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Framework of the Indicative Industrial Plan for the Egyptian Private Sector Through the Year 2000

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المجموعة الإستشارية للشرق الاوسط

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Preface

The current economic liberalization and reform policy is envisaged to enhance the role of the private sector in the social and economic development in Egypt. Liberalization of the economy - in turn - requires planning and scenarios for the path of development that shall be pursued by the private sector, in such a manner that coincides with the economic interests of that sector.

Indicative planning scenarios shall be based on tools that are totally different from those adopted in the context of the central planning which has been phased out worldwide. In specific terms, economic liberalization and market mechanisms represent the determinants of the development vehicle, identify its pace and draw up its future trends. Such determinants are essential for the plan to become a realistic one.

Since the industrial Sector is the leading sector and the vehicle of development, the indicative planning process for this sector shall be of a paramount importance in the context of the national planning.

Indicative plans, programs and projects provide data and information which shall guide the private sector when making investment decision. Thus, they represent a support for the private sector in the course of social and economic planning in Egypt.

The General Organization for Industrialization plays a major role in the planning and development endeavors including the formulation of policies and strategies for the private sector in the course of the different development stages.

Amongst the basic characteristics of the open-door policy- adopted by Egypt since mid 70's - is the encouragement of the private sector and the incentives provided therefore to penetrate the different fields of the economic activity. By the private sector we mean local, arab and foreign capital. The fields of activity penetrated by the private sector include the small, medium - scale and micro enterprises, along with extracting industries.

The indicative plan drawn-up in this document focuses on the small and medium scale industries which include all industrial enterprises with ten (10) and more workers, and with investments of about L.E. 100,000 - L.E. 3,000,000.

1- **Historical Background of the Manufacturing Sector in Egypt and the Rationale of the Plan:**

Uptill 1950, the Egyptian manufacturing sector did not exceed 10-12% of the Gross National Product (GNP). Structurally, the sector represented a mix of simple consumer industries which developed because of the availability of their basic requisites, especially the agricultural raw materials. In addition, the industrial entrepreneurs preferred to produce the types of goods which required small investments, and those which did not account for significant transportation and energy costs, nor those which implied complicated technological processes.

Major industries during this period included: cotton ginning (the production of which grew from 868,000 Kentar in 1940 to 1,400,000 Kentar in 1950), spinning, rice husking, and soap.

The decade of fifties was characterized by attempts to encourage the industrial sector and help it diversify and expand activities.

Amongst the major endeavors in this respect was the establishment of the national development councils, the amendment of the joint stock companies law, the reduction of tax, the increase in tariff protection, the reduction of tariff on production supplies, the exemption of companies from corporate taxes for varying periods which reached 7 years, the exemption of new stocks from corporate taxes for 5 years, and the exemption of non-distributed profits from 50% of the industrial corporate tax.

Nevertheless, the national and foreign private capital remained limited, a manner which forced the government involvement in the establishment of projects in some industrial sub-sectors to help promote such investments. The government role, however, was confined to some heavy and basic industries, such as: iron and steel, chemicals, cement, electric cables, and tyres. The second half of the fifties witnessed the first 5-year government industrial plan, which comprised 150 projects, with an investment cost of L.E. 500 million.

This plan represented the first step in the course of the government and the public sector control over the industrial sector, whereby the private sector was permitted to be engaged in industrial activities under the supervision and control of the public organizations. Such a situation resulted in a slow-down of the private industrial sector, the share of which did not exceed 20% of the total industrial production in Egypt, which amounted to about L.E. 1320 million in 1970.

As result, significant bottlenecks took place in respect of many manufactured goods and accordingly, it became evident that private capital, both national and foreign, shall be attracted to the industrial field. Law No. 65 was issued in 1971, granting privileges and guarantees to the local and foreign capital.

However, the effectiveness of this law was weakened by the circumstances undergone by the Egyptian economy at that time, including the preparation for war and hence, the fear of entrepreneurs to be involved in business activities.

In spite of such adverse circumstances, the output of the industrial private sector has increased by virtue of this law, from L.E. 330 million in 1970 to L.E. 475 million in 1974. Such an increase represented an incentive for the government to proceed further with the encouragement of the private sector, in general, and the industrial private sector, in particular. Law 43/1974 was issued (amended by Law 32/1977) to enhance the privileges provided to the private investors. Specifically, the Law provided additional privileges, including:

- Facilitation of the provision of local inputs - produced by the public sector - for the private sector, at cost lower than the imported ones.
- Streamlining of the importation of production supplies, and allocating part of the foreign loans for the private sector.
- Establishing the Industrial Development Bank to facilitate the importation of equipment by means of soft loans.

2- **Major Aspects of the Plan:**

The Plan has a multitude of aspects, including:

1. Set-up of a data base for the industrial sector, covering:

- Industrial production and factors of production.
- Employment, wages, and working hours.
- Capital assets.
- Financial indicators.
- Economic indicators.
- Population.
- Micro and Small industries.
- Foreign trade.
- Development, in quantity terms, of the industrial output.
- Development, in quantity terms, of the industrial consumption.
- Commodity balances.
- Macro economic indicators.
- Input-output tables and national accounts.

2. Draw-up of a package of computer programs to operate and update the data base, as well as formulate the different industrial plans.

3. Provision of the appropriate methodology for industrial planning.

4. Provision of commodity balances.

3- **Limitations of the Plan:**

1. Historical data: 1970 - 1988.
2. The Plan is drawn-up on the levels of activity, product, and project.
3. The Plan deals with the regional aspects globally, excluding the mining industries.
4. The number of industrial activities ranges between 9 and 27 activities.
5. Data cover industrial establishments with 10 workers and over. Certain data about micro enterprises are also provided.
6. The indicative industrial plan is drawn-up in the framework of the national economy.

4- **Objectives:**

1. Set-up of an indicative 5-year industrial plan for the private sector in Egypt, in the framework of a 10-year plan and of the Egyptian economy, in general.
2. Formulation of an appropriate methodology for the plan, to be taken as guidelines in the future.
3. Build-up of an integrated information - and data - base apt for expansion and updating in the future.
4. Draw-up of a package of policies and procedures, capable of encouraging the private sector to put the indicative plan into effect.
5. Concluding a list of industrial projects, which meet the requirements of technical and economic feasibility, in order to be carried out by private investors.
6. Providing advice and building-up expertise by means of on-the-job training for GOFI staff, in order to enable them to carry out the planning tasks in the future, based on the outcome of the economic liberalization and reform policies.

5- **Components and Sources of the Data Base:**

Components :

1. Statistics of the industrial production and factors of production (2 + 3 digits):
   - Factors of production, by industrial activity and subsector, including: output, supplies, manpower and wages.
   - Factors of production, classified by governorate and numbers of workers.
   - Capital formation.
2. Financial indicators, including basic indicators, by activity and sub-sector (2 + 3 digits):
   - End-of-year accounts.
   - Final accounts.
   - Sources and applications of funds.
3. Economic indicators, by activity and sub-sector (2 + 3 digits).
4. Employment statistics, by activity, governorate and sub-sector (2 + 3 digits):
   - Statistics of employment, wages and working hours.
   - Statistics of population and manpower.
5. National accounts, by activity and sub-sector (2 + 3 digits):
   - Tables of output, consumption expenditure and capital formation.
   - Tables of income, expenditure and capital financing.

6. Statistics of population, according to the different distributions and projections through the year 2000.

7. Household budget, distributed among product groups, and according to the income brackets in urban and rural Egypt.

8. Foreign trade statistics, on product basis (2, 6 digits):

   - Exports, quantity and value.
   - Imports, quantity and value.
   - Prices of exports and imports.
   - Trade balance.

9. Consumption of goods in Egypt, including total and per capita consumption.

10. Prices of industrial inputs and products on the basis of:

    - Factory price.
    - Consumer price.
    - Wholesale price.

11. Industrial output, including:

    - Quantities and values of production of the items manufactured by the public and private sectors (37 industrial sub-sector).
    - Quantities of manufactured goods in the public and private sectors.
    - Quantities of goods transferred for manufacturing in the public and private sectors.
    - Value of manufacturing processes undertaken by the different institutions for the account of others.

12. Inter-sectoral tables:

- National accounts tables and input-output tables.
- Manpower matrices.
- Imports matrices.
- Exports matrices.

13. Statistics of financing sources, including:

- Banks financial positions.
- Liquidity.
- Deposits, local and foreign.
- Credit, local and foreign.

14. Statistics of micro enterprises, including:

- Numbers of workshops, by district, city and activity.
- Numbers of workers, by workshop and activity.

15. Statistics and data required for the analysis of the proposed projects' feasibility.

6- Sources of Information:

1. Central Agency for Public Mobilization and Statistics (CAPMAS).
2. Ministry of Planning.
3. Federation of Egyptian Industries.
4. Handicrafts Federation and Local Units.

5. Ministry of Manpower.

6. The Banking System.

7. International Statistics.

8. Field data collected from production units and distribution outlets.

Period covered: Time series for the period 1960 - 1990.

7- **Planning Methodology and Analytical Techniques:**

A- Analytical Studies:

1. Statistical and economic analytical studies:

- Developments of the industrial structure.
- Structure of imports and exports.
- Wages and productivity.
- Human resources.

Major tools:

- Production functions.
- Human resources functions.
- Statistical measures and parameters.
- Inter-sectoral models.
- Cost/benefit analysis.

2. Financial studies:

   - Applications of financial analysis, by activity and sector, based on the statistics of the financial and economic indicators.

3. Utilization of the inter-sectoral models for the analysis of the structure of the manufacturing sector and the determination of the leading sector.

4. Commodity balances for the manufacturing sector:

   - Developments of commodity usages.
   - Developments of commodity and resources.

B- Planning studies (Indicative Plan through the year 2000):

1. Macro-level model:

   - Sectoral production and income.
   - Capital formation and financing.
   - Consumption expenditure.

2. Sectoral model, and alternative development scenarios and industrial plans.

3. Commodity-level studies and projections for the year 2000:

   - Industrial production.
   - Industrial exports and imports.
   - Apparent consumption of industrial goods.
   - Demand functions for industrial goods.
   - Derivation of supply/demand gaps for industrial goods.

4. Project Financing (banking system financing).

5. Utilization of the cost/benefit analysis technique, with computer applications.

C- Computer packages used:

1. Quattro pro.

2. SPSS.

3. D Base III and IV.

4. COMFAR.

8- Study's Users:

1. Senior management of the manufacturing sector:

   - Reporting system.
   - Rapid decision making due to the automation of the planning process.

2. Private industrial investor:

   - Data and information required for the establishment of a new project or for the management and operation of an existing one:
   - A listing of projects for selection and implementation.

3. Middle level management in GOFI and the manufacturing sector:

   GOFI's role has developed to be a planning rather than an administrative one. The planning process - in turn - requires modern technique and automation. This project provides the middle level and executive management with information and techniques about the planning process in the future.

9- **Proposed Project Profiles:**

Project profiles are drawn-up on the basis of the following factors:

- Market needs, analysis of supply, demand and gaps through the year 2000.
- Sources of finance availab'e for the concerned projects in the banking sector.
- Vertical and horizontal integration of the plan and the proposed projects.
- Technical, financial and economic feasibility.

The plan concluded 150 project profiles, distributed among the different industrial activities.

These proposals are directed to the following groups:

- Egyptian businessmen.
- Arab and foreign investors.
- Financing institutions.
- Federation of Egyptian Industries.
- Planners at the different levels.

10- Components of the Study Plan:

1. Relative importance of the manufacturing industry and the private manufacturing sector in the Egyptian economy.

2. Data base, and basic economic indicators of the private manufacturing sector.

3. A future outlook for the industrial private sector.

4. Policies and procedures which ensure the encouragement of the private sector to carry out the indicative plan.

The plan components have been dealt with through two phases, namely:

Phase I

- Relative importance of the manufacturing sector and the private enterprises.
- Data bases and the structural and quantitative analysis.
- Past, present and future commodity balances.

Phase II

- Future plans for the industrial private sector.
- Policies and procedures necessary for encouraging the private sector to implement the indicative plan.

The following chart indicates the phases of the Plan:

Indicative Plan Preparatory Phases

First Phase

1- Data Collection

- Industrial statistics on sector & activity level.
- Financial Indicators on sector & activity level.
- Wages & work hours on sector & activity level.
- Laws governing industry.

2- Data Base Preparation & Computer programs for Industrial Planning Purposes:

- Production data base
- Labor & wages data base
- Industrial activities budgets data base & analysis
- Deposits & credit data base
- Capital formation data base

3- Preparation of industrial planning programs:

- Dealing with data base.
- Analyzing data base graphically.
  - Dealing with statistical models
  - Correlation coefficients
  - Regression models
- Financial Statistics
  - Liquidity ratios
  - Creditworthiness ratios
  - Assets management efficiency ratios.
  - Profitability ratios

4- Modifying Data Base Structure

5- Models & Programs Applications:

- Statistical models analysis
  - Human resources model
  - Production function model
  - Productivity model
- Industry structure analysis
  - Financial analysis
  - Input output model analysis
  - Determining leading sector
  - Determining final demand matrix

6- Periodical Report

Second Phase

7- Data Collection Completion:

- Production quantitive and commodity data
- Productive & unemployed potentials
- Completion of funding sources data
- National accounts data
- Deposits & credits data
- External trade data on commodity level
- Family budget
- Products prices data
- Family data
- Population data

8- Final Preparation for Program:

- Matrices test & entry
- Matrix inverse
- Matrix inverse analysis
- Sectoral gross
- Planning models preparation
- Aggregate plan programs preparation
- Simulation programs preparation
- Sectoral plan programs preparation
- Commodity balance preparation
- Planning models design for funding sources and plan requirements
- Commodity plans preparation
- Determining private sector role

Programs Operation for Completing Plan Schedules Outputs

Final Report

Chapter One

The Relative Importance of Manufacturing Industries & Industrial Private Sector in the Egyptian Economy

1.1 Industrial Growth and Structural Change Phases in the Egyptian Economy:

1- Industrial Growth and Structural Change:

Tables in the statistical appendix highlight the pattern of growth and structural change of the private industrial sector and contrast it with that of the public sector and the economy as a whole. There are two sources of data related to the industrial sector whose coverage are different. Figures obtained from the national accounts combine the manufacturing and mining sectors excluding oil.

However, since the mining sector other than oil is insubstantial, the figures given there provide a good indicator for growth in the manufacturing sector. Besides, they have the advantage of covering all manufacturing activities including small scale enterprises and the informal sector.

On the other hand, the detailed data regarding the manufacturing sector at a two-digit level of disaggregation by sub-activity are obtained from the industrial census conducted by CAPMAS. The census covers only enterprises employing more than 10 workers and/or capital of more than L.E. 5,000. The aggregate national account figures and the desegregated census are beyond comparison, they complement each other. There seems to be no inconsistencies between the two sets of data as far as the main trends of industrial growth is concerned.

The period covered (1975-1990) could be divided into three distinct sub-periods as far as the growth cycle is concerned: 1975-81/82, 81/82-84/85, 84/85-89/90. Growth in real aggregate GDP peaked during the first period (9% P.a.), then decelerated afterwards to 6.3% over the two subsequent periods. This could be explained by the massive inflow of external resource inflow from many sources and its tapering off following the second oil price shock after 1981.

The pattern of growth of total manufacturing followed a similar cycle, but with some lag in the first period and a lead in the third. It grew at 6.9% in the first period in contrast with 9% for aggregate GDP, and at 4.7% during the third period, thus exceeding that of the GDP (3.9%) The outcome was an initial decline in the share of the manufacturing sector in GDP. The leading growth sectors then were oil and other staple windfall incomes.

But with the decline of overall growth since the beginning of the 1980s, industrial growth seems to have picked up momentum as well as autonomy. This is more evident from the data related to the formal organized manufacturing sector, both public and private, but particularly the latter.

The rates of growth of the public manufacturing sector during the three successive periods were: 2.0%, 4.3%, and 9.8% consecutively. Its slow growth during the first period (only 2%) could be explained through the impact of the so-called "Dutch Disease" that normally accompanies a sharp rise in windfall foreign exchange resources. However, growth not only continued in the 1980s but even accelerated, reaching a rate of circa 10% towards the end of the decade.

The rate of growth of the private (organized) manufacturing sector was substantially higher and was sustained throughout the whole decade and a half (1975-90) with a short-lived miid lull in the first half of the 1980s. It grew at 15.9%, 12.3% and 15.9% during the three period. Accordingly, its share in total GDP almost doubled form 25% in 1975 to over 40% in 1990. The private manufacturing sector has started to become significant and capable of acting as an engine of industrial growth if its potential is appropriately utilized and its organizational constraints alleviated.

The accelerated growth of the manufacturing sector's output in the second half of the 1980s, in spite of an overall recessionary trend in the economic, could be explained mainly in terms of recent macro-economic policy reforms. The steady decline in foreign exchange resource inflows and capacity for external borrowing, particularly since mid-1980s, imposed stringent stabilization policies aiming at contracting domestic aggregate demand and absorption.

Consequently, the rate of growth of real aggregate consumption, which reached a level of circa 7% in the second half of the 1970s, declined to less than half that level (2.6%) in the second half of the 1980s. The decline in public consumption was even sharper reduced as it was from 7.2% in the first half of the 1980s to 1.9% in the second half.

Real gross fixed investment followed the same pattern. After having increased at 16.8% in the first (1975-81/82), it declined to 1.5% and 0.0% in the two successive periods. Public investment declined at an annual rate of 1.9% during the last period. The result was that domestic demand and markets contracted during most of the 1980s.

Accordingly, the accelerated growth of industrial output (manufacturing) in the face of an overall of contraction of domestic markets and demand means that growth sources of demand turned markedly towards import substitution, exports, and some local production sectors which meet the needs of high-income groups. The latter income group's demand has not been affected by the overall contractionary trend in the economy.

According to Ministry of Planning data related to the growth in the industrial sector's intermediate import requirements, it declined from 21% to 10% of total industrial production (i.e. it was less than the half) over the period 81/82-86/87. Likewise, the industrial sector's balance of trade deficit was reduced from 16% to 7%.

Such figures indicate substantial intensification of import-substitution industrialization which is a major goal of publicly announced policies. Meanwhile, the share of industrial exports declined from 5% to 3%.

Total industrial exports in current L.E. increased form L.E 200 million in 1976 to L.E 7.6 billion in 1986-87. Its growth accelerated, particularly since the mid 1980s, and more than doubled by the end of the decade. Private industrial imports increased from L.E. 69 million in 1983-84 to L.E 126 million in 1986-87 (i.e. doubling over a period of three years). Nevertheless, it still accounts for only 14% of total industrial exports as compared to a share of over 40% in output.

Growth in private manufacturing activities has been predominantly an inward oriented, derived one. It is only in recent years, with domestic demand contracting, that it began to seek expansion and/or higher level import substitution. On the whole the overall export orientation of Egypt's industrial sector remains very modest amounting to $800 million only in 1986-87.

Recent macro-economic policy and the modest regulatory reforms contributed to the above described pattern of industrial growth and its still predominately inward-orientation. Aside form the above mentioned stabilization policies aiming at reducing aggregate absorption, the exchange rate and price policies need to be single but for their substantial macro and structural impacts on industrial growth.

The average annual rate of devaluation of the Egyptian pound's exchange rate was 8% during the period 1975-1980. This rate has, since then, accelerated to 15%. This naturally provided an additional margin of protection for domestic industries over and above the already quite elevated rate of effective nominal protection ranging between 100% to 300%.

Such a high level of total protection, coupled with declining foreign-exchange supply and accordingly import capacity, provided a substantial incentive for import-substituting industrial growth, both public and private. Further incentives were provided through regulatory reforms such as price liberalization and deregulation, extension of incentives of foreign investment laws to private investors, easier defects licensing and other regulation related to investment, etc. These added to the profit margins and incentives for industrial expansion.

To the extent that these reforms contributed to industrial growth, they are commendable. However, they have a serious negative long-term side effect. Whatever industrial growth has been realized, it was achieved under highly protective conditions and is therefore non-competitive in export markets.

Studies of the domestic resource cost of public enterprises in the 1970s indicated a ratio of more than one for most of these projects which make them non- competitive internationally. The same criteria is likely to apply to more recent industrial growth and its cost efficiency, including that of the private sector.

Now that domestic markets are contracting and given the fact that industrial growth can only be sustained if the marginal rate of industrial exports exceeds that of output, a predominant import-substitution growth would be harmful in the long-run and would reduce the industrial sector's competitive edge and thus reduce the marginal rate of growth of industrial exports rather than uplift it. The crux of the matter, then is that industrial growth, whatever its pattern of allocation amongst type of demand, must take place under competitive internal market conditions.

Lastly, another factor encouraging inward-oriented industrial growth relates to monetary polices. Low nominal interest rates and an easy credit policy led to rapid expansion of credit offered to industrial manufacturing sector increased to finance industrial investment at negative interest rates. This applied to both public and private sectors.

Accumulated commercial banks credit to the organized private sector amounted to L.E. 651 million in 1975 (409 million for the public business sector). In 1982, it had risen to L.E. 3.9 and 2.9 billion for the private and public sectors respectively. In 1989, the figures were L.E. 17.3 billion for the private sector and 9.0 billion for the public one. Bank credit from L.E 4 billion in 1987 to L.E. 14.4 billion, an almost fourfold increase over a period of only three years.

Such a high level of financial leverage and growth in the industrial sector bank borrowing contributed the macro-economic to the imbalances of financing structures and costs as well as on level to growth in domestic credit, money supply and inflation.

Such a credit extravagance is not sustainable, and the interest rate has already raised sharply. Industrial growth in the 1980s was not based on solid economic foundation and need to be revised and rationalized if it is to continue and accelerate in the 1990s.

So far we have highlighted the pattern of growth in industrial output and its linkages with the rest of the economy. We have also assessed briefly sources of growth in demand particularly in the light of contracting domestic absorption. Below we discuss briefly the sources of growth from the supply side.

The neoclassical approach to assessing the sources of growth in supply flows depends on the production function. Thus output growth is made a function of its inputs growth mainly: labor and capital.

Since empirical evidences indicated that growth in output can substantially exceed the growth in factor input, the remaining residual is attributed to growth in total factor productivity which is a composite of many other factors such as efficiency, factor utilization, economies of scale, externalities etc.

However, the Egyptian economy departs substantially from some of the assumptions underlying the above methodology. Firstly, factor and product markets are segmented and, therefore, prices and rates of return are not equated at the margin. Secondly, the commodity composition of output and factor mix are changing rapidly. Therefore the pattern of growth and structural change and its consequential changes in factor allocation constitute a major source of growth other than growth in factor inputs and levels of efficiency. This additional source of growth must therefore be taken into consideration in trying to account for growth in industrial output in Egypt.

With regard to growth in capital formation, total gross fixed investment increased rapidly after the Infitah (16.8% during 1975-81/82) then completely stagnated throughout the 1980s. The average annual rate of growth over the whole period was just about the same rate of growth as GDP. As for the manufacturing sector, the rate of growth of real gross fixed investment exceeded that of real GDP. For the formal industrial private sector the respective rates of growth were 15.5% and 11.7% respectively.

The available evidence then indicates capital deepening in manufacturing and a rise in the capital/output ratio. On the other hand, the overall average growth rate of employment in the manufacturing sector over the whole period was 3.3%, almost all of it emanating from growth in private sector employment (5.8% p.a). Private industrial employment accelerated, particularly in the second half of the 1980s, reaching a high level of 12.4%. One can safely conclude form these figures that the capital/labor ration of manufacturing in general and of the private sector in particular has increased.

Growth in factor inputs constituted a major source of industrial growth over the period 1975-90. However, its contribution fluctuated with capacity utilization. During periods of expansion, factor productivity would rise, and the opposite would happen during periods of slow growth.

Part of the growth cycle is related to foreign exchange availability which is a major constrain on industrial growth given its overall high imports intensity of over 25%, if we account not only for intermediate inputs (referred to earlier) but also for raw materials and capital goods. The external resource inflow cycle and its correlation with levels of capacity utilization also explains a major portion of the estimated fluctuations in TFP changes in efficiency, economies of scale, etc. are unlikely to have been a major source of change in TFP over this period.

The pattern of structural change in industry contributed not only to growth in output but it has also affected average factor productivity. A shift in the industrial sector's commodity composition from raw material processing labor-intensive technologies to higher value-added capital intensive ones must have been a factor in the estimated rise in the ICOR to levels approaching 10. Another contributing factor to the high capital intensity and low productivity is the cheap cost of capital relative to labor, particularly if we take not only the direct but also the indirect cost of labor, pecuniary and nonpecuniary, into consideration.

The pattern of structural change has been quite substantial. Over the period 1975-89 the share of traditional raw material processing consumer goods industries declined from over 50% of total output to circa 40%. At the same time, that of higher capital-as well as import- such as metal products, machinery and transport equipment almost doubled, accounting for circa one third of the total industrial activities. It is also to be noted here that structural changes took place w.thin each of the 2-digit industrial activities. Also, the period witnessed a great deal of internal substitution, with formal industries substituting for previously informal ones. These structural changes affected both factory mix and their productivity.

In conclusion, it must be pointed out that while the period since the Infitah has witnessed a significant growth in industrial output and capital formation, particularly by the private sector, its present level is still extremely modest in comparison to both the country's potential and need. Since 1973, Egypt's civil society (keeping government aside) accumulated large sums of financial wealth. A major portion of these resources were invested not in productive activities, including industry, but in financial assets, including foreign exchange, real estate speculation, housing and durable consumer goods. The reason has been the lack of viable, accessible and profitable investments, especially in industry for which there is a great need. The reason is mainly the stifling regulatory framework, inappropriate macro-economic policies and negative rational expectations.

2- Stages of Industrial and Economic Growth:

Long term industrial growth in Egypt in the past Second World War passed through three analytically distinct phases. Inter-phase years are often marked by slowing down of growth and efforts to achieve structural adjustment. The shift from one phase to another has occurred due to the exhaustion of growth sources of the old phase and the emergence of major imbalances in the economy at both macro and sectoral levels. The external sector has played a predominant role in this regard.

The first phase came right after the war and was triggered basically by primary commodity exports and the resulting increase in income and domestic demand for industrial products. This was followed by import substitution growth which took place in the late fifties and first half of the sixties. The third phase began in the mid seventies and was domestic demand led. It lasted for nearly a decade before beginning to decelerate coming to a halt towards the end of the 1980s.

The industrial sector is presently in transition towards a new fourth phase. Future growth is planned to be more outward-oriented. Such an orientation, however, is not likely to exclude higher level import substitution. The main difference between this latter import substitution is that it is planned to take place through liberalised and more competitive domestic markets rather than taking place behind high protective walls. One can therefore predict the coming phase of industrial growth as likely being led by growth in tradeable products within competitive market structures.

A. Primary Exports and Derived Industrial Growth:

Modern economic growth in Egypt was associated with growth in cotton production and trade. While the expansionary phase of this growth reached its peak level at the beginning of the century with the cotton area reaching its peak level, it continued afterwards via vertical expansion albeit at a slower rate. Growth in national income fluctuated mainly with fluctuations in cotton prices.

The World depression of the 1930s and the Second World War acted as natural barriers to industrial imports in Egypt. On the other hand population growth and the emergence of a labor surplus, rise of nationalism, and industrial demand of allied forces during the war prompted growth in industrial investment and production capacity. The process continued after the war with pent-up domestic demand for industrial goods. Expansion in cotton production and trade, partly from war accumulated stocks, helped financing industrial growth.

This initial phase of modern industrial growth in Egypt came to an end with the turn of the fifties. The sharp decline in cotton prices after the Korean war led to a drop in income and economic activity in general. Cotton could no longer play the role of engine of growth. Industrial growth declined with contraction in domestic demand.

The main characteristics of the industrial sector were as follows:

Industrial value-added in 1952 had already reached a level of L.E. 124 million constituting 14% of GDP. However, industrial production catered mainly for domestic demand. Industrial exports amounted to only L.E. 11 million i.e. less than 10% of the sectors value-added. It should also be noted that the sector was completely private with foreign private enterprises accounting for a substantial share of the sectors output.

B. Industrial Growth Related to Import Substitution:

Industrialization was amongst the major national objectives of the political regime which came to power after 1952. The achievement of this goal was first thought via encouraging private investment both domestic and foreign. However, given the political and social conflict between the new forces coming to power and their aims at political and social change, and the established order, overturns to private sector did not bear fruit.

The political and social environment, its change orientation and the risks they entailed were not conducive for private investment. This internal situation coupled with an external situation dominated by the Arab-Israeli conflict and security concerns led ultimately to the government adopting a socialist road to industrialization and central planning of development in general.

The process of socialization and rise of the public industry started first with foreign enterprises being sequestrated then Egyptianised. A Five-Year Industrial Plan was promulgated and the Five-Year Organisation for Industrialization (at present GOFI) was established and charged with its implementation. With the adoption of the socialization law at the beginning of the sixties the industrial Plan was integrated in the first comprehensive Five-Year plan (1960-1965).

Accordingly, with the turn of the sixties the industrial sector had become completely under government ownership and control with the exception of some small enterprises. Even the latter were controlled indirectly via a number of supervisory institutions and regulations. Industrial growth during this phase was, therefore public sector-led.

The country's industrial strategy was basically an inward-oriented import substitution one. The initially established import substituting industry focused mainly on consumer goods sectors and their requisite of intermediate inputs. The capital goods sectors were relegated to a future second Five-Year Plan.

The consumer goods orientation of the plan was dictated by market conditions as well as political and social considerations. Consumer demand for industrial products, satisfied mainly through imports constituted the bulk of domestic demand and markets. The market for capital goods was still limited.

The country also lacked the necessary inputs for such industries including the requisite capital. The political and social rationale for such a strategy, on the other hand, was based on the fact that emphasis on capital goods would require parallel changes in aggregate demand towards greater saving and investment and less consumption which was felt to be inopportune at this stage after many years of deprivation and high popular expectations.

The strategy brought about a substantial acceleration in the rate of industrial growth which nevertheless was not sustained for any prolonged period. Industrial growth reached its peak in the mid-years of the Five-Year Plan, but began to decelerate in its latter years. Rising macro-economic imbalances as well as exogenous shock (the Arab-Israeli War in 1967) brought this phase of industrial growth to its end. There was no second Five-Year Plan and accordingly no shift to productive commodities sector's development.

The statistical indications of this phase of industrial growth are represented as follows. The real rate of growth of industrial output (value added) increased from an average rate of 4% in the second half of the fifties to 6.5% in the first half of the sixties. It thereafter declined to less than 4% in the second half of the sixties. With GDP growing at annual rate of 6% over the period 1960-65, the share of industrial output in GDP increased by over 4 percentages of its level in the mid fifties reaching a level of nearly 19%. During this period industry served as Egypt's engine of growth.

The main source of industrial growth was capital formation. The average share of industrial investment to GDP during the period of the first Five-Year Plan was over 22% which was significantly higher than the national rate (18%). At the same time industrial employment increased at an even higher rate indicating a possible decline in average real output per worker in some industrial activities.

Industrial employment incomes and price policies led to a rise in the share of wages in value added from less than 40% at the beginning of the fifties to 50% or more in the mid sixties. This was naturally at the expense of the industrial sector's surplus and profitability. But the policy was intended as a means of achieving social and income distribution goals.

The impact of industrial growth on the internal trade balance was, however, negative. The growth elasticity of the demand for imports in general and industrial imports in particular was substantially higher than that of exports. Industrial imports increased at current prices increased from L.E. 100 million in 1952 to L.E. 160 (1959/60), L.E. 265 (1964/65), then declined to L.E. 250 million by the end of the 1960s. In the meantime industrial exports increased over the same period from L.E. 11 million (1952) to L.E. 36 (1959/60), L.E. 70 (1964/65) and L.E. 100 (1969/70). The industrial balance of trade showed a deficit of L.E. 200 million by the end of the first Five-Year Plan (1960-1965).

Another major outcome of industrial growth during this phase was the change in the commodity composition of imports. The share of industrial consumer goods in total industrial imports declined, while these of intermediate and capital goods increased. This was due to the rapid growth of fixed investment specially in industry.

The slowing down of industrial growth since the mid-sixties marked the end of import substitution growth. The external and internal macro-economic imbalances forced a stringent control over imports. Since imports had come to consist mainly of food and industrial producer goods, their decline led to a parallel decline in fixed investment and major capacity under utilisation in industrial activity. Both industrial and economic growth in general subsided. Stagnation in the economy continued until 1974 and the take-off of the "Open Door" policy.

C. The "Open Door" Policy and Industrial Growth:

A new development strategy was launched in the aftermath of the October War of 1973. A new investment law was promulgated in 1974 (Law 43) encouraging foreign and Arab investment. A more liberal development policy in general has been followed since then. It aims at greater participation of the private sector in economic activities, a lessening of public control and regulations in areas such as pricing, trade etc.

The wholemark of economic growth during this phase, aside from gradual liberalistion, was the massive inflow of foreign resources via a number of channels.

First, the reopening of the Suez Canal, and the redemption of the oil fields in Sinai brought about a sharp rise in foreign exchange earnings. The rise in oil prices after the October War led to the multiplication of foreign-exchange receipts from oil exports. The outflux of labor in response to growing demand in the labor deficit oil-rich gulf countries brought an additional inflow of foreign exchange in the from of workers' remittances.
Over and above these sources, there was a rapid growth in direct investment, long-term capital, foreign aid etc.

