete, and that private sector trends are probably understated. (Figure for private sector convertible currency 1978 is corrected here to match totals.)

TABLE 8

Indicators of Economic Performance for
Selected Public Sector Enterprises, 1977 (or 1978)[a]:
Financial Rate of Return (FRR), Social Rate of Return (SRR),
Effective Rate of Protection (ERP), Domestic Resource Cost (DRC)[b]

Product (by enterprise)	FRR (%)	SRR (%)	ERP (%)	DRC (LE/$)
1. Reinforcing iron	-18.9	-28.6	**	**
2. Tobacco	-1.3	80.0	-97	0.43
3. Aluminum	1.8	2.8	69	1.32
4. Cement[a]	4.1	27.0	-79	0.44
5. Cement[a]	4.8	29.9	-84	0.48
6. Fertilizer (nitrogen)	5.6	22.3	-72	0.51
7. Food flavour	8.8	89.6	-58	0.28
8. Food canning	9.2	25.0	3	0.54
9. Knitwear (cotton)	10.1	11.4	1	0.70
10. Vegetable oil	10.2	272.5	-92	0.07
11. Cement[a]	11.0	40.5	-72	0.42
12. Cement[a]	12.5	40.0	-71	0.40
13. Food canning	18.2	18.3	15	0.55
14. Soft drinks	21.6	57.8	-53	0.24
15. Carpets	25.5	20.2	14	0.56
16. Starch	27.6	67.7	-50	0.19
17. Underwear (cotton)	28.1	32.7	-4	0.44
18. Confectionery	29.2	39.2	-20	0.42
19. Spinning (cotton)	36.2	10.0	92	0.70
20. Biscuits	42.9	35.6	6	0.38

Notes: See next page.

Table 8 (continued)

** Not applicable.

a/ 1978 for cement enterprises.

b/ FRR: Financial rate of return is the cash surplus including imputed interest and rent less any production subsidies, divided by capital employed (fixed assets plus inventories).

SRR: Social rate of return is social profit divided by capital employed, where capital employed is same as for FRR and social profit equals value of output minus value of domestic factors other than cost of capital employed. All quantities are valued at their shadow prices (FOB for exportables and CIF for importables).

ERP: Effective rate of protection is the difference between value added at domestic and at international prices calculated as a percentage of value added at international prices; i.e.:

Effective rate of protection

$$= \frac{\text{Value added at domestic prices - value added at world prices}}{\text{Value added at world prices}}$$

$$= \frac{\text{Value added at domestic prices}}{\text{Value added at world prices}} - 1$$

DRC: Domestic resource cost is the ratio of domestic resources used at shadow prices including opportunity cost of capital (all expressed in domestic currency) to domestic value added at international prices (expressed in foreign exchange), i.e.:

Domestic resource cost

$$= \frac{\text{Domestic resources used (in L.E.)}}{\text{Domestic value added at international prices (in \$)}}$$

The opportunity cost of capital used in calculating DRC was 10%. The shadow exchange rate used in calculating SRR and ERP was $1 = L.E. 0.70 at a time when the official exchange rate was $1 = L.E. 0.40 and the parallel market rate was $1 = L.E. 0.65.

Table 8 (continued)

SOURCE: Heba Ahmad Handoussa, Public Sector Employment and Productivity in the Egyptian Economy, Report prepared for the ILO/UNDP Comprehensive Employment Strategy Mission 1980, Cairo, September 1980. This table was reproduced from Heba Handoussa, The Impact of Economic Liberalization of Egypt's Public Sector Industry, Paper presented to the 2nd BAPEG Conference, Cambridge, Mass., April 1980. Most of the calculations were made in 1979 at the Economic Studies Unit of the Ministry of Economy, with the cooperation of Professor Paul G. Clark and Dr. Hanaa Kheir El Din.

TABLE 9

Domestic Resource Cost (DRC) Ratios[a] for Selected Products and Enterprises, 1977 or 1978

Product and enterprise	DRC ratio[a]
Food	
Jams and marmalades:	
El Nasr Preserved Food	0.27
Edfina	0.39
Preserved legumes:	
El Nasr	0.55
Edfina	0.51
Juices and sherbets:	
El Nasr	0.66
Edfina	1.19
Preserved vegetables:	
El Nasr	0.79
Tomato products:	
El Nasr	-0.82
Edfina	-1.38
Frozen products:	
Edfina	1.81
Canned fish:	
Edfina	1.67
Spinning and weaving	
Cotton yarn:	
Misr/Shebin El-Kom	26.95
Kafr-El-Dawar	-10.00
Cotton fabrics:	
Kafr-El-Dawar	-0.93
Essential oils and cosmetics	
Food flavors	0.22
Perfumed oils	1.10
Cosmetics	0.50
Aluminum metal	
Misr Aluminium Co.	1.31
Cement	
National Cement	0.48
Alexandria Cement	0.59

a/ L.E. per L.E. of foreign exchange at official exchange rate.

Table 9 (continued)

SOURCE: Hanaa Kheir El Din, Policy Study on Potential and Problems in Expanding Selected Manufactured Exports, Ministry of Economy, Foreign Trade and Cooperation, Economioc Studies Unit, October 1979, as quoted in Hanaa Kheir El Din and Robert E. B. Lucas, Comparative Advantage in Egyptian Manufacturing, Paper for Boston University Industrial Sector Strategy Assessment Project, August 1981, Table 2.2, p. 9.

TABLE 10

Effective Rate of Protection (ERP) and Domestic Resource Cost (DRC) Ratio by Branch of Manufacturing, as Estimated from 1977 Input-Output Table

Branch	ERP (%)[a/]	DRC ratio[b/]
Food	-92	0.11
Beverages	799	13.49
Tobacco	37	1.90
Spinning & weaving	-53	0.35
Final wear	44	1.89
Wood and wood products	339	3.68
Paper	1	1.62
Leather	-369	-3.77
Rubber	43	2.26
Chemical	24	1.89
Oil products & coal	29	2.09
Nonmetallic products	-80	0.36
Basic metals	38	3.38
Nonelectrical machinery	30	1.89
Electrical machinery	586	9.81
Means of transportation	354	6.33

a/ $ERP = \left(\frac{\text{Value added at domestic prices}}{\text{Value added at world prices}} - 1 \right) \times 100 \text{ (in \%)}$

b/ Domestic resource cost (DRC) ratio equals social cost of direct and indirect labor and capital required (in L.E.) plus social cost of electricity used divided by value added at world prices (in L.E. at official rate of exchange) using median primary factor shadow prices.

SOURCE: Hanaa Kheir El Din and Robert E.B. Lucas, Comparative Advantage in Egyptian Manufacturing, Paper for Boston University Industrial Sector Strategy Assessment Project, August 1981, Tables 3.2 and 3.4, pp. 28, 37.