January 2022

Cotton Textile Industry and Industrial Development in Egypt

Nadia Abdel Moneim El Tatawy
The American University in Cairo AUC

COTTON TEXTILE INDUSTRY AND INDUSTRIAL DEVELOPMENT IN EGYPT

A THESIS

SUBMITTED TO

THE DEPARTMENT OF ECONOMICS-POLITICAL SCIENCE

OF THE AMERICAN UNIVERSITY IN CAIRO

IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

BY

NADIA ABDEL MONEIM EL TATAWY

APRIL 1972

This Thesis for the Master of Arts Degree

by

Nadia El Tatawy

has been approved

May, 1972

_____

Chairman, Thesis Committee

_____

Reader, Thesis Committee

_____

Reader, Thesis Committee

_____

Chairman, Department of
Economics-Political Science

ACKNOWLEDGEMENTS

I would like to express my deepest and most sincere gratitude to my supervisor, Dr. Samir Sidhom, for his patient, continuous and constructive assistance and effort which made this work possible.

My thanks go also to Dr. Galal Amin, with whom I started this research and to the members of my thesis committee: Dr. H. M. Thompson and Dr. A. Bryski for their invaluable comments.

I am also greatly indebted to my sister, Dr. Nawal El Tatawy, who read the thesis and offered me valuable comments. I would like also to express my gratitude to my very patient family.

Acknowledgement is also made for the encouragement and support given by the staff of the National Center for Sociol[illegible] and Criminological Research, headed by Dr. Ahmed Khalifa.

ABSTRACT

The cotton textile industry is one of the leading industries in Egypt, and the present study was an examination of the course of its development, status and prospects vis-a-vis other industries in the Egyptian economy. The study covered the period from the beginning of the nineteenth century until 1971, delineating the major problems facing the industry in Egypt today.

The study was divided into three major parts: a historical review, a survey of the present status, and a discussion of production efficiency and future trends. The historical review included a discussion of the major factors which shaped the development of the cotton textile industry from the beginning of the nineteenth century up to 1952: the two World Wars and the 1930 Tariff Reform. Examining these factors underlying the growth of this industry in the past century and major problems which it has faced throws some light on its present and future prospects.

The interrelationship between this major industry and the other industries in Egypt is discussed in the second section, which is a consideration

of the present condition and status of the cotton textile industry in the economy today. The final part emphasizes the impact of technical innovations on its production efficiency and future development.

Three important concepts were developed in this study. First, there is a very harmful effect resulting from the utilization of high quality Egyptian cotton in the production of coarse textiles. The various economic policy measures related to this point have been discussed thoroughly, and a number of proposals have been suggested for alleviating this difficulty.

Second, it was proved that, although it has high forward linkages with the other industries and sectors of the economy, the cotton textile industry is one of the leading industries today, and during the period under consideration it has contributed the highest percentage share to the industrial aggregate quantities of production: income, employment and export; it has also recorded a high rate of growth in real income.

Third, this study of the future trends and prospects for the cotton textile industry revealed that it and the man-made fibers industry possess complementary features or characteristics, rather than competitive ones; thus, development of one would reflect on the development of the other.

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

Textiles, being a relatively labor intensive industry and having a comparatively large domestic market in most countries, are often among the first industries to be established in developing countries, where labor resources are relatively abundant.

In Egypt, which produces a distinguished fine quality cotton--still the most prominent single product shaping the country's productive structure-- the development of the cotton textile industry was a natural choice. Thus, in Egypt, where capital and foreign exchange are relatively scarce and labor and high quality raw cotton abundant, this industry accommodates itself to the availability of resources.

In addition to its significant contribution to real national income, the textile industry has also provided both a means of foreign exchange saving and a source of foreign exchange earnings. The products of the industry almost completely satisfy, at present, both the needs of domestic market and those of an expanding export market. The foreign exchange savings that have resulted from a decrease in importation of textile products and from an increase in the exportation

of textile products thus exceed the amount of foreign exchange which would have been earned had the amount of fiber consumed in textile production been exported.

This thesis discusses the assumption that the cotton textile industry represents one of the leading industries in Egypt, as well as the main export industry. It emphasizes the vital role the cotton textile industry plays in the industrial development of the country. This investigation is particularly important in a centrally planned economy like the Egyptian economy, where national development plans determine the strategy and rate of growth of industrial development. The importance of the cotton textile industry could be traced as follows:

First, it has transformed Egypt, since the fifties, from a cotton textile importing economy into a self-sufficient economy producing a surplus of textile products which is being exported in increasing quantities.

Second, Egypt's cotton industry absorbs a large share of the cotton crop. The quantity of raw cotton consumed domestically increased from less than one percent of the total cotton crop at the beginning of the twentieth century to 21 percent by 1958. Furthermore, this increase in the domestic consumption of cotton proceeded at a much higher rate in the sixties,

—

reaching a level of 46 percent by 1968.[1]

Third, the cotton textile industry provides employment for a large segment of the labor force. In 1970 the number of workers employed in the textile industry accounted for 38.2 percent of the total labor force engaged in the industrial sector.[2]

This prominent role assumed by the cotton textile industry justifies a thorough study of its development, as well as its present status, prospects and future trends in Egypt.

This thesis is divided into three major parts.

Part I presents a survey of the development and status of the cotton textile industry in the Egyptian economy since the 19th century to 1952, with a study of the relevant factors affecting its growth and fluctuations in the past and present centuries.

Part I is divided into two chapters.

Chapter One describes the history of the cotton textile industry from the Mohamed Ali era to World War I. Chapter Two surveys the 1914-1952 period, tracing the effect of World War I, the 1930 Tariff

---

[1]Domestically manufactured cotton amounted to approximately 3.6 million kantars in 1967/68. Central Agency for Public Mobilization and Statistics, Statistical Indicators, 1952-1968 (Cairo: 1969), p. 129 (Arabic). (One kantar = 99.05 pounds = 44.93 kilograms)

[2]The Central Agency for Public Mobilization and Statistics, Industrial Production Statistics, 4th Quarter, 1969/70, June 1971, p. 3 (Arabic).

Reform , and the impact of World War II on the cotton textile industry vis-a-vis the other industries.

Part II discusses the development as well as the status and role of the cotton textile industry in the economy between 1952 and the present. It also examines the interdependence between this industry and the other industries and sectors of the economy, thus aiming at substantiating the proposition that the textile industry is a leading industry in Egypt.

Chapter Three examines the development as well as the status of the textile industry as a whole and cotton textiles in particular during 1952-1970.

Chapter Four studies the interdependence between the textiles industry and the other industries and sectors of the Egyptian economy and the extent to which it could be considered as a leading industry.

Part III discusses the efficiency of production of the cotton textile industry and its future trends and prospects vis-a-vis man-made fibers.

Chapter Five examines the economic policy measures of the cotton and cotton textile industries, as well as their impact on the level of efficiency and productivity of the industry compared to similar measurements in other countries.with which it competes in international markets.

Chapter Six presents an evaluation of the present conditions and future prospects of the cotton textile industry[3] emphasizing the impact of technology on its development. This includes a discussion of the selection of the level of technology and machinery, as well as the impact of technology on the development of textile fibers.

A summary and conclusion are then presented containing the main findings, as well as suggesting alternative policies and measures for achieving further expansion in the cotton textile industry, which could play a vital role in accelerating the economic development of the country.

---

[3]The term cotton textile industry refers to those establishments engaged in the spinning and preparation of yarn and weaving and finishing, except where otherwise indicated.

PART I

REVIEW OF THE DEVELOPMENT OF THE COTTON TEXTILE INDUSTRY DURING THE PERIOD 1800-1952

CHAPTER I

COTTON TEXTILE INDUSTRY IN THE 19TH CENTURY AND UP TO WORLD WAR I

A. The Conditions of the Industry Prior to, and during the Mohamed Ali Era

Mohamed Ali, the founder of modern Egypt, attempted to transform the subsistence economy existing at the beginning of the nineteenth century into a modern exchange economy. Although he could not achieve his goal fully, his accomplishments started Egypt towards an export-oriented economy.

Industry in general was suffering an eclipse before Mohamed Ali. It had declined during the Mamluk period from the level reached by the Fatimids and was satisfying only the subsistence needs. The textile industries--comprising wool, cotton, silk, and linen--were the major industries, with spinning being done by the countrymen and weaving carried out in towns.

The few industries which existed at the beginning of the nineteenth century were still at the guild stage of organization.[1] The members of the cotton

---

[1]Charles Issawi, Egypt in Revolution (London: Oxford University Press, 1963), pp. 21-23.

industry were organized into guilds controlled by masters.[2]

In 1816 the guild industrial system was altered by Mohamed Ali and private enterprises, consisting mainly of artisan houses and small workshops, gave way to complete state monopolies. The government was totally responsible for providing workmen with raw materials, as well as for selling the finished products. However, it did not direct the process and determine the pace of production in the handicraft sector; nor did it provide weavers and spinners with equipment or credit.

A great contribution of Mohamed Ali towards the industrial development of Egypt was the expansion and modernization of the cotton textile industry. He is also credited with the establishment of mechanized cotton textile factories.[3]

1. Development of Cotton Textiles

a. Volume of production

Cotton textile production expanded during the Mohamed Ali era. It was estimated that by 1828 about

---

[2]Under this system textile production was carried out in artisan houses or small workshops. The work was run by a master that owned the workshop, raw materials and capital. He sometimes hired employees to help him in his business.

[3]Patrick O'Brien, The Revolution in Egypt's Economic System, from Private Enterprise to Socialism, (London: Oxford University Press, 1966), p. 34, and A. E. Crouchly, The Economic Development of Modern Egypt, (London: Longmans, Green and Co., 1938), pp. 66-67.

25 percent of Egyptian raw cotton was consumed by the domestic factories. In 1833 cloth production was estimated at 2 million pics annually.[4] By 1837 the yarn production of twenty-nine factories comprised 50 thousand kantars, satisfying the major part of the domestic demand.

b. Employment

Mohamed Ali supplied the cotton factories with both skilled and unskilled labor from among the urban artisans and small masters, who were directed to work in government factories. The engineers and managerial staff, however, were mostly foreign experts.[5]

In 1820 the number of employees in the cotton factories amounted to 30 thousand.[6]

c. Capital

The machinery utilized in the cotton factories was mostly domestically produced.[7] In 1829, the number

---

[4]pic (pik): a measure of length varying from about 18 to 30 inches. In Egypt the pic is equal to 22.83 inches (58.cm.) One kantar = 99.05 lbs = 44.93 kilograms.

[5]A. E. Crouchly, op. cit., p. 69.

[6]Although this figure decreased substantially to 6000 employees during the Syrian War (as a large number of workers became engaged in the army); employment rose to the previous level afterwards. Robert Owen, Cotton and the Egyptian Economy, 1820-1914: A Study in Trade and Development (London: Oxford, 1969), pp. 44-47.

[7]A few machines were, however, imported. In 1818 there were two cotton mills, both supplied with the most advanced European machinery. In 1834 the number of imported machines was estimated at 8. Ibid.

of spindlers in cotton factories amounted to 1459, and the number of looms amounted to 1215.[8]

Mechanized factories were centrally controlled or organized and operated as one unit; the central factories located in Cairo provided the necessary equipment for mills all over the country.

All spun thread was to be sent to Cairo factories to be bleached, and then distributed for domestic consumption or for exportation.[9]

d. Marketing

Mohamed Ali's army and navy provided a sufficient market for the manufactured cotton. In addition, consumers were forced to buy the product whenever there was a surplus. Most notably, Mohamed Ali also protected the domestic market for domestically produced cotton textiles from cotton textile imports by means of imposing tariffs, as well as preventing transactions between merchants and their customer By selling the domestic products at a loss, he was able to undercut the imported goods.[10]

2. Evaluation of Mohamed Ali's Achievements

The major contribution of Mohamed Ali was the establishment of large-scale mechanized industries.

---

[8]Rashed El Barawi, et. al., Economic Development in Modern Egypt (Cairo: Dar-el-Nahda, 1961), p. 10 (Arabic).

[9]A. E. Crouchly, op. cit., p. 69.

[10]Robert Owen, op. cit., pp. 46-47.

The most important of these industries was textiles, which, however, deteriorated towards the end of his reign for a number of reasons, the most important of which are the following:

a. Inefficient administration caused both managers and workers to lose interest in their work.[11] Besides, Mohamed Ali practiced little supervision over his subordinates. It is estimated that almost 50 percent of the raw materials used were wasted during the manufacturing process.

b. Financial management was also carried out inefficiently since depreciation costs were not counted in total costs. This prevented accumulation of savings for the repair of machines.[12]

c. Natural factors contributing to the deterioration of cotton textile industry were mainly:

   i. There was a high degree of dependency on importing coal and iron at a high cost.

---

[11]Reasons for this were mainly pressure of work, exhaustion, mistreatment and low wages. These unfavorable conditions had negative impacts on productivity. The price of a meal offered in the factory was deducted from the already low wage, and what remained was paid in cash or in kind. Rashed El Barawi, op. cit., p. 18.

[12]Robert Owen, op. cit., p. 46.

ii. The high dependency of both agriculture and industry on the limited animal power was also a factor.

iii. The dry dusty weather and high temperature together with the lack of technological innovations to neutralize the harmful effects of the unsuitable weather conditions on textile production also had backwash effects on the industry.[13]

d. The deteriorations of the cotton textile industry was also affected by political factors. As Mohamed Ali's main aim in industrializing Egypt was to build up a modern army and navy, the compulsory reduction of his army that followed his defeat in the second Syrian campaign of 1839-1840 killed his incentives to industrialize Egypt. The Anglo-Turkish conventions of 1838 forced Egypt to accept a free trade policy which ended Mohamed Ali's protectionist policy and exposed the Egyptian cotton textile industry to severe foreign competition. Both domestic and

---

[13]Rashed El Barawy, op. cit., p. 4.

foreign incentives for investing in the unprotected Egyptian market were thus discouraged.[14]

B. The Period from 1849 to World War I

In general, the cotton textile industry disintegrated during this period. After Mohamed Ali, the government made no effort to establish publicly-operated industries. Gradually, the functions of the state withered, giving way to the development of a decentralized private enterprise economy in which private investment fell short of developing large-scale industries.[15]

Abbas and Said, the rulers that followed Mohamed Ali, displayed little interest in adhering to his policy of industrializing Egypt. Cotton factories which had been already established by Mohamed Ali were being closed.

Ismail's reign, in contrast, was marked by active governmental participation in economic life.[16] His interest in developing the textile industry, however, ranked second to his major interest in the sugar industry.

---

[14]Charles Issawi, op. cit., p. 23.

[15]This is with the exception of factories established by Ismail, who followed Said, including two cloth factories which were sold to private enterprise. Patrick O'Brien, op. cit., p. 42.

[16]A. E. Crouchly, op. cit., p. 102.

General stagnation in the industry characterized the period that followed Ismail' s reign and up to 1914. The main landmark during this period was the formation of the Egyptian Cotton Mills Company,and the Anglo-Egyptian Spinning and Weaving Company, which were founded for establishing cotton textile mills. Unfortunately, they failed to achieve their goals. Among the main reasons for this failure was the customs duty of 8 percent on the domestic industrial production eradicating any advantage over the imported goods which were exposed to the same duty. Other reasons were the lack of skilled labor and training as well as the shortage of capital and marketing difficulties.

C. Conclusion

This chapter traced Mohamed Ali's efforts to establish large scale modernized industries to replace the guild stage industries that dominated the economy up to the beginning of the nineteenth century. He was mainly concerned in establishing large scale cotton textile industry. Although he succeeded in establishing modern factories, nevertheless he faced many basic problems that prevented him from achieving his aim of industrializing Egypt. After Mohamed Ali, and up to World War II, no major efforts were made to develop the cotton textile industry. On the contrary, we find that the imposition of 8 percent duty on

domestic industrial production acted as a serious obstacle to the development of Egyptian industry as a whole.

Following Mohamed Ali's era the government made no effort to establish any publicly operated industry. The economic policy became one of Laissez-faire.

As we shall see in Chapter II, the period 1914-1952 witnessed the reversion towards a centrally directed economy again. Reasons for this change are (i) the two world wars, (ii) the international depression of the 1920's and 1930's, and (iii) the transfer of political power from the British administration to the Egyptian rulers, who appreciated that protection of economic life demanded government interference.

CHAPTER II

THEPERIOD FROM 1914-1952

A. The Impact of World War I on Egyptian Industry

The war magnified Egypt's high dependency on manufactured imports while at the same time, it demonstrated the urgency of developing Egyptian industry. The birth and development of many industries and particularly the textile industries to satisfy domestic demand could be witnessed during the post World War I period.[17]

Until the 1930 tariff reform, however, Egyptian Industry remained generally depressed as a result of a number of restrictive economic conditions both internal and external.

The narrowness of the home market stemming from the low purchasing power of the majority of the population, severe foreign competition, together with the absence of tariff protection, a limited range of domestic raw materials and generating power, a shortage of technicians and skilled labor, the scarcity of capital and investment, and the lack of government support

---

[17] A. E. Crouchly, op. cit., p. 227.

and protection for the Egyptian industry were the main factors which limited industrial growth in the post World War I period.

However, two significant landmarks with a major impact on Egyptian industry, materialized during the above period. The first was the formation of the Commission in Industry and Commerce by the government in 1917 which proposed a positively effective fiscal policy. Incentives were, thus, offered through the tax system. Cotton factories were supported by means of subsidies, protective tariffs and the provision of cheap credit.[18] The second major development was the establishment of Bank Misr in 1920 which gave a significant stimulus to Egyptian industry in general and to the cotton textile industry in particular. One of its main objectives was the supporting and fostering of Egyptian Industry. The Misr Group of industries produced chemicals, pharmacenticals, edible oil, cement and, above all, textiles, for Misr spinning and weaving firms alone produced about 60 percent of the output of textiles and employed 53 percent of the labor force engaged in the organized sector of textile

---

[18] Charles Issawi, Egypt: An Economic and Social Analysis (London: Oxford University Press, 1947), pp. 82-83, Patrick O'Brien, op. cit., p. 55, and A. E. Crouchly op. cit., p. 227.

production.[19]

B. The 1930 Tariff Reforms

The real stimulus to Egyptian industry came in 1930, when Egypt obtained its fiscal autonomy and became free to follow an independent customs policy after the espiration of the last treaty which bound Egypt to an open door policy. It protected domestic production from foreign competition by raising the tariffs on imported goods from 8 percent to 12 percent, a change which has continued ever since.[20]

The tariff reform marked the great shift towards large-scale industrialization. The following statistics on imports, shown in Table 2.1 serve to throw some lignt on the development which took place in industry after the tariff reform. Compared to the import pattern of 1913, that of 1938 indicates and increase in certain imported manufactured goods.

---

[19] In 1922, the government began to give loans to industrialists. Most of the financial aid supplied by the state went to Mist Companies. Patick O'Brien, op. cit., p. 92.

[20] Already during the last years of Mohamed Ali's reign the Ottoman Porte opened Egypt to penetration by foreign merchants, Patrick O'Brien, op. cit., p. 43, and Charles Issawi, Egypt in Revolution, p. 22. See also National Bank of Egypt, "The Cotton Textile Industry in Egypt," Economic Bulletin, Vol. iv, No. 1, 1951, p. 95.

TABLE 2.1

IMPORTED ITEMS IN 1938 EXPRESSED AS A PERCENTAGE OF 1913 IMPORTS

Machinery and Raw Materials	%	Finished Goods	%
Lubricants	1,403	Iron Bedsteads	2
Silk Yarn	1,012	Leather shoes	6
Precision Instruments	629	Furniture (Value)	11
Mazout	590	Tarbouches	13
Vegetable Oils for Industry	516	Tanned Leather	22
Iron Bars	331	Cement	24
Machines Value	313	Cotton Yarn	29
Cast Iron	281	Matebes Value	40
Woollen Yarn	180	Glassware	45
		Soap	51
		Cotton piece goods	58
		Beer	76

Source: Schaty, "Le Developpement Industriel d'Egypte," Journal du Commerce (Alexandria, 8 June, 1940), quoted in Cahrles Issawi, Egypt: An Economic and Social Analysis (London: Oxford University Press, 1947), p. 83.

With respect to individual commodities, the quantity of imported cotton yarn decreased by 29 percent from the quantity imported in 1913. Similarly, imports of cotton piece goods (cotton fabrics) in 1938 decreased by 59 percent compared to the quantity imported in 1913, thus indicating an increase in domestic production which, as we shall see, served to satisfy a larger proportion of the domestic demand for cotton textiles.[21]

[21] Charles Issawi, Egypt, p. 83.

1. The Development of Cotton Textile Industry[22]

a. Expansion in Cotton Textile Production:

In 1930 the output of public goods was nearly 25 million square metres.[23] By 1937 the output of cotton cloth had reached 25.53 million square metres, about one half of which had been woven on handlooms all over the country. This represented 30 percent of total final consumption. The output of piece goods kept increasing until it reached 150 million square metres in 1939, out of which 40 millions were produced by handlooms.

Output of cotton yarn reached 36 million pounds per annum in 1937.[24]

b. Domestic Consuption of Cotton:

Another indication of the growth in the cotton textile industry during the period 1930-1939 is the quantity of raw cotton consumed domestically. Before 1930, less than 1 percent of the cotton crop was

---

[22] Besides the cotton textile industry, the main industries during this period were the mines and quarries, cotton industries other than textiles, cotton seed oil and soap milling, sugar, cigarettes, fisheries, other spinning and weaving and electricity. Charles Issawi, Egypt, p. 83.

[23] Ibid., p. 86.

[24] A. E. Crouchly, op. cit., p. 228, (in Crouchly the figure is 83 million yards but here it has been transferred into square metres to enable us to compare it with production in other years).

retained[25] while all the rest was exported. In 1936 the total retained cotton amounted to 450 thousand kantars, representing 5 percent of the total crop[26] and by 1939/40 it had reached 8 percent.

The following table indicates the increase in the amounts of raw cotton consumed domestically.

TABLE 2.2

THE QUANTITY OF RAW COTTON CONSUMED DOMESTICALLY FROM 1928/29 - 1938/39

Years	Quantity in Kantars (000)	Annual Rate of Increase (%)
28/29	62	..
29/30	45	-27.5
30/31	65	44.4
31/32	111	70.7
32/33	256	130
33/34	262	2.3
34/35	359	50
35/36	437	10
36/37	511	16
37/38	720	40
38/39	753	4.5

Source: International Fair for Egyptian Cotton, Egypt's Cotton and Economics (Cairo: Al Ahram, 1958), p. 97.

c. The decrease in the domestic imports of the cotton textiles

The following Table 2.3 shows the five yearly averages of the quantity and value of the domestic

---

[25] With the exception of the Mohamed Ali period, when the quantity of raw cotton retained domestically reached 25 percent. A. E. Crouchly, op. cit., p. 69.

[26] A. E. Crouchly, op. cit., p. 228.

imports of yarn and cotton goods. The table shows a continuous decrease in cotton textile imports from 1925 to 1946.

TABLE 2.3

QUANTITY AND VALUE OF THE DOMESTIC COTTON TEXTILE IMPORTS

Yearly Average	Quantity in Thousand Tons	Value	
		In Million L. E.	Percentage of Total Imports
1910/14	31.2	3.9	15.4
1920/24	35.4	13.7	23.1
1925/29	33.1	8.0	15.0
1930/34	27.2	4.4	13.5
1935/39	21.3	3.7	10.7
1946	4.5	5.0	3.5

Source: National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, p. 100.

The five years that followed 1930/34 are a better indication of the downward shift in the demand for textile imports, since the period 1930/34 represents a general fall in demand as a result of the Great Depression. It is significant that the quantity of imports decreases markedly in spite of the growth in population from 12 million in 1910 to 20 million in 1950. The natural increase in cotton textile consumption accompanying this rapid population growth thus attests to the development and expansion in domestic cotton

textile production which had taken place during that period.[27]

Although the 1930 Tariff constituted support and protection for the cotton industry leading to its expansion and growth, nevertheless the industry was suffering from being forced to use domestic high-quality long and medium staple cotton as its raw material due to the prohibition on importing raw cotton.[28] The use of high quality Egyptian raw cotton in the production of coarse cloth was a factor which affected the competitiveness of the industry.[29]

C. World War II and the Egyptian Industry

The restricted imports during World War II, the additional demand of the Allied Troops and the consequent rise in prices provided a great stimulus to the domestic manufacturing sector. As a result, the output of textiles more than doubled, while

---

[27]National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, pp. 95-105.

[28]The importation of raw cotton was prohibited by Law No. 1, 1916. The Egyptian textile industry was thus compelled, and still is, to use domestic raw cotton. The reason for the promulgation of this law was to protect the main crop from plant diseases which might be carried with imported raw cotton. National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, p. 100., and Bent Hansen and Girgis Marzouk, Development and Economic Policy in U.A.R. (Egypt) (Amsterdam: North-Holland Publishing Company, 1965), p. 153.

[29]This point will be discussed in Part III, Chapter V.

production in the second major industry--food processing--rose more slowly.[30]

Estimates of the value of the industrial output are very scarce. In 1940 the value added for the whole industry has been estimated at L.E. 40.5 million.[31]

The index of the net profit in industry rose from 114 in 1938 to 154 in 1940, and to 125 in 1941.[32]

Table 2.4 below shows the value added generated in the various branches of industries in the years 1945-1954. It is clear from this table that the major increase in the total industrial value added during this period was concentrated in the branches of a) food, drink, and tobacco and b) spinning and weaving. (The food processing and the textile industries constituted nearly 60 percent of the total industrial output in 1945.) The remaining increase was exhibited in the construction materials, petroleum refining and metal products industries.[33]

---

[30]Donald Meade, Growth and Structural Change in the Egyptian Economy (Homewood, Illinois: Richard D. Irwin Inc., 1967), p. 100.

