Industrial Sector Strategy Assessment - Gustav F. Papanek, May 1982

INDUSTRIAL DEVELOPMENT IN EGYPT - AN OVERVIEW
SUMMARY OF RECOMMENDATIONS

Faced with declining migration and lower foreign exchange growth, Egypt in the 1980's risks rapidly growing unemployment, stagnant wages and worsening income distribution. To create instead productive jobs in activities that can afford to pay a rising wage requires industrial development that is rapid and more labor intensive than in the past. This involves:

* eliminating the existing bias against exports in industrial goods, to make exports as attractive as producing for the domestic market, (where producers now effectively receive PT 115 for each $ of import value produced) by:
  - -- granting the own exchange rate to exports
  - -- an automatic, general rebate on import duties and taxes
  - -- low-cost export credit
  - -- or a compensated devaluation which does not raise the price of imports;
* abolishing most export controls which discourage exports;
* improving the access to credit of the private sector, by increasing the length of loans, assuming the exchange risk, setting interest rates at the long term expected rates and subsidising administration of small loans;
* gradually eliminating the distored prices faced by producers, including prices of energy, of industrial products and inputs, while keeping prices low for some consumer goods by direct subsidies, effectively delinking producer and consumer prices;
* increasing the efficiency of public enterprises, by greater autonomy for managers, an effective system of evaluating their performance, and strong incentives to reward managers and workers for performance. A 5% increase in efficiency would finance a 50% increase in investment in industry;
* giving priority in credit and favorable terms to joint private (especially Egyptian) and public ventures to increase efficiency;
* encouraging the use of workers, especially women, instead of machines, by subsidising vocational training in factories and schools, maternity leave, child care, fringe benefits, and by reducing the educational requirements of jobs where they are not essential. Employing women can reduce labor costs, improve equity, and save LE 4,000 per job in infrastructure (justifying a subsidy of up to LE 600 a year).
* not raising wages for a few by government action, which would reduce jobs and the ability of Egypt to compete. Wages can and will rise if demand for labor is increased as suggested.
* shifting new investment from industries where Egypt lacks comparative advantage to those where efficient production is quite possible. At present the highest effective subsidies perversely go to industries where Egypt is least able to compete efficiently.

With changes in policies such as these, wages and employment could rise, while costs and prices would be kept in check as
- -- redundant workers are absorbed by expanding industry
- -- efficiency in public enterprises rises
- -- investment shifts from industries which cannot be operated efficiently to those where Egypt has comparative advantage.

Egypt, like Japan and other countries, would then rapidly develop its industry and especially its manufactured exports, taking advantage of its proximity to Europe and the Gulf, and of its industrial base and educated labor force.

INDUSTRIAL SECTOR
STRATEGY ASSESSMENT

May 1982

EXECUTIVE SUMMARY
INDUSTRIAL DEVELOPMENT
AN OVERVIEW

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Prepared for USAID-Cairo

Industrial Sector
Strategy Assessment

Gustav F. Papanek
May 1982

Executive Summary

INDUSTRIAL DEVELOPMENT IN EGYPT: AN OVERVIEW

1. A major achievement of the period since 1973 was that rapid growth appears to have provided rising real incomes to the great majority of Egyptians who derive most of their income from labor.

REAL WAGES, 1973-1980
(PT. 1978 Prices)

	Agriculture per day	Construction per week	Manufacturing per week	Textile; blue collar; private per week
1973	50	872	929	481
1977	81	946	976	943
1980	100	(1,250)*		

*order of magnitude estimate from interviews.

2. This achievement is threatened by the prospect that in the next few years it will become difficult to develop productive employment for a rapidly rising domestic work force. If policies and programs are not adjusted to changed circumstances:

i) unemployment and underemployment can rise,

ii) the incomes of workers could stagnate,

iii) income distribution is likely to become less equal, with all that this implies in terms of social tensions.

LABOR FORCE ESTIMATES

	Estimated 1979	Projected, mid-1980 (annual) Inter-mediate	Pessi-mistic	Opti-mistic
Increase in labor force	380	430	400	465
unemployed	-85	-15	-15	-15
migrants (net)	-145	0	100	-150
To be employed in Egypt	150	415	485	300
in: agriculture, trade, construction	-15	45	85	40
government	90	0	50	0
manufacturing	70	370	350	260

The rough projections in this Table have a substantial margin of error, but they suggest that the number of jobs which need to be created in government and manufacturing probably have to increase by 50 - 100% compared to 1979 if unemployment and underemployment are not to rise dramatically.

3. Two alternative strategies are possible to provide jobs:

a) absorb additional workers in government, but this would: not add to real output or income; rather quickly double the number of government workers; impose the permanent burden of a bloated civil service; become unfeasible when oil revenues no longer rise rapidly, which is likely in a few years; or

b) greatly increase the speed and labor-intensity of industrial development.

4. Rapid industrialization could set up a self-reinforcing process, in which resources are generated for further development; the pressures for unneeded government jobs is diminished; and increased labor productivity provides higher wages and fewer controls without rising prices.

5. A rapid expansion of manufactured exports would have to be an integral element of the strategy, because the domestic market can not absorb labor

intensive products, such as electrical goods and garments, that could reach three times their level in 1977. (Increased output of L.E. 3,000 million.)

6. Egypt has potential assets for rapid industrialization:

i) inexpensive labor (wages about one quarter those of Hong Kong),

ii) a large number of women in urban areas who are able to work in industry without requiring infrastructure investment,

iii) proximity to European and Arab markets, a major asset when fashions change,

iv) a government with a willingness to take bold initiatives,

v) no serious foreign exchange problem,

vi) a labor force with more education and a longer industrial tradition than many low wage countries,

vii) a private sector that has proved surprisingly dynamic and many competent public sector managers.

7. There are also serious problems of distorted prices, perverse incentives, overstaffing, a wasteful control system. But steps have been taken to deal with some of them and most would yield rather quickly to policy changes. If the necessary steps are taken soon to change the economic environment and incentives facing enterprise managers, Egypt could take advantage of the vacuum created by higher wages in East Asia and Latin America and follow the pattern of rapid industrialization pioneered by Japan and followed by Korea, Taiwan, Brazil and others.

8. Egyptian manufactured exports have to contend with the "Dutch disease": a foreign exchange rate kept low by oil, remittances, and aid, which makes most industry uncompetitive. Industries producing for the domestic market can compete because they receive an average implicit subsidy, through tariffs, of 27% and most existing exporters also receive implicit subsidies.

A dollar earned in exports is just as useful as one saved by substituting for imports, so more balance between exports and import substitutes is desirable.

For exporters to receive the same infant industry protection as those producing for the domestic market requires an implicit exchange rate for exports of about PT 115 to the U.S.$. This could be achieved by:

Own-exchange rate	PT 90/$
Tax rebates	PT 8/$
Export credit concession	PT 5/$
Working capital concession for exporters	PT 11/$
	PT 114

The same rates could be achieved by a compensated devaluation, which would have other advantages, or other combinations of various measures. There will be a cost to the budget of these measures to improve the exchange rate for non-traditional manufactured exports, but experience elsewhere indicates that the resulting "activation" of the economy will increase revenues by a somewhat larger amount. The existence of investment operated at less than 1,000 shift-days and of overstaffing greatly reduces the economic costs and increases the benefits of expanding exports.

9. Existing export controls are costly and the benefits mostly small; they could generally be abolished to promote exports.

10. The current system of price controls and subsidies for industrial inputs and outputs leads to excessive use of cheap inputs (e.g. energy, long-staple cotton) and incorrect investment decisions; high priced inputs keep industries from being competitive; (e.g. steel users); some low-priced outputs subsidize rich consumers (e.g. cars); low prices keep private firms from producing popular goods; and severe distortions make it difficult to evaluate public enterprise managers and give windfall profits to some private

firms. It would be difficult to eliminate all price controls and subsidies quickly because:

i) government is committed to keeping popular (wage goods) prices low,

ii) raising wages to match price increases would reduce the competitiveness of Egyptian industry and, even more important, would discourage labor use,

iii) it would force some firms to shut down, increasing unemployment and reducing production.

However, all prices of producers and consumer can be de-linked, with any needed subsidy going to consumers. Producers would pay appropriate social or scarcity prices. In the process, most price distortions for industry could be eliminated.

11. Industrial investment is especially risky and takes longer to pay than trade. Therefore it is desirable to improve the terms for credit to the private sector, by:

a) giving loans for longer periods,

b) setting interest rates at the level expected over the next five years,

c) government assuming the exchange risk,

d) subsidizing the administrative costs for small borrowers.

12. Real wages (purchasing power) of workers should rise for equity and other reasons, but if this is accomplished by government decision or by increasing the machinery per worker in industry, it will be at the cost of jobs, of consumers, and of the competitiveness of Egyptian industry. If it is done by absorbing unneeded workers into more productive jobs and increasing labor productivity, wages can rise and prices can drop. A 30% decline in overstaffing would permit a 43% increase in wages or income to government without an increase in costs.

13. An even bigger reserve of potential labor are women in the urban areas. Women in the labor force have increased by 8% a year and even for jobs at the minimum wage there are 2 to 12 over-qualified applicants for each position. So supply is no problem. Demand is increasing, more slowly, as managers find women more reliable than men who have greater alternatives. Increasing industrial employment of women will:

a) reduce the cost of urban infrastructure by at least L.E. 4,000 per woman hired, L.E. 280 million a year at the rate projected;

b) reduce labor costs, since, unfortunately, women's wages have persistently been 30% lower than men's.

c) avoid the development of capital intensive industry in response to currently perceived shortages of male workers. It is important that new industry be labor intensive since the problem of the future is likely to be a labor surplus.

d) improve equity by making it possible for women in poor families to bring in a regular, additional income.

14. A third pool of underutilized labor are unneeded government employees. Industrial output can be increased at little cost if new workers are induced to work in industry, not government.

15. Indirect subsidies to encourage labor use are justified because in drawing on these pools of unneeded or underemployed labor the social cost of employing labor appears to be around one-half the market wage. For women, even a subsidy of L.E. 600 a year could be justified by saving on infrastructure costs. Government can subsidize:

i) vocational training in industry, especially because employers often lose workers after they have been trained,

ii) social security contributions,

iii) child care facilities,

iv) fringe benefits, such as health care,

v) education, including literacy training, provided by industry,

vi) maternity leave.

Real labor costs could be lowered as much as 20-30% as a result. In addition, vocational education in the schools should be expanded.

16. Raising educational requirements for women for jobs that really do not require them has meant that the female labor force is more educated than the male. It excludes the poorest, uneducated women from the better jobs and therefore makes for less equal income distribution and increases pressure for expanding general education. To counteract this, labor subsidies should be limited to unskilled jobs with no prior educational requirements.

17. Employment, the efficiency of industry, prices and wages depend critically on the pattern of investment. Before investing, Egypt carries out less analysis of the comparative advantage, that is the social efficiency, of industry than most other countries. Since industrial investment should be very large in the next few years this could be a costly omission.

18. It could be especially costly since the greatest protection or subsidies are provided to industries where Egypt is least efficient. Conversely, the most efficient industries generally receive no protection/ subsidy and often bear implicit taxes instead. This perverse system, which exists in many other countries, encourages investment in the least desirable industries.

To the extent permitted by the very inadequate data available to us, industries where investment is desirable are those shown below as requiring less than L.E. 1 of resources to produce.

EFFECTIVE PROTECTION AND COMPARATIVE ADVANTAGE
(selected commodities)

	ERP	DRC
	+ is subsidy	the cost of producing
A. Desirable investment	- is tax	a L.E. of exports/imports
Food (average)	- 92%	.25
Vegetable oils	- 92%	.10
Carpets	14%	.80
Leather products	- 4%	.63
Cement	- 71-84%	.4 to .48
Bicycles	--	.0 to 1.0
B. Probably desirable investment		
Sugar	14%	.77
Garments	44%	1.89
Wooden furniture	--	.12 to .55
PVC	--	.08 to .09
Filters	--	.16
Cables	--	.08
C. Not recommended		
Frozen food	--	1.81
Nitrogren fertilizer	- 72%	1.34
Iron and steel	599%	4.8
Aluminum	69	131.0
Automobiles	305 (??)	1.85

The analysis assumes that:

i) Egypt should produce the goods which it can produce efficiently; that it is costly to produce all the goods needed by the domestic consumer, if at far lower cost it is possible to produce exports which permit Egypt to import more of the goods its consumers need.

ii) in deciding what goods can be produced efficiently one can not use existing prices, because of price controls, subsidies and taxes,

iii) that a diversified industrial structure is desirable.

The most attractive investments are in industries:

a) based on local raw materials (cement, leather),

b) using much labor (bicycles, carpets, underwear).

The least attractive investments tend to be those:

i) where efficiency depends on large scale (automobiles)

ii) which require costly inputs and scarce skilled labor (iron/steel, aluminum),

iii) which had received substantial protection/subsidies and were therefore not under pressure to be efficient.

Several important sectors, especially textiles, seem to lack comparative advantage. But this could change radically if different policies were adopted.

20. Crucial to the future development of industry is an increase in the efficiency of public enterprises, which will continue to dominate industry regardless of the growth of private industry. On its efficiency depend prices for consumers and for private firms who buy goods and services from public firms. A 5% gain in public sector efficiency could finance an increase in industrial investment of about 50%.

21. An increase in public enterprise efficiency involves:

a) the changes in output and input prices, in profitability of exports, in wage policy and female employment already discussed. These affect public firms, but the impact will be limited without greater responsiveness on their part.

b) A necessary condition is greater enterprise autonomy to enable them to respond to the changed environment. But the desirable organizational reform now underway will not last if it just allows managers to pursue self-interest; to satisfy their preference for modern, capital-intensive technology; to preserve a comfortable, riskless situation.

c) For autonomy to be used in society's interest requires:

* externally set, clear and quantified objectives;

* an evaluation system of enterprise performance in meeting these objectives;

* incentives that reward managers and workers for good performance. Evaluation of performance calls for calculating the rate of social return. This is similar to private profit, but uses social, not market prices (for instance a tax payment is a cost to private enterprise, a benefit to Government). The contribution of a firm to non-commercial objectives, such as training, needs to be measured also in evaluating performance, by including special costs or benefits in a "social adjustment account." This account can also be used to adjust for distorted prices (e.g., if the enterprise receives cheap energy, its profit would be calculated after deducting a "tax" payment to the social adjustment account). A "disclosure bonus" can induce management to set its own objectives at the maximum it can realistically achieve.

To obtain maximum management effort requires an incentive scheme that provides large enough bonuses, awarded only for performance and continuous, not dependent only on whether a target is reached. Non-financial incentives, such as promotion, demotion and greater financial autonomy should also be used. A performance evaluation system for public enterprise is being installed in Pakistan. The rewards from a good system would be very great.

22. Since, above all, changes in Egyptian policies and programs are required for outside funds to be used more effectively in industrial development, AID's major contribution can be through program support. Donors could make a large scale, preferably multi-year, commitment to an agreed-on program to achieve the employment and other objectives set for industry. The program would need to specify the macro-economic policies and the structure of investment which will be adopted.

23. A major element of the AID commitment could be support for finance to both the public and private sector.

a) For the private sector, donor funds could provide the needed long-term, fixed interest loans, with no exchange risk and with a subsidy for

the administrative costs of small loans. They could be channelled through existing institutions. An abbreviated cost-benefit analysis could avoid financing industries that operate with extensive protection and lack comparative advantage.

b) Financing for the new National Investment Bank (NIB) could be part of a comprehensive program to increase the efficiency of the public sector, by careful evaluation of new investments, reduced price distortions, greater autonomy of management and, above all, a well-designed performance evaluation system.

c) Special priority in funding could be given to joing private/public ventures that meet certain criteria (see separate memo).

Channelling funds via the banks, including the NIB, would enable AID to shift from project to program, from "retail" to "wholesale" finance in the industry field.

24. A number of specific recommendations for AID are in all the reports, such as:

* emphasis on a machinery to collect and analyse data needed for effective cost-benefit analysis:

* support for child-care facilties,

* technical, management and economic assistance to the National Investment Bank in its massive task,

* various skill-upgrading and training programs,

but we are persuaded that the crucial need is support for further changes in the policy framework which guides decisions. With such changes a rapid growth of labor intensive industry is perfectly possible and would make a major contribution to attaining Egypt's objectives of development, equity and stability.

