PROTECTION AND COMPETITIVENESS IN EGYPTIAN AGRICULTURE AND INDUSTRY

by

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PROTECTION AND COMPETITIVENESS IN

EGYPTIAN AGRICULTURE AND INDUSTRY

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This paper contains the basic statistical material upon which Effective

Rates of Protection (ERPs), Domestic Resource Costs (DRCs), and crop acreage

responses were calculated by the authors for their volume on Egypt in the

NBER project Foreign Trade Regimes and Economic Development. This material,

which includes some comparisons of Egyptian costs of production with those of

other countries for a number of commodities, is too extensive for that volume,

in which interest is focused on the end results of the calculations. The

underlying data, however, are not easily accessible: some of them took us a

long time to gather, and readers might want to work on the data themselves

for further research in this field. We also felt that readers should be in

a position to evaluate our calculations.

In agriculture it was possible to estimate ERPs and DRCs for fourteen

crops in 1961 and 1963, and for ten crops in 1964. 1962 had to be left out

because the official exchange rate changed in the middle of the agricultural

year, and for several crops it was uncertain which rate should be applied in

converting Egyptian pounds to U.S. dollars, or vice versa. In manufacturing,

major industries were studies for as many years as possible between 1954 and

1970, but for some industries data were available only for one single year.

In all cases our choice of coverage (crops and industries as well as years)

was dictated by the availability of data.

I. DEFINITIONS

The effective rate of protection (ERP) is defined as

$$\frac{DVA_i^{dom} - DVA_i^{int}}{DVA_i^{int}} \times 100$$

where DVA stands for domestic value added, including nontraded produced inputs. DVA is thus equal to total value of output minus produced traded inputs, all in terms of domestic currency. Dom indicates estimate at domestic prices, int at international prices (in domestic currency), while i denotes crop or industry.

Domestic resource costs, or, DRC, are defined as the sum of labor costs, rental of land, and "normal" gross returns to capital, plus the value of nontraded produced inputs minus nontraded outputs, all expressed in domestic currency. DRC per U.S. dollar then follows directly through division by dollar value of traded output minus traded inputs, at international prices in terms of U.S. dollars.

II. AGRICULTURE, ERPs, AND DRCs

The data used in calculating the ERPs and DRCs are reproduced in the Appendix, Tables 2A-2C and 3A-3C. The calculations of the DRCs are presented in Tables 4A-4C. The results are summarized in Appendix Table 1.

For output, acreages, yields, and domestic prices, data were obtained from publications of the Ministry of Agriculture. These (for outputs, acreages, and yields) are known to be quite reliable and of satisfactory quality for our purpose. Domestic prices seem to be ex-farm; thus, the cotton price is for

unginned cotton (cotton seeds with lint). Output of by-products such as straw
and stalks is included; for certain crops (wheat, in particular) this changes
the picture substantially. In the case of peanuts[1] and chick-peas, straw was
not included for 1961; so that year the output values for these crops are
somewhat too low for that year.

In estimating output values at international prices we encountered some
difficulties. As far as possible export prices f.o.b. or import prices c.i.f.
in domestic currency were obtained from Egyptian trade statistics. In some
cases (cottonseed, refined sugar) international prices in terms of U.S. dol-
lars, obtained from FAO publications, had to be used; they were then converted
to domestic currency via the official exchange rate. Heterogeneity of com-
modities gave rise to difficulties. Thus, Egyptian cotton in 1961 had 9
varieties with 13 grades, each with its own price; some varieties and grades
were not exported (or imported) and thus had no observable international price.
We had to rely here on the Egyptian Cotton Commission's published prices for
exports, which may not include all handling costs in Egypt and thus fall short
of export price f.o.b. For nonexported varieties, prices were imputed on
the basis of the export price for comparable varieties. Weighted averages
were then calculated. Some agricultural outputs had been both exported and
imported, and typically the export price f.o.b. was higher than the import
price c.i.f. In some cases this was due to exports of superior qualities

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[1]Note a problem of interpretation here. In the official Egyptian publi-
cations the word ful soudani is used; its meaning in colloquial Arabic is
invariably peanuts. The official translation into French is arachide, which
in colloquial French can mean both peanuts and groundnuts, but botanically
means groundnuts. The offical translation into English is groundnuts. We
have assumed that the item included peanuts only; but if groundnuts are meant,
or an aggregate of the two, our calculations for this item on the basis of
international prices may not be correct.

and imports of inferior qualities; but it may also be a question of seasonal price differences. The authors proceeded on the premise that commodities actually exported should be evaluated at export prices f.o.b. and the rest at c.i.f. or other international prices. Since domestic prices were apparently ex-farm, estimates at international prices somehow had to take into account domestic trade and transport margins. On the basis of average prices for cotton at Alexandria and at ginning mills, it was calculated that trade and transport margins were about 10 per cent of the output value for cotton, and this margin was applied to all crops;[2] the actual margin, however, may differ substantially from crop to crop. It was included in domestic resource costs among the nontradable produced inputs (see below).