[31]The term "Industry" includes mining and building, but excluded transportation. Charles Issawi, Egypt, p. 88.

[32]Ibid., p. 91.

[33]Ibid., p. 102.

TABLE 2.4

INDUSTRIAL PRODUCTION:
VALUE ADDED BY SECTORS AT CONSTANT 1954 PRICES
(IN L.E. 000)

	1945	1947	1950	1954
Consumer Goods:				
Food, Drink & Tobacco	38188	42509	54915	58990
Ready-Made Clothing	3963	3807	3690	3885
Furniture	1154	1239	2778	4274
Spinning & Weaving	7898	8902	12000	15189
Others	541	580	710	1490
Total	51744	57097	74093	83828
Producer Goods:				
Basic Chemicals	10448	10345	7823	5147
Cement	966	1434	2290	2758
Basic Metals	0	0	2106	4270
Metal Products	2517	3997	6168	4934
Machinery Repair	4428	5141	5734	8122
Building Materials	939	1007	2036	1868
Others	2223	2676	3406	4205
Total	21521	24600	29563	31304
Others (Mixed & Exports):				
Petroleum Products	5098	5000	8825	9805
Gunning & Pressing	1484	1816	2437	2215
Paper & Printing	1709	2661	3085	3668
Other Industries	2523	2451	2905	3034
Total	10814	11928	17252	18722
General Total	84079	93625	120908	133854

Source: National Planning Committee, Memos Nos. 1 and 22 (Cairo, November, 1959), quoted in Donald Meade, Growth and Structural Change in the Egyptian Economy (Homewood, Illinois: Richard D. Irwin, Inc., 1967), p. 100.

from 1 percent in 1930/31 to 8 percent in 1939/40 and kept increasing to 23 percent of the total crop in 1944/45. As Table 2.5 indicates, the quantity consumed increased from 68 thousand kantars in 1930/31 to 1.067 thousand kantars in 1939/40; that is, it increased by 56.9 percent.

TABLE 2.5

QUANTITY AND PERCENTAGE OF RAW COTTON CONSUMED DOMESTICALLY

Year	Quantity Consumed Kantar (000)	Local Consumption as % of Total Crop
1930/31	68	1
1934/35	273	4
1939/40	653	8
1944/45	1,067	23

Source: National Bank of Egypt, Economic Bulletin, Vol. 1, No. 3, 1948, p. 120.

C. Capital

The number of mechanized spindles in 1950 rose by 51 percent above its 1946 level. The number of mechanized looms installed reached 15,800 by 1950. The handlooms increased by 4.7 percent from 1946 to 1950.[36]

[36] Ibid., p. 66.

TABLE 2.6

IMPORTS OF TEXTILE MACHINERY FROM 1940 TO 1950

Years	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950
Tons	1168	689	1783	392	294	430	7538	13887	17960	11429	6881
000 L.E.	108.4	104.3	120.5	80.4	87.2	130.5	1438	4391.5	4264.9	3123.3	2020.9

Source: National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, p. 97.

The war prevented the purchase of new machinery as well as the repair of old ones. This led to the wearing out of the old machines. Table 2.6 shows the textile machinery imports during this period.[37] It indicates that imports of textile machinery declined from 1,168 tons in 1940 to 430 tons in 1945; that is, it decreased to 36.8 percent of the 1940 level. In 1950 imports increased to 1600 percent compared to 1945 and 589 percent compared to 1940.

It is worth noting also that the capital investment in the cotton textile industry was estimated by the Federation of Industry to be approximately L.E. 25 million in 1950.[38]

d. Employment

According to the 1945 census, the number of persons employed in industry, as a whole, amounted to 316,144 persons, while the number employed in textile industries alone amounted to 117,272 persons.[39]

In 1950 the leading cotton mills (which were members of the Federation of Industries) amounted to 33 mills, employing 65 thousand workers working in

---

[37] National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, pp. 97-99.

[38] This figure is believed to be an understatement, as it is based on the balance sheets in which the plants were heavily written off during the war and post-war years. National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, pp. 97-98.

[39] National Bank of Egypt, Economic Bulletin, Vol. 1, No. 11, 1948, p. 120.

three-hour shifts.[40]

e. Marketing

i. Domestic consumption of cotton textiles

Per capita consumption of domestically produced and imported cotton goods is shown in Table 2.7. This table shows that domestic production had more than compensated for reduced imports. This is evident from a comparison of the situation in 1937, when imports of cotton goods by far exceeded production, with the situation in 1950, when production exceeded imports significantly. Moreover, the fact that per capita consumption of cotton goods in Egypt approached three kilograms by the end of World War II demonstrates the fact that it still lagged behind when compared with other countries.

During the post war years, per capita consumption was nearly 14 kilograms in the United States of America, 8 kilograms in Belgium, 7 kilograms in Switzerland and 6.5 kilograms in the United Kingdom. Per capita consumption of cotton goods in the Far East, however, was lower than that in Egypt; it was 2 kilograms for India, and Pakistan and 1.2 kilograms for Ceylon.[41]

---

[40] Ibid., p. 98.

[41] National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, pp. 102-103. The per capita consumption of cotton textiles has not changed much up to 1967/68 (2.4 kg.). Central Agency for Public Mobilization and Statistics, Statistical Indicators, 1952-1969 (Cairo: 1969), p. 253.

TABLE 2.7

PER CAPITA CONSUMPTION OF COTTON GOODS IN EGYPT

	1937	1938	1948	1949	1950
Local Production of Yarn	18.0	20.5	49.7	57.9	53.4
Imported Yarn	.7	.8	.3	-	.1
	18.7	21.3	50.0	57.9	53.5
Less Exported Yarn	1.9	.4	-	4.7	5.3
Net Yarn Supply	16.8	20.9	50.0	53.2	48.2
Less 2½% Yarn Wasted in Process of Weaving	.4	.5	1.3	1.4	1.2
	16.4	20.3	48.7	51.8	47.0
Production of Cotton Goods Plus Imported Cotton Goods	22.5	17.6	4.8	4.7	5.0
Total Available Supply	38.9	37.9	53.5	56.5	52.0
Population in Millions	15.9	16.1	19.3	19.5	19.7
Supply per Capita in Kilograms	2.45	2.36	2.77	2.90	2.63

Source: National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, p. 102.

ii. Exports of the cotton textile industry

It is apparent from the previous section that the spinning and weaving industry expanded greatly during World War II and in the post war period. Towards the end of 1949, however, the Egyptian cotton textile industry faced difficulties resulting from the following factors:

a) the partial resumption of cotton textile imports,

b) the accumulation of a surplus of cotton products which had to be exported, and consequently,

c) obstacles facing the exportation of cotton yarn and fabrics as a result of their high prices, which in turn stemmed from the facts that (1) the Egyptian factories were forced to use the expensive Egyptian raw cotton and (2) some yarn and fabrics produced in Egypt were inefficiently produced compared to foreign products.[42]

At that time, the production of fine quality cotton textiles was technically hindered by the lack of advanced machinery, and hence the surplus of coarse materials production was perpetuated.

---

[42]National Fair for Egyptian Cotton, op. cit., p. 33.

This position improved greatly when, in 1949, a subsidy was decided upon to enable domestic mills to export their surplus production. The government appropriated an export subsidy of L.E. 500 thousand in its budget. The subsidy was to make up for the cost difference between using the Egyptian Ashmouni and Indian and American cotton according to the counts (grade or quality) of the produced textiles. This subsidy would enable the decrease of cotton textile prices in export markets. This resulted in an increase in textile exports from a negligible quantity in 1948 to 4.7 million kilograms in 1949 and to 5.3 million kilograms in 1950,[43] or a 12 percent increase between 1949 and 1950..

For protection reasons, too, import duties on yarn and fabrics goods were raised in 1949. Efforts were also made to encourage the production of fine cloth by means of facilitating the importation of required machinery.

Suggestions were advanced for solving textile marketing problems to the effect of using cheap imported

---

[43] Although trade statistics during this period indicate that both textiles production and imports were increasing, the increase in domestic production was import-substituting based on the assumption that with the constant rate of growth of demand, if domestic production had not increased, imports would have had to increase even more than they did. Donald Meade, op. cit., p. 102.

short-staple cotton which would lower costs and consequently the prices of domestically produced cotton goods. This would allow for an expansion in the domestic and external demand. Major objections to this suggestion centered around the fact that it would generate harmful effects resulting from adverse competition for Egyptian cotton. Furthermore, contemporary machinery was only suitable for the manufacture of Egyptian cotton and considerable technical changes would have to be introduced before the domestic industry could utilize imported raw cotton in the production of cotton textiles. It was also suggested by experts on the subject that further expansion depended primarily on the expansion of the domestic market. Another suggestion was the production of finer quality cotton cloth which might find markets in neighboring countries. As we shall see later, however, the problems remained unsolved, and none of these solutions were adopted.

In addition to the relatively high price of Egyptian raw cotton, another factor affected the competitive position of the Egyptian cotton textile industry. This was the relatively high cost of

labor.[44] It was estimated that before World War II one worker attended up to four automatic looms, while in 1950 he could take charge of 16; thus 16 persons could attend 1000 spindles. If we compare Egyptian figures with productivity elsewhere, we find that in the United States at that time 4 people were required to attend to 1000 spindles, while in Western Europe the corresponding figure was nearly 5.[45]

Summary

Part I of this study reviewed the development of the cotton textile industry from the beginning of the nineteenth century till 1952, tracing the major policies and impacts which affected and shaped the course of its development in the past, as well as the major problems that it faced during the abovementioned period.

In Part II an attempt is made to prove why the cotton textile industry should be considered a

---

[44] In a comparison between labor productivity in the Egyptian textile industry and that in England for 1949, it was found that Egyptian wages in the final stages of the production process accounted for only from 30.60 percent of the English wages, but the labor costs on each machine in Egypt were almost double or three times the same costs in England. Zakaria Nasre, The Egyptian Economy: Its Structure and Development (Cairo: Maktabat A. Wahba, 1958), p. 77. (Arabic.)

[45] Assuming that the machinery used and technology were the same. National Bank of Egypt, "The Cotton Textile Industry in Egypt," Economic Bulletin, Vol. IV, No. 1, 1951, pp. 100-103.

leading industry in Egypt. Chapter Three examines the relative importance of the textile industry in general and that of cotton textiles in particular among the other industries in the Egyptian economy during the 1952-1970 period.

Chapter Four presents an analysis of the present interdependence between the textiles industry and the other sectors of the economy.

PART II

COTTON TEXTILE INDUSTRY AS A LEADING INDUSTRY IN EGYPT

CHAPTER III

STATUS OF THE COTTON TEXTILE INDUSTRY IN THE EGYPTIAN INDUSTRIAL SECTOR 1952-1971

A. The Industrial Policy

At the beginning of the 1952 Revolution the government was aware of the urgent need for industrialization. The economic policy was directed towards this objective. Tariffs were raised on competitive imported goods, and customs duties on raw materials and capital goods were reduced. In addition, the newly formed joint-stock companies were exempted from profit tax for a period of seven years. Profits from new share issues by existing companies were exempted from the same tax for a period of five years; while undistributed profits were exempted from 50 percent of the profit tax. Furthermore, the Industrial Bank became more active in lending funds to companies.[1]

The government accorded special attention to the textile industry; it issued laws and provided facilities for its support. Owners of factories were motivated by

---

[1] Patrick O'Brien, The Revolution in Egypt's Economic System, from Private Enterprise to Socialism (London: Oxford University Press, 1966), pp. 70-72.

means of subsidies to sell cotton yarn and fabrics domestically and abroad. Hoping to avoid sporadic crises, the government decided to regulate the cotton industry in a way that would enable it to face competition in both domestic and foreign markets in order to protect it from economic fluctuations.[2]

In 1953, the government established the Consolidation Fund for Cotton Yarn and Fabrics Industries, to support cotton textiles industries in Egypt.

In 1954, the government cotton committee was authorized to purchase from farmers raw cotton required for intermediate consumption in order to stabilize the prices of raw cotton used in the spinning and weaving industry, thus providing, each factory its requirements of the various cotton grades.[3]

Between 1957 and 1960, state control over private enterprise was noticeably extended both in range and intensity. In 1957, the newly formed Ministry of Industry prepared an Industrial Five-Year Plan. The plan target was to increase the annual rate of growth of industrial production from 6 to 16 percent per annum

---

[2]Later in 1961 the whole yarn industry was transferred to the public sector, the Egyptian Corporation for Spinning and Weaving. (International Fair for Egyptian Cotton, Egypt's Cotton and Economics (Cairo: Al Ahram, 1958), pp. 32-33).

[3]Ibid., p. 33.

over the plan period, thus raising its contribution to national income from 11 to 19 percent by the end of the five years.[4]

Direct state intervention was practiced following the 1961 nationalisation decrees which put nearly 80 percent of the total industrial sector under government control. The general economic policies at the same time also strengthened the state's control over the private sector, thus keeping it closer to the fulfillment of the objectives and targets of the first comprehensive Five-Year Plan 1960/61-1964/65.[5]

The strategy of industrial development during the seventies aims mainly at achieving rapid economic expansion. This means, as regards investment, applying an intensive capital investment policy with concentration on capital industries, which is opposite to the investment contraction policy followed during the period 1966/67 and 1967/68, which led to a decrease in total National Product and hence in per capita income. In spite of this investment contraction policy, the total investment in the industrial sector amounted to

---

[4] Patrick O'Brien, op. cit., pp. 72-84.

[5] According to the 1961 decrees, 44 companies and establishments other than banks and insurance companies were to be completely taken over by the state, the state was to share in ownership of 82 companies and establishments. United Nations, Economic Survey of Africa, Vol. III, III (New York, 1968), p. 54.

L.E. 900 million during the sixties. It is expected that by the mid seventies the relative importance of the capital industries will rise to 46.8 percent of total industrial production as compared to 38.2 percent in 1969/70. Thus, the importance of consumer goods industries is expected to decline from 61.8 percent to 53.2 percent.

The average annual rate of growth in industrial product is expected to reach 10 percent during the seventies as compared to 8 percent during the sixties. The capital industries are expected to increase at even higher rates of growth.[6]

B. The Status of the Textile Industry in the Economy - 1952-1960

In 1952 a modest industrial sector comprising 3,445 establishments, employing 273,156 persons and producing 9-11 percent of the national income, was already existent. Manufactuing industries constituted the most significant branch of this industrial activity, and they absorbed almost 87 percent of the labor force engaged in industry. Textile industries[7] ranked first

---

[6] Dr. Said Gab Allah, "Strategy of Economic Development during the 70ties," L'Egypte Contemporaine, Year 62, Vol. 343, Cairo, June 1971, p. 6 (Arabic).

[7] It is significant to note that the cotton textile production alone accounts for more than three fourths of the total textile production. Central Bank of Egypt, Economic Review, Vol. VI, No. 1, 1966, p. 289.

among the manufacturing industries, employing nearly 32 percent of the industrial labor total and contributing 25 percent of the industrial value added. Second in rank were the food industries which employed 49,596 persons and produced one sixth of the industrial value added.[8]

In terms of total manufacturing production, textiles industries grew at an annual rate of 7 percent between 1951 and 1961, while production in food industries grew at an annual rate of 3.1 percent, chemicals at 5.6 and non-metallic products at 5.2.

In terms of exports, the following Table 3.1 shows that cotton textiles were a principal item among manufactured goods exports, contributing 31 percent of the total value.

TABLE 3.1

THE VALUE AND PERCENTAGE OF EXPORTS IN 1952-1960

Year	1959		1960	
Exports	Value	%	Value	%
Raw Cotton	126414	85	134745	70.7
Cotton Yarn	3459	2.4	9119	4.7
Cotton Fabrics	915	.7	6693	3.7
Rice	852	.6	9849	5.2
Onions	2597	.2	3575	2
Petroleum	-	-	2898	1.6
Sugar and Sugar Products	357	.2	1985	1
Linen	395	.2	629	.5

Source: Central Agency for Public Mobilisation and Statistics General Statistics and Anal. Studies, Vol. 31, 3rd year, July, 1965, p. 28.

The period following 1954 witnessed a noticeable growth in manufacturing output recording an increase of 50 percent between 1954 and 1960. Food and textiles industries were still dominant, both accounting for nearly 60 percent of the total value added. Significant diversification was taking place in the other branches of the industrial sector, however. Production of fertilizers and other chemicals was growing rapidly and petroleum output nearly doubled during this period.[9]

The remarkable expansion of the industrial sector that took place during this period has manifested itself in the continuous rise in the industrial output recorded by the general index of industrial production. It shifted from 91.1 in 1951 to 141.5 in 1959, as shown in Table 3.2

Textiles production showed an even higher rate of growth, rising by approximately 67 percent between 1951 and 1960.[10]

The period 1960-1965

By the first of July 1960 the U.A.R. has adopted the First-Five Year Comprehensive Plan for Economic and Social

---

[9]Donald Meade, Growth and Structural Change in the Egyptian Economy (Homewood, Illinois: Richard D. Irwin, 1967), pp. 103-104.

[10]National Bank of Egypt, Economic Bulletin, Vol. XV, Nos. 2 and 3, 1962, pp. 132-133.

TABLE 3.2

INDEX OF INDUSTRIAL PRODUCTION (1954 = 100)

6

	1951	1952	1953	1954	1955	1956	1957	1958	1959
Industries of Agricultural Origin	114.4	145.3	129.2	100	134.0	105.6	132.1	154.5	166.6
Mining, Quarrying and Crude Oil	116.4	118.3	111.5	100	103.6	95.8	117.6	153.3	154.0
Manufacturing	89.0	91.8	93.6	100	109.4	117.2	123.4	134.1	137.8
Spinning and Weaving*	83.2	89.0	91.4	100	106.0	115.3	122.8	134.4	138.9
Other Manufacturing	93.8	94.2	95.3	100	112.2	118.8	123.9	123.9	136.8
Electricity	49.1	50.7	96.8	100	113.8	124.6	136.5	153.6	171.4
General Index	91.1	95.0	96.7	100	110.0	115.1	123.7	157.6	141.5
Excluding Agriculture	90.2	92.9	95.4	100	109.0	115.5	123.3	136.6	140.9
Excluding Agriculture and Electricity	91.6	94.4	95.3	100	108.8	115.1	122.9	136.0	139.3

*Includes cotton ginning and pressing

Source: National Bank of Egypt, Economic Bulletin, Vol. XV, Nos. 2 & 3, 1962, p. 132.

Development 1960/61-1964/65.[11]

In 1959/60, the income generated in the industrial sector accounted for nearly 20 percent of national income, while industrial production contributed 42.7 percent of the total national production.[12] In 1961, manufacturing industries produced 95.0 percent of the value added, while they used 98.8 percent of the total value of raw materials and fuel consumed in the industrial sector. The average number of workers employed in manufacturing industries amounted to 94.5 percent of total industrial employment, receiving 90.6 percent of the total wages and salaries.

Within the manufacturing sector, the spinning and weaving industry ranked first, contributing 39.2 percent of the total value added and 35.1 percent of the total wages and salaries.

Within the manufacturing sector, the spinning and weaving industry ranked first, contributing 39.2 percent of the total value added and 35.1 percent of the total manufacturing production.

---

[11] This Plan aimed at doubling real National Income during the period 1959/60-69/70, The National Income Growth Target till 1965 was 40%. This was nearly reached. Gross Domestic Income, measured at 1959/60 prices, has increased by the end of the plan period by 37%. National Bank of Egypt, Economic Bulletin, Vol. XXII, No. 1, 1969, p. 24.

[12] Central Agency for Public Mobilization and Statistic General Statistics and Analytical Studies, Vol. 68, year 7, September, 1969, pp. 58-59 (Arabic).

Food, chemicals, metal products and tobacco industries contributed 14.2, 12.3, 6.1 and 4.7 percent respectively to total value added generated in the manufacturing industry.[13]

The real income generated in the industrial sector (manufacturing, mining and electricity) increased during the first plan period at an average annual increase of 8.9 percent.

Table 3.3 shows the rate of growth of the various industrial activities in the industrial sector during the plan period. The highest rate of growth was recorded in electricity, 18.5 percent, followed by mining, 11.8 percent, and manufacturing, 8.4 percent. In spite of this relatively lower rate of growth in manufacturing, the rate of growth in some capital industries has exceeded those of electricity and mining. Among the industries which had the highest average annual rate of growth of real income was the machine repair industry, growing at 35 percent, the paper industry, 48.6 percent, chemical products 25.1 percent, metal industries 12.2 percent and the manufacturing and repairing of non-electric machines 16.7 percent. It is thus obvious from the table that a high rate of growth took place in many capital goods industries.

---

[13]National Bank of Egypt, "Industrial Census of 1961," Economic Bulletin, Vol. XV, No. 1, 1962, pp. 54-57.

TABLE 3.3

RATES OF GROWTH OF REAL INCOME OF INDUSTRY, MINING AND EIECTRICITY DURING THE FIRST FIVE-YEAR PLAN (1960/61-1964/65) IN PERCENTAGE

Sectors	Plan Period					Average Annual Rate of Growth
	First Year 1960/61	Second Year 1961/62	Third Year 1962/63	Fourth Year 1963/64	Fifth Year 1964/65	
Mining	30.7	5.5-	17.3	11.3	5.3	11.8
Mining of Petroleum Oil	35.3	5.2	25.7	11.7	7.2	17.0
Extraction of Mineral and Other Materials	23.6	5.9-	3.1	10.6	1.4	8.9
Industry	10.3	9.5	5.6	12.3	4.1	8.4
Food and Drink Industry	1.9	3.4	5.0-	15.2	.6	3.2
Tobacco Industry	4.1	5.3	6.3	1.2	8.1	5.0
Ginning and Pressing Industry	5.1	29.3-	24.1	2.8	13.5	3.2
Spinning and Weaving Industry	6.5	5.8	7.8	2.0	1.8	4.8
Ready-Made Clothes, Shoes Industry	5.0	30.2	6.5	15.0-	4.8	6.3
Wood Industry	52.5	3.2	25.0-	45.8	1.0	25.5
Paper Products Industry	15.4	126.7	61.8	36.4	2.7	48.6
Printing and Publishing Industry	2.1-	7.4	29.4	3.0	2.2	8.0
Leather and Leather Products Industry	70.4	175.0	22.7	-	-	25.5
Rubber Industry	8.7	2.8	6.3	20.6	2.4	12.2
Chemical Products Industry	25.2	20.7	30.4	30.5	18.7	25.1
Petroleum Products Industry	9.9	8.0	6.8	17.0	11.5	10.7
Non-Metallic Industry	5.3	15	29.6	3.4	4.5	11.6
Basic Metal Industry	16.4	17.6	10	11.8	.8	11.8

TABLE 3.3--CONTINUED

RATES OF GROWTH OF REAL INCOME OF INDUSTRY, MINING AND ELECTRICITY DURING THE FIRST FIVE-YEAR PLAN (1960/61-1964/65) IN PERCENTAGE

Sectors	Plan Period					Average Annual Rate of Growth
	First Year 1960/61	Second Year 1961/62	Third Year 1962/63	Fourth Year 1963/64	Fifth Year 1964/65	
Metal Industry	-	31.8	2.3	14.1	17.5	12.2
Manufacturing and Repair of Non-Electric Machines	5.6	-	21.1	87.0	30.2-	16.7
Manufacturing and Repair of Electric Machines	130.0	11.6-	13.1	40.6	3.1	35.0
Transportation Industry	53.8	22.0	6.6-	2.6	17.1	10.9
Other Industries	60.0	1.4	32.8	24.4	5.9	9.6
Electricity	24.5	33.6	12.9	1.1	20.4	18.5
Total Aggregate of Mining Industry and Electricity	11.9	9.5	6.6	11.6	4.9	8.9
National Economy	6.1	3.5	8.9	8.7	5.5	6

Source: Said Ahmed el Bawab, Determinal Factor in the Rate of Growth in the Development of Industry, Mining and Electricity during the Five-Year Plan Period (60/61-64/65) in U.A.R., Memo 780 (Cairo: 1967), p. 4 (Arabic).

With respect to industries directly catering for final consumption, the highest average annual rate of growth of real income was recorded by the food and textiles industries, namely 3.2 percent.

It is worth noting also that this high rate of growth of real income in industries expanding the productive capacity of the economy has helped to supply other industries with their requirements of intermediate and capital goods.

A comparison of the value of industrial production in 1965 with that in 1952 reveals an increase of 273.9 percent which reflects the large strides made during this period. The manufacturing industries, in 1965, contributed 84 percent of total Industrial Production, and within these industries spinning and weaving accounted for 30.8 percent of the total value of Industrial Production, followed by foodstuffs industries, 24.2 percent, engineering 74.9 percent, and chemicals 11.4 percent.