INDUSTRIAL SECTOR May 1982

STRATEGY ASSESSMENT

INDUSTRIAL DEVELOPMENT

AN OVERVIEW

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Prepared for U.S. A.I.D. Cairo

Industrial Development in Egypt

An Overview

INDUSTRIAL SECTOR

STRATEGY ASSESSMENT

GUSTAV F. PAPANEK

MAY 1982

INDUSTRIAL DEVELOPMENT IN EGYPT

AN OVERVIEW

Egypt's economic development and stability are threatened by the prospect of a rapidly increasing number of workers for whom productive jobs need to be created. More rapid and employment oriented industrial development has a crucial role in:

* increasing real incomes to meet rising aspirations,
* providing productive jobs, especially for poorer families,
* thereby preventing a serious increase in the gap between rich and poor,
* building a foundation for reduced dependence on aid and oil.

1. Past Success - Future Problems

The greatest achievement of the period since 1973 is probably that rapid growth benefited not only a small elite, but appears to have provided rising real incomes to the great majority of Egyptians. The purchasing power (real wages) of agricultural workers doubled between 1973 and 1980. Real wages of workers in construction, industry and trade rose 5 to 15% between 1973 and 1977, the last year for which we have data. But agricultural wage increases, scattered interviews and other data suggest that real wages continued to rise thereafter. The largest

Table 1

REAL WAGES, 1960-1980
(in PT, 1978 prices)

	Agriculture Per Day	Construction All Workers Per Week	Manufacturing All Workers Per Week	Spinning & Weaving All blue collar Per Week	Spinning & Weaving All Public sector Per Week	Spinning & Weaving Blue collar private Per Week
1951	54					
1955	29					
1960	42	951	765			
1964	49	1218	937			
1966	60	860	843	781	817	432
1968	56	947	843	786	833	420
1971	50	844	861	781	830	420
1973	50	872	929	888	933	481
1975	65	904	873	814	850	536
1977	81	946	976	886	876	943
1978	86				899	
1979	99					
1980	100					

Sources: B. Vermeulen and G.F. Papanek, "Labor, Employment, Wages and Training in Egypt's Industry", Industrial Sector Strategy Assessment.

group for which no information seems to exist are the smallholder agricultural families. But with rapidly rising wages in construction and in agriculture itself, and a tight labor market, it is likely that many took advantage (perhaps with a lag) of the possibility of supplementing their income from wage labor.

Undoubtedly there are groups which have not benefited from rising incomes. Poor households with no skills and without men able to do physically ardous work probably suffered. So did middle class families on relatively fixed incomes (e.g. some government employees), whose wages did not rise as rapidly as inflation, and who are determined to remain honest. Finally increased competition from imports and expanding large enterprises adversely affected some small firms in industry and services. Their workers and owners are less well off.

Moreover incomes of the poorer 60% of the population are probably rising more slowly than average income in the country as a whole, so that the differences between rich and poor are increasing. For instance real wages (wages adjusted for inflation) of construction workers are shown as increasing only 2% a year to 1977 while per capita income for the country as a whole was increasing 5-6% a year. Casual interviews for this study, not based on a careful sample, show an acceleration of wage increases in this sector after 1977. But the increase between 1973 and 1981 was still only at an annual rate of 4.5%, contrasted with 6% for the per capita income. Industrial wages, especially in the public sector, rose even less rapidly. The share of property income, which goes predominantly to middle and upper income groups, would therefore have increased and with it income inequality. Such increasing income disparities can cause tensions

even if real income is rising. But the rise in real income of the great majority is a major achievement of the past 7 years.

Problems are likely because this success depends on three major factors which are unlikely to continue:

i) massive migration of labor to other countries;

ii) a substantial increase in government employment and in construction labor;

iii) rapidly rising subsidies for the consumption of poorer groups.

The first two factors resulted in rapidly rising demand for labor. Combined with relatively stable food, housing, and cloth prices this produced the increase in real wages after 1973 which allowed the poor majority to participate in the benefits of development. Before migration took off in 1974, accompanied by more plentiful government revenues and foreign exchange which financed subsidies and increases in employment, wages had stagnated. By 1973 wages in agriculture and construction - the two sectors where they were not set by government - were actually less than they had been in the mid-1960's and, for agriculture, in 1951.

But neither of the underlying factors which caused rising wages is likely to continue at the same rate. In the 1980's it is unlikely that other countries will continue to absorb additional foreign workers at a rate sufficient to provide jobs to about 40% of the increase in the Egyptian labor force, as they did in 1979. Nor is it likely that imports can continue to increase at the rate of 24% a year which they achieved in 1976 to 1980. During that period, increased revenues from oil (about U.S. $2.5 billion), remittances (U.S. $2.5 billion), the Suez Canal (U.S. $700 million) and tourism (U.S. $300 million), plus continued inflows of

foreign resources, (U.S. $1.5 billion) enabled the country to finance an increase in government employment, in construction (that is investment) and in subsidies. A World Bank study forecasts that with a "very optimistic scenario for petroleum and gas" total export earnings will increase at most 6.6% in real terms a year in the 1980's. Even after for price increases in the 1970's, that is a far slower rate in this decade than in the past one. Yet it is based on the assumption of a tripling in the real oil price, which appears highly unlikely after the recent decline in real prices. Moreover, even if a continued rise in Government employment and subsidies could be financed, it is not necessarily desirable to expand them further. There are obvious economic costs to both policies.

2. Alternative Strategies: Industrialization or Government Growth

Even if foreign exchange and domestic resources do not grow as rapidly in the 1980's as they did in the late 1970's, Egypt will still have command of substantial resources in the next five years. The substantial income from oil, the Canal, tourism, remittances and aid can be "seeded" or invested to create productive jobs, or it can be used to support many of the additional workers as government employees. The numbers in Table 2 are very approximate and subject to considerable error, but they do give the orders of magnitude which either strategy would have to contend with.

a) Government Employment.

The resources derived from oil, remittances, aid, etc. could be used to provide additional jobs in Government and public enterprises. But

Table 2

LABOR FORCE ESTIMATES

	Estimated 1979	Projected Increase, Mid- or late 1980s		
		Inter-mediate	Pessi-mistic	Opti-mistic
Increase in labor force	380	430	400	465
unemployed	- 85	- 15	- 15	- 15
migrants (net)	- 145	0	100	-150
To be employed in Egypt	150	415	485	300
Likely to be employed in:				
agriculture	- 80	- 60	0	- 80
trade, services, etc.	- 20	60	55	40
construction, tourism	85	45	30	80
Required employment in:	(160)	(370)	(400)	(260)
government	90	0	50	0
manufacturing	70	370	350	260

Sources: See section on "Employment" in B. Vermeulen, op. cit.

given the rapidly rising labor forces, even on the most optimistic assumption, nearly 200,000 workers a year would need to be absorbed in government if industry absorbs only the same number of workers as in 1979 (70,000). Since it is generally agreed that Government is already overstaffed (the ILO report estimates overstaffing at 1 million persons, including the military) this would quickly lead to an even more bloated civil service.

Moreover, this strategy is likely to become infeasible before too long:

* The optimistic assumption includes continued massive net migration. But this is bound to come to an end sooner or later. At that time Government would have to absorb another 150,000 workers or so a year, or a total of 350,000 new government employees annually. For Government to add an additional 1 million workers over 3 years is probably not feasible, especially since remittances would stop rising when net migration becomes zero.

* The optimistic scenario also assumes that foreign exchange resources continue to increase rapidly. But it is likely that in the next few years aid will decline in real terms, or remittances will stop growing, or oil revenues will stagnate. In fact, under various assumptions the World Bank forecasts unmanageable foreign exchange gaps, ranging from U.S. $ 3,000 million to U.S. $ 15,000 million. And these forecasts were made before the recent decline in real oil prices.

There is one exception to an impossible foreign exchange gap in the World Bank model, which demonstrates the close linkage between foreign exchange and employment: under very optimistic assumptions about oil,

the foreign exchange gap will be manageable but even then employment will increase only 2.1% a year. Since the labor force will be increasing about 3%, that highly optimistic scenario would add about 100,000 people to the unemployed every year. That too is probably not a feasible "solution".

So a strategy of continuing to provide employment in Government can continue only as long as large - scale migration continues and foreign exchange resources rise more rapidly than the most optimistic scenario assumed by the World Bank.

Moreover this strategy would seriously handicap the Egyptian economy for the future. Egypt would be saddled with another 1/2 million to 1 million unproductive workers in Government, with office buildings to house them and with the negative attitude of people who have no real function in society.

b) Industrialization.

The alternative would be to use the resources from oil, remittances, aid, etc. to create a large, productive, labor intensive industrial sector. This strategy would call for adopting a mutually reinforcing set of policies:

i) Increase the efficiency and the output of existing industry particularly of the public enterprises. A 5% increase in public enterprise efficiency, quite feasible to achieve in one year, would provide additional resources equal to 3% of GDP or nearly L.E. 400 million a year.

ii) Allocate additional resources to industry, that would otherwise go to expand government employment or to other activities with a

lower rate of return. Government expenditures alone have been increasing at about L.E. 400 million a year. Perhaps L.E. 100 million could be saved.

iii) Obtain additional resources from abroad, including private investment, as part of a big push for more rapid and efficient industrial development.

iv) Continue with steps (see point ix below) to make it attractive for Egyptians to save and invest in industry.

v) Substantially increase the rate of investment in industry. With the additional resources available as the result of steps (i)-(iv) it should be possible to increase investment L.E. 750 million or by more than 50%.

vi) Change the incentive system for public and private managers to induce them to use less capital and more labor, especially more unskilled labor.

vii) With more demand for labor from a rapidly expanding, labor intensive industrial sector, some of the unneeded workers in public enterprises will be absorbed and real wages can continue to rise with labor productivity.

viii) With more jobs available in industry, the pressure for government employment will diminish and with it the number of additional, unneeded, government employees.

ix) To increase the efficiency of both public and private sector and the attractiveness of industrial investment requires:

- making it as profitable to manufacture for export as it now is to produce for the domestic market,

- increasing the availability of credit on stable terms to the private sector,
- reducing or eliminating many controls over private (and public) enterprises,
- reducing the distortions of prices which managers face, by cutting the link between consumer and producer prices,
- for the public enterprises, setting up a performance evaluation system and rewarding managers according to performance.

In short, a self reinforcing process would be set up in which a rapidly expanding, labor intensive industrial sector generates further resources for its own development; the existence of attractive jobs in industry diminishes the pressure for unneeded jobs in Government; the increased productivity and competition in industry allow a removal of some controls without sharp price rises. This strategy is based on the notion that economic, as well as social and political, problems can more readily be solved in an environment of rapid expansion of resources. For instance, the problem of overstaffing can probably not be solved if the only alternative which unneeded workers have is to be unemployed. But if attractive alternative jobs are available in rapidly expanding industry, most workers have shown they are quite willing to leave a low-paying non-job, to go to somewhat better paid real work.

3. Priority for Industry and Industrial Exports

a) Why Industry?

The principal reason for stressing industry, is that not enough jobs can be provided in other sectors. Agriculture has been losing workers and should continue to do so: Egypt has a higher density of rural

population per unit of cultivable land than all of the labor-surplus, densely populated areas of Asia. Tourism can at most provide 20,000 jobs. As the economy expands there will be more work in some service and trade activities. But at the same time the number of workers should decline in such low-income, low productivity jobs as sidewalk peddlers and lottery ticket sellers. In 1979 the number of workers in these sectors apparently declined, despite the rapid growth of the economy, so not too many productive jobs can be expected there. Only a rapid expansion of employment opportunities in industry can keep unemployment or underemployment from becoming a serious problem.

Moreover, it is particularly important for the income of most people to rise more rapidly than prices, because expectations have been aroused that peace will bring economic improvement. The most effective way for raising the income of the bottom 60% is to raise (real) wages. The most effective way for raising wages is to increase the demand for (unskilled) labor. That in turn requires the creation of industrial jobs.

b) Why Industrial Exports?

But a rapid growth of industry requires substantial exports of manufactured goods. In 1979 each worker in industry produced value added of about L.E. 1,000 and output worth about L.E. 2,000 [1]. If 370,000 additional persons a year are to be employed in industry, the value added would increase by L.E. 370 million and industrial output would increase by L.E. 740 million a year, without an increase in labor

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1. According to the 1977 "Quarterly Production Survey" (CAPMAS) value of output is 1.9 times value added.

productivity[1]. If two-thirds of the increased output is in such laborintensive final goods industries as textiles, garments, shoes, electrical equipment and wood products, their output would rise by L.E. 500 million a year, or by L.E. 3,000 million at the end of six years. That is twice the value of output of labor intensive industries in 1977 and roughly equal to total industrial output. To put it another way, in one year the increased output would roughly equal and replace all the imports of comparable manufactured consumer goods.

In short, the Egyptian market could not usefully absorb the labor intensive manufactured goods that would be produced. Much of the new production would need to be exported. Since total manufactured exports in 1979 were U.S. $600 million, of which nearly half was cotton yarn, manufactured exports would just about double in two years, and almost quadruple in four years. To achieve such a massive increase would obviously require significant policy changes.

At the same time, this expansion of manufactured exports would not only help to solve the employment problem, it would also help achieve other objectives: increased foreign exchange earnings, reduced dependence on oil and aid, and the basis for a truly modern and independent economy.

c) Is Rapid Industrial Development Feasible

Egypt has some important assets in achieving rapid industrial development:

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1. The value of output per worker will be less than average in labor intensive industries. So, emphasis on such industries will offset the increase in labor productivity.

(i) Relatively inexpensive labor: the daily wage of industrial workers is about one quarter that in Hongkong, a very successful exporter of labor-intensive manufactures. Productivity is generally low but in 1976 labor costs per unit of output in textiles were still only half or less those in Europe. Moreover a few firms had in 1976 achieved productivity comparable to that of European enterprises. Other firms could achieve it with proper incentives and investment.

(ii) Large numbers of women who could work in industry at low total cost: Egypt still has tens of thousands of women already in cities and supplied with housing and costly urban infrastructure, many already educated, who are eager to take industrial jobs. Each woman thus employed saves an estimated L.E. 4,000 in investment in urban infrastructure in Egpyt. Countries in East Asia where over 70% of young women and nearly half of older ones are already in the formal labor force have to incur large infrastructure costs for workers (and their families) who move to the cities.

(iii) Proximity to the European and Arab Markets is a major asset for exporters of goods for which market conditions change rapidly such as garments, toys, shoes, some textiles and plastic goods. Shipping costs by air are much less and contact between producers and buyers can be easier and cheaper.

(iv) Adequate foreign exchange to pay for machinery and intermediate inputs that need to be imported.

(v) A labor force with more education and longer industrial tradition than in many other low wage countries. Also a larger group is at home in foreign languages and countries than some potential competitors.

Egypt not only has assets, it also has serious problems in achieving rapid industrialization: perverse incentives for private and, even more, for public, managers; distorted prices; overstaffing in some enterprises; a control system that causes delays and waste; inadequate infrastructure (especially telephones and developed land); lack of technical and professional personnel; and bad habits in many enterprises and Governmental units. But these problems are probably no worse on the average than they were in Korea and Taiwan when those countries started on their process of industrial development. Most of these problems would yields rather quickly to changed policies. As wages have risen rapidly in Korea, Taiwan, Hong Kong, Singapore, Mexico and Brazil, another group of countries can follow the pattern pioneered by Japan and then followed by these countries: the production of labor-intensive manufactured goods for the world market. But there are many coutries that could fill the partial vacuum that has been created by higher wages in East Asia and Latin America. While Egypt is quite well-positioned in terms of potential assets, the crucial question is which countries will act most quickly to turn the potential to actual advantage. The policies needed are described below. If they are adopted, Egypt could be part of the group of countries that next follows the Japanese pattern of development. If Egypt delays, others are likely to fill the vacuum. A number of policies and program could help bring about rapid, labor intensive industrial development in Egypt.

4. Stimulating Exports

Manufactured exports are a small and declining fraction of total foreign exchange earnings. Earnings from such exports were stagnant between 1977 and 1979 and rose 12% in 1980. Since world prices for most commodities rose 30% or more in those 3 years, exports of manufactures declined even absolutely in real terms.

a) The reasons for declining exports.