The cost of estimates are based on the Ministry of Agriculture's calculations of costs per feddan for individual crops for the years 1961 to 1964. The Ministry's calculations are based on extensive yearly surveys of actual costs, taking into consideration farm size, location, composition of production, etcetera. Economists who have been given the opportunity to scrutinize the surveys[3] consider them representative and reliable. Their main deficiency is that they classify costs in items that are not always clearly defined (at least in the available sources), and that the published classification is not fully appropriate for our purpose. (For the years before 1961 and after 1964 the classification is by agricultural operation -- and thus useless from our particular point of view.) Our breakdown of costs on tradables and nontradables

[2] B. Hansen, "Egyptian Cotton: The Margin between Ex-Farm Prices and Alexandria Spot Prices," unpublished paper, March 4, 1972; E.R.J. Owen (in Cotton and the Egyptian Economy, 1820-1914, Oxford, Clarendon Press, 1969, p. 229) reports information from the time of World War I that points to a margin between 9 and 16 per cent. But a margin of 25 per cent is also mentioned. These margins do not include interest on loans extended by middlemen.

[3] A.M. Mohieddin, unpublished thesis, London, 1966.

is for that reason somewhat dubious. Possible errors at this point are fortunately too small to affect the estimates of either the ERPs or DRCs seriously. There is no breakdown of costs on quantities and prices of inputs. The cost estimates seem to be at "delivered at farm" prices.

In estimating costs of produced inputs "at international prices," non-tradables were singled out and taken at their value at domestic prices. Tradables were divided into three groups -- seeds, chemical fertilizers, and the item "irrigation," which was identified with fuel for pumps. Seed costs were adjusted in proportion to the ratio between domestic and international prices for grain of the crop in question; for cane, the domestic price was used. Chemical fertilizer costs were adjusted on the basis of the ratio of domestic prices to (a) import prices c.i.f. for nitrates and (b) export prices f.o.b. for phosphates, respectively. "Irrigation" costs were adjusted on the basis of the ratio between domestic fuel prices and fuel prices f.o.b. Kuwait. For costs in sugar processing, see below.

Concerning costs for inputs of primary factors, labor input was evaluated by the Ministry at going market wages for rural laborers, while land rentals were at the official maximum rents. There is no official estimate of capital costs, presumably because they are fixed costs in relation to individual crops and difficult to distribute by crop. Only private costs are included in the official estimates.

Labor costs were taken directly from the ministry's estimates and are therefore at going market wages. The estimates of land rentals were obtained by adjusting upward the ministry's estimates of official maximum rentals in proportion to the increase in total output value of agriculture from 1949 to the year in question. The official maximum rentals are based on assessments

for tax purposes in 1949 and should, in principle, be equal to market rentals that year. It was then further assumed that free market rentals would be proportional to total output value for all crops (Cobb-Douglas, at given input of labor and land); rentals per feddan per crop differ as between crops, but the difference seems mainly to reflect the length of the growing period for the various crops.

Normal gross returns to capital were assumed to be ŁE 12 per cultivated feddan per year in 1961, which would amount to about ŁE 70 million for agriculture as a whole. For 1963 the figure was increased by 20 per cent, and for 1964, by 32 per cent.

We were led to the figure of ŁE 12 by the following considerations. To indicate possible orders of magnitude for interest and depreciation costs, we assumed the (private) capital-value added ratio in agriculture to be one. No reliable estimates of the agricultural capital-output ratio exist. Capital in agriculture consists mainly of the irrigation and drainage system (largely public) and the animals. The capital sunk into irrigation and drainage is, however, hardly distinguishable from land, and part of interest on capital is thus included in the category "rent of land." But the value of the animals alone may be of the same order of magnitude as that of agricultural output value. Thus, at 10 per cent interest, total interest costs in 1960 should have amounted to about ŁE 40 million.