As the following Table 3.4 indicates, the manufacturing sector did undergo some changes between 1952 and 1965. The spinning and weaving industries continued to rank first, followed by foodstuffs, while the petroleum industries, which ranked third in 1952, became the

TABLE 3.4

VALUE OF INDUSTRIAL PRODUCTION* 1952-1963
(L.E. MILLION)

	1952	1964	1965	Percent Rate of Increase between 1964 and 1965	Percent Rate of Increase between 1952 and 1965
Manufacturing					
Textiles	85	332	362	9	325.9
Foodstuffs	122	256	284	10.9	132.8
Chemicals	20	123	134	8.9	570.0
Engineering	30	165	175	6.0	483.3
Building Materials and Ceramics	9	29	31	6.9	244.4
TOTAL	266	905	986	8.9	270.7
Mining	4	11	11	-	175.0
Petroleum	34	118	122	3.4	258.8
Electric Energy	10	51	55	7.8	450.0
GRAND TOTAL	314	1085	1174	8.1	273.9

*
These figures do not include cotton ginning and pressing cereals, milling bakeries, tea packing, printing, government workshops and the output of military works for military purposes. Central Bank of Egypt, op. cit., pp. 157-159.

Source: Central Bank of Egypt, "Industrial Development in the U.A.R. in 1965," Economic Review, Vol. VI, Nos. 2 and 3, 1966, p. 159.

fifth in 1965, following the engineering and chemical industries.[14]

By 1969/70, the total industrial production accounted for approximately 42.5 percent and the industrial income 21 percent of the national income, while the value of textiles production accounted for 30 percent of the total value of industrial production, as shown in Table 3.5.[15]

C. The Development of the Cotton Textile Industry - 1952-1971

Since the beginning of the 1952 Revolution, the Egyptian government has been conscious of the vital role which the textile industries play in the economy. The realization of the major objective of expanding the quantity of cotton manufactured domestically has been reflected in the constant rise in cotton textile products, whereas in 1952 the amount of cotton consumed domestically was 1,298 thousand kantars,[16] it reached 3.6 million

---

[14]Central Bank of Egypt, "Industrial Development in U.A.R. in 1965," Economic Review, Vol. VI, Nos. 2 and 3, 1966, pp. 157-159, and Central Agency for Public Mobilization and Statistics, Annual Book of General Statistics, 1952-1970 (Cairo, 1971), p. 88 (Arabic).

[15]Central Agency for Public Mobilization and Statistics, Yearbook 1952-1970, op. cit., pp. 238-239 (Arabic).

[16]The Egyptian Corporation for Spinning and Weaving, 1st Annual Report, op. cit., p. 110.

TABLE 3.5

DEVELOPMENT OF THE VALUE OF INDUSTRIAL PRODUCTION*

(Value in L.E. Million and in Current Prices)

Industrial Production	1952	1965	1966	1967	1968	1969	1970
Petroleum Products	34.2	101.1	103.2	99.7	119.4	110.2	133.2
Mining Products	3.6	10.9	10.1	11.9	13.8	10.8	---
Chemical and Medicine Products	20.5	140.0	142.2	130.4	152.4	164.2	150.5
Food Products	122.3	285.4	208.7	342.5	368.2	425.2	482.8
Engineering and Electronic Products	30.1	160.0	155.6	176.4	202.8	233.2	232.2
Construction Products	8.4	30.8	34.6	34.6	37.6	44.5	88.0
Spinning and Weaving Products	84.6	357.8	383.4	389.1	423.2	449.9	470.3
Electric Power	10.1	54.7	48.4	60.1	65.8	73.2	---
Total	313.8	1140.7	1188.4	1244.7	1383.2	1511.1	---

*The table does not include cotton ginning and pressing, cereals, milling bakeries, tea packing, printing, government workshops and the output of military works for military purposes.

Source: Central Agency for Public Mobilization and Statistics, Yearbook of General Statistics, 1952-1970 (Cairo: 1971), p. 88 (Arabic).

kantars by 1968.[17]

Production

The development in cotton textiles production can be traced through Table 3.6 and Table 3.7. Cotton yarn production rose from 25,700 tons in 1952 to 105 thousand tons in 1960, recording approximately 97 percent increase. In 1965, production reached 138,120 tons[18] with a percentage increase of approximately 150 percent over the 1952 level.

Table 3.7 furthermore shows that cotton yarn production had increased to 163 thousand tons by 1968/69.

The output of cotton fabrics, which was 40,080 tons in 1952, rose to 75 thousand tons in 1960. Production rose to 88,880 tons in 1965 recording an increase of 122 percent over 1952. While in 1968/69 the fabrics output reached 96 thousand tons, as appears in Table 3.7.

---

[17]In 1968, the amount of raw cotton manufactured domestically was 46 percent of the total cotton crop. Central Agency for Public Mobilization and Statistics, Statistical Indicators, 1952-68 (Cairo, 1969), p. 129 (Arabic).

[18]Prime Minister of Industry and Mineral Resources, Industry Report on the Follow-Up of the Five-Year Plan in 1964/65 (Cairo, 1965), p. 64 (Arabic) and National Bank of Egypt, Economic Bulletin, Vol. XXIV, No. 2, 1971, Statistics Section (Arabic).

TABLE 3.6

DEVELOPMENT OF ANNUAL PRODUCTION OF COTTON SPINNING AND WEAVING (METRIC TONS)

Year	Spinning		Weaving	
	Quantity	Index No.	Quantity	Index No.
1952	55700	100	40080	100
1957	78200	140,0	46200	140,2
1958	85000	152,6	58500	146
1959	91111	163,6	62531	156
1960	105000	188,5	75000	187,1
1961	110952	199,2	69385	173,1
1962	120768	217,0	80096	202,1
1963	122896	220,0	80109	200
1964	130791	235,0	87981	220
1965	138120	248,0	88880	221,8
1966/67*	152142	273	104034	260
1967/68*	160128	287	95092	237

Source: The Central Agency for Public Mobilization and Statistics, The Statistical Indicators for U.A.R., 1952-1965 (Cairo, 1966), p. 67 (Arabic).

*Source: The Central Agency for Public Mobilization and Statistics, Statistical Indicators, 1952-1968 (Cairo, 1969), p. 107 (Arabic).

TABLE 3.7

ON OF SPINNING AND WEAVING 1959/60-1968/69

0/60	1960/61	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70*
98	108	124	142	152	160	163	164
69	73	84	97	104	95	96	97
7	8	10	10	9	8	9	10
3	3	4	4	3	2	3	3
13	13	15	17	14	12	12	12
8	9	8	8	9	7	7	6
12	18	19	21	14	21	27	27
10	16	16	19	13	20	24	24
3	3	4	4	4	4	4	4
4	5	8	8	6	7	7	9

ow-Up Evaluation of the Economic Growth in 1969/70 (Cairo: 1971),

obilization and Statistics, The Annual Book of General Statistics of 970), p. 83 (Arabic).

"United Nations, The Development of Manufacturing and Industry in Egypt, Israel and Turkey (New York, 1958), pp. 30-31.

23Patrick O'Brien, op. cit., p. 130.

TABLE 3.7

PRODUCTION OF SPINNING AND WEAVING 1959/60-1968/69

Production	Unit	1950/60	1960/61	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70*
Cotton Yarn	000 Tons	98	108	124	142	152	160	163	164
Cotton Fabrics	" "	69	73	84	97	104	95	96	97
Wool Yarn	" "	7	8	10	10	9	8	9	10
Wool Fabrics	" "	3	3	4	4	3	2	3	3
Industrial Silk Yarn	" "	13	13	15	17	14	12	12	12
Industrial Silk Fabrics	" "	8	9	8	8	9	7	7	6
Jute Yarn	" "	12	18	19	21	14	21	27	27
Jute Fabrics	" "	10	16	16	19	13	20	24	24
Blankets	" "	3	3	4	4	4	4	4	4
Cotton Knitwear	Million Dozen	4	5	8	8	6	7	7	9

*Source: Ministry of Planning, Follow-Up Evaluation of the Economic Growth in 1969/70 (Cairo: 1971), p. 11 (Arabic).

Source: Central Agency for Public Mobilization and Statistics, The Annual Book of General Statistics of U.A.R., 1952-1969 (Cairo: 1970), p. 83 (Arabic).

Employment and Capital

Employment in the textiles industry accounted for 32 percent of the total employment in the industrial sector[19] in 1952.

In 1962/63, employment reached 178,751[20] while in 1969/70 employment in textiles industry increased to 233,775 workers in both the public and private sectors,[21] accounting for 38.2 percent of total employment in industry.

The value of capital employed in textiles industry in 1950 accounted for 28.8 percent of total capital employed in manufacturing.[22] In aggregate terms, investment expenditure spent on textile industries amounted to L.E. 43 million during the period 1960-64; out of which L.E. 26,304 thousands were spent on cotton spinning and weaving projects.[23]

---

[19]National Bank of Egypt, Economic Bulletin, Vol. XV, Nos. 2 and 3, 1962, p. 126.

[20]Ministry of Industry, Activities of Industrial Companies in 1962/63 (Cairo, 1964), p. 10 (Arabic).

[21]Number of workers in the public sector was 211237, and the private sector 22538, Central Agency for Public Mobilization and Statistics, Industrial Production Statistics, 4th quarter, 1969/70, June, 1971, p. 3. (Arabic).

[22]United Nations, The Development of Manufacturing and Industry in Egypt, Israel and Turkey (New York, 1958), pp. 30-31.

[23]Patrick O'Brien, op. cit., p. 130.

Marketing

Exports of cotton yarn declined at the beginning of the period 1952-1970, from 9,853 tons in 1951 to 5,395 tons in 1953,[24] i.e., a decrease of 85 percent. Following the Suez Crisis, however, a new record was attained; exports reached 4,305 tons in 1956, a 15 percent increase over 1951 - cotton fabrics exports increased to 3,616 tons in 1956 compared to 1,811 tons in 1951. The industry had been successful in entering new markets, although a number of countries were taking measures against our Egyptian yarn export policy.[25] During the Suez crisis, exports of cotton textiles accounted for nearly 3.4 percent of total exports in 1954, increasing to 5.7 in 1956.[26]

During the fifties production exceeded domestic demand; thus the cotton textiles industry had achieved self-sufficiency. By the sixties, 1962, domestic demand on cotton yarn had reached 99,351 tons, while production was 110,743 tons in 1961. The accumulated stocks of cotton textiles in 1962 amounted to 10,182 tons.[27]

---

[24]National Bank of Egypt, Economic Bulletin, Vol. VII, No. 1, 1954.

[25]Ibid., Vol. X, 1957, p. 118.

[26]Ministry of Industry, Industry after the Revolution, pp. 58-61.

[27]Central Agency for Public Mobilization and Statistics, "Marketing of Cotton Textile Products," Monthly Bulletin, Vol. 12, year 1, 1963, pp. 37-45 (Arabic).

Exports of cotton spinning and weaving represent by far the most significant manufactured exports, and recorded very high rates of increase in the sixties, accounting for 8.9 percent of total exports in 1960, compared to only 3.1 in 1952. The value of exports of this industry, furthermore, rose to 14.9 percent of total exports in 1963/64, and 20.6 percent in 1967/68. Exports of food processing industries by comparison accounted for an average of 2.4 percent of total exports during the 1963/64-1967/68 period.[28]

Tables No. 3.8, 3.9 and 3.10 clearly demonstrate the increasing importance of cotton textiles exports in total exports.

TABLE 3.8

PERCENTAGE OF COTTON TEXTILE EXPORTS IN RELATION TO TOTAL VALUE OF EXPORTS 1952-1964

Exports	1952	1960	1961	1962	1963	1964
Cotton Yarn	2.4	4.7	5	7	8	7.7
Cotton Fabrics	.7	3.7	3.8	4.8	4	4
Linen	.2	.5	.4	.6	.9	.4

Source: Central Agency for Public Mobilization and Statistics, General Statistics, Vol. 31, 3rd year, July, 1965, p. 29 (Arabic).

[28]Central Agency for Public Mobilization and Statistics, General Statistics and Analytical Studies, Vol. 68, 7th year, September, 1969, pp. 55-65 (Arabic).

TABLE 3.9

PERCENTAGE OF CLOTH AND TEXTILE EXPORTS VALUE TO TOTAL VALUE OF EXPORTS 1963/64-1967/68

Item	Years				
	1963/64	1964/65	1965/66	1966/67	1967/68
Percentage of Cloth and Textile exports to Total Value of Exports	14.9	14.6	17.5	19.8	20.6

Source: Central Agency of Public Mobilization and Statistics, General Statistics and Analytical Studies, Vol. 697, 1968 (Arabic).

TABLE 3.10

EXPORTS OF SPINNING AND WEAVING PRODUCTS

	1952		1961		1962		1963		1964		1965	
	Value	Index Number	Value	Index Number	Value	Index Number	Value	Index Number	Value	Index Number	Value	Index Number
Raw Cotton	126414	100	104610	83	83856	66	120928	96	116584	92	146284	110
Cotton Yarn	3459	100	8725	252	11199	224	18178	526	18100	523	31092	399
Cotton Fabric	915	100	7340	802	7542	824	9006	984	8755	957	11627	128

Source: Central Agency for Public Mobilization and Statistics, Statistical Indicators for U.A.R., 1952-1965 (Cairo: 1966), p. 67 (Arabic).

Summary

To recapitulate, the foregoing study of the development of the textile industry during the period 1914-1970 showed it as one of the leading industries in Egypt. The amount of raw cotton manufactured domestically exceeded 46 percent of the total cotton crop in 1968.[29] The percentage value of ready-made clothes and textile exports in relation to total value of exports accounted for 20.6 percent in 1967/68,[30] while total employment in the textiles industry in 1970 amounted to 38.2 percent of the total industrial employment.[31] This, together with the high contribution to industrial production and income makes further development very rational.

The abovementioned discussion leads to the conclusion that the cotton textiles industry, which accounts for over 76 percent of the total production of textiles industry is likely to continue as a leading industry in Egypt.

---

[29] Central Agency for Public Mobilization and Statistics, Statistical Indicators 1952-1968 (Cairo, 1969), p. 129.

[30] Central Agency for Public Mobilization and Statistics, General Statistics and Analytical Studies, Vol. 68, 7th year, September, 1969, p. 59 (Arabic).

[31] Central Agency for Public Mobilization and Statistics, Industrial Production and Statistics, 4th Quarter, 1969/70, 1971, p. 3 (Arabic).

Table 3.11 gives a wider view of the place of the textiles industry in the economy.

TABLE 3.11

PERCENTAGES OF INDUSTRIAL MANUFACTURING AND TEXTILE PRODUCTION AND INCOME IN THE EGYPTIAN ECONOMY 1952-1970

Items	1952	1961	1963	1965	1967/68	1969/70
-Percentage of Industrial Income to National Income	11	20	22	21.4		21
-Percentage of Industrial Production to National Production	-	42.9	43.6	42.9		42.5
-Percentage of Manufacturing Production to Industrial Production	--	95	85	84		
-Percentage of Textile Production to Industrial Production	27		31.2	30.8	34	30
-Percentage of Textiles Income to Industrial Income	25					
-Percentage of Textile Production to Total Manufacturing Production	32	35.1	39	37	39	
-Percentage of Textiles Income to Manufacturing Income		39.2		30.8		

Sources: Statistics used in constructing this table were from the following sources: Central Bank of Egypt, Economic Review, Vol. VI, No. 1, 1966, p. 289. National Bank of Egypt, Economic Bulletin, Vol. XV, Nos. 2 & 3, 1962, pp. 126-131. Ibid., Vol. XXII, No. 1, 1969, p. 24. Ibid., Vol. XV, No. 1, 1962, pp. 54-57. Central Agency for Public Mobilization and Statistics, General Statistics, Vol. 68, 7th Year, 1969, pp. 58-59 (Arabic). Ibid., Yearbook of General Statistics of U.A.R., 1952-1970 (Cairo: 1971), pp. 233-234; 94 (Arabic).

CHAPTER IV

THE INTERDEPENDENCE BETWEEN THE COTTON TEXTILE INDUSTRY AND THE INDUSTRIAL SECTOR

The development of the cotton textile industry has historically had a dynamic impact on the economy of those countries in which it has been established. This was particularly true in the case of Britain and France and more recently in Hong-Kong, Taiwan and India. In the case of Britain, an expanding demand industry such as cotton textiles in the 18th century encouraged short cut devices and inventions to increase production. In 1733, John Kay of Burry introduced his famous invention (flying shuttle) in the weaving process enabling one worker to accomplish the work of two men later the invention was improved leading to the acceleration of fabric production. This invention created an imbalance in the industry, resulting from the shortage of yarn and the increase of unemployment among weavers. This imbalance urged the necessity for spinning inventions. By 1738, John Wyatt and Lewis Paul had introduced a new spinning machine.[34] Another two inventions, Hargreave's spinning

---

[34] F. R. G. Jervis, The Evolution of Modern Industry (London: George B. Harrap and Co. Ltd., 1960), pp. 106-112, and S. Pollard and C. Holmes, Documents of European Economic History (London: Edward Arnold, 1968), p. 289.

Jenny and Arkwright's waterframe enabled the speeding up of the spinning process. Similarly, new technology was introduced in other processes. In America, 1793 saw Whitney's invention of the cotton gin. The mass production of cloth had put a strain as well on the furnishing processes. Berthollet, a Frenchman, had discovered the bleaching method by the action of chlorine, James Watt then introduced it into England. This shows the interconnexion between the various technical inventions.

These textile machines had also an impact on the structure and organization of production. With the introduction of new machinery, there were economies of mass production in all production processes. Mass production necessitated the gathering of workers in a factory, and the provision of the high cost machines, necessary buildings which required large capital resources.[35] Hence, we note how textiles stimulated the production of textile machinery.

The wages earned by the large labor force employed in the industry, furthermore, stimulated consumer demand, including the demand for textiles.

The situation was somewhat different in Egypt, however, where the impact has been less marked. Textile machinery is still not domestically manufactured.[36] This

---

[35] Ibid., pp. 112-138.

[36] With the exception of one company producing the equipment for the textiles machinery and few spare parts. Said Abd El Moutall, The Modern Guide for Corporations and Companies (Cairo, 1969-70) (Arabic).

is due mainly to shortage of sufficient capital, technology, and markets, in addition to the fact that a rapid advance in the techniques of production of textile machinery is taking place which leads to models becoming obsolete quickly.

Nevertheless, the total impact of the cotton textile industry on the domestic economy could be ascertained with an analysis of the pattern of interdependence between this industry and the other sectors of the economy.[37]

This chapter discusses the interdependence between the textile industry and the other industries and sectors of the Egyptian economy. Section A includes a framework of the subsequent analysis of the pattern of interdependence in the economy; also it contains an analysis of the Ministry of Planning's published attempts at constructing input-output tables, with special reference to the position and weight the textiles industry has in the economy. Section B compares the pattern of distribution of the cotton industry, for selected years of the 1954-1967/68 period, among the various components of final demand. Section C discusses the Institute of National Planning Input-Output Tables of 1959, 1960 and 1961; it also presents a reproduced classification of the input-output of the textile industry in 1959/60.

A brief summary then follows.

---

[37] United Nations, Textile Industry, UNIDO Monographs on Industrial Development, Monograph 7 (New York, 1969), p. 58.

A. The Pattern of Interdependence between the Textiles Industry and the Other Sectors of the Economy

1. A Brief Theoretical Review of the Input-Output Analysis

The input-output analysis, for which we are indebted to Professor Leontif,[38] could be considered as a major revolution in the methodology of economic analysis. It mainly seeks to identify the interdependence of the production activities of the industries and the other sectors constituting an economy. This interdependence results from the fact that each industry employs the output of other industries as its input and, in turn, its output may be used as an intermediate commodity, or as a productive factor by other industries. The main problem is to see how much of the product is left for final consumption and how much is used in production.

In this chapter input-output analysis is utilized mainly in undertaking a structural analysis of Egyptian industry to reveal the typical productive and distributive interrelationship which determines the structure of the industrial sector. By comparing the input-output for different years it is possible

---

[38] See Wassily Leontif, The Structure of the American Economy 1919-1939 (New York: Oxford University Press, 1963), p.

to see how this structure changes.[39]

The first step in the structural analysis is to identify the present interrelationship between the various economic units; the second is the direct effects resulting therefrom. A main aspect of structural analysis is the investigation ofthe role of individual industries in the national economy. Thus, the main emphasis in this chapter is to trace the role of the textiles industry in the Egyptian economy and the links which exist between this industry and the other industries and sectors of the economy.

2. The Application of the Input-Output Analysis to Egypt

The attempts to construct input-output tables in Egypt were pioneered in 1954 by the National Planning Committee. The first table was constructed for 1954, a second table was constructed for 1959/60, and the third table for 1963/64. These endeavors at constructing input-output tables have been of great help in conducting the analysis of the pattern of structural interdependence in the Egyptian economy.[40]

---

[39]William Baumol, Economic Theory and Operations Analysis (New Delhi: Prentice-Hall of India Limited, 1970), pp. 479-480. See also Richard Ruggles, An Introduction to National Income and Income Analysis (New York: McGraw-Hill Book Company Inc., 1949), p. 143, pp. 128-131; and Baumol, op. cit., p. 150.

[40]Shafik Youssef, "Input-Output Analysis and its Applicability to Egypt" (unpublished M.A. thesis, American University in Cairo, 1967).

The interdependence among the various sectors of the economy could be detected through the structural analysis showing the dependence of the economy on an industry or on several industries, as well as the dependence of these industries on the products of other industries and sectors. This structural analysis was effected by rearranging the data of the 1954 input-output table, to show the degree of dependency of the individual industries or others, and the weight of various industries on the rest of the economy.[41] The 1954 table was initially divided into 83 x 83 sectors; later this number was reduced to 33 x 33 and 7 x 7 table.

Table 4.1 for 1954 presents the deliveries of each sector of the 33 sectors, to intermediate demand (as inputs to other industries), thus showing its linkage to other industries and sectors to domestic final demand, and to exports. Table 4.2 shows the 1959 input-output table rearranged in the above-mentioned order. It comprises 33 productive sectors. The following presents a comparison of the structure of the Egyptian economy in 1954 and 1959.

a. <u>The Ranking of the Productive Sectors according to their Deliveries to Intermediate, Final Demand and Exports Sectors</u>:

The spinning and weaving industry was among the industries which made significant contributions to

---

[41] <u>Ibid</u>., p. 79.

TABLE 4.1

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR DELIVERIES TO INTERMEDIATE AND FINAL DEMAND SECTORS (WITH IMPORTS) L.E. 1000

	Gross Production Plus Imports (L.E. 1000) (1)	Intermediate Demand (L.E. 1000) (2)	Percent (2)÷(1) (3)	Domestic Final Demand (L.E.1000) (4)	Percent (4)÷(1) (5)	Exports (L.E. 1000) (6)	Percent (6)÷(1) (7)
Basic Metallurgy	20491	19382	94	767	4	342	2
Fertilizers	17359	16178	93	--	-	1181	7
Mining and Quarrying	17669	15502	88	1265	7	902	5
Cement	5665	4820	85	44	1	801	14
Paper and Paper Products	9609	7239	75	2102	22	268	3
Electricity	12383	9082	73	3301	27	-	-
Banking and Insurance	17007	12104	71	3776	22	1127	7
Petroleum Refining	40989	27828	68	12314	30	847	2
Agriculture	416391	258643	62	154579	37	3169	1
Grinding and Processing Grains	84815	50535	60	32530	38	1750	2
Other Services	276098	159762	58	116336	42	-	-
Other Basic Industries	26838	15107	56	10822	40	909	4
Transportation and Communication	92969	46084	50	40505	44	6380	6
Spinning and Weaving	95023	41776	44	45943	48	2304	8
Other Industries	62292	27493	44	30930	50	3869	6
Metal Products	19650	9389	43	11039	54	222	1
Tobacco and Cigarettes	54117	22652	42	41394	58	71	-
Trade and Finance	249854	105579	42	304399	42	39876	16
Manufacturing and Machinery Repair	61023	23257	38	36630	60	1136	2
Dairy Products	45743	15750	38	28148	61.5	25	0.5
Other Food Products	28487	8669	30	16694	59	3124	11

TABLE 4.1--CONTINUED

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR DELIVERIES TO INTERMEDIATE AND FINAL DEMAND SECTORS (WITH IMPORTS) L.E. 1000

Sectors	Gross Production Plus Imports (L.E. 1000) (1)	Intermediate Demand (L.E. 1000) (2)	Percent (2)÷(1) (3)	Domestic Final Demand (L.E.1000) (4)	Percent (4)÷(1) (5)	Exports (L.E. 1000) (6)	Percent (6)÷(1) (7)
Oils and Fats	14130	4094	29	9526	67	510	4
Education	5725	1335	23	4390	71	-	-
Ginning and Cotton Precessing	87061	20340	23			66721	76.7
Wood and Furniture	10328	1012	10	9008	87	308	3
Construction Activity	71311	3257	5	68054	95	-	1
Manufacturing Ready-Made Clothes	17065	899	5	15120	89	1046	6
Slaughtering and Meat Products	46420	483	1	45758	98.5	179	0.5
Bread and Bakery Products	57121	820	0.4	56851	99.5	50	0.1
Suez Canal	31427	18	0.01	0	-	31411	99.9
Medical Services	7932			7982	100	-	-

Source: Ministry of National Planning, The 1954 Input-Output Tables, quoted in Shafik Youssef, Input-Output Analysis and its Applicability in Egypt (Unpublished M.A. Thesis, American University in Cairo, 1967), p. 85

TABLE 4.2

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR DELIVERIES TO INTERMEDIATE AND FINAL DEMAND SECTORS (WITH IMPORTS) L.E. 1000
YEAR 1959

Sectors	Production Imports (L.E.1000) (1)	Deliveries to Inter-mediates (L.E.1000) (2)	Percent (2)÷(1) (3)	Deliveries to Final (L.E.1000) (4)	Percent (4)÷(1) (5)	Deliveries to Exports (L.E.1000) (6)	Percent (6)÷(1) (7)
Fertilizers	20358	19292	95	-	-	1066	5
Banking and Insurance	12791	11627	91	664	5	500	4
Mining and Quarrying	29012	23220	80	1521	20	-	-
Other Basic Industries	18463	13733	80	3235	18	495	2
Cement	7821	6063	78	326	4	1432	18
Paper and Paper Products	22003	16361	75	4517	20	1125	5
Agriculture	475298	353967	74	118581	25	2741	6
Basic Metallurgy	38092	27436	72	6981	18	3675	10
Petroleum Refining	50702	35395	70	14329	28	978	2
Other Industries	55599	33357	60	19577	35	2665	6
Grinding and Processing Grains	100596	54134	54	42928	43	3534	3
Transportation and Communication	102822	51305	50	42717	42	8800	8
Tobacco and Cigarettes	58613	23220	40	35339	60	54	-
Dairy Products	83784	34984	42	48566	57.9	234	0.1
Trade and Finance	188049	73028	40	81884	45	28137	15
Metal Products	2267	8660	38	13752	60	255	2
Spinning and Weaving	144804	54835	38	74271	51	2666	8
Oils and Fats	16451	5405	33	10294	63	752	4
Manufacturing and Repairing Machinery	82351	21172	26	60891	74	298	0.3
Ginning and Processing of Cotton	149932	32676	22	1633	1	115603	77

TABLE 4.2--CONTINUED

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR DELIVERIES TO INTERMEDIATE AND FINAL DEMAND SECTORS (WITH IMPORTS) L.E. 1000
YEAR 1959

Sectors	Production Imports (L.E.1000) (1)	Deliveries to Intermediates (L.E.1000) (2)	Percent (2)÷(1) (3)	Deliveries to Final (L.E.1000) (4)	Percent (4)÷(1) (5)	Deliveries to Exports (L.E.1000) (6)	Percent (6)÷(1) (7)
Basic Chemicals	16520	1124	7	15083	91	313	2
Construction and Building	88232	6209	7	82023	93	-	-
Other Food Products	40413	2993	7	22740	56	14680	37
Manufacturing Ready-Made Clothes	20579	313	1.5	19325	94	941	4.5
Wood and Furniture	9098	70	0.9	8931	97	197	2.1
Other Services	185784	24368	13	161416	87	-	-
Medical Services	10695	9	0.1	10686	99.1	-	-
Bread and Bakery	68381	39	-	68321	99.9	21	-
Education	5868	-	-	5868	100	-	-
Suez Canal	44500	-	-	-	-	44500	100

Source: Ministry of National Planning, The 1954 Input-Output Tables, quoted in Shafik Youssef, Input-Output Analysis and its Applicability in Egypt (Unpublished M.A. Thesis, American University in Cairo, 1967), p. 86.

intermediate demand. It delivered 44 percent of its total supply (production and imports) to intermediate demand in 1954. This rate decreased to 38 percent[42] in 1959 however, mainly on account of the great expansion in the cotton fabrics industry. Between 1952 and 1961, yarn production increased by 99 percent while cotton fabrics production increased by 73 percent.[43]

The direct relation between the decrease in the textiles contribution to intermediate demand and the shift in textiles production itself could be noted if we take into account the fact that textile industry received 87 percent of the textiles contribution to intermediate demand in 1959/60.[44] While cotton yearn industry contributed 78 percent of its total production for intermediate consumptoon to the cotton weaving industry.[45]

---

[42]According to the National Planning Committe, the figure rises to 40 percent, Frame of the Five-Year Plan, 1959/60-1964/65 (Cairo, 1960), p. 77.