Egyptian manufactured exports have to contend with the "Dutch disease" -- a foreign exchange rate which is kept low by massive earnings from the export of oil and from remittances, a rate which makes most other exports uncompetitive. Producers of goods for the domestic market also could not compete with imports, were it not for protection in most cases, and direct or indirect subsidies by Government in some cases. In fact, a large share of current exports also receive substantial indirect subsidies which make exports possible. The effective rate of protection (ERP), which measures the implicit subsidy, for aluminum, for instance, is 69%. Most or all of it is the result of a heavily subsidised price for electricity, which is the principal cost. For spinning the effective rate of protection is 92%, in large part the result of low-cost cotton. To the extent that "protection" takes the form of low-cost inputs, it benefits both those producing for export and for the domestic market. However, protection on garments, with an effective rate of 44%, takes the form of tariffs on imports and therefore benefits only those producing for sale in Egypt, not those producing for export. Protection limited to import substitution is the more typical case.

The failure of manufactured exports to expand is not due solely to

the exchange rate. Public enterprises, for one, do not simply maximize profits and therefore would not necessarily respond by a massive expansion of their exports to a more favourable exchange rate. Other obstacles also exist. But there is no doubt that an attractive exchange rate is a necessary, even if not sufficient, condition for raising non-traditional exports. The experience around the world is quite consistent in this respect. The East Asia super-exporters, beginning with Japan, relied heavily on an undervalued exchange rate even when they had -- as Korea does -- a large public enterprise sector. The experience of Pakistan, India, Colombia, Peru and other countries all confirms the crucial role of the price of foreign exchange in stimulating, or repressing, non-traditional exports.

Egypt's own import substituting industries have developed most rapidly when they received a favorable exchange rate through protection. However, the present system of protection is somewhat haphazard and generally perverse. That is, it provides the highest subsidies (protection) for industries in which Egypt is least competitive, from which the society benefits the least. (Egypt is not unusual in this respect. We found the same perverse relationship in Bagladesh and elsewhere). On the whole, subsidies/protection is far greater for enterprises producing for the domestic market than for export. These subsidies either are paid by the consumer in higher prices, as a result of tariffs, or by the producer of inputs who receives prices below those prevailing in the world market (cotton growers) or by Government (including its banks) which receives a low or no return from some public enterprises.

Table 3

THE TREND OF MANUFACTURED EXPORTS

(Million of L.E.)

		1974	1977	1979
1.	Cotton yarn	115	121	
2.	Cotton fabrics	36	43	
3.	Garments	39	33	
4.	Other textiles	8	18	
	Textile Sub-Total	189	215	(211)*
5.	Perfume, cosmetics	6	17	
6.	Footwear	15	9	
7.	Aluminium bars/rods	0	22	
8.	Iron/steel, sheets/plates	3	1	
9.	Other selected **	42	49	
	Selected Sub-Total	66	98	
	Total major manufactured exports	264	313	
10.	Foreign exchange earnings	1,666	3,181	5,673
11.	Selected manufactured exports as % foreign exchange	16%	10%	
12.	Total manufactured exports,		432	433
	as % foreign exchange earnings		14%	8%

Sources: Items 1-9 1974, 1977: Hanaa Kheir El Din, Economic Studies Unit "Policy Study on Potential and Problems of Expanding Selected Manufactured Exports" (undated)

Items 10-12 from Khalid Ikram, Egypt, World Bank, Johns Hopkins, 1980 and World Bank reports.

Notes : *From Ministry of Industry, as reported by IMF.

All exports were converted at the rate of L.E. 0.7 per U.S. $.

**"Other" includes: juices, alcohol, cigarettes, oils, pharmaceuticals, leather goods, books, furniture.

b) The effective exchange rate for exports and imports
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Since a dollar earned in exports is just as useful as a dollar savedby substituting domestic production for imports, it would be best to provide the same subsidies for exporting as for import-substituting industries. (Both types of industry provide different incidental benefits. Exporting industries, forced to compete in the world market are usually more efficient, but also riskier. Since these other benefits are offsetting, they are ignored here.) Ideally the "subsidies" or protection for exports should be set for each commodity at a level sufficiently high to make it profitable to export all goods in which Egypt has comparative advantage. A less appropriate but still useful approach would be to set export protection/subsidies at the same average level as import protection/subsidies. This would be less appropriate because the level of import protection was established as in other countries -- without careful calculation of costs and benefits. But if exports receive the same rate of protection, at least there would be no distortion between exports and imports, although some exports will receive excessive protection, while for others it will be inadequate. In any case the detailed data were not available to us which are required to frame an appropriate subsidy program for exports: which gives each commodity whose export should be encouraged (which has comparative advantage) just the subsidy it needs to compete on the world market.

Without the necessary information, all one can do is to provide some general orders of magnitude. At the present exchange rate manufactured exports have not developed, although Law 43 companies have received the own-exchange (free market) rate which has generally involved a premium of 10 - 15% above the parallel/unified rate. Also, between 1977 (when the parallel rate became generally applicable to industrial exports and the

own-exchange rate applied to Law 43 companies) and 1980, wages have probably risen by something like 30%. In the same period the parallel/unified exchange rate did not change significantly until recently when it was increased by 17%. The own-exchange rate fluctuated over this period, and increased about 12%. So just to restore the competitive position which manufactured exports had in 1977 would require a 10 - 20% higher exchange rate, depending on whether the parallel or own-rate applied in 1977. But in 1977 exports were inadequte, so clearly an even higher effective rate is required.

Average customs duties actually collected in 1979 were 27% of imports subject to tariffs. If tariffs are generally not collected on capital goods, the actual rate on intermediate and consumer goods would be closer to 50%. By now most intermediate and consumer goods seem to be imported at the own-exchange rate. All these facts suggest that domestic producers face an average effective exchange rate between PT 105 and PT 135 per dollar.

Table 4

EFFECTIVE EXCHANGE RATES FOR IMPORTS AND EXPORTS

(PT per US. $)

	Imports		Exports	
	Minimum	Maximum	Other	Law 43
Parallel rate	83	--	83	--
Own-exchange rate	--	90	--	90
Tariffs-average (27%)	22	--	--	--
-intermediate/consumer goods (50%)	--	45	--	--
Effective rate	105	135	83	90

Since most intermediate imports seem to com in at PT 90 and the average tariff is 27% it is probably reasonable to think of an effective exchange

rate for import competing producers of PT 115 per dollar. Exporters face that average exchange rate when they buy their imported inputs, but receive only PT 82 for their exports, unless they are Law 43 companies when they receive PT 90.[1] Buying inputs at PT 115 and selling output at PY 82 or PT 90 is not designed to encourage exports. To match the rate for import substitutes, would require an effective export rate for manufactured goods of PT 115/U.S. $.

Whatever rate finally proves appropriate would need to be adjusted to cover any differences in the inflation rate of costs in Egypt and in competing countries. Whether a uniform floating rate is adopted or a differential effective rate is provided for non-traditional exports, the aim would be an effective rate that increases the competitiveness of manufactured exports.

c) How to improve the profitability of exports

Such an effective rate could be achieved in a variety of ways.

(i) Give the own-exchange rate. One obvious step in the right direction would be to channel through the own-exchange market all exports of manufactured and non-traditional agricultural goods. It would be important to assure all exporters of manufactured products that they can retain their export earnings for their own use or for sale in the own-exchange market. That would give them a premium of about 12% or a rate of about PT 90/U.S. $.

(ii) A generalized tax rebate scheme. Under this arrangement the import duties and other indirect taxes paid directly or indirectly by

1. All figures are as of August 1981 and differ somewhat in April 1982, but the relationships among them have not changed significantly.

every export product would be calculated. Exporters would automatically - e.g. through the banking system -- receive a refund of these taxes as soon as exports have taken place. It would be unnecessary to demonstrate that the particular firm actually imported a particular input and paid customs duty on it. Such a specific drawback scheme is cumbersome, leads to long delays before refunds are made and creates perverse incentives, encouraging imports instead of domestic production. By contrast, the generalized drawback under which import duties are refunded even if the input was bought locally encourages buying inputs in Egypt.

If the cost of imported inputs are one-third of the value of exports (all inputs cost about half of the value of output), and the average tariff on imported inputs is 27%, then the average refund of customs duties would be 9% (PT 8/U.S.$) of the value of exports. Rebates would, of course, vary widely among products, being higher for those with more direct and indirect imported inputs.

The current drawback system appears to be complicated, time consuming and far from automatic and quick. It requires a separate determination of actual imports for each firm. It therefore encourages imports and does not provide a strong incentive to exporters since there is such a long delay before the refund is made, up to a year or two. Indeed some exporters find the system so cumbersome and its benefits so small that they do not take advantage of it. Changed to a generalized drawback, the incentive for manufactured exports would be much greater.

(iii) Subsidized credit for exporters. If exporters pay lower interest rates on export finance, that too is equivalent to a subsidy on exports. If normal interest rates for working capital are 16% and export finance is provided at 4% for 6 months that would represent a subsidy of

only 6%, despite rather extreme assumptions about the interest rate differential and the length for which credit is extended. A 6% subsidy on the PT 90/U.S. $ own exchange rate would raise the effective foreign exchange rate by PT 5/U.S. $.

Subsidized credit on export finance presents no unusual administrative problems. More difficult to administer would be subsidized credit for exporter's working capital. (Fixed capital should not be subsidised, since that would encourage not only exports but also capital intensive methods of production.) The problem is to estimate how much working capital would actually be used to produce exports.

It would be easiest and best just to ignore this issue and to announce that every exporter will receive L.E. 10 of credit for one year at the low interest rates for exports for every L.E. 10 of exports actually made. On the assumption of a 12% differential between normal and export rate, that would represent another 12% (or PT 11/U.S. $) subsidy for exports. It is administratively more complex and therefore has less clear-cut benefits.

Undoubtedly there would be some arbitrage, that is diversion of credit given for exports to other uses (perhaps even including deposit in foreign exchange accounts). But that does not really matter. The aim is to subsidize exports, to give them the same effective rate of protection as to industries producing for the domestic market, in ways which do not violate GATT or other agreements.

(iv) Combining these programs. Exports can be given roughly the same average protection as commodities produced for the domestic market, by (i) giving them the own-exchange rate, plus (ii) a new tax rebate system,

paying a standard rebate for each export as soon as the product is exported, plus (iii) highly subsidised financing of export sales and also subsidised working capital for exporters.

The illustrative or notional figures are as follows:

Own exchange rate	PT 90 per dollar
Import duty drawback	PT 8 per dollar
Export credit subsity	PT 5 per dollar
Working capital credit subsidy	PT 11 per dollar
Total effective rate	PT 114 per dollar

Of course, the same objective can be achieved by other combinations of the same policies. For instance, the premium on the own-exchange rate could be raised more and other subsidies scaled back or eliminated. This, however, would also increase costs of imported inputs, so the rate would need to be raised sufficiently to compensate for the increased costs as well.

A positive feature of all these methods of increasing the effective exchange rate for exports is that, with the exception of the drawback scheme, they are uniform and universal. Every potential exporter would know in advance roughly what effective exchange rate (or subsidy) he would receive. Since it is notoriously difficult to predict what exports can efficiently and profitably be produced in a country, it makes good sense to provide a universal incentive and let the market determine what is exported.

Other alternatives are discussed on the next three pages to provide a complete picture. They involve greater changes in policy and involve other difficulties, however, and are therefore not fully developed.

(v) Differentiated exchange rates for exports. Unfortunately a uniform export exchange rate does not provide a uniform incentive, because of other distortions in the economy. As long as the price of labor, energy and capital does not reflect their relative scarcity or their true economic value (opportunity cost) in the Egyptian economy, and as long as the price of such inputs as yarn or cement do not reflect their price in the world market, a uniform effective exchange rate is bound to be too high for some and too low for other exports. For instance the present exchange rate already provides an incentive to export aluminum, because it is produced with highly subsidised electricity (a subsidy that in effect, benefits the foreign buyers of aluminum). At the same time the Egyptian economy apparently actually loses foreign exchange on every pound of aluminum exported. To increase the incentive for aluminum exports by the steps suggested above will simply increase the losses to the Egyptian economy. On the other hand, garment producers might receive a lower effective exchange rate if they use few imported inputs and therefore do not benefit much from the drawback scheme. However they really should receive a larger subsidy, if they employ a great deal of unskilled labor whose cost to society (opportunity cost or shadow wage) is less than their market wage. That is, a uniform export rate will not provide, as a well designed incentive system should, stronger incentives to labor intensive and weaker incentives to capital intensive enterprises.

There are two ways of dealing with this problem. The better way is

to reduce the distortions in the economy, as discussed elsewhere. Alternatively a less satisfactory approach is to treat export incentives like import protection: differentiate the level of incentive provided for extreme cases. All exporters would receive the own exchange rate, the drawback and the credit subsidies, subject to a provision that the latter two can be withdrawn by a Board if it determines that the cost-benefit ratio for exporting a particular commodity is just not sufficiently favorable to warrant providing all these incentives. In exceptional cases the Board could also provide greater than normal incentives, by a larger credit subsidy for instance, for exports of commodities that are particularly labor-intensive or that for other reasons have an especially favorable cost-benefit ratio. A high priority for research is to carry much further the cost/benefit (DRC) calculations made in another paper, using actual firm by firm, or at least sub-sector, data to establish more firmly the commodities in which Egypt has comparative advantage. This is needed not only to determine which exports should receive particularly high or low rates of protection (subsidy) but also to determine appropriate rates of protection for import substitution industries, producing for the domestic market

Differentiated rates of protection could, of course, be provided by an outright subsidy to all commodities that it is desirable to export (that have comparative advantage) and to no other. It could be set at the rate for each commodity needed to make it profitable to export. Such a carefully calibrated subsidy system has the advantage of providing neither excessive nor inadequate subsidies and is therefore an ideal arrangement as long as any distortions exist in the economy. But it has two shortcomings.

First, even if all available data are used it is impossible to estimate exactly the commodities in whose production Egypt has comparative advantage and the subsidy each needs. It is too difficult to determine the current value of the capital stock (machinery), the proportion of excess labor, the extent to which some costs shown as operating expenses are really investment and so on. But even if one could estimate this with reasonable accuracy, thus accurately calculating static comparative advantage, it is even more difficult to determine to what extent inefficiencies are due to factors which can readily be changed and those which are inherent in the Egyptian situation and can be changed only slowly. For instance, if textile mills use high quality cotton to produce low quality yarn, is that something that could be changed quickly by providing the right incentives, or can it be changed only over 2-3 years when a major investment is made in new machinery, or only in 5-10 years when the whole textile industry can be reorganized? Since the calcuations of comparative advantage and of needed subsidies are therefore approximations at best, it is dangerous to fine-tune a subsidy system that depends on the accuracy of these calculations. Second, open subsidies for exports are against GATT rules. Some countries have used them nevertheless, usually in slightly disguised form and abolished them only after a few years when GATT complained. Still this is another disadvantage.

(vi) Compensated devaluation. The opposite approach to subsidies/protection for exports would be compensated (not full-fledged) devaluation. The currency would be devalued, but most import prices would be maintained at their present level by reducing import duties to fully

compensate for the higher costs (for instance, a 27% devaluation is accompanied by a 27% reduction in all import duties that are at least at 27%. The price of these commodities then would not change)[1] For imports with duties less than the devaluation, a subsidy would be needed. The price of all traditional exports would also remain unchanged by imposing an export duty equal to the devaluation. A fully compensated devaluation changes only three sets of prices: those of non-traditional exports, those of invisible transactions and those of capital flows. The loss of Government revenues due to lower import duties is largely compensated by higher revenues from export duties.

The advantages of a compensated develuation include its straighforward nature, affecting transactions equally; the assurance it provides to exporters that the favorable rate they receive will not quickly be changed (as a drawback scheme or interest rate subsidy can be); and that it is well regarded by the IMF, the international financial community, and others. The disadvantages include the nervousness which the word "devaluation" provokes in both governments and business communities and the fact that it is uniform and does not provide differentiated incentives to match the differential impact of distortions.

(vii) The cost of export subsidies. Whatever method is adopted to subsidise manufactured exports, it imposes a cost on Government which is the same for all methods if the level of subsidy is the same. If a 27% subsidy is provided for all manufactured exports, estimated at U.S. $700

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1. For supply commodities government would simply maintain the same price.

million in 1979, the gross cost would obviously be almost US $200 million or L.E. 160 million. The net costs however, would be substantially less. Some of the producers of export commodities now receive an indirect subsidy through low or no returns to Government from its investment in public enterprises or direct subsidies on inputs. With higher pound prices for their products these enterprises will need less of a subsidy or earn more of a profit which, in the case of public enterprises, goes largely to Government.