Depreciation relating to replacement of animals, not included in output and value added, can be disregarded. There is some private machinery (pumps, motors, tractors), and maintenance and depreciation on such capital amounted to ŁE 3.9 million in 1965.[4] Interest on capital and depreciation should thus

[4]B. Hansen and K. Nashashibi, Foreign Trade Regimes and Economic Development, Vol. IV: Egypt, Chapter 6.

amount to about ₤E 45 million; including public costs, we may reach about ₤E 60 million per year.[5] Part of this amount should, however, be considered as costs in animal production. But we might, on the other hand, add interest on the value of "goods in process" -- that is, crops growing in the fields. With two crops per year, the (discounted) value of the growing crops should at any time be about ₤E 200 million. Interest on that amount means another ₤E 20 million -- hence the figure of ₤E 70 million "normal" capital costs, which is probably on the high side, unless an interest rate of 10 per cent is much below the "normal" rate. With a cultivated area of about 6 million feddan, the "normal" capital costs thus amount to about ₤E 12 per cultivated feddan per year.

"Normal" capital costs per crop are calculated in proportion to the time a crop occupies the land; if it is six months, "normal" capital costs would be ₤E 6 per feddan for this crop. For capital costs in sugar processing, see Appendix, Table 13 C.

We emphasize, finally, that all our estimates are averages for agriculture as a whole. It was not possible to break down the calculations by region or farm size, or to study the production margin, where relationships may differ completely from the averages. For sugar cane, special estimates were made, however, to allow for regional differences.[6]

III. AGRICULTURE: ESTIMATES OF ACREAGE RESPONSE FUNCTIONS

Appendix A of our volume on Egypt contains the results of the statistical estimates of acreage response functions for major Egyptian crops, 1913 to 1961.

[5]Ibid.

[6]Ibid., Chapter 8.

The data upon which these estimates are based appear in the appendix Tables 5 to 12 below. Sources and explanations are given in footnotes to the individual tables.

IV. INDUSTRY: ERPs AND DRCs

The data used in calculating the ERPs and DRCs for the ten industries selected in this study are listed in Tables 13A-13K. The results are shown in Table 13.

We had no single consistent systematic source of data at our disposal. A highly disaggregated input-output table could have filled this requirement;[7] such a table was not available, however. Instead, we had to use data derived from industrial surveys conducted either at the industry level or at the single firm level.

1. The industry surveys were conducted by the Central Agency for General Mobilization and Statistics (CAGMS) through questionnaires and survey teams in an attempt to study production and cost developments. The term "industry" is loosely defined, but usually encompasses large firms (fifty workers and over) in a given industrial activity, such as cement or phosphate fertilizers. These surveys present detailed breakdowns of all inputs used, including spare parts, as well as accounts of inventories, indirect taxes, subsidies, and profits. They do not, however, provide any details on actual capital replacement, financial structure, or relationships with the Ministry of Industry, particularly with respect to exports, imports of inputs, and foreign exchange flows. This is the source we used for cotton spinning and

[7] Since relatively accurate DRC calculations require the identification of virtually all produced inputs (in terms of quantity and value), it is doubtful whether any standard national input-output table would really suffice for the purpose at hand.

weaving, sugar, cement, phosphate fertilizers, nitrogenous fertilizers, and automobiles.

The advantage of the industrywide approach is, of course, that we are not restricted to the conditions of a single plant but obtain an average measure of efficiency and competitiveness. Moreover, data compiled at various points in time for the same industry bring in the effects of "embodied" technological change accompanying the addition of new plants. The question of how resources have been utilized on the average in an industry is interesting in itself. On the other hand, performance in the most efficient units should also be considered in an appraisal of profitability in import substitution and exports. When the industry consists of a few modern firms (as in the case of cement and fertilizers), average and top efficiency may not differ much and our DRC computations would underestimate the performance of the most efficient units to only a minor extent. But when the sources aggregate a large number of firms (as in the case of cotton spinning and weaving), the difference between the average and the top may be considerable. Indeed, the statistics for the cotton textiles industry lump together the large, modern plants of Mehalla el Kobra and the small firms with antiquated equipment. Thus, in interpreting our results for the cotton textiles industry one should bear in mind that they may significantly underrate the profitability and competitiveness of the modern integrated spinning and weaving units.