[43]Central Agency for Public Mobilization and Statistics, The Statistical Indicators for U.A.R., 1950-1965 (Cairo, 1966), p. 67 (Arabic).

[44]Textiles industries, in its commonly used term, including spinning and weaving, and exclusing ginning and pressing of cotton and ready-made clothes industry (at current 59/60 prices). The National Planning Committee. The General Frame of the Five-Year Plan, 1959/60-1964/65 (Cairo, 1960), p. 77.

[45]Ibid., p. 59.

The difference between the rate of growth of cotton yarn and fabrics production during the 1952-61 period indicates that domestic demand for domestically manufactured products did not induce an equal expansion in fabrics production.

Statistics show that while cotton fabric production increased by 73 percent between 1952 and 1961, domestic consumption of cotton fabrics increased by only 15 percent during the same period.[46]

Tables 4.1 and 4.2 show that the textiles industry falls in the middle group in terms of its deliveries to intermediate demand, and hence in terms of the degree of dependency of the other sectors of the economy on this industry, and consequently in terms of its forward linkages with other industries and sectors.

In 1954, industries making the highest percentage contribution to intermddiate demand were the metal industries, mining and quarrying and chemical industries, delivering 94-68 percent of their total domestic supply (production and imports) to intermediate demand. The relative importance of these industries was later reflected in the general expansion in capital goods and chemical industries, which assumed strategic importance and were

---

[46] Per capita consumption of cotton fabrics increased from 2 kilograms in 1952 to 2.3 kilograms in 1961. Central Agency for Public Mobilization and Statistics, Statistical Indicators, 1952-1968 (Cairo: 1969), p. 253 (Arabic).

accorded high priority in industrial development plans.

In 1959, however, this group of industries showed some decrease in its deliveries to intermediate demand.

In 1954, deliveries to intermediate demand in the third group of industries ranged between 38 and 201 percent of the total supply. At the top of this group were the food industries which delivered approximately 33 percent, as well as cotton ginning and pressing which delivered 23.3 percent of their supply to intermediate demand and 76.7 percent to exports.

In 1959, its deliveries to intermediate demand decreased to 22 percent, while the proportion of its supply going to exports increased to 77 percent. Among the other industries which experienced a substantial decreaae in their deliveries to intermediate demand were the Other Food Industries (which is one category of the Food Industires), the contribution of which fell from 30 percent in 1954 to 7 percent in 1959. Deliveries to final demand decreased from 59 percent to 56 percent while their exports rose from 11 percent tn 1954 to 37 percent in 1959. These tendencies imply a large increase in exports of food products.

Fertilizers, electricity and basic industries infreased their deliveries to intermediate demand. Their products are used as inputs in the production of most industries, thus preparing for the wide industrial

development that took place during the first Five-Year Plan 1959/60-1964/65.

b. The Degree of Dependency among the Various Industries and Sectors of the Economy

Input-output analysis was also utilized to measure the degree of dependency among the various industries and sectors of the economy, as well as the share of domestic production in the total available supply (domestic production plus imports). Through such an analysis we detect the weight of textiles industries on the rest of the economy.[47]

The following Tables $.3 and 4.4 show that in 1954 the spinning and weaving industry supplied 91 percent of the total available textile products, and 28 percent of its inputs were produced domestically. The industry, with an index weight of 71, ranked 7th among other industries in terms of its dependency on the domestic economy.

Table 4.4 shows that, by 1959, spinning and weaving industries supplied 98 percent of the total available textiles, thus nearly satisfying the domestic demand for

---

47"The weight which each sector has on the rest of the economy has been derived by calculating the percentage that domestic production represents out of total deliveries as well as the percentage of its input derived from domestic production. The two percentages were multiplied to get an index of weight, and the industries were ranked according to their weights, those exerting more weight ranking high on the top of the table and those having little weight being placed at the bottom." Shafik Youssef, op. cit., p. 90.

TABLE 4.3

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR WEIGHT TO THE REST OF THE ECONOMY, 1954, IN L.E. 1000

Sectors	Gross Production	Total Supply (Gross Production plus Imports)	Percent 1 : 2	Domestically Produced Inputs	Percent 4 : 1	Index Weight 3x5
	(1)	(2)	(3)	(4)	(5)	
Ginning and Pressing of Cotton	87061	87061	100	84358	97	97
Grinding and Grain Processing	81660	84815	96	75202	92	91
Slaughtering and Meat Products	46420	46420	100	40351	87	87
Other Food Products	26843	28487	94	22600	84	79
Bread and Bakery Products	57050	57121	99.3	43935	77	76
Tobacco and Cigarettes	49125	54117	91	40356	82	75
Spinning and Weaving	86812	95023	91	67739	78	71
Dairy Products	44611	54743	98	31720	71	70
Manufacturing of Ready Made Clothes	14332	17065	84	9740	68	57
Agriculture	400814	416391	96	211385	53	51
Sugar Industry	21104	21906	96	10900	52	50
Medical Services	7932	7932	100	3662	46	46
Other Services	276093	276093	100	13112	47	47
Cement	5545	5665	98	2493	45	44
Construction	71311	71311	100	29263	41	41
Wood and Furniture	10063	10328	97	3524	35	34
Electricity	12383	12383	100	3932	32	32
Banking	15316	17007	90	3995	26	32
Other Industries	36955	62292	59	16451	45	27

TABLE 4.3--CONTINUED

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR WEIGHT TO THE REST OF THE ECONOMY, 1954, IN L.E. 1000

Sectors	Gross Production (1)	Total Supply (Gross Production plus Imports) (2)	Percent 1 : 2 (3)	Domestically Produced Inputs (4)	Percent 4 : 1 (5)	Index Weight 3x5
Education	5725	5725	100	1543	27	27
Manufacturing and Repairing Machines	30828	61023	51	15317	50	26
Other Basic Industries	12744	26838	47	6163	48	23
Metal Products	11870	19650	60	4311	36	22
Paper and Paper Products	3621	9609	38	2125	59	22
Trade and Finance	249495	249854	99.8	54727	22	22
Mining and Quarrying	13051	17669	74	3552	27	20
Transport and Communication	86165	92969	93	18159	21	20
Basic Metallurgy	9847	20491	48	3361	34	16
Oils and Fats	13548	14130	96	2567	19	16
Suez Canal	31429	31429	100	3341	11	11
Fertilizers	5747	17359	33	1693	29	10

Source: Ministry of Planning, The 1959 Input-Output Tables, quoted in Shafik Youssef. Input-Output Analysis and its Applicability in Egypt, (Unpublished M.A. Theses, American University in Cairo, 1967), p. 92.

TABLE 4.4

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR WEIGHT TO THE REST OF THE ECONOMY, 1959, IN L.E. 1000

	Gross Production (1)	Total Supply (Gross Production plus Imports) (2)	Percent 1 : 2 (3)	Domestically Produced Inputs (4)	Percent 4 : 1 (5)	Index Weight 3x5
Ginning and Pressing of Cotton	149612	149932	99.7	138609	93	92
Slaughtering and Meat Products	56342	56847	99	41337	73	72
Bread and Bakery Products	68376	68381	99	50110	73	72
Spinning and Weaving	142561	144804	98	99375	70	69
Grinding and Processing of Grain	98373	100596	98	68089	69	63
Other Food Products	29626	40413	71	22602	79	56
Manufacturing Ready Made Clothes	19044	20579	93	11239	59	55
Sugar Industry	32670	33834	97	18037	55	53
Cement	7355	7821	94	3904	53	50
Tobacco and Cigarettes	52545	58613	90	26424	50	45
Dairy Products	81899	83784	93	36435	44	43
Oils and Fats	15490	16451	94	6947	65	42
Other Basic Industries	14358	18463	78	7033	49	38
Banking and Insurance	11991	12791	94	4782	40	38
Construction	88232	88232	100	30841	35	35
Wood and Furniture	8501	9098	93	3177	37	34
Electricity	19830	19830	100	6266	32	32
Other Industries	39307	55599	71	17045	43	31
Petroleum Refining	36729	50702	72	14003	38	27
Trade and Finance	175722	183049	96	46363	26	25

TABLE 4.4--CONTINUED

RANKING OF THE PRODUCTIVE SECTORS ACCORDING TO THEIR WEIGHT TO THE REST OF THE ECONOMY, 1959, IN L.E. 1000

Sectors	Gross Production (1)	Total Supply (Gross Production plus Imports) (2)	Percent 1 : 2 (3)	Domestically Produced Imputs (4)	Percent 4 : 1 (5)	Index Weight 3x5
Agriculture	439806	475289	93	110296	25	23
Transportation and Communication	92752	102822	90	22434	24	21
Mining and Quarrying	22684	29012	79	5296	23	18
Metal Products	13626	22667	60	3922	29	17
Manufacturing and Repair of Machines	25764	82361	33	12858	47	16
Basic Metallurgy	15985	38092	42	5554	35	15
Fertilizers	8833	20358	43	2393	27	12
Education	5868	5868	100	619	11	11
Other Services	185784	185784	100	19448	10	10
Medical Services	10695	10695	100	988	9	9
Paper and Paper Products	15998	22003	73	2688	11	8
Basic Chemicals	10920	16520	66	1193	11	7
Suez Canal	44500	44500	100	1659	4	4

Source: Ministry of Planning, The 1959 Input-Output Tables, quoted in Shafik Youssef, Input-Output Analysis and its Applicability in Egypt (Unpublished M.A. Thesis, American University in Cairo, 1967), p. 94.

these products, while the domestically produced inputs accounted for 70 percent of the total inputs, recording a decrease of 8 percent as compared to 1954.

Cotton textile industry in 1959/60 contributed approximately 99.5 percent of the total available textile resources, thus achieving self-sufficiency as regards its products.[48]

The ginning and pressing of cotton industry ranked first, followed by the food industries; in 1959, these industries were still at the top in the sense of having heavy weights on the rest of the economy. Capital intensive industries, such as metal products, mining and quarrying, basic metallurgical and other basic industries were among the main industries that relied heavily on imports in 1954, both in terms of the percentage share of imports in available resources as well as in the percentage share of imported inputs in relation to total inputs. At that time, heavy industries had not been developed yet.

The 1959 table, however, shows a significant substitution of imports by domestic production particularly in the filed of capital intensive industries, which developed significantly during this period. Mining and quarrying supplied 79 percent of the total available resources, as compared to 74 percent in 1954. Other

---

[48] National Planning Committee, op. cit., p. 59.

basic industries raised their contribution from 47 percent of the total available resources in 1954 to 78 percent in 1959. Fertilizers production rose from 33 percent in 1954 to 43 percent in 1959.

B. Classification of Cotton Textile Production

In the preceding section we presented a detailed classification of the textile production as a whole, into final consumption, intermediate demand and exports, comparing them in 1954 and 1959, and we have also classified the available supply into domestic production and imports.

In the following part, the focus is on cotton textile production in particular. Table 4.5 presents the various sources of the available textile commodity supply and the distribution in terms of exports, final consumption and commodity production requirements, also investment and increase in stocks in 1959/60. As for the cotton yarn industry, it almost satisfies the domestic demand and its available commodity resources, they were distributed as follows: exports approximately 14 percent, commodity production requirements 79 percent, increases in stocks 7 percent and final consumption 3 percent. Cotton fabrics resources were distributed as follows: exports 13.3, final consumption 84 percent and commodity production requirements 2.7 percent.

TABLE 4.5

PRODUCTION OF COTTON TEXTILES AND THEIR DISTRIBUTION IN TERMS OF DOMESTIC CONSUMPTION; EXPORTS FOR SELECTED YEARS 1959-1968

(Quantity in Tons)

Classification	1959	1962/63	1963/64	1964/65	1966*		1967*		1968*	
	Quantity	Quantity	Quantity	Quantity	Quantity	%	Quantity	%	Quantity	%
Domestic Consumption of Raw Cotton		137,900	136,400	157,500	168,518		178,947		177,455	
Loss in Raw Cotton during Spinning Process		16,400	12,400	23,900		100	[illegible]		[illegible]	
Production of Cotton Yarn	98,000	121,000	124,000	133,600	142,487	100	157,483	100	157,358	100
Domestic Consumption of Cotton Yarn		99,351	96,500	104.00	104,799	73	21,484	77	120,134	76
Exports of Cotton Yarn	134,540	20,816	28,752	27,000	40,737	27	37, 976	23	39,276	24
Production of Cotton Fabrics	69,000	77,932	85,000	88,000	97,167	100	92,681	100	102,306	100
Domestic Consumption of Cotton Fabrics		62,791	67,000	76,000	81,749	84	73,572	79.3	83,070	81.

TABLE 4.5--CONTINUED

PRODUCTION OF COTTON TEXTILES AND THEIR DISTRIBUTION IN TERMS OF DOMESTIC CONSUMPTION; EXPORTS FOR SELECTED YEARS 1959-1968

Classification	1959	1962/63	1963/64	1964/65	1966*		1967*		1968*	
	Quantity	Quantity	Quantity	Quantity	Quantity	%	Quantity	%	Quantity	%
Exports of Cotton Fabrics	7,030	13,627	15,000	13,000	14,611	15	16,953	18.3	20,174	18.2

Source: Statistics used in constructing this table were from the following sources: National Bank of Egypt, Economic Bulletin, Vol. XX, No. 1, 1971, Statistical Section. Central Agency for Public Mobilization and Statistics, General Statistics and Analytical Studies, Vol. 68, 7th year, 1969, p. 29 (Arabic). National Bank of Egypt, "Industrial Development in U.A.R. for 1964," Economic Review, Vol. V, No. 4, 1965, p. 353. Central Agency for Public Mobilization and Statistics, op. cit., p. 63. Central Agency for Public Mobilization and Statistics, "Marketing of Cotton Spinning and Weaving Products," Monthly Bulletin, Vol. 12, 1st year, 1963, p. 38. (Arabic).

*Source of 1966, 1967 and 1968 figures is the Federation of Industries, The Annual Report (Cairo: 1969), p. 81 (Arabic).

It is worth noting here that the main share, approximately 8.7 percent of the cotton yarn contributions to intermediate demand, goes to the cotton fabrics industry, while the main contributions of the cotton fabrics production go to final consumption and exports.[49]

Table 4.5 shows the quantities produced of cotton spinning and weaving and their distribution between domestic consumption (which includes domestic final consumption, production requirements and increases in stocks) and exports during the period 1959/60-1968).

The available statistics in Table 4.5 are utilized for comparing between the pattern of distribution of cotton textile production in 1959 and 1967/68.[50]

Cotton yarn production in 1959 amounted to 98 thousand tons, and was distributed in the following manner: domestic consumption 86 percent, exports 14 percent. Cotton fabrics production amounted to 69 thousand tons with domestic consumption with accounting for 89 percent and exports for 11 percent.

In 1964/65, the value of textiles production amounted to L.E.345.5 million, including exports (L.E.38,6 million). Cotton textile production contri-

---

[49] The National Planning Committee, Frame of the Five-Year Plan 1959/60-1964/65 (Cairo, 1960), p. 59.

[50] The comparison of the aforementioned years has been determined by the availability of statistics.

buted approximately 75 percent of the total quantity of textile production. Cotton yarn production was divided between domestic consumption, accounting for 80 percent, and exports, accounting for 20 percent, while the cotton fabrics industry contributed 86 percent of its production for domestic consumption and 14 percent for export. Figures show a shift in the pattern of distribution of both cotton yarn and fabrics products; exports increased, particularly of cotton yarn, which increased from 14 percent in 1959 to 20 percent in 1964/65. Cotton fabrics production witnessed the same trend toward an increasing export share.

Table 4.5 implies also that the pattern of distribution of cotton yarn production had slightly changed during 1966-1968.[51] Domestic consumption accounted for between 72 and 77 percent of production while cotton fabrics accounted for 81-84 percent. On the whole, we could note a decreasing trend in the domestic consumption share and an increase in exports share, from 11.2 percent to 19.8 percent during the 1959-1967/68 period.

C. The Institute of National Planning Attempt at the Construction of Input-Output Tables

Similar attempts at constructing input-output tables were undertaken by the Institute of National

---

[51] Central Agency for Public Mobilization and Statistics, Statistical Indicators 1952-1968 (Cairo, 1969), p. 113, 71 (Arabic).

Planning (INP) in 1960.

The first table was constructed for the year 1959 covering industry, electricity and transport and communications sectors. The table comprised 100 sectors which were later reduced to 73 sectors due to lack of adequate and convenient statistics, a step which was severely criticized since the cancelled sectors, mainly mining and extraction industries were of great importance in magnitude, and in their contributions to economic interdependence.[52]

The second attempt was the construction of the 1960 and 1961 tables which were an extension of the first attempt, and the same construction procedures were followed. This allowed for a comparative analysis of the changes that took place in the economic structure, namely changes in the economic interdependence.

In the following section, we present a brief review of the results of those of the above mentioned studies which are of relevance to our subject.

---

[52] Institute of National Planning, Construction of Input-Output Tables for Industry and Transportation and Communication Sectors for 1960/61 Census (Cairo: Input-Output Group, June, 1964), p. 3 (Arabic). Aslo the Institute of National Planning Attempts to Construct Input-Output Tables, by Ahmed Mohamed A. Nosseir, in the paper prepared by the Input-Output Dept. of the Ministry of National Planning under the name of Historical Survey of Commodity Balances and Input-Output Tables, the Institute of National Planning, December, 1966.

The Technical Coefficients in Industrial Activities

One of the main objectives of the study of the Institute of National Planning (INP) was to examine the technical coefficients in the various industrial activities.

By technical coefficients we mean the amount of intermediate goods, both raw materials and semi-manufactured products, used in producing one unit of final production. It depends mainly on the level of technology applied and efficiency of production. A comparison of the technical coefficients in different factories and in different countries is considered a fundamental means of determining the following:

(i) the level of efficiency of production in factories using the same level of technology in production;

(ii) the differences in the efficiency of production in a developing country from that in an advanced country using the same production methods and reasons for such discrepancies;

(iii) tracing the change in technical coefficients from year to year in the same country, among the various sectors of the economy. Due to deficiencies in the statistical data of tables 1960 and 1961, it was deemed preferable to use these tables in an aggregative way in detecting the impact of change on the economic structure.

Partial tables were constructed by the INP Input-Output Unit for the industry, transport and communications sectors for the years 1959, 1960 and 1961, for comparative studies purposes. Among these studies was a comparison of the technical coefficients of raw materials and intermediate goods, on the one hand, and power and fuel on the other, for the three above mentioned years.

A comparison was drawn between the gross production of every industry and the amounts distributed among other industries, and the ratio of the last to the first during the three years of study. Moreover, a comparison of the value added, wages and salaries in all industries was also made.[53]

We could detect the following:

- The improvement in the efficiency of production in a certain industry.
- The impact of introducing new techniques of production in a factory or in several factories on the general structure or nature of this industry.

A change in the value of the production requirements in an industry without a change in the technical coefficients could be explained by an expansion in

---

[53] The Institute of National Planning, **Analysis of Input-Output Tables for Industry, Electricity and Transport, and Communications Sectors for the Years 1959, 1960, and 1961**, Memo No. 459 (Cairo, 1964), p. 5 (Arabic).

production. However, if both of them change, this implies a change in the level of technology or productive efficiency.

Table 4.6 shows the value of inputs and the technical coefficients in the textile industry for the two years 1959 and 1961.[54]

The INP study showed stability of technical coefficients in many industries including textiles industries, during the years under review. The following Table 4.6 shows a comparison of the technical coefficients of both raw materials and power and fuel in percentages in 1959 and 1961. The technical coefficients in the textile industry showed no major change during this short period.

The National Institute of Planning Input-Output Tables

The aggregative Tables 4.7 and 4.8 show the flow of inputs and outputs in Industry and Transportation for the years 1959 and 1961. The tables comprise 14 rows and columns, and two more containing the total requirements and the total value added.

Textiles contribution to intermediate demand increased from 20.2 percent of its total value of production in 1959 to 59.6 percent in 1961. The intermediate contribution of the textile industry to itself

---

[54] Ibid., p. 45.

TABLE 4.6

VALUE OF INPUTS AND COEFFICIENTS
OF THE TEXTILE INDUSTRY

(In L.E. 000)

Activities	Inputs		Technical Coefficients	
	1959	1961	1959	1961
Food Industries	2	21	-	.01
Spinning and Weaving Industries	81779	99150	21.76	53.65
Mining and Petroleum Extraction	310	-	.13	-
Chemical Industries	6838	10652	2.30	5.76
Wood Industries	1221	1345	.40	.73
Machinery and Repairs	-	-	-	-
Metal Products	15	57	.05	.03
Electrical Products	-	-	-	-
Electricity	3392	4050	1.2	2.19
Transportation and Communications	-	-	-	-
Natural Resources	119299	8525	40.4	1.61
Others	3281	1187	1.1	.60
Total Requirements	142749	124987	43.39	74.57
Wages and Salaries	18360	14759	6.2	7.99
Production	299826	184796	100	100

Source: Institute of National Planning, Analysis of Input-Output Tables, Memo No. 459, p. 48 (Arabic).

TABLE 4.7

INPUT-OUTPUT TABLE OF INDUSTRY AND TRANSPORTATION FOR 1959*
VALUE IN 000 L.E.

	Food Industry	Spinning and Weaving**	Mining and Petroleum	Chemicals and Leather	Construction materials	Machinery and Repair	Metal Products	Electrical Products	Transportation and Communication	Outside World	Final Demand
Food Products	116451	2	3	254	13	-	-	-	136	22559	14
Spinning and Weaving	6064	81779	-	1013	165	-	6	57	111	1143+	
Mining and Petroleum	179	380	-	1129	1871	31	1909	228	-	965+	
Chemicals and Leather	9891	6737	-	25749	3901	261	3022	2084	13127	57938-	
Construction Materials	439	1221	-	453	2517	39	350	52	52	7311-	
Machinery and Repair	-	-	-	-	5	1276	21	-	2336	46452-	
Metal Products	446	17	-	684	1100	2543	5793	648	3320	22911-	
Electrical Products	-	-	-	-	-	15	8	375	309	17232-	
Transportation and Communication	-	-	-	-	-	-	-	-	775	-	
Electricity	1495	3394	-	1213	568	27	867	34	417	-	
Natural Resources	74182	119299	-	304	51	2	4	19	292	36040-	
Wages and Salaries	7892	18360	-	6210	2779	649	3326	123	3783	-	

TABLE 4.7--CONTINUED

INPUT-OUTPUT TABLE OF INDUSTRY AND TRANSPORTATION FOR 1959*
VALUE IN 000 L.E.