Tables in statistical appendices highlight the above-mentioned financial flows from abroad. Their total sum increased from $69 million in 1971 to $16331 million in 1985. Since then, these extraordinary resource inflows followed a downward trend for the rest of the 1980s. The external situation changed once more with the turn of the 1990s. The level of inflows once again soared to $15721 million.

Such massive foreign exchange receipts were mainly due to exogenous factors and were hardly related to the efficiency, competitiveness and general performance of the domestic economy. They naturally had a marked effect on the overall pattern of growth and structural change.

The share of these exogenous sources of income, due mainly to external factors and stocks, in GDP (in L.E.) soared from an initial level of 2% in 1971 to over 50% by the end of the 1980s. They come to constitute not only the main source of income growth but also the engine of growth of the economy as a whole.

These income inflows having emanated from exogenous external factor, with a large portion of them consisting of earnings in the form of rent, affected behavioral patterns and attitudes of government, business and households. The main trend was towards consumerism, declining factor productivity and efficiency as well as rising cost and prices.

The rapid growth in income from endogenous and exogenous sources brought about a rapid growth in aggregate domestic demand. Private and public current consumption as well as capital expenditures increased simultaneously. Overall domestic absorption (consumption plus investment) increased from L.E. 3062 million in 1970 to L.E. 5897 (1975) to L.E. 64003 millions (1988). In spit of the slowing down of growth in real output, domestic absorption (expenditure) continued to grow, reaching a level of L.E. 147043 in 1990/91.

The rate and pattern of nominal expenditure growth contrasts sharply with those of real GDP over the same period while expenditure increased nearly eleven fold between 1975 and 1988, real GDP increased by a multiple of 2.1 only (i.e. from L.E. 10695 millions to L.E. 22443 millions). Since 1988 there has been no growth in real GDP.

The gap between the rate of growth of nominal expenditure and real GDP was filled up through a sharp rise in net imports i.e. widening deficit in the external balance of trade. The remaining deficit between expenditure and output was made up for via inflation. The average rate of inflation, both open and suppressed, must have exceeded 20% p.a. Official statistics indicate an average rate of open inflation of circa 20% p.a.

The period was also characterised by rapid expansion of monetary aggregates. Domestic bank lending to the public (government and public enterprises) sector increased from L.E. 2634 millions in 1975 to L.E. 55249 in 1990. Likewise lending to the private sector increased from L.E. 881 millions to L.E. 20428 over the same period. Money supply (M2) increased 32 times between 1975 and 1990/91. This credit expansion was provided at a negative interest rate of around -10% p.a. or less.

The impact of the "Open Door" policy and its accompanying exogenous resource inflows and macro-economic environment on industrial growth was mixed. On the one hand, the period 1975-85 witnessed a fairly rapid industrial growth, particularly of the private sector. The rapid growth in domestic demand led to the continuation of a predominantly inward-oriented pattern of industrial growth. This orientation was also fostered by the declining levels of industrial efficiency and competitiveness.

Rapid growth in domestic expenditure with highly inelastic supply due to regulatory, institutional and policy factors meant that the bulk of it was satisfied through imports and rising prices. Moreover, capacity bottlenecks in such domestic products as construction led to an even sharper rise in construction cost. With construction constituting around half of aggregate gross domestic investment, capital cost soared at an exponential rates.

Further more, rapid growth in foreign exchange, combined with a macro-economic policy maintaining an overvalued exchange rate for the Egyptian pound, facilitated the rapid growth in imports including industrial goods. Gradual liberalisation and availability of imported industrial goods with better quality and at a competitive cost in domestic markets exposed domestic industries to greater competition.

Many enterprises could not adjust to such changes in market conditions, and were forced to curtail sales, accumulate inventories and produce at below capacity.

Therefore, in spite of an initial acceleration of industrial growth, the industrial sector, both public and private, accumulated a highly distorted financial and cost structure constituting a major liability on their ability to compete in international markets as well as in more liberalised and less protected domestic markets.

Consequently overall industrial growth started to decelerate since the second half of the 1980s. According to official figures, industrial growth which had declined to an average annual rate of less than 5% in the transition period 1965-73, accelerated to 7% in 1973-80 then declined to 3% in the first half of the 1980s.

Since then, it has decelerated further such that for the period 1986/87-1990/91 the rate of growth was only 2% . Consequently the share of industry in GDP has fallen to below 13% since the turn of the 1990s.

The above pattern of growth applied to both public and private enterprises, particularly the former. However, private enterprises benefited from an overall orientation towards the production of industrial goods for which domestic demand is inelastic. Moreover, they have greater flexibility in adjusting to changing market conditions.

The share of the private sector has increased substantially since the adoption of the "Open Door" policy and subsequent efforts to encourage private investment, particularly Arab and foreign ones. In recent years, these efforts and the incentives they provided were partially extended to national investors.

Consequently, the share of the private sector in total industrial investment reached 27% in 1986/87 in comparison to its negligible level in the 1960s. In 1991/92 private investment in industry was at a par level with its public counterpart (50%).

The same trend applied to the two sectors' relative shares in value-added. At the beginning of the 1980s, private industrial value-added was less than half of the public sector's. By the mid-1980s, they had become nearly equal. In 1991/92 the private sector output exceeded that of the public sector by a multiple of 1.3.

However, as mentioned earlier, industrial growth was predominantly inward-oriented for most of the period. It is only recently, with contraction in domestic demand, that greater efforts are being exerted to seek international markets as an alternative to the shrinking domestic ones. The 1991 devaluation of the Egyptian pound gave these efforts a forward push.

Total industrial exports, which reached a level of over L.E. 200 millions in 1975, increased to one billion in 1986/89 and nearly L.E. 7 billions in 1991/92. A major portion of this increase, however, was due to the sustained and accelerating decline in the exchange rate of the Egyptian pound since the mid-1970s. Rising export prices also contributed inflating the value of industrial exports. In real terms, industrial export growth was more modest than is indicated by its nominal values.

Moreover, while private sector industrial investment and output exceeded these of the public sector in 1991/92, this did not apply to exports. In the same year, private industrial exports were nearly one third its public counterpart. Furthermore, the bulk of private industrial exports went to bilateral account countries with only a negligible amount going to convertible currency areas (L.E. 51 million in 1986/87).

3- Structural Adjustment and Industrial Growth:

The widening gap between aggregate domestic current and capital expenditure (absorption) and real domestic output (aggregate domestic supply) could not be sustained. It led to major macro-economic imbalances. As mentioned earlier, the gap was filled up by a pari passu growth in net imports and a rise in the rate of inflation.

By the mid 1980s, the balance of trade deficit had exceeded $6 billions. The growing external deficit was plugged through a positive net factor payments from abroad, current transfers (mainly remittances) and capital inflows (mainly borrowing and foreign aid).

The massive growth in foreign exchange receipts represented in oil exports, Suez Canal revenues, tourism, workers' remittances, foreign grants and direct foreign investment, were still not adequate to fill up the widening external gap. The remainder was financed through foreign borrowing.

By the mid 1980s, the external debt had reached a level of $40 billions. Afterwards, it continued its growth path reaching $50 billions by the end of the 1980s. The interest payment on the long-term debt amounted to nearly $2 billions in 1990. Clearly, the external debt had reached a ceiling and its servicing became a major hurdle.

Accordingly, external financing of the debt became successively more difficult. The country was forced to gradually reduce the external gap, mainly through entailing imports. Long-term capital inflows, which had reached a level of $2.4 billions in 1985, declined to $500 millions in 1990.

Likewise, the internal gap between output and expenditure brought about an accelerating rate of output inflation of over 20% p.a. Asset inflation was much higher than that. This led to major distortions in private investment allocation. A major share of national saving was invested in real estate as well as other physical and financial assets- including capital formation.

The Gulf war (1991) constituted a turning point. The wavering of a major portion of a major portion of Egypt's external debt and the rise again in external capital flows and transfers in the aftermath of the war provided the country with breathing time to undertake the requisite economic reforms it had contemplated earlier.

In 1991 the Egyptian government negotiated and signed stabilisation and structural adjustment agreements with the IMF and World bank. This cleared the way for other aid donors to provide financial assistance. The reform program started with policies aiming at macro-economic stabilisation.

The Egyptian pound was devalued and the foreign exchange market became more liberalised. Similarly, interest rates were raised and deregulated. Efforts were also made to curtail the rate of growth of money supply and reduce the excess liquidity in the economy through the sale of government treasury bills.

This combination of macro-economic policies led to a gradual contraction in the growth of domestic aggregate demand. Inflationary pressures were produced. Both the real exchange and interest rates moved from negative for positive. The widening differential between international and domestic interest rates brought about large capital inflows leading to a surplus overall balance of payments.

This latter outcome was aided by the recessionary condition in the domestic economy and the low interest rate on the US dollar.

Stabilistion policy, according to the reform program, is to go hand-in-hand with structural reforms.

Stabilisation policy reforms aim at demand management, macro-economic balance and a stable environment. The structural adjustment policy reform component aims at improving the responses capacity and eliminating the structural inflexibilities hindering domestic output growth (supply).

The latter reforms range from privatization of a large portion of public enterprises in activities which could be undertaken by the private sector to institutional and market reforms aiming at deregulation and greater internal and external competition in domestic markets. This include price deregulation, trade liberalisation as well as the building up of competitive market structures and the requisite supervisory institutions and regulatory frameworks.

The implementation of these late structural adjustment reforms have made only modest progress. This is due to economic as well as socio-political factors. On the economic side, the main hurdle has been the stagnationary state of the economy.

Stagnating or declining output growth has been accompanied by sharp rises in prices. This is in spite of the impact of stabilistion policies. One reason for this outcome is the substantial devaluation in the Egyptian pound in 1991. Another reason is the reduction in subsidies, open or hidden, including users, fees of public services and, possibly, the recently instated sales tax. One can also add the effect of monopolistic market structures, particularly in such sectors as trade. Public enterprises, under pressure to show net profits, have also raised their prices.

Stagnation, coupled with rising unemployment and overall redundant labor in the public economy, seems to be the main factor delaying structural adjustment reforms.

This delay, however, is in its turn hindering more dynamic reforms of enterprises, banks and markets (factor, product and financial). In essence, it is an excuse for delaying output growth.

The above described situation constitutes the institutional and regulatory framework, macro-economic environment and market conditions affecting industrial growth in the 1990s. They signal the end of public expenditure-led inward-oriented growth. Future industrial growth has to be more of an export led one.

This in itself is a prerequisite for growth, it has to take place under liberalized and more competitive domestic markets. Growth in industrial production via exports or import substitutions requires a major restructuring of the cost and financial structures of industrial enterprises. This, in turn, requires appropriate structural adjustment reforms and changes in market structures towards greater sectoral integration and competitiveness.

The industrialization policy of Egypt envisages to change the structure of the manufacturing industry, as well as shift the relative importance away from the agricultural sector towards agricultural processing. Due consideration is given to the coordination between heavy and light industries and also between the public and the private sectors.

In 1987, the structure of the manufacturing sector was the following:

	Output (L.E. million)	Percentage
Consumer industries	9365	45
Intermediate industries	6257	30
Capital industries	5421	25
Total	**21043**	**100**

Accordingly the ratios of the three categories are as follows:

Consumer industries : !ntermediate industries : Capital industries

1.8 1.2 1

The above ratios indicate that, according to Hoffman criterion, the Egyptian manufacturing sector has not -so far- reached an advanced stage.

1.2 Development of the Major Parameters of the Manufacturing Sector:[1]

The growth rate of GDP of the manufacturing sector amounted to 7.2% during the period 1974 - 1980/81, and 9% during the period 1981/82 - 1986/87. Table (1) indicates the growth rates of the manufacturing sector's GDP, compared with other sectors during the period 1974 - 1986/87. Data of the table reveal the following facts: [2]

1- The growth rate of the manufacturing industries during the period 1974 - 1980/81 exceeded the corresponding growth rates of the agricultural and services sectors. The mining and petroleum sector was characterized by the highest growth rates during the same period, amounting to four times the manufacturing growth rates.

2- The growth rates of the manufacturing sector were higher than those of the other sectors during the period 1981/82 - 1986/87.

(1) The Manufacturing sector covers all manufacturing activities, being under the auspices of the Ministry of Industry or other Ministries.

(2) Based on the statistics of industrial production published by CAPMAS.

Table (2) shows other figures - published by CAPMAS - about the production of the manufacturing sector throughout the period 1952 - 1989/90, and the rates of growth during the period 1985/86 - 1989/90.

The figures reveal the following:

1- The growth rate of the mining industries was the highest, compared with the other sectors during the period under study.

2- The growth rates of the production of crude oil and petroleum products were lower than those of other sub-sectors. This was due to the sectoral production policy, along with the decline of oil prices.

Table (3) shows the developments of the value of the manufacturing sector's output, in current prices, according to the categories of the number of workers, and the relative distribution during the period 1970/71 - 1980/81. The table indicates that the relative share of small industries (with 10-50 workers) amounted to 5.6% of the manufacturing output in 1980/81.

It is worthnoting that this sector does not include the handicrafts nor the informal sector.

Table (1)
Gross Domestic Product of
The Manufacturing Sector
Compared With Other Sectors
(1974-1986/87)

Item	Average Growth Rate (1974-80/81)	Manufacturing Industries (=1)	Average Growth Rate (81/82-86/87)	Manufacturing Average Growth Rate
Gross Domestic Product	9.10	1.25	6.80	0.76
Commodity Production	7.20	1.03	6.20	0.69
Agriculture	3.00	0.41	2.00	0.22
Manufacturing	7.30	1.00	9.00	1.00
Mining & Oil	31.00	4.25	8.00	0.89
Distribution	16.20	2.22	7.60	0.84
Services	6.00	0.82	6.00	0.67

Table (2)
Developments of the Value of Industrial Products

(E£'000)

Sub-Sector	Years							Growth Rate (85/86-89/90)
	1952	84/85	85/86	86/87	87/88	88/89	89/90	
Petroleum Products	34	4464	4092	3563	4172	4186	6090	48.8
Mining Products	4	87	97	102	114	231	313	222.7
Chemicals & Pharmaceuticals	21	1456	1515	1883	2163	2867	3222	121.3
Food Processing	122	3491	3391	4459	5005	6500	7628	124.9
Metallic & Engineering	30	2286	2388	2487	3494	4200	4527	89.6
Building Materials	8	198	235	294	349	355	402	71.1
Textiles	85	2227	2605	3765	3796	4866	5648	116.8

Table (3)
Value of Industrial Production, By Number of Workers
(1970/71 - 1980/81)

(E£ '000)

Years	Number of Workers													
	<10		10-		25-		50-		100-		500<		Total	
	Production	%	Production	%	Production	%	Production	%	Production	%	Production	%	Production	%
1970/71	1554	0.1	64486	4.7	66791	4.9	68308	6.5	212971	15.6	927641	68.2	1361751	100
1971/72	1421	0.1	70669	4.7	81677	5.4	93000	6.2	236728	15.8	1015743	67.8	1499238	100
1973	1270	0.1	76851	4.7	96562	5.1	97693	6.0	261204	16.0	1103844	67.4	1637424	100
1974	1933	0.1	89061	4.5	90874	4.6	111367	5.6	290893	14.6	1404815	70.6	1988643	100
1975	1430	0.6	108376	4.6	94615	4.1	124223	5.4	355988	15.3	1647127	70.9	2331759	100
1976	498	-	106330	3.9	117332	4.3	143777	5.3	394553	14.5	1957265	72.0	2719755	100
1977	1003	-	134396	4.0	149645	4.5	165014	4.9	471748	14.1	2433680	72.5	3355486	100
1978	626	-	161822	3.8	172752	4.1	172552	4.1	564715	13.4	3136397	34.5	4208834	100
1979	1815	-	252528	4.1	152981	2.5	207916	3.4	693329	11.3	4844128	78.7	6152697	100
1980/81	1974	-	267584	2.9	251741	2.7	283853	3.0	906533	9.7	7612106	81.6	9323791	100

Source: Annual Industrial Production Statistics, CAPMAS, Different Issues

During the period 1972 - 1987, the manufacturing sector underwent major developments, amongst which are the following:

1- The number of workers increased from 618 thousand in 1976 to one million in 1987.

2- The output increased from L.E. 1.5 billion to L.E. 21 billion during the same period.

3- The wages increased from L.E. 200 million to L.E. 2.9 billion.

4- The value of assets went up from L.E. 2.8 billion to L.E. 39 billion. The Ministry of Industry estimated the industrial fixed capital at L.E. 77 billion in 1991.

5- The value of sales went up from L.E. 1.2 billion to L.E. 16 billion.

6- The value added increased from L.E. 419 million to L.E. 5.6 billion.

Based on the data of 1987, the most important sectors, in terms of output, fixed assets, value added, number of workers, wages, and sales are the following:

- Food processing.
- Textiles.
- Chemical industries.
- Engineering industries.

The statistical appendices (appendix 2) include the following basic parameters for the years 1972, 77, 82, 87:

- Labor productivity: $\frac{\text{Output}}{\text{No. of workers}}$

- Assets productivity: $\frac{\text{Output}}{\text{Value of assets}}$

- Average wage: $\frac{\text{Wages}}{\text{No. of workers}}$

- Productivity of wages: $\frac{\text{Output}}{\text{Wages}}$

- Value added/production.
- Value added/sales.
- Wages/value added.

In 1972, the following sectors were characterized by the highest indicators:

- Food processing.
- Chemical industries.
- Construction materials.
- Wood products.

In 1987, the following sectors had the highest ranks, in terms of the above indicators:

- Chemical industries.
- Paper industries.
- Other industries.

1.3 Developments of the Industrial Policy in Egypt:

1.3.1 Import Substitution Policy:

The Egyptian economy suffers from deficits in the balance of trade and the balance of payments due to the increase in the volume of imports of goods over the exports volume. Table (4) shows the developments of exports, imports and balance of trade during the period 1986 - June 1990.

The following developments can be derived:

1- Imports of fuel decreased from 3.7% in 1986 to 1.9% in 1989.

2- Imports of raw materials increased from 11.6% to 13.6% during the same period.

3- The percentage of intermediate goods remained at 40% throughout the period.

4- Similarly, imports of capital and consumer goods, as percentages of total imports, did not undergo any changes.

5- The overall period was characterized by a chronic deficit in the balance of trade.

6- It was clear that the import substitution policy did not succeed in curbing the steadily rising imports.

Local production can replace imports only when foliowing relation is achieved:

$$\frac{M_1}{S_1} < \frac{M_0}{S_0}$$

Where :

M_1 , M_0 : represent imports in the base year and comparative year respectively.

S_1 , S_0 : represent commodity supply in the basse year and comparative year respectively.

Table (4)
Developments of Exports, Imports and Trade Balance
(1986 - June 1990)

(E£ million)

Item \ Year	1986		1987		1988		1989		Jan-June 1990	
	Value	%	Value	%	Value	%	Value	%	Production	%
Exports										
Fuel	1048	51 1	1083	35 6	1298	32 5	1733	30 2	1231	34.1
Raw Cotton	308	15 0	272	8 9	318	8 0	594	10 4	435	12.0
Processed Cotton	117	5 7	333	10 9	328	8 2	410	7.2	293	8.1
Semi-Finished Goods	274	13 4	749	24 6	855	21 4	1168	20.4	583	16.1
Finished Goods	305	14 9	507	19 9	1193	29 9	1827	31 9	1072	29.7
Total	2052	100	3044	100	3992	100	5732	100	3614	100
Imports										
Fuels	245	2 8	282	2 5	365	2 2	331	2 0	269	2.5
Raw Materials	1025	11 7	1137	10 0	1622	9 9	2254	13 6	1619	15.3
Intermediate Goods	3513	40 0	4300	37 9	6409	39 3	6696	40 3	4062	38.3
Capital Goods	2138	24 3	2953	26 0	4035	24 7	3539	21 3	2310	21.8
Consumer Durable Goods	288	3 3	460	4 1	600	3 7	522	3 1	319	3 0
Consumer non-durable Goods	1573	17 9	2217	19 5	3274	20 1	3277	19 7	2022	19 1
Total	8782	100	11349	100	16305	100	16619	100	10601	100
Trade Balance	-6730		-8305		-12313		-10887		-6987	

Table (5) indicates a decline in imports during the period 1982 - 87 in the following industries:

- Food processing.
- Fertilizers.
- Engineering industries.
- Textiles and readymade garments.
- Cement and building materials.
- Iron and steel.

However, the manufactured imports were generally higher during the same period. Chennery model is used in a following part of this study to reveal the role of the import substituting production in the industrial growth.

Generally, the import substitution policy had the following shortcomings:

1- A high cost of capital, particularly the imported one.

2- Despite the achievement of a decrease in imported goods, imports of the inputs of such goods usually increase.

Accordingly, export promotion policies shall be considered complementary to the import substitution to ensure success of the overall industrial policy.

Table (5)
Structure of Industrial Imports

($ million), Current Prices

Item	1982		1986		1987		Avg. Annual Growth Rate 1982-1987
	Value	%	Value	%	Value	%	
Food Processing	837.6	10.2	748.5	10.9	725.3	11.2	-2.7
Fertilizers	15.2	0.2	17.4	0.3	14.2	0.2	-1.3
Chemicals	690.0	8.4	833.8	12.1	951.8	14.8	7.5
Engineering	4624.6	56.1	3403.7	49.4	3036.9	47.1	-8.1
Transport	349.1	4.2	443.8	6.4	413.1	6.4	3.6
Paper & Wood	217.5	2.6	247.3	3.6	260.7	4.0	-3.9
Textiles	225.0	2.7	162.0	2.4	163.1	2 5	-5.5
Leather Products	98.8	1.2	82.4	1.2	39.2	0.6	-12.1
Cement & Building Materials	200.9	2.4	147.7	2.1	127.6	2.0	-7.3
Iron & Steel	822.6	10.0	675.1	9.8	549.3	8.5	-6.6
Mining & Quarrying	152.9	1.9	114.1	1.7	152.3	2.4	0.0
Aluminum	11.4	0.1	13.3	0.2	14.3	0.2	5.0
Total Industrial Imports	5245.5	100.0	6889.0	100.0	6447.8	100.0	4.5
Total Imports	10636.8	77.5	8749.0	78.8	8086.1	79.7	-4.7

1.3.2 Industrial Export Promotion Policy:

Developing countries who succeeded in developing their industrial exports have pursued the following courses of action:

1- Developing the production processes in general.

2- Tax exemptions, and production subsidization.

3- Due attention to the effects of market prices on the exportation processes.

4- Conclusion of international trade and payments agreements.

5- Simplification of laws, regulations and procedures to encourage exports.

6- Facilitation of export financing and provision of data and information.

Export promotion policy in Egypt was based on some of the above courses of action. Nevertheless, industrial exports, so far, represent only 8.3% of industrial imports (Table 6).

Table (7) shows the structure of manufactured exports and the growth rates of the manufacturing sub-sectors during the period 1982-87. The figures indicate a decline in the exportation activities due to domestic and external reasons. Such a declining trend is also revealed by the relative share of the Egyptian manufactured exports in the foreign markets during the period 1970 - 1987 (Table 8).

It is worthnoting that the growth rate of the manufactured output exceeds that of manufactured exports.

Table (6)
Value of Manufactured Exports & Imports

(E£ million)

Item / Years	Total Exports (1)	Total Imports (2)	Manufactured Exports (3)	Manufactured Imports (4)	Consumer Imports (5)	Manufactured Exp./ Total Exp. (%) (6)	Manufactured Imp./ Total Imp. (%) (7)	Manufactured Exp./ Manufactured Imp. (%) (8)	Manufactured Exp./ Consumer Imp. (%) (9)
1970/71	331.2	342.1	141.1	267.6	59.1	42.6	78.2	52.7	238.7
1971/72	343.2	400.0	139.9	291.7	60.4	40.8	72.9	48.0	231.6
1972/73	358.8	390.8	149.9	303.1	55.8	41.8	77.6	49.5	268.6
1973	444.2	361.1	162.5	273.5	62.5	36.6	75.7	59.4	260.0
1974	594.0	925.1	225.0	612.1	161.8	37.8	66.5	36.8	139.1
1975	548.6	1539.3	247.8	1145.6	266.7	45.2	74.4	31.6	92.9
1976	595.5	1489.9	219.5	1195.4	341.0	36.9	79.9	18.4	64.4
1977	668.5	1884.3	245.9	1599.2	413.5	36.8	84.9	15.4	59.5
1978	679.8	2632.2	292.4	2297.0	626.0	43.0	87.3	12.7	46.7
1979	1287.8	2686.2	402.5	2342.9	625.6	21.2	87.2	17.2	64.3
1980/81	3132.2	3402.0	365.6	2905.0	795.4	16.9	85.4	12.4	45.3
1981/82	2263.0	6187.5	381.0	5158.9	1611.6	16.8	83.4	7.4	23.6
1982/83	2184.1	6354.5	316.6	5283.7	1568.1	14.5	83.2	6.0	20.2
1983/84	2250.3	7192.7	385.4	6128.9	1684.9	17.1	85.2	6.3	22.9
1984/85	2197.9	7536.1	453.8	6457.2	1964.2	20.6	85.7	7.0	23.1
1985/86	2599.9	6973.1	401.0	6007.6	1539.6	15.4	86.1	1.7	26.0
1986/87	2053.9	8051.4	579.6	6976.3	1729.9	28.2	86.7	8.3	33.5

Table (7)
Structure & Growth Rate of Industrial Exports

($ million. Current Prices)

Item	1982		1986		1987		Avg. Annual Growth Rate 1982-1987
	Value	%	Value	%	Value	%	
Food Processing	83.5	16.2	57.4	10.6	51.3	7.0	-7.6
Fertilizers	9.1	1.8	1.9	0.4	1.6	0.2	-16.0
Chemicals	24.9	4.9	25.1	4.6	22.2	3.0	-2.0
Engineering	67.0	13.1	60.8	11.3	60.0	8.2	-2.0
Transport	4.0	0.8	1.8	0.3	3.3	0.4	-5.0
Paper & Wood	0.7	0.1	0.3	0.1	1.4	0.2	14.0
Textiles	167.6	32.6	218.1	40.4	385.6	52.6	26.0
Leather Products	23.6	4.6	28.5	5.3	58.1	7.9	29.0
Cement & Building Materials	0.3	0.1	0.2	-	0.4	0.1	6.6
Iron & Steel	16.9	3.3	9.8	1.8	15.0	2.0	-2.0
Mining & Quarrying	5.6	1.1	10.0	1.8	14.5	2.0	31.7
Aluminum	109.5	21.4	126.1	23.4	120.9	16.4	2.0
Total Industrial Imports	512.3	100.0	540.1	100.0	735.3	100.0	8.7
Total Imports	5304.8	9.7	2697.1	20.0	3569.2	20.6	-6.5

Table (8)
Share of Egyptian Manufactured Exports
in
The World Markets

Item	1970-71 %	1975-76 %	1980-81 %	1985-86 %	1987 %
Food Processing	0.115	0.720	0.049	0.330	0.033
Textiles	0.293	0.199	0.201	0.175	0.243
Chemicals	0.026	0.022	0.017	0.014	0.009
Fertilizers	0.136	0.059	0.072	0.023	0.013
Iron & Steel	0.011	0.015	0.015	0.007	0.016
Engineering	0.018	0.013	0.015	0.011	0.007
Aluminum	0.009	0.019	0.114	0.132	0.122
Cement	1.422	0.185	0.007	0.001	0.005
Building Materials	0.015	0.018	0.006	0.002	0.003
Communication Equipment	0.011	0.009	0.008	0.017	0.007
Paper & Wood	0.004	0.003	0.002	-	0.001
Total Exports	0.059	0.039	0.044	735.300	0.043
Exports minus Textiles	0.034	0.023	0.029	0.023	0.019

1.3.3 Chennery Model for the Analysis of the Industrial Growth Factors (Demand):

Factors of industrial growth are ascertained through the utilization of the input-output tables. In this respect, Chennery model is used to measure the contribution of these factors which are summed-up in the following:

1- An increase in local demand, assuming that the percentage of imports to total supply is constant.

2- An increase in foreign demand (exports).

3- An increase attributable to a change in the percentage of imports to total supply, assuming that total demand is constant (import substitution).

The model is based on the following formula:

$$X = Y + E + M$$

Where:

X = local production
Y = final local demand
E = foreign demand (exports)
M = percentage of local production to total supply.

According to the above formula, a change in production (X) is attributable to three factors, namely:

1- Growth of local demand

2- Expansion in exports

3- Import substitution.

Table (9) shows the results of assessing the contribution of the factors responsible for the growth of industrial production in Egypt during the period 1959/60 - 1973/74.

These results reflect a common pattern in many developing countries, namely, that industrial growth is usually associated with a decline in the relative importance of import substitution as a percentage of production increase in the consumer industries, whereas such a relative importance increases in respect of the intermediate and capital goods.

It is also observed that the effect of foreign demand (exports) on
growth in Egypt is relatively weak.

Foreign demand is responsible for 6.6% of the increase in th
industries output, 3.3% of the increase of the intermediate indus
and 1.9% of the increase of the capital industries output.

Textiles represent the sole industry where exports played a m
exports were responsible for about 20% of the increase in the o
industry during the period 1959/60 - 1973/74.

The corresponding percentages in the readymade garments and
industries amount to 11% and 0%, respectively.

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Many empirical studies, applying Chennery model on the industrial sector, were conducted in different countries, including Egypt.

According to this model, import substitution is adopted when the growth rate of the local production exceeds that of imports, and vice versa.

The following formula is used to measure the growth rate of GDP:

$$\Sigma \Delta G_{t+1}^{i} = \Sigma[\Delta(D+W)^{i} U_{t}^{i} + \Sigma[(\Delta x)^{i} U_{t}^{i}] + [(U_{t+1}^{i} - U_{t}^{i}) Z_{t-1}^{i}]$$

Where:

Z^{i}	=	total supply
G^{i}	=	local production
$D^{i}+W^{i}$	=	local demand (final + intermediate)
X^{i}	=	exports
M^{i}	=	imports
U_{t}^{i}	=	percentage of local production to total supply in the base year and the comparison year.

$$U_{t}^{i} = \frac{G_{t}^{i}}{Z_{t}^{i}} \quad U_{t+1}^{i} = \frac{G_{t+1}^{i}}{Z_{t+1}^{i}}$$

i = 1 , 2 , ... n and n = g
n = Industrial activities.

Chennery model has been applied on the date of 1975-80 for six countries, namely, Egypt, Saudi Arabia, Syria, Yemen, Jordan and Kuwait. For purposes of briefing, Jordan, Kuwait and Egypt are selected in this study and longer time series (1970 - 1980) is used. The results of the model are summarized in tables (10) and (11).

The figures indicate that the import substitution policy is responsible - to a large extent - for the growth of GDP during the two periods 1970 - 1980. This contribution amounted to 67%, 82% in Saudi Arabia, Egypt and Jordan, respectively. The contribution of the same policy to the growth of local demand amounted to 10% and 18% in Kuwait and Egypt, respectively.

The roie of exports in the growth of total industrial output was relatively small in most of the countries subject of the study, except for Kuwait, where exports contribution to the growth of the industrial output amounted to 15%. The corresponding percentages in Syria and Saudi Arabia amounted to 4% for each, while in Jordan it did not exceed 1%.

The same results do not change significantly if the industrial sub-sectors are considered.