Generally, it could be said that the more homogeneous the output and the fewer the firms included in the survey, the more reliable the data. Thus, it is difficult to assign international prices to a heterogeneous output. A number of industries (pharmaceuticals, metal products, tobacco) had to be left out from our study for this reason. From comparisons with other sources

(e.g., Yearbook, Federation of Industries), we found the CAGMS data source to be fairly reliable, particularly for industries with a relatively simple structure of outputs and inputs.

2. A second type of source was used for the evaluation of the rubber tires plant (Transport and Engineering Company), the Helwan Steel plant, and the paper factory (RAKTA). It consists of unpublished papers from a series of courses on industrial development given by the Institute of National Planning, Cairo, which frequently required participants to present an analysis of the performance of specific industrial firms. These papers represent a valuable source of information and are available in the library of the Institute. Their main drawback is that cost categories are not standardized and hence are subject to varying interpretation.

In our tabulations ex-factory unit values were used in lieu of published domestic prices, since the latter usually include transport and handling margins.[8] Whenever possible, we attempted to get equivalent international prices on a c.i.f. basis at Egyptian ports. Such prices were obtained either from the Egyptian Trading Organization, which collects quotations in foreign currencies directly from foreign exporters for a wide variety of products, or, in the case of easily identifiable commodities, from trade statistics. In some cases (such as steel), we used f.o.b. export prices published by the United Nations, OECD, and other international organizations and added freight margins obtained from freight conferences to obtain prices on a c.i.f. Alexandria basis. For a number of manufactured traded inputs, international prices were obtained by reducing the domestic unit value by the appropriate tariff

[8]In some cases, the ex-factory prices may not have been the market clearing prices. But shortages were usually temporary and could not be taken into account.

and the so-called statistical tax, which in reality is an import surcharge levied on most goods. In the case of export industries (textiles), we used export prices c.i.f. European ports as well as the f.o.b. export prices.

Nontraded goods were evaluated at their actual domestic prices, but in the case of electricity produced with fuel oil, a reduction was made corresponding to the substantial difference between domestic and c.i.f. prices of fuel oil.

Joint products were included as much as possible in the estimates of DRCs, and in some cases (e.g., molasses in the sugar industry) this procedure improved profitability significantly. Some industries (e.g., cement) enjoyed revenues from sales of special services (transportation) which had to be included since their costs were not distinguishable in the input breakdown. Where an industry operated at less than full capacity, we computed DRCs at full capacity utilization (usually defined as 90 per cent utilization) by a linear extrapolation of outputs, produced inputs, and, in most cases, labor. Profitability was assumed to increase only through better utilization of capital, a conservative assumption that tends to underestimate the overall benefits of higher-capacity utilization.

Capital is usually evaluated at historical costs minus actual depreciation charges. This method did not pose serious problems in cases where the plant's construction was of recent origin (tires, paper, steel, automobiles) but may have led to underestimates of "normal" returns to capital in the case of cement, fertilizer, and textile plants, which were constructed or reconstructed in the late 1940s. In the sugar industry, where much of the equipment was of a pre-World War II vintage, capital was estimated at replacement cost.

"Normal" returns to capital (before taxes) were assumed to be 10 per cent. Our basis for this assumption is the average return of 143 joint stock companies for 1958 and 1959 -- 10 per cent and 11 per cent, respectively.[9] Since depreciation allowances were computed on the historical costs of assets, the rates of return in 1958 and 1959 may have been somewhat lower. However, investments were much higher in the first half of the 1960s than in the preceding period and capital was scarcer. On the other hand, many investments were financed from Communist countries at low interest rates, and some foreign funds were directed to specific projects (such as the High Dam and the current steel expansion). In such cases, it is the actual interest rate that is relevant to evaluating profitability of a given industry, provided the capital equipment supplied by the lender is priced at c.i.f. quotations from the cheapest alternative sources. Any price differential is in effect an interest charge, and has to be seen as part of the overall bilateral trade agreement with the country in question.[10] We do not have sufficient information on the actual terms of financing for most of the industries included in this study. Hence we propose to experiment with two additional rates of return, 5 per cent and 15 per cent, which should provide us with a range that surely must have included the "natural" rate of return within it.

Returns to labor only pose problems insofar as average wages were raised above labor's social opportunity cost by the nationalizations, the statutory minimum wages and the employment drive of 1961. Empirically, it is not feasible to correct for such discrepancies, particularly because these may

[9]Economic Bulletin, National Bank of Egypt, 1960, p.