Activity	Food Industry	Spinning and Weaving**	Mining and Petroleum	Chemicals and Leather	Construction Materials	Machinery and Repair	Metal Products	Electrical Products	Transportation and Communication	Outside World	Final Demand
Others	13	2381	-	1834	543	76	4106	123	3783	27+	
Outside World	-	142	-	950	-	85				-	
Total Requirement	218405	234470	-	38843	13513	4619				208008-	
Total Production	242797	295095	-	63664	20417	4201					

*Corresponding column data for the Electricity, Natural Resources, and Other Sectors were not available.

**Spinning and Weaving Industry includes the cotton ginning and pressing and ready-made clothes.

Source: Institute of National Planning, Analysis of the Input-Output Tables for Industry, Electricity and Transport and Communications Sectors for the Years 1959, 1960 and 1961, Memo No. 459 (Cairo: 1964), pp. 27-28 (Arabic).

TABLE 4.8

INPUT-OUTPUT TABLE OF INDUSTRY AND TRANSPORTATION SECTORS IN 1961*
VALUE IN 000 L.E.

	Food	Spinning and Weaving **	Mining and Petroleum	Chemicals and Leather	Wood Cut and Construction materials	Machinery and Repair	Metal Products	Electrical Products	Transportation and communication	Outside World	Final Demand
Food Products	10297	21	-	74	102	-	2	1	49	12383	
Spinning and Weaving	8092	99150	177	2625	209	25	18	53	-	15937+	
Mining and Petroleum	123	-	118	13246	2166	239	4168	255	-	2839-	
Chemical Products	8854	10652	2276	33355	4011	308	3875	676	10181	50484-	
Wood	161	1345	80	1483	1565	175	227	260	387	8575-	
Machinery and Repair	-	-	-	5	11	4403	12	7	-	55533-	
Metal Products	1156	57	17	605	380	1364	11008	3158	6458-	26454-	
Electrical Products	-	-	4	4	-	8	124	1136	-	16449-	
Transportation and Communication	-	-	-	1	--	-	-	-	-	-	
Electricity	1647	4050	424	3289	823	86	1083	61	641	-	
Natural Resources	78320	8525	23	1519	867	1	7	40	-	33507-	
Wages and Salaries	1908	14719	171	1376	750	239	1453	804	123	926-	
Others	10575	1187	2582	13407	3189	2220	4106	1126	20861	-	
Outside World	58726	1847	24	5197	1236	4673	5391	3196	-	-	

TABLE 4.8--CONTINUED

INPUT-OUTPUT TABLE OF INDUSTRY AND TRANSPORTATION SECTORS IN 1961*
VALUE IN 000 L.E.

	Food Products	Spinning and Weaving**	Mining and Petroleum	Chemicals and Leather	Wood Cut and Construction materials	Machinery and Repair	Metal Products	Electrical Products	Transportation and communication	Outside World	Final Demand
Total Requirement	121133	124987	5873	70989	15073	9073	26983	7577	-	-	
Total Production	145674	184796	20351	82915	24581	14723	37866	11597	-	-	

*Corresponding column data for the Electricity, Natural Resources, and Other Sectors were not available.

**Spinning and Weaving industry includes the cotton ginning and pressing and ready-made clothes

Source: Institute of National Plannin , Analysis of the Input-Output Tables for Industry, Electricity and Transport and Communications Sectors for the Years 1959, 1960 and 1961, Memo 459 (Cairo: 1964), pp. 35-36 (Arabic).

increased from 27 percent in 1959 to 53.65 percent of its total production in 1961. Food industries input demand increased from 1,77 percent to 5,55 percent in 1961.

On the other hand, regarding the input demand of the textile industry on the products of other sectors, we note the following: the sharp decrease of the input demand on the natural resources from 40.4 percent in 1959 of the total textile production to 4.61 percent in 1961 which represents a steep decline in the consumption of direct natural resource products.[55] We also notice an increase in the input demand of the textiles industry on chemical products, which could be mainly explained by the expansion in man-made fibers production during this period, as the nylon industry was introduced.

Demand on imports increased by 10 percent. In general, total requirements decreased from 79.4 percent in 1959 to 74.6 percent of total textile production; in the meantime, value added increased from 20.6 percent to 25.4 percent of the total production. The share of wages and salaries increased from 6.2 percent to 7.99 percent in 1961.

---

[55] Figures of the cotton ginning and pressing in this source were unavailable for 1961. Hence, it was quite difficult to explain the cause of this abnormal shift. The cotton ginning and pressing industry uses (field resources) raw cotton as its main input; so a partial explanation be the fact that the cotton crop in the 1960/61 season dropped sharply by nearly 30%, as a result the industry might have had to resort to supplying its needs for cotton from accumulated stocks.

D. A Reproduced Classification of the Textiles Input-Output in 1959/60

As mentioned in Section C of this chapter, the input-output analysis is used in sectoral analysis, where every sector is represented by a row containing commodities produced by that sector and a column that includes the various inputs used in producing the product.

The following section represents an attempt at drawing up a sectoral analysis of the textile industry with the aim of further examination of the role played by this industry in the Egyptian economy. A reproduced table embracing the main classifications of the column and the row of the textile industry is presented.[56] This was made possible by having a broad classification of the inputs and outputs which could be applicable to all industries and sectors.[57]

Tables 4.9 .a and b show that the textiles industry contributes 31 percent of its total production to the national income, which is a relatively big share. The remaining 69 percent represents the production require-

---

[56] I depend mainly on the National Planning Committee Statistics enclosed in the Frame of the Five-Year Plan 1959/60-64/65 (Cairo, 1960), which presented the commodity balance of this base year 1959/60. Figures of exports, final consumption and stocks had been changed from factory cost to market prices.

[57] This classification of allocations pattern was introduced in Richard Ruggles, An Introduction to National Income and Income Analysis (New York: McGraw-Hill Book Company, Inc., 1949), pp. 131-132.

TABLE 4.9 a

INPUT-OUTPUT CLASSIFICATIONS* OF THE TEXTILE INDUSTRY IN 1959/60 (IN MARKET PRICES, AND IN L.E. MILLIONS)

Column	Spinning and Weaving
Business Sector	-
Agriculture	5.0
Manufacturing	
Power and Fuel	5.0
Chemical Products	4.0
Metallic and Engineering Industries	2.0
Ginning and Pressing	39.5
Spinning and Weaving	55.3
Other Industries	5.0
Rest of the World Sector	5.9
Government Sector	-
Payments to Individuals	47.2
TOTAL GROSS PRODUCTION AND IMPORTS	168.7

*Statistics were not available for presenting any further detailed classifications. Some figures are rounded to the nearest whole number. National Planning Committee, Frame of the Five-Year Plan, 1959/60-1964/65 (Cairo: 1960), pp. 57; 77 (Arabic).

TABLE 4.9 b

INPUT-OUTPUT CLASSIFICATIONS* OF THE TEXTILE INDUSTRY IN 1959/60 (IN MARKET PRICES, AND IN L.E. MILLIONS)

Classification of the Row	Total Business Sector	Agriculture Sector	Chemical Production	Food, Beverage and Tobacco	Ginning and Pressing	Spinning and Weaving	Construction	Rest of the World Sector Exports	Final Consumption	Stocks	Total Economy
Spinning and Weaving		2.0	1.0	4.0	2.0	55.3	1.0	17.8	80	4.7	168.7

*Statistics were not available for presenting any further detailed classifications. Some figures are rounded to the nearest whole number. National Planning Committee, Frame of the Five-Year Plan, 1959/60-1964/65 (Cairo: 1960), pp. 57; 77 (Arabic).

ments, mainly the ginning and pressing industry's products, spinning and weaving, chemical products and power and fuel.

Table 4.10 shows the distribution of the total value added in terms of wages and salaries and returns to ownership which comprises rent, interest, profit and fixed assets depreciation in 1959/60 (at 1959/60 prices and in L.E. millions).

TABLE 4.10

THE DISTRIBUTION OF THE TEXTILES VALUE ADDED IN 1959/60

	Value Added	Wages and Salaries	Returns to Ownership
Spinning and Weaving	L.E. 47.2	L.E. 20.7 44%	L.E. 26.5 56%

Source: The National Planning Committee, The Frame of the Five-Year Plan 1959/60-64/65 (Cairo, 1969), p. 123.

In 1961 the production requirements (raw materials and fuel) of the textiles industry amounted to 58.8 percent of the value of production. Wages and salaries represented 29.9 percent of the value added generated in this industry.[58]

[58] National Bank of Egypt, Economic Bulletin, Vol. XV, No. 1 (Cairo, 1962), p. 57.

In 1962/63, total production requirements (raw materials, fuel and electricity) accounted for approximately 65 percent of total textiles production, while the value added reached 35 percent of total production.[59]

In 1967-68, the value added accounted for 33.4 percent of the production of the Egyptian Corporation of Spinning. The percentage share of wages and salaries accounted for 58 percent of the value added generated in these companies, thus recording a significant expansion compared to the 1959/60 figures. This reflects governmental concern with the social welfare regardless of declining shift trends in labor producitvity.[60]

The 1965/66 statistics show that the value of the production requirements in the cotton weaving industry accounted for 75.5 percent of the total value of fabric production, which represents a decrease in the real contribution to National Income.[61]

---

[59] Ministry of Industry, Activities of the Industrial Companies in 1962/63 (Cairo: The Central Control of Industrial Statistics, 1964), p. 10 (Arabic).

[60] Ministry of Industry, Report on the Economic Activities of the Egyptian Public Corporation of Spinning and Weaving for 1967/68 (Cairo, 1969), pp. 7-8 (Arabic).

[61] Taking into consideration that value added in this respect is the net value added after deducing services received from others and depreciation costs. Central Agency for Public Mobilizations and Statistics, Cotton Weaving Industry (Cairo, 1968), p. 59.

As traced in this chapter the input demand of the textile industry on the products of the other sectors of the economy is rather large. The multiplier effect (resulting from the demand for inputs) of an additional unit of final production for textiles, is thus also quite substantial. First, it generates additional demand within the agricultural sector, since cotton fibers are grown domestically. In 1968, almost 46 percent of the total cotton crop was domestically manufactured. This linkage effect is of great importance and fits within the economic development plans which aim at expanding the domestic manufacturing of raw materials.

The textiles industry is obviously linked to clothing, and including, as it does, man-made fibers it is also linked to chemicals and petro-chemicals. Although the textiles industry in Egypt has generated a demand for textiles machinery, domestic production of the required machinery has not been encouraged for a number of reasons.[62] The most important factors impeding the development have been (i) the relatively small size of the domestic market, (ii) the high rate of techno-

---

[62] In Egypt, there is only one factory that produces spare parts of textile machinery, as well as production equipments in the production process of textiles. Said Abd El Moutall, The Modern Guide for Corporations and Companies (Cairo, 1969/70) (Arabic).

logical change in the production of textiles machinery which renders models already produced obsolete rather quickly.

Thus, to keep up with advanced techniques of production, the textiles industry in Egypt continues to rely on importing improved machinery.[63] There is still room, however, for the production of less complex machinery and spare parts.

It seems that the textiles industry contribute more backward than forward linkages in Egypt, i.e., it uses the products of other industries as inputs more than its products are used as inputs of other industries.

The varieites of fibers grown in Egypt, it is argued, however, may not initially be the most suitable for the products that the textile industry plans to produce. This may account, as we shall see in Part III, Chapter V, for the relatively high costs of textile production. The government, in this case, subsidised the price of raw cotton - when produced for export marekts - as part of its agricultural policy. The government also resorted to import restriction and export subsidies to support the cotton textile industry. To tackle the roots

---

[63] The writer had a chance of visiting a number of textile factories, the most important of which was the Misr Spinning and Weaving Company in Mehalla-El-Koubra. There they utilized fully automated machines in the cotton spinning and weaving process.

of the problem, changes have to occur in the agricultural sector where new varieites mainly extra short staple cotton have to be grown.

Part III of this study examines the impact of present economic policies and measures on the cotton textile industry, and discusses measures proposed for eliminating their negative effects. Chapter V discusses the impact of economic policy on the efficiency level of octton textile industry production. Chapter VI discusses the future trends and prospects of the cotton textile industry vis-a-vis the man-made fiber industry.

PART III

EFFICIENCY OF PRODUCTION AND FUTURE TRENDS OF THE COTTON TEXTILE INDUSTRY

CHAPTER V

THE IMPACTS OF ECONOMIC POLICY ON THE EFFICIENCY OF COTTON TEXTILE INDUSTRY

The preceding chapters indicate that the textile industry has spearheaded industrial development, as is the case of many other developing countries. In addition to the fact that the textile industry accounts for a high proportion of the total labor force employed in the manufacturing sector, the spinning and weaving industry requires a moderately skilled labor force. In a modern mill, less than one quarter of the labor force need consist of skilled labor.[1]

According to the Neckacher-Ohlin theory[2] of comparative advantage, a country would tend to specialize

---

[1]United Nations, Textile Industry, Monograph No. 7 (New York: 1969), p. 54. The textile industry is becoming a more capital intensive industry. The higher labor cost in the advanced countries was a strong intentive to develop high speed automated machinery; but this does not mean that developing countries have to adopt these advanced techniques in production; it means the availability of a wider range of machinery to suit the ratio of capital to labor cost, skills and the size of the market in each country.

[2]See Eli Heckscher, "The Effects of Foreign Trade on the Distribution of Income," Readings in the Theory of International Trade, edited by H. S. Ellis and L. A. Metzler (Philadelphia: Blackistone, 1949), chapter 13, and Bertil Ohlin, Interregional and International Trade, Harvard Economic Studies, Vol. 39 (Cambridge, Mass.: Harvard University Press, 1933).

in the production of those commodities which intensively utilize its abundant resources. Many developing countries in general, and Egypt in particular, are thus expected to hold a comparative advantage in the production of textile products, as the production methods for textiles have proven to be relatively labor intensive.

In this chapter an attempt is made to analyze the impact of government policies on the growth of the cotton textile industry. Section A examines government policies regarding cotton. Such a review is particularly significant in view of the fact that cotton input constitutes from 40 to 85 percent of total textile production costs. Section B presents the impact of the government policies on the cotton textile industry, while Section C examines the level of productivity in the domestic textile industry compared with that in competing countries and that in other domestic industries. Section D analyzes the relationship between the plant size and economies of scale. Finally, a brief summary is presented.

A. Government Protection Policy for Cotton

1. The Post World War II Period

The government protectionist policy regulating cotton was introduced as early as World War I. It lasted throughout the Great Depression and World War II,

and directly influenced the regulations that were initiated in the post World War II period. The types of protectionist measures adopted by the government during that period may be classified as follows: (a) area restrictions, (b) cotton export taxes, (c) purchases for and sales from buffer stocks and (d) encouragement and support of cotton exports through direct subsidies or disguised partial depreciations of the Egyptian pound.

a. Area restrictions

This was the type of intervention measure used during the World War II period.[3] It proved to be insufficient, as large quantities of cotton remained unsold. The Egyptian Cotton Commission (ECC) had to purchase large quantities of cotton at support prices. After the war, the ECC faced the problem of selling its accumulated stocks. The Commission attempted to solve this problem by fixing a supported price for selling cotton, in addition to the area restriction device which was still in use. This policy, however, proved to be ineffective.

With the advent of the 1952 Revolution, the cotton policy was characterised by increasing government

---

[3] It is worth noting that the area restriction device is still in use up to the present. Hansen and Marzouk, Development and Economic Policy in U. A. R. (Egypt) (Amsterdam: North-Holland Publishing Company, 1965) pp. 95-98.

intervention, which later evolved into the nationalisation of 1961, followed by co-operative marketing in 1963. Any cotton policy had to take into account the rapid increase in the domestic demand for cotton, as already explained. The spinning industry, in particular, developed vigorously, not only to satisfy domestic demand, but also to meet the expanding exports of the textile industry.[4] Statistics show that domestic consumption of cotton accounted for approximately 20 percent of the cotton crop during the post World War II period, increased to 30 percent in 1956, and reached 46 percent in 1968.[5]

b. Export taxes

The second protectionary device used by the government was in the form of export taxes, which were introduced in 1948. Export taxes were intended to partially finance a subsidy to domestic spinners, who were compelled to use high quality Egyptian cotton. Its most important effect was to keep domestic raw cotton prices down, compared to the raw cotton prices in export markets. Economic rationality has required a differentiation in export taxes, and therefore, prices with respect to the various export markets receiving

---

[4] Ibid.

[5] Central Agency for Public Mobilisations and Statistics, Statistical Indicators, 1952-68 (Cairo: 1969), p. 129 (Arabic).

cotton. The export tax reached its maximum level in 1950/51, and it served as an alternative device for area restriction--a measure which was not adopted until 1954/55. The tax remained high, in spite of the lower export prices, which were due to fiscal considerations.[6] The export tax was meant to prevent the farmers' incomes from deteriorating as a result of the tendency for cotton prices to fall. Starting from 1955/56, however, export taxes decreased considerably while domestic purchase prices of raw cotton increased. The purchase prices for the domestic textiles industry continued to rise in relation to export prices including export tax. By 1959, the difference in favour of domestic industry had disappeared completely.[7]

c. The buffer stock policies

The buffer stock policies adopted by the Egyptian Cotton Commission (ECC) were aimed mainly at counteracting short-term fluctuations in cotton prices and income of cotton producers. During the fifties, when buying from producers, the ECC fixed a support price much lower than the Alexandria market quotations, while most ECC selling prices had been higher than the

---

[6] "This has to be seen as a measure to keep up the farmers' income in spite of the tendency for cotton prices to fall." Hansen and Marzouk, op. cit., p. 101.

[7] Ibid., pp. 98-102.

Alexandria free market prices.[8] (It has been stated by ECC experts that prices are below the Alexandria market quotations because the former carries transportation costs, storage and insurance costs, which have to be reduced from the original price.)[9]

d. Subsidies and exchange rate adjustment

The fourth protectionary device, direct subsidies to exporters, was used extensively during the 1952-1955 period. Subsidies were granted to exporters selling at reduced prices specially for export to hard-currency countries. The combination of export taxes and subsidies were meant to apply a price differentiation policy, adjusting the price to the conditions in each export market. This price discrimination policy had been seen to be inefficient, and in the 1962/63 season the ECC offered uniform prices to all foreign buyers.[10]

2. The Period from 1961 to 1971

By 1961, the cotton trade was nationalized and prices were centrally fixed. All raw cotton sales to meet domestic or export demand were to be concluded through the Egyptian Cotton Commission (ECC).

---

[8] Ibid., p. 102.

[9] This has been stated by top managers of the Eastern Cotton Company, Alexandria.

[10] Hansen and Marzouk, op. cit., pp. 102-104.

From 1963, uniform prices were to be set for all export markets and domestic selling prices were to be fixed at the beginning of each season.[11] To encourage textile exports, domestic spinners producing yarn or cloth for export markets were to receive a subsidy from the government corresponding to the difference between the ECC selling price of raw cotton for export, and the selling price of raw cotton for domestic consumption. Thus, the domestic textile industry was subsidized when producing for export.[12] The prices set by the ECC for raw cotton utilized in production for the domestic market were higher by 10-15 percent in 1962 than export prices. This was made possible by the fact that the domestic market was protected, as the importation of raw cotton was restricted by law.

Thus, the protection policies enabled the high cost cotton textile industry to expand by having the domestic final consumers pay a higher price for the raw cotton used in the textile products than the foreign final consumers. Regarding fine quality products, the domestic textile industry has an advantage in export markets over the foreign producers, due to the export

---

[11]The purchase prices are those paid for deliveries to the ECC from ginning mills, while the selling prices for local consumption are the prices paid by domestic spinners to ECC. Ibid., p. 106.

[12]This point is discussed in Section C of this chapter.

taxes still levied on medium staple varieties of raw cotton.

Comparing the situation as regards cotton policies during the fifties with the present 1971 policies, we find substantial differences. During the fifties, domestic textile producers producing for domestic or export markets were favored by means of an export tax on raw cotton. During the sixties and up till 1969, domestic final consumers have been increasingly taxed in favor of raw cotton and textile exports, although there is still little taxation on raw cotton exports in favor of the domestic textiles. In addition to this subsidization policy of exports, there exists an area restriction law limiting Egyptian cotton production.[13]

In evaluating the various government interventionist measures, it could be noted that some of them are worth perpetuating, since they work efficiently, while others need to be modified. Among the advisable devices is the area restriction of cotton production, which needs to be determined by the government in relation to total final demand, taking into consideration the shift in the terms of trade against the interest of the primary producing countries with regard

---

[13] Ibid., pp. 107-108.

to cotton. Raw cotton has at the same time to be sold to domestic textile producers at lower costs without differentiation between producing for domestic or export markets. Production costs would thus decrease, in general, making it possible to export at lower support prices to start with, while with an increase in efficiency this may lead to the eventual discontinuation of subsidies.

At the same time, raw cotton exports have to be further encouraged by creating competition among importers and abolishing export taxes on short staple cottons, while high taxes are imposed on medium and long-staple, karnak cotton. Some of these measures have already been adopted. (Very recently it has been stated that no subsidies will be given when textiles are produced for export markets.)[14]

The government is studying now (the end of 1971) methods for raising the purchase prices of raw cotton accruing to farmers.

B. The Textile Industry and Economic Policy

As has been previously noted, the Egyptian cotton textile manufacturers suffer from having to resort to the use of high priced Egyptian raw cotton--both long and medium and short-staples--in the produc-

---

[14]Dr. M. El-Garib, expert at the Egyptian General Corporation for Spinning and Weaving.

tion of low count yarn.[15] This, in effect, reduces the efficiency of production in the domestic industry by raising its costs of production. This is at a time when the domestic industry has to compete in export markets with low-priced foreign products utilizing short-staple low-priced raw cotton. In addition, foreign competitors have the advantage of more advanced technology and higher productivity. In spite of these difficulties, however, the domestic cotton textile industry has survived and developed.

Thus, during the fifties, cotton textile production exceeded domestic demand, and although the Egyptian textile products faced hard competition in export markets from the low priced products of the Asiatic textiles industries of Hong Kong, Japan, Malaya, India, and Pakistan, the Egyptian industry contributed an increasing surplus (over domestic demand) of fine-quality textile exports to Europe and the United States of America. However, exports were blocked by the adopted protectionist measures codified in the World Textile Agreement sponsored by GATT.[16]

---

[15]It should be noted that Egyptian short-staple cotton is considered as medium and long-staples cotton abroad.

[16]General Agreement on Tariffs and Trade. GATT (United Nations Specialized Agency).

Most of these difficulties were dealt with by means of direct subsidies and sales of raw cotton by the ECC below the domestic market prices when producing for exports. The main device of the post-war period, however, took the form of taxing exports of raw cotton. Such a tax supports domestic textile products by raising exported raw cotton prices, thus raising production costs of the foreign fine-yarn manufacturers, i.e., provided a preferential treatment for domestic producers relative to foreign producers using imported Egyptian cotton. Nevertheless, foreign yarn-producing competitors in European and American markets were hardly affected by this tax, as the relatively lower costs of raw materials in Egypt were of little importance. The major barrier to exporting of fine quality textiles remained mainly in the form of quota barriers and other quantitative restrictions effective in importing countries.[17]

As has been shown in Section A of this chapter, cotton policies have changed substantially since the end of the fifties. Export taxes almost disappeared for most varieties, and domestic manufacturers have even come to pay higher prices for cotton than export prices.

---

[17] In spite of this support, domestic cotton prices were still higher than those of foreign industries for short-staple cotton. Hansen and Marzouk, op. cit., pp. 153-154.

The following section discusses the government support policy for cotton textile exports. It analyzes this support and presents a brief survey of the application of exports policy from World War II and until 1971, when it was totally abolished.

1. Government Support Policy and Cotton Textile Exports

a. Export support policy in Egypt

The export support policies regarding cotton textile products have been applied since the World War II period. These were mainly the result of the accumulation of cotton textile stocks resulting from rapid expansion in production during the war, which was not met by an equal increase in demand.

With the resumption of imports following the war, the domestic textile industry faced serious difficulties due to its subjection to foreign competition. This caused domestic textile production to exceed domestic deman by 25 percent in the post World War II period. The government, thus, had to intervene to remedy the situation. It granted domestic producers subsidies to promote their exports. Nevertheless this measure fell short of solving the problem and stocks kept piling up. In 1953, the Textile Industry Support Fund was established. Its main function was to encourage and stimulate cotton textile exports by means of granting subsidies called "export differences" to

compensate for part of the cost differential inhibiting the export of the domestically produced textiles. This subsidy had the effect of lowering cotton textile prices in export markets.[18]

b. Reasons for government support of cotton spinning and weaving exports

The main factors necessitating government support for textile exports may be summarized as follows:

i. High costs of raw materials: The major kind of cotton textile produced in the form of coarse products or thick yarns and fabrics was produced from fine quality and high price Egyptian raw cotton, which is uneconomical for producing these low quality products. This leads to the increase in the costs of production of these products and therefore a rise in their prices.

ii. High costs of production: A number of factors operate to raise the costs of production in the cotton textile industry.

a). The excessive expansion in the number of workers employed, due to the government full employment policy, caused an increase in the production costs. One worker in Egypt attends to 18 spindles while the

---

[18]Dr. M. El Garib, "The Support Policy of the Textile Exports," Conference of Management and Organization of Production and Exports, (Cairo: 1970), pp. 79-82 (Arabic).

worker abroad supervises as many as 40 spindles. This is in addition to the low level of productivity in operating the spindles, and the irregularity in repairing the machinery.

b). The extra costs borne by the cotton textile industry in the form of expensive imported machinery and spare parts (on which import taxes are levied), in addition to the high prices of other production requirements such as power, dyes and transportation.

c). Other costs connected with government policies such as compulsory social insurance and health and safely requirements. The total additional or extra costs borne by the textile industry amounted to 20 percent of total costs. For the above reasons, government intervention and support of the industry were deemed necessary to enable it to compete with foreign producers in export markets.