Table (10)
Contribution of Local Demand, Exports and Imports Substitution
In
The Growth of Manufactured Products (1970-80) in Selected Countries

Industry Code	Industry Type	Jordan				Kuwait				Egypt			
		Local Demand	Exports	Imports Replacem	Total	Local Demand	Exports	Imports Replacem	Total	Local Demand	Exports	Imports Replacem	Total
31	Food, Beverages & Tobacco	29	3	68	100	18	2	80	100	38	·	62	100
32	Textiles, Clothing & Leather	18	3	79	100	·	·	100	100	34	2	64	100
33	Wood & Wood Products	23	11	66	100	15	7	78	100	36	·	64	100
34	Paper & Printing	28	2	70	100	23	2	75	100	37	·	63	100
35	Chemicals & Rubber	26	3	71	100	5	39	56	100	31	4	65	100
36	Non-Metallic Mining Products	35	2	63	100	27	4	69	100	40	·	60	100
37	Basic Metals	·	·	100	100	·	·	100	100	36	2	62	100
38	Metallic Products & Equipment	18	·	82	100	4	1	95	100	32	·	68	100
39	Other Manufactured Products	25	5	69	100	1	1	98	100	34	2	64	100
3	Total	24	2	74	100	12	13	75	100	36	1	63	100

Table (11)
Contribution of Local Demand, Exports and Imports Substitution
In
The Growth of Manufactured Products (1970-80) in Selected Countries

Industry Code	Industry Type	Egypt				Saudi Arabia				Syria			
		Local Demand	Exports	Imports Replacement	Total	Local Demand	Exports	Imports Replacement	Total	Local Demand	Exports	Imports Replacement	Total
31	Food, Beverages & Tobacco	15	-1	86	100	41	1	58	100	27	1	72	100
32	Textiles, Clothing & Leather	24	-2	78	100	7	.	93	100	13	12	75	100
33	Wood & Wood Products	19	.	81	100	18	.	82	100	39	.	61	100
34	Paper & Printing	12	-1	89	100	15	-1	86	100	13	.	87	100
35	Chemicals & Rubber	15	-1	84	100	19	19	62	100	16	5	79	100
36	Non-Metallic Mining Products	25	-1	76	100	36	.	64	100	31	.	69	100
37	Basic Metals	20	1	79	100	2	.	98	100	6	.	94	100
38	Metallic Products & Equipment	16	.	84	100	2	.	98	100	10	.	90	100
39	Other Manufactured Products	12	-5	93	100	26	1	73	100	25	.	75	100
3	Total	18	.	82	100	29	4	67	100	20	4	76	100

(Cont'd)

Industry Code	Industry Type	Yemen				Jordan				Kuwait			
		Local Demand	Exports	Imports Replacement	Total	Local Demand	Exports	Imports Replacement	Total	Local Demand	Exports	Imports Replacement	Total
31	Food, Beverages & Tobacco	21	.	69	100	23	3	74	100	38	3	59	100
32	Textiles, Clothing & Leather	15	.	85	100	14	3	83	100	9	2	89	100
33	Wood & Wood Products	36	.	64	100	17	12	71	100	21	11	68	100
34	Paper & Printing	21	.	79	100	22	1	77	100	23	3	74	100
35	Chemicals & Rubber	4	.	96	100	22	2	76	100	.	38	62	100
36	Non-Metallic Products	36	.	64	100	34	2	64	100	29	5	66	100
37	Basic Metals	32	.	68	100	20	1	79	100	9	1	90	100
38	Metallic Products & Equipment	.	.	100	100	2	.	98	100	3	1	96	100
39	Other Manufactured Products	25	.	65	90	13	4	83	100	6	2	92	100
3	Total	20	.	80	100	17	1	82	100	10	15	75	100

1.4 Industrial Growth and Market Structure:

The manufacturing sector has shown significant growth dynamics over the last 15 years as above assessment based on available data indicate. This is particularly so with regard to the private sector whose real output and investment expanded at average annual rates of 15.6% and 10.9% respectively and employment at 5.8%.

This funding is particularly interesting since it comes contrary to expectations given the overall contractionary tendencies in the economy in most of the eighties. Nevertheless, even such growth dynamics and ability to adjust to adverse economic conditions is still modest in comparison to both available potentials and needs. A more serious matter is that it is unsustainable given the structure and macro-economics of the sector. Maintaining and accelerating past growth performance required a great deal of structural changes and macro-economic rationalization.

Egypt's overall growth, absorption of its growing labor force and macro-economic balancing, particularly of the external sector, rely ultimately on the growth performance of the industrial sector; which in turn depends on its level of efficiency. Commitment to a policy of liberalisation and privatisation means that this goal has to be achieved by the private sector. The sector's growth orientation in the past has been predominantly inward-oriented leading to a widening gap in its balance of trade. The question is how could such urgently needed reorientation be achieved ?

Market structure reforms and rationalisation is the most fundamental pre-requisite for achieving the interrelated goals of increasing industrial efficiency and reswitching towards export growth. The past policy of depending on pumping of investment for domestic demand and its growth behind high walls of effective protection has been over extended beyond desirable limits.

The private industrial sector must improve its international competitiveness if it is to continue to grow and serve as a leading growth sector. The only mechanism for achieving this goal is an efficient market mechanism. Planning, as currently practiced, has become redundant for all practical purposes. The goals of public policy must now shift to giving high priority to creation of an appropriate macro-economic environment on one hand and an efficient allocative market mechanism on the other.

Market reforms have two interrelated dimensions: the market price system and institutions. Economic theory (neoclassical) emphasized the role of competitive market prices in achieving allocative efficiency in both factor and product markets.

Assuming a maximizing behavior by market transactors, competition would direct them towards allocating their resources to achieve maximum output, income and satisfaction. Empirical evidence validated the potentiality of such a mechanism for efficient resource allocation. This does not mean, however, that the approach is mechanistic. Market failures do occur and should be dealt with accordingly. But public policy in this case should aim at making up and correcting such failures, and not substituting for the market through price administration.

Institutions, however, play a determinant role in defining the context, terms, and parameters through which the market mechanism operates. Market efficiency and structure could therefore be defined and assessed only within its institutional context and goals. Traditional neoclassical theory has set this essential dimension aside on the basis that it is outside the scope of economics. Recent development in theory, including that of neoclassical economics, have incorporated institutions in their schemes of analysis both normatively and positively. The theory of rational choice in but one example in this regard.

In the light of the above, assessing Egypt's market structure and the design of policies to enhance its allocative efficiency must include both market prices and their institutional context. The objective here is to create a competitive market price mechanism. Likewise, all barriers and constraints standing in the way of factor and product mobilities must be culminated or reduced. This is essential if resources are to be allocated to equate marginal returns and therefore maximum output. The main objective of institutions is to achieve these goals as the context for market operation and make up for their failure to the extent needed.

The actual market and institutional structures in Egypt are by no means consistent with above described model. Markets are not competitive and segmented due to structural, regulatory and policy factors. The prevailing price system has evolved under heavy regulations and high protection. Institutional objectives, structures, operations and skill composition have been designed as market substitutes, and regulatory mechanisms have been set as markets building substitutes. The adoption of the open door policy in 1974 led since to substantial market price deregulation, but it has also left the overall institutional structure intact.

The monopolistic market structure is the outcome of a number of factors. High levels of external protection shut out effective external competition. At the same time the public sector accounting for over 50% of total industrial output, investment and employment constitute a major monopolistic bloc.

Public companies are both vertically and horizontally integrated and are under a centralized decision-making process and government administration. Their decisions are not motivated by other considerations and are therefore not easily anticipated by their private competitors in accordance with market criteria.

Major segments of private industrial activities are also highly monopolized. Higher level industries with modern technologies and high capital intensity require a minimum size and large initial capital. This often constitutes an economic barrier to market entry and competition. Moreover, low real interest rates and capital cost and the resulting heavy reliance on credit-rationing favors entrepreneurs with requisite material and non-material collateral and credentials. Once again, this normally leads to high capital concentration and not necessarily to efficient credit allocation from the industrial productivity point of view.

It has been a common public policy practice to try, via licensing of both domestic investment and imports, to restrict supply whenever a supply/demand commodity balance is felt to prevail. This often led to arrangements according to which domestic markets are closed on particular producers, thus encouraging supply concentration. The combined public and private monopolistic practices reinforce each other and even collide to prevent entry, maintain high levels of protection and domestic prices.

The monopolistic market organisation constitutes a major factor standing in the way of efficient resource allocation via restriction of market entry and competition. Moreover, it contributes to a higher cost of production and low productivity. The absence of competition reduces efficiency, as widely observed in Egypt's industrial enterprises. Monopolistic profits constitute a quasi-rent and lead to a maldistribution of income.

Another major characteristic of the industrial sector's market structure is that it is highly segmented by a combination of policies, laws and regulations. The organised industrial sector is divided, by legal status, into companies , some of which are subject to investment law 43/230 and others to law 26/159, except public sector companies, cooperatives and informal sectors. The result is that these sectors have different cost and price structures.

Factor mobilities between these sectors are hindered and thus prevent the gradual emergence of equilibrium-integrated market prices in line with the country's factor endowment and comparative advantage. It also prevents the sector from adjusting to changes in demand conditions and relative prices, both domestic and international.

Recent policy and regulatory references have made substantial progress toward market liberalisation, deregulation and references. The planned trade liberalisation, tariff reduction and equalisation will bring a fresh wind of competition and challenges to domestic industries forcing them to enhance their efficiency. Public sector liberalisation and privatisation programs will contribute both to competition and to a more economic behavior and efficiency. In the public sector, competition should also be allowed and even promoted.

Deregulation of labor and capital markets and the integration of the private sector under a single legal and regulatory framework will also enhance factor mobility and a more efficient pattern of resource allocation.

Market liberalisation and deregulation had already begun to set in motion a process leading to institutional restructuring. The present institutional set-up whose foundations go back to the socialisation laws of 1961 was designed as a network for economic administration and regulation almost displacing markets altogether. They set the context and terms for market operations and were therefore exogenous to it. Now, with markets gradually acquiring autonomy and starting to determine their own rules, institutional changes have become endogenized and to a large extent determined by market needs and dictates.

Many of these institutions have lost their old identity and are seeking a new one. They are in transition. The process of institutional restructuring and transition would be greatly assisted and made more efficient should a new social welfare function and terms of reference (TOR) for these institutions be determined from the outset.

At present, institutional reforms are dictated by the market system and structural reform requirements. The direction of the causal relation between markets and institutions has been reversed. It is the market liberalisation, competitiveness and mobility which determine the context and TOR for institutional reforms.

The social welfare function of industrial planning and regulation institutions is to contribute to building of a viable and efficient market structure which will itself stimulate and rationalize industrial growth. This is the rule. Exceptions requiring direct public interventions, restrictions or regulation would be to maintain market balance such as those between participants including consumers and producers, to make up for market failures, or to satisfy well-defined social objectives not inconsistent with the general orientation.

Available statistics of formal industrial establishments, provided by both CAPMAS and GOFI, point to the steady growth towards a higher average establishment size in both the public and private sector. This is a natural outcome of the process of structural change alluded to earlier. There has been a steady shift from traditional sectors such as food and textiles towards chemicals, metals, machinery, etc., with higher capital intensity, modern technology and, accordingly, larger average size. Within each sub-activity there has been a steady substitution of modern organised production for small scale and informal activities.

As for the special pattern of industrial growth, it has been heavily concentrated in urban areas, particularly in large metropolis such as Cairo and Alexandria. In 1990, Cairo and adjacent areas have been reported to have accounted for circa half the total number of registered establishments, and Alexandria for only 10% of them. Such a high level of locational concentration is due to the prevailing pattern of purchasing power and market size, availability of infrastructures and factor inputs.

The high level of congestion accentuated by industrial concentration in Cairo and Alexandria have a negative impact on the environment and lead to a sharp rise in the rental cost and price of real estate. That must be a contributing factor to industrial cost, both directly (financial) and indirectly (social). The higher cost of living in these cities, particularly housing rent, contributes to higher wage cost. The creation of satellite industrial cities attempts to alleviate metropolitan industrial concentration.

The public industrial sector is part and parcel of the public economy. It has a social role to play and has often been used as a welfare instrument rather than a pure business activity. Its finances and general operational rules are, with slight modification, part of the government finances and overall rules and regulations. Investment law 43 which was later succeeded by law 230 provides a number of privileges and exceptions from the general company rules to foreign investments falling under its auspices. The last sub-sector covers other companies required to hold formal accounts by law and registered with the "companies authority". This last category follows the general rules and regulations applicable to companies.

Tables in the statistical appendices provide an overview of the aggregate economic structures of the three sub-sectors for the year 1985 (85/86 in the case of public companies). This is the last year for which CAPMAS has published data.

Since figures in the tables are based on company statistics, they are identical with those based on establishments by activity. Lastly, it must be pointed out that since these statistics are based on information reported by companies, they are likely to encompass certain biases inherent in such reporting. Nevertheless, they provide, on the whole, a fairly indicative picture of the broad economic structures and performance indicators of the respective company groups.

The first structural feature to be noted from the tables is the high share of intermediate input in production, and accordingly, the low share of value added for all three company groups. Value added constitutes 37% of the value of production of public companies, 24% for those of law 159 and 29% for those of law 230. This could be simply an outcome of the nature of their activities as simple raw material processing or assembly factories of imported inputs such as the case of electrical equipment, cars, etc.

Another significant factor is the high percentage of imported inputs, raw materials, and spare parts whose cost has been rising relative to that of outputs. This constitutes a major cost item and burden.

The level of net indirect taxes, also as a percentage of production, is quite low: 3% for (P.Cs), 1.7% for (L-159-Cs), and 3.4% for (L-230-Cs). These include tariffs on imported goods as well as production taxes, sales taxes, etc.

As for the allocation of value-added by factor shares, wages constitute 69% for (P.Cs), 5% for (L-159-Cs), and 56% for (L-230-Cs). Wages here include pecuniary and non-pecuniary payments and social insurance. The high share of wages of a public company is an outcome of its social welfare role.

The share of interest on the other hand accounts for 52%, 43% and 180% for the three company groups: P.Cs, L-159-Cs and L-230Cs respectively.

This includes both actual interest payments for both domestic and foreign laws as well as imputed interest on capital. The shares of interest payments and wages add up to more than the net value added at factor cost. Accordingly, all three company groups reported negative profits. The net losses of P.Cs and L-230-Cs are particularly large: LE 666 million and LE 615 million respectively.

In spite of negative net profits, other sources of funds such as imputed rent and interest, current transfers and other incomes produce a net surplus. Part of this surplus is allocated in the form of dividends on equity and labor shares in the surplus. The remainder, representing savings, goes to finance investment. Only L-159-Cs realised positive savings in 1985.

Aside from savings, other major sources of financing investment are: depreciation allowances, capital transfers and borrowing. With savings mostly negative, the other two sources accounted for the bulk of investment finance as seen from the tables. This is naturally reflected in their balance sheets. Their debt/equity ratios are heavily tipped towards debt, with equities accounting for only 18% for P.Cs, 8% for L-159-Cs, and 21% for L-230-Cs.

The statistical portrait emerging from the above described data regarding the industrial sub-sectors' cost and financial structures is not one of viability and efficiency. While losses of private sector companies may be exaggerated for tax evasion purposes or otherwise, this does not negate the overall picture.

The recent rise in the price of foreign exchanges and domestic prices of intermediate inputs and raw materials including energy are likely to reduce the share of value added further. The contractionary trend in domestic demand is unlikely to permit a rise in output prices across the board. At the same time, high nominal interest rates will increase the cost of borrowing. Rationalisation of cost and financial structures through increased efficiency and a greater shift towards export markets are essential for future growth.

1.5 Geographic Distribution of the Manufacturing Industry:

The policy of industry and industrial planning are basically responsible for the locational structure of the Egyptian industry added to these are several factors including technical, economic, social, political, security, administrative, financial and institutional factors.

The main economic factors are the following:

1- Availability of agricultural and livestock resources.

2- Availability of mining wealth.

3- Availability of energy.

4- Profitability of projects.

5- Financial and administrative aspects.

6- Transport and other infrastructure.

However, the economic assessment is based on short-term considerations, hence, the concentration of the manufacturing industry in the two metropolitan regions of Cairo and Alexandria, in addition to the Delta.

Therefore, it is of a paramount importance that the industrial projects be relocated and a new industrial map be set-up, including the industrial new cities and free zones.

Table (12)
Industrial Location Coefficient
(1988/89)

Industry Code	Location Coefficient (Delta Region)	Location Coefficient (Cairo Region)
290		1.37
311	1.62	
312	2.55	1.38
321	2.75	1.64
323		1.04
331	2.64	1.15
332		1.68
352	1.51	1.14
354		1.50
356		1.73
369		1.75
371		1.12
372		1.18
381		1.34
382		1.66
384		1.58
385		1.93
390		1.57
Total	5 Industries from 34 Industry	17 Industry from 34 Industry

Micro enterprises play a major role in the different Egyptian regions. Employment in micro enterprises in these regions are the following:

Region	Employment ('000)
Cairo	83
Delta	128
Alexandria	34
Suez	31
North Upper Egypt	5
Middle Upper Egypt	3
South Upper Egypt	13
Total	**297**

The above volume of employment amounts to 30% of the total employment in the Egyptian manufacturing sector.

Micro enterprises are worth special attention due to the following factors:

1- Sintability for geographic expansion.

2- Low volume of required capital.

3- High manpower absorption capacity.

4- High capability to ensure societal orientation towards industry and hence, the potentials of concentration on technical education and training.

5- High export potentialities, if production meets the international quality standards.

The scope of these industries shall not be confined to the consumer goods industries, rather, it shall be extended to cover the electrical and electronic sub-sectors.

The locational pattern of the micro enterprises is the following:

Cairo: Leather - metals - tailoring - repair and maintenance.

Alexandria: Shoes and leather - readymade garments - Khan El-Khalili handicrafts - tobacco - paper.

Delta: Shoes - carpets - textiles - wooden products.

1.6 Industrial Growth and Private Investment:

Direct foreign investment in Egypt began to be significant only after the adoption of the Infitah policy in the mid-70s. Before that, there was no foreign investment worth mentioning in spite of a generous foreign investment law. The problem had been with the economic system and overall economic environment. This shifted to a more liberalized system after 1973. Investment law 43 was promulgated to provide a regulatory framework for foreign investments and exceptions from general rules and regulations. The law focused on direct foreign and Arab investments, either alone or in combination with domestic investors, public and private, in joint ventures.
Statistics related to foreign investment, whether at aggregate or sectoral levels, are hard to get by their conceptual definitions and coverage are often imprecise. Part of the difficulty is not to confuse licensed projects and investments with realized ones.

According to available statistics, actual total foreign direct investment under the auspices of law 43/230 and by oil companies increased from L.E. 34 million in 1975 to L.E. 658 million in 1986/87. Most of these investments are related to the oil sector and are undertaken by multinational oil companies. This latter category increased from L.E. 32 mn in 1975 to L.E. 535 mn in 86/87 i.e. over 80% of the total. Law 43/230 investments increased from L.E. 2 mn to L.E. 123 mn over the same period.

However, not all Law 43/230 investments are foreign as far as the nationality of investors or the origin of capital are concerned. It includes investments by Egyptian citizens and institutions as long as they satisfy certain requirements stipulated by the Law. Moreover, Law 43/230 is not necessarily the only channel for direct foreign investments such as the Law of new cities and communicates or even Law 159. In mid-1991, 208 branches of foreign companies were registered under the auspices of company Law 159.

Figures provided by the World Bank indicate that foreign private investment increased from L.E. 142 mn in 1984 to L.E. 361 mn in 1987. The source of this information is GOFI and is therefore likely to pertain more to planned figures than to actual realized ones. According to statistical information provided by GOFI, the total invested capital of projects under its auspices and in operation at the end of 1990 amounted to L.E. 7.0 billion. Of all approved projects the allocation of shares in total investment by country of origin is as follows: 66% Egyptian, 18% Arab, 4% USA, 3% EEC and 7% others. The Egyptian share is further divided into one third public and two thirds private.

The overall picture leads us to conclude that direct foreign private investment in Egypt in general, and in manufacturing in particular has increased since the mid 1990s, but has been rather insubstantial. The question is why ? given the country's generous foreign investment laws.

There are certain factors which encouraged foreign direct investment since the Infitah policy. They are, however, transitory and do not constitute a sustainable foundation for long-term growth. Amongst these factors, which are specially related to the industrial sector, are large and growing domestic markets shielded behind high protection walls, subsidized energy costs and other domestic raw materials and intermediate inputs, cheap money, permissive tax policies, and generous accounting principles permitting capital redemption over a short period. One should also not forget the special advantage such policies offered early comers enhancing their domestic market position vis a vis their other domestic competitors.

On the negative side, however, there was potential public sector encroachment, lack of clear rules and policies, unstable and non-transparent macro-economic policies and environment, foreign exchange scarcity and price instability, problems with repatriating capital, inflated real estate prices, unclear ownership claims, and difficulties in identifying and developing projects, to mention only a few. These latter factors led to higher risk, risk premiums and capital cost. Absence of capital markets added to the difficulties of both investment and divestment. This situation tended both to constrain foreign direct investment and to direct it towards venture capital.

Most of these investments had a short-to medium-term line horizon and were predominantly inward-oriented. Their cost and financial structures suffered from the same distortions as their other domestic counterparts which were largely dictated by domestic market conditions and distortions in both factor and product markets.

With policy reforms, macro and structural, picking up momentum, the profitability of these projects was negatively affected as we have seen earlier. Many of the foreign investors sold their shares to their Egyptian partners, a factor which is not accounted for in official statistics related to net foreign investment.

A long-term strategy for viable and sustainable foreign investment could not be achieved without reforming market structures and incentives. it would then cater for more viable foreign investment consistent with a long-term growth strategy. One essential ingredient in this regard is the reform of financial markets, including capital ones. This would help link portfolio investment with real investment and reduce risk. The previous focus on direct real investment is not warranted.

Another important factor is macro-economic policies and their processes. They exert a strong influence on expectations and therefore investment. Particularly important is the expectations with regard to changes in the exchange rate. It defines the relative rates of return to investment in real or financial assets, domestic or foreign.

Export led Industrial Growth, Efficiency and Competitiveness:

It is obvious from our earlier analysis that Egypt's industrial sector suffers from a low level of competitiveness in international markets. The past pattern of growth, non-competitive market structures, high protection and heavy regulations have led to economically inefficient cost and price structures with low international competitiveness. This is evident from the sector's poor export performance, particularly to convertible currency areas. Continuing import substituting growth is by no means a sign of rising competitiveness in domestic markets since the real efficiency rates of protection increased instead of declining. One can, therefore, safely conclude that the inefficient cost and price structures cut across all Egyptian enterprises, public and private. They are all subject to uniform market conditions, regulations and macro-policies that have led to this result.

Factors market structures, regulations and policy lead to a high labor cost emanating partly from low levels of efficiency and productivity. At the same time, rising money wages (at least to keep up with the cost of living) and non-wages costs such as social security, insurance, share in profits and other allocations add to high and rising wage and non-wage payments. Regulations preventing labor fixing or other disciplinary action make labor mobility hard and add to its cost to enterprises.

Moreover, massive labor emigration to the Gulf regions and high payments received there deprived Egypt's industry from some of its most skilled manpower: labor, engineers, accountants, etc. It also set standards for work compensation based on little work - big pay. In other words, skilled labor became scarce, labor wages increased, and labor productivity on the whole declined.

In contrast to the situation in the labor market, market structures, regulations and macro-policies led to a negative rental cost of capital. Interest rates were priced at a rate significantly below the rate of inflation. There was also a sharp rise in the rate of growth of domestic credit. This is other than external borrowing. Since credit was available and at a low price, its allocation was carried not according to market and economic efficiency criteria, but was rationed with negative results as far as levels of default and productivity are concerned.

Rapid growth in credit to both private and public enterprises has been a major contributor to the growth inflationary pressures in the economy. Likewise, the low cost of credit relative to labor led to a predominant pattern of factor proportions in private industrial enterprises that is heavily capital-intensive. Such a pattern of factor proportions is not consistent with the opportunity costs of capital and labor or with the country's factor endowment.

The distortion in factor proportion and prices was actually reflected in product prices. Their prices were not in line with efficiency prices and were not competitive with their foreign counterparts. Distortion in product market prices was further distorted by a haphazard tax policy aiming at raising revenue or achieving other social objectives without any regard to the structural and negative allocative impact of these policies. They added to the cost and price distortions, inefficiency and non-competitiveness.

Lastly with steadily accelerating inflation, highly protected domestic markets prices could be increased without fear of losing markets. Non-competitive domestic market structures accentuated such a trend. A declining real effective exchange rate provided an additional source of protection and gave a further impetus to a distorted non-competitive pattern of import substitution growth.

At the beginning of the 1980s the World bank undertook a major study of Egypt's industrial sector for the major public enterprises. It also provided estimates for some private enterprises. It also was to assess the potential comparative advantage of the various industrial sub-sectors. it concluded that the sector where a majority of enterprises had DRCs equal to one or less were, as to be expected, the food and textile industries, particularly the former. Interestingly enough, the findings indicate that the competitive levels of DRCs in these two sectors were better in the public sector than in the private sector particularly in textiles.

However, they used a low accounting rate of interest (6%) in the estimation of capital replacement cost. This was the ongoing bank rate of interest at that time. With that rate, however, they used a low accounting rate of interest (6%) in the estimation of capital replacement cost. This was the ongoing bank rate of interest at that time. With that rate now reaching 20% , industrial enterprises with a DRC of less than one would have their ratio go above one and would therefore become non-competitive.

Domestic resource costs are static parameters and therefore reflect the competitive situation and foreign-exchange earning capacity of Egypt's industry at the beginning of the 1980s. Changes in factor proportion, productivity and prices of both factors and products could bring about a new situation.

During the period 1975-88/89 the rate of growth of real capital formation has greatly exceeded the rate of growth of real IDP, particularly in the private industrial sub-sector in the 1980s. As for labor, it increased but at a more moderate rate, lower than that of IDP. As a result the ICOR rose sharply to levels exceeding 10, and likewise marginal capital productivity declined pari passu. Labor productivity, on the other hand showed a steady rise.

As for total factor productivity which measures changes in mechanical efficiency, it fluctuated rising rapidly in the second half of the 1970s but declined during most of the 1980s. TFP change is supposed to measure growth other than that generated through growth in factor inputs. It is represented by a shift in the production frontier. Its recent decline, however, is due mainly to declining industrial capacity utilisation for many enterprises. This is due to the recent contraction in domestic demand and markets and inability of enterprises to shift production to foreign markets.

Accordingly, TFP in Egypt's industry have fluctuated mostly with fluctuation in capacity utilisation which is in turn affected by growth in domestic markets and/or availability of foreign exchange to purchase essential raw materials, intermediate inputs, capital and spare parts.

One can therefore safely conclude that the inward-oriented growth in the manufacturing sector has been accompanied on the whole by declining international competitiveness. The Infitah policy has not affected the situation. Domestic markets were opened to private foreign and domestic investment but continued to be shielded from international or domestic competition via liberalized trade regime.

However, the present situation does not mean a pessimistic outlook for export-led industrial growth. Both DRCs and production can improve substantially via greater factor and capacity utilisation and improve managerial and other types of export efficiency. The industrial sector is characterised by a substantial productivity slack. An increase in primary factor productivity and a shift in the production function towards power opportunity cost factors would lower the numerator of the DRC ratio. At the same time a lowering of intermediate inputs and a rise in the share of value-added (all at international prices) would raise the numerator of the ratio, and improve the country's international competitiveness.

However, an important issue related to the casual relation between static measures as DRC's, international competitiveness and industrial export growth must be raised. The relationship is dual rather than unidirectional from competitiveness to exports. This inherent circularity provides a target for policy intervention.

A pervasive and well-coordinated strategy of industrial export promotion needs to be designed and implemented. This is naturally aside from the overall reforms whether related to deregulation, market reforms or the macro-economic environment. Exporters with net value-added must be compensated through tariff exemption. Special credit policies should be designed to assist them and appropriate infrastructures, hard and soft created. Quality control external standard specifications, essential information and other services related to the creation of an export business culture must be initiated by public policy.

This is required in order to make the shift from a domestic market industrial orientation to an export one with its inherent risks and higher initial costs.

Export-led industrial growth itself lead to improved capacity utilisation and improved technical efficiency (i.e. a positive growth in TFP). In fact, greater contact in both domestic markets via import liberalisation and in export markets has a technical and managerial industrial extension effect leading to improved export efficiency as well. Such a trend would improve productivity growth and reduce DRCs, thus reinforce the export-led growth trend initiated via public policy.

Two essential policy components would aid greatly in the shift from an inward-oriented industrial growth to an export led one. The first is growth in the ration of domestic average labor productivity in important segments of industrial activities relative to their trading partners. This ought to be achieved at a lower rate of growth of labor and capital costs. The second essential policy component is an aggressive exchange-rate policy aiming at a positive growth in the real effective rate of exchange.

Unfortunately, the actual policy trends and growth patterns are not fully consistent with the above-prescribed ones. Marginal labor productivity are not growing relative to other competitors in international markets. The real effective rate of exchange has not yet turned positive on a sustained basis.

1.7 Private Sector Role in Industrial Development:

Tables (25, 26 and 27) in the statistical appendices indicate the number of establishments, total production, sales, employment, wages, assets (public and private) and valueadded in the manufacturing sector during the period 1972 - 1987. In 1987, the indicators were as follows:

- Public sector production/total manufacturing production: 72%
- Private sector production/total manufacturing production: 28%
- Public sector sales/total manufacturing sales: 81%
- Private sector sales/total manufacturing sales: 19%
- Public sector employment/total manufacturing employment: 75%
- Private sector employment/total manufacturing employment: 25%
- Public sector wages/total manufacturing wages: 80%
- Private sector wages/total manufacturing wages: 20%
- Public sector worker's productivity: L.E. 20 000
- Private sector worker's productivity: L.E. 24 000
- Productivity of one pound of wages (public sector): L.E. 6.5
- Productivity of one pound of wages (private sector): L.E. 10.6

The above indicators are basic inputs for the planning of the role of the private sector in the industrial development, including the planning of the trends of the major parameters (production, sales, manpower, wages, assets and value added).

Table (13) indicates the developments of exports of both the public and the private sectors. During the past period, the role of the public sector was significantly larger due to the bilateral agreements. With liberalization, however, the private sector shall play a more significant role in industrial exports.

Table (13)
Distribution of Industrial Production
and
Exports between the Public and the Private Sectors
(1974-1983/84)

Years	Industrial Production					Industrial Exports				
	Public Sector	%	Private Sector	%	Total	Public Sector	%	Private Sector	%	Total
1974	1429.3	75.0	475.0	25.0	1904.3	168.4	75.6	54.3	24.4	222.7
1975	1671.1	73.6	596.9	26.4	2268.0	171.4	74.4	59.0	25.6	230.8
1976	1724.1	70.0	755.5	30.0	2479.6	162.8	78.6	44.3	21.4	207.1
1977	1963.3	71.7	775.8	28.3	2739.1	187.0	78.1	52.5	21.9	239.5
1978	2391.9	69.7	1040.3	30.3	3432.2	269.6	86.0	44.1	14.0	313.7
1979	2796.0	67.0	1361.6	33.0	4157.6	369.7	80.6	61.9	19.4	458.6
1980/81	3990.0	68.0	1847.4	32.0	5837.4	436.2	87.4	63.1	12.6	499.3
1981/82	4438.7	67.3	2157.9	32.7	6596.6	428.9	88.5	55.9	11.5	484.4
1982/83	5079.0	69.3	2244.7	30.7	7323.7	423.5	89.4	50.1	10.6	473.6
1983/84	5650.2	65.9	2926.8	34.1	8577.0	578.2	89.3	69.2	10.7	647.4

Chapter Two

Data Base & Basic Indicators for the Egyptian Manufacturing Sector

Chapter Two
Data Base & Basic Indicators for the Egyptian Manufacturing Sector

■ Introduction

The indicative industrial plan shall be based on a comprehensive data base, along with basic information and indicators, covering the following:

1. Input-output interrelationships.
2. Interrelationships between wages and productivity.
3. Interrelationships between human resources and other determining factors.
4. Financial indicators which determine the financial structures of the industrial sectors and the magnitude of the financial problems.
5. The extent of linkages among the different industrial sub-sectors.
6. Historical commodity balances and an outlook for the industrial plan (1992/93 -1996/97).
7. Gross-sectoral tables for the primary sectors and inputs (imports, Labor) for the Egyptian economy.

2.1 Quantitative Analysis of the Manufacturing Industries

2.1.1 Wages & Productivity Models:

Labor productivity is measured by several measurements, including average labor productivity and total productivity.

Amongst the major findings concluded by the productivity studies is the deterioration of productivity in the following industries: Cotton products, rubber, plastics, and glass.

Besides, a study conducted by CAPMAS on the total factor productivity (TFP) in the manufacturing sector (1964/70 -1980/81) revealed that TFP has been negative, during the period under study, in the following sub-sectors: furniture, printing and publishing, metal products, except the public sector machines, and glass.

There exist significant discrepancies between the public and the private sectors in respect of productivity levels.

This study includes measurement of wages and productivity models particularly the interrelationship between the average wage, productivity, and cost for employment opportunity.

The following regression formulae are used:

(a) $Y = A + B' X$

(b) $Y = A + B' \frac{1}{X}$

(c) $\frac{1}{Y} = A + B' X$

(d) $Y = A' B^{x}$

(e) $Y = A' X^{B}$

Where:

Y: Represents work productivity (P)

*: Represents labor wage (W) or cost of job opportunity (K)

These formulae are used for each of the manufacturing sub-sectors.

In order to test the validity of these models, the following tests are used:

a. Determination factor (R^2)

b. T test in respect of A (regression constant).

c. T test in respect of B (regression coefficient).

d. F test in respect of the significance of the overall regression model.

The following sub-sectors were subject to the above measurements and tests: food processing, textiles, wood products, paper, chemicals, building materials, metal industries, engineering industries.

Tables (2-1) through (2-18) in appendix (2) indicate the findings of these formulae estimates regarding the interrelationships between productivity on the one hand, and wage and cost of employment opportunity-on the other hand, both for the public and the private sectors. The study findings reveal that the interrelationship between productivity and cost for employment opportunity is an insignificant one, whereas the interrelationship between wage and productivity is significant.

2.1.2 Production Functions:

The single coefficient production functions have been derived for each of the industrial activities in the public and private sector. The following logarithmic model was used to measure the relationship between total production cost -on the one side- and total number of workers or total assets -on the other side.

$$\text{Log } Y = \text{Log } X + B \text{ Log } X$$

Where (in respect of each industrial activity)

Y: total production cost
X: total number of workers (L) or total assets (K)

Tables (2-19) through (2-36) in appendix (2) indicate the findings of the model estimates regarding the interrelationship between total production costs and each of the total number of workers and the total assets, proved to be significant.