[10]See Karim Nashashibi, "Bilateral Trade as a Development Instrument under Global Trade Restrictions," NBER Working Paper 54, New York, 1974.

differ with skill categories. On the other hand, we have noted instances of overemployment (in textiles and steel, for example), maintained a long time after the employment drive, partly because the industries were not at liberty to release excess labor. To the extent that labor was redundant because of this rather than because of bad management, DRCs should be adjusted downward accordingly. This circumstance is another reason which leads us to suspect that the textile industry and particularly its modern, large-scale units may be much more competitive than our DRC estimates indicate. Another problem in evaluating labor remuneration is the treatment accorded by statistics to the workers' share of profits and to payments to old age pension funds. Since 1961 wage data are broken down into four categories: wages, salaries, social services, and insurance and savings. "Social services" means the usual fringe benefits, such as free transportation to and from the plant, paid holidays, and free medical care. These certainly represent a cost to the firm. "Insurance and savings" consists of old age pension fund contributions and retained employee profit shares. By and large these charges do not represent a social resource cost. Hence, we have viewed them as a tax on profits and have excluded them from resource cost evaluation.

V. INDUSTRY: INTERNATIONAL COMPARISONS

Indentifying the factors that have contributed to the competitiveness of Egyptian industry or the lack of it is a natural sequel to the foregoing evaluation. According to the theory of comparative advantage one expects Egypt to excell in labor-intensive industries. In terms of the theory of effective tariffs, this would suggest that Egypt would have an advantage in

lines of production with a high share of labor in value added. A large
component of nontraded goods in value added should also be an advantage since
such goods tend to be labor-intensive. We shall make an attempt to throw
some light on these hypotheses by selecting from our industries activities
producing homogeneous goods and comparing their costs with those incurred in
other countries (both developing and developed) in the production of the
same goods. Comparisons have been made for cement, phosphate fertilizers,
nitrogenous fertilizers, rubber tires, and paper for countries with compara-
ble cost data. Data were obtained from the UNIDO publication Profile of
Manufacturing Establishments.

Cement production in Egypt was found to be highly competitive. Compari-
sons of Egyptian costs data with those of India, Israel, and France are shown
in Table I. Since the data refer to plants concentrating on standard Port-
land cement, reasons of comparability prompted us to use Egyptian cost data
for 1960 rather than for 1965-66, by which time diversification had reduced
the share of Portland cement to two-thirds of total Egyptian output. With
the production mix virtually identical for all four countries, costs per unit
of output were calculated for variable material inputs, labor, and machinery.
In addition, labor productivity, capital productivity, and the capital-labor
ratio were computed, together with ex-factory prices. In Egypt, Israel, and
India, multiple exchange rate systems were in effect at that time. Exchange
rates were chosen to reflect the fact that domestic cement prices in India
and Israel fell roughly to the level of the international cement price (taken
here as Egyptian export price of $11 per ton) so that for that particular com-
modity, the exchange rate would be an "equilibrium rate." Thus, absolute

TABLE I

Cement: Cost Coefficients, Labor Productivity

and Capital Productivity in Four Countries

Cost coefficients	Egypt	India	Israel	France
(U.S. $ per ton of cement)	1960	1964	1964	1964
Energy	2.96	3.01	3.44	3.43
Variable material inputs	2.56	1.30	3.03	4.72
Wage bill	1.09	0.93	2.47	1.55
Total material input and labor cost	6.61	5.24	7.94	9.60
Wages per hour				
(U.S. $)	0.35	0.11	1.14	1.71
Labor productivity				
(kg. per man-hour)	321	122	460	1100
Capital productivity				
(kg. per U.S. $ for machinery)	228	224	62	164
Capital-labor ratio				
(U.S. $ per man-hour)	1.40	0.54	7.41	6.70
Unit value of cement				
(U.S. $)	7.61	10.96	11.66	12.53
Egyptian export price				
(U.S. $)	11.00	--	--	--
Exchange rate				
(domestic currency per U.S. $)	0.435	7.57	4.20	5.0

Note: Averages are as follows: five plants in India with an average scale of operations of 400,000 tons; two plants in Israel with average capacity of 500,000 tons; two plants in France with average capacity of 700,000 tons; four in Egypt with average capacity per factory of 600,000 tons. Capacity utilization exceeds in all cases 90 per cent. Capital values refer to book values of machinery and equipment after depreciation. For Egypt the exchange rate is the official rate after the devaluation of 1962.