Moreover the stimulus to increased production for export will generate additional revenues, from taxes on imported intermediate goods, on additional goods consumed by workers or owners receiving more income, from taxes on profits and personal incomes. There has been neither time nor resources to construct a macro-economic model, and we have not had the industry data needed in any case, which would allow us to calculate the additional costs and revenues to Government. However, we have made such calculations for Bangladesh, for Peru and for other Latin American countries. In all cases the additional revenue from the "activation effect" on the economy equalled or exceeded the cost of the export susbsidy. Unless Egypt is different from these other countries we would expect the same result i.e. government can, within a year, finance the subsidies on manufactured exports from the additional revenues generated by the higher economic activity which will result from the subsidy.

The same was true, in the case of these other countries, for the effect on the balance of payments. Additional exports require additional imports of raw materials and intermediates to produce them. Moreover the additional income generated by the greater economic activity will also

lead to greater demand for consumption imports. But again it was found that the additional foreign exchange earned by the exports exceeded the additional foreign exchange needed in all cases.

d) The abolition of most export controls:

An effective exchange rate which increases the profitability of manufactured exports is fundamental. Without it little will happen. But there are additional steps that can be taken, generally at little cost, that will help to increase industrial exports. One would be to transform the current export control machinery into an export promotion machinery.

That presupposes abolition of controls over exports, which is desirable in its own right. Controls are designed to serve several purposes, most of which can be achieved at less cost:

(i) To prevent the export of capital. When the exchange rate is grossly overvalued and businessmen lack confidence in the future, they have a strong incentive to report a lower export price than is true and, in collusion with the buyer, to keep the difference abroad. Governments therefore control, or at least check, the price at which exports are sold to prevent such under-invoicing. But it is difficult to be familiar with thousands of international prices. As a result some prices are set too low by Government and exports become undesirable for the exporter, some are set too high and export sales are lost. Always price checks cause delays, which can be costly, and require a control machinery which also adds to cost. In Egypt, where it now is quite easy to obtain foreign exchange in the own-exchange market, price controls serve little or no purpose in preventing capital flight. Abolishing them would help exports at little or no cost.

(ii) To maintain export quality. Governments also control the quality of goods exported to maintain a good reputation for a country's product in the world market. Again these controls have costs and cause delays. Moreover, they can lead to error. For instance, it is not clear that it is in Egypt's interest to insist that coarse (low count) yarn for export be produced with high quality and high cost cotton. Quality control can have advantages, but only in a few cases do they outweigh the costs. Generally this is the case when Government has highly specialized personnel to check quality, while the exporters are small firms that lack a quality control machinery. It would be well to eliminate quality control measures for all except a few commodities.

(iii) To prevent exporters from making a mistake. Governments try to keep exporters from being exploited by more knowledgeable foreign buyers who pay too low price or do not pay on time and so on. Unfortunately it is difficult for government agencies to be adequately informed to perform this function. In any case the exporter has a compelling incentive to look out for his own interest which a government agency lacks, so it is only in some cases that government is effective in preventing error by the exporter. But sometimes it can commit its own error, by delaying or preventing a low price export sale needed to penetrate a new market or desirable for other reasons.

In short, it is costly, especially in terms of delay and discouragement to control exports and the benefits are, in general, small and dubious. It would therefore be desirable to eliminate all general controls on exports. In the case of a few commodities quality checks may be desirable. For practically all commodities government can play an

important role by providing information on markets and prices, by helping in establishing contacts and so on. Exporting should be encouraged and helped, not made difficult

e) The benefits of increased exports

There is some evidence that reduced controls and, above all, better prices would substantially increase exports. The private sector study[1] indicates that about half of all firms interviewed exported and that the relative profitability of exorts and production for the domestic market was significant in the decision to export. So private firms can be expected to respond quickly to a better price for exports and the abolition of controls over exports. Public sector firms, however, will not respond fully in many cases unless their managers become more responsive to economic incentives. This is discussed below. For them the higher prices for exports are a necessary, but not sufficient condition.

(i) The effect of exports in lowering costs. If a more favorable exchange rate stimulates exports the average costs in industry are likely to decline. Output could be expanded at little additional cost for labor, since very little additional labor will need to be employed in many public enterprises. In addition there are factories that do not operate to capacity. In most industries 750-1000 shift-days are quite feasible. Therefore some expansion of output requires little new investment. Both labor and machines are underutilised in part because existing output satisfies domestic demand and exports are unprofitable at the prevailing

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1. Paul G. Clark "Private Sector Industrial Development Strategy" Industrial Sector Strategy Assessment, December, 1981.

exchange rate. Of course, if output expands at little additional cost for labor or machinery, then average costs will decline. The widespread existence of excess labor and the evidence of some idle capacity in the public sector substantially increases the benefits and lowers the cost of stimulating production for exports.

(ii) Impact on employment, investment and foreign exchange. We do not have the data or time to trace through the potential effects of greater exports on the economy as a whole. But from the experience of other countries it is clear that in a few years an increase of 50% in the value of exports is quite feasible (for instance Pakistan, Peru). For Egypt that would mean earning an additional LE 200 million of foreign exchange. While significant, that would not be a major contribution to foreign exchange available. Far more important is the contribution which exports can make to a dynamic industrial sector and which such a sector in turn could make to employment, income and future growth.

If a better foreign exchange rate opens the foreign market, investment in industry becomes far more attractive. Since Egypt's comparative advantage lies primarily in its labor force (and in the agricultural goods also produced by that labor force), exports will be largely labor intensive. If such industries produce LE 1,000 per worker, half of the ratio in all industries, then a total of about 200,000 additional workers might be productively employed over several years in producing for export. In addition, each job created in industry leads to the employment of at least another worker in producing goods and services for the industrial workers, according to the experience of other

countries.[1] Additional productive employment could therefore be provided directly and indirectly to 400,000 workers over several years, say 100,000 a year, as a result of rapid expansion of manufactured exports. That would be a major contribution to employment and income for the lower income groups, even if some of the jobs would not be net additions to the industrial labor force, but the provision of productive work to workers who are unproductive as part of the excess labor force in public sector firms.

In short, a high priority in industrial development should go to the stimulation of exports, by improving the effective exchange rate and abolishing export controls.

5. Price Controls and Subsidies

Changing the effective exchange rate is probably the most important macro-economic policy to stimulate more rapid and labor-intensive industrial development. Close behind is a change in the prices of industrial inputs and products to producers, to reduce distortions which now exist, largely as a result of the perceived need to stabilize and lower prices to the consumer.

a) Benefits of subsidies.

There are very good, even compelling reasons to stabilise and reduce some consumer prices:

(i) The Government has a committment to do so. Our evidence, from Egypt and from 5 other countries confirms that when prices of food and other

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1 See Chow, SC and Papanek, GF, "Laissez Faire, Growth and Equity in Hong-Kong" Economic Journal, June 1981, and the report on Bangladesh industry by the Asian Center, Boston University.

"popular" (wage) goods rise rapidly, that is when inflation accelerates, wages tend to fall behind. The result is that real wages - the purchasing power of workers - falls. There is evidence from several countries , as well as Egypt, that declining incomes as a result of accelerating inflation, often result in serious instability.

(ii) Low prices for popular goods helps to stabilise wages and therefore to maintain low costs for industry. One estimate is that all incomes would have to rise by 41%, and the incomes of the poorer 50% of the population would have to increase by more than 50% to compensate fully for the elimination of the food and energy subsidies.[1] Adding other budget subsidies roughly increases the total subsidy bill by 10%. A further amount would be added to workers' cost of living if farmers were paid the world price for the goods they produce, that is, if the subsidy from agriculture to urban areas were eliminated. Finally there is a large, implicit subsidy from Government via public enterprises to consumers as a result of low rates of return on some public sector firms and subsidised credit to others. The magnitude of these implicit subsidies could be calculated with more time and data, but for the present it may suffice to note that labor costs in industry would rise by more than 50% if all explicit and implicit subsidies were to be eliminated and workers were to be fully compensated for their increased costs (real wages would remain unchanged).

Increased wages to compensate for the elimination of subsidies would raise costs of wage goods further and so would the devaluation, or

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1. USAID, CAIRO "Food and Energy Subsidies, 1979" (By P. Davis and J. Lapittus. mimeo) 1980.

increase in tariffs/subsidies required to keep Egyptian goods competitive with imports and for export. This would, in turn, require a further increase in wages if real income of workers is not to fall. A very substantial devaluation and upward adjustment in prices would be needed if subsidies were eliminated or a substantial deterioration in the balance of payments would have to be accepted.

Even more serious is the fact that a more than 50% increase in labor costs would discourage the use of labor. Since the impact of eliminating food and fuel subsidies would be particularly great for the lower income groups, the wages of unskilled/semi-skilled workers would rise especially, resulting in a strong incentive to use more capital-intensive methods of production. This is clearly the opposite of what is desirable from the point of view of economic efficiency, as well as equity

b) Costs of subsidies.

So there are strong reasons for retaining the subsidies on popular goods. But subsidies also have significant costs to the economy, which provide strong reasons for gradually eliminating them. This paper will not address issues which are far beyond the limits of this study, such as the effect of subsidies in discouraging the production of food in Egypt, in contributing to the budget deficit and therefore to inflation, in encouraging the diversion of food and so on. However, it is necessary to discuss the effect of subsidies and controlled prices in encouraging inefficient and inequitable decisions with respect to investment and operation of industry.

Problems arise from prices of inputs that are substantially above or below the world market prices or the true cost to society. The best known

example is that of cheap power. It makes it profitable to produce aluminum and therefore provides an incentive to invest in further aluminum capacity, although Egypt probably loses foreign exchange on every pound produced. With cotton cheap there is less incentive to use it economically. Conversely, high prices for steel make it difficult for steel-using industries to be profitable and discourage their development. Distorted prices also make it difficult to monitor performance in the public sector: managers can always claim that losses are not due to their incompetence, but to government control of their prices. Finally, low prices for the very goods deemed most essential discourage private production and encourage managers to search for ways around controlled prices,such as allowing quality to deteriorate or producing luxury and semi-luxury goods that are uncontrolled.

c) De-linking prices of consumers and producers.

If elimination or significant reduction of subsidies affecting industry is not deemed feasible, it is possible to retain many of the advantages of subsidies, while reducing the disadvantages, if producer and consumer prices are de-linked. Industrial managers would pay the full price, as determined in the world market, for all their inputs: raw materials, energy, intermediate inputs. The enterprise in turn would receive the full world market price for its goods. However, in the case of goods where a price rise would cause unacceptable problems, a direct, specified and uniform subsidy could be paid by government on each unit of output to keep consumer prices low, even if prices to producers increase.

There would be some clear advantages to such a compromise system and only one significant, but not too serious, disadvantage. The disadvantage

would be that the open subsidies appearing in the budget would increase a great deal. Instead of the energy subsidy being hidden in a low price of oil, it would be clearly identified as a subsidy item in the budget. But, while government expenditures would increase, government revenues would increase also. For instance, all enterprises would pay the full cost of energy. Enterprises that are major energy users would have lower profits or might incur losses. In the case of some, such as flour mills and bakeries, if the cost increase threatens a price increase, government may have to subsidise the price of bread. But the income of the electric company would rise by the same amount as the fall in income of electricity users. So government would receive higher profits from the electric company, which could go to subsidize bread.

Similarly in other fields subsidies would go up but so would government income. Then why bother? Such a system would have several advantages:

(i) Enterprises, public and private, would be faced with prices that come close to reflecting true costs, at least for commodity inputs and output. Their managers therefore would make investment and operating decisions which would be far more in the social interst than decisions made on the basis of badly distorted prices. There would no longer be a strong incentive to use a great deal of energy, or high quality cotton, because they are cheap. Instead there would be more of an incentive to use labor and local Egyptian raw materials. Conversely some metal using industries, now faced with high steel costs, might become profitable and expand.

(ii) Managers and the supervising ministry or ministers would be able to evaluate more clearly the performance of different public enterprise

managers, of firms and departments than they can now, when it is never clear whether a profitable enterprise is profitable because it uses inputs that are kept cheap or because it is efficient.

(iii) When subsidies are in the open, clearly identified and their size obvious, government is in a better position to decide whether they are worthwhile. For instance, is it worthwhile to give a large subsidy to persons who have a chance to buy a car at a fraction of its market price and another subsidy for them to operate the car?

(iv) Private firms could enter the production of popular (wage) goods, if the same subsidy is available to all producers. At present subsidies are often implicit, differ from one firm to the next and are available only to public sector firms.

More generally, the system would stimulate competition and increase pressure to reduce costs and increase efficiency. With hidden implicit subsidies the system usually gives the greatest subsidies to the least efficient, highest cost producers, who need the most additional income. With an open, fixed subsidy per unit of output, there will be pressure on producers to lower cost and increase output.

The better public enterprise managers now say that they would be quite willing to compete both in the world market and in Egypt, and to pay world prices for their inputs, if only the prices of their products were also at the international level. A system which subsidises prices to the consumer, but does not distort prices for the manager, would put them to the test and could be a major step in improving the efficiency of all enterprises, but especially those in the public sector, who now operate with the most severely distorted prices.

6. Credit and Interest Rates

The third important area of macro-economic policy, in addition to the effective exchange rate and producer prices, is the provision of credit and the level of interest rates. The public firms are primarily concerned with delays in obtaining investment funds and delayed financing of approved projects. This is taken up below. Some small private firms consider lack of capital a serious obstacle to expansion. The risk of a higher cost of credit is of concern to private firms regardless of size.

a) Interest.

The concern with "excessively high" interest rates may seem strange. The DIB (Development Industrial Bank) provides Pound and foreign exchange loans at a rate of interest substantially below the rate of inflation, so the real rate of interest is negative. Even the commercial banks lend Pounds at a real rate of interest which is barely positive and may be negative (below the rate of inflation). That industrialists still seem concerned about high interest rates may be due to:

(i) The quite understandable wish to have still lower rates. They may complain about excessive rates as part of a campaign to obtain more favorable rates from such institutions as the DIB.

(ii) Fear about borrowing for long-term investment at fixed rates that may be justified in the short term, but that could become excessive in the future. After all, historically the price level has risen quite slowly. Even in Egypt until the mid 1970's average annual price increases were only around 2-4%. If inflation should drop to anywhere near this rate, a fixed interest rate of 15% would be devastating.

(iii) In loans tied to Euro-currency rates problems are created by sudden

increases in interest charges, unrelated to changes in the Egyptian currency and therefore not accompanied by increased income to pay higher interest rate costs.

(iv) The risk that even if average prices rise with inflation or devaluation, the price of a particular commodity on which a firm's repayment capacity depends may rise much less. This problem is compounded by price controls.

While these are all reasonable fears, it is also true that negative real rates of interest lead to:

* Excess demand for credit, followed by rationing of credit by size of loan (discrimination against small borrowers); by personal or political connections and bribes; or by providing inadequate loans.
* Inadequate incentives to save.
* Subsidies to borrowers, whose impact is quite haphazard.
* Undesirable capital intensity, especially if interest charges are less on fixed capital.

A solution, avoiding negative real rates in the short term and the risk of excessively high rates in the long term, would be variable rates tied to the rate of inflation. This does not deal with the risk that a particular output price will rise less than prices in general, but it covers most other risks.

However, private investors seem to feel that variable rates create excessive uncertainty, especially since industrial investment is already more risky than investment in trade and some services. Moreover, variable rates are sometimes considered to complicate management. They may therefore not be adequate to reassure potential borrowers. An alternative

would be a fixed rate, with the level fixed to reflect expected long term rates. If the underlying rate of world inflation is somewhere around 7-8%, a nominal rate of 11-14% might be considered appropriate for the long term. The result would be a desirable rate somewhat higher than that now charged by the DIB.

To avoid encouraging capital intensive industries and methods of production, the same interest rate should apply to loans for working capital as to fixed capital (machinery and buildings). The more labor intensive industries need more working capital. An interest rate structure which is lower for fixed capital discriminates in favor of capital intensive industries.

b) Exchange Risk.

A related issue is the exchange risk. It is a small risk for the average borrower because output prices normally rise when the exchange rate is devalued, whether the good is exported or competes with imported goods. With increased output prices the capacity to service the loan rises together with the cost But for the individual borrower the risk is greater since he cannot be sure that the price of the goods he produces will rise as much as the cost of servicing the loan. Non-traded goods, of course, need not rise in price at all with devaluation and there are a large number of such goods in Egypt, as a result of import restrictions and tariffs. This risk of devaluation for producers is especially great as long as price controls continue.