2.1.3 Human Resources Models:

A number of human resources models has been estimated for the activities of the manufacturing sector. The estimation process has been based on the models used in the analyses of wages, productivity and production function. The following symbols are used:

Y: Production cost (P)
W: wages value (W)
L: number of Laborers
(S) Sales value
(K) Total assets

The tables of appendix (3) indicate the findings of the models estimates which proved significance and which can be used in the planning of human resources during the design of an effective plan throughout the following stages of the study. These - in turn - would contribute to the planning and projection of production and assets, and also to the conceptualization of the manpower plan for the industrial sector in the future.

2.1.4 Data Inputs:

Major types of data used are the following:

Production:

Production is assessed at factor costs as follows:
Production for sale - direct taxes + subsidies.

Wages:

Total wages are used, including monetary and non-monetary payments, in addition to social insurance, as published in the annual industrial production statistics.

Manpower:

Manpower is estimated either in number of workers, or in number of working hours during the year added to this is the transfer of seasonal work into annual full-time work.

Assets:

Net assets are measured as follows:

Assets in the beginning of the year + purchase of assets during the year - Sale of assets during the year - annual depreciation.

The study is based on the total value of assets published in the financial indicators publication of CAPMAS.

Sales:

The analyses are based on the cash and time sales value published in the economic and financial indicators statistics. Usually, the difference between sales and production is the stock of finished goods.

Prices:

Current prices, rather than constant prices, are used.

2.1.5 Analysis of Estimates Findings:

The following could be derived through the analysis of the three models:

Wages and productivity, production functions & human resources models:

a. The models presented in the appendices demonstrate acceptable significance and could be used for projections in the following fields of planning:

   wages, production, assets, sales, manpower.

b. These models are complementary, rather than substituting, with other models. This shall be clarified in more detail in the following parts of this study.

c. The programs used in the estimates of these models are valid for use in the updating of these models' data.

d. Full competition and liberalization of the national economy are two requisites for these models. Therefore, the private sector models are deemed representing the realities. They are also considered apt for a more comprehensive application in the future.

e. The study attained its envisaged objectives, as a number of linear and nonlinear models were used, linking the following:

   - Production, wages, and cost per job.
   - Production, number of workers, and assets.
   - Manpower, on the one hand, and all other related variables (production value, sales value, wages and invested capital) in 9 industrial sub-sectors (public & private).

f. The study concluded different results. Each was subject to statistical tests to verify its ever significance, at 95% and 99% confidence levels, respectively.

g. The study proved the validity of its underlying assumptions (the models used) in some cases, and the opposite in other cases.

h. For each sub-sector, estimates could be derived for the production volume, manpower volume and production level for the period 1990 - 2000, also for the public and the private sectors, separately. This has become possible after the verification of the correlation between the variables subject of the study, in addition to the significance of the findings at 95% and 99% confidence levels.

i. It is of paramount importance to draw the attention of industrial planners to the fact that the selection of any of the above techniques shall be performed continuously, with due consideration being taken of the following aspects:

- The qualitative aspects of the human resources models and their application for deriving projections.
- The types of variables which have complex correlations with dependent variables, and the extent to which such variables are quantitatively estimated, in addition to the level of detail and complementarily of such estimates.
- The time horizon of the plan (short-term, medium-term or long-term).

In brief, the planning process shall be performed by an integrated and well-trained planners who work in the framework of the overall planning and administrative policies of the different industrial activities. This -in turn- emphasizes the importance of selecting, preparing, and monitoring such a specialists group to ensure the attainment of the planning process outcomes.

A data and information base for the industrial sector shall be set-up. Such a data base shall comprise all data and information related to the planning process. It shall also be comprehensive, accurate, detailed and integrated in order to serve as a valid tool for planning as well as for the derivation of accurate indicators and the appropriate decision making in due time.

2.2 Financial Analysis of the Manufacturing Sector:

2.2.1 Introduction:

Cost and revenue data are included in a number of financial statements amongst the major objectives of these statements, is the analysis of the financial ratios of a company, a project or an activity. Analysis of the financial ratios - in turn - is aimed at the identification of the factors of liquidity, credit worthiness, efficiency, and profitability for the planned and the existing projects or for an industrial activity.

Since financial ratios are derived from the financial statements, their benefit is dependent on the accuracy of their estimation and projections. The financial statements include: income statement, statement of the sources and uses of funds, cash-flow statement, and the budget.

Financial ratios are used for the derivation of time comparisons between the projects or companies affiliated to the same sub-sector. The derivation of such ratios, however, shall be considered a start, rather than an end, of the financial analysis.

It is worth mention also that the financial ratios are either based on projected or actual data of certain enterprise or an activity. Using the latter entails appraisal of performance efficiency.

In such a case the role of professional and practical expertise shall be duly emphasized.

Financial ratios are categorized into 3 major groups:

1. **Liquidity and Credit Worthiness Rations:**

   These rations are of particular interest to external financial creditors. They include comparison as cash and ratio and current ratio, and long-term comparison as the ratio between long-term loans and equity capital. Long term investors are particularly concerned with the leverage ratio.

2. **Efficiency Ratios:**

These ratios measure the level of efficiency in the utilization of assets. Specifically, they measure the capability of an activity/enterprise to control stock. The trends of these ratios indicate the levels of precaution in the critical aspects of operations management, investment planning, and future cash requirements.

3. **Profitability Ratios:**

Profitability ratios bear on the returns to all types of investors.

Accordingly, they measure the returns on sales, on equity capital, on total assets and on long term sources.

It is more advantageous to calculate the profitability ratios for more than one period, i.e on a discounting basis.

The following ratios are used in the context of the study:

1st = Liquidity and Credit Worthiness Ratios :

- Liquidity Ratios:

1. Liquidity Rations / Current ratio = Current assets / Current Liabilities

2. Quick Ratio = $\frac{\text{Current assets - stock}}{\text{Current Liabilities}}$

3. Cash Ratio = Cash / Current Liabilities

- Credit worthiness Ratios

1- Fixed assets coverage ratio = Net fixed assets / Long - term Loans

2- Ratio of long term loans to equity capital

2nd Ratios of efficiency in assets utilization:

1- assets turnover ratio = Total sales / Average of total assets value

2- Stock turnover ratio = Cost of sold goods / Average stack value

3- Number of stocking day = Average stock value / Average cost of goods

4- Number of collection days = End-of -period debtors account / Average daily sales

3rd Profitability Ratio:

1- Return on Sales = Profit after tax / Sales value

2- Return on equity capital = Profit after tax / Equity capital

3- Return on capitalization value = $\frac{\text{Profit after tax + Interest}}{\text{Equity capital + Long term loans}}$

4- Return on total Investment = $\frac{\text{Profit before tax \& interest payment}}{\text{Total assets}}$

2.2.2 Liquidity and Credit Worthiness Ratios:

Some enterprises tend to depend heavily on high leverage financing. The inherent possible fluctuations in business level and prices. Therefore, project financing shall permit the overcoming of adverse factors with high level of predictability and uncertainty analysis.

Liquidity Ratios:

Current Ratio:

Current ratio is the ratio between current assets and current liabilities.

Banks use this ratio to reveal the extent to which the value of current assets drop before being short of covering current liabilities. With a law ratio, the project is considered at risk due to the possibility of selling at below-cost prices for the dire need for cash, or due to the inability of making provision for the stock required to fulfill the clientele requirements.

Banking institutions adopt an approximate rule that the current ratio should be in the average of 2:1. However, the type and specific potentials of each industrial sub-sector determine the appropriate level of such a ratio. If the sub-sector enjoys a short production cycle and rapid collection periods, then a lower ratio could be accepted. A ratio of 1:1 represents a warning sign. If the ratio is further decreased, the working capital becomes negative, a matter which entails instability for the project.

Quick Ratio:

The quick ratio is the decisive ratio, since it compares only between part of the current assets which demonstrates the highest liquidity and the current liabilities. Accordingly, products stock is excluded from the transfer into cash in a very short period. Quick ratio is derived by dividing cash and debtors' account by current liabilities. If this liquidity assessment ratio proves to be low, along with a high level of the current ratio, this would be entailing that the project faces a problem of large stocking with the implied inability to market its products, as is the case with some of the textiles projects in Egypt. As a general rule, if the quick ratio decreased to level below 1:1 this would be considered an outset of instability of the project.

Tables (4-1)through (4-45) in appendix (4) indicate the liquidity ratios at the sub-sector level.

Credit Worthiness Ratios:

Assets Coverage Ratio:

This ratio indicate the extent to which fixed assets are covered by loans.

Department/Equity Capital Ratio:

Financing through loans dictates repayment of loans installments, along with interest in specific dates. If loans exceed a certain limit, the enterprise becomes vulnerable to financial problems with high credit related risks. The lower debt/equity ratio entails a healthy financial status of the enterprise.

This ratio is derived by means of long term loans by all long term sources of capital (long term loans plus equity capital). Long term loans include suppliers credit and exclude overdrafts. Shareholders equity include shares, reserves, surplus and retained profit.

Tables (4-55) to (4-90) in appendix (4) show the credit worthiness ratio at the industrial sub-sector level

2.2.3 Efficiency Ratios :

Efficiency ratios express the level of efficient utilization of assets and the control of expenditure. The ratios dealt with in this study are stock turnover rate, average stocking days and average credit and collection period.

Stock Turnover Rate:

This ratios identifies the stock turnover along with the stock level required to attain a certain sales level. Stock turnover is measured by the period for which the enterprise keeps the stock, i.e, if the stock period is 4 months, so, the stock turnover is 3.

This ratio indicates two major issues, namely,

- A high stock level entails loss for the enterprise due to the blocking up of investments in the form of stocks and the increase in inventory costs.

- A low level of stock-below the safe level, will halt the production process despite the saving of the inventory costs it achieves. A low level of stock turnover imolies frozen assets in different forms of stock. On the other hand, a substantially high level, compared to other similar companies could indicate that the enterprise undergoes financial deficits which- in turn - hinder investments in stocking and hence, a loss in terms of foregone sales opportunities.

  In all such cases, the underlying causes shall be duly scrutinized in order to conclude the appropriate solutions.

Average Stocking Period:

Average stocking period is derived through the division of the end - of - year stock value by the average cost of the daily sales value.

The period required to transfer the total working capital into cash is calculated through the summation of collection days and the average number of the stock selling days.

Average Credit and Collection Period:

This ratio indicates the number of the credit and collection days. It is calculated by dividing the total of the end- of year debit accounts by the average daily sales.

A high ratio could be attributed to the following:

- Management problems.

- Incapability of the distribution network & inappropriate criteria for customers selection.

On the other hand, a higher ratio implies an overestimation of the enterprises profits due to the high probabilities of bad debts.

2.2.4 Profitability Ratios:

An enterprise success is highly dependent on its respective capability to realize revenues through production processes in order to finance reinvestment and hence, growth of activity.

Revenue on Sales:

This ratio is derived through the division of profits (before tax) by sales value. It is complementary to the sales processing ratio, i.e, the two ratios show opposite directions. The revenue on sales ratio is calculated on a before-tax basis for purposes of excluding the effect of taxes from the comparison between enterprises which operate in the same industrial & activity.

The specific inter-activity differentials could be identified through comparing ratio with model industries. It could also be used during the comparative assessment aimed at the expansion of activities.

Return on Equity:

This ratio is estimated by dividing profit (after tax) by total equity.
It indicates the income of to the shareholders after taxes and interest payments.

A high ratio would indicate high prices of materials, a production waste, low productive capacity or low due to market considerations. By means of neutralizing the price effects, each sold unit's share of operating costs would be derived hence, the possibility of comparing that share with the corresponding ones in different periods in the same enterprise, activity or with similar units in the same industry. A constant share indicates the effect of selling prices on this ratio. It would be advantageous to calculate this ratio for several periods to select that ratio which reflects the activity of a normal year of operation.

Return On Capitalization Value:

This ratio assesses the after-tax return on the enterprise's total investment. Capitalization is defined as the total of equity capital and long term loans. It ascertains the enterprise's effectiveness in utilizing borrowed funds.

Return on Total Assets:

The return on total assets (fixed + current) is considered one of the major indicators for assessing the quantitative capacity of an enterprise or activity. It is derived by dividing profits (before tax and interest payments) by total assets.

Tables (3-163) to (3-234) in appendix (3) show the profitability ratios at the industrial activity level.

The following conclusions could be derived:

1- Substantial discrepancies exist-in respect of return on sales and other profitability industrial ratios - among periods activities and industrial sub-sectors.

2- Several negative ratios are concluded, a matter which indurates realized losses in some sectors. Such losses could be attributed to the following factors:

- Adverse financial and economic policies.
- Technical problems and bottlenecks.
- Shortages of production supplies, particularly the imported ones.
- Low level of management efficiency.
- Market constraints and marketing problems.
- Absence of rehabilitation, maintenance, or training programs. Such enterprises shall be subject to privatization. as institutional problems.

2.3 Gross Sectoral Tables:

2.3.1 Gross Sectoral Tables of 1971/72:

These tables were used in planning-for the first time-during the preparation of the first 5-year plan (1960-65).

These table are composed of 4 matrices, namely:

1- Intermediate consumption matrix

2- Final consumption matrix

3- Primary factors matrix

4- Matrix of primary factors in the final demand sectors

These tables have revealed the following characteristics of the Egyptian economy :

1- The agricultural sector and the food processing sub-sector account-jointly-for 40% of the total consumption (public & private).

2- The agricultural sector, along with the food processing and textiles sub-sectors account for over 50% of exports.

3- Wages in some industrial sub-sectors exceed the respective value-added.

4- The largest sub sector, in terms of contribution to indirect taxes, is the food processing industry.

2.3.2 Gross Sectoral Tables of 1983/84:

Table (13) in the statistical appendices indicate the structure of final demand in 1983/84. The data included reveals the importance of oil and ginned cotton in the Egyptian exports. Besides, the relative importance of the consumption and capital industries sectors in meeting demand for these two product-categories.

Table 14
Primary Factors Matrix (1983-1984)

Value in LE '000

	1	2	3	4
Imports	64,735	181,240	555,238	744
Intermediate	985,722	2,683,340	705,484	31,958
Value Added	5,020,292	497,010	2,298,948	392,502
Total Input	6,006,014	3,180,350	3,004,432	424,460
Imports %	1.08%	5.70%	18.48%	0.18%
Intermediate %	16.41%	84.37%	23.48%	7.53%
Value Added %	83.59	15.63%	76.52%	92 47%
Total Input %	100.00%	100.00%	100.00%	100.00%

5	6	7	8	9
42,782	23,480	426,098	7	203,868
1,121,764	100,688	698,381	510,398	1,323,712
639,588	171,080	89,918	90,415	363,161
1,761,352	271,768	608,463	600,813	1,686,873
2.43%	8.64%	70.03%	0.00%	12.09%
63.69%	37.05%	144.78%	84.95%	78.47%
36.31%	62.95%	-14.78%	15.05%	21.53%
100.00%	100.00%	100.00%	100.00%	100.00%

Table 14 (Cont'd)

10	11	12	13	14
14,567	8,202	5,261	174,554	189,593
196,604	51,028	81,244	247,314	330,352
313,886	24,170	58,621	183,460	338,963
510,490	75,198	139,865	430,774	669,315
2.85%	10.91%	3.76%	40.52%	28.33%
38.51%	67.86%	58.09%	57.41%	49.36%
61.49%	32.14%	41.91%	42.59%	50.64%
100.00%	100.00%	100.00%	100.00%	100.00%

15	16	17	18	19
138,189	409,616	173,937	25,971	1,965
252,207	826,126	506,207	205,416	25,262
130,890	34,717	751,161	52,068	38,586
383,097	860,843	1,257,368	257,484	63,848
36.07%	47.58%	13.83%	10.09%	3.08%
65.83%	95.97%	40.26%	79.78%	39.57%
34.17%	4.03%	59.74%	20.22%	60.43%
100.00%	100.00%	100.00%	100.00%	100.00%

Table 14 (Cont'd)

20	21	22	23	24
25,380	20,644	56,003	451,041	222,648
52,562	340,303	577,715	1,085,215	393,950
68,678	281,113	284,410	694,127	145,424
121,240	621,416	262,125	1,779,342	539,374
0.2093	3.32%	6.50%	25.35%	41.28%
43.35%	54.76%	67.01%	60.99%	73.04%
56.65%	45.24%	32.99%	39.01%	26.96%
100.00%	100.00%	100.00%	100.00%	100.00%

25	26	27	28	29
6,984	54,648	916,437	30,875	10,872
38,348	170,915	2,083,827	541,501	392,067
12,902	203,530	1,388,156	2,700,590	395,596
51,250	374,445	3,471,983	3,242,091	787,663
13.63%	14.59%	26.40%	0.95%	1.38%
74.83%	45.64%	60.02%	16.70%	49.78%
25.17%	54.36%	39.98%	83.30%	50.22%
100.00%	100.00%	100.00%	100.00%	100.00%

Table 14 (Cont'd)

30	31	32	33	34
329,637	265	58,671	13	14,787
1,190,964	25,289	214,390	56,032	312.456
1,558,833	217,336	308,734	106,176	1,764.211
2,749,797	242,625	523,124	162,208	2,076,667
11.99%	0.11%	11.22%	0.01%	0.17%
43.31%	10.42%	40.98%	34.54%	15.05%
56.69%	89.58%	59.02%	65.46%	84.95%
100.00%	100.00%	100.00%	100.00%	100.00%

35	36	37	38
6,200	33,279	26,048	5,954,480
44,333	103,960	134,430	19.691 465
3,580,422	93,000	290,999	25,673,837
3,624,755	196,960	425,429	45,365,302
0.1%	16.90%	6.12%	13.13%
1.22%	52.78%	31.60%	43.41%
98.78%	47.22%	68.40%	56.59%
100.00%	100.00%	100.00%	100.00%

2.3.3 Gross Sectoral Tables 1986/87:

Table (2) in the statistical appendixes indicate the structure of Egyptian economy in the light of the Gross Sectoral table for 86/87. The data included reveal that the agricultural, food processing industries and spinning & weaving sectors contribute largely in Egyptian exports, and that some industries failed to achieve profits. Thus industrialization policies had totalize economic liberalisation and privatization policies.

2.3.4 Work Matrix 1976 - 1986 :

Tables 15 - 16 show the work matrix of 9 main professions:

1- Technicians and scientific professionals and those who are related to them.

2- Administrative managers and business managers, and business holders (other than agriculture, trade, restaurants, and hotels).

3- Office Workers

4- Sales Workers

5- Services Workers

6- Workers in agriculture, animal raising, Sea and Shore hunting.

7- Product workers, workers operating means of transportation carriers and Laborers.

8- Professionally unclassified individuals.

They were classified according to sex and industry activities (9 activities 1976 - 1986).

From the matrices we ca n extract these confusions concerning labor structure in 1986 :

1- Product and transport workers, unskilled labor creat about 73% from the total labor power in the transformation industries (1.4 million workers).

2- 31% out of the total labor power in the transformation industries work in the spining and weaving sector.

While Engineering industry sector came second, concerning labor density.

Table 15
Manpower Matrix (1979)

Manpower/Subsector	Job	Number	# 1	Job	Number	#2	Job	Number	#3
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Food Processing	7941	807	8748	1744	38	1812	13073	2656	15729
Spinning & Weaving	15780	1506	17286	3022	111	3133	24611	5352	29963
Wood Industry	1176	114	1290	214	4	218	1081	346	1427
Paper Industry	3644	597	4241	678	23	701	4171	1285	5456
Chemical Industry	10929	1732	12661	1402	58	1460	10869	4334	15203
Non Metallic Mineral Products	2192	230	2422	821	17	838	2969	616	3585
Metal Industry	8154	283	8437	448	12	460	4976	682	5658
Eng. Industries	17988	1570	19558	1658	48	1706	12955	4345	17300
Others	411	66	477	119	2	121	391	135	526
Total of Workers in Job	68215	6905	75120	10136	313	10449	75096	19751	94847
Workers % in Job	5.258%	0.532%	5.790%	0.781%	0.024%	0.805%	5.788%	1.522%	7.311%

Manpower/Subsector	Job	Number	# 4	Job	Number	#5	Job	Number	#6
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Food Processing	1870	149	2019	8451	232	8683	2584	62	2646
Spinning & Weaving	1564	240	1804	15102	504	15606	506	9	515
Wood Industry	177	7	184	772	41	813	180	3	183
Paper Industry	374	22	396	2655	46	2701	167	2	169
Chemical Industry	871	70	941	7932	354	8286	271	0	274
Non Metallic Mineral Products	369	19	388	2934	58	2992	124	0	124
Metal Industry	197	19	216	3382	23	3405	137	2	137
Eng. Industries	709	49	758	8135	203	8338	318	0	320
Others	89	9	98	447	28	475	21	81	21
Total of Workers in Job	6220	584	6804	49810	1489	51299	4308	0.006%	4389
Workers % in Job	0.479%	0.045%	0.524%	3.839%	0.115%	3.954%	0.332%	1.522%	0.338%

Table 15 (cont'd)

Manpower/Subsector	Job	Number	# 7	job	Number	#8	Total Numb	Workers	Ranking
	Male	Female	Total	Male	Female	Total			
Food Processing	121519	4545	126064	1133	133	1266	166967	12.87%	3
Spinning & Weaving	413428	40091	453519	2394	425	2819	524645	40.44%	1
Wood Industry	134877	1161	136038	844		1233	141386	10.90%	4
Paper Industry	28135	613	28748	278	28	306	42718	3.29%	8
Chemical Industry	51606	3648	55254	726	180	906	94985	7.32%	5
Non Metallic Mineral Products	51679	1249	52928	545	83	628	63905	4.93%	6
Metal Industry	41985	179	42164	547	37	584	61061	4.71%	7
Eng. Industries	143008	1442	144450	1142	354	1496	193926	14.95%	2
Others	5670	219	5889	165	34	199	7806	0.60%	9
Total of Workers in Job	991907	53147	1045054	7774	1663	9437	1297399	100.00%	
Workers % in Job	76.454%	4.096%	80.550%	0.599%	0.128%	0.727%	100.000%		

Note:

Non Metallic M. Products
Value in LE '000

** Job #1 = Technicians
** Job #2 = Managers, Businessmen & Project Owners
** Job #3 = Workers in Administration Field
** Job #4 = Workers in Sales Field & Sales Representatives
** Job #5 = Workers in Services Field
** Job #6 = Workers in Agriculture, Fishing & Hunting
** Job #7 = Production, Transportation & Unskilled Labours
** Job #8 = Others

Table 16
Manpower Matrix (1986)

Manpower/Subsector	Job	Number	# 1	Job	Number	#2	Job	Number	#3
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Food Processing	11811	1483	13294	2877	217	3094	12569	5301	17870
Spinning & Weaving	18953	2154	21107	3139	278	3417	17804	6912	24716
Wood Industry	733	88	841	150	9	159	442	191	633
Paper Industry	5791	1243	7034	810	68	878	4099	1809	5908
Chemical Industry	21006	2903	23909	2584	249	2833	10467	5924	16391
Non Metallic Mineral Products	5613	399	6012	863	49	912	3170	948	4118
Metal Industry	11330	436	11766	982	50	1032	4126	942	5068
Eng. Industries	33241	2719	35960	2908	213	3121	12891	5978	18869
Others	1113	136	1249	180	11	191	582	332	914
Total of Workers in Job	109611	11561	121172	14493	1144	15637	66150	28337	94487
Workers % in Job	10.569%	1.115%	0.11684%	1.397%	0.110%	1.508%	6.378%	2.732%	9.111%

Manpower/Subsector	Job	Number	# 4	Job	Number	#5	Job	Number	#6
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Food Processing	1677	314	1981	4705	389	5094	712	28	740
Spinning & Weaving	1093	298	1391	664	663	1327	221	9	230
Wood Industry	102	12	114	191	20	211	39	1	40
Paper Industry	366	28	394	1799	67	1866	362	12	374
Chemical Industry	820	106	926	4055	423	4478	246	11	257
Non Metallic Mineral Products	223	18	241	1504	66	1570	47	5	52
Metal Industry	144	13	157	1346	33	1379	94	0	94
Eng. Industries	601	56	657	5157	329	5486	195	3	198
Others	120	8	128	305	38	343	17	1	18
Total of Workers in Job	5136	853	5989	19726	2028	21754	1933	70	2003
Workers % in Job	0.495%	0.082%	0.577%	1.902%	0.196%	2.098%	0.186%	0.007%	0.193%

Table 16 (Cont'd)

Manpower/Subsector	Job Number #7			Job Number #8			Total Number	Workers	Ranking
	Male	Female	Total	Male	Female	Total			
Food Processing	108889	7352	116241	1401	220	1621	159935	15.42%	3
Spinning & Weaving	237237	31256	268493	1895	312	2207	322888	31.13%	1
Wood Industry	86412	513	86925	522	15	537	89460	8.63%	5
Paper Industry	27997	1025	29022	641	91	732	46208	4.46%	8
Chemical Industry	5329	51880	57209	257	1562	1819	107822	10.40%	4
Non Metallic Mineral Products	38700	805	39505	1123	82	1205	53615	5.17%	6
Metal Industry	32286	176	32462	890	35	925	52883	5.10%	7
Eng. Industries	121429	1902	123331	4978	218	5196	192818	18.59%	2
Others	7788	321	8109	390	124	514	11466	1.11%	9
Total of Workers in Job	666067	95230	761297	12097	2659	14756	1037095	100.00%	
Workers % in Job	64.224%	9.182%	73.407%	1.166%	0.256%	1.423%	100.000%		

Note:

Non Metallic M. Products
Value in LE '000

** Job #1 = Technicians
** Job #2 = Managers, Businessmen & Project Owners
** Job #3 = Workers in Administration Field
** Job #4 = Workers in Sales Field & Sales Representatives
** Job #5 = Workers in Services Field
** Job #6 = Workers in Agriculture, Fishing & Hunting
** Job #7 = Production, Transportation & Unskilled Labours
** Job #8 = Others

It is possible to extract matrices of labor coefficients as follows:

Matrix of coefficients of labor structures: (1)

$$1_{ij} = \frac{L_{ij}}{L_j}$$

$$\begin{array}{cccc} \frac{L_{11}}{L_1} & \frac{L_{12}}{L_2} & \cdots & \frac{L_{1n}}{L_n} \\ \frac{L_{21}}{L_1} & \frac{L_{22}}{L_2} & & \frac{L_{2n}}{L_n} \\ \vdots & \vdots & & \vdots \\ \frac{L_{n1}}{L_1} & \frac{L_{n2}}{L_2} & & \frac{L_{nn}}{L_n} \end{array}$$

Where :

L_{ij} : Presents no. of labores in category i and work in sector j

L_j : Total no. of laborers in category j and work i in all industries

(1) This matrix was used in preparing the labor requirements in the indicative plan

Matrix of labor coefficients concerning product:

$$1_{ij} = \frac{L_{ij}}{X_j}$$

$$\frac{L_{11}}{X_1} \quad \frac{L_{12}}{X_2} \quad \cdots \quad \frac{L_{1n}}{X_n}$$

$$\frac{L_{21}}{X_1} \quad \frac{L_{22}}{X_2} \quad \frac{L_{2n}}{X_n}$$

$$\begin{matrix} . & . & . \\ . & . & . \\ . & . & . \\ . & . & . \end{matrix}$$

$$\frac{L_{n1}}{X_1} \quad \frac{L_{n2}}{X_2} \quad \frac{L_{nn}}{X_n}$$

Where :

L_{ij} : presents labor coefficients in category i , sector j concerning the product of sector j

L_{ij} : Presents no. of laborers in category i who work in sector j

X_j : Presents value of the product in sector j

These matrices are used in planning labor in the industrial sector (number of professions can reach 999 profession).[1]

(1) See : Staff paper on labor market in the industrial sector in Egypt as a part that completes this study

2.4 Structural Analysis of the Industrial Sector, and Identification of the Leading Sector using the Input-Output Tables:

2.4.1 Utilization of the Input-Output Tables:

National income accounts are based on profiling macro economic aggregates, where as the input-output (i/o) tables indicate the interrelationships between the different economic activities. Utilization of such tables is diversified and can be summed-up as follows :

1- I/O tables are used for coordination between the different objectives of the national plans, in such a manner which evades the possible obstacles. They are also used as bases for economic forecasting.

2- They reveal the respective roles of exports and imports, vis-a-vis the local production, particularly in respect of the presentation of the competing and complementary imports.

3- They identify the interrelationships of resources and their uses, i-e between intermediate and final uses on the one hand, and local production and imports on the other hand.

4- They indicate the links between the different major aggregates of the national accounts.

5- They present the details of the production structure and the final uses of goods and services in the national economy during a specific period.

6- They avail the data useful for the assessment of the changes of the supplies prices, along with the wage levels and the tax policies, on the pricing of both intermediate and final products.

7- They avail economic criteria which could be used for the comparative assessment of the different projects, in terms of the marginal efficiency of capital, volume of production and employment, along with the extent of reliance on imports and other similar indicators.

8- They represent an integrated framework for the basic statistical data which shall be made available further more, these tables identify the shortly comings of the available data, a matter which proves instrumental during the design of statistical programs.

In addition, I/O tables are used for purposes of structural analyses, such as these studies aimed at the identification of the leading sector, the analysis of structural unbalance and the impacts of the different policies.

This study utilizes the I/O tables for Egypt in 1983/84 and 1986/87 for purposes of identifying the leading sector in the Egyptian industry, and the economy, as a whole.

2.4.2 Models used in the Structural Analysis and the Identification of the Leading Sector :

Several criteria can be used for the identification of the leading sector, namely:

1- **Direct Forward and Backward Linkages:**

Backward linkage indicate the primary and necessary conditions for the establishment of a certain industry. In other words , they represent the inputs required for enabling a certain sector to produce forward linkages are those which result from the production process of a certain sector (whether productions intended for intermediate or final consumption), i.e these represent the outputs.

This criteria is based on the assessment, of the foreword, backward and total linkages. It is mathematically expressed as follows:

$$L_{fi} = \frac{\Sigma_j X_{ij}}{Z_i}$$

$$L_{Bj} = \frac{\Sigma_1 X_{ij}}{X_j}$$

Where:

L_{fi} : Parameter of the foreword linkage of the sector i

L_{Bj} : Parameter of the backward linkage of the sector j

X_{ij} : Output of the sector i used in the production of the sector j

X_i : Total output of the sector i

Z_i : Total demand for the sector i

n : Number of sectors in the national economy.

The above relationship is based on the direct linkages between the sector/sub-sector, and exclude the indirect linkages despite their respective importance in assessing the level of the overall sectoral linkages accordingly, the following formulae are envisaged to avoid such a shortcoming and identify the backward, forward and overall linkages on the basis of the aggregate technical coefficients which can be derived from the inverse of the technical coefficient matrix.

The following formula is used for the identification of the leading sector:

$$Lfi = \Sigma^{n}_{j} bij$$

$$LBi = \Sigma_{j} bij$$

$$Li = Lfi + LBi$$

Where:

bij: elements of the inverse of the technical coefficient matrix.

li : gross sectoral table for sector i.

According to this method, the different sectors could be ranked according to the level of linkages ,where the leading sector is identified as the one which demonstrates the highest level of this parameter.

The differential coefficient is used wherever there exist some add values which could affect the above formula. the coefficient is derived by means of the following formula

$$V_{ij} = \frac{\frac{1}{n-1} \sum_{i,j,1}^{n} (bij - \frac{1}{n} \sum_{i,j,1}^{n} bij)^2}{\frac{1}{n} \sum_{i,j,1}^{n} bij}$$

2- Criterion of Aggregate Relationship, Adjusted by Value Added:

Several criteria are dependent on the aggregate technical coefficients matrix, for purposes of identifying the leading sector. Such criteria are based on either overall or partial objectives. Amongst these criteria are the following:

The value added criterion, used for the identification of the leading sector on the basis of each sub-sector's value added, relative to the sub-sectc:'s total output. The formula used is the following:

$$\text{Max } {}^{n}\Sigma_{1=1} A_{vi} \, {}^{n}\Sigma_{1=1} b_{ij} \, Y_j \;,\; A_{vi} = \frac{V_i}{X_i} \quad \text{-----}$$

Where:

V_i :Value added in the sub-sector i

X_i :Total output in the sub-sector i

b_{ij} :Aggregate coefficients for the utilization of the products of the sub-sector i in producing one unit of the product j, being an element of the aggregate coefficients matrix.

3- **Criterion of Imports Ratio Decrease:**

This criterion is concerned with the sub-sector which requires the least volume of imports. It is calculated on the basis of the following formula:

$$\frac{M_i}{X_i} \quad A_{vi} \cdot Y_i \; b_{ij} \sum_{j=1}^{n} A_{vi} \sum_{i=1}^{n} \quad \min$$

Where:

M_i :imports of the sub-sector i

X_i :Total output of the sub-sector i

4- **Weighted Overall Criterion:**

The formula used is the following : $L_{fi} \underset{j=1}{=} \sum^{n} e_j \; b_{ij}$

i.e, the general factor L_f can be expressed as follows: $L_f = 11\ b_{ij}\ ej\ 11$

besides, the general factor L_B is expressed as follows: $L_B = 11\ b_{ji}\ ej\ 11$

Where:

e_j : The relative weight of the sub-sector j, according the objective set-forth, Where $e_j = 1$.