Source: Data on Egypt: The Cement Industry, Central Agency for General Mobilization and Statistics (CAGMS), Cairo; Data on India, France, Israel: Profile of Manufacturing Establishments, Vol. I, United Nations, 1967, pp. 182-199.

cost levels reflect the cost shares of the various input components at the international price of cement. Eventually, these exchange rates were adopted virtually unchanged by the countries concerned under general devaluation measures. For Egypt, the official rate after the devaluation of 1962 was used to make the 1960 cost data comparable to the 1964 data for other countries.[11]

Cement production depends heavily on bulky raw materials like limestone, which, in effect, is a nontraded commodity. It is also a large consumer of energy, mostly fuel oil in Egypt but also coal and electricity in India and France. The value of energy consumed per ton of cement does not vary much among the four countries. But costs per ton of the other variable material inputs reveal substitution differences. In this respect the countries can be ranked according to their relative labor abundance as reflected by the wage rate. India has the lowest materials cost per unit of cement produced, followed by Egypt, France, and Israel. The differences may be attributed to the costs of extracting the raw material component (limestone, clay, gypsum), where highly labor-intensive, low-skill techniques can be used. But they may also depend to some extent on the location of raw material deposits and factories. When it comes to cement production proper, which demands more highly-skilled labor, the Indian advantage in reduced. Labor costs per ton of cement produced appear to be roughly the same in Egypt as in India. Labor productivity is much higher in Egypt, but the far lower wages in India compensate for the difference. The higher labor productivity in Egypt is clearly

[11]Note that if a higher exchange rate had been chosen for Egypt (e.g., the rate of 61 piasters per U.S. dollar suggested by the IMF in 1966), the dollar values at domestic prices in Table I would be lower.

related to the much higher capital-labor ratio in that country. In France, a very high capital-labor ratio results in lower capital productivity and a high labor productivity. Labor costs are nonetheless higher than in Egypt because French wages are relatively high. In Israel, there seems to be overcapitalization, as labor productivity is less than half of that in France at a higher captial intensity, and labor costs are considerably higher than in France; the explanation seems to be underutilization of capacity in Israel.

For our purposes, the comparisons between Egypt and India are the most interesting. Disregarding inadequate valuations of capital that might bias the results, the striking fact is that with a capital-labor ratio two and a half times that of India, Egypt's capital productivity is roughly the same, and her labor productivity is three times larger. With the same productivity of capital but a much higher productivity of labor, production is clearly more efficient in Egypt than in India. Two possible explanations come to mind:

1. The technology used in Egypt might be superior to that used in India although capital (at historical values) per ton of cement produced is the same. However, the simple and standardized nature of the technology of cement production would render little weight to this explanation. Moreover, the average age of equipment seemsto be about the same in the two countries; in both some plants were erected in the 1920s and additional units added after World War II. What may give some weight to the argument is the difference in scale of operations. The average plant in Egypt has an annual capacity of 600,000 tons, as against 400,000 tons in India. However, the resulting difference in cost of production hardly exceeds 10 per cent and cannot explain away the equality in capital productivity.[12]

[12]United Nations, Industrialization and Productivity, Bulletin No. 8, 1964, Table VII.

2. Another possible explanation is related to the quality of labor in the cement industries of the two countries. Better management, engineering staff, and workers in Egypt might result in a larger product per unit of capital than in India. The difference in quality of labor between Egypt and India could be tested by looking at the distribution of the labor force by educational level. As a matter of fact, Egypt has a higher proportion of engineers among its employeed (1.03 per cent) than India (0.62 per cent).[13] For France the corresponding figure is 1.64 per cent. On the other hand, India has a higher proportion of workers with high school diplomas (12.8 per cent, compared with 3.5 per cent). However, the relative skill of the production worker should not be a determining factor with respect to overall capital productivity in this type of industry -- the efficiency of capital utilization in industries like cement, fertilizers, and oil refining depends mainly on engineering supervision and organization of production. The production process is continuous and to a large degree automated; moreover, and most important, the specifications of the product are constant. Hence, production does not require frequent intervention on the part of the worker in shaping the final product (as in the metal industries) or manipulation of a variety of machine tools, the proper functioning of which depends very much on the worker's skill.