It is therefore desirable for the banks to assume the exchange risk on long term industrial loans. That is, at the time a dollar (or DM or Yen) loan is made, repayment in Pounds would be fixed at the exchange rate

then prevailing. This would not change even if the exchange rate changes. However, if the interest rate remains at its present level (negative in real terms) there would be less justification for lenders to assume the exchange risk in addition.

c) Small borrowers.

Small borrowers have special problems. Commercial banks deal only with larger loans. The DIB does make loans to smaller firms, but not enough to meet all the need and there are borrowers who cannot provide the minimum 15% equity, or who need technical assistance along with their loans. Some other countries have achieved good results with a separate bank, or a separate department of their development bank, which makes loans only to smaller firms, in the Egyptian context to those with capital (other than land and buildings) of less than L.E. 200,000.

The cost of providing such small loans is usually greater than the income and the risk is also considerable. A specific, small subsidy is desirable to cover the additional administrative costs, since it is in the national interest that industrial development be widely based. The requirement for only 15% of equity is already quite low and the risk increases greatly if it is further reduced, so this is not recommended.

d) Extending the term.

Existing loans typically have maturities of 8 to 10 years at the most. For industrial projects with a long gestation period and often a long pay-back period this can be too short. It would be desirable if loans were available for 12-15 years for some projects.

e) Credit to stimulate private investment.

All four of the special arrangements proposed -- fixed, long-term

interest rates; assumption of exchange risk; special terms for small borrowers; and longer-term loans -- are justified by the need to stimulate a more rapid expansion of private investment in industry. In Egypt, as in other less developed countries, industrial investment is usually less attractive than investment in trade or real estate. Industrial investment is considered far more risky, and risk looms large in the calculations of private investors. There is risk of controls over prices, of competition from public sector firms or imports, of increased prices charged by public enterprises for inputs, of rising wages, of changed labor laws, even of nationalisation. These risks are compounded by a long gestation period. Risk is reduced if a substantial part of capital can be borrowed on favorable terms. Until private investors are reassured about the risk they face, reducing the risk of borrowing can be temporarily justified (say, for the next 5-7 years).

For loans of the DIB, Misr Iran and AIB, more favorable terms could be arranged through concessional loans from foreign donors. For Law 43 and public sector banks an Industrial Financing Fund (IFF) could be set up which would share in their loans. Using concessional funds, IFF participation would produce a loan package that is more satisfactory than a straight bank loan. The IFF share would be at fixed interest, with Government assuming the exchange risk, and for longer maturities. The Private Investment Encouragement Fund provides a model for the IFF.

(f) Finance for the Public Sector Enterprises

In the past a major problem for public enterprises that attempted to expand has been uncertainty and delays in government financing. When funds were inadequate to finance all approved projects, cuts were often

made across the board. The result, of course, was to delay completion of all projects, to postpone the beginning of production and therefore to increase investment costs and reduce benefits for all projects. It is clearly better to approve only projects for which financing can be assured at the rate dictated by construction and machinery costs. It was too early to tell whether this problem has been solved by the new Investment Bank.

Decisions on new investment projects seemed to depend almost wholly on financial returns expected, not on an economic cost-benefit calculus. Given distortions in prices, financial criteria based on prevailing prices, are not very relevant, as already noted.

Aid donors, by assuring themselves that needed funds were definitely committed and that an economic analysis had been carried out, would help improve the situation in both respects.

7. Wages, Employment, and Productivity

For social, equity and political reasons it is clearly desirable for wages in industry to rise rapidly. At the same time rising real wages will weaken the competitive position of Egyptian industry and increase the costs which consumers in Egypt have to bear, if productivity remains unchanged. However, wages can be increased without raising industrial costs if labor productivity rises.

a) Raising real wages.

There are two approaches to raising labor productivity and wages. One is to increase the amount of machinery (capital) for each worker, that is to increase capital intensity. Productivity could rise and so could the wages of employed workers, but at the same time there would be fewer productive jobs created in industry for each unit of investment, since

there would be more investment per worker. The same undesirable consequences can result if wages are raised by Government: as labor then becomes more expensive, managers will have an incentive to use less labor and more machinery, so the capital - labor ratio would change. Productivity per worker would rise, but fewer workers would find jobs in industry and the competitiveness of Egyptian industry would decline. In effect what would happen is that workers employed in industry would be better off, at the cost of the workers who could not find jobs with a reasonable and regular wage and who would have to subsist on casual employment.

It needs to be stressed that a policy of increasing real wages by Government action, through increases in the minimum wage or across-board percentage increases for both public and private firms, can have substantial economic costs. While such a policy has obvious and important short-term political benefits, its economic costs will translate into political costs as well, in the medium term. To create the needed employment, Egypt must remain competitive in the world market. That requries low labor costs. At present, wages are about one quarter those in East Asia, but productivity is also lower, so any advantage which Egypt has in terms of labor costs is probably quite small. If wages in Egypt rise more rapidly than in competing countries, without a corresponding increase in productivity, Egyptian industrial development could be severely set back, with great costs not only to the economy, but to labor. Increasing unemployment and underemployment (low income, casual work) obviously have serious consequences for the efficiency and equity

with which the economy functions and for stability of the society. In short, wage policy, and particularly the increases in wages which take place as a result of Government decisions, need to take full account of the consequences for employment, and the competitiveness of Egyptian industry, of raising wages too rapidly.

The alternative means for raising productivity is to improve management, to increase incentives for labor and management, to decrease overstaffing, and to expand and improve training. This would make labor more productive without increasing the machinery used per worker. Wages could also rise but labor intensity would not diminish and the number of jobs created for each unit of investment would therefore not decline. This is clearly the far better alternative.

Ways of improving labor productivity without increasing capital intensity are discussed throughout these reports. But there are consequences for labor policy which follow from this distinction between the two strategies for raising wages and labor productivity

b) Overstaffing.

Real labor productivity will increase to the extent that overstaffing is reduced. If overstaffing is still of the order of 30%, then eliminating overstaffing will increase labor productivity by 43% and would permit an increase of up to 43% in wages, with no increase in labor costs to the enterprise. Elimination of overstaffing is therefore a crucial element in increased wages and labor productivity.

But it is unrealistic to expect that overstaffing can be eliminated simply by dismissing the excess workers. It can be dealt with only by absorbing them in a more rapidly expanding, labor intensive industrial

sector. This is another example of the beneficent cycle, the self-reinforcing process, created by a strategy which stresses labor intensive rapid industrialisation. As unneeded workers are absorbed in new or expanded enterprises, labor productivity rises. That means wages can rise and costs can be reduced simultaneously. The competitiveness of Egyptian industry would increase, permitting further expansion of output, in part for export, which can absorb additional redundant workers. The process can continue until all unneeded workers are absorbed, while at the same time costs decrease and wages rise.

Redundant workers can play such a positive role in reducing cost while simultaneously increasing income, because they can increase output at almost no cost. They are now paid, but produce little. Labor in much of Egypt's industry is not a variable cost, as it is in economic theory, but is essentially a fixed cost. So if redundant workers are put to productive work, the output they produce will mostly be a net addition to production. Part of the increased output can go to increase wages, part to reduction of output costs. The only costs incurred in shifting redundant labor to productive work are any incentive pay or production bonus for them, usually a fraction of the normal total labor cost.

c) Government Employment

Another substantial pool of underutilized labor exists in Government. It would be ideal if, over time, some unneeded workers in Government could be retrained and shifted to work in industry. At the least it would be important that most additional people entering the labor force be available for productive jobs, many in industry, and not be diverted to lower productivity positions in Government.

To achieve this without violating the committment to provide government employment for secondary and university graduates requires that work in industry be available and more attractive than work in Government. One step is for wages in industry to rise more rapidly than in Government, which can be accomplished either by more rapidly increasing wages in industry or more slowly raising wages in Government. Since rapidly rising industrial wages can undermine Egypt's competitive position, a slower rise in government wages would be important, if that slowdown can be restricted to unneeded workers , and not apply to the specialists which Government desperately needs (Indonesia, which faced a similar problem, dealt with it by a system of special allowances which were often a multiple of base pay).

Another useful step would be to emphasize technical and practical training relevant to industry at both the secondary and university level and to reduce the number of students in those liberal arts and commerce courses which prepare students primarily for Government jobs. Of course that is difficult to bring about. (Korea has carefully adjusted the supply of university graduates to meet the expected demand of its economy and especially its industry, quite ruthlessly cutting admission in fields where there is an oversupply. But this is not feasible in most countries.)

d) Education and Training

To improve the capability of workers is one of the more difficult and important tasks in industrial development. It requires attention to the educational system, to formal vocational training and to training on the job.

At present a great deal of resources are going to higher education, while the resources available for basic literacy training in the primary school system seem to be quite limited. The extent to which a shift is desirable is beyond the scope of a study of industry, but it is worth emphasizing that literate workers appear to be considerably more productive in industry than those who are illiterate in many countries where the issue has been studied.

Extensive experimentation has been carried out in many countries on appropriate vocational education or training for industry. One clear conclusion is that the more closely such education is tied to the actual needs of industry, the more effective it is. At the same time training can not be left to each firm. Some firms that spend money on training find that some of their workers leave for a slightly higher wage elsewhere as soon as the training is completed, thus leaving them with all of the costs and none of the benefits of training. A solution is to share training costs between a government agency and the firm or firms employing the workers. Either the government can subsidize training carried out by a firm or group of firms or, conversely, the government agency can provide the training, with a contribution from all of the firms in the industry in a particular area. That keeps industry from seeing training as a free good and therefore asking for training even if it is not very useful.

Provision of training is especially significant in some public enterprise with redundant staff. They need to be re-trained for work that needs to be performed, but that is better paid, so they will be willing to undergo the training.

e) Technology

There is a tendency in Egypt, as elsewhere, for firms to take over the technology of a cooperating or licensing foreign firm. But that technology often is not appropriate, since it is designed for a country with high labor costs. A few countries have been successful in getting the most appropriate technology, one that is efficient in economic terms, though a government technological agency specifically charged with searching for efficient and appropriate technologies.

Such an agency can be small. But it needs to be staffed by technically competent personnel, needs to concentrate on industries of importance in the country. It has to have a clear mandate not to look for the most sophisticated technology, but for one that will be least costly in Egypt, whatever the degree of sophistication.

f) Labor Incentives

In the public sector incentives for labor are as important as the incentives for management discussed below. This requires shifting to the maximum extent feasible from a civil service pay system - with wages determined substantially by seniority - to a private sector pay system, with wages determined largely by output. Any such change is easier to carry out if,in the first instance, most workers receive a higher wage than before and none, or almost none, receive a lower wage.

Some public sector enterprises have already shifted to a piece work system, in which the individual or small group is rewarded entirely according to output. Others could be encouraged to do so. The experience has been clear: when most workers are better off, a piece work system

is widely accepted, even if a few workers, who previously did little - often because they had another full-time job - are unhappy or even resign.

A bonus system can, however, be a very dangerous tool, if public enterprise managers are not under pressure for efficiency. It is easy to set compensation per unit of output so high that everyone is better off without an increase in output. That is just a not-so- hidden wage increase, of course. The manager is content, because he is more popular, the workers are happy, only society loses, if wages rise while output stagnates. A bonus system, that is a system that rewards workers performance with higher pay, can be instituted only if either:

- managers are subject to careful performance evaluation (see below)
- or are prevented from paying out more in total wages unless output increases.

With such safeguards some remarkable increases in output per worker have been recorded at a few public enterprises in Egypt that shifted over to a group piece work or bonus system.

8. The Crucial Role of Women Workers

Women represent an even bigger reserve of potential industrial labor than underemployed males. If obstacles to their employment can be reduced, they can contribute significantly to higher industrial productivity and lower costs, and therefore to Egypt's ability to compete in the world market. At the same time, employing women in industry can benefit especially the lower income groups. Thousands of women are eager to work in industry, so supply presents no problem. The problem is to remove obstacles to the employment of women, especially for less educated women.

From the point of view of rapid industrial development the lower cost of female labor is a major potential asset. This is due in small part to lower wage costs, more to lower costs of urban infrastructure and a lower absenteeism and turnover rate.

a) The low cost and high productivity of female labor

(i) Wages. No significant change seems to have taken place betweeen 1966 and 1977 in the relationship between the wages of men and women in industry: women's wages are almost 30% below those of men. Surprisingly the gap appears to be somewhat larger in public than in private firms and for white collar (salary) than for blue collar (wage) earners. Since

Table 5

RELATIVE WAGES OF MEN AND WOMEN

	1966	1968	1971	1972	1973	1974	1975	1976	1977
All Industry									
men	103	102	102	102	104	102	102	101	102
women	69	71	73	72	70	73	74	77	64
Spinning & Weaving									
men	103	102	102	102	103	102	102	102	104
women	69	71	73	72	70	73	74	77	64

Source: CAPMAS: "Statistics of Employment, Wages and Hours of Work" Calculated from various years.

Note: Figures are ratios of average wages for both genders, i.e.: in 1977 in spinning men's wages were 4% above and women's were 36% below the average for both combined.

there has been a considerable change in the composition of the manufacturing sector, it is desirable to look at the ratio for a single industry. Textiles (spinning and weaving) is one of the largest employers of women. There women's wages also average lower by roughly the same proportion. But there are greater fluctuations and the sharp drop in 1977 seems unbelievable, especially since it is due to a decline in the female index for the private sector from 94 of the average wage in 1976 to 41 in 1977. This is almost certainly an error.

But the main picture is clear: female wages are almost 30% lower than men's. It is sometimes argued that women are less productive than men and that wage differences just reflect relative productivity or that women perform less difficult work. But the evidence from East Asia is clear that in the industries where they are important, women's productivity is probably higher than men's. Some of the occupations dominated by women in East Asia, such as spinning and weaving are elsewhere considered too arduous for them. Moreover in Egypt women in the organized labor force are, on the average, more highly educated than men, so if education is related to productivity or capacity to perform complicated work, women should be more highly paid. Certainly there are few high level and well paid personnel among women, which might explain part of the differential for administrative workers, but does not explain the differential for production workers which is just as great. Differences in seniority are another possible explanation and discrimination undoubtedly plays a role.

The relative importance of different factors can not be readily determined for Egypt. However, it is quite clear that women are less well

paid than men for comparable work in most societies, although this is contrary to the stated intention of many governments. Indeed different pay for the same work is illegal in Egypt as elsewhere. Usually, however, women perform slightly different work and are paid less for work that is comparable. Undesirable as it is, this fact reduces manufacturing costs of countries where the industrial participation rate of women is high.

It needs to be stressed, however, that employment in industry, even at a lower wage than men, is for many women far preferable to the alternatives available to them. It is sometimes argued that opening jobs to women at a wage below that of men represents exploitation and is therefore undesirable. But that argument ignores the fact that for poor women the alternative is often employment in the informal sector or in domestic service. In the former wages are even lower than in industry. In both alternatives protective legislation is effectively absent and so are the social security provisions of large firms. That is why the demand for formal sector jobs greatly exceeds the number available (see below). There is even anecdotal evidence that women are willing to pay "rent" to a woman formally holding a job to be allowed to perform it. In short, poor women have made it plain that they need and want industrial jobs. Increasing access of women to industrial jobs is good both for the economy and for the women.

(ii) Infrastructure costs. A more important fact affecting costs is the impact of women's employment on social overhead capital (or infrastructure). According to one estimate, the cost of urban infrastructure is lowest for an additional person in Cairo and Alexandria. Despite their well-publicised congestion the investment cost

of housing, transportation, water, policing, electricity etc., is estimated at L.E. 500-800 per person in these cities, while elsewhere in Egypt it is from 2 to 10 times higher. If one takes L.E. 800 as a reasonable minimum for the infrastructure cost of an additional worker in industry who comes from the rural area with a family of four others, then each wage earner would cost L.E. 4,000 or more in urban services.[1] In contrast, if the wife or daughter of a worker already in an urban area takes the same job in a factory, the additional costs are minimal (primarily some additional transport). So the savings in investment are of the order of L.E. 4,000 per female woker. The employment per year of 70,000 women workers, as projected in Table 2 would save L.E. 280 million a year, equal to one third of all industrial investment in 1979. Many of the female production workers in industry are daughters of production workers and are married to production workers. They therefore often live near factories and even require no transportation.