Selection among the sub-sector is based on: max. L_B, max. L_F, or max $(L_f + L_B)$

The above is dependent on whether the aim is to identify the forward linkages or the overall linkages. To explain, if it is assumed that the total value added has a priority over other objectives, then, sub-sectors shall be ranked descendingly according to their contribution to this specific objective and each shall be accorded the appropriate relative weight.

5- **Criterion of Average Aggregate Coefficients:**

The formula used is the following:

$$L_{fi} = \frac{\frac{1}{n}\sum^{n} b}{\frac{1}{n2}\sum\sum b_{ij}}$$

$$L_{Bi} = \frac{\frac{1}{n}\sum^{n} b_{ij}}{\frac{1}{n2}\sum_{j}\sum_{i=1} b_{ij}}$$

$$L_{i} = L_{fi} + L_{Bi}$$

2.4.3 Analysis of the Estimates Findings:

Input/Output Tables of 1983/84:

In order to identify the leading sector, the A matrix (technical coefficients matrix) shall be set-forth, along with the matrix inverse. Forward and backward linkages are assessed in the appendices. Table (17) identifies the leading sectors (those which demonstrate the largest linkages) as follows:

1. Chemicals & products, and oil refining
2. Rubber, plastics & products
3. Iron, steel & metals
4. Machinery and equipments
5. Leather products

Table 17

The Leading Sector by Using Matrix 1983/84

Sector	Ranking	Order
Chemicals, Excluding Oil Refining (16)	8.286	1
Wholesale & Retail Trade (28)	4.152	2
Rubber, Plastic & Products (18)	3.413	3
Vegetation Production (1)	3.050	4
Real Estate & Housing Service (34)	2.544	5
Iron & Hard Metal (22)	2.253	6
Machinery (23)	2.207	7
Leather & Prod. Excluding Footwear (11)	2.159	8
Paper & Printing (15)	2.143	9
Electricity, Gas & Water (26)	2.134	10
Foodstuff (5)	2.001	11
Yarn & Woven Tissue (9)	1.979	12
Transportation & Warehousing (30)	1.939	13
Animal Production (2)	1.934	14
Other Extraction (4)	1.899	15
Footwear (12)	1.847	16
Carding of Cotton (8)	1.771	17
Financial Agency (32)	1.766	18
Construction & Building (27)	1.728	19
Means of Transportation (24)	1.637	20
Production of Petroleum Refining (17)	1.562	21
Wood & Prod. Excluding Furniture (13)	1.548	22
Other (25)	1.513	23
Tobacco (7)	1.504	24
Insurance (33)	1.503	25
Non Metallic Production (21)	1.483	26
Entertainment & Cultural Service (36)	1.439	27
Restaurant, Hotel & Cafe (29)	1.375	28
Readymade Garments (10)	1.339	29
Glass Manufacturing & Products (20)	1.331	30
Beverages (6)	1.310	31
Transportation (31)	1.277	32
Personal Services (37)	1.270	33
Wooden & Metallic Furiniture (14)	1.252	34
Extraction of Crude Oil & Natural Gas (3)	1.244	35
Refractories (19)	1.210	36
Social & Societal Service (35)	1.001	37

Input/Output Tables of 1986/87:

In order to identify the leading sector, the A matrix shall be set-forth, along with the matrix inverse as shown in the appendices tables.

Table (18) indicates the leading sector in the Egyptian industry:

1. Iron and steel
2. Cotton ginning
3. Textiles
4. Leather products
5. Machinery & equipments

The above findings could be used for the formation of industrial plans as follows:

1. The strategy of non-balanced growth which leads to a balanced growth in the future, emphasizes the adoption of rather low rates of production for the sub-sectors which demonstrate high linkages.

2. Such linkages are used as bases for the distribution of industrial investments between the different industrial sub-sectors and activities. Practically, investments allocations could be based on the consideration of the linkages levels. Such an indicator, however, is deemed constant, therefore, the identification of the leading sector shall be updated on a regular basis.

Table 18

The Leading Sector by Using Matrix 1986/87

Sector	Ranking	Order
Vegetation Production (1)	2.867	1
Real Estate & Housing Service (34)	2.776	2
Wholesale & Retail Trade (28)	2.639	3
Iron & Hard Metal (22)	2.572	4
Animal Production (2)	2.304	5
Carding of Cotton (8)	2.297	6
Yarn & Woven Tissues (9)	2.296	7
Leather & Prod. Excluding Footware (11)	2.234	8
Machinery (23)	2.226	9
Chemicals, Excluding Oil Refining (16)	2.159	10
Food Stuff (5)	2.083	11
Footwear (12)	2.054	12
Electricity, Gas & Water (26)	2.041	13
Paper & Printing (15)	2.021	14
Other Extraction (4)	2.006	15
Other (25)	2.003	16
Insurance (33)	1.986	17
Non Metallic Production (21)	1.959	18
Rubber, Plastic & Products (18)	1.923	19
Means of Transportation (24)	1.912	20
Transportation & Warehousing (30)	1.908	21
Restaurant, Hotel & Cafe (29)	1.904	22
Construction & Building (27)	1.897	23
Entertainment & Cultural Service (36)	1.896	24
Financial Agency (32)	1.857	25
Production of Petroleum Refining (17)	1.838	26
Readymade Garments (10)	1.791	27
Beverages (6)	1.731	28
Refractories (19)	1.726	29
Tobacco (7)	1.709	30
Transportation (31)	1.698	31
Extraction of Crude Oil & Natural Gas (3)	1.690	32
Glass-Manufactruing & Products (20)	1.678	33
Personal Services (37)	1.672	34
Wood & Prod. Excluding Furniture (13)	1.659	35
Wooden & Metallic Furiniture (14)	1.590	36
Social & Societal Service (35)	1.401	37

2.5 Commodity Balances and their Utilization:

Commodity balances are used for purposes of analyzing and planning for the production and consumption of the different commodities. Such balances indicate the sources and uses of commodities. However, their utilization as a planning tool is limited due to the fact that such balances are solely concerned with the direct effects of the production process, rather than the overall effects.

Commodity balances require an assessment of the developments of production, consumption, exports, imports and changes in stock.

2.6 Commodity Balances of the Industrial Sector and Estimates of the Gap:

2.6.1 Developments of Production of the Major Products:

Tables (4-1) to (4-7) in appendix (4) indicate the production developments of the major products during the period 1952 - 1989/1990.

These include:

- Food processing.
- Textiles.
- Chemical industries.
- Petroleum products.
- Metal industries.
- Electrical equipment.
- Building materials.

The highest rates of growth achieved were in the following products:

- Preserved foods.
- Wool textiles.
- Sulfuric acid.
- Leather.
- Pharmaceutical.

- Fuel oil.
- Diesel.
- Pressure pipes.
- Cables.
- Ceramics.

2.6.2 Developments of Consumption of Major Industrial Products:

Tables (5-8) to (5-28) in appendix (5) indicate the consumption of the major industrial products and the related ones throughout 5 reference years. These data are used as bases for the following analyses:

1. Estimation of the gap through comparison with the developments of production at the product level.

2. Forecasting of demand and consumption during the plan.

2.6.3 Estimates of Products Gaps:

Based on the available production and consumption data, estimates of gaps were derived. These estimates are used as bases for the investment projects lists. The major products which demonstrate substantial gaps are the following:

- Tyres.
- Butane gas.
- Sardines.
- Dairy products.
- Edible oils.
- Sugar.
- Water heaters.
- Tyres inner tubes.
- Pharmaceutical.

Table (19) indicates the production, consumption and gap (table 19p. 136-138)

Table 19

Produced & Consumed Quantities and Gap in some Industrial Commodities

Commodity	Year	Production Quantity	Consumption Quantity	Surplus/Gap	Self-Sufficiency %
Radio & Recorder Sets	84/85	221	31- 1	-93.1	70
(in thousand)	85/86	180	292.4	-112.4	61
Television Sets	84/85	895	968.6	-73.6	92
(in thousand)	85/86	443	478.1	-25.1	92
Washing Machines	84/85	268	310.4	-42.4	86
(in thousand)	85/86	194	223.2	-28.2	86
Air Conditioning	84/85	32,825	38	-5,375	85
(in thousand)	85/86	31,788	38.9	-7,112	81
Refrigerators	84/85	514	539	-25	95
(in thousand)	85/86	536	547	-11	97
Heaters	84/85	100	356.6	-256.6	28
(in thousand)	85/86	112	251	-38	44
Internal Pipes (in thousand):					
Cars	84/85	1719	3330.3	-1611.3	51
Bicycles	85/86	1806	2586.5	-780.5	69
Motorcycles					
Medicine	84/85	421	664.1	-243 1	63
(LE million)	85/86	490	750 1	-260 1	65
External Tyres (in thousand):					
Cars	84/85	1527	1600 3	-73 3	95
Bicycles	85/86	1720	1932.3	-212 3	89
Motorbicycles					
Soap	84/85	422	422.5	-0 5	99
(in thousand)	85/86	275	275	-	100
Detergents	84/85	62	68.8	-6 8	90
(thousand tons)	85/86	72	80.4	-8 4	89
Mazot	84/85	9787	7916	1871	123
(thousand tons)	85/86	9501	7438	2063	127
Kerosine	84/85	2123	2180	-57	97
(thousand tons)	85/86	2257	2269	-12	99
Solar + Diesal	84/85	2795	4257	-1498	65
(thousand tons)	85/86	3178	3849	-671	82
Butane gas	84/85	273	596	-323	45
(in thousand)	85/86	251	641	-390	39
Gasoline	84/85	1940	1892	-48	102
(thousand tons)	85/86	1993	2000	-7	99
Pasturized Milk	84/85	75	87.6	-12.7	85
(thousand tons)	85/86	75	91.2	-16 2	82
Conserved Sardine	84/85	5.2	17	-11 3	30
(thousand tons)	85/86	5	14.8	-9 8	33
Whole White Cheese	84/85	180	194 8	-14 8	92
(thousand tons)	85/86	185	200 7	-15 7	92
Dry Processed Cheese	84/85	15	36.4	21 4	41
(thousand tons)	85/86	11	37.5	26.5	29
Tobacco Products	84/85	10,582	10.6	-0.018	99
(thousand tons)	85/86	8,325	6	2,325	138
Edible Oil (Refining)	84/85	260	474	-214	54
(thousand tons)	85/86	274	523	-249	52
Margarine	84/85	180	150	30	120
(thousand tons)	85/86	178	131	47	135
Beer	84/85	42	42	-	100
(thousand litres)	85/86	46	46	-	100
Wine & Liquors	84/85	666	666		100
(thousand litres)	85/86	175	175	-	100
Soft Drinks	84/85	3745	3745.4	-0.4	99.5
(million bottles)	85/86	2517	2517.4	-0.4	99 5
Starch	84/85	26	26.3	-0.3	98
(thousand tons)	85/86	31	30.6	0 4	101
Sugar	84/85	764	1382	-618	55
(thousand tons)	85/86	791	1346	-555	58
Glucose	84/85	50	50.2	-0 2	99
(thousand tons)	85/86	51	50 9	0 1	100 1

2.7 Commodity Balances - Industrial Plan, and Estimates of the Future Gap - Ministry of Planning Estimates:

Based on the data derived from the Planning Sector, commodity balances in the manufacturing sector were set-up, along the self-sufficiency levels throughout the five-year-plan. These balances consider the incorporation of the proposed investment projects with the actual production and imports, then, comparing this with the different uses of the major industrial products.

Tables (5-29) to (5-37) in appendix (5) indicate the estimates of these balances.

The following can be derived from the estimated balances:

1. Products with self sufficiency ratios of less than 70%:

- Refined sugar.
- Fish.
- Edible oil.
- Oil cake.
- Wool spinning.
- Jute weaving.
- Tanned leather.
- Leather products.
- Gelatine and glue.
- Paper pulp.
- Writing and printing paper.
- Cigarettes paper.
- Newspaper.
- Paper bags and boxes.
- Raw rubber.
- Sodium carbonate.
- Dyeing materials.
- Paints and varnishes.
- Cast iron.
- Cast iron products.

- Iron pipes and fixtures.
- Lead and zinc works.
- Steel and tin strips.
- Jet fuel.
- The rapine.
- Flat glass.

2. Products with an export/production ratio of more than 10%:

- Dried sweets.
- Preserved vegetables and fruits.
- Molasses.
- Cacao and chocolate.
- Cotton spinning.
- Cotton fabrics.
- Carpets and moquette.
- Wool spinning.
- Linen spinning.
- Ginned cotton.
- Ready-made garments.
- Gelatine and glue.
- Rubber shoes.
- Detergents.
- Glycerine.
- Coke.
- Steel castings.
- Aluminum.
- Ferro silicon.
- Forgings.
- Naphtha.
- Waxes.
- Alkyl-benzine.
- Therpine.

According to the 5-Year-Plan, the above products demonstrate either significant gaps or export potentials.

Chapter Three

An Outlook on the Future of the Industrial Private Sector in Egypt up to the year 2000

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An Outlook on the Future of the Industrial Private Sector in Egypt up to the year 2000

3.1 The need for an Indicative Plan for the industrial Private Sector in Egypt and its Preparation Phases:

An important question is raised regarding the need for an Indicative Plan for the industrial private sector in Egypt, and the dimensions off such a plan. This Indicative Plan is extremely important for the following reasons:

1 - To provide a database, alternatives and objectives to the private sector, since in their absence there is a lack of a clear vision by the industrial private investor.

2 - The State tendency towards privatisation of the industry i.e., increasing the role of the industrial private sector necessitates that the Indicative Plan of the Industrial Private Sector forms part of the economic system as a whole.

3 - To stress that the Indicative Plan is formulated within the planning framework using market mechanisms.

4 - The availability of efficient industrial equipment with data and information needed by the industrial private sector which will subsequently be directed to the private sector once the industrial public sector 's role diminishes in future.

5 - An important question is also raised as to the contents of this plan and the uncertainties which may exist therein. The answer to this question requires the emphasis of two significant points:

a- The element of uncertainty is an important one, influencing the social and economic variables, particularly when the economy is very sensitive to foreign trade. Therefore, it is necessary to use the appropriate tools when formulating the Indicative Plan.

b- The Indicative Plan can include many details reaching merchandise level as has been the case with this study.

6 - The bigger states expertise confirms the fact that the success of the planning process depends on methods and approaches which combine the social, economic and political factors in development plans, to deal not only with the preliminary phases of development, but also with problems of growth itself.

The following figure shows the Indicative Plan Preparation Phases adopted by this study :

Indicative Plan Preparation Phases

Phase 1:

Estimates of overall variables : income/ depreciation/investment/imports/exports

Phase 2:

Transformation of overall variables to variables per activity.

Simulation Model

- Production
- Product
- Exports
- Imports
- Middle Consumer
- Fixed Demand

Phase 3:

Estimates of the Plan requirements in:

- Manpower & professionals
- Investments
- Imports

Phase 4:

Definition of the industrial private sector role as regards means and objectives.

Phase 5:

Estimates of the financing sources available to finance the required investments.

Phase 6:

Industrial Goods Plan

- Imports
- Exports
- Production
- Gap.

3.2 Role of Private & Public Sectors on both National & Activity Levels:

In the 1960s both resource allocation and macro-economic balancing were centrally controlled. Medium-term sectoral targets of both demand and supply are initially and tentatively set through a five year plan. The plan provides guide lines to public investment allocations which constitutes the bulk of gross fixed investment. The main criteria underlying plan target preparation and investment allocation is sectoral balancing in the light of a loose macro-economic strategy, available international finance, etc.

Short-term balancing of the economy and conduct of public policy is more flexible and quite often ad hoc. The economy is administered in the light of unforeseen contingencies through a hierarchy of institutions at national, sectoral and project levels. The instruments of economic central administration range from private investment and import licensing to price and distribution controls, that is, at the structural level. The process is facilitated by the dominance of the public sector which serves mainly as a tool of public policy implementation.

Public structural policies are reinforced by macro-economic policies. The main goals of these latter policies are to provide the necessary financial requirements for government and the public sector and sectoral balancing targets. This is due within the confines of macro-economic constraints, particularly external finance.

Macro-economic policies are often short-term, ad hoc and administered by different institutions. Conventional macro-economic stabilization goals are often subordinated to other objectives. The major macro-economic policy instruments, viz, the interest and exchange rate, other fiscal and monetary policy targets are also administered.

Needless to say, prices, including interest and exchange rates, are not market-based and do not reflect forces of demand and supply. Market clearing takes place through rationing and informal markets.

This approach to national economic management loosened since the Open Door policy but retained its fundamental character. Medium and annual plans became rolling rather than fixed targets. The share of the private sector rose sharply. An increasing number of commodity and service prices have been deregulated. Public monopoly of production, trade, and distribution in general has been reduced.

However, public administration of the economy through various means continued to dominate. Creating a competitive and rational market price system is yet to be achieved. The economy is still in a state of transition from a predominantly publicly-administered to a market-based one. This is amongst the main objectives of policy reforms in the 1990s.

Since 1991, the pace of policy reforms has accelerated. This is particularly so in the area of stabilisation policy and macro-economic demand management. Interest rates have been raised and the LE exchange rate has been allowed to depreciate. Major steps are being taken towards allowing both variables to float and to be more market based. Efforts are also made to contain fiscal and monetary expansion. Most significant, however, has been the greater liberalisation of the balance of payments, both the balance of trade and the capital account. Particularly relevant for economic policy is the liberalisation of the capital account, thus allowing for full capital mobility.

Allowing external capital mobility imposes a major constraint on government demand management policy and its major instruments. It leads to the internationalization of interest rates, internally and externally. A decline in the difference between domestic interest rates and international ones provides an incentive for an increase in net capital outflows. On the other hand, a rise in the interest rate differential entices a net capital inflow.

Capital mobility affects the exchange rate. A net capital outflow puts downward pressures on the exchange rate of domestic currency. The opposite occurs in the case of a rise in net capital inflows. Stabilisation of the exchange rate is therefore linked to interest policy.

Financing the deficit in the balance of trade through private capital inflows sets the floor for any reduction in real interest rates given international ones. The interest rates become, to a certain extent, exogenously determined. It could no longer be used freely to foster economic growth via a policy of cheap money to encourage investment.

Such a policy would trigger capital outflows, currency depreciation, speculation and inflation. It would also require alternative means to financing the current account deficit such as foreign borrowing or loss of international reserves.

Liberalization of the external sector as well as interest and exchange rates likewise imposed a ceiling on fiscal and monetary growth. Expansionary fiscal and/or monetary policies would be inflationary and would therefore exert a negative effect on real interest and exchange rates. It would therefore lead to the same results as explained above.

There are major conclusions to be derived from the above analysis and its implication for the likely orientation of the Egyptian economy in the 1990s. It is also has implications for the goals of public policy, its means and process. The industrial sector is likely to be the one most affected by the change in economic orientation, mechanisms, policy tools and process.

As mentioned earlier, economic growth since the Infitah has been domestic expenditure-led growth. Nominal domestic absorption increased close to fifteen-fold from the mid seventies to the end of the eighties.
It amounted to less than a three-fold increase. The gap between domestic demand and supply was filled by rising net imports and prices.

Growth in private industrial investment and output was stimulated by rising domestic demand and prices. They were therefore predominantly inward oriented. There was neither time nor the need for efficiency considerations. The outcome has been, in many cases, a distorted and inefficient cost and price structure.

This past orientation is now to give way to a more restrained one. Domestic absorption and demand are, at present, contracting in real terms. This is likely to continue in the near future. Stabilization policy is initially trying to cope and siphone excess demand and liquidity and thus reduce the inflationary process. Afterwards, domestic demand growth must be kept in line with real resources.

Private industrial growth can no longer be based on rapid and indiscriminate growth in domestic demand. It must reorient itself toward export-led growth. While the potential for import substitution is considerable, it will have to take place within the framework of liberalised and competitive domestic markets.

Economic growth in general, and industrial growth in particular, will have to depend in the 1990s on supply management as a substitute for past expansionary demand management policies.

Industrial production in particular, is very low, with few exceptions. This applies in general to both public and private sectors. The rate of growth of domestic demand was circa five times that of supply.

Such an outcome could be explained partly by the distorted cost, price and financial structures of industrial enterprises. With growth in imports as an alternative source of supply, the domestic industries were at a disadvantage competitively. For the same reason. they could not compete in international markets.

However, other factors and impediments could be cited for the lag of domestic industrial production in the face of rising demand. Numerous bottlenecks ranging from inefficient factor markets to credit, distribution, etc. could also be added. Last but not least is the heavy-handed regulatory framework stifling industrial responses and reducing their structural adjustment capabilities. Non-competitive markets and an unstable and distorted macro-economic environment contributed to the lag in domestic production and its orientation.

Structural adjustment reforms aim at dealing with the above mentioned impediments and bottlenecks constraining industrial growth. Such policies range from deregulation and rationalizing the macro-economic environment to market and price reforms and privatization. Such policy and institutional reforms are expected to improve the structural flexibility of industrial enterprises and raise their level of efficiency. They would be in a better position for changing market conditions and orientation. They would also enhance their competitiveness in both domestic and external markets.

Such supply management policy reforms would augment the growth potential of the industrial sector as well as other production sectors in the economy. Growth in real output would allow growth in demand which, in turn, stimulates growth in output. The economy would be set on a sustained growth path.

According to the adopted structural adjustment polices, the private industrial sector would have to play a bigger role in industrial growth. Many of the present public enterprises are targeted for privatization.

Besides, public investment is to focus more on the infrastructure and parapublic sector such as water, energy and regional expansion. It is anticipated that public investment in industrial production would be greatly curtailed.

The private industrial sector has a major task to achieve. Its main source of growth will either be exports or imports substitution. In both cases, their level of efficiency and competitiveness will have to be at par with their international counterparts. This requires major reforms at the enterprise level as well as at market sectoral and national levels. The required reforms are after interlocking and entail many tradeoffs.

The speed with which the industrial sector can achieve its growth goals depends on the sequence and speed of public policy reforms, business collaboration and response to them. Market reforms in particular are time-consuming and require the coordination of many factors, information, institutional restructuring as well as behavioral changes. The transition requires formal and informal collaboration between government, business and labor.

3.3 Market Based Methodology for Industrial Growth Simulation:

An input-output model is used to simulate industrial growth for the medium as well as long term. Therefore, two time periods are selected for simulation: a medium-term one (1991/92-1996/97) and a long-term one (1991/92-2001/2002). The medium-term period coincides with the official Five-Year Plan. This allows us to test the official 5-Y-P scenario as well as to compare and analytically discuss its scenario with other market-based economic policy reforms to which the government of Egypt is committed.

For the purpose of the medium-term simulation scenarios, the CAPMAS statistical I/O table for 1986/87 is used. The level of disaggregation of the table is (37 X 37). The level of disaggregation of the manufacturing sector is a 2-digit ISIC one. Separate matrices of coefficients for the public and private sector have been constructed but at a more aggregate level.

The long-term simulation utilises a more aggregated level of the I/O total (12 X 12). This is felt to be more appropriate in the light of the length of the period. The main purpose of the long-term scenarios is to assess the long-term consequences of the policy reforms. Their gestatic.. period is likely to go beyond the medium term and are likely to bear fruit only in the second half of the 1990s.

The macro-economic approach used in the simulations separates the demand and supply sides. Decisions related to demand and supply are assumed to take place by different agents. Their coordination take place through the market. This stands in contrast with the central planning approach where the coordination and consistency of sectoral demand and supply balances is fulfilled through planning.

According to the approach used here, sectoral demand and supply simulations need not be consistent with one another. Sectoral demand and supply discrepancies (gaps) provide guidelines for public policies. They also provide indicators for business investment planning and medium-term policies.

Components of aggregate demand are simulated on an ex ante basis. Neither are they nominal in real terms. They constitute intended expenditures, not necessarily the realized ones.

They are estimated on the basis of their functional relation of anticipated changes in their major explanatory variables.

The whole exercise is undertaken within the framework of the liberalisation, stabilisation and structural adjustment programs of the government.

The same approach is applied to output simulation. However, in the case of output, the total is separated between the public and private sectors. This is deemed necessary for industrial policy design as well general public policies affecting the private sector at both aggregate and structural levels.

As mentioned above, demand and supply growth and pattern are not necessarily consistent ex ante. In such a case, this would lead either to rising imports or rising prices to fill up the gap. Realized expenditure and output level in nominal terms would then reflect the cumulative effect of inflation. Such an outcome is assessed in the course of the analysis of simulation results.

Components of aggregate demand are desegregated at the ISIC 2-digit level using various available desegregated devices and information. Household and government budget studies are used to desegregate both private and public consumption. Disaggregation of gross fixed investment and trade are based on a thorough analysis of past trends and anticipated policy reforms and market changes. Several scenarios are used to test alternative policies. Such an approach provides us with policy ranges rather than point estimates.

A similar approach is used in structuring output. As in the case of demand, past trends as well as likely policy changes are assessed. The impact of price liberalisation and decontrol, including the interest and exchange rate on the cost of both sectoral intermediate inputs and the distribution of value-added, is also assessed. Scenarios related to better capacity utilisation and reduced inventory accumulation are likewise discussed.

Structural scenarios due to such factors as income distribution, changing factor prices and shares, as well as other prices, are also analyzed. At the end, a prescriptive scenario for macro-economic as well as industrial policy is outlined. The aim is to maximize industrial growth and achieve macro-economic balancing.

3.4 Simulation Model Used (theoretical analysis):

1- The equations show the main models used, that can be applied on \$he input, and output schedules in the Egyptian economy in years 86,87/ 90,91 [1].

$$^{n}\Sigma_{i=1}\ X_{ij} + B_j + W_j + R_j + E_j = X_j$$

Where:

- i represents the selling sectors, j represents the purchasing sectors where i,j take the values from 1-n.
- X indicates the value sent from sector i to ij sector j(i,j = 1,...n)
- E_j, R_j, W_j, B_j represent the share of sector j from the imports and salaries and custom fees and the rest.

and if x represents the product of sector j, then j

$$^{n}\Sigma_{i=1}\ X_{ij} + B_j + W_j + R_j + E_j = X_j$$

2- $\Sigma_j\ X_{ij} + D_i = X_i$ (i = 1,..., n)

Assuming steady technical coefficients,then

$X_{ij} = A_{ij}$ Const.

(1) 1990/91 Tables of the inputs and outputs where available research directly before drafting this report.

3- $\frac{B_j}{X_j} = M_j = \text{Const.}$

$\frac{W_j}{X_j} = W_j = \text{Const.}$

$\frac{r_j}{X_j} = r_j = \text{Const.} \quad (j = 1,\ldots,n)$

$\frac{E_j}{X_j} = E_j = \text{Const.}$

It is clear that:

$$\Sigma_i A_{ij} + M_j + W_j + r_j + E_j = 1$$

4- From 2,3 we conclude:

$$^{n}\Sigma_{ij} (I_{ij} - A_{ij}) X_j = D_i \qquad (i = 1,\ldots,n)$$

Where:

$I_{ij} = 1 \quad i=j$

$= 0 \quad i\#j$

5- By inserting

$$(I - A)_{ij} = I_{ij} - A_{ij}$$

Then equations 4 will take the following form:

6- $\Sigma_j (I - A)_{ij} \; X_j = D_i \qquad (i = 1, \ldots, n)$

Notice that :

$(I - A)_{ij}$ indicates matrix n x n and simply it is a matrix of technical coefficients subtracted from unit matrix and they are two matrices n x n.

From equation no. 6 we conclude that:

7- $x_j = {}^{n}\Sigma_{i=1} \; (I - A)^{-1} \qquad (j = 1,\ldots,n)$

Where:

$(I - A)_{ij}$ is the inverse of matrix $(I - A)_{ij}$

Notice that :

$\blacktriangle D_i$ = the change in the final demand in sector i.

$\blacktriangle X_j$ = the equivalent in the total product of sector j.

From equation 7 then,

8- $X_j = {}^{n}\Sigma_{i=1} \; (I - A)_{ij}^{-1} \; \blacktriangle D_i$

Eqawtion 8 determines the change in the total product of the equivalent sector to the change of the final demand in sector i $(i = 1,\ldots,n)$

This change in production $\blacktriangle X_j$ will lead to a change in imports, salaries, custom duties and the rest. To reach the equivalent charges we multiply the change in $\blacktriangle X_j$ by the equivalent technical coefficients.

Therefore the change in $\blacktriangle M_j$ in the imports delivered to sector j due to changes in the final demand of the sector $(i = 1,\ldots,n) \blacktriangle k_i \; i$

9- $\blacktriangle M = M \blacktriangle X = M \, {}^{n}\Sigma_{i=1} (1 - A)_{ij}^{-1} \quad (j = 1,\ldots,n)$

Similarly the change of $\blacktriangle W_j$, $\blacktriangle r_j$, $\blacktriangle E$ because of the change of $\blacktriangle D$ will be:

10- $\blacktriangle W_j = W_j \blacktriangle X_j = W_j \, {}^{n}\Sigma_{i=1} (I - A)_{ij}^{-1} \blacktriangle D_i \quad (j = 1,\ldots,n)$

11- $r_j = r_j \blacktriangle X_j = r_j \, {}^{n}\Sigma_{i=1} (I - A)_{ij}^{-1} \blacktriangle D_i \quad (j = 1,\ldots,n)$

12- $\blacktriangle E_j = E_j \blacktriangle X_j = E_j \, {}^{n}\Sigma_{i=1} (I - A)_{ij}^{-1} \blacktriangle D_i \quad (j = 1,\ldots,n)$

Since the value added

13- $V_j = W_j + E_j$

14- The change in V_j will be:

$\blacktriangle V_j = (W_j + E_j) \blacktriangle X_j = (W_j + E_j) \, {}^{n}\Sigma_{i=1} (I - A)_{ij}^{-1} \blacktriangle D_i \quad (j = 1,\ldots,n)$

From equations 9 to 14, it is possible to assume the matrices:

$M_j\Sigma(I-A)_{ij}^{-1} \; W_j\Sigma(I-A)_{ij}^{-1} \; r_j\Sigma(I-A)_{ij}^{-1} \; V_j\Sigma(I-A)_{ij}^{-1}$

To increase the final demand in sector by one unit we have to import value equals to:

15- ${}^{n}\Sigma_{j=1} M_j(I-A)_{ij}^{-1}$

This means that the increase in product will be equal to:

16- $1 - {}^{n}\Sigma_{j=1} M_j(I-A)_{ij}^{-1}$

This will correspond changes in imports equal to:

${}^{n}\Sigma_{j=1} M_j(I-A)_{ij}^{-1}$

Therefore:

17- $$\frac{1 - {}^{n}\Sigma_{j=1} M_j(I-A)_{ij}^{-1}}{{}^{n}\Sigma_{j=1} M_j(I-A)_{ij}^{-1}}$$

It will give a net increase in the product of sector for every unit of imports needed:

18- This means that the quantity is very important since it is an indicator for the relation between the product and the imports.

$$\frac{1 - {}^{n}\Sigma_{j=1}\, M_j(I-A)_{ij}^{-1}}{{}^{n}\Sigma_{j=1}\, M_j(I-A)_{ij}^{-1}}$$

The last analysis did not determine the nature of the change of the final demand in sector i. Thus the change in the final demand will be as follows:

1- Change in the governmental consumption or household consumption
2- Change in the investment needs
3- Change in the level of storage
4- Change in the export needs

By using equation 7 instead of equation 8, the primary factors needed for exports (one of the elements of the demand) will be expressed as equations similar to equation 9 to 14 as follows:

19- $M_j\, {}^{n}\Sigma_{j=1}\, (I-A)_{ij}^{-1}\, S_i \quad (j = 1,\ldots,n)$

20- $W_j\, {}^{n}\Sigma_{j=1}\, (I-A)_{ij}^{-1}\, S_i \quad (j = 1,\ldots,n)$

21- $r_j\, {}^{n}\Sigma_{j=1}\, (I-A)_{ij}^{-1}\, S_i \quad (j = 1,\ldots,n)$

22- $E_j\, {}^{n}\Sigma_{j=1}\, (I-A)_{ij}^{-1}\, S_i \quad (j = 1,\ldots,n)$

23- $V_j\, {}^{n}\Sigma_{j=1}\, (I-A)_{ij}^{-1}\, S_i \quad (j = 1,\ldots,n)$

We will try in the following parts to make suitable application to these model when preparing the indicative plan for the private industrial sector.

3.5 Model Simulations:

First Alternative : Using Input/Output Tables for 1986/87

Functional Relations, Public Policies and Future Growth Scenarios:

1. Final Demand:

The main final demand components comprise household consumption, public consumption, investment and exports of goods and services. Import of goods and services is treated as an alternative source of supply rather than a negative component of final demand.

The functional relations of the various components of final demand changed drastically in the last 15 years. The changes affected their rates of growth at constant and nominal prices and their commodity composition. Moreover, they have become less amendable to direct control through traditional government machineries and policy instruments. Instead, they have become increasingly influenced by market prices and mechanisms, and therefore government policies towards demand management can only be market-based and indirect.