The government support in the form of export difference consists of the following: (i) the difference in the raw cotton price. The sum of this subsidy is equivalent to the difference between the Egyptian raw

cotton price used in manufacturing coarse (low count) textiles and the foreign raw cotton prices. (ii) The difference in the efficiency of producing cotton textiles and the relatively high labor cost.

Being only slightly affected by the higher costs of production, yarn exports are subsidized only by the price difference. The cotton yarn industry is, in fact, counted one of the major industries in Egypt, and is encouraged to grow competitively in the world markets. The cotton fabrics industry, on the other hand, needed to be more intensively subsidized in order to increase its exports.

The following Table 5.1 represents the "export difference support" received by the various categories of textile products inaugurated in July 1964 and continuing till the end of June 1968. Consequently, the support was decreased by 16 percent of the total starting with July 1968 exports.[19] In 1971, experts from the Egyptian Spinning and Weaving Corporation declared that the whole export subsidization policy had been discontinued.

From the table we notice the following: The "export difference support" is split into two kinds. The first is the price cotton difference subsidy which

---

[19] Ibid., pp. 82-84.

TABLE 5.1

EXPORT DIFFERENCES OF COTTON TEXTILE PRODUCTS (IN PERCENT)

Counts	Price Difference Subsidy	Efficiency Subsidy	Total	Counts	Price Difference Subsidy	Efficiency Subsidy	Total
10	16.3%	100%	26.3%	12	16.0%	10.2%	26.2%
14	15.5	10,3	25.8	16	15.0	10.5	25.5
18	14.5	10.8	25.3	20	13.9	11.0	24.9
22	13.3	11.4	24.7	24	12.6	11.8	24.4
26	11.8	12.3	24.1	28	10.3	13.0	23.8
30	9.7	13.8	23.5	32	8.4	14.6	23.0
34	7.0	15.5	22.5	36	5.2	16.0	21.7
38	3.2	16.8	30.0	40 and above	-	20.0	20.0

Source: Dr. El-Garib, "The Support Policy of the Textile Exports," Conference of Management and Organization of Production and Exports (Cairo: 1970), p. 84.

accounts for 16.3 percent for low counts (10 counts) and is reduced to nil for counts of 40 and higher. This subsidy is, thus, inversely proportional to the number of counts. This is because the low count yarn or the coarse products are more adversely affected by the high prices of raw cotton, compared to the foreign coarse products produced by low priced cotton. The high count fine quality products, however, are produced from the long staple Egyptian cotton both in the domestic industry as well as the foreign industries, and hence the price difference progressively decreases and little support is required. The other is a subsidy granted to compensate for differences between the levels of efficiency in the industry at home and abroad. It varies positively with the number of counts. Counts as low as 10 receive a subsidy of 10 percent which increases to nearly 20 percent as counts increase. This means that the fine quality fabric exports need to be subsidized more for the differential in the level of efficiency than the lower quality fabric exports, since a relatively higher level of efficiency in low quality fabric production is realized than the level of efficiency attained in fine quality fabrics production.

2. The Future of the Export Tax

In order to decrease the government support of the textile industry the level of productive efficiency

has to be raised. Complete elimination of the price difference subsidies would necessitate the following measures:

a. Importation of foreign short-staple cotton yarn

The importation of foreign short-staple cotton yarn to replace the short-staple Egyptian Ashmouni and Giza 66 used in the production of coarse fabrics. This will be beneficial in two ways. It would decrease costs of production, simultaneously allowing for an expansion in raw cotton exports, thus realizing a gain out of the difference in prices of the imported low quality yarn and the exported high quality and price Egyptian cotton.[20]

b. Development of new varieties of raw cotton

The development of new varieties of raw cotton which give higher yields and extra short-staple raw cotton which has been successfully experimented with may prove beneficial. In 1971 a variety of American raw cotton was successfully cultivated in Upper Egypt. It gives an average production of 7 kantars per feddan, in comparison with an average of 5 kantars per feddan given by the Egyptian cotton (in the first picking). This new variety is picked four times per season. Further expansion in the cultivation of the American

---

[20] Ibid., p. 85.

raw cotton varieties is expected to be undertaken next year.[21]

c. Mixing man-made fibers with raw cotton in textile production

This would decrease the consumption of Egyptian raw cotton in the production of coarse textiles and, in the meantime, improve the quality of textiles. The introduction of blends of man-made fibers and cotton fibers in textile manufacturing, in Egypt, is a development which deserves further attention and study. This is especially important for the following reasons:

i. The low prices of man-made fibers.

ii. The high demand for blends of cotton and man-made fibers products because of their durability.

iii. The reduction in the domestic raw cotton consumption for the sake of increasing raw cotton exports, hence improving the country's balance of payments.

In the long run, it may be more worthwhile to increase the level of counts produced, that is, to produce more of the medium and high count textiles. This would in turn call for an improvement in the type

---

[21] Saad Hagrass, "American Cotton and the Success of its Cultivation in Egypt," El-Ahram, 21/10/1971, p. 5 (Arabic). (One feddan = 1.038 acres = 42.01 ares)

of machinery and the standard of technology used in textile production.

The above discussion of the necessity for government support of the cotton textile industry does not mean that protection has to continue in the long run. Price support has been reduced in 1964/65 and again in 1968 by 14 percent. By 1971 it has been completely abolished. Increasing the efficiency of production will not by itself put an end to the need for support, as the price difference would still be effective. The elimination of the price difference support requires the importation of low quality coarse yarn,[22] and in the meantime, improving the number of counts produced into mainly medium counts and high counts. As well suggested in the introduction of new varieties of extra short-staple cotton in Egypt for the production of coarse or thick cloth. The production of blends of

---

[22] Mention should be made, in this connection, of the discussion in Hanson and Marzouk, Development and Economic Policy, on the policy of importing short staple cotton for domestic use and increasing the Egyptian cotton exports. It is stated that since the marginal revenue from selling more cotton abroad tends to be less than the export price which depends on the elasticity of foreign demand that is quite inelastic, as it is with many primary goods, we cannot rule out the present policy of raw cotton import restriction. Bent Hansen and Giris Marzouk, op. cit., p. 155. The importation of raw cotton is also not recommended by the agrarian experts since the foreign raw cotton might carry plant diseases and pests.

cotton and man-made fibers would also need to be developed.

It is also worth noting here that the present capacity of the domestic cotton textile industry absorbs all the remaining amounts of cotton crop, after satisfying the export requirements.[23] Hence, "any plans to expand the capacity of the domestic production of cotton textiles would essentially depend upon the availability of raw materials."[24]

C. An International Comparison of the Levels of Productivity in the Textile Industry

The preceding sections of this chapter discussed the adopted cotton and textile economic policies that have a direct impact on the efficiency and productivity of the cotton textile industry. This section contains an analysis of the level of productivity in the world cotton textile industry, in general, and the domestic cotton textile industry in particular.

1. Efficiency of Production in the Cotton Textile Industry on the International Level

Reports from United Nations sources and individual countries indicate that the world consumption

---

[23] A significant share of the cotton crop goes to the Soviet Union for repaying debts and loans. This share accounted for 32.8% in 1965/66; it decreased to 17.8% of the total cotton exports in 1967/68. Its share of the cotton yarn exports was 47.9% of the total cotton yarn exports in 1967/68. Central Agency for Public Mobilisations and Statistics, Statistical Indicators, 1952-1968, (Cairo: 1969), pp. 73-75.

[24] Mohie el Din El-Garib, op. cit., p. 87.

of raw cotton has continued its ascending trend since the post war period. In spite of the 9.3 percent decrease in the number of spindles in several countries between 1949/50 and 1967, consumption of raw cotton during this period increased by 70 percent as shown in the following table.

The fact that the increase in the index number of spindles in the world was much lower than the increase in the index number of raw cotton globally consumed attests to a noticeable increase in productivity per spindle.

Further examination of individual countries data indicates that advanced countries apply modern technical innovations to the textile machinery in order to cancel out advantages enjoyed by the developing countries in cotton textile production, resulting from low wages and domestic availability of raw materials.

Table 5.2 presents a comparison of the index number of amounts of cotton consumed in several countries and the index number of the quantity of spindles at work, the year 1949/50 being taken as the base year.

Table 5.3 shows that a few countries, such as the United States of America, France, Italy and West Germany, have increased their raw cotton consumption in spite of the decrease in their number of spindles. In other countries, such as the Soviet Union and Egypt,

TABLE 5.2

INDEX NUMBER OF THE NUMBER OF SPINDLES AND OF THE CONSUMPTION OF RAW COTTON IN THE WORLD FOR THE PERIOD 1949-1967

Years	1949	1955	1960	1965	1966	1967
Index Number of the Number of Spindles in the World	100	105.3	102.3	106.5	108.3	109.3

Years	1949/50	1954/55	1960/61	1965/66	1966/67	1967/68
Index Number of the Raw Cotton Consumed in the World	100	128.7	151.7	164.3	169.1	170.2

Source: Ibrahim Boraei, Some Basic Trends in the World Cotton Industry, Institute of National Planning, Memo No. 989 (Cairo, 1970), p. 63 (Arabic).

TABLE 5.3

INDEX NUMBERS OF THE DEVELOPMENT IN THE NUMBER OF SPINDLES AND IN THE CONSUMPTION OF RAW COTTON IN A NUMBER OF COUNTRIES

	Seasons of Cotton Consumption	1949/50	1954/55	1960/61	1965/66	1966/67	1967/68
	Spindles	end of 1949	end of 1955	end of 1960	end of 1965	end of 1966	end of 1967
United States:	Cotton Consumption	100	99.9	93.5	107.3	107.2	101.5
	Number of Spindles	100	95.5	85.5	83.1	86.0	88.4
France:	Cotton Consumption	100	108.3	120.4	106.2	106.6	94.8
	Number of Spindles	100	93.5	71.2	52.7	51.4	50.4
Italy:	Cotton Consumption	100	144.6	179.2	149.0	134.8	132.5
	Number of Spindles	100	103.8	102.1	88.0	85.1	80.8
West Germany:	Cotton Consumption	100	30.9	111.1	107.1	119.1	110.0
	Number of Spindles	100	102.4	102	79.5	77.0	77.7
United Kingdom:	Cotton Consumption	100	86.7	58.4	48.4	43.1	39.8
	Number of Spindles	100	85.2	32.8	20.7	19.5	14.4
Soviet Union:	Cotton Consumption	100	152.2	185.1	213.4	220.9	226.9
	Number of Spindles	100	107.1	113.9	134.0	141.6	149.5
Egypt:	Cotton Consumption	100	150.4	228.3	325.0	254.2	362.5
	Number of Spindles	100	121.6	237.0	283.0	295.4	295.2

Source: Ibrahim Bouraie, Some Basic Trends in the World Cotton Industry, Institute of National Planning Memo 989 (Cairo: 1970), p. 63 (Arabic).

consumption exceeded the increase in the number of spindles. In the United Kingdom, the recorded decrease in the number of spindles set for work has much exceeded the decrease in the amounts of raw cotton domestically consumed.[25]

In spite of this increase in the efficiency of production of textiles, the level of productivity in the domestic textile industry is low compared to that of other industries. A comparative analysis of the levels of productivity in the various industries is thus attempted in the following section.

2. Productivity in the Cotton Textile Industry

The commonly used measurement of productivity in an industry is output per worker. Other measurements are capital output or income ratio, the net to gross output ratio, and raw materials to income ratio. In the following section we shall trace these ratios in industry as a whole and in the textile industries in particular.

a. Output per worker; Labor productivity

Although productivity in Egyptian industry is relatively low compared with that in advanced countries, statistics show that industrial output per worker in

---

[25]Ibrahim Bouraie, Some Basic Trends in the World Cotton Industry, Institute of National Planning Memo, No. 989 (Cairo: 1970), pp. 61-63 (Arabic).

1944 was L.E. 56 and increased to 74 in 1947 (at 1937 prices). Comparing these figures with those of the United States and some European countries, we find that the corresponding figures are L.E. 264 in the United Kingdom, L.E. 294 in Germany and L.E. 595 in the United States during the 1935-1937 period.

Between 1947 and 1958, employment in all industrial establishments employing 10 or more workers dropped by nearly 3 percent, while the value added in real terms rose by approximately 7 percent per annum. Between 1958 and 1960, employment rose by 21 percent and value added in real terms increased by 32 percent with an annual rate of growth of 2 percent.[26]

The figures in Table 5.4 indicate that whereas the level of productivity in the Egyptian cotton fabrics industry is higher than that in Turkey; it is slightly more than one-third that of the United Kingdom and a little over one-fifth that of the United States.

Another study by the United Nations is available on the Egyptian productivity per worker. The study

---

[26]Charles Issawi, Egypt in Revolution, p. 180. It is worth noting here that labor productivity during the First Five Year Plan of 1960/61 to 64/65 decreased by 0.7 percent. This shows that there is a decreasing trend in industrial labor productivity which is contrary to the statement of Charles Issawi that "productivity in the Egyptian industry is rising rather rapidly." Charles Issawi, op. cit., p. 180. If we add to this the decreasing trend in capital productivity and the slow increase in raw materials productivity.

TABLE 5.4

PHYSICAL OUTPUT PER WORKER IN VARIOUS INDUSTRIES, 1954

Industries	Egypt 1954	Israel 1951	Turkey 1950	United Kingdom 1948	United States 1947
Grain Milling (Tons)	140	320	--	250	480
Beer (hl.)	290	230	25	--	--
Cigarettes (Kilograms)	1230	5200	4400	---	6860
Cotton Fabrics (1000 meters)	7*	--	6	20	32
Paper (Tons)	12	65	8	--	104
Matches (Millions)	13	24	--	27	68
Petrol-Refining (Tons)	500	1300	--	730	1890
Cement (Tons)	470	600	260	900	1040

*Members of Chamber of Textile Industry producing about 70 percent of the total output

Source: United Nations, Development of Manufacturing, p. 71, quoted in Charles Issawi, Egypt in Revolution: An Economic Analysis (London University Press, 1963), p. 182.

includes 67 projects with an aggregate investment of L.E. 50.5 million, which started production in 1960-61. The net output per worker was calculated at $3,800 in the mineral products industry, $8,900 in chemicals and $4,500 in food processing, $2,300 in engineering and metals, and $2,700 in textiles, recording a comparatively low level of productivity.[27]

Before World War II, a worker in the Egyptian textile industry used to attend four automatic looms, while at the beginning of the fifties he took charge of 16 looms. At the same time, 16 workers attended to 1,000 spindles. This level compares very unfavorably with productivity in the United States where four workers on the average were required to attend to 1,000 spindles, and in Western Europe where the corresponding figure was 5.[28]

b. Labor productivity during the First Five-Year Plan period

Examining the labor productivity of the industrial sector during the plan period, we find that the index number of the average productivity of labor decreased from 100 in the base year 1959-60 to 99.3 in the fifth year, 1964-65, with a percentage decrease of .1 percent. This decrease is mainly due to the decrease of 1.5 percent in labor productivity in total industry

---

[27] Ibid., pp. 180-182.

[28] National Bank of Egypt, Economic Bulletin, Vol. IV, No. 1, 1951, p. 100.

in the fifth year.

A number of industries have nevertheless witnessed significant improvements in productivity over the plan period. As Table 5.5 illustrates, in the paper industry average labor productivity increased by 182.6 percent in the five-year period, while in the chemicals industries it increased by 43.8 percent and in wood products by 39.1 percent.

Among the industries experiencing a decrease in average labor productivity, basic metals industries witnessed a decrease of 18.5 percent, food and drink industries 16.9 percent, ready-made clothes industries 2.3 percent, and petroleum products industries 14.9 percent.

The spinning and weaving industry witnessed a slight increase of 3.4 in labor productivity which is considered rather unsatisfactory for one of the major and most vital industries in the Egyptian economy.[29]

This low level of labor productivity is offered as one of the main factors limiting economic development during the first five-year plan.

Comparing labor productivity in Egyptian industry with that of other countries we find that it

---

[29]Said Ahmed El Bawab, Factors Determining the Rate of Growth of the Industrial Sector in the First Five-Year Plan 1960/61-1964/65, Institute of National Planning Memo, 780 (Cairo: 1967), p. 15 (Arabic).

TABLE 5.5

INDEX NUMBERS OF THE AVERAGE PRODUCTIVITY OF LABOR IN INDUSTRY DURING THE FIRST FIVE-YEAR PLAN (1960/61 - 1964/65)

(1959/60 Prices = 100)

Sectors and Activities	Base Year	Plan Years				
		First Year	Second Year	Third Year	Fourth Year	Fifth Year
Mining	100	121.5	109.2	112.8	119.9	118
Extraction of Petroleum	100	142.3	116.1	127.5	108.9	109
Extraction of Minerals and Stones	100	105.4	106.3	95.7	108.4	107.1
Industry	100	101.7	92.6	100.6	98.5	98.5
Food and Drink Industries	100	88.5	85.6	82.6	85.3	83.1
Tobacco Industry	100	102.1	101	99.6	100.3	103.8
Ginning and Pressing of Cotton	100	104.5	75.9	100.7	90.3	100.7
Spinning and Weaving Industry	100	105.9	103	103.3	104.5	103.4
Ready-Made Clothes	100	104.5	123.2	119.4	97.6	97.7
Wood Industry	100	146.6	149.6	146.7	142.4	139.1
Paper Products Industry	100	123	190.6	240.8	286.1	282.6
Polishing Industry	100	108.8	109.4	116.7	124.1	123.8
Tanning Leather	100	62.7	83.9	93.1	94.2	90.6
Rubber Industry	100	107.9	115.6	113.1	120.1	113.2
Chemicals Industry	100	113.4	108.5	128.1	126.3	143.8
Petroleum Production Industry	100	102.7	84.7	90.2	98.1	85.1

TABLE 5.5--CONTINUED

INDEX NUMBERS OF THE AVERAGE PRODUCTIVITY OF LABOR IN INDUSTRY DURING THE FIRST FIVE-YEAR PLAN (1960/61 - 1964/65)

(1959/60 Prices = 100)

Sectors and Activities	Base Year	Plan Years				
		First Year	Second Year	Third Year	Fourth Year	Fifth Year
Non-Metallic Products Industry	100	106.1	110.9	110.5	102.1	103.5
Basic Metal Industry	100	113.5	112.4	106.5	84.9	81.5
Metal Industries	100	103.8	129.6	115.4	112.1	123.6
Manufacturing and Repairing Machines	100	66.1	61.1	133.1	176.3	122
Transportation	100	122.5	171.8	198.3	193	157.9
Other Industries	100	103.2	102	101	101.1	90.7
Electricity	100	108.6	121.6	117.5	120.7	136.2
Grand Total of Mining, Manufacuring and Electricity	100	102.1	98.1	101	99.1	99.3

Source: Statistics used in constructing this table were from the following sources: Ministry of Planning, The Main Achieved Goals of Production and Income of Mining, Industry and Electricity according to the Sectors in the First Five-Year Plan (1960/61-1964/65), Statistical Tables. Ministry of Planning, Follow-Up and Evaluation of the First Five-Year Plan (1960/61-1964/65), Part I, Table No. 1, pp. 8-62. Ministry of Planning, Labor Statistics included in the Annual Follow-Up Reports. Ministry of Planning, Labor Unit Statistics, quoted in Said El Bawab, op. cit., p. 19.

lags far behind. In the Eastern Socialist countries--Soviet Union and European Socialist countries--the index number of labor productivity increased from 100 in 1958 to 138 in 1963. Other developing countries in South Asia witnessed an increase in the average productivity of labor from 100 to 117 between 1958 and 1963.

In the advanced capitalist countries, such as the Common Market countries, the index number of labor productivity increased from 100 in 1958 to 135 in 1963. During the same period, average labor productivity rose by 25 percent in the United States and Canada.[30]

Physical productivity per worker per working hour in the Egyptian cotton textile industry was calculated in 1964/65 as follows:

Average production of spinning worker per hour =

$$\frac{\text{Total production in kilograms x 1000 kilograms}}{\text{Number of workers x number of working hours}} =$$

$$\frac{137707000 \text{ kilograms x 1000 kilogram}}{19882 \text{ x } 148 \text{ working hours}} = 929 \text{ grams.}$$[31]

In 1967, the value of the average annual pro-

---

[30] In current prices, the average productivity per worker increased by 9% during the plan period, while the average wage in industry increased by 22.8%. Ministry of Planning, Follow up and Evaluation of the Five-Year Plan 1960/61-1964/65 (Cairo: 1966), pp. 67-70; 20 (Arabic).

[31] Centray Agency for Public Mobilization and Statistics, "Industrial Development in U.A.R.," General Statistics and Analytical Studies, Vol. 68, 7th year, September 1969, p. 29 (Arabic).

ductivity per worker was L.E. 1281 per worker and in 1968/69, productivity decreased to L.E. 1111.382 (all at current prices).[32]

An attempt is made in the following section to trace the level of productivity and efficiency of investment and raw materials in industry as a whole, and in the textiles industry in particular, comparing their levels before and during the First Five-Year Plan 1960/61-1964/65. This is done basically to give a complete picture of the trend of change of inputs productivity in textile industry.

c. Other indicators of level of productivity during First Five-Year Plan 1960/61-1964/65 compared to level before plan

The major factors limiting the realization of the planned 8.9 percent average annual rate of growth of the real industrial income during the First Five-Year Plan were outlined as follows:

First, investment criteria, quantity of capital and its pattern of distribution and efficiency in the industrial sector. Second, labor productivity--which has already been discussed--and raw materials

---

[32]Ministry of Industry, Report on the Economic Activities of the Egyptian Public Corporation for Spinning and Weaving for 1967/68 and 1968/69 (Cairo: 1970) p. 7 (Arabic).

productivity.[33]

3. Investment

The growth ratio of the industrial sector (industry, electricity and mining) over the plan years has been a highly capital intensive one. This sector received 34.1 percent of the total investment of the economy during the First Five-Year Plan.

a. The quantity of capital

If we compare the amount of capital invested in the industrial sector during the plan period with that in the previous period, we notice that investment in the industrial sector during the plan period amounted to L.E. 516.5 million, whereas investment in the previous eight years preceding the plan reached L.E. 367.1 million. Industry received 67.1 percent of the total actual investment in the industrial sector, electricity accounted for 21.8 percent and mining 11.1 percent.

Chemical products industries received 8.9 percent of the total investment of the industrial sector (industry, mining, and electricity), petroleum 8.2 percent, and basic metal industries 6.3 percent. Among the major consumption industries which received large amounts of investment resources were spinning and weaving which accounted for 10.6 percent, and food,

---

[33]We shall discuss whether each factor had positive or negative effects on the realization of this rate of growth.

tobacco and drink industries which received 7.5 percent of the total industrial sector's investment.

The pattern of distribution of investment, thus, showed a high concentration in the productive industries, which received L.E. 363.3 million, accounting for 70.4 percent of the total executed investment in the industrial sector.[34]

b. The investment efficiency

As we have seen, the magnitude and pattern of distribution of the industrial investment had a major impact on the rate of growth or real income in the industrial sector. When we examine the investment efficiency of production we notice that it had a negative effect. This will be traced in the textile industry as well.

The marginal capital/output ratio in industry and mining amounted to 2.4 in the first five-year plan, 7.7 in electricity, and stood at 2.8 in the total industrial sector . The corresponding ratio for the total industrial sector during the 1952/53-1959/60 period was 2.5, thus indicating a higher level of

---

[34]Ministry of Planning, Evaluation and Follow-up of the Five-Year Plan 1960/61-1964/65 (Cairo: 1966), quoted by Said Ahmed El Bawab, The Factors Determining the Rate of Growth of the Industrial Sector in the First Five-Year Plan (1960/61-1964/65) in U.A.R., Institute of National Planning Memor.780 (Cairo: 1967) pp. 1-7 (Arabic).

efficiency of production than that achieved during the plan.[35]

The United Nations study showed that the capital/output ratio in 1960/61 in industry was 1.72, with corresponding ratios of 0.55 for food, 1.22 for textiles, 3.0 for chemicals, 0.20 for minerals and 0.99 for engineering.[36] In 1947, however, the overall ratio of capital to value added in manufacturing industries[37] was 1.10, in food processing 1.04, in textiles 0.5, in chemicals 2.72, in mineral products 1.84, and in engineering and metal products 2.61.[38]

A comparative analysis of the capital/output ratios in industry shows an increasing trend in its value in most industrial activities. This trend is probably due more to the effect of (i) the shift towards establishing more capital intensive industries that

---

[35]Ministry of Planning, op. cit., pp. 76-99, quoted in Said El Bawab, op. cit., p. 15.

[36]Too much significance should not be attached to these changes of the capital/value added (between 1947 and 1960/61) since the number of projects studied was small. Charles Issawi, Egypt in Revolution, pp. 182-184.