Moreover, provision for women's industrial employment can facilitate the move of population away from Cairo, Alexandria and other established areas and lower the costs of such a move. Women in poor families, if they cannot find work in industry or other regular employment, often cannot afford to be without income. They work in the informal sector as seamstresses, making cheese or in trade. Moving to a new area normally means losing this income, at least temporarily. So families are reluctant to move unless the husbands' income is increased sufficiently to make up for the reduction in income of the women in the family. If regular

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[1] The PADCO report estimates the cost at L.E. 600-650 per capita or L.E. 3,600-3,900 for a family of six. The two estimates are quite similar.

employment can be provided to women in the same areas, families will be more willing to move, and at a lower wage for the husband than otherwise would be necessary.

(iii) Absenteeism and turnover. In addition, a small but increasing number of managers have found female workers more reliable and therefore more productive. Men have more alternative opportunities. They move to other countries, other cities, other areas of the same city or other jobs in response to higher wages. Female mobility is much less, for a variety of social and economic reasons. True, women's maternity leaves may mean paid absences totaling nine months, in the case of a woman with 3 children, the maximum number for which such leave is allowed. But that is only 2.5% of a normal 30 year working life. Married women with children can also be absent for child rearing or because of children's illnesses and other family obligations and some of these may be at partial pay. Some managers have nevertheless found that all these absences are less than those due to male migration to other countries, work in construction and job shifts.

As a result of these factors, managers in interviews expressed increasing willingness to employ women. In some cases they faced an absolute shortage of male workers at the wage they were able or willing to pay (e.g. preparatory department, textile mill, Alexandria) and were changing predominantly male units or jobs into female ones. In other cases they found less absenteeism or lower turnover among women, as men left more frequently for other countries or second jobs (e.g. in construction) or other work at higher pay (e.g. large, capital intensive, private firms).

In short, as a result of lower wage costs and greater reliability

there is increasing willingness to hire women, but it is still limited. Both of these factors, plus the savings on infrastructure are reasons for suggesting that Government should encourage greater female employment in industry. There are two additional reasons: avoiding inappropriate capital intensity and increasing equality.

b) Avoiding capital intensity in the short term

Employment of women can have substantial long-run benefits by reducing the pressure for a potentially risky and costly industrial structure. At prevailing wages there are, at present, shortages of male workers in some industries and occupations. Combined with the natural preferences of engineers and managers for modern, sophisticated, labor-saving machinery, there is a strong and immediate danger that investment will result in an industrial sector that needs few workers and a great deal of machinery. Such a capital-intensive industrial sector would be a heavy burden on the Egyptian economy and society if, as projected earlier, the country again needs to absorb many more workers later in this decade. Once a capital-intensive industrial sector is developed, it becomes virtually impossible to shift to a labor-absorbing, capital-saving, labor-intensive pattern of industrial production. By then, managers, technicians, workers will all have acquired skills in using machinery, not people. Wages for the few workers used are high because labor productivity is high. But total factor productivity, the productivity of labor and capital, would probably be quite low and only a few workers could find jobs in industry. Some Latin American countries have found themselves in this position.

If, instead of locking the economy into an inappropriately

capital-intensive industrial structure, the female labor force is expanded rapidly in the next few years, Egypt can develop along labor-intensive lines. An industry with such a structure is better able to absorb additional workers than one that has little use for unskilled labor. It will be better able to cope when, in a relatively few years, the number of male workers seeking jobs in Egypt again increases rapidly and is added to the rising female labor force. (In other words, the elasticity of demand for labor tends to be higher in labor-intensive than in capital-intensive industries).

c) The Effect on Equity and the Problem of Educational Qualification

(i) Equity. In addition to these reasons of economic efficiency for women's employment, there are reasons of equity. In the lowest income groups, many adult women need to work to supplement family incomes and, in the case of female-headed households (15% of women are widowed or divorced), often to earn the principal income. If they cannot find regular employment at a fixed wage, they often do work that is not assured, pays little and provides no health facilities, insurance or other fringe benefits. One of the best means for raising the income of the poor is to provide regular, productive employment at a fixed wage to most of the adults in a family, including women.

(ii) The Problem of Educational Screening or"Credentialism" The tendency to use educational qualifications as a screening device to reduce the number of applicants for jobs in industry threatens, however, to undermine the equality - promoting effects of industrial employment. Apparently, as the number of educated women available for employment has increased, employers in turn have increased their educational qualifications.

Several firms require completion of 9 years of schooling (adadeya certificate) for essentially unskilled production work. As a result, the proportion and the absolute number of poorly educated women in the organised labor force has actually decreased (from 86% to only 46% from 1950 to 1976) while the number and proportion of educated women has sharply increased. Since the poor can not afford to educate their girls, educational requirements effectively keep women from poorer families from more stable, pleasant and well paid formal sector work and force them to seek work in the informal sector.

Table 6

EDUCATION OF PRODUCTION WORKERS, FEMALES AND MALES, 1976

(as proportion of women and men in occupation)

	Administrators Production supervisors		Chemical industry workers		Weaving, Knitting, dyeing		Sewing, tailoring, upholstery		Population 1976	
	F	M	F	M	F	M	F	M	F	M
Illiterate/ d and write	30	53	40	91	89	95	83	94	86	71
mary/less than er. (6-11 yrs)	35	16	60	9	29	13	11	6	9	17

Yet in many cases educational qualifications do not appear to be needed for some of the industrial work to which they apply. Repetitive assembly work in electronics factories, for instance can be, and has been, learned by women with very little formal education. Educational requirements are imposed because they have no cost to the firm: even with such requirements in place more women apply than are needed. But from society's point of view there are substantial costs to this practice.

When education is required for more attractive jobs, there is strong pressure on Government to expand general secondary education at considerable cost to society. For the same cost many more illiterate women could be given primary and vocational education. More important is the effect in further concentrating income, already referred to. For both reasons it seems desirable that Government policy should be to discourage the use of educational qualifications as a screening device for jobs where such requirements are not really needed. At least in the public sector such a policy could fundamentally affect what firms do.

Although both economic efficiency and equity call for a rapid increase in female employment, this does not necessarily mean that such expansion is a realistic possibility. This depends on whether enough women are willing to work in industry.

d) The Supply of Female Labor.

By now there is a good deal of evidence on the supply of female labor. Between 1975 and 1979, when employment opportunities increased, the female labor force outside agriculture increased by 8% a year, and open unemployment increased even more rapidly (Table 7).

The ratio of applications when regular industrial jobs are available is equally striking . These jobs were for the minimum wage, with bonuses and other payments bringing the income to L.E. 22 to L.E. 25 a month. To reduce the number of applicants for these essentially unskilled jobs, managers often required that applicants be unmarried, could read and write and sometimes that they have completed the pre-High School preparatory degree. Despite the low wage and the insistence on special qualifications, the number of women seeking jobs was always a multiple of the vacancies (Table 8).

Table 7

SUPPLY OF FEMALE LABOR

	Thousands of workers			Growth Rate %	
	1971	1975	1979	71-75	75-79
1. Manufacturing	67	66	87	0	7.2
2. Trade, service, etc.*	306	339	455	2.6	7.6
3. Total employed*	373	405	542	2.1	7.6
4. Unemployed	35	84	124	24.0	19.0
5. Total labor force	408	489	666	4.6	8.0

Source: CAPMAS "Labor Force Sample Surveys."

Note: *Excludes those in "Agriculture" and "Unspecified," because statistics in these fields are quite unreliable.

Finally there is spotty, largely anecdotal evidence of women working for L.E. 10 to L.E. 20 a month for piece work, or in very small enterprises. Many of these women are eagerly looking for regular industrial employment. There is thus little question that there now is no shortage of women interested in industrial employment.

The increased demand for and supply of female labor explain the rapid rise in the female labor force between 1977 and 1979. Undoubtedly with no further action on the Government's part this rise will continue. However, it is both desirable and feasible to accelerate the process.

Table 8

FEMALE APPLICANT - TO - JOB RATIOS

Textiles	8:1	Canning	1.5:1
Electric, Water meter	13:1	Furniture	5:1
Food processor	2:1	Electronics	6:1

Source: Interviews

9. Encouraging Employment

a) The difference between market and social costs of labor

Substantial further steps by Government to encourage employment in general, and particularly employment of women, are justified because there is a gap between the actual wage paid to workers (market wage) and the social cost (opportunity cost or shadow wage) of employing an additional worker. The current wage for male workers (and some females) in construction, agriculture and some industrial work is between L.E. 50 and L.E. 80 a month for essentially unskilled work (that is for work where training requires less than a month). However, there are many jobs which could equally well be performed by women, and which are increasingly being performed by women. There is no lack of female workers at L.E. 25 per month. Moreover, a survey in the Suez Canal Region found that 45% of all workers, most of them male, earned less than L.E. 20 a month in small scale industry and other small scale enterprises. The social cost of employing one additional worker could therefore be as low as 40% (L.E. 20/50), and at most would appear to be 60%, of the market wage at present.

Any calculation of the social cost of labor needs also to take

account of likely future trends in labor availability. Investments in industry planned now will generally not come into production for another 3 to 5 years. By that time it is quite likely that the labor situation will have changed, as argued earlier. Managers usually make their decisions on whether to use machines or workers on the basis of their current relative costs. But government, on behalf of society, can and should have a longer time horizon, taking account of the likelihood that the relative real cost of labor will be less in the future. Lower relative labor costs in the future are another good reason why the current social cost of labor should be treated as lower than its market price.

There are further reasons why there is a gap between the cost of labor to enterprises and the true cost to society. Industrial firms are expected to pay and to provide social services to workers on behalf of the Government. The most obvious example is the cost of health services. It is generally accepted in Egypt that Government is to provide free or low cost health services to Egyptians not able to pay for private medicine and Government does so through heavily subsidized clinics and hospitals. Public enterprises and large private firms provide such services to their workers and this becomes a cost for them. Since they are really acting as agents of Government, the firms should be compensated by Government for providing these services.

Industrial firms also provide training to workers on the job which benefits society as a whole and which otherwise would have to be provided by the Government supported vocational education system. Child care services provided by enterprises are a more difficult matter. To the extent they provide education, health care or better nutrition that

society would or should otherwise provide, the enterprise is again an agent of society. Since good care for small children can improve their chances to do well in school and, by lowering mortality, can reduce the desire for more children, child care can be seen as largely or wholly a social cost. But to the extent it serves to free a woman for work in the enterprise and would not be needed if the woman did not work in the enterprise, its cost is a legitimate expense of the firm, in effect a wage in kind.

There is an important offsetting cost, that of providing the urban infrastructure which is borne by society, but which really should be charged against firms employing adult male workers drawn from the rural areas, but not those employing adult women already in the city. An estimate of LE 4,000 has been reported earlier as the cost of providing urban infrastructure for a worker's family. At 15% interest, that would be LE 600 per year. In addition there are operating costs for police, streets, transport,water supply, sewage and even housing to the extent that it is subsidized. There are some offsets, because even in the rural areas from which workers come Government has some costs for infrastructure. If these total costs of rural infrastructure equal operating expenses of the far more elaborate infrastructure required in the city, one would be left with LE 600 per year as an order of magnitude guess of additional urban infrastructure costs. As noted, if additional workers are drawn from women already near factories, instead of male heads of household who move with their families from rural areas, practically all of these costs can be saved. Therefore, on that basis alone, one can argue that social costs for male workers are LE 50 a month higher than for

women or conversely that society can afford to subsidise female industrial workers by about that much. Of course, these are only very rough estimates, but even if they are wrong by 50% or more, very substantial subsidies to increase female employment would be justified.

b) Labor Subsidies

Therefore total output would increase if industrial enterprises were encouraged to use more workers in high productivity industrial activities, withdrawing them from the very low income and low productivity work which they are now doing in the informal sector or from some jobs with very low real (social) productivity in redundant government and public sector employment. The cost to society would be minimised if the new industrial workers are women already in the urban areas. To provide an incentive to industry to employ more workers and especially women, by labor intensive techniques or to invest in labor intensive activities, a subsidy would be desirable to cover at least part of the difference between the market and the social wage.

Such a subsidy cannot readily be given directly because of administrative difficulties and the risk of fraud. Indirect subsidies are, however, possible, somewhat easier to administer and can be more closely targeted to achieve their aim. The most promising possibilities are:

(i) partial payment by Goverment of maternity leave. One of the obstacles to greater employment of women is the cost of 3 months of maternity leave for each child. While the cost over the working life of a woman is not great, it may be considerable for a particular employer if the woman works in that firm during her childbearing period. If

Government uses normal revenues to pay most of the cost of maternity leaves for all women who return to work it would reduce this disincentive.

(ii) partial payment for child care facilities at a factory and almost full payment for facilities in residential areas would make it easier to employ women with children and more attractive for both workers and employer.

(iii) partial payment of the cost of such fringe benefits as health care at the factory, canteens and transport between factory and home for all workers. This would compensate factories acting as agents of society or government, even if the facility is administered by the factory.

(iv) partial payment for training and education provided by industrial firms. Here again firms are really acting as agents of society. The costs of firms will increase if they provide training to workers who leave to work at another firm once their training, is completed. This can be a strong disincentive to training, especially by private firms. Yet there is great need for massive training to replace skilled workers leaving for other countries and to train the additional workers needed by an expanding industrial sector. A good deal of the training can be given in factories to assure that it is practical and relevant. But for a massive expansion of training, government should bear much of the cost.

(v) partial payment of social security contribution could substantially reduce labor costs, since these now equal a substantial proportion of the basic wage.

If all of these indirect subsidies could be adopted, labor costs to the enterprise could be reduced by as much as 15-20% for men and more for women. This would encourage a socially desirable increase in labor use,

especially of women, while at the same time expanding training. Most subsidies however should be limited to production and service workers and should not be available for clerical, administrative, technical and managerial workers. First, because the main purpose is to increase the use of unskilled and semi-skilled workers, who are among the poor and, second, because many public enterprises have a particularly large number of unneeded clerical and technical workers. It is in any case desirable for public enterprises to absorb first the unneeded workers they have before they are encouraged to hire more. Any labor subsidies therefore need to be phased in over the next four years and should apply to blue collar (unskilled and semi-skilled) workers only, with the exception of the training subsidy. In the case of the public enterprises the social adjustment account, discussed below, could be used to cover the desirable subsidies.

c) Additional Employment to Compensate for Job Loss in Traditional Occupations

The need to create additional jobs, and therefore for implicit subsidies to lower the cost of labor and encourage labor use, is particularly great because as the Egyptian economy is opened to the world market and as industry develops, the number of jobs in some very small, informal sector occupations is likely to diminish. Preliminary results of the Michigan State University study of very small scale enterprises show nearly 29,000 workers employed in 23,500 enterprises in the cities and towns of one (Fayoum) Governorate. These enterprises, which generally have only one worker provide about one-third of total industrial employment. The activities with the largest number of workers - tailors and dress-makers

(about 9% of total, almost half women) - would seem particularly vulnerable to competition from ready-made garments. Cheese and basket makers, (each about 8% of the total) are probably less vulnerable and may actually experience increased demand with development, as a result of the greater income of industrial workers. Experience from other countries suggests that a small but significant fraction of new jobs in industry are created at the cost of existing jobs in the handicraft sector. There often is a special problem for women, whose jobs in the latter are wiped out if they can not obtain employment in developing industry. This warrants special concern to assure access to industrial jobs for women with little education.

10. Pattern of Future Investment-Comparative Advantage

The extent to which industry draws on unskilled workers depends a great deal on the pattern of investment. As already mentioned there is a substantial difference among industries in the investment required for each job created. But what is relevant to the desirable pattern of future investment is not just labor intensity, but more generally the efficiency of each industry or activity in Egypt as compared to other countries. This "comparative advantage" is always difficult to measure. A great deal of data preferably on a firm-by-firm basis, is required.