The requisite policy instruments are to be developed and the market mechanism built up and rationalised.

The changes in the functional relations of the components of final demand continue to change as a result of the impact of the liberalisation and policy reform programs adopted by the government. In fact, the pace of these changes accelerated and their main outcomes are likely to take hold within the span of the intended simulations in 1991/92-1996/97.

The impact of the reforms, however, is likely to be greatly influenced by the speed and sequence of these reforms. While prudence in this regard is advisable, it does not necessarily mean slowness. The optimal pace of change should be based on the empirical monitoring of results in an iterative process. In the light of this situation, alternative growth scenarios are adopted commensurate with alternative reform packages and restrictiveness.

a- **Household Consumption:**

The level and commodity composition of household consumption and its rate and pattern of change depends on many factors. Prominent among these factors are domestic disposable income, factor incomes from abroad and wealth. Changes in income distribution also influences both the level and commodity composition of consumption.

These determining factors are in turn influenced indirectly by public policy. To cite few examples, income taxes and transfers influence disposable income. Price policies likewise influence both the absolute price level and relative prices with major effects on real disposable income and the level and pattern of expenditure.

Clearly, interest and exchange rate policies affect the household sector allocation of their income between consumption and saving (especially factor income from abroad), prices, real income and its distribution.

The recent implementation of government adopted stabilisation programs entailed raising (and floating) interest rate structures, depreciation of the exchange rate of the LE and reducing the budget. The latter goal has depended mainly on raising the government tax revenue, reducing subsidies, and increasing user fees of public and parapublic services. On the other hand, structural adjustment reforms entailed price deregulation of public enterprises allowing them to move upwardly.

The main consequence of these policy changes has been an initial sharp rise in the level of prices. This is an intended result to make up for the large gap between absorption and output resulting from past expansionary policy.

The prognosis is that the elimination of excess liquidity in the economy and the contraction of real income and expenditure would, in due time, reduce the inflationary pressures in the economy. However, the end result is that real domestic disposable income is likely to have recently contracted. The ongoing reforms lead us to anticipate its continued contraction in the near future.

The second major source of household income, namely factor income from abroad, is not necessarily affected by the policy reforms. It is mainly in foreign exchange and therefore escapes the impact of LE depreciation. It is not amenable to taxation either.

Its growth, however, depends on the number of Egyptian workers abroad (mainly in the oil-rich Arab Gulf countries). The number of these workers has reached a peak before the Iraq- Kuwait war and is not likely to increase significantly.

The impact of household factor income from abroad on consumption expenditure is also likely to be affected by the percentage of this source of income remitted home. The level of remittances depends on many factors hard to conjure. Amongst these factors, one can mention not only consumption needs but also interest rate differentials, exchange rate expectations and its investment in opportunities and environment general.

By its very nature, the liberalisation and reform policies have a major impact on income distribution. The relative income share of low-income groups and those with fixed income declines with inflation while the share of asset holders, financial (foreign exchange) or material, rises. Also, income earners in foreign exchange raise their share in income.

Changes in income distribution are particularly important for their effect on the pattern of consumption expenditure. Expenditure on food and basic goods and services is likely to increase nominally at a lower rate while expenditure on imported goods, durable consumer goods and other higher income types of expenditure increase faster.

Indicators of Disposable Income
&
Household Consumption

(E£ million)

Year	GDP		Direct Taxes	Workers Transactions ($ million)	Home Consumption	
	Factor Cost (Current Prices)	At Constant Prices (1986/87)			Current Prices	Constant Prices (1986/87)
1986/87	48765	48765	2366	2973	35823	35979
1987/88	58386	50887		2845	359407	42729
1988/89	67254	52900	5582	3386		36976
1989/90	81341	54955		3700		38790
1990/91	103344	56689		3800		39993
1991/92	125485	59107	10710			110026

Source: Ministry of Planning & World Bank

Disposable Income and Household Consumption Indicators (in million LE)

	GDP at curr. F.C.	GDP at cons. 1986/87pr.	Direct Taxes	Workers Remittances (in mn US$)	Household Consumption curr.	Household Consumption cons. pr. 86/87
86/87	48765	48765	2366	2973	35979	35823
87/88	58386	50887		2845	42729	359407
88/89	67254	52900	5582	3386		36976
89/90	81341	54955		3700		38790
90/91	103344	56689		3800		39993
91/92	125485	59107	10710			110026

Source: Ministry of Planning and World Bank

The above figures highlight the recent trends in household disposable income and consumption. In the last five years, real GDP at factor cost increased by only 11%. This includes GDP in government whose deflation is, for conceptual reasons, inadequate. Meanwhile, direct taxes (on incomes) increased fivefold. Workers' remittances in dollar terms are estimated to have declined below its level in the last few years.

Real household consumption is, on the other hand, estimated to have increased by 11% in the last five years.

In the light of the above, three scenarios for the future growth of household consumption are chosen for the simulation of final demand in 1996/97 and 2001/2002. These are as follows:

	1991/92-1996/97 %	1996/97-2001/2002 %
Scenario (1)	0.0	2.0
Scenario (2)	1.0	3.0
Scenario (3)	5.0	7.0
Prescriptive Scenario	2.0	3.0
5-Y-P Scenario	4.0	

As can be seen, these constitute low, medium and high growth scenarios. In addition, a prescriptive scenario is provided on the basis of the above analysis. All scenarios are compared with the official 5-Y-P one.

Aggregate consumption is then desegregated at the 2-digit ISIC level using the last family budget study results and the income elasticities based on it. No assumptions are made regarding income distribution albeit its importance. This is due to lack of data and the conceptual means for its quantification.

b- Public Consumption:

The two major components of public consumption are wages and salaries of government employees and government purchases of intermediate goods and services for current use. Wages and salaries represent two thirds of total public consumption (1991/92).

However, public consumption does not represent the whole of public expenditure. The latter includes transfers, mainly in the form of interest rates on foreign and domestic debts and subsidies. Defense expenditure is also not included in estimates of public consumption. In 1990/91 these two additional items amounted to more than the total of the two traditional components namely, wages and salaries plus purchases of goods and services. Total government expenditure share in GDP in 1990/91 amounted to 50%.

Moreover, public capital expenditure (investment) amounted in 1990/91 to over 50% of total gross fixed investment. This includes investment in government services as well as those of public enterprises. As percentage of GDP, public capital expenditure amounted to circa 20% in 1990/91.

Government revenues are also not confined to sovereign sources, namely taxes. Non-tax revenues from royalties, sales of assets, etc. constituted one third of total government revenues in 1990/91. Besides, public investment expenditure is partially self-financed which constitutes an additional capital revenue.

The budget overall deficit (on current and capital account) in 1990/91 amounted to 20% of GDP. The main sources of financing this deficit have been external borrowing (amounting to 15% of GDP-net in 1990/91) and domestic borrowing both from banks and the public.

The whole of the government budget structure and accounts is liable to change in the 1990s as a basic part of stabilisation and reforms processes. The government is initially committed to reduce the overall budget to 8% of GDP by the end of this year. Resort to both external and internal borrowing (especially Central Bank borrowing) are programmed to be extremely restricted.

Reducing the budget deficit is to take place through raising revenues and reducing expenditures. In the light of liberalisation commitments to restrictions on borrowing, the focus in the field of increasing revenues is on taxes, fees, charges, etc.

On the expenditure side, while subsidies and interest rates on foreign debts have been reduced, interest on the internal debt is rising. However, both public expenditure and the domestic public debt are likely to decline in real terms as a result of the inflation tax.

The above indicators and the intended policy reform orientation lead us to conclude that real public expenditure is not likely to grow ex ante. The only source of revenue that is likely to increase and such a rise would be compensated for by a parallel decline in disposable income. While income of asset sales is likely to rise as a result of privatization plans, it would be improper to use it to fund current expenditure. On the other hand, both the budget deficit and its sources of funding are projected to contract as part of the commitment to stabilisation.

The simulation scenarios used regarding public expenditure are therefore as follows:

	1991/92-1996/97 %	1996/97-2001/2002 %
Scenario (1)	3.0	3.0
Scenario (2)	6.0	6.0
Scenario (3)	9.0	9.0
Prescriptive Scenario	6.0	0.0
5-Y-P Scenario	2.0	3.0

Sectoral disaggregation of public consumption (the expenditure of goods and services component) is undertaken with the help of budget data. This source is complemented by information from past trends derived from I/O data.

No structural scenarios are undertaken regarding public expenditure despite their importance to change the ratios of public expenditure on wages and salaries, on the one hand, and goods and services on the other. A rise in the share of the latter overtime is more developmental.

c- **Investment Expenditures:**

Total investment comprises gross fixed investment and changes in stocks. Recently, the latter's share in total investment has increased significantly. However, its pattern of growth in the future is difficult to fathom. Nevertheless, it can be assessed analytically. This is done in conjunction with the analysis of output growth.

Gross fixed investment combines public, private, and foreign investment. They have different behavioral functions and should therefore be analysed separately. It is to be pointed out that the analysis here is confined to their contribution to final demand.

Foreign finance (grants and aid) represent a major source of public finance. The rest comes from auto finance, contractual sources of savings (social insurance, pension funds) and commercial bank short-term credit (overdrafts). Private domestic investment capital needs are derived from private equity sources and bank borrowing (also mainly annual loans but rolled over). In the past, the share of debt in total private investment increased dramatically, constituting serious over-leveraging. This was an outcome of a past policy of cheap money (negative real interest rates), easy access to bank credit and rapid expansion in domestic credit.

The economic reform program puts a ceiling on sources of funds of public investment. Foreign finance of investment is planned to be both project and market based. They are conditioned on project capacity to service their loans. Contractual savings are also to be allocated according to market criteria and at market interest rates. Bank borrowing is, as we have seen, gradually restricted.

As for private domestic investment, it does not lack sources of funds. Private financial saving far exceeds the sector's investment requirement and capacity. Private savings and time deposits with the domestic bank system amounted to L.E. 75 billion in 1991 (June). Additional private savings, perhaps exceeding this amount, are invested abroad in financial assets (portfolio investments).

However, inadequate financial intermediation greatly limits the utilisation of these sources of funds to finance domestic fixed investment. A major portion of the owners of these savings are not businessmen. It is the function of specialized financial institutions to mobilize these sources of funds to be invested profitably in capital formation. Inadequate capital markets and the rising cost of bank borrowing are likely to continue to slow down private investment in the near future.

However, the main constraint on private investment at present does not stem from lack of sources of finance but is rather related to market forces, both demand and supply. The private sector has been accustomed to rapidly growing domestic demand and prices. Domestic markets are also heavily protective and non-competitive. On the supply side, structural factors, bottlenecks and inconsistent policies, at both project and macro-levels, constitute an unenabling environment for productive private investment.

Likewise, inflation, tax and other policies disfavor investment in the creation of new material assets, including manufacturing. They favor investment in financial assets, and speculation in real estate and foreign exchange. It is not surprising that the bulk of private investment in recent year has gone to housing and land.

Foreign investment, on the other hand, has been modest so far. Furthermore, it went mainly to such sectors as oil and related activities, tourism, etc. Investment in manufacturing has been rather insignificant.

Future anticipated contraction in consumption demand and high interest rates are likely to curtail private investment in the immediate future. However, in the long-run, the private sector is likely to develop the capacity for outward expansion (export-led). Another source of expansion, other than growth in domestic demand, is import substitution. However, both these alternative sources of demand require higher productivity and competitiveness on the part of private enterprises. The speed at which this could be achieved requires coordinated action between government and business enterprises.

The main conclusion of the above analysis is that the anticipated rates of growth of both public and private investments are likely to be slow. Public investment is planned to be directed more to infrastructure. This leaves the main burden of investment in other sectors of the economy on the private sector. To be able to fulfill this goal, it must increase its productivity and competitiveness. This is a prerequisite to its export as well as import substitution future growth.

Investment Expenditure Indicators
(in million LE.

	Total Gross Fixed Investment (at current prices)				Investment in Manufacturing at constant		
	Pub.	Priv.	Total	87pr. Total	Pub.	Priv.	
1986/87	9024	5721	14745	10006	3962	2312	1650
87/88	13038	7569	20607	8721	5167	3867	2300
88/89	11228	9508	20736	8050	4827	2427	2400
89/90	13476	9707	23181	8530	5354	2854	2500
90/91	14534	10758	25292	8410	4838	2238	2600
91/92	13440	11666	25106				

Source: Ministry of Planning and World Bank

The above figures corroborate our analysis. Total investment has been declining in real terms in recent years. This trend is likely to continue in the near future before it is actually reversed. The turning point will depend on the speed of public policies and market reforms as well as on the private sector's ability to adjust.

The growth scenarios for investment are accordingly as follows:

	1991/92-1996/97 %	1996/97-2001/2002 %
Scenario (1)	2.0	5.0
Scenario (2)	4.0	7.0
Scenario (3)	6.0	10.0
Prescriptive Scenario	6.0	10.0
5-Y-P Scenario	4.6	

The sectoral disaggregation of gross fixed investment is rather straightforward. It is concentrated in two main sectors namely construction and machinery, with the share of construction slightly higher than machinery. In the past, both public and private investment went to sectors with a large construction investment. This is likely to change in the 1990s leading to a rise in the share of machinery.

An additional note on foreign investment as a special type of investment and dominated by a special set of factors is warranted. It could be divided into 3 categories according to ownership and sources of funds. These are direct investment from OECD DAC countries, from Arab countries and from expatriate Egyptians (or resident Egyptians but expatriate sources of funds).

Direct investment by expatriate Egyptians or sources of funds fall within the scope of our earlier analysis of direct investment and are affected by the same factors. Arab investors have focused so far on real estate and have refrained from investment in industry, perhaps, due to inadequate means and machineries for such technical investment, that is, mainly the absence of a capital market. The potential of this source of investment, like that of private investment by Egyptians, is quite considerable.

As for direct investment from DAC countries, it is modest but important. It brings with it needed technologies, both soft and hard. Its technology transfer benefit can exceed that of its benefit as a source of funds. In the past the latter benefit was important because of foreign exchange scarcity. This is no longer essential in the light of recent convertqbility of the LE. Direct investment by DAC countries can also serve as a catalyst for exports to these countries or to third countries. The same principle applies to substituting for imports from these countries in domestic markets.

As can be concluded from the above, this source of direct foreign investment, after having reached a peak level in the mid-1990s, has been dwindling since then. The main impediments have been the often mentioned inappropriate macro-economic environment, red tape, etc.

Its future pattern depends on external and internal factors. Externally, capital is becoming increasingly scarce with a rising number of countries and regions competing for them (including Eastern Europe). Internally, the pace of economic reforms competitiveness and profitability of Egyptian industries, transparency and expectations, will all play a dominant role.

Egyptian government privatization programs represent an opportunity for foreign capital which it will, no doubt, try to seize. However, it represents a transfer of assets rather than addition to capital. Its final contribution to fixed investment depends on the utilisation of sources of funds from capital asset sales.

d- External Demand: Exports

The structure of Egyptian exports, both by commodity and by destination, changed dramatically since the Open Door policy. In the 1960s and early 1970s the main export item was raw and processed cotton. Return of the oil fields due to Egypt's expansion of oil exploration and production, the opening of the Suez Canal and migrant labor to the oil-rich Arab countries transformed the country's balance of payments on current account.

Initially, growth in oil exports and its price rise qualified Egypt as a semi-oil exporting country although its oil-reserves are rather meager. However, proceeds from oil exports reached a plateau in the early eighties and have been fluctuating mildly with prices since then. The rise in tourism, the Suez Canal and workers' remittances made up for the decline in oil revenues. The position of Egypt in the international division of labor at present could be described as that of an exporter of services, both factor and non-factor ones.

Available statistics corroborate this characterisation. In 1990/91 agricultural exports amounted to only LE 0.7 bn, while petroleum exports were LE 4.6 bn. In the meantime, non-factor service exports were LE 18.1 bn and factor services LE 18.6 bn.

As for industrial exports, it amounted to LE 4.0 bn. This constitutes 7% of total current receipts and half the value of consumer goods imports.

A similar transformation took place in the geographical allocation of exports. In 1973, 2/3 of exports went to bilateral trade agreement countries while, 1/3 went to convertible currency areas. In 1986/87, exports to convertible currency areas were 10 times, those of bilateral agreements. Subsequently, bilateral agreements have been substituted for by counter trade.

In 1990, Egypt's total exports reached a level of $ 4.7 bn, 3.3 of which went to the industrial countries of the West (mainly EC countries). On the other hand, exports to the Arab countries amounted to only $ 200 mn, and to the socialist countries (mainly in Eastern Europe), $ 500 mn.

Export Growth Indicators
million LE

	Exports of Goods and Services	Exports of Manufacturing in million US $	
	curr. pr.	const. 87 pr.	
1980	5034	6940	388
1985	6598	7494	660
1986	6034	7528	639
1987	8006	8006	690
1988	12944	8870	1163

Source: World Bank.

Recent growth in exports after allowing for price changes, especially changes in the exchange rate has been very modest, if any at all. The disruption of Eastern European markets have had a substantial effect on private industrial exports in particular (two thirds of private industrial exports go to Eastern Europe). The slow growth in Western Europe must have also affected Egypt's export performance.

In world markets growing at rates of 2%-3%, Egypt's exports in general, and industrial exports in particular, can only grow at a higher rate only if they can compete strongly and displace other exports. Devaluation of the LE has improved the country's competitive edge. But this has been more encountered by the recent rise in the rate of inflation which has negatively affected the real effective exchange rate.

Egypt can also expand its industrial exports to other regions of the world. It is dissatisfactory that total exports to the rapidly expanding Arab markets in the Gulf amount to only $ 200 million. Similar future export potential exists in other markets, including those of the industrialized countries.

The limitations to Egypt's industrial export growth are domestic ones. Implementation of the stabilisation and structural adjustment reforms creates the necessary environment and market conditions requisite for industrial restructuring. Achieving this goal would set Egypt on the path to sustained export-led industrial growth.

The simulation scenarios for total export growth are as follows:

	1991/92-1996/97 %	1996/97-2001/2002 %
Scenario (1)	1.0	3.0
Scenario (2)	3.0	5.0
Scenario (3)	7.0	9.0
Prescriptive Scenario	5.0	10.0
5-Y-P Scenario	6.0	

As for the structure of exports, it is dominated by the traditional sectors, namely food and textiles and wearing apparel. Petroleum products has assumed a significant proportion in total manufacturing in recent years. Another sector that has become a semi-export one is that of engineering industries (metal products).

The private sector has been predominantly inward-oriented. While its share in total industrial output in 1990 reached a level of over 50%, its share in industrial exports is only 3%. Most of its exports are directed to nonconvertible currency areas. More than 50% of its exports consists of textiles.

The simulation of the structure of exports is based on an analyses of past trends and their most recent commodity composition. While future export growth potential is considerable, substantial structural change, other than the trend ones, are unlikely in the medium term.

2- **Resource Supply:**

a- **Output:**

Real growth in aggregate GDP is the main source of growth in income and expenditure. It affects, therefore, the growth and pattern of consumption expenditure. Likewise, growth in sectoral output (disaggregated) affects sectoral demand supply balances, trade and prices.

For the purpose of our simulations here, aggregate output could be divided into different classifications by economic activity (industrial activity), according to final use, namely tradeables and home goods, with the former further divided into export and import substitutes, and finally by type of ownership and management, i.e. public, private and joint ventures. All three classifications are necessary for our analysis and projections here. A major aim of the model and its analytical uses is to try to identify potential industrial sectoral supply-demand gaps. They in turn provide information and serve as guidelines for investment allocation, particularly by the private sector and public policy in this regard.

Growth in real aggregate GDP at factor cost is discussed above. Available statistical evidence point to its slowing down or perhaps its coming to a complete halt. It has been concluded also that it will pick up slowly in the immediate transition period until the policy reforms take hold and then they would take off and accelerate gradually.

The resulting aggregate resource gap in the 1990s depends on the relative rates of growth of final demand and output, their time pattern and sequence.

This, in turn, depends on the speed and rigour of the implementation of the reform programs, their careful monitoring and requisite adjustments. The division of any resource gap that might emerge between net import and price rises also depends on policy responses and available external finance.

The structure of output in all its dimensions experienced major transformations since the mid 1970s. The share of the oil sector in total production increased from 2% at the beginning of the 1970s to 9% in the early 1980s and then nearly stabilised at that level. Similarly, the share of production services increased from 16% to 27% over the last two decades. The share of the manufacturing sector, on the other hand, declined from 38% to 28% over the same period.

Real output of the manufacturing sector increased at constant prices by 69% in the 1960s, 63% in the 1970s, and doubled in the 1980s. The leading sectors in this growth differed. In the 1960s, paper, chemicals, electrical and non-electrical equipment grew at more than double the average rate. Military industries (which are included in other manufacturing) were equally high growth ones. In the 1970s, the same growth pattern was maintained with the petroleum product sector accelerating its growth. Sectoral growth rates in the 1980s, on the other hand, were almost even, with no significant structural changes. Perhaps part of the estimated growth is due to inadequate deflation.

At the end of the 1980s, Egypt's manufacturing sector had not substantially changed its commodity composition. The food and textile sectors accounted for over half of the total although the level of raw material processing in these sector has, in fact, deepened. This is evidenced by the rising share in readymade clothes and other apparel. Nevertheless, the share of machines and equipment, electrical and non-electrical, remained very low (less than 5%).

This is an outcome of past industrial policies and market conditions. Inward consumption-led growth emphasized production of consumer goods. Abundant foreign exchange from staple and semi-staple sectors (oil, Suez Canal, etc.) permitted imports of capital and other producer goods.

Another major structural change has been the rise of the share of the private sector in total industrial production. In the second half of the 1980s, private industrial production surpassed its public counterpart after having been rather insubstantial before the inception of the Open Door policy. Two thirds of the private sector's industrial activity is still in the food and textile sectors, particularly readymade clothes.

The cost structure of the industrial sector has also changed with major consequences of the impact of the ongoing policy reforms on industrial cost, profitability and competitiveness. Firstly, the share of value-added in total production rose from 33% .n 1971/72 to 40% in 1986/87 reflecting, to a certain extent, a gradual shift in sectoral composition from simple raw material processing to activities with higher value-added.

Secondly, the share of wages in value-added declined from 43% in 1971/72 to 30% in 1986/87. This, on the one hand, reflects the rising share of the private sector in total industrial output but, on the other, it also reflects a trend of wage stickness in the face of the rising prices of industrial goods.

Lastly, the share of imported intermediate inputs in total intermediate inputs rose from 33% in 1971/72 to 41% in 1986/87. At present, imported inputs constitute one quarter of the value of total production.

In the light of the above structural changes in industrial cost and factor shares, it is in order to briefly assess the likely initial impact of stabilisation and structural adjustment on this structure. With one quarter of industrial inputs imported, this cost component increases pari passu with the depreciation of the LE exchange rate. Furthermore, price liberalisation of local inputs, particularly such items as raw cotton, food and energy, further raises the total cost of intermediate inputs. It is well known that pricing intermediate inputs at international prices makes the value-added of some protected subsidized industrial enterprises negative.

Earlier, it has been pointed out that, as a result of a past policy of cheap money (negative real exchange rates), the industrial sector, particularly the private one, has been overleveraged. Its debt/equity ration is very high. Rising interests therefore constitute an additional cost rise.

These are essential adjustments for the rehabilitation and improved efficiency of the industrial sector. Perhaps it will lead to a weeding out of the inefficient and ill-conceived enterprises. But it is also a more generalised problem and remedies for it must be sought.

The only such remedy is a compensating increase in sector productivity and efficiency. It is estimated that industrial capacity under utilisation and unplanned stock accumulation of finished goods at present amount to nearly one third of industrial output. Labor, capital, and total factor productivities in general are very low in many industrial enterprises.

These are sources of productivity lags that could be tapped for lowering industrial cost and as a source of growth.

Industrial growth requires major restructuring related to cost and productivity if it is to achieve competitiveness in both international markets and liberlised domestic demand. This is the only path to growth.

Given the above industrial trends and diagnosis, output growth simulations in the 1990s are as follows:

	1991/92-96/97 %	1996/97-2001/2002 %
Scenario (1)	1.0	3.0
Scenario (2)	3.0	5.0
Scenario (3)	3.0	7.0
Prescriptive Scenario	3.0	7.0
5-Y-P Scenario	5.1	

While better capacity utilisation and rising levels of factor efficiency are necessary sources of growth, they are not sufficient. Raising the level of capital formation is imperative. The share of investment in GDP in 1990/91 was only 17%. To achieve a rapid rate of industrial growth, the share of investment must nearly double. Rapid capital formation is also instrumental in achieving structural change and raising the sector's competitive edge.

The last point concerning the structure of output and its future pattern of growth is the relative weights of the private and public sector in total output. Another important consideration is the relative allocation of total industrial output, particularly for the private sector, between domestic use and output.

With the turn of the 1990s, the private sector came to assume a significant proportion in total industrial production. The government of Egypt is committed to a major program of privatization as part of its structural adjustment reforms. Moreover, public investment is to gradually refrain from private types of goods and to focus on public goods to the extent possible.

Such a policy orientation would mean a greater reliance of industrial growth in the future on the private sector. Since, as we have seen, industrial growth will have to be more export-led, the private sector must be reoriented toward export growth.

The share of industrial exports in total production for both the public and private sector is low (16%). Out of this modest level of total industrial exports, the share of the private sector is only 3%. The industrial sector will be undergoing major structural change before it can achieve sustained growth which takes time.

b- Imports of Goods and Services:

Future growth in total imports of goods and services will depend on export proceeds and net capital flows. In the past, import growth was very rapid and the deficit in the balance of trade widened. This was made possible by supplemental resource inflows such as workers, remittances and foreign aid, that is, other than oil exports, proceeds of the Suez Canal and tourism which all went to boosting exports.

While most of the non-traditional sources of foreign exchange remained substantial, they have tapered off since the mid 1980s. Rising difficulties in funding the overall balance of payments have acted as a brake on imports.

However, in the post Iraq-Kuwait war, Egypt's balance of payments improved significantly. A number of factors contributed to this improvement. External debt relief reduced the burden of debt servicing. At the same time, a general contraction in the economy brought about an absolute decline (negative growth in imports). Devaluation of the LE added another factor for declining imports. Lastly, the rising interest rate differential on pound and dollar deposits led to a net capital resource inflow.

All these factors are short term. As economic growth picks up, additional imports will be required. The interest rate differential is likely to narrow down in the near future by virtue of a rise in the dollar rate. Also, high interest rates on the LE cannot remain high without exerting a negative effect on investment.

Accordingly, the import growth simulations are on the low side. This is due to likely financial constraints. But it is also based partly on the assumption that part of growth in domestic production will be import-substituting. This is not only in industry but also in other sectors, particularly the agriculture and food ones whose imports in the past have grown rapidly.

The Growth Scenarios used are as follows:

	1991/92-96/97 %	1996/97-2001/2002 %
Scenario (1)	0.0	1.0
Scenario (2)	1.0	2.0
Scenario (3)	3.0	5.0
Prescriptive scenario	3.0	2.0
5-Y-P scenario	3.1	

It must be pointed out that economic policies will affect imports. Rapid growth in capital formation will be improt-intensive while, at the same time, a gradual further depreciation in the LE would put an additional brake on imports.

3- Model Results:

The model results are the outcome of independent simulations of the demand and supply components in the medium and longer run. Different scenarios are used in deciding on the rates of growth of demand and supply aggregate variables. The choice of these scenarios is based on Egypt's programs of stabilisation and structural adjustment. Different hypotheses are used for the speed and sequence of the implementation of the policy reforms.

The present structural characteristics of both demand and supply variables are also taken into consideration. Their historical pattern of change is assessed in the light of available quantitative evidence. Moreover, the likely impact of the policy reform programs on these structures and their anticipated pattern of change is examined analytically. However, these anticipated structural changes, other than those implicit in the changing compositions of the aggregates, do not lend themselves to precise quantification. However, these could be taken into consideration in analyzing model results.

Both demand and supply simulations are assumed to be ex ante (intended) and period averages. For example, an average rate of consumption growth of 1% is consistent with an initial negative growth at the beginning of the period and rapid growth at the tail end of it. Other growth sequences are also consistent with the average rate.

Demand and supply variables are simulated independently on the basis of anticipated changes in their explanatory variables and the impact of policy reforms on them.

Accordingly, demand and supply projections of the model do not coincide. Market chearing and equalisation takes place through various adjustment mechanisms such as prices, imports and changes in stocks.

Sectoral imbalances affect both the absolute price level and the relative prices. A generalised excess demand would, for example, lead to a rise in the price level. This adds to the ongoing rate of inflation. Inflation in turn affects the real values of the explanatory variables, model projections and results.

Estimated sectoral gaps are closed export either through changes in imports or prices. The model results provide ex ante projcetions of these gaps. They constitute policy guidelines for government and business serving as inputs in deciding on policy choices, particularly regarding investment decisions.

Sectoral gaps are measured by deducting the projected sectoral productions from sectoral total demand (final and intermediate). A positive gap indicates excess demand and a negative one, excess supply. The gaps are measured before and after adding projected sectoral imports as an alternative source of supply.

As mentioned above, the gaps must at first be qualified in the light of potential structural changes that have not been built into the model. An example of such factors is income distribution and therefore patterns of consumption. Another example are changes in the structure of trade consistent with changes in production (import substitution).

The adjusted sectoral gaps could be used to indicate sectoral investment requirements through the use of sectoral ICORDS. The level and pattern of investment would have to take the results of the model's sectoral imbalances into consideration.

Industrial investment is planned to be predominantly private. Sectoral imbalances therefore measure the requisite investment level and its pattern of collocation.

An overall definite investment would indicate the need to raise the share of investment in GDP. However, this would in turn requires reducing the share of consumption which raises the level of absorption, final demand and the model's solution altogether. If there is a generalised excess demand, such a policy would accentuate the inflationary pressures.

The focus here in this study is on the medium term. For the long term, a more aggregated level of the input-output table is used. This is done to give an indication of the reform policies and for reaching sustained growth. Structural changes could not be foreseen with any reasonable level of accuracy for such a length of period. This is particularly so for a market-based economy and projection.

Again, it must be reiterated that the approach constitutes a methodology for market-based industrial planning. The number of scenarios and alternative combinations of policy reform packages and sequences that could be tested with the model are unlimited. In the case of data availability, additional structural scenarios could be quantified.

The highlights of the model's medium-term results are as follows:

First: The main sectors with excess demand are the export ones and the capital good ones. The structure of demand is projected to shift in this direction and output must follow suit. Model import projection is based on lagging production in the capital goods sectors, a low level of investment demand and a high share of consumption. This is the pattern of growth in the 1980s which determined the structure of imports. Changing this pattern would accordingly inevitably change the structure of imports.

Second: Two, the sectors with excess supply are all catering predominantly to domestic final consumption. Amongst these sectors are readymade clothes, wood products, chinaware, metallic products, etc. These sectors will have to switch to export markets through undertaking the requisite structural adjustments.

3.6 Applying Simulation Model:

Second Alterative: Using Input/Output Tables for 1989/90

3.6.1 Total Variables Projections:

Start by predicting the total variables while dealing with the estimations of these altimatives.

The total variables mean the following :

- General domestic product.
- Capital formations.
- Different types of consumption.

The estimations of rates of growth for the total variables have been reached according to the trends of growth in the post (between 70-86), these were the growth rates of the general domestic product of the activities in both public & private sectors (as shown in table no. 20)

The research tried to use half of the growth rates that decreased during the period, but the estimating of variables were low, therefore they were not much relied on.

According to the estimations of the general domestic growth (that were reached) till 2000, also according to the relation between the capital and the general domestic growth (between 70-86) the estimations of capital during the plan 91/92-96/97 were reached also till 2000.

Table (20)
GDP Growth Rate
Public & Private Sectors
1970 - 1986

Activity Code	Public Sector Growth Rate		Private Sector Growth Rate	
	Current Prices	Constant Prices	Current Prices	Constant Prices
10	10.2	0.2	16.4	6.4
21	11.9	1.9	18.3	8.3
22	17.5	5.5	49.4	39.2
31	15.2	5.2	12.2	2.2
32	12.4	2.4	20.3	8.3
33	13.3	3.3	25.9	15.9
34	14.1	4.1	17.8	7.8
35	18.2	8.2	19.6	9.6
36	19.6	9.6	25.6	15.6
37	19.0	9.0	9.6	-0.4
38	14.5	4.5	19.2	9.2
39	9.7	-0.3	13.2	3.2
40	15.2	5.2	--	--
50	22.1	12.1	17.6	7.6
61	9.8	-0.2	21.5	11.5
62	11.0	1.0	17.1	7.1
71	22.5	12.5	14.0	4.0
72	19.1	9.1	--	--
81	21.7	11.7	--	--
82	19.3	9.2	2.4	-7.6
83	15.0	5.0	19.2	9.2
91	12.2	2.1	--	--
92	--	--	--	--
93	--	--	18.1	8.1
94	--	--	32.1	22.1
95	1.8	-0.8	3.9	-6.1
Grand Average	17.4	7.4	17.2	7.2

Assuming that prices growth rate is 10% per annum.