[37]In 1967, the average annual productivity per L.E. was 5,169 millions, while in 1968/69 it fell to 4,542 millions. (All in current prices) Ministry of Industry, Report on the Economic Activities of the Egyptian Public Corporation for Spinning and Weaving for 1967/68 and 1968/69 (Cairo: 1970), p. 7 (Arabic).

[38]Charles Issawi, Egypt in Revolution, p. 183.

require large sums of capital, (ii) a change in the level of technology applied in the various industrial activities and (iii) decreasing efficiency in capital utilization.

c. Raw materials productivity during the First Five-Year Plan period

The low level of labor productivity in Egyptian industry is also coupled with low productivity of raw material inputs. In several industries this level remained stable, while in others it improved only slightly.

As for the industrial sector, as a whole, raw materials productivity during the five-year plan period (1960/61-1964/65) increased by only 3.8 percent. The decreasing raw materials productivity in many industrial activities, particularly spinning and weaving, has forced it to face severe competition in export markets from highly efficient foreign products. It is worth mentioning that raw materials constitute a high percentage--between 45 and 85 percent--of total inputs in textile production. The cost of production of raw materials in textile industries increased during the plan period. The production requirements for an equivalent to one L.E. (1000 millimes) of textiles output in the base year 1959/60 was 691 millimes and increased to 709 millimes in 1964/65 (at 1959/60 prices), which represents a decrease of 2.6 percent in raw

material productivity (mainly cotton).

Among the other industries showing a decrease in their national inputs productivity were ready-made clothes and shoes, -3.1 percent; basic metal industry, -2.5 percent; and petroleum industry, -1.5 percent.

Other industries recorded a slight improvement in productivity; among these were the non-metallic products industry that increased by 0.1 percent during the plan period, paper industry 7.4 percent, food and drink 5 percent and chemical industries 1.6 percent.[39]

D. The Textile Plant Size and Economics of Scale

1. In Industry

In the preceding sections of this chapter, the productivity trends of the various inputs in the textile industry were examined regardless of the size of the plant or firm. Here we focus on the level of productivity and efficiency with respect to the size of the establishment.

A study of industrial production statistics in 1960 carried out by the Central Agency for Public Mobilization and Statistics covered 3,336 industrial

---

[39] Ministry of Planning, Evaluation and Follow-up of the Five-Year Plan, 1960/61-1964/65, quoted in El Bawab, op. cit., pp. 1-7 (Arabic).

establishments.[40] These were classified according to the number of workers employed:

First size 10-49 workers

Second size 50-99 workers

Third size 100-499 workers

Fourth size 500 and over

The study showed the results which appear on Table 5.6. From this table, we can observe 1) The increase in average production per establishment and productivity per worker is directly related to the increase in the number of work shifts (with the exception of establishments employing 500 or more workers), and 2) Labor productivity increases from the first to the second size; then it tends to decrease in both the third and fourth sizes. In normal cases, and at early stages, efficiency tends to increase with increasing scale of production; nevertheless, at sizes larger than management capacity or in the case of some industries, such as the textile industry--which does not require very large production units[41]--diseconomies

---

[40]These were distributed as follows: 44 mining and quarrying, 3290 manufacturing, 2 electricity and fuel. Institute of National Planning, Some Servïad Coefficients of the Industrial Statistics, Memo no. 460 (Cairo: Input-Output Group, 1964), p. 51.

[41]This point will be discussed later in Chapter 6 when the results of a field study on the relation between the size of textile establishments and the efficiency or production in Latin America is discussed. The study shows similar results of the relation between the size of firm and efficiency of production as shown above.

TABLE 5.6

THE AVERAGE PRODUCTIVITY PER WORKER, THE SIZE OF THE ESTABLISHMENT AND THE NUMBER OF SHIFTS IN INDUSTRY IN 1960

Number of Shifts at Work	First Size			Second Size			Third Size			Fourth Size		
	Work Shift	X*	Y**	Work Unit	X*	Y**	Work Unit	X*	Y**	Work Unit	X*	Y**
1 shift	1	25	847	25	85	1141	10	233	778	50	826	5571
2 shifts		44	1491		118	1584		310	1035		8494	5663
3 shifts		78	2644		328	4403		351	1172		2661	1774

*Average production per establishment, Thousand L.E.

**Average production per worker in L.E.

Source: Institute of National Planning, Some Devised Coefficients of the Industrial Statistics, Memo 460 (Cairo: Input-Output Group, 1964), p. 51. (Arabic.)

of scale start to appear. However this case deserves further investigation in order to underline the main factors behind this phenomenon.

Statistics show no correlation between the percentage share in total industrial production and the size of the firm (productive unit). In the first size 5 percent of the invested capital contributes 16 percent of total production. The second size accounted for 6 percent of the invested capital and generates 8 percent of total production, while 22 percent of the investment accruing to the industrial establishments of the third size generated 20 percent of production. The fourth size, accounting for 76 percent of investment, contributed 56 percent of the total production of the industrial establishments.[42]

The same trend was exhibited with respect to the relative contribution to total value added by the various size establishments.

Table 5.7 gives a clear view of the behavior of inputs productivity with respect to variations in the size of establishments. The table suggests that size two is relatively the most efficient size;[43]

---

[42] Institute of National Planning, op. cit., p. 51.

[43] Whole greater inefficiency in larger size plants may be attributable to deficiencies in the construction or technology in the Egyptian large-size establishments; it might be as well attributed to the huge bureaucratic organizations or lack of managerial skills. Ibid.

TABLE 5.7

COMPARISON OF THE COEFFICIENTS IN THE VARIOUS SIZES OF ESTABLISHMENTS IN INDUSTRY IN 1960

Items	1st size	2nd size	3rd size	4th size	Comments
Labor Productivity	1410	1770	1290	1450	Production in L.E. Thousand / Number of workers
Capital Productivity	7,22	7,85	3,1	1,77	Production Capital in L.E. Thousand
Value Added/ Production	,15	,4	,35	,29	Value Added/ Production L.E. Thousand
Value Added/ Capital	1,06	1,95	1,07	,51	Value Added/ Capital L.E. Thousand
Capital/ Worker	200	370	420	820	Capital/ Number of Workers

Source: Institute of National Planning, **Some Derived** Coefficients of the Industrial Statistics, Memo 460 (Cairo: The Input-Output Group, 1964), p. 77 (Arabic).

scale labor intensive weaving units.[46]

As shown in Table 5.8, approximately 75 percent of the total number of establishments in textiles industry in Egypt employ less than 100 workers, accounting for only 8% of the total employment in the industry.

It is important in this respect to compare between the coefficients of industry in general and the textile industry in particular. Figures in Table 5.9 do not show any direct relationship between the increase in the size of establishments and the increase in capital or labor productivity in the textile industry.

The comments which were made on the coefficients of industry in general also apply to the textile industry. Productivity of labor and capital and the ratio of the value added / Production and value added / Capital significantly increases from size one to size two, then suddenly decreases in size three. In the largest size establishments, size four, productivity rises but remains at a lower level than that of size two establishments. This can be attributed to the lack of managerial efficiency and high percentage of waste in production.

---

[46]United Nations, op. cit., p. 68.

TABLE 5.8

COEFFICIENTS OF THE TEXTILE INDUSTRY

	Size	Number of Establish-ments	Production in L.E. 1000	Employment	Fixed Assets	Value Added in L.E. 1000
Man-Made Fibers	1	25	592	679	189	203
	2	7	526	552	131	152
	3	10	1,929	2,095	304	481
	4	5	12,696	20,654	20,029	3,887
Spinning and Weaving of Natural Fibers	1	226	3,252	5,587	623	306
	2	55	3,826	3,892	813	1,269
	3	67	13,184	17,654	5,441	4,048
	4	36	88,992	90,626	45,426	26,764
Knitwear	1	88	1,395	2,338	371	417
	2	9	370	598	135	73
	3.	14	2,113	2,889	769	619
	4	4	2,741	3,262	998	630
Rope	1	9	17	126	1	5
	3	1	105	101	88	55
Other Textiles	1	3	91	37	36	18
	4	2	2,410	2,976	2,976	483
TOTAL	1	351	5,367	8,767	1,220	949
	2	71	4,723	4,742	1,079	1,494
	3	92	17,331	22,739	6,402	5,203
	4	47	106,839	117,518	76,356	31,764

Source: Institute of National Planning, Industrial Coefficients, Memo 460 (Cairo: Input-Output Group, 1964), p. 80 (Arabic).

Summary

This chapter aimed at examining the effect of economic policies on the efficiency of production of the cotton textile industry and at demonstrating that any improvement in the level of productivity would call for the adoption of a number of measures if the serious difficulties which this leading industry faces in Egypt are to be solved.

One of the serious problems facing the cotton textile industry is the use of high quality Egyptian cotton in the production of low count textiles, whereas in other countries the 40 percent cheaper Indian cotton is used.[47] In other countries, Egyptian raw cotton is used for producing counts which range from 30 to 180. The raw cotton or yarn utilized should correspond to the quality of products manufactured. At the same time, very low quality raw cotton or yarn should not be used improperly as it results in equally serious problems, in the form of low quality final products and uneconomical production, as well as technical problems.[48]

Our examination of the level of productivity in the domestic cotton textile industry revealed that it is comparatively low compared to that in other countries,

---

47"It is as though mahogany were used for kitchen tables." Charles Issawi, Egypt in Revolution, p. 186.

48United Nations Textile Industry, op. cit., p. 70.

and that textile exports need to be subsidized.

During the first five-year plan, the average annual rate of growth in the industrial sector as a whole reached 8.9 percent, mainly on account of the highly intensive capital investment policy, i.e. 34.1 percent of the total executed investment in all sectors of the economy.

The pattern of distribution of investment within the manufacturing sector, with particular emphasis on capital goods industries (receiving 70.4 percent of the total investment in the industrial sector) also contributed to the achievement of this high rate of growth. The investment productivity, however, was obviously low. The marginal capital total output ratio in the industrial sector reached 2.8 during the plan period as compared to 1.10 in 1947 and 2.5 during 1952/53-1959/60 period.

The same trend of decreasing productivity is characteristic also of labor input, and had a negative effect on the development of industry as a whole, while the raw materials input productivity achieved a slight increase of 3.8 percent in the industrial sector during the plan period.

The textile industry recorded a very slight increase in labor productivity and a decrease of 12.6 percent in raw materials productivity during the plan period.

Comparing the inputs productivity in different sizes of establishment in Egyptian industry in 1960, we find no positive relation between the increase in size of establishment and the increase in inputs productivity. It was also proved that there is no correlation between the percentage contribution to total industrial production and the size of establishment (measured by the number of workers) or the quantity and percentage of capital invested. This was characteristic also of the textile industry. This behavior is opposite to normal expectations regarding changes in the various inputs productivity as the size of the establishment increases.

These results underline the urgent need for improving imput productivity in industry, which leads us to recommend increasing incentives for both workers and management, as well as improving managerial training and technical education. We also recommend developing necessary research in all fields: economics, sociology, engineering, and science which would be conducive to sound development of the industrial sector in general and the cotton textile industry in particular.

CHAPTER VI

FUTURE TRENDS IN THE COTTON TEXTILE INDUSTRY

In this chapter an attempt is made to analyse the future prospects of the cotton textile industry vis-a-vis the man-made fibers industry.

Special emphasis is accorded to the dynamic development of the man-made fibers industry and its negative and positive impact on the development of the cotton textile industry in developing as well as in developed countries. Section A discusses the conditions determining the establishment and development of cotton textile industry. Section B analyses the impact of advanced technology on the development of the textile industry. It discusses the selection of the level of technology and machinery, as well as the impact of technology on the development of the raw material fibers.

A. Conditions Determining the Establishment and Development of the Cotton Textile Industry

Among the 2000 species of plants which yield vegetable fibres, cotton has been so far the most dominant. It plays a vital role in the economies of

the developing countries producing it.[49]

In Egypt cotton exports accounted for 50.2 percent of the total value of exports in 1964.[50]

A number of factors have induced the establishment of the cotton textile industry in several other developing countries as well as in Egypt. As we have previously noted, the relative abundance of required inputs, raw materials, moderately skilled labor, and capital, as well as an existing domestic market in these countries have given them a comparative advantage in the production of textiles.

On the international level, there is a tendency for the terms of trade to alter in favor of the developed countries and against the interests of the underdeveloped countries, the latter being the producers of primary products. This induced developing countries to establish and develop cotton textile industry, especially in cotton producing countries.[51]

---

[49] United Nations, Textile Industry, op. cit., p. 5.

[50] Central Agency for Public Mobilization and Statistics, General Statistics and Analytical Studies, Vol. 31, 3rd year, 1965, p. 29. (Arabic)

[51] Benjamin Higgins, Economic Development (New York: W. W. Norton & Company, 1959), Chapt. 15, and Raoul Prebish, Commercial Policy in Underdeveloped Countries (May, 1959), and Theodore Morgan, Readings in Econ. Development in the Long-Run Terms of Trade Between Agriculture and Manufacturing (California: Wadworth Publishing Company, 1963), pp. 274-285.

Many economists among them Kindleberger, Singer and Prebisch have defended the thesis which states the existence of a secular deterioration in the terms of trade against the interests of primary producing countries. They concluded that there is a secular deterioration in the commodity terms of trade of developing countries which will continue in the future, and that the only corrective will be the development of industries in poor countries and an increase in industries production for the purpose of import substitution. He states that protection is efficient if the loss caused by decreasing export prices for primary products exceeds the higher cost of domestic production of industrial products, in relation to imports. Protection here means a change in the type of goods imported rather than the restriction of imports. On the other hand, there is an opposing point of view, mainly supported by Theodore Morgan and Meier, which does not accept the first point of view, on the basis that it does not take into account such factors as quality improvements in industrial products, and decreasing transportation costs of primary products.[52]

Nevertheless, most of the weight is on the side of the first argument which states the existence of a

---

[52] Ibid.

secular deterioration. However, it might be more accurate to describe this trend as a series of wide fluctuations in the primary products terms of trade which operates against the producer countries most of the time.[53]

The existence of such fluctuations in the terms of trade constituted the main inducement for the developing countries to manufacture raw cotton domestically, especially those developing countries, such as Egypt, having a comparative advantage in fiber production. This policy is expected to be beneficial in four ways:

i. There will be a reduction in the need to sell their raw cotton abroad at unsatisfactory prices.

ii. There will be an increase in the size of their manufacturing sectors and expanding employment opportunities.

iii. There will be a saving of foreign exchange, resulting from the substitution of domestically produced textiles for textile imports.

iv. There will be an increase in foreign excahnge earnings as a result of export potentialities gained through improvements in quality of production, as well as world-wide efforts to reduce tariff barriers in developed countries for

---

[53] Nadia El-Tatawy, Terms of Trade and Economic Development (unpublished paper American University in Cairo, 1970), pp. 28-38.

developing countries exports.[54]

It is not surprising that the world structure of the cotton textile industry today has substantially changed. The growth in man-made fibers production in advanced capitalist countries tends to substitute for the once properous cotton textile industry in those countries. Meanwhile, the textile industry is currently flourishing in the developing countries.

The cotton textile industry today could be divided into two main categories:

1. Traditional cotton textile industries in the industrial capitalist countries facing severe competition from man-made fibers industries. In fact, it is no longer an expanding industry in those countries.[55] The latter characteristically have a higher per capita consumption of textiles. Due to the rise in wage rates, their textile industries face obsolescence and accelerating imports competition.[56]

---

[54] In many developing countries textile industries have become so competitive that developed countries have imposed import quotas to avoid what they regard as disruption of their domestic markets. United Nations, Textile Industry, op. cit., p. 54.

[55] Ibrahim Bourraie, Some Basic Trends in the World Cotton Industry, Institute of National Planning, Memo 989 (Cairo, 1970), pp. 43-48. (Arabic).

[56] United Nations, Textile Industry, op. cit., p. 72.

2. The cotton textile industry in developing countries producing raw cotton, where this industry is supported and developed to satisfy the domestic markets and for export purposes, as well as to accelerate the economic development process in general. In fact, within this category we would differentiate between three main divisions. First there are the textile industries which have been established recently in the expectation that they would save foreign exchange while, at the same time, domestic resources would be utilized. The second kind is the firmly established cotton industry which has already achieved self-sufficiency and an accelerating growth rate in production for domestic and foreign consumption. Egypt would be safely placed in the latter category. The third category includes textile industries which have grown obsolete but are protected from foreign competition by high tariffs imposed on imports.[57]

The following are among the main factors which will have an impact on the future trends of the cotton textile industry:

Price:

Although rayon, considered to be the oldest rival of cotton, still maintains a price advantage

---

[57] Ibid., see also Ibrahim Bourraie, op. cit., pp. 46-48.

over cotton, it has not succeeded in supplanting cotton products in the world market.[58]

Table 6.1 shows the price trends of the main man-made fibers in the main producing countries. From the table we note a declining trend in their prices, thus indicating a high level of technological improvement and efficiency in the production of the man-made fibers industry. This trend encourages developing countries which are non-producers of cotton to substitute alternative man-made fibers for natural fibers. Hence, whenever the prices of natural fibers rise sharply further impetus is given to their specific man-made fiber substitute.[59]

Performance:

The man-made fibers have proved to offer a better performance in some respects, especially in developed countries where their easy-care qualities are counted an important competitive advantage over cotton.[60]

In developing countries, however, cotton and the other natural fibers are still regarded as offering

---

[58] Ibrahim Bourraie, op. cit., p. 173.

[59] United Nations, Textile Industry, op. cit., p. 48.

[60] This is a consequence of the higher levels of income and the fact that services are relatively more expensive in these countries. Ibid., pp. 48-49.

TABLE 6.1

DEVELOPMENT OF MAN-MADE FIBER PRICES

	1956	1957	1958	1960	1961	1962	1963	1964	1965	1966
Silk Fibers										
United States	86	91	82	82	82	82	82	82	85	85
United Kingdom	58.5	58.5	64.5	64.5	64.5	66	66	66	69	69
Japan	56.7	60.2	40.5	37.5	38.3	37.8	35.5	50.7	44.3	44.3
Fabron										
United States	32	29	33	33	28	28	28	28	28	28
United Kingdom	24	24	22.7	22.7	22.7	22.7	22.7	23.7	23.7	23.7
France	31.7	31.7	21.9	24.3	21.9	23	23	23	23	23
Japan	25.5	24	19.9	20.5	21.3	17.1	18.9	18	18	18
Nylon Thread										
United States	19	201	201	201	201	201	201	221	221	221
United Kingdom	190	190	190	190	190	176	176	176	177	164
Japan	185.7	226.2	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1
Nylon Fibers										
United States	125	128	128	128	130	126	126	113	98	98
United Kingdom	117	117	117	117	117	109	109	109	103	96
France	133.5	133.5	133.3	133.3	94.8	94.8	94.8	87	87	87
Polyester Thread										
United States	190	201	191	191	191	198	197	182	182	182
United Kingdom	136	136	145	145	145	145	145	145	145	145
Japan	-	-	156	156	156	156	156	149	156	156

TABLE 6.1--CONTINUED

DEVELOPMENT OF MAN-MADE FIBER PRICES

	1956	1957	1958	1960	1961	1962	1963	1964	1965	1966
Polyester Fibers										
United States	135	141	141	141	136	124	114	98	84	84
United Kingdom	120	120	120	120	120	11)	110	110	90	80
Japan	-	-	119	119	119	119	102	119	119	119
Deropolia Fibers										
United States	112	128	128	130	130	128	106	106	106	106
United Kingdom	108	108	108	96	96	96	90	90	78	78
France	-	-	118	118	122	122	95	82	82	82
Japan	-	-	214	97	97	97	97	97	97	97

Source: Ibrahim Bourraie, "Some Basic Trends in the World Cotton Industry," Institute of National Planning, Memo 989 (Cairo: 1970), p. 175 (Arabic).

a better performance. This is largely due to the greater price difference between cotton and man-made fibers in developing countries than in developed countries and also to climatic factors, i.e. in hot climates cotton textiles are more suitable for clothing.

Cotton fibers are characterised by high durability and strength, which are 10-30 percent enhanced by washing, while the man-made fibers lose some of their strength through washing, e.g. nylon loses between 10-16 percent, and Orlon loses 14-16 percent.[61]

Cost of Production:

Another advantage in favor of man-made fibers is that their supply can be easily controlled and adjusted to fluctuations in demand, in contrast to the supply of natural fibers, which is affected by climatic conditions. Among the advantages provided by this controlled supply is the greater stability in prices and quality of man-made fibers.[62]

B. The Impact of Technology on the Development of the Textile Industry

1. The Capital and the Selection of the Level of Technology and Machinery in the Textile Industry:

Up to 1950, the textile industry was considered as a relatively labor intensive industry, traditional

---

[61] Ibrahim Bourraie, op. cit., pp. 173-181.

[62] United Nations, op. cit., p. 49.

and static, rather than a dynamic industry. Since the 1950's, however, a dramatic increase in the installed production capacity has taken place. The rising labor wages have acted as a strong incentive to adopt higher speed machinery combining a number of processes as well as the automated processing of materials. This resulted in textile production tending to increased capital intensity. However, it is not advisable that developing countries adopt highly advanced and sophisticated technology; instead they should choose the particular capital/labor combination that gives optimum returns relative to the availability of skills and the size of the market.

The availability of spare parts is of particular importance to developing countries where they are not domestically produced. Spare parts should be held in stock since the capital cost of holding spare parts in stock is by far lower than the overall costs of production when machinery lies idle.

It may be of particular importance to developing countries, as mentioned in Chapter 5, to seriously investigate the possibility of purchasing secondhand machinery which saves foreign exchange, while making sure that the exporter will provide the spare parts for a considerable time.

2. Impact of Technology on Raw Textile Fibers:

Although the availability of domestic raw materials has given many developing countries a strong incentive for manufacturing textiles, the area allocated to cotton production may have to be reduced in the future for the purpose of increasing the production of food crops as the population increases. This factor would result in an increase in the demand for man-made fibers total textile consumption at home.[63]

Using blends of man-made fibers and cotton might increase the quality of cotton produced as well as decrease the costs of production. In Egypt we have noted how the fine quality Egyptian cotton is utilized in the production of coarse yarn which results in the squandering of resources. Using man-made fibers and an admixture of cotton would partially solve this problem, while improving the performance characteristics of the final product.

In a forecast by the United Nations, cotton textiles consumption in developing countries is expected to continue to increase at a higher rate than in the developed countries reaching 50 percent of total world consumption between 1975 and 1980.

---

[63] United Nations, Textile Industry, op. cit., pp. 47, 80.

However, any plans for expansion in textile exports to developed countries have to take into account the increasing demand for cloth produced from blends of man-made fibers and natural fibers, as well as trends in the overall world demand for textiles in general. The advantage which the developing countries would have, compared to the developed ones, is the low wages in developing countries, which should enable them to export not only textiles but ready-made clothes as well.[64]

a. The World Production of Man-made Fibers

World War II is counted as one of the critical phases in the development of the world's textile industry. Germany and Japan had concentrated their efforts during this period on fostering the man-made fibers industry, in order to free themselves from dependence on imported raw cotton. Following the war and ever since, advanced countries were racing to manufacture these fibers.[65]

In 1968, world production of the man-made fibers amounted to 36 percent of total textile fibers production.

The following Table 6.2 illustrates the development in the world production of the main fibers, which have increased by 260 percent during the period 1900 to 1968. Wool fibers developed by 117 percent during

---

[64] Ibid., p. 30.

[65] Ibrahim Bourraie, op. cit., pp. 40-45.

TABLE 6.2

DEVELOPMENT OF WORLD PRODUCTION OF MAIN TEXTILE FIBERS

	Cotton		Wool		Man-Made Fibers				Total	
					Cellulosic		Synthetic			
	000 Tons	%	000 Tons	%	000 Tons	%	000 Tons	%	000 Tons	%
1900	3162	81	730	19	1	-	-	-	1	100
1910	4200	84	803	16	5	-	-	-	5	100
1920	4620	82	816	15	15	3	-	-	15	100
1930	5870	83	1002	14	208	3	-	-	208	100
1940	6907	76	1134	12	1127	12	5	-	1132	100
1950	6647	71	1057	11	1608	17	69	1	1677	100
1960	10113	68	1463	10	2656	17	702	5	3358	100
1961	9819	16	1488	10	2747	19	828	5	3575	100
1962	10456	66	1480	9	2928	19	1079	6	4007	100
1963	10945	65	1514	9	3130	19	1329	8	4459	100
1964	11309	63	1501	8	3386	18	1687	10	5073	100
1965	11577	62	1484	8	3439	19	2039	11	5478	100
1966	10545	58	1526	9	3449	19	2469	13	5918	100
1967	10406	57	1553	8	3430	20	2864	15	6794	100
1968	11386	56	1585	8	3646	18	3739	18	7395	100

Source: Ibrahim Bourraie, Some Basic Trends in the World Cotton Industry, Institute of National Planning, Memo 989 (Cairo: 1970), p. 45.

the same period, while the enormous percentage increase which occurred in man-made fibers, amounting to 7295 percent, is most notable.

The cotton proportion in the total textile fibers' production declined from 81 percent of the total textile fibers production in 1960 to 56 percent in 1968. Wool production decreased from 19 percent of the total textile production to only 8 percent during the same period. At the same time, the man-made fibers share increased from nil in 1900 to 3 percent in 1930, reaching 36 percent in 1968.