In the case of our work almost no such data were available from the dominant public sector enterprises. Even if the data are available they provide only an indication of relative past efficiency, which may not be a good guide to likely future efficiency. This is especially true in countries like Egypt where most of the industrial plant is old, where overstaffing is widespread but differs among firms, where there are strong incentives to hide or change information, and where an inherited distorted price and control system causes many abberations that affect economic efficiency (e.g. the use of high quality cotton to produce low quality yarn). However, if firm-by-firm data are available, it is usually reasonable to assume that the most efficient firms (in economic terms) represent the potential for the future and indicate the dynamic comparative advantage of a country. In the absence of such data, we were able only to calculate the present (static) comparative advantage. The conclusions we are able to draw are therefore subject to a considerable margin of error.

a) The need for cost-benefit analysis: Its absence in Egypt

Since decisions on the pattern of future industrial investment are of great importance to the functioning of the whole Egyptian economy - to employment, wages, prices of industrial products, ability to export, government revenues and so on - it would be very desirable to apply to firm-by-firm data the particular measure of costs and benefits we have used here, the Domestic Resource Cost (DRC) of earning or saving one unit of foreign exchange. We would urge that our results in this field be treated as highly preliminary and be used as a basis for further work with better data, which are available.

(i) Systematic cost-benefit analysis is especially important in Egypt because:

- price distortions are especially pervasive in the economy, therefore decisions based on prevailing market prices can be, and often are, very inefficient in economic and social terms.
- Government continues to dominate decisions in industry. Therefore desirable investment indicated by cost-benefit analysis can actually be carried out.

But we have been struck by the apparent almost complete neglect of cost-benefit analysis in Egypt compared to other countries. For reasons we do not understand, we do not know of any other country in Asia or Africa that so largely ignores the analysis of economic costs and benefits in investment decisions. More careful calculation of costs/benefits can, if decisions are actually influenced by such calculations, be a major step in improving the economic efficiency of Egyptian industry in the next decade.

(ii) Appropriate cost-benefit analysis for Egypt. Our approach, quite standard for most planning agencies, international organizations, aid donors and economists, is based on three premises:

- Egypt should produce the goods which it can produce efficiently, where its productivity is high, whether these goods are sold in Egypt or abroad. After all, if Egypt can earn one Pound of foreign exchange by exporting cement which costs only PT 48 to produce, it should invest enough in cement to produce an export surplus. With each Pound of foreign exchange earned from selling cement abroad it can buy such goods as electric heaters, where one Pound's worth of imports would cost nearly L.E. 7 to produce in Egypt. At a cost of L.E. 5,000 Egypt can produce enough cement to pay for imported heaters which would cost almost L.E. 70,000 to produce in Egypt (L.E. 7/L.E. 0.48 X L.E. 5,000). It makes no sense to produce in Egypt all the goods needed by the domestic consumer, that is to plan to produce whatever is now imported. Rather it is sensible to expand industries in which Egypt is efficient, to produce those goods for both domestic consumption and export, and to import goods which cannot be produced as efficiently in Egypt.

- In deciding what goods Egypt can produce cheaply and efficiently, one can not use prevailing prices. Private profitability is not a suitable criterion in an economy where prices do not measure scarcity because of price controls, subsidies, imort duties and taxes. Any commodity can be produced at an apparent profit if government controls or subsidises the prices of the inputs used to produce it or keeps the price of output high, by protecting it from competition.

For instance, cement will appear unprofitable if its price is set

below import costs, while aluminum may appear to be profitable if the electricity used to produce it has a price set way below the real cost of making electricity. The appropriate price to use for most commodities is the cost of importing them or the earnings from exporting them. The social price of labor is what it produces in its present employment (opportunity cost). Using these social prices one can calculate for each commodity what it would cost in terms of Egyptian resources to produce one Pound worth of imports saved or export income earned. This measure of costs and benefits, the Domestic Resource Cost (DRC) has been used. A DRC of 0.5 indicates that at social prices it costs only PT 50 to produce goods valued at one Pound in the world market, clearly a favorable ratio. A DRC of 2 means that it costs L.E. 2 to produce goods worth only L.E. 1, not a very promising proposition.

- It is risky to produce only the goods with the most attractive DRC

Egypt needs to develop a diversified industry: because DRC calculations are not necessarily accurate; because demand or technology and therefore prices may change; because costs may rise if an industry is expanded a great deal; and because quotas or other restrictions may be imposed if Egypt exports large quantities of a single commodity.

b) Commodities for which Egypt is an efficient producer

Using the DRC criterion we evaluated as many existing activities as we could. Not surprisingly, because it is consistent with experience elsewhere, there were two types of industry which proved relatively efficient or attractive:

-- those based on local raw materials, especially materials that are costly to ship (cement, leather, vegetable oils)

-- those that used much labor (bicycles, nylon carpets, cotton underwear).

Those which were least economically efficient were industries:

-- where economies of scale are great, that is efficiency depends on huge factories with large output (automobiles).

-- which requires costly inputs and scarce skilled labor (iron and steel, aluminum).

-- which had received substantial protection/subsidies and were therefore not under pressure to raise productivity.

(i) Perverse incentives: subsidies for the inefficient. We have found elsewhere as well that there is a costly tendency for those industries to receive the highest protection/subsidy which are the least efficient at social prices. There is a vicious cycle at work. Industries that are difficult to operate efficiently receive greater protection/subsidies because that is needed to allow them to survive. They benefit from high tariffs on their output, low prices for their inputs, cheap credit, losses borne by government. They become dependent on this protection/subsidy and their managers tend to concentrate on increasing the subsidy rather than on increasing productivity. Efficiency or productivity does not increase with experience, rather it diminishes since the implicit or explicit subsidy protects the enterprise and its managers from the consequences of inefficiency.

High protection for enterprises with low economic efficiency, or low social productivity, is often accompanied by low or even negative protection for the most promising, efficient enterprises. They can manage to survive despite an implicit tax on their production, so they suffer

from low prices on their output or high prices on their inputs

Such a system of perverse incentives, encouraging and subsidising industries that should decline and penalising/taxing those that should expand, exists in Egypt as elsewhere. The Effective Rate of Protection or ERP measures the extent to which goods or activities are implicitly subsidized or taxed. ERP of .50 means an implicit or effective subsidy of 50% through low prices of inputs or high prices of output. An ERP of -.75 means the activity is, in effect, taxed 75%, by a high price on the goods or services it buys or a low price for those it sells. The perverse relationship between ERP and DRC, is shown in Table 9 below.

(ii) Egypt's efficient industries. The same table also indicates, by a DRC below 1.0, the industries which our - admittedly quite rough - calculations show to be the most efficient i.e.: with the greatest comparative advantage. Unfortunately several of these industries, which should be promoted by Government policies, are instead quite heavily "taxed", usually by a high price for inputs or a fixed low price for output (e.g., leather products and cement).

Table 9

COMPARATIVE ADVANTAGE AND EFFECTIVE PROTECTION
(Selected Results)

	ERP-%	DRC
Activities where further investment seems warranted		
Food -- average	-92	.25
Vegetable oils	-92	.10
Jams and marmalades		.27/.39
Starch	-50	.27
Textiles -- average	91	1.46 (?)
Rayon filament	--	0/1.0
Nylon carpets	14	.8
Leather products (especially bags)	-81	.27
Cotton underwear	-4	.63
Cosmetics	--	.5
Cement	-71/-84	.40/.48
Bicycles	--	0/1.0
Probably worthwhile		
Food		
Sugar	14	.77
Cigarettes	--	0/1.0
Cotton textiles (if based on short staple cotton)	--	.93
Acrylic and polyester fibers	--	1.06 (?)
Final wear/garments	44	1.89
Wooden furniture	--	.12/.55
Paper production	--	.11/1.62
Chemicals -- average	24	1.89
Phosphate fertilizer	7	.72
PVC	--	.80/.09
Synthetic leather	--	.03/.32
Polymers and paints	--	.13

	ERP %	DRC
Non-metallic products	--	--
Sanitary ware	--	.19
Cement bricks	--	.13
Engineering products		
Television, refrigerators, washing machines, air conditioning, sewing machines	--	0/1.0
Oil, fuel, air filters	--	.16
Electric cables	--	.08
Not recommended for expansion		
Food products		
Frozen	--	1.81
Canned fish	--	1.67
Nitrogen fertilizer	-72	134/negat.
Iron and steel	599	4.8
Aluminum	69	131/negat.
Steel structures	--	-.17
Automobiles	305 (??)	1.85

Notes:

Data from various sources. If more than one source, range of values given. (?) means doubtful, (??) very doubtful.

0/1.0 means exact value uncertain but most probably in desirable range.

DRC data derived from applications to DIB and Investment Authority tend to be substantially biased downward (eg: 2h, 2i). Data from input-output table on whole subsectors tend to higher DRC.

Several other conclusions emerge from these data:

- Energy intensive activities have obviously become less attractive as energy prices have risen, especially in a country like Egypt where any reduction in energy consumption would, with a lag, increase oil exports correspondingly. The substantial protection for iron and steel and for aluminum, together with their unattractive DRC, reinforce the argument for more realistic pricing of energy to all producers. This would reduce the false profitability of energy-intensive enterprises and provide less of an incentive for their expansion, an expansion that would result in a subtantial loss of resources to Egypt.
- Several important sectors, notably, textiles, seem to lack comparative advantage, but this may be due to questionable policies, such as the use of high quality, high cost cotton to produce low cost yarn. The situation would, according to rough calculations, change radically if policies were changed.

11. The Efficiency of Public Enterprise

The importance of the public enterprises has already been mentioned. The public enterprise sector contributed about one-third of total gross domestic product (GDP) in 1979. Since agriculture, services and trade are essentially in private hands and comprise well over 50% of GDP this means that public enterprises dominate the economy outside these sectors, including industry.

a) The Crucial Importance of Efficient Public Enterprises

Increasing the efficiency of public enterprises is as important as a more appropriate exchange rate and input/output prices in developing a

productive industrial sector. And unlike other steps, practically everyone would gain from improved efficiency at almost no cost. There are very few economic policies that give a society something for almost nothing - increased public enterprise efficiency is one of them.

A 5% overall efficiency gain in public enterpirses would provide resources sufficient to increase by nearly half the investment in industry and mining. And everyone seems to agree that a 5% increase in efficiency is quite feasible in a short period of time and that a good deal more is a distinct possibility.

(i) The effect of public efficiency on private investment. Another important reason for increasing public sector efficiency is that it is important for a growing and successful private sector. In many cases public sector firms provide the inputs needed by private firms: electricity, yarn, glass, iron and steel, fertilizer, paper, cloth, tires, cement, and so on. Any attempt to develop a private garment industry will be seriously handicapped if the cloth it buys from its public suppliers is of low quality, or costly or is not supplied on time.

Second, if public firms remain inefficient and burdened with excess labor that is poorly trained, Government will be under strong pressure to protect them from competition. The alternative is to let them go under, at considerable and possible unacceptable political and economic cost. To protect public firms may mean that Government will continue to prohibit investment in private firms. Even if private firms are allowed, they will not be exposed to effective competition which alone can assure their efficiency. Private firm too can become fat and lazy if they are heavily protected by Government.

For both reasons, support for rapid growth of an efficient private sector pre-supposes increased public sector efficiency.

(ii) Why not sell public firms to private enterprise? It might be argued that the most effective way for improving the functioning of public firms is to sell them to private entrepreneurs. We have not addressed the issue of an appropriate mix between the private and public sector in industry, because we consider it to be beyond our mandate, but it may be worthwhile listing the reasons why we consider it unrealistic to shift the public industrial firms wholesale to private hands:

- Many firms would require bargain basement prices. Public firms are widely overstaffed, with old and outdated machinery in many cases and handicapped by other problems, such as controlled prices. They could be sold only at a fraction of their book value or investment cost. Government would be severely criticised if it accepted such bargain sales.
- There would be no buyers for many of the larger, more important firms, even at low prices. Few Egyptians have the capital required and, given Egyptian history, few would be willing to risk much of it. If Government finances purchases, by advancing funds, it would be subject to even more devastating criticism.
- Firing redundant workers and present managers and raising prices, which any private buyer would insist on doing in most cases, would result in bitterness and opposition which Government would find hard to deal with.
- Administratively it would be impossible to sell off such a large public sector in the short term. Experience elsewhere (e.g., Pakistan) has shown that selling public enterprises is a complex, time consuming

process. It is necessary to avoid the possibility of collusion, corruption and nepotism in such sales. So valuation and negotiation are bound to take time. To sell off dozens of firms worth hundreds of millions of dollars would take a while.

- Public firms are monopolies or oligopolies in many fields (e.g., steel, electricity) and government would need to set up a mechanism to avoid monopoly profits.

This is not to say that a gradual sale of some public firms would not be possible, if the Government decides on such a policy. But whatever policy is adopted, the public firms in industry will remain of great importance for the next five to ten years at least. Their efficiency will have a profound impact on the government revenues, exports, prices and the ability of the private sector to grow.

b) Steps to increase efficiency

(i) General (macro-economic) policies, discussed earlier, will affect the public enterprises. If consumer and producer prices are de-linked, so producers pay more for some inputs, such as electricity and receive more for some outputs, such as cheap cloth, public enterprise managers will try to save on electricity and to produce more cheap cloth.

Better prices for exports, somewhat higher interest rates, more flexible credit arrangements, and somewhat lower effective labor costs would all have some impact on public, as well as private firms. But the impact on public firms will remain quite limited until:

* Enterprise managers have sufficient autonomy to respond to the different environment,

* Incentives are provided for the enterprises to respond in socially desirable ways,

(ii) Needed autonomy hinges on organizational reform. There is a broad consensus in Egypt on the form that this reform should take and a law to implement the consensus was well advanced in the summer of 1981. The consensus holds that public ownership should be combined with a private type of management. This requires more autonomy, especially in setting prices and labor policies. A draft law would delegate most important decisions to enterprise managers, a new group of holding companies and the new National Investment Bank.

The form of organization is not all that different from organizational forms that existed in Egypt and elsewhere (e.g Indonesia), but that were abandoned. One reason why these "reforms" did not last is that the new organisations were unable to build up staff and competence to exercise their authority over the public enterprise firms.

But a more important reason for the cyclical nature of public enterprise reform - with major responsibilities shifting periodically among intermediate organizations (holding companies, Moassasats), enterprises and responsible Ministries - is the difficulty of dealing with the problems of the public enterprise sector. They are great and extend well beyond organizational structure. If organizational reform is seen as the principal step needed for a solution, expectations are bound to be disappointed. Another turn on the wheel is likely to follow, with another organisational change, in the hope that this reorganization will have the expected beneficial results. Decentralisation and enterprise autonomy is probably a necessary condition for public enteprise efficiency, but it is far from a sufficient condition.

The draft law under consideration does delegate many decisions to the enterprises, but since the holding companies and the National Investment Bank have great influence on managers' careers and the finance they are able to obtain, managers are likely to be responsive to their wishes. Also many public managers are risk averse, want to share responsibility or cannot afford to jeopordise personal relationships. It is therefore quite possible that the superior agencies will evolve over time to exercise the same excess control as the old Moassasats. The National Investment Bank will have unprecedented power under the new law, combining direct control over the Government's equity with credit control. If it is badly run or dominated by an interventionist, or bureaucratic mentality, the new arrangements could be a disaster. But if its leadership are able and imaginative people, and its staff has persons with the needed professional and technical background, it could make for major improvements. As a new agency it can start with good people, if its role is seen to be as important to Egypt as those of EGPC or the Suez Canal Authority.

(iii) The Danger of Autonomy. Appropriate leadership and staffing for the NIB is especially important because the draft law is very well designed to give to it (and the holding companies) an appropriate degree of control over enterprises. In execution it will need to ensure that the best, strongest and most dynamic of the enterprises do not arrogate too much autonomy. The danger is that managers will be left free to use public money to pursue their self-interest or their own perception of the public interest (examples are the petroleum companies in Indonesia and Italy).

Moreover many of the managers, as well as many of the best managers, are engineers. Like engineers elsewhere they tend to prefer capital intensive, high technology methods to those using large numbers of unskilled workers, although the latter are generally preferable in terms of low cost production, employment creation and equitable income distribution. Many of the managers have long years of experience, with great benefit to their technical competence, which makes it difficult for them to adjust from a centrally planned, to a more market oriented, system.

Evidence on the dangers of autonomy is provided by the ineffective use of existing autonomy. For instance, freedom to establish bonus criteria has led to excellent systems in some cases. In other cases bonuses have been uniform, which discourages effort.

Finally, distorted prices mean that great autonomy may simply allow managers to make more decisions that are wrong from the viewpoint of society and the economy, as they try to increase income or profits in an environment where distortions abound.