Table (21)
GDP Growth Rate
Public & Private Sectors
(50% from the previous rate)
1970 - 1986

Activity Code	Public Sector Growth Rate	Private Sector Growth Rate
10	5.1	8.2
21	5.9	9.1
22	8.7	24.6
31	7.7	6.1
32	6.2	10.1
33	6.6	12.9
34	7.0	8.9
35	1.0	9.8
36	9.8	12.8
37	9.5	4.8
38	7.2	9.6
39	4.8	6.6
40	7.6	--
50	11.0	8.8
61	4.9	10.7
62	5.5	8.5
71	11.2	7.0
72	9.5	--
81	10.8	--
82	9.6	1.2
83	7.5	9.6
91	6.1	--
92	--	--
93	--	9.0
94	--	16.0
95	0.9	1.9
Grand Average	4.6	4.7

Apparently the rate of growth of the industrial domestic product is greater than that of other sectors. The tables in appendix 6 shows the projection of the total variables in the Egyptian Economy till 2000 for both public and private sectors.

According to this scenario, the variables in 96/97 will be as follows:

Capital accumulation	74 Billion L.E
General domestic product	203 Billion L.E
Consumption	129 Billion L.E

but in case of a decrease in the rates of growth, then the total variables in 96/97 will be as follows :

Capital accumulation	31 Billion L.E
General domestic product	88 Billion L.E
Consumption	58 Billion L.E

3.6.2 Sector Plan :

We relied on several scenarios to construct a plan on the level of industrial activities :

- **First Scenario :**

a- Assuming that the rates of growth of the general domestic product during the period 1970-1987 will remain the sam in the years of the plan 92/93-2000.

b- Assuming that the rates of growth of the domestic product in each sector and activity will be equal to 75% of the previous rates.*

- **Second Scenario :**

Assuming that the rates of growth of the general domestic product in the rational plan 91/92-2001/2002 will be used in constructing this plan (table no. 22)

Complete the estimations of this scenario (i.e 1st scenario) as they are very much like those of the social and Economic plan (92/93-96/97).

Table (22)
Monthly GDP Growth Rate
(3rd & 4th Five-Year Plan)

Sector	1991/92-1996/97	1997/98-2001/02
Agricultural Sector	3.5	4.3
Energy & Mining Sector	7.0	10.3
Petroleum Sector	1.0	1.4
Electricity Sector	6.5	7.6
Construction Sector	7.2	9.1
Transportation & Storage Sector	5.2	6.9
Suez Canal	3.9	4.0
Commerce & insurance	5.1	6.1
Restaurants & Hotels	11.4	10.1
Real Estate	9.3	6.4
Services	5.3	5.8
Grand Total	5.1	6.5

- **Third Scenario :**

  Assuming that the rates of growth of the final demand (as shown in the first alterative) will also be used in this alternative, but input,output tables of 89/90 were used instead of those of 86/87.

- **First Scenario :**

1- Methods of Estimating the First Scenario:

Production levels, structure of the final demand, and obstructing, till year 2000, were estimated as follows :

a- Total variables data estimated in the previous stage were inserted in the gross sector table (added value).

b- The value of production was estimated according to the production added value coefficients in an input-output table 90/91.

c- Intermediate demand levels 96/97 (year of estimation) were estimated according to the value of production coefficients in 89/90.

d- The final demand was reached by subtracting the intermediate demand from the production.

e- The estimations of the final demand were reached by estimating the use of the final demand structure in the previous period.

2- Results :

Estimations results of the first scenario a in 96/97 were the following :

Value added	L.E 244 Billion
Product	L.E 393 Billion
Exports	L.E 20 Billion
Intermediate imports	L.E 46 Billion

Concerning assuming 75% from the previous alternative, the results in 96/97 were:

- General domestic product
- National production L.E 296 Billion
- Exports L.E 26 Billion
- Imports needed for exports L.E 4 Billion
- Intermediate imports L.E 35 Billion
- Transformation industries production L.E 94 Billion
- The increase of production (Transformation industries) from 89/90 - 96/97 L.E 73 Billion
- The increase in transformation industries captain L.E 56 Billion

Transformation industries have shown an increase in the production level in 96/97 (year of prediction) greater than production levels in the fiscal year, this helped new industrial enterprises to join these sectors.

3- Dividing Levels of Activities :

The activities were divided into 32 activities then 19, finally into a industrial activities and one activity for the rest national economy activities, also they were divided into 11 activities presenting the industrial activity in one sector.*

4- Labor Plan and Professions Needed in the Industrial Sector :

Labor demand in the transformation industries sector in this plan, was estimated by about 2.2 million laborer (1.3 million laborer more than 1987) i.e about q75 thousand laborer/year.

This labor needs L.E 56 Billion (investments) assuming that the capital/labor coefficient will be multiplied during the plan, compared to the fiscal year (capital/labor coefficient due to the industrial activity).

The following steps were followed to estimate the number of needed professions (in the industrial sector) in the plan:

1- Professions data in the industrial sector in 87 were reached (work hours and salaries statistics from the central agency for public mobilization and statistics CAPMAS).

2- Relative distribution of these professions was prepared.

3- Needed professions for transformation industries were reached by using the numbers of needed labor that were estimated by 2.2 million laborers, also by using what was reached in step.2.

4- The increase in professions needed to achieve the goals of the industrial plan, was reached by subtracting professions in 87 from those of 96/97.

The important required jobs for achieving the Industrial Sector's plan are as follows

Code	Job	Number
11	Chemists	5587
21	Architectural Engineers	637
22	Civil Engineers	871
23	Electrical Engineers	12649
24	Mechanical Engineers	1447
25	Chemical Engineers	1625
26	Metal Engineers	32
27	Metallurgical Engineers	2956
28	Industrial Engineers	1669
34	Technicians (electrical engineering)	11837
35	Technicians (mechanical engineering)	24168
36	Technicians (chemical engineering)	7854
37	Metal technicians	655
38	Metallurgical technicians	60

5- Industrial Private Sector's Role:

If we assume that the industrial private sector will accomplish at least 50% of this plan, then the Industrial private sector plan 96/97 will be :

Transformation industries production	L.E 46 Billion
Increase in production	L.E 36 Billion
Increase in investments	L.E 28 Billion
Needed labor	550 thousand laborers

- **Second and Third Scenarios :**

1- Methods of estimating the second and third scenarios the same methods were used in estimating both the first and second scenarios, but it was assumed that the General domestic product's growth rate is equivalent to the National plan's growth rate concerning the third scenario the following steps were followed :

a- As the first alterative, we started with the three scenarios final demand.

b- Using the following equation :

$$X = (1-A)^{-1} Y$$

Where:

X Stands for the production

(1- A)-1 for the increase matrix (89/90)

Y Stands for the final demand

The production was reached by using the final demand's estimation.

2- Results :

The results reached in year 96/97, and year 2000 presents growth paths and scenarios that can be used in the decision taking (*).

Main restrictions on the sectorial plan and the plan level:

1- The stability of the coefficients used in the simulation models.

2- The estimations of replacement processes in the manpower, forced retirements, retirements and deaths were not considered during the labor plan.

3- Some assumptions used eg: prices, rates of growth. To overcome these restrictions, several scenarios and alternatives were available to the decision falter.

4- These patches show the growth directions of all the sectors in the Egyptian Economy including infrastructure sectors (electricity, water, construction, mobilization) they can be chosen as a strategy for economic, social, industrial growth in Egypt and achieve the General economic equilibrium element in the society.

3.7 Industrial Investments Fund :

1- Introduction :

For the success of the industrial and investments plan, funds must be available at the proper time and standard. There is a main equality: available fund must be equivalent to the investments needed in the plan.

There are two main sources of funds: either by participation of the different types of loans. The banking system is a main source of funding either by loans or participation we can deal with the deposits or loans through one of the following perceptions :

a- According the bank (commercial bank, investments banks, specialized banks)

b- According to the activity (industry, agriculture, commerce. services)

c- According to the sector (public, private, governmental)

d- According to the terms (long, intermediate, short)

e- According to the currency (domestic, foreign) Loans are funded usually by deposits.

2- Procedure Used :

Deposits in the banking system and that can be used in funding Industrial and non Industrial investments enterprises needed till 2000.

The following Procedure was used :

a- Preparing the data concerning the deposit development.

b- Preparing the data concerning the credit development.

c- Finding the relation between deposits and general domestic Product.

d- Benefiting from the previous relation and the general domestic product in the plan, in finding the value of the expected deposits.

e- Distributing the expected deposits according to the previous coefficients and structure.

f- Changing the deposits expected according to the terms into assumptions:

	L.T.C	I.C	S.T.C	Liquidity	Total
Long term deposits	0.6	0.2	0.1	0.1	1.0
Medium term deposits	0.05	0.6	0.15	0.2	1.0
Short term deposits	0.05	0.05	0.6	0.3	1.0

- L.T.C : Long term credit
  I.C : Medium term credit
  S.T.C : Short time credit

3- Data Needed to Estimate the Funding Model:

The statistical appendix tables show the deposits and loans data, and the importance of these variables:

a- Total deposits in the commercial and investments banks were estimated by 69 Billion L.E. in 1990 (10 Billion L.E. for industry), and the total loans granted were estimated by about 48.7 Billion L.E (15 Billion L.E in the industrial sector in the same year (1990).

b- Foreign deposits were estimated by about 34 Billion L.E while the domestic deposits were 26 Billion L.E, in 1990.

c- The average ratio of the long term deposits to the medium to the short, were estimated as follow:

0.52 : 0.33 : 0.16

d- Cash liquidity has a great importance and special sensitivity where the quantity of the cash liquidity reserved in the Banking system is inversely proportional to the profit. To emphasis the role of the Banking system, a cash liquidity must be available a suitable quantity to the needs of the depositors.

Also the liquidity demand is determined by the type of the deposit. The planning of the expected cash liquidity is importance to the decision taker when planning the participation of the Banking system in pushing the investment and economic development process.

4- **Model Estimations Results :**

It was found that there is a relation between the General domestic product and the deposits in Egypt.

Deposits Were Estimated By :

Years	Deposits (Billions)
1991	82.7
1992	99.1
1993	118.4
1994	140.9
1995	167.4
1996	227.4

The deposits are distributed according to the terms as follows:

	Long term	Medium term	Short term
1991	42.6	26.2	12.8
1996	117	74	35

- See statistical appendix & results.

- Available long term credit is distributed in the plan as follows:

Years	Deposits (Billion)
1991	27
1992	33
1993	39
1994	47
1995	55
1996	75

The industrial sector's share is about 30 %, while the share of the Industrial private sector is about 66 % from the total credit estimated to the Industrial sector.

3.8 Estimating the Total Demand for the Industrial Sector Products:

1- The development of the outward consumption for the industrial sector products :

The development of the production of the industrial sector during the period, and the change in stock , imports, exports of those during the same period, aim to reach the annual outward consumption during the period by using the following equation:

$$C = P + I - E \pm (CS)$$

Where:

C = Outward consumption during the year.
P = Quality of annual product.
I = Commodity imports in this series (excluding reexported imports).
E = Represents the Egyptian exports in this series (does not include in re-exported imports).
Cs = Annual positive or negative change in commodity stock.

The application of this equation would help us to reach the annual outward consumption of the different industrial goods. This equation was estimated in 1987 only, since the quantity of commodity exceeds 2500 industrial commodities.[1]

No doubt that estimation depends mainly upon the circumstances of the considered factors (Production, Imports, Exports) and it was assumed that the change in stock is Zero.[2]

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(1) it is well known that it is extremely difficult to reconcile between the commodities statistical codes of external trade and those of industrial products as the different measuring units

(2) See statistical appendix 9.

2- Determining the Factors Affecting the Demand:

To estimate the demand on any commodity we have to determine the factors affecting that demand, for we can determine the relation controlling the demand function from these factors and measuring its affects after analysing it, so we can select the suitable mathematical model that shows this relation.

Therefore the estimation of the expected demand for the industrial commodities must be made in two steps:

1- Determining the factors affecting the demand for the industrial commodity products.

2- Selecting and applying a suitable mathematical model that reflects the relation between : the demand of commodities concerned as a dependant variable and the factors affecting its as an independent variables.

Main factors affecting demand :

- Increase in the rate of population growth.
- Increase in the rate of migration from rural to urban areas, as urban people tend to consume much amounts of conserved food beside consuming more calories.
- Increase in the number of working women, hence the need for manufactured food commodities increased.
- The increase in both rates of consumer's expenditure and the elasticity of expenditure demand for commodities the factors affecting the demand for mathematical products are numerous such as:
- The population and their future development in both age and race components, the educational level, division into urban and real parts. etc.
- The specific prices for certain commodities or the complementary or alternative ones.
- The actual & expected level of income per person.

- The actual level of commodity saturation (that is: the least it is, the more the demand is).

The structure of income distribution among the categories in the community also affect the demand for the consumable commodity.

The world standards in advanced countries affect a little less the demand for a certain commodity in the countries conceded and determine the level of its consumption.

One of the important factors affecting the consumable demand of food in the biological needs of a person for calories which are determine by world and local food organisation according to field studies.

Some affecting factors can be attained from family budget researches such as the elasticity of expenditure demand the intermediate & investment commodities is influenced by the productivity of the different branches of industries consuming their products .

This sort of demand of industrial products depend or. the demand of the products used in producing them:

eg : the demand of cotton textiles reflects the demand for clothes, which is called the derivative demand, when the intermediate products (Industrial commodities) are used from one or more industries, then it is important to study the demand of these products in the different industries in order to estimate the demand for the product conceded.

In many cases, we find that industrial products such as nails, screw caps, wires, office equipments are used in many industries, in this case the derivative demand must be estimated according to an overall economic view not a partial one.

The actual commodity balances can be used to know the different consumption coefficients in each of the branches of industries using the project's products. Some consumable commodities can be studied through studding the derivative demand.

For example the demand of car spare-parts or car fuel will be affected by the car sales. It is likewise n the case the demand of different sorts of engines---- etc. If the product conceded is usual in both cases as direct and intermediate consumption, it is necessary to study the final and industrial consumed demand (derivative demand).

3- Planning tools of demand of industrial commodities :

Consumption planning (specially the final individual consumption such as the consumption of margarine, shoes, soap, textile, ready mode clothes, leathers, drugs, refrigerators working machines, stoves, aluminum kitchen ware, tv, radio, bicycles, cars, sewing matrons) depend on the theory of utility and the consumer's economic calculation.

Industrial consumption includes 2 kinds : the final end the intermediate consumption. The factors causing growth of demand depend on the quality of industrial consumption, the intermediate demand rely on the growth of sectors using these industrial products, while the final demand rely on a group of factors which are prices individual average income and the rate of its growth, the number of population, its educational characteristics, regional racial, age formula, the annual growth rate, It also rely on the elasticity of demand, price-wise income wise and expenditure wise for such a product. We have to determine the factors influencing consumption before we determine planning tools for industrial consumption.

The main tools for industrial consumption :

A- Technical Coefficients :

These determine the amount of consumption of products of a certain industry, necessary to produce a single unit derived from another industry (example: abate is the amount of comment needed to produce one cubic meter of leather or textile.

Knowing the quantity of production needed and the volume of these technical coefficients of production we can estimate the quantity of demand job a certain industry production.

The production of a certain industry can be used in the production of several sectors. Hence we need to study the expected quantity of production for these sectors in orders to know the quantity of demand for the industrial productions this method of demand study is called "sector study Method".

B- Methods of Prediction :

They comprise the use of time series. Time element is considered the independent variable through which the change in demand, a certain commodity occurs.

C- Income, commodity and expenditure elasticity of demand:

It measures the change in income , prices total expenditure compared to the chargee in demand or expenditure of a certain commodity.

D- Family budget sample researches:

This method is used to evaluate the average individual consumption of various commodities through the estimation of the family direct expenditure which the framework of research comprises.

E- Statistical Models :

Their function is to measure the impact of different variables on the change in consumption.

Regression analysis can be used in estimating demand or consumption in future, as this method rely on historical consumption data and other variables influencing it. Such as time element, the average individual and population income, the average prices of the commodity itself, the complementary or alterative prices, also the general price average.

The analysis that considers a single independent variable is called simple regression, while the method that considers more than one independent variable is called multiple regression, there are several funetiens mathematical forms that can be used as follows:

These functions take the following form:

$Y = a + bx$	Simple linear
$Y = a + bx + cl$	Multiple linear
$Y = a\ bx\ ab^x$	Exponential Function
$Y = a\ X^b$	double Log. cop bouglas
$Y = a\ p\ I^B$	multiple Log. cop douglas
$Y = a + bx + cx^2$	Secondary equation

Where :

Y : dependent variable (consumption or demand).
a,b,c: equation constants
x: Time (another in dependent variable).
B: Demand elasticity for P,I
P,I: Prices and income.
W: Normal Log = 2.718

4- Features of the proposed mathematical model :

There are several models to measure the demand on the industrial goods, it is possible to suggest one of them to measure the demand of the reserved food goods.

$$d_e = d_o\ (1 + P_s)^N \{1 + (I_s \times E)\}^N$$

Where :

d_e = Expected demand of the good in the fiscal year
d_o = Actual demand of the good in the fiscal year.
P_s = Rate of annual expansion of population.
I_s = Rate of annual increase of in the average income/person
N = Number of years in the period.
E = Demand elasticity

The individual consumption persone the year of comparison is:

$$C_e = C_o (1 + C_s)^N$$

Where:

C_e = Average individual consumption in the year of comparison.
C_o = Average individual consumption in the fiscal year.
C_s = Rate of annual increase in the average individual consumption during the period.

Expenditure demand elasticity of (point of research commodities) commodities studidied:

It is meant by the expenditure demand elasticity for a commodity, the following:

The demand reflex of the commodity due to the change in the consumptive expenditure.

It can be measured by using the following equations:

$$E = \frac{D}{D} - \frac{X}{X}$$

or :

$$E = \frac{D}{X} \times \frac{X}{D}$$

Where:

D = Demand of the commodity.

X = Consumptive expenditure.

$\frac{D}{X}$ = Change in demand due to the change in expenditure.

5- **The method and models used estimating the gop between production and demand of industrial products :***

The following method & models are the basis for estimation of the expected demand and the gap between production and demand of industrial products in Egypt till year 2000.

1- Listing of industrial export - import commodities in quantity and value during 87 - 90 (public and private sectors).

2- Listing of industrial commodities produced in both public and private sectors in quantity, value, and prices since 87.

3- Putting together both production statistics and external trade statistics in order to achieve the outward consumption according to the equation for a number of industrial commodities that exceeds 3000 at least since 87 (in quantity & value).

4- Estimating the average outward individual consumption by dividing the product of step 3 by the number of population of the same year.

5- Estimating the rate of demand growth for the next period through the product of expenditure elasticity of the product (taken as an average from table 33 by rate of domestic product during the plan : assumed to be 5.1% yearly).

6- Predicting the demand of industrial commodity per person till years 96/97 and the year 2000 through the following equation :

The individual outward consumption x (1 + growth rate of demand of a commodity) in 87, the estimations of year 2000 have been reached by using the same equation but with increasing the paver of the equation.

7- Estimating total for each commodity by multiplying the product of step 6 by the population projections for the next coming ten years.

* This method relied on the use of available data from the central agency for public mobilization and statistics regarding correlative variables.

6- Estimation Results :

Table 23 shows the gap of the various industrial commodities in quantity and value, it shows the following in details :*

- The name of the commodity.
- The unit of measurement.
- The gap in quantity for the year 96/97.
- The gap in value in pounds for the year 96/97

We must stress in such estimations of the following

a- It represents a gap during the period from 87 - 96 therefore the projects accomplished during the period.

b- This gap was based nonproduction and must be modifical in order to bear in mind waste energies.

c- This gap-on the level of commodities which was estimated in this part if collected on the level of industry branches - must be equal to the estimation results of sector gaps which were estimated in the other parts of this study.

d- This gap of commodities must be linked with the industrial investment project profile.

e- Seeking the role which the private sector could play in satisfying the demand for these commodities in future, we can state that it can contribute to 66% of this gap.

The following diagram shows steps and stages of estimations and projections of the gap on the demand of industrial commodities in Egypt till 1996 and which can be used in estimating up till 2000, the following points must be stressed on:

- We reach the field part of the study when we expose these gaps and the Egyptian industrial private sectors to confirm th expectation and suggest of the plan or to adjust and add to it according to the method adopted by the study which is a downward planning method.

- The use of this method does not reject the use of other methods in planning demand and estimating the gap of industrial commodities in Egypt.

- This gap expresses one of the variables that determine priorities, many standards must be added to it, that is the basic needs, gross sector, efficiency and distribution requirements.... etc.

- If we can update the data we relied on in estimating the gap, we could re estimate the gap and update the results.

Stages of Preparing the industrial comodities the Gap predictions

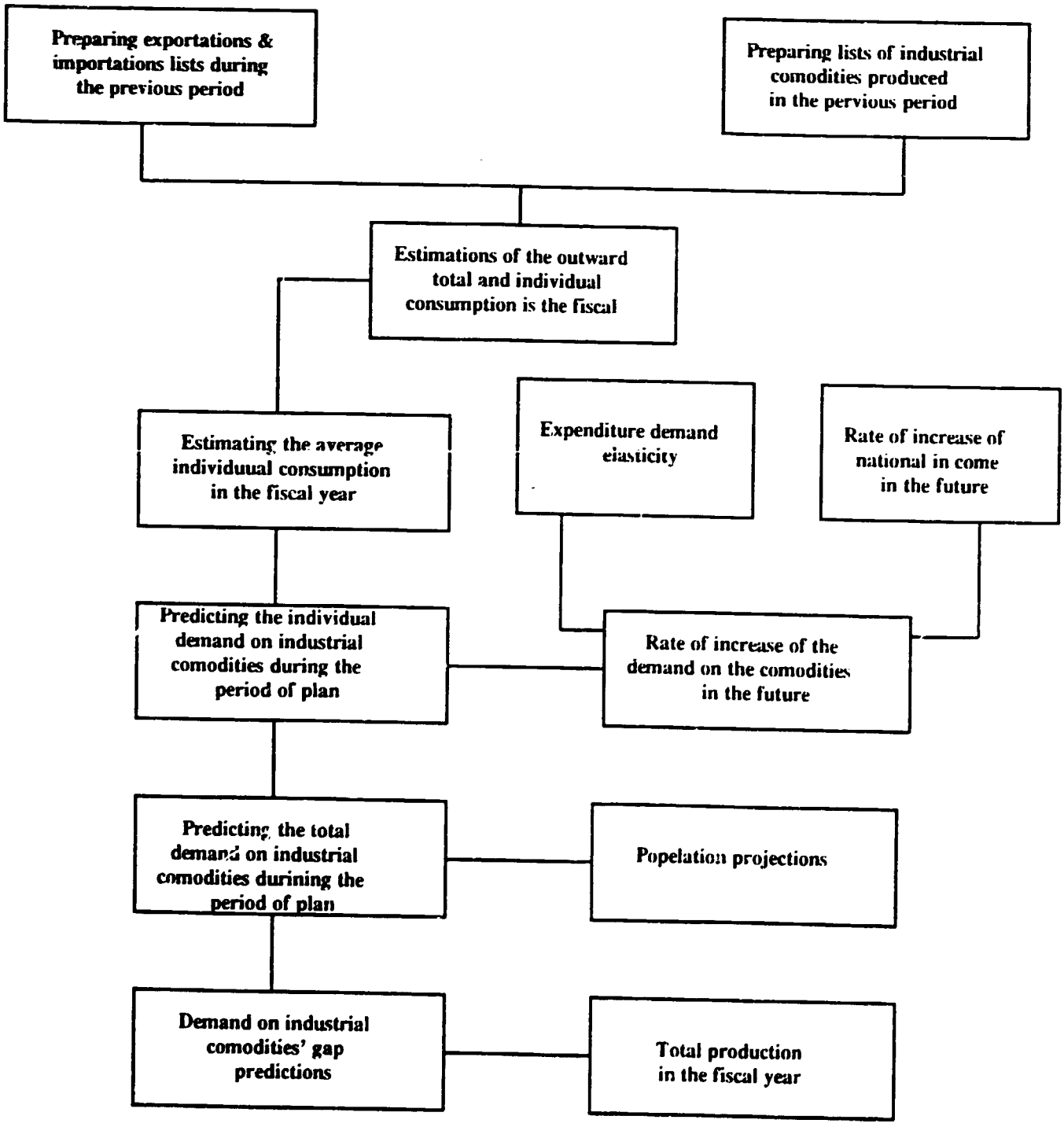

Table 23

Commodity Estimated Gap for 1996/97

Product	Unit	Quantity	Value (LE mn)
Perfumes			19
Medicine			671
Plastic Products			240
Plastic Raw Material			57
Flake Wood	Ton	188569	174
Passengers Cars	Number	39	422
Non Electrical Heaters	Ton	1246	39
Non Insulated Iron Wires	Ton	40158	54
Other Wood	Ton	622	19
Clothes			34
Wrapping & Packing Materials	Ton	62279	69
Drawing & Painting Materials			12
Palm Fruit Oils	Number	20696	13
Paper & Cartoon	Ton	152116	360
Paper bags	Ton	29594	237
Other Kinds of Iron & Steel	Ton	120245	751
Cake Oil	Ton	264127	106
Female Clothes	Ton	0,328	15
Cut Papers	Ton	1672	106
Conserved Dairy Products	Ton	539	21
Iron & Steel Products	Ton	68256	357
Iron & Steel Nails	Ton	219	32
Other Fish (Frozen)	Ton	163958	86
Other Butter	Ton	39107	81
Cotton Carpets	M2	1269	23
Wool Carpets	Ton	21	30
Barrels, Iron Cans & Tins	Ton	2201	19
Cheese / Others	Ton	5107	22
Other Cheese (processed, guda)	Ton	19383	55
Wrapping Cartoon or Paper	Ton	4429	110
Other cotton yarn	Ton	6	440
Nylon Thread	Ton	1	11
Nylon Fabrics	Metre	8725	21
Electrical Engines (1/8, 3/4 horse)	Ton	17160	62
Organic Fertilizers			93
Moquette			25
Turbine Boats			28
Motorcycle	Number	53	55
Natural Silk Cloth			46
Periodical Publications & Newspapers	Ton	4026	11
Paper for Newspapers	Ton	74711	167
Suits & Trousers (men/boys)			35
Metal Wires, Windows, Doors			12

Table 23 (Cont'd)

Metal Wires, Windows, Doors			12
Metal Furniture (excluding medical)			29
Metal Capsules			47
Metal Chandeliers			15
Metal Fixings for Buildings			24
Metallurgical Turnery			37
Metro Wagons			44
Microbus	Ton	3350	38
Tobacco			85
Mineral Water	Ton	150	309
Various Chemical Substances			39
Flax Oil	Ton	15284	15
Locally Prepared Fish	Ton	4	14
Trucks			39
Low Pressure Opening & Closing Sets			49
Iron & Steel Molding			79
iron & Steel Moling (one ton)	Ton	570	41
Watering Pipes			13
Irrigation surface and ground pipes			28
Fabric Fibers			18
Karnik Cement	Ton	589	30
Kilometers Signs			17
Glass for Laboratories & Ranches	Ton	1061	12
Laboratory Equipments			19
Varnish			91
Leather Footwear			42
Lentile	Ton	89	77
Heat Insulating Molds	Ton	11083	15
Heating tools			10
Iron Pipes for High Pressure Distribution			127
Chinese Clothes			29
Ice Cream			41
Cartoon	Ton	20656	40
Kitchen Iron & Steel ware	Ton	1349	12
Iron Poles for Electricity Weldering	Ton	6380	15
Glassware for Infant Food	Ton	380	26
Glucose	Ton	65	14
Walnut Oil			11
Wheet Flour	Ton	351921	423
Exctracted Food			16
Rubber Footwear	Pair	6515	26
Lifts			16
Fromica	M2	1048	13
Frozen & Conserved Juices			37
Blood Tubes	Ton	1435	27
Fat	Ton	73299	149
Cement	Ton	419	15
Natural Fertilizers (Nitrates 31%)	Ton	426	60
Natural Fertilizers (Phosphate)			91

Table 23 (Cont'd)

Fiber & Glass Fabric	Ton	2769	12
Fire Extinguishers	Ton	1623	18
Iron & Internal Electrical Sets	Ton	2097	10
Electrical Engines			16
Current Transformers			85
Electric Discharge Bulbs	Ton	2895	12
Electricity Boards			120
Electric Plugs & Pipes Bulbs	Ton	273	15
Electricity Measurement Apparatuses	Number	796	34
Electricity Measurement Apparatuses SP			31
Detergents & Insecticides for Retail Sale	Ton	16346	169
Solid Materials			12
Poultry & Duck	Ton	92183	197
Cement Products			14
Aluminum Pots			63
Aluminum Wires	Ton	20392	101
Aluminum Products			16
Chords			27
Protection Factor for Eye glasses	Ton	178	10
Cotton blankets			30
Cotton Seeds Oil			186
Cotton Thread for Sewing			47
Cigarettes	'000 unit	27816	940
Mud Molds			30
Coal	Ton	483682	222
Coarse Cotton Fabrics			42
Unpolished Fabric & Cotton			151
Ceiling & Locks for Public Buildings	Ton	6185	42
Ships Loading			86
Cassette Tapes			16
Cast Iron Mixture			39
Cast Iron Strips			20
Cast Iron (rectanguiar blocks)	Ton	32	43
Casting			14
Cement & Cement Pipes			28
Cement Pipes			26
Central Air Conditioners Equipment	Number	4	51
Pottery Molds			23
Iron & Steel Chains	Ton	1493	11
Butane Gas for Retail Sale	Ton	63169	15
White Cheese			20
Buses	Number	6	422
Butane Gas Cylinders			122
Refined Sugar Cane	Ton	918278	376
Car Spare Parts			20
Steel Carbon Alloy			18
Wooden Doors & Windows			13
Wool Fabrics			148

Table 23 (Cont'd)

Wool Yarn			286
Wool Fabric & Mixted Wool			312
Zinc Molds	Ton	7	17
Zinc Oxide			41
Underwear			76
Bath Sets	Ton	761	38
Refrigerator Units (800 litres)	Ton	722	529
Unweldered Tubes of Iron & Steel	Ton	100300	124
Electrical Vacuum Cleaners			50
Video Sets	Number	26	55
Half Automatic Washing Machines	Ton	2661	15
Clothes & Cigarettes Stuffings	Ton	4664	19
Washing Machines			179
Weldering Machines			12
Caustic Soda	Ton	81661	39
Spare Parts of Railways Equipments			24
Coloured Glass			18
Steel Pipes			34
Sea Water Cement	Ton	284	22
Short Fiber Yarn of Synthetic Fibers	Ton	2493	95
Steel Slices	Ton	84	27
Synthetic Threads			29
Television Sets			475
Tea	Ton	60991	220
Telephone Sets			19
Bath & Shaving Soap	Ton	1	91
Towels			13
Tractors	Number	7	86
Tricot Fabrics			13
Trailers for Factories Use	Ton	11597	55
Rice			110
Internal Rubber Pipes for Cars (55cm)	Number	1754	15
Outside Rubber Tyre for Cars	Number	1233	48
Outside Rubber Tyre for Lorries	Number	22992	155
Rubber Sheets			21
Cast Iron Pipes for Sanitary Drainage			27
Sanitary Ware	Ton	1395	16
Flake Wood	Ton	1952195	877
Radio Sets			49
Shipping Wagons in Railways			75
Railways Wagons			24
Oxen & Horses Skin	Ton	505	43
Readymade Clothes			95
Electricity & Heat Insulator			62
Portland Cement	Ton	2906714	895
Printed Books, Copybooks, Others	Ton	8354	93
Printing & Publishing Paper	Ton	220747	501
Printing Ink	Ton	358	15
Air Conditioner, Spare Parts	Ton	21	22

3.9 The Main Features of the Plan, and the Industrial Private Sector's Role in the Indicative Plan 1996/97 :

According to one of the study's alternative about the indicative plan we can present the main features of this alterative and its different goal, that the financial and commercial policy must be directed to, so that it would be achieved in time.