As for the period 1960-68, Table 6.2 indicates the following major trends:

(i) Between 1960 and 1968, production of the cellulosic fibers increased by 36.4 percent, i.e. by 4.5 percent annually.

(ii) The major growth in man-made fibers - which increased during the same period by 120 percent, i.e. by 15 percent annually, occurred in the synthetic fibers, which increased by 436 percent.

(iii) The increase in raw cotton production did not exceed 12.6 percent and wool production increased by only 8.3 percent during the same period.

(iv) The relative share of cotton in total fibers production declined from 68 percent in 1960 to 56 percent in 1968, while the man-made fibers

share increased to 36 percent in 1968, as compared to 22 percent in 1960, and the synthetic fibers share increased from 5 percent in 1960 to 18 percent in 1968.

As for the percentage share of the factory consumption of total fibers, Table 6.3 shows that the capitalist countries record a falling trend in its percentage share. Its share decreased from 56.1 percent of the world fibers consumption in 1952/54 to 51.1 percent in 1967/68, while the Socialist countries consumption share increased from 25.9 percent in 1952/54 to 28 percent of the total fibers factory consumption in 1967/68. Also the developing countries' share in the total world consumption of fibers increased from 17.9 percent in 1952/54 to 20.9 in 1967/68.

On the basis of the above trends, we cannot conclude that the cotton textile industry is deteriorating. For, in spite of the decreasing trend in the share of capitalist countries' consumption of cotton in the total fibers factory consumption, the percentage share in total world consumption of fibers is increasing at an accelerating rate both in the socialist and developing countries. Thus, the cotton textile industry in particular and textiles in general are still expanding in many countries of the world.

TABLE 6.3

DEVELOPMENT OF FACTORY CONSUMPTION OF THE MAIN TEXTILE FIBERS
(000 TONS)

	Industrial Capitalist Countries		Socialist Countries		Developing Countries		T o t a l	
	000 Tons	%	000 Tons	%	000 Tons	%	000 Tons	%
Cotton								
1952/54	3999	49.1	2447	30.1	1691	20.8	8142	100
1961/63	4330	43.3	3013	30.2	2646	26.5	9989	100
1964/66	4499	41.2	3443	31.5	2996	27.3	1918	100
1967/68	4321	38	3839	33.7	3224	28.3	11384	100
Wool								
1952/54	812	69.8	199	17.1	153	13.1	1163	100
1961/63	1004	64.9	383	24.8	160	10.3	1547	100
1964/66	982	62.6	399	25.4	188	12	1569	100
1967/68	942	59.8	426	27	208	13.2	1576	100
Cellulosic Fibers								
1952/54	1388	75.4	283	15.4	169	9.2	1840	100
1961/63	1866	63.7	761	26	301	19.3	2928	100
1964/66	2129	62.6	881	26	387	11.4	3397	100
1967/68	2061	58.7	982	28	465	13.3	3509	100

TABLE 6.3--CONTINUED

DEVELOPMENT OF FACTORY CONSUMPTION OF THE MAIN TEXTILE FIBERS
(000 TONS)

	Industrial Capitalist Countries		Socialist Countries		Developing Countries		T o t a l	
	000 Tons	%	000 Tons	%	000 Tons	%	000 Tons	%
Synthetic Fibers								
1952/54	174	93.1	9	4.8	4	2.1	187	100
1961/63	966	58.3	74	6.7	54	5	1094	100
1964/66	1855	87.1	161	7.5	116	5.4	2132	100
1967/68	2734	84.5	266	8.3	234	7.2	3234	100
Total Fibers								
1952/54	6372	56.1	2937	25.9	2022	17.9	11332	100
1961/63	8165	52.5	4230	27.2	3161	20.3	15556	100
1964/66	9466	52.6	4883	27.1	3666	20.3	18015	100
1967/68	10059	51.1	5514	28	4130	20.9	19703	100

Source: Ibrahim Bourraie, Some Basic Trends in the World Cotton Industry, Institute of National Planning, Memo 989 (Cairo: 1970), p. 76.

b. The Development of the Man-made Fibers Industry in Egypt

In Egypt, the silk industry was established toward the end of the 19th century. The industy depended entirely on natural silk fibers. By the twenties of this century, it was stimulated by the invention of two man-made silk fibers and fabron. The industry depended on imported fibers up to the Second World War, when imports stopped and, as a result, producation stopped for the duration of the war. During the post-war period, two Egyptian companies were established to supply the domestic market's demand for man-made fibers.[66]

In 1958, the manufacture of nylon commenced. The following Tables 6.4 and 6.5 show the development of the man-made fibers industry from 1956 to 1964/65.

Table 6.4 shows the development of the production of man-made fibers, including nylon fibers. In terms of quantity, production increased by 48 percent during the 1956-1964/65 period, while value of production rose by 69 percent.[67]

---

[66] The Central Agency for Public Mobilization and Statistics, Monthly Bulletin, Vol. 12, 1st year, 1963, p. 47 (Arabic).

[67] Central Agency for Public Mobilization and Statistics, Monthly Bulletin, Vol. 61, 6th year, 1968, p. 52 (Arabic).

TABLE 6.4

DEVELOPMENT OF MAN-MADE FIBER PRODUCTION IN EGYPT
DURING THE YEARS 1956, 1958, 1960, 1964/65

Year	Output of Foscose Products (Tons)	Output of Nylon Products (Tons)	Total Production of Man-Made Fibers		Change over 1956			
			Quantity (Tons)	Value (L.E.)	Quantity (Tons)	%	Value	%
1956	8877		8877	6092719	-			-
1958	10359	133	10492	6729978	1615	18.2	637259	10.5
1960	11893	241	12134	2881522	3257	36.7	178803	29.4
1964/65	12615	525	13140	10298720	4263	48.0	4206001	69.0

Source: Central Agency for Public Mobilization and Statistics, Monthly Bulletin, Vol. 61, 6th Year (Cairo: 1968), p. 52.

TABLE 6.5

DEVELOPMENT OF MAN-MADE FIBERS IN EGYPT (1956-1960)

(In Tons)

Item	Year	Domestic Production	Imports	Exports	Domestic Demand	Production/ Demand
Artificial Silk and Fabron	1956	8504	2161	57	10608	80.16
	1958	9746	388	429	9655	103.07
	1960	11124	830	696	11208	98.80
Solofan	1956	373	263	5	631	59.11
	1958	613	318	5	926	66.20
	1960	769	94	5	858	89.63
Total	1956	8877	2424	62	11239	78.98
	1958	10359	706	484	10581	97.90
	1960	11893	924	701	12116	98.15

Source: Central Agency for Public Mobilization and Statistics, General Statistics and Analytical Studies, Vol. 12, 1st Year, 1963, p. 48.

Comparing production with domestic final demand in Table 6.5, we note that, whereas domestic production fell short of satisfying the total domestic demand, there is an increasing trend towards achieving self-sufficiency. The ratio of domestic production/domestic demand reached 98.15 percent in 1960.[68]

Other indicators of the growth occurring in the man-made fibers industry are the value-added it generates, the wages and salaries and the employment it provides for thousands of workers. In 1960 the labor force in the man-made fibers industry was 23,980 (i.e. representing almost 14 percent of the total number employed in textiles industry, which reached 153.766 workers in 1960).

Statistics show that value added generated in the man-made fibers industry is constantly increasing, thus inducing further development. Value added increased by 63.6 percent between 1956 and 1960, while the rates of value added/investment rose from 16.3 in 1956 to 21.8 in 1960.[69]

Our brief review of the development of the man-made fibers industry in Egypt indicates a continuous tendency toward expansion, which is mainly attributable to the rising domestic demand for its products.

---

[68] National Bank of Egypt, op. cit., Vol. 12, 1st year, 1963, p. 47 (Arabic).

[69] Ibid., p. 49.

The special emphasis accorded to this industry is basically due to the fact that the cotton textile industry and the man-made fibers industry could be considered now as complementary industries in the sense of the expanding manufacture of blends.

3. Technology and the Economies of Scale

We could distinguish between two categories of economies of scale.

First, there are those which arise from a more efficient organization of the manufacturing process leading to an increase in output without any fundamental change in the manufacturing processes. Most important in this regard are the efforts to reduce the idle machine time existing at a certain installed production capacity.

The Economic Commission for Latin America (ECLA) published a theoretical study in 1966 investigating the significance of integrated cotton spinning and weaving plants. It was noted thereupon that the minimum economic size was a plant with a little below 6,000 spindles, while the optimum economic size was a mill with 18.500 spindles with a unit production cost 3 to 4 percent above the minimum.

The study showed that idle machine time is to be expected as the installed production

capacity grows.[70]

The second category of economies of scale comprises those resulting from the application of new technology to the production process, e.g., using machinery operating at higher speed, which requires that the output should absorb the production capacity of this machinery.

The ECLA examined as well the influence of the level of technology on the production costs in an integrated cotton spinning and weaving mill. The type of machinery was classified into three broad categories in relation to technology current in 1950, 1960 and 1964. Three models containing 15000 spindles were studied. The capacity of production was to be determined by the size of machinery at the relevant level of technology.[71]

Table 6.6 shows the capital plant capacity, output, workers, cost and profitability. From the table we note the striking difference in the relative use of labor and capital between levels A and C.

---

[70] The study was based on recent technical innovations in Latin America in 1964. They constructed 24 models based on 8 size units ranging from 2,000 to 100,000 spindles. The unit production and investment costs for a mill with a capacity of 6,000 spindles were only 6 to 11 percent higher than the costs for a mill with 100,000 spindles. United Nations, Textile Industry (New York, 1969), pp. 42-43.

[71] Assuming that machinery is producing at full capacity level, and that the full output could be sold. Ibid., p. 44.

In setting up a factory, the manager should weigh the difficulty of acquiring the larger amounts of capital required for levels B or C, as compared to level A, against the decrease in costs which could be achieved. Another factor should also be considered, which is the adequacy size of the market, should levels B or C be chosen.[72]

TABLE 6.6

DATA INTEGRATED COTTON MILLS IN LATIN AMERICA

	Level A	Level B	Level C
Capital Investment ($1,000)	4,453.3	5,658.5	6,507.6
Number of Spindles Installed	13,600.0	15,200.0	14,800.0
Number of Looms Installed	534.0	530.0	524.0
Yarn Output Tons	2,265.0	2,643.0	2,895.0
Cloth Output (1000 Meters)	16,800.0	19,600.0	21,500.0
Number Employed	668.0	446.0	315.0
Cost of Cloth ($per 1000 Meters)[a]	176.0	156.0	149.0
Return on Investment[b] (Percentage)	28.1	32.6	33.3

Source: ECLA, document, EICN 121746 quoted in United Nations, Textile Industry, Monograph No. 7 (New York, 1969), p. 44.

When the government participates in the establishment of mills, as in the case of Egypt, it may plan to

---

[72] It should be noted that the ECLA study does not examine the further economies prevailing at even greater capacity mills. Also conclusions are not to be accepted elsewhere without further investigation.

create employment opportunities and, from this point of view, level A clearly offers the greatest advantages. It is essential to consider the shortage of capital relative to labor in Egypt, and to choose from among the wide range of machinery available to the textile industry that which would give the minimum cost. Due consideration should also be given to the fact that textiles industries require more labor per unit of output than many other industries.[73]

Complementarity in the Textile Industry

It is noteworthy that a kind of interrelationship and complementarity in textiles is taking place, especially between the cotton and man-made fibers industries. This would improve cotton textile performance along with efficiency of production and in the long run decrease the cost of production and prices. Advanced technology and machinery are being adopted and utilized at accelerating rates in the textile industry. Machinery with the appropriate production capacity for manufacturing blends of cotton and man-made fibers should be installed in Egypt.

---

[73] United Nations, Textile Industry, op. cit., p. 73.

SUMMARY AND CONCLUSION

In Egypt, several factors have operated to encourage the establishment and frowth of the cotton textile industry aince Mohamed Ali directed his great efforts towards industrialization. Outstanding among these factors has been the fact that Egypt enjoys both a comparative advantage in the production of long staples raw cotton and the existence of a secure domestic market. At present, the cotton textile industry remains one of the leading industries in Egypt. This thesis has aimed mainly at substantiating this proposition, tracing the course of development and the role played by this industry in the Egyptian economy.

Part I of this study comprised a historical survey of the development of the cotton textile industry from the beginning of the 19th century up to the 1952 Revolution. This review showed that the growth of this industry has, at most times, exceeded the industrial growth which took place during this period. Emphasis has been laid on the major events and factors that affected the cotton textile industry's development and prosperity.

Part II examined the status of the textile industry and its relation with the other industries in Egypt, especially with reference to its contribution to industrial production, value added, employment and manufactured exports. In Capter III during the period 1952-70, the textile industry has been shown to rank first in terms of its contribution to the above-mentioned aggregates.[1] To draw a complete picture of the role played by the cotton textile industry, it was deemed necessary to analyse the interdependence between this major industry and the other sectors of the economy. Chapter IV presented the various published attempts at constructing input-output tables in Egypt, which has enabled the examination of the linkage between cotton textile industry and other sectors of the economy. It has been noted that the input demand of the textiles industry on products of the other sectors of the economy is rather large, the multiplier effect of an additional unit of final demand creates additional demand within a number of sectors, mainly the agri-cultural, chemical and petro-chemical, textile and

---

[1] As have been mentioned, the textile industry is the largest employer of labor in the industrial sector. In 1970, total employment in the industry amounted to 233,725 workers, which accounts for 38.2 percent of the total employment in the industrial sector. The Central Agency for Public Mobilization & Statistics, Industrial Production Statistics, 1969/70 (Cairo, 1971), p. 3.

ready-made clothes industries. On the other hand, it was noted that textiles production has had very little linkage effect on the production of textiles machinery. This is mainly attributable to the fact that the domestic market is not sufficient to justify local manufacture of textiles machinery as well as to the fact that the rapid pace of technical advance leads to the machinery being outdated. On the whole, the textile industry has been shown to contribute more backward than forward linkages.

Part III examined the efficiency of production and future trends of cotton textile industry. In Chapter V, the economic policies that directly affect the efficiency of production of the cotton textile industry were examined.

Any improvement in the level of input productivity calls for the adoption of a number of alternative measures which would overcome the difficulties which this leading industry faces in Egypt.

One of the major problems restraining the growth of the textile industry is the use of the high quality Egyptian Cotton in the production of low count textiles, for which the 40 percent cheaper Indian cotton is used elsewhere. In other countries, Egyptian raw cotton is used for producing counts which range from 30 to 180. The practice of using high quality

cotton for low count textiles results in non-optimum utilization of resources, as well as high costs of production and consequently higher prices as compared to those of foreign products, thus reducing the competitiveness of the domestic industry both in domestic and export markets.

A number of alternative policies have been suggested for dealing with these difficulties, mainly (i) increasing the importation of inferior quality low price yarn for the production of coarse fabrics, (ii) introducing new varieties of raw cotton that give high yields and extra short staple raw cotton (which is already under experimentation, (iii) using a blend of man-made fibers and cotton in the production of textiles. This would reduce the utilization of the high quality raw cotton in the production of coarse textiles, while at the same time improving the quality of textiles produced (i.e. producing more fine quality textile). The introduction of blends of man-made fibers and cotton fibers in textile manufacturing is of particular relevance to Egypt, since this country has already achieved progress in the man-made fibers industry.

In the long run, it should also be worthwhile to increase the level of counts produced, i.e., to produce more of the medium and high count textiles. This would,

nevertheless, call for basic adjustments in the type of machinery and the level of technology used in textile production.

It is noteworthy in this respect that developing countries including Egypt, could benefit by purchasing second-hand machinery in good condition (although they have to make sure that the exporter still produces spare parts for these machines). This would save foreign exchange, since the mass output produced by the up to date machinery might not be marketable (supply might exceed domestic and foreign demand) or alternatively it might result in idle machine capacity which entails great economic losses. It has also been noted throughout this study that in many developing countries the small size establishment in the textile industry is the most common and that it does not result in any serious diseconomies, furthermore, that economics of scale prevail in moderately small size establishments. In Egypt, statistics show that establishments employing 50-100 workers achieved the highest level of inputs and factors productivity.

The human factors, as well, have a serious impact on the development and prosperity of the cotton textile industry. Steps must be taken to increase labor productivity, which is relatively low compared to productivity levels achieved in foreign competitive

industries. Throughout the study it was noticed that too little attention has been accorded to increasing productivity. Both moral and financial incentives should be advanced, in addition to negative incentives punishing any carelessness or incompetence in workers' performance.

The serious impacts of the incidence of disguised unemployment in industries that reflect the government full employment policy should be noted in this respect, as well, as a harmfull factor that hinders the efforts for increasing productivity in the Egyptian industry.

Improving labor productivity requires as well the adoption of new techniques of production, and equally important is the establishment of training programs to import the requisite skills. In addition managerial efficiency should be improved through the introduction of appropriate management systems, the selection of the right type of men as managers, and the establishment of proper incentive systems.

Finally, Chapter VI discussed the present and future trends and prospects of cotton textile industry vis-a-vis the now flourishing man-made fibers industry. It has investigated as well the impact of technology on development. Although textiles industry tends to become a more capital intensive industry, nevertheless it is advisable that developing countries choose the

ratio of labor and capital that gives optimum returns relative to the availability of skills and the size of the market.

Finally, it is noteworthy that although the expansion of the cotton textile industry in the industrial capitalist countries has almost stopped, in the socialist and developing countries this industry is still growing at an accelerating rate. In the latter countries the cotton textile industry and the man-made fibers industry tend to be complementary rather than competitive industries.

In conclusion, the author wishes to emphasize that the importance of the cotton textile industry in the Egyptian economy warrants extensive research on the potentialities for developing this industry in Egypt. The present study, the author hopes, constitutes a modest attempt in this regard.

BIBLIOGRAPHY

TEXTBOOKS

Baldwin, Robert E., and Meier, Gerald M. Economic Development, Theory, Policy. New York: John Wiley and Sons, Inc., 1963.

Barawy, Rashed, and others. Economic Development in Modern Egypt. Cairo: Dar el Nahda, 1961. (Arabic.)

Baumol, William J. Economic Theory and Operations Analysis. New Delhi: Prentice-Hall or India, Limited, 1970.

Crouchly, A. E. The Economic Development of Modern Egypt. London: Longmans, Green and Co., 1938.

Hansen, Bent, and Marzouk, Girgis A. Development and Economic Policy in U.A.R. (Egypt). Amsterdam: North-Holland Publishing Company, 1965.

Heckscher, Eli. "Effects of Foreign Trade on the Distribution of Income," Readings in the Theory of International Trade. Edited by H. S. Ellis and L. A. Metzler. Philadelphia: Blakiston, 1949.

Higgins, Benjamin. Economic Development: Problems, Principles and Policies. New York: W. W. Norton and Company, 1959.

Issawi, Charles. Egypt: An Economic and Social Analysis. London: Oxford University Press, 1947.

_____. Egypt in Revolution. London: Oxford University Press, 1963.

Jervis, F. R. J. The Evolution of Modern Industry. London: George G. Harrap and Co., Ltd., 1960.

Leontief, Wassily. The Structure of the American Economy, 1919-1939. New York: Oxford University Press, 1953.

Meade, Donald. Growth and Structural Change in the Egyptian Economy. Homewood, Illinois: Richard D. Irwin, Inc., 1967.

Morgan, Theodore. Readings in Economic Development in the Long-Run Terms of Trade between Agriculture and Manufacturing. California: Wadworth Publishing Company, 1963.

O'Brien, Patrick. The Revolution in Egypt's Economic System from Private Enterprise to Socialism. London: Oxford University Press, 1966.

Owen, Robert. Cotton and the Egyptian Economy 1820-1914: A Study in Trade and Development. London: Oxford Clarendon Press, 1969.

Prebisch, Paul. "Commercial Policy in Underdeveloped Countries," American Economic Review Papers and Proceedings. May, 1959.

Ruggles, Richard, and Ruggles, Nancy D. An Introduction to National Income and Income Analysis. New York: McGraw-Hill Book Company Inc., 1949.

PUBLICATIONS OF THE GOVERNMENT, LEARNED SOCIETIES AND OTHER ORGANIZATIONS

Abd el Moutall, Said. The Modern Guide for Corporations and Companies. Cairo: n.p., 1970. (Arabic.)

Bawab, Said Ahmed. The Factors Determining the Rate of Growth of the Industrial Sector in the First Five-Year Plan (1960/61-1964/65) in U.A.R. Institute of National Planning. Memo No. 780, Cairo: 1966. (Arabic.)

Borail, Ibrahim. Some Basic Trends in the World Cotton Industry. Institute of National Planning. Memo No. 989. Cairo: 1970. (Arabic.)

Central Agency for Public Mobilization and Statistics. Annual Book for General Statistics of U.A.R., 1952-1969. Cairo: 1970. (Arabic.)

_____. Cotton Weaving Industry, No. 231-1[illegible]-Cairo: 1968. (Arabic.)

_____. General Statistics Yearbook, 1952-1970. Cairo: 1971. (Arabic.)

_____. Industrial Production Statistics, 1969/70. Cairo: 1971. (Arabic.)

_____. Statistical Indicators of U.A.R., 1952-1965. Cairo: 1966. (Arabic.)

_____. Statistical Indicators, 1952-1968. Cairo: 1969. (Arabic.)

Egyptian Corporation for Spinning and Weaving. First Annual Report. Cairo: 1963. (Arabic.)

Garib, Mohie el Din. "Support Policy of the Textile Industry Exports," Conference of Managements and Organization of Production and Export. Cairo: 1970. (Arabic.)

Institute of National Planning. Analysis of the Input-Output Tables of the Industry and Transportation Sectors in the Years 1959, 1960 and 1961. Memo No. 459. Cairo: 1964. (Arabic.)

_____. Some Derived Coefficients of the Industrial Statistics. Memo No. 460. Cairo: 1964. (Arabic.)

International Fair for Egyptian Cotton. Egypt's Cotton and Economics. Cairo: Al Ahram, 1958.

Ministry of Industry. Activities of Industrial Companies in 1962/63. Cairo: 1964. (Arabic.)

_____. Industry after the Revolution: The Prime Minister of Industry and Mineral Resources' Industrial Report on the Follow-Up and Evaluation of the Five-Year Plan in 1964/65. Cairo: 1965. (Arabic.)

_____. Report on the Economic Activities of the Egyptian Public Corporation for Spinning and Weaving in 1967/68. Cairo: 1969. (Arabic.)

Ministry of Planning. Follow-Up and Evaluation of Economic Growth in 1960/61-1964/65. Cairo: 1966. (Arabic.)

_____. Follow-Up and Evaluation of Economic Growth in 1969/70. Cairo: 1971. (Arabic.)

National Planning Committee. The General Frame of the Five-Year Plan, 1959/60-1964/65. Cairo: 1960.

United Nations. Textile Industry. UNIDO Monograph 7 on Industrial Development. New York: 1969.

_____. The Development of Manufacturing and Industry in Egypt, Israel and Turkey. United Nations Publications No. 58.II.B.4. New York: 1958.

PERIODICALS

Central Agency for Public Mobilization and Statistics. "Cotton Yarn as an Industrial and Exportable Good," General Statistics and Analytical Studies, Vol. 31, 3rd year (July 1965), pp. 28-31. (Arabic.)

_____. General Statistics and Analytical Studies, Vol. 61, 6th year (September, 1968), p. 52. (Arabic.)

_____. General Statistics and Analytical Studies, Vol. 68, 7th year (September 1969), pp. 55-65. (Arabic.)

_____. Industrial Production Statistics, 4th Quarter 1969/70. June, 1971, p. 3. (Arabic.)

_____. "Marketing of Cotton Textile Products," Monthly Bulletin, Vol. 12, 1st year, 1963, pp. 37-48. (Arabic.)

Central Bank of Egypt. Economic Review, Vol. VI, Nos. 1, 2 and 3, 1966, pp. 157-159. (Arabic.)

_____. "Industrial Development in U.A.R. in 1965," Economic Review, Vol. VI, No. 1, 1966, p. 289. (Arabic.)

Federation of Industry. The Yearbook of 1968. Cairo: 1969, p. 81. (Arabic.)

Gab Allah, Said. "Strategy of Economic Development During the 70ties." L'Egypte Contemporaine, Vol. 343 for 1962 (June 1971), p. 6.

National Bank of Egypt. Economic Bulletin, Vol. I, No. 3, 1948, p. 120.

_____. Vol IV, No. 1, 1951, pp. 95-105.

_____. Vol II, No. 1, 1954, pp. 10-11.

_____. Vol. X, No. 2, 1957, p. 118.

_____. Vol. XI, 1958.

_____. Vol. XIII, 1960.

_____. Vol. XV, No. 1, 1962, pp. 54-57.

_____. Vol. XVII, No. 2, 1964.

_____. Vol. V, No. 4, 1965, p. 353.

_____. Vol. XX, No. 1, 1967.

_____. Vol. II, 1968.

_____. Vol XXII, No. 1, 1969, p. 24.

_____. Vol. XXIV, No. 2, 1971, Statistical Section.

United Nations. Economic Survey, Vol. II,(New York, 1968), p. 54.

NEWSPAPERS

Hagrass, Saad. "American Cotton and the Success of its Cultivation in Egypt," Al Ahram, October 21, 1971. (Arabic.)

UNPUBLISHED MATERIAL

Tatawy, Nadia. Terms of Trade and Economic Development. Unpublished paper, American University in Cairo, 1970.

Youssef, Shafik Mikael. Input-Output Analysis and Its Applicability to Egypt. Unpublished M.A. Thesis, American University in Cairo, 1967.