For all these reasons, greater autonomy must be accompanied by externally set and clear objectives, by careful evaluation in the light of these objectives and by incentives for managers to use their autonomy in the public interest. Otherwise autonomy will allow some managers to pursue self-interest and others to satisfy their preference for modern, capital-intensive technology. A few managers will use autonomy not to increase efficiency but to preserve present, comfortable riskless conditions. In all cases distorted prices will give managers wrong signals and lead to less than optimal decisions. Autonomy can be helpful if it is accompanied by a changed economic environment. By itself it can

be dangerous, since society's interest could no longer be safeguarded by central authority and would not be preserved by market pressures in many cases, unless some major distortions are removed (see above).

(iv) A signalling system is required to induce public enterprises to act in the interest of society as a whole. Such a system has three major components: (i) a performance evaluation system in which national goals are translated into explicit enterprise objectives and quantified in a performance criterion (iii) an incentive system in which managerial and worker welfare is linked to national welfare by a pecuniary or non-pecuniary bonus system. Without reform of the signaling system, international experience suggests that some managers will be found to use their newfound autonomy in ways which are incompatible with the national interest. This will lead to cries for increased central control, the government will increasingly intervene, and the system will be right back where it started.

To reward socially desirable behavior is no simple task. Public enterprise goals are difficult to specify due to the problems of multiple objectives, and different control organs having different perceptions of what the goals should be. If goals cannot be specified, then "good" performance cannot be distinguished from "bad,"managers cannot be rewarded on the basis of performance, and inefficiency can result.

Most public enterprises are in fact evaluated like a public institution (which is to say, not at all) and if they are to be made more efficient, they must be made more like private enterprises, with quantified performance indicators to serve as a first approximation to performance. This is not to say that they are to be evaluated like a

private enterprise, but rather that, like a private enterprise, they must be evaluated.

(v) A performance criterion for public enterprise is difficult to construct, not because they have multiple objectives, but because some of the objectives are difficult or impossible to quantify, and there is little agreement on the trade-offs (relative weights or prices) among objectives. In dealing with these problems, it is useful to think in terms of two sets of objectives: commercial and non-commercial. Commercial objectives are similar to those of private firms and reflected in commercial accounting procedures. Non-commercial objectives concern extenal effects of enterprise operation (e.g., the benefits of opening up a backward area, or the costs of pollution) which are not reflected in private accounting procedures. Non-commercial objectives are particularly troublesome because they are typically difficult to quantify and/or difficult to put weights on. Fortunately, for purposes of performance evaluation, the problem of non-commercial objectives can be substantially reduced by recognizing that many non-commercial objectives are achieved by the very existence of the enterprise and do not alter operational goals. They affect investment decisions but not operating decisions.

(vi) Profits as performance criterion. Even if an enterprise has no non-commercial operating objectives, it is not appropriate to use private profit as a performance criterion. Publicly relevant profit is quite different from privately relevant profit for two sets of reasons: first, publicly relevant accounting categories are different from privately relevant categories; second, publicly relevant prices differ from privately relevant prices.

Accounting differences occur because private costs are often public benfits and vice versa. Corporate income tax is an example. This is a private cost and a private manager should be rewarded for reducing taxes in favor of increasing dividends and/or retained earnings. For a pure public enterprise, however, taxes are not a cost but merely one form in which the benefits are distributed to the government shareholder. A public manager should be neither rewarded nor penalized for reducing taxes while increasing dividends, retained earnings or the depreciation allowance. Differences between publicly and privately relevant accounting categories arise because the private manager is charged with looking out for the interests of only one economic actor (the shareholder) while the public manager should be concerned with the interests of all domestic actors. The performance indicator which reflects this broad interest is "public profit," the difference in the value to society between what the enterprise takes out of the economy (costs) and what it puts back in (benefits).

The second source of divergence between public and private performance criteria lies in the relevant prices, an issue discussed earlier. For instance, an enterprise is forced to sell its output in a price-controlled market where the price to the enterprise is less than what society is willing to pay; or, it is allowed to acquire imported inputs at a preferential exchange rate below the real value of the foreign exchange to society. From the viewpoint of a government shareholder as custodian of all national resources, the relevant price is that which reflects economic scarcity.

If the recommendations made earlier are acceptable and most

distortions are removed, then market prices facing the industrial manager would come quite close to reflecting social scarcity. That would clearly be a first best solution. The second best solution is also simple: revalue the accounts, using shadow prices, just as is common with project evaluation. If transfer payments (taxes and subsidies) and price distortions are largely corrected for, then public and private profits become quite similar and private profits are an appropriate criterion for measuring operational efficiency.

(vii) Trends in public profits as criterion. If price distortions can not be removed and shadow prices are considered too complex and controversial, then the operational solution is to evaluate managers on the basis of the trend in public profit at constant prices. While the levels of public profits will differ when evaluated at shadow as opposed to market prices, the trends will generally be similar.

(viii) Operational non-commercial objectives must still be dealt with. The central proposition is that they must either be dealt with explicitly or ignored altogether. Otherwise, the entire signaling system breaks down, and with it, the basis for a sensible autonomy structure. If a manager is allowed to get away with arguing that his poor commerical performance is due to a pursuit of vague, unquantified, non-commercial objectives, then it becomes impossible to distinguish between legitimate and illegitimate reasons for losing money. It is then impossible to hold managers accountable for achievement of either commercial or non-commercial objectives, and therefore undesirable to delegate autonomy.

One straightforward solution is to eliminate the problem by simply denying the validity of non-commercial objectives in public enterprises.

Any worthwhile non-commercial responsibilities are to be hived off to separate public institutions, leaving public enterprises free to operate according to strictly commercial principles.

(ix) Social adjustment accounting. A further step is possible. This involves quantifying the costs and/or benefits of meeting non-commercial objectives and entering them explicitly into the enterprise accounts -- a process one can call social adjustment accounting. The basic principle is that the enterprise should pursue only commercial objectives unless specifically instructed to the contrary by the government. In such a case, a bargain is struck as to the incremental costs incurred in meeting the stated objectives, and the enterprise is compensated in this amount. The obvious advantage of this system is that it allowed pursuit of legitimate non-commercial objectives but controls illegitimate pursuits by subjecting them to an open discussion of costs (and thus of the trade-offs) involved.

Social adjustment accounting can also be used to achieve the delinking of producer and consumer prices. If fertilizer is sold ex-factory at low prices as a result of a conscious government decision to subsidize farmers and/or wage goods, then the enterprise can be compensated by a per unit subsidy, as suggested earlier. Similarly, if the factory is receiving underpriced natural gas or electricity, then a per-unit tax can be levied to make the price faced by the firm approximate real economic value. This is of course a cumbersome second-best alternative to simply setting the right price in the first place.

(x) The "disclosure bonus" system. There remains the problem of deciding which is "good" performance, that is to set criterion values. To

determine "good" performance, the best comparison is with the same enterprise in previous years, as already suggested. If several other enterprises in the same field exist, comparisons with their performance are also useful. While inter-temporal and inter-enterprise comparisons are essential inputs into the process of setting criterion values, in the end a subjective professional judgement is required; that is, a 10% improvement in performance is not "good" performance if new technology or the ability to transfer 30% of the labor force readily allows a 40% increase in productivity. Performance needs to be evaluated in terms of what is feasible.

But the people with the best information as to what is feasible for a particular enterprise are the managers of that enterprise. Unfortunately, their unbiased judgement is generally not forthcoming, because it is in their interest to have a low target. To induce managers to reveal their own best estimate of enterprise potential, a "disclosure bonus" system can be used. Briefly, the process is as follows:

(i) the ministry uses its judgement to set a target criterion value (e.g., a 10% increase in profits) and an associated target bonus level (e.g., a bonus of 10% of salaries);

(ii) the enterprise is then free to adjust the target criterion value, and if it does so, then the bonus rate is raised or lowered depending on whether the enterprise raises or lowers the target criterion value (e.g., if managers set the target at 20%, the bonus would become 15% if the target is reached).

(iii) the actual enterprise bonus may be above or below the adjusted target bonus depending on whether actual performance is above or below the

adjusted target criterion value (e.g., if only 10% improvement is achieved, the bonus would be 7%; if the achievement is 30%, the bonus would be 17%).

The managers would then maximize the bonus if they set the target criterion value at the highest level they can possibly achieve.

(xi) The bonus system is the last step in an appropriate and effective signaling system. It provides incentives which affect managerial behavior in the desired way. This requires that:

-- the bonus be sufficiently large to cause changes in behavior (Japanese and Korean firms pay bonuses equal to 2-8 months of pay);
-- the criterion for paying the bonus be set high enough to require special effort;
-- it be continuous, that is the better the performance, the higher the bonus, otherwise managers may relax once they have reached a set target; and that
-- it include such non-monetary incentives as promotions and increased financial autonomy.

Implementation of a successful signaling system is not a simple matter, but is essential if the organizational reforms are to produce the desired effects. A priority task for the National Investment Bank should be to establish such a system.

c) Competition and Pricing to Improve Public Enterprise Efficiency

Increased competition is one of the major advantages of moving from a centrally-planned to a market economy. Decentralized control by the market can to a considerable extent be substituted for centralized control by the Ministries. Efficiency can be enforced in part by exposure to the

rigors of the market. This works, of course, only to the extent that two conditions are fulfilled: first, that managers are motivated to respond; and second, that the market provides the correct signals of social scarcity.

The chances of the market providing correct signals increase dramatically with the number of competitors. This means that a major principle of economic policy should be to increase the number of participants in a particular market, subject to the limitation imposed by scale economies.

Partitioning the economy into public and private spheres clearly reduces competition. It protects inefficient public and private sector enterprises from each other and subsidizes them at the expense of the consumer. It would be preferable to allow them to compete.

More important in the short term is to encourage competition among public enterprises by avoiding grouping them along sectoral lines. Diversified, rather than homogeneous, holding companies will not only encourage competition rather than cartelization and market sharing but also are likely to leave more autonomy to their enterprises.

International competition is the only solution in fields where economies of scale prevent the existence of many firms in Egypt.

The final crucial element in competitive policy is to permit enterprises to die. The ultimate collective incentive is knowing that otherwise all employees will lose their jobs. This is difficult to do -- impossible in some societies -- but is important to an efficient public sector. Moreover, there is a real welfare loss in operating inefficient enterprises. Shut-down should occur only when variable social costs

exceed variable social benefits and this means that the enterprise is taking more out of the economy than it is putting back in.

Unlike organizational and signalling reforms, competition policy is unlikely to be popular with either managers or workers. In the United States, it is often said that entrepreneurs are avid believers in the virtues of competition in every market save their own. Nonetheless, increased competition must be seen as one of the prices managers must pay for increased autonomy. Making public enterprise managers responsibe to markets rather than bureaucrats presupposes that the markets give correct signals of social scarcity and this can best be accomplished by mechanisms to encourage competition.

Pricing policy has already been commented on. A few additional points apply especially to public enterprise:

* Some of the low prices charged by public enterprises benefit primarily the wealthy (e.g., Fiat cars, flat glass), and raising prices would increase resources which could benefit the poor. These prices not only reduce efficiency, but also equity.
* Cost-plus pricing has widely led to inefficiency.
* When there is excess capacity enterprises should be encouraged to export even if the price covers little more than intermediate input costs. Japanese firms use this principle to employ workers they cannot fire or otherwise idle machinery, and develop export markets at the same time.

But these are lesser issues. The crucial point is that public enterprises will continue to dominate the industrial sector in the next few years, regardless of how quickly private enterprise develops. Whether

they operate efficiently and in the interests of the society as a whole will large determine whether Egypt develops a dynamic industrial sector. Efficiency in turn depends in part on greater autonomy and steps to achieve this are well underway. But it depends equally on a system of performance evaluation and incentives to assure that managers use the autonomy to achieve the purposes of society. The efficiency of public enterprises is probably one of the two or three most important determinants of success in the industrial development of Egypt.

12. The Role of AID

For outside funds to be used more effectively in Egypt's industrial development requires, above all, changes in Egyptian policies and programs. A number of important, imaginative and risky steps have already been taken in the last few years which have accelerated industrial growth and improved its efficiency, and more are under way. But clearly still more needs to be done. More important than AID's support for any particular project is general support for the needed reforms, to reduce the risk and increase the benefits of the changes made. Of course, it is never easy for outsiders to be involved in policy changes, nor is it without controversy. And it would be difficult in the extreme, fraught with danger and little chance of success for AID to advocate policies that are not acceptable to the Egyptian government. But there are farsighted and incisive analysts in the Egyptian Government who see the changes that need to be made, yet also understand the risks, particularly the short-term risks involved. AID can help them by reducing the risks.

a) Program Support.

What this calls for, above all, is program support for an accelerated, more labor intensive industrial program. AID, the World Bank and other donors could make a large scale, preferably multi-year (subject to appropriations) committment to a program jointly agreed with the Egyptian Government, to achieve the employment and other objectives set for industry. Such a program could involve:

(i) an outline of the needed macro-economic policies,

(ii) including steps to increase the attractiveness of exports and,

(iii) the availability of credit to private firms, and especially to smaller private firms;

(iv) breaking the link between producer and consumer prices for industrial goods. Producers would pay scarcity and international prices to provide strong pressure for efficiency, while consumer prices for popular goods would, where necessary, be directly subsidized.

(v) a decision to stress labor intensive investment,

(vi) that particularly takes advantage of the ample supply of female labor.

(vii) steps to improve the functioning, that is the economic efficiency, of the public enterprises and

(viii) to provide training and incentive schemes for industrial workers and managers,

Such a program would support the on-going move from a centralised, relatively closed economy to a decentralised one which uses the market to achieve its objectives and is far more oriented to international trade.

AID's support could be more effective, it is widely recognised, if

AID itself moved away from support of specific projects to support of programs, from "retail" to "wholesale" operations. Both objectives can be realised by specific support for programs in support of desirable policies.

b) Loans to financial institutions

Both the proposal to make exports more attractive and to provide loans to the private sector would be greatly facilitated if AID could provide, in the context of the general program for industry described above, loans to various banking institutions that would:

(i) allow them to lend to very small private borrowers at a lower interest rate than if they had to cover the full cost of small loans,

(ii) lend for industrial investment at a fixed interest rate which reflects the likely long-term rate,

(iii) assume the exchange risk,

(iv) provide export credit and working capital to exporters at highly favorable rates.

c) The Efficiency of Public Enterprises and the NIB.

As part of the same loan program, funds could be provided to the National Investment Bank for a program to develop and improve the efficiency of public enterprises. The program would need to include:

(i) a performance evaluation system which allows monitoring the performance of managers,

(ii) a project appraisal system, which chanels new investment into activities where Egypt possesses comparative advantage, especially those which are labor intensive, and

(iii) incentives for managers and workers to take advantage of decentralisation measures now in prospect.

d) Joint Public-Private Ventures:

Providing credit on a priority basis for joint public-private ventures would encourage such enterprises. The result would be to improve efficiency of public enterprises, as they are exposed to competition and incentives, and encouragement to private firms, especially Egyptian firms, to enter fields they have largely avoided.

e) Specific Projects

In addition to these major programatic commitments there are a large number of more specific projects that would be worth pursuing.

(i) Technical and training assistance for the National Investment Bank, to accompany program support.

(ii) More generally, developing a careful economic appraisal procedure for industrial investment projects, at least for AID supported projects and preferably more generally, which would require more systematic gathering of information (including international prices) and its use in calculating social cost and benefits.

(iii) Support for widespread industrial training programs:

* apprentice training for men and women in factories, with substantial subsidies, to help new entrants and retrain redundant workers,

* literacy training for workers to enable them to take jobs that require reading and writing,

* expansion of technical vocational education, especially for women,

* management training, already under way, could pay special attention to the skills needed by public enterprise managers.

(iv) To facilitate employment of women in industry:

* help finance child care facilities,

* subsidies for maternity leaves,

* training for female supervisory personnel,

* give preference to industries that traditionally employ a higher proportion of women and/or are opening up new occupations to women that have traditionally been limited exclusively to male workers,

* subsidize special skills training programs for women in areas where there are pronounced shortages of skilled male workers, outside of vocational schools in special programs and in vocational schools that would receive subsidies in developing new curricula with special efforts to enroll women.

* support innovative programs for unskilled and older women, such as on-the-job training programs, and shared-year work programs,

* in designing resettlement areas, include industries which provide employment for women in families of resettled male workers,

* support industrial apprenticeship programs that include young women,

* increase enrollment of girls in technical vocational schools by subsidizing development of curricula in areas where women are particularly in demand and where they could find employment on basis of demonstrated aptitudes (interior finishing in construction, furniture finishing, plumbing and electrical work).