There features can be presented in the follows:

1- Main Commercial and financial indicators:

- National annual production L.E 296 Billion
- General Diametric product L.E 170 Billion
- Exports L.E 26 Billion
- Needed imports for exports L.E 4 Billion
- Available fund from long term credit gradual from the Banking system in 96/97. L.E 75 Billion

2- Main industry indicators:

- Transformation industries production L.E 94 Billion
  It is detailed in the following :
- Increase in the Transformation industries production. L.E 73 Billion
- Increase in the capital of the transformation industries Production. L.E 56 Billion
- Number of laborers in the transformation industries 2.2 Million Laborer
- Increase in Labor 1.1 Laborer
- Food industries L.E 21 Billion

- Spinning and texture L.E 14 Billion
- Wood and wood products L.E 10 Billion
- Paper industry and paper products L.E 2 Billion
- Chemical industries and products L.E 24 Billion
- Metallurgical non- metal industries L.E 6 Billion
- Metallic industries L.E 5 Billion
- Machines and equipments L.E 7 Billion
- Other industries L.E 2 Billion
- Available fund (Long term loans for industry) L.E 25 Billion
- Number of produced and needed good according of the gop estimation 600 goods
- Number of other goods produced that can be replaced by the domestic production instead of its importation. 1400 goods

3- **Industrial Private Sector Indicators:**

- Transforation Industries Production L.E 50 Billion

It is detailed in the following:

- Food industries L.E 15 Billion
- Spinning & Texture industry L.E 10 Billion
- Wood industry L.E 5 Billion
- Paper industry L.E 1 Billion
- Chemical industries L.E 10 Billion

- Metallurgical non-metal industries L.E 3 Billion
- Metallic industries L.E 2 Billion
- Machines and equipments L.E 3 Billion
- Other industries L.E 1 Billion
- Number of Laborers L.E 1.3 Billion
- Increase in capital invested in industry L.E 33 Billion
- Avoidable fund (Long term loans in the Industrial private sector 96/97) L.E 8 Billion
- Number of industrial goods available for the private sector for the other industrial products 300 goods
- Number of goods that can replace importation 700 goods

Chapter Four

Policies and Measurements for the Encouragement of the Private Sector to Implement the Indicative Plan

Chapter Four
Policies and Measurements for the Encouragement of the Private Sector to Implement the Indicative Plan

4.1 Policies & Procedures Recommended from the Perspective of the Legal Status of Industrial Enterprises:

4.1.1 Small and medium scale enterprises subject to the companies law:

For purposes of overcoming the obstacles and constraints which encounter the small and medium scale enterprises, specific economic and production mechanisms shall be adopted to ensure the structural adjustment of the concerned sub-sectors, based on the trends of the present and future economic policies which-in turn-tend to sustain the economic liberalization and the proalliance on market mechanisms in the course of allocating economic resources.

A scouting of the business environment reveal certain shortcomings in the areas of production, finance, marketing, employment and wages. In this respect, certain basic principles shall direct the structural adjustment of these enterprises.

First: The small and medium scale enterprises shall represent one of the major constituents of the overall economic and social development plan in its new form which depends on indicative, rather than central planning.

In specific terms, the overall plan shall demonstrate in a clear and independent manner, the investments allocated for the micro small and medium enterprises, along with the policies and objectives which the authorities deem necessary for such enterprises in the coming stage. Objectives shall be clearly identified in terms of : production, investment employment, wages, exports, imports, projected surplus and value added, etc.

Direct and indirect policies which result in the realization of the plan's objectives shall also be explicitly outlined, in addition to the determination of the extent of linkages between the concerned enterprises and all other sub-sectors.

Based on this specific technique, the small-and medium-scale enterprises could be accorded a specific and well - defined status, vis-a-vis other types of enterprises. An entirely different approach was used in the prist, namely, small- and medium-scale enterprises were considered in a general manner in the context of the development plan. Such an approach rendered those types of enterprises backing the necessary attention which is urgently required for the support and development of such enterprises, a matter which result in higher local and international competitiveness, coupled with a substantial contribution by those enterprises in addressing the problem of unemployment.

Second: Small-and medium-scale enterprises shall be availed specific locational sites which shall be properly selected, using the appropriate industrial location analyses identified by UNIDO. Specifically these include: feasibility analyses, regional multiplier, linear programming, size optimization, and regional analyses of the input/output ratio.

In this way, the industrial development map of Egypt would include well-designed geographic distribution for locating the small-and medium-scale enterprises allover the country.

The industrial map is instrumental in supporting the planning and execution agencies with the realization of the industrial planning objectives, linking such objectives with the financial and locational incentives, along with the different economics realized through the widespread location of enterprises, rather than the current concentration in the two metropolitan regions of Greater Cairo and Alexandria.

Third: Any modifications in the organizational structure of the small and medium enterprises shall take place in the framework of the objectives of these enterprises. Specifically, every concerned administrative body shall play a well-defined and effective role in the realization of one or some of the objectives of the small and medium enterprises, as determined by the indicative planning authorities, collaboratively with the professional agencies, chambers of commerce and other bodies involved in the development of small-and medium-scale industries.

Fourth: Economic liberalization shall not impede the adoption of a minimum level of protection for the small industries, vis-a-vis the competitive positions of the larger local enterprises, or the foreign ones. This,however, does not necessarily involve the imposition of restrictions on other enterprises nor the absolute banning of competitive imports, nor the encouragement and development of the small industries products, nor the provision for the advanced technical and technological capabilities such that they become subject to a continuous process of development.

Appropriate formulate for cooperation, rather than competition could be concluded for the small and medium enterprises and the large ones. In specific terms, mutual economies could be made available, along with the encouragement of feeding and complementary industries.

Fifth: The multitude of financial agencies, coupled with the modest capabilities of the individual agencies, prove ineffective in addressing the financial problems encountered by the small-and medium-scale enterprises.

An appropriate formula for coordination shall be drawn-up to harmonize the respective efforts of the local and international financial agencies, and increase the financing available for the small-and-medium-scale enterprises at concessionary terms. This is closely related to the size of the foreign component in the industrial investments, and the need to minimize this component through higher dependence on local resources and industries.

Sixth: Given the current state's endeavors towards issuing a unified law for investment (to which all enterprises shall be subject, including those which are respectively subject to laws 159, 230 and 203), such a law shall be preceded by a unified legislation for the small-and medium-scale enterprises, as an intermediary step towards bringing those enterprises under the umbrella of the proposed unified investment law.

Seventh: The Planning and technical aspects of the small and medium industries development shall not undermine those administrative aspects which are urgently required to support the small enterprises management in making administrative, organizational and marketing decisions, as well as simplifying procedures, managing time effectively and conducting management, technical and vocational training.

The management aspects is a joint responsibility of the entrepreneurs and the agencies in charge of industrial development, in general. A certain level of cooperation could be attained in order to overcome the obstacle of the insufficient financial capacity and the low capability for management development and training, as well as the absence of the appropriate management expertise of other developing countries indicate the utmost importance of the provision of management consulting services for the small- and medium-scale industries by the specialized institutions for purposes of raising the manpower productivity and enhancing the effectiveness of the decision-making process.

Based on the above seven principles, the following recommendations are deemed instrumental for the realization of structural adjustment for the small- and medium-scale industries:

First: The set-up of a single national agency to be responsible for the affairs of small-and medium-scale industries. Specifically, it shall be in charge of putting into effect the provisions of the unified investment law, along with the provision of all means of support, guidance, control and inspection, using the sound technical criteria. The establishment of such an agency shall avail substantial advantages over the status quo where a multitude of institutions exist with no coordination between their respective roles.

Second: Industrial estates shall be increased, both in the new cities and elsewhere in the country. These estates will ensure industrial facilities and infrastructure. Financing shall be made available by means of savings of the expatriate Egyptians through the Industrial Development Bank and some other investment banks. Industrial estates are advantageous for ensuring coordination and complementarily, in addition to the economies of scale, the provision of joint services and the possibilities of mutual benefits of distribution.

Industrial estates also facilitate the establishment of non-conventional small-and medium-scale industries and the provision of administrative and technical services.

Third: The amalgamation -in one entity- of the fin funds involved in financing the small-and medium-scale industries. Such an entity shall avail substantial financing capabilities which ensure sufficient credit, at concessionary terms, for those industries. The entity, a bank or a fund may work in close collaboration with the Investment Risk Guarantee Corporation, wherein all foreign financing shall be put, rather than dispersing efforts, extending small loans, raising banking costs and hence, higher risks, a matter which usually leads to the banks' reluctance to furnish financing.

Fourth: Supporting the small-and medium-scale industries with the surmounting of their marketing problems. To this end, a specialized department shall be set-up in the Export Development Bank of Egypt to help small-and medium-scale industries in obtaining their production supplies, intermediary goods and spare parts, along with the simplification of the export and import procedures.

In addition, the Ministry of Economy shall establish a permanent fair facility to help the external marketing of the products of small and medium enterprises. The Egyptian Export Development Center shall furnish data and information for the facilitation of exportation.

Fifth: Establishment of a Management Training Center to help the small-and medium-scale enterprises formulate sound policies for the production, investment, marketing and employment. Such a center would also be instrumental for raising productivity and surmounting obstacles and bottlenecks.

The small-and medium-scale industrial sector is projected to undergo significant performance improvements throughout the next five years, due to partial mitigation of the financing constraints. The Credit Risk Guarantee Corporation contributed to these improvements through the provision of guarantees on the basis of technical and economic feasibility studies.

The participation of financial institutions in the establishment of industrial estates in the new cities would also lead to substantial economies in the technical, economic and management fields. Enterprises in these estates contribute to addressing the unemployment problem, as well as the provision of a parol of trained manpower.

4.1.2 Encouragement of the Private Enterprises Operating Under Law 230/1989:

Law 230/1989 represents the basic reference for the treatment of local, Arab and Foreign investments, as well as the free zones enterprises. This law avails a multitude of advantages, namely:

- Availing foreign investments of the opportunity to embark on business activities in Egypt, without need for local participation. Such a participation was previously one of the conditions which prohibited the more effective foreign participation in investment in Egypt.

- Eliminating all differential treatment between the enterprises subject to this law and other enterprises.

- Exempting project from the official fees of stamps, registration and publicizing.

- Raising the percentage of profits exempted from taxes to 10% against 5% previously of the original value of each shareholder's equity, after the elapse of the initial exemption period. This percentage is raised to 20% in cases of projects with a minimum of 40% of public participation in equity capital.

- Stipulating obtainment of the approval of the General Authority for Investment prior to any litigation against the enterprises subject to the law, by any of the official authorities, e.g. Customs, Foreign Exchange Authority, or Taxation Authority.

- Availing the lease of barren or desert lands for a 50-year period, extendable to 100 years, upon cabinet approval. Activity could also take place on land acquisition basis upon cabinet approval also, but only for joint stock companies.

- Providing several authorities for the General Authority for Investment, including the allocation of lands for investors, the obtainment of licenses for projects operations, the granting of approvals concerning the projects import requirements, the determination of projects start-up dates, etc.

Despite the above privileges, however, the following shortcomings characterize Law 230/1989:

- The confinement to 5 types of business activities, and the absolute exclusion of other activities.
- The absence of controls over the importation of used equipment and machinery.
- The non-identification of the period required for the attainment of equality in pricing matters between the projects subject to the law and other projects.
- The non-determination of the bases of pricing and the general criteria adopted to consider a certain good a basic one, in such cases when the government interferes in pricing through the cabinet.
- The cancellation of the exemption of foreign loans from interest payments, a privilege that has previously been granted by the preceding investment law. Such a cancellation has led to higher production costs and hence, excessive burdens on the investment projects.
- The provision for several exceptions, in addition to the excessive granting of privileges in certain aspects, such as the repatriation of foreign exchange with no need to be kept inside the local market for 5 years.

Generally, it is worthmentioning that despite the advantages availed by both the General Authority for Investment and the General Organization for Industrialization, several investment obstacles are still impeding the streamlined performance of industrial investments in Egypt.

Of particular importance in this regard is the overlap of responsibilities among the official authorities in respect of the lands allocated for investment projects, along with the inappropriate feasibility studies of the projects submitted either to the General Authority for Investment or to the General Organization for Industrialization.

Besides, and despite the existence of several financial institutions involved in the provision of funds for the industrial enterprises in Egypt, yet, the funds available are rather non-substantial, the major part of which takes the form of commercial, short-term loans, longer term loans play a rather limited role in the provision of financing for industrial projects.

In respect of production and sales, low growth rates are observed, amounting to less than 1% in some years.

The industrial enterprises subject to Law 230/1989 also experience raising costs of production, interest rates, and foreign exchange rates, all representing adverse factors which contribute to heavy burdens, particularly in light of the substantial foreign component of the production costs.

Value and growth rates of sales in the local market still exceed those of exports, despite the fact that the present levels are better than those which prevailed in the past. They are also more favorable than the corresponding levels of the public sector.

Positive effects were generated due to the liberalization of the foreign exchange regime, and exports supply tends to increase, in association with the higher exposure to the international market and the higher accumulation of capital.

Exports of the free zone enterprises are directed towards the local market. It can generally be argued that the international marketing is rather weak due to the low competitiveness of the major part of local production. Exports of enterprises subject to Law 230/1989 represent 6.3% of the total Egyptian exports. Such a low percentage is attributed to the isolation of the local industrial activity from competition, the inappropriate R & D policies, the inability to attain the optimal utilization of the available capacity and the weak marketing efforts.

The role of training is still limited in respect of providing additional employment. This problem would be interpreted in light of the fact that manpower represents about 46% of the net value added.

Many industrial enterprises, of those operating under Law 230/1989, are still experiencing distortions in their financial structures, particularly those enterprises which operate in the fields of textiles, food processing and building materials. Liquidity problems are attributable to the high foreign exchange costs, high interest rates, and the absence of an active stock market.

The management systems and decision making processes are still experiencing serious shortcomings due to the dominance of subjective judgements and considerations over the objective ones, along with the inseparability of management and ownership. There exist, however, some flexible patterns of management which help accommodate any emerging changes and permit adjustment vis-a-vis the international technological developments.

Financial structures are characterized by imbalances and lack of linkages with the objectives of the concerned enterprises.

Given the above obstacles and constraints, the following recommendations are set-forth in an aim to overcome the adverse circumstances which encounter the industrial enterprises:

1st: Amendment of the article included in Law 230/1989 which stipulates a percentage of no less than 10% of net profits to be distributed to the staff without a maximum limit. A maximum limit shall be determined either by the annual wages and benefits or by annual wages only, as stipulated by the companies Law No. 159/1981.

2nd: Draw-up of strict technical controls over the imported equipment particularly the used ones, in order to ensure appropriate quality standards for the production processes and help the transfer of advanced technologies and hence, the higher potentials available for exportation.

3rd: Set-up of appropriate controls regarding the pricing of industrial good along with the adequate criteria for differentiating between the basic and non-basic goods, to identify the cases of interference - by the cabinet - in the pricing process. A specific time span shall be identified for such interference, as is the case with the enterprises subject to the other business laws.

4th: Ameliorating the investment environment such that the administrative obstacles could be eliminated, particularly those related to the number of the licensing and approval agencies, and the overlap of the official bodies' authorities over the lands allocated for investment projects.

5th: Linking the exemption of foreign loans from interests to the export capabilities, and permitting the repatriation of profits after the elapse of a certain period to be specified by the law.

4.1.3 Policies and Measurements Related to the Development of the Public Business Sector in order to Raise the Contribution of the Private Sector in its Industrial Investment:

The public business sector is still dominating a substantial percentage of the available assets, accounting for a high percentage of GNP, and employing a large percentage of manpower. Reform of the public sector will not take place merely through the improvements of the institutional frameworks and the legal forms. Rather, the public sector shall be managed in a business like manner.

Problems of the public sector are inherent in the areas of pricing mechanisms, excess labor, waste, wage level, interference of the official agencies, old rules and systems, and obsolescence of equipment.

If the public sector is managed on the basis of the business criteria, (e.g., free pricing, upgrading of regulations and systems, linking wages to production) it would be capable of positively contributing to the GNP, in terms of quantity and quality, and hence, the privatization process could proceed with larger paces.

Specifically, the public sector shall be freed from the excessive control of the multitude of official authorities. Its budgets shall be separated from the state budget. It shall operate on the basis of separating management from ownership. This means that the Minister in charge of the public business sector does not interfere with the management of the public enterprises. Rather, such a management shall be the exclusive role of the holding companies established by Law 203/1991.

As the constitution stipulates the supervision - by the People's Assembly - over the public funds, this is realized through the role of the Ministry of Public Sector which assumes the responsibility of coordination between the holding companies - on the one hand - and the state's policy - on the other hand. In all such cases, the general assemblies of the holding or the affiliate companies represent the bodies charged with the management of the public enterprises, with the required flexibility to ensure the effectiveness of their respective roles.

The distortions of the financial structures, along with the heavy burdens of indebtedness, high debit service, obsolescence of equipment and inappropriate pricing policies shall all be duiy addressed.

Amongst the essential roles of the new management of the public enterprises shall be the resolving of obstacles encountered by this management in the field of personnel and wage policies.

- Tackling the mismanagement problem experienced by a large number of enterprises, in order to mitigate the heavy burden of losses and realize profits.
- Addressing the causes of distortions of the financial structures, including the pricing on social, rather than economic, basis.
- Reducing the interest rate to induce industrial investments.
- Reconsider the tariff policy, exempting imported equipment and production supplies from customs duties. Exemptions granted to other sectors shall also be reconsidered a and higher council for tariff affairs shall be established.
- Controls shall be set-forth to regulate the migration of technical manpower.
- Consumption of all types shall be rationalized, including consumption of raw materials and energy.
- Free zones shall be established only in areas with easy and immediate access to ports. Controls shall be strict over the outlets of these free zones to eliminate trafficking and hence, protect the nascent industries.

- Industrial estates shall be expanded in the new cities and new small industries shall be duly supported.
- An industrial information center shall be supported and given the right to obtain accurate and timely data and information from the different sectors (government - public - private - joint ventures - cooperatives).
- The subsidies policy shall undergo substantial reforms. Basically, subsidies shall be focusing on the distribution rather than the production field.
- Heavy industries shall be supporting the small and medium scale industries.
- Export industries shall be expanded as an effective means for more rapid industrialization.
- Integration of agricultural and industrial development shall be realized.
- Industries dependent on local raw materials and intermediate inputs shall be duly expanded.
- Unutilized capacities shall be exploited to attain higher productivity at the lowest possible cost.
- Necessary consumption industries shall be developed to achieve an appropriate level of self sufficiency of such goods as: sugar, edible oils, textiles, paper, etc.
- Emphasis shall be laid upon the textiles sub-sector to surmount the existing bottlenecks and conduct the necessary processes of upgrading and rehabilitation.
- Building materials industries shall be developed in line with the requirements of the economic development plan.
- In-depth and analytical studies shall be performed prior to the actual formulation of plans.
- Industrial design capabilities shall be appropriately developed.

- Training for continuous production, along with top management training, shall be furnished.

- All relevant bodies and levels shall effectively contribute to the formulation of plans to ensure the highest possible levels of achievement and implementation capacities.

In order to attain structural adjustment in the industrial public enterprises the management of the holding companies shall modify the companies investment portfolios in such a manner that minimize risks. The targeted structural adjustment - in turn - cannot be realized in the absence of vigorous efforts by the management to overcome the barrier of technological backwardness. This consideration has been accorded particular urgency in light of the elimination of tariff and non-tariff barriers.

The market mechanism shall prevail the resource allocation process inside the industrial enterprises. Such a mechanism in the areas of inputs and outputs pricing shall be supported by liberal policies of exchange rates and interest rates determination. Hence, complementarily of liberalization at the micro-and macro-levels can be realized.

Revenues of the privatization process shall be used in reforming the financial structures of the oiling public industrial enterprises prior to selling their stocks in the stock market.

In such where there is a tendency towards utilizing part of the privatization revenues in expansion or new investment projects, the redistribution of manpower and/or creation of new jobs shall take place accordingly, a matter which contributes to the overcoming of the problems of unemployment and low productivity. The involved authorities estimate the privatization revenues at L.E. 146 billion.

One of the major requisites for the structural adjustment of the public industrial enterprises is the matching of the exports proceedings with the imports value, taking into due consideration the effects of import substitution. This would help mitigating the burdens over both the balance of payments and the state's budget. To this end, exports production shall be paid due attention, with emphasis on the reliance on local raw and intermediate inputs.

It is worthnoting that the initiation of the liberalization of the import policy could trigger adverse effects on the potentials of growth of the Public industrial sector, particularly with the absence of the executive regulations of the public Business Sector Law No. 203/1991.

An expected inevitable result would be represented by the exacerbation of the capacity under utilization problem, along with distortions in the financial structures hence, the inherent difficulties of the privatization process. This is currently evident with the industries of iron and steel, chemicals and coal.

To conclude, the protection of the local manufacturing sector shall represent a transitory stage, particularly in view of the export subsidization policies adopted by Egypt's trade partners.

4.2 Policies and Measurements Recommended from the Perspective of the Incentive Fields and Instruments:

4.2.1 Banking and Credit Policies:

- The Banks Federation shall undertake to overcome the existing obstacles which tend to slow decisions related to credit. This could be achieved through developing the skills of specialists and/or the streamlining of the credit procedures and studies.
- The Technical Committee of the Banks' Federation shall endeavor to ensure more expansiveness to the requirements of the small- and medium-scale enterprises.
- Initiatives shall be taken to support the ailing enterprises in such cases where causes of ailing are beyond their control.
- The Central Bank shall endeavor for lowering interest rates on loans provided to the manufacturing sector. The open market policy, along with indirect monetary instruments could be used in this regard.
- Banks shall be encouraged to use the lending system based on stocks and bonds guarantees. Such a policy, which was last used during the 1960s, would ensure liquidity for bonds.
- The Banks portfolios shall be circulated through offerings to the private business and household sectors. Balancing, however, shall be maintained in this regard by permitting banks to offer stocks and bonds of all types of corporations, being healthy or ailing.
- Credit guarantees shall not be confined to physical assets rather they shall extend to include the intangible assets, such as the enterprise's reputation and its marketing potentials.
- The cheque law shall be issued to restore its power as a payment instrument.

- The official fees of registration and mortgaging shall be lowered to reasonable levels which will not decrease the total revenues. Specifically, lower rates of these fees would help eliminate the avoidance of such fees hence, the higher possibilities of more revenues. Elimination of these fees could also be considered, in so far as the projects concerned are productive ones.

- Reform of the taxation policy shall be initiated, covering personal and corporate taxes. This shall include an expansion of the tax base, simplification of the taxation calculation and clarification of the bases of calculation in order to avoid subjective judgement, either on the part of the tax payer or the tax officials.

- The monetary rules and regulations, which prohibit the streamlined exportation activities, shall be reviewed and the necessary reforms thereto shall be introduced.

- The Civil Law provision which stipulates an interest rate of 7% on transactions, shall be amended in order to permit adjustment of the bonds interest rates.

- The legislation related to the lease financing shall be issued to encourage companies operating in this field.

- Relative stamp payments related to equity capital shall be canceled. Besides, profits of shareholders' equity and bonds income shall be treated similarly with savings income.

- The General Authority for Investment, along with the Central Bank and the Commercial banks shall reconsider the determination of fixed ratios for equity capital to loan financing. Such ratios shall be determined on a case-by-case basis, depending on the respective viability of the projects concerned.

- Credit ceilings, particularly for the viable productive, activities, shall be identified as a percentage of the banks' saving deposits. This could help ensure flexibility for the growth of loans, proportionally with the capacity of the banking system to mobilize savings hence, the incentive to attract such savings and furnish credit, the quantitative restrictions are more appropriate for credit provided to the state agencies or to less viable investments.

- The social fund programs shall be put in place, along with the enhancement of the fund's resources which shall be assigned for the financing of small scale enterprises, and for the alleviation of the social effects of the economic reform policies.

- The Ministry of Finance shall undertake to formulate appropriate tax solutions to the following problems.

- Exemption of imputed interest on bad deletes from taxes, since such revenues are not actually realized ones. Taxes shall be levied upon the actual collection of interests.

- Exemption of the annual allocations out of the realized profits from taxes. This would coincide with the practice adapted for the insurance companies.

- The commercial banks shall be free to identify the fees to paid against their banking services. Such a freedom would ensure competition and hence, efficiency in the provision of banking and credit services furnished to producers.

- The government agencies shall endeavor to pay the installments of the business sector or to afford credit interest on such installments to avoid the adverse effects on this sector.

- An export financing and encouragement agency shall be established. The role of such an agency shall include the actual support to exporters.

- Commercial banks shall play an effective role in providing credit to the private sector to help perform the privatization process.

- Mutual funds shall be established and adapt systems to the Egyptian business context.
- Specialized companies shall be set-up to help support ailing companies.
- Banks shall assume a training and educational role to be targeted to the small investors.

4.2.2 **Improvement of Government Procedures:**

- Set up prolonged coordination committees in which representatives of the various ministries concerned, as well as representatives of the business sector shall participate as members, with a view to :
  - Propose steps and procedures for the implementation of the general policy, rules and regulates issued, and model used.
  - Establish coordination among different bodies whose work is related to any of these procedures, in order to simplify and facilitate such procedures, and to eliminate any conflict or contradiction between different bodies regarding any regulation.
  - Endeavour to provide all data and information to facilitate implementation, and unify such data and information to avoid repetition.
- Set up arbitration committees to deal with any disputes arising between governmental bodies and the business sector regarding work steps.
- Revoke the principle of incrimination in case of simple procedure violation, and restrict the regulation to the application of fines and the referral of the violations to arbitration committees, prior to referring any subject to court.
- Endeavour to improve the work methods and environment in government offices in order to raise the level of their services and employees.
- Reexamine the policy relative to issuing and renewing permits or authorizations issued periodically for short durations, thus leading to waste of time and money. The following should therefore be taken into consideration:
  - Unification of all authorities in charge of issuing founding permits to all factories into one authority namely the General Organization for Industrialization.

- Extension of the duration of permits validity for as long as possible and simplification of renewal procedures, either by payrnent of fees for long durations, or by purchase of renewal stamps from post offices.

  The observance, by those who have obtained authorizations or permits, of the obligations required for continued validity of the permits, can be ensured through periodical inspections and revocation of the authorization or permit in case of violation.

- Releasing of the authorization for renewal from any condition unrelated to the renewal itself e.g, the social security payment condition in case of transportation vehicles licence renewal, which may result, when not renewed, in production delays.

- Restriction of the number of documents frequently required for submission to one authority even if pertaining to several different approvals. The availability of a good information system relying on computers would undoubtedly eliminate, in many cases, the need to examine or obtain many documents.

- Consider as sufficient, the letter of authorization issued by from an enterprise to its representative assigned to carry out the procedures, in addition to a proof that he is working with the enterprise, without the need for an official power of attorney.

- Set up offices for all bodies responsible for issuing permits to investment companies, inside the Investment Organization building, in application of article 47 of the Investment Law. All procedures regarding investors and issuing of permits shall be completed by the proper departments of the Organization, and all permits necessary to begin operation obtained and compiled. The responsible employee of the Organization shall then move to the project's headquarters where he will complete, with the investor, the procedures and payment of fees necessary to issue the permits.

■ Restrict the number of bodies in charge of inspection, when their inspection capacities cover the same aspects and require the same documents.

- Schedule visits, as much as possible, in an agreed upon periodical program, particularly to ensure the renewal procedures for permits and authorizations, in addition to matters not requiring unexpected visits, so that the required documents, as well as the person in charge, can be prepared.

- Advise the enterprise of the inspection's result and remarks thereafter, and refrain from taking any direct punitive action without first notifying the enterprise.

- Resort to arbitration in case of difference in points of view between the inspection body and the enterprise, so that the enterprise or businessman does not face any unnecessary legal action.

- Emphasize the importance of the role of the Organization for Standardization and the legislation issued in this regard, by supporting and freeing the financial possibilities of the Organization to enable it to proceed hand in hand with scientific development and in harmony with the proposed Policy of Economic Reform.

- Issue a legislation prohibiting the offering of any merchandise for sale at any of the distribution outlets without the documents showing the manufacturer's name, the industrial registration number and certificate of origin.

- Set up a fund to support the fight against industrial and commercial fraud

4.2.3 Customs Policies:

- If a state is revealed to have been subsidizing its exports and adopting a policy of market flooding which would harm local production, the customs authority shall take steps towards fixing a price for these goods and communicate it to all authorities concerned.

- In order to implement the specialization system in pricing, specialized committees shall be formed in each complex, and by each committee shall specialize in pricing a homogeneous category of goods. A training program shall also be prepared in pricing specialties.

- Establish equality in guarantees for both the public and private sectors, and the acceptability of insurance policies.
- Refund any taxes paid in case of partial re-export.
- No specific time limit or conditions are to be imposed for re-export.
- A duration of 21 days shall be set as a time limit to address customs contestation.
- A unified item not exceeding 5 % shall be applied on machinery and their parts.
- All publications and resolutions of the customs authority and its various departments shall be promulgated so that all persons concerned be informed in this respect.
- The analyses carried out by any governmental laboratory shall be accepted and not only those of the Chemistry Authority.
- Confiscation shall not include all the debtor's funds but only the amount due.
- The letters of guarantees shall be released as soon as their purpose has been fulfilled.
- Invite participation of businessmen in the discussion of customs reforms, provided the required confidentiality is not breached.
- Provide training to customs staff and employees.
- Exercise care in endorsements made on documents.
- Avoid contradiction in the interpretation of regulations from various departments.
- Application of the arbitration committee resolution in similar cases.
- Require the exporter to submit invoices giving the merchandise detailed specifications in order to avoid any fraudulent behavior.

- Observance of the GATT and the Arab League agreements.
- Release any food and perishable merchandise within 24 hrs.
- Approve the sale of merchandise with low tax margin to bodies with the same low customs.
- Restrict the customs control over machinery with low customs margin to a duration appropriate to its depreciation, and discontinue this control upon expiry of its duration span.
- Reduce the customs tax on production requisites.
- Ensure accuracy in formulating the customs tariffs items .
- Ensure coordination between customs taxes on raw materials and the different phases of manufacture.
- Ensure the performance of the High Council for Tariffs of its required role.
- Authorize the sale of merchandise in a private warehouse to a third party provided the purchaser undertakes customs clearance procedures.
- Application of a unified customs fee not exceeding 5 % for spare parts.
- Cancellation of the time limit condition relative to equipment being exported for the purpose of repair and return.

Customs Reductions for Assembly Industries:

- The rate of local manufacture relative to the application of customs reductions shall be specified in the founding permit issued by the General Organization for Industrialization provided that it can be applied in advance and that follow-up takes place after implementation.

- Requirement of payment of a development tariff on totally manufactured products imported from abroad, for which there is sufficient substitute in local production.

- Requirement of the non-lifting of the ban on importation of any product produced which is already produced locally prior to studying the customs fees imposed on raw materials and the final product, and reviewing the description of itemized customs duties for clarification.

4.2.4 Policies of Encouragement of Exports:

- Activate the role of commercial representation offices already existing in Egyptian embassies around the world and supply these offices with Egyptian industries publications. Give attention to training of staff in these offices and provide them with various information systems to establish their bonds with the Arab Republic of Egypt.

- Allocate part of the aid and loans granted by the Arab Republic of Egypt to African or other states in form of Egyptian national products.

- Support the Center for Development of Egyptian Exports.

- Endeavour to obtain grants and preferred terms loans to be allocated to exports financing within a program of incentives to promote exports.

- Examine the possibility of offering a tax privilege to exports to be calculated an the basis of annual exports value whether directly exported from origin or through specialized agents.

- Formulate a clear strategy to train Egyptian manpower and simplify procedures for :

  - Setting up of a specialized body emanating from the Union of Egyptian Industries to receive and employ foreign grants allocated to training.

  - Utilizing the facilities available for training purposes in various organizations and bodies in the Arab Republic of Egypt.

  - Issuance of operation permits, setting a time limit after which approval shall be considered as implicit.

  - Professional practice licences of various levels to be issued by a specialized authority and such licence to be a requirement for employment and promotion.

- Cooperation should exist between all government bodies concerned (in the ministries of Supply, Industry & Economy) to follow-up the application of the standard specification conditions on products sold on the Egyptian market.

- Raise the rate of preference for the local product to 25 % in government tenders.

- Emphasize the importance of the industrial registry role implemented at present in the General Organization for Industrialization, and apply the requirement of submission of a certificate of compliance of the product to specifications, together with other documents required to be submitted by the enterprise owner, in order to obtain the industrial registry certificate. The industrial registry number shall be considered as the enterprise code number to be used when dealing with all concerned bodies.

4.4.5 Transportation & Communications:

- Revocation of Law 14 for 1964 relative to ownership of ships by the private sector so that authorization shall not be according to ministerial decree which can be revoked at any time. No preference shall be given to ships of public sector companies for the transportation of merchandise.

- Granting of a legal tax privilege to ship ownership activity.

- Revocation of Law 14 for 1964 relative to the restriction of maritime services to the public sector, and establishment of total equality, in this regard, between both the public and private sectors.

- Finalize the projects for ports equipment and modernization, and endeavour to offer a service to the world trade as well as to the Egyptian trade. Special attention should therefore be awarded to Port Said and Suez ports, in addition to the Gulf of Suez as a whole, where the setting up of new ports will be less costly. The private sector should also be allowed to set up small ports and to rent wharfs.

- Expedite the issuance of a law regulating the transportation services, customs clearance, land, maritime and fluvial transport.

- Amend certain customs regulations to allow for the admission and shipment of assembled goods.

- Establish equality between these companies and those of the public sector not required to submit bank letters of guarantee.

- Expedite the use of computer systems in customs clearance of merchandise.

- Allow these companies to establish bonded warehouses inside and outside ports in industrial and commercial centers.

- Give customs privileges for the import of expensive transportation vehicles as in the case of tourism vehicles, as well as tax privileges for investment in transportation vehicles and equipment.

- Expedite the issuance of the Equipment Rental Law.
- Provide all borders centers with the necessary communication means.
- Set up car parking areas in the important industrial and commercial centers, particularly on the borders.
- Set up special storage areas in the different airports and allow the transportation services companies to rent and operate these stores.
- Set up parking areas for trucks and lorries.