Phosphate Fertilizers

In this industry it is difficult to find comparable data for the various countries because output structures are often characterized by joint products, and inputs differ widely from plant to plant, depending upon the processed used in

[13]The relative abundance of engineering skills at low cost in Egypt stems from a long-established educational system oriented toward applied sciences (engineering, medicine, agronomy).

labor advantage, which accounts for the difference in raw materials cost. [15]

"Other inputs" consist mainly of energy requirements, repair and maintenance work and other services. Labor charges are small in this capital-intensive industry and can do little to offset a raw materials disadvantage. The virtual equality in labor costs in the two countries despite higher wage rates in Yugoslavia is probably related to much higher capital charges in Yugoslavia, where the value of machinery and equipment per unit of output is more than twice as large as in Egypt. Thus, substitution of labor for capital appears to have taken place in Egypt relative to Yugoslavia and low wages may, in this way, have helped to give Egypt an overall factor cost advantage.

Nitrogenous Fertilizers

To give an impression of relative costs, we compare the Egyptian industry with a calcium ammonium nitrate plant in India; both depend upon the same electrolytic process for hydrogen reduction. [16] The exchange rates of the two countries may, of course, be overvalued to a different degree and the inputs may bear different rates of protection. Nevertheless, the relative cost structure is informative.

[15] The difference would have been even larger if pyrites had been imported by Yugoslavia rather than mined domestically.

[16] Profile of Manufacturing Establishments, op. cit., pp. 524-525.

TABLE III

Comparative Costs of Nitrogen Fertilizer Production

in India and Egypt in 1964-65

($ per nitrogen unit)

	India[a] calcium ammonium nitrates 20.5 per cent	Egypt[b]
Energy	69.3	49.9
Other material inputs	79.4	83.2
Wage cost	24.5	32.9
Exchange rate per U.S. $	Rs 4.74	0.437

[a]Source: Profile of Manufacturing Establishments, Vol. I, UNIDO, pp. 524-525.

[b]Output mix is shown in Table 13G.

Total variable costs of production in the two countries were quite similar. Note, however, that capacity utilization in India (95 per cent) was higher than in Egypt (80 per cent). And while average wages in India appear to be one third lower than in Egypt, wage costs per nitrogen unit at equal capacity utilization would probably have been the same in both countries. The significant difference is in energy costs, a simple consequence of a lower electricity price in Egypt ($2.71 per mwh against $3.69 per mwh in India), with physical input of electricity per unit of nitrogen almost the same. The low price of electricity is thus one of the factors that contribute to make Egypt's nitrogenous fertilizer industry relatively competitive.

data on paper mills in other countries reveals a very low level of labor productivity in the Egyptian plant. Experience with other Egyptian industries during this period suggests that overstaffing depressed average productivity. The share of wage costs in output value (at international prices) is low, however, and compares favorably with the European example in Table V. Thus, if overstaffing did, in fact,

TABLE V

Labor Productivity in Integrated Paper and Pulp Mills
(kilograms of paper)

	Labor Productivity Per Man-Hour	Per $ of Fixed Equipment at Replacement Costs	Share of Wage Costs in Output Value at International Prices
Egypt	6.4	1.2	14.0
	8.2[a]	1.5	11.5[a]
India I	3.5	--	20.5[c]
India II	9.0	--	13.4[b]
Mexico	59.0	1.9	--
Middle Europe	64.0	5.4[b]	12.3

Note: India I (1965) produces a large variety of paper, which partly accounts for its low labor productivity; India II (1964) produces newsprint; Mexico (1967), mostly printing and writing paper. The latter plant is highly competitive at world prices and is engaged in exports. All plants worked close to full capacity utilization, with the exception of India I, which operated at 75 per cent capacity utilization. See Profile of Manufacturing Establishments, Vol. I, UNIDO, pp. 120-23, 996-1002.

[a] At full capacity utilization.

[b] At domestic prices.

[c] Capital at fire insurance value.

occur, it cannot explain the Egyptian plant's inefficiency. Rather, the explanation appears to be -- starting-up costs notwithstanding -- the low skill level of

workers and possibly also the inexperience of management. Together with capacity utilization skill of the operatives is, indeed, critical in this industry and may account for most of the differences in efficiency. Much responsibility rests with plant engineers and foremen in securing the prescribed specifications of the paper in the beating and mixing departments and with operatives in handling sophisticated and costly equipment. The relatively automatic production process may only work after a long experimental period in which output mix is adapted to both the quality of raw materials used and the demands of the market. Once control over paper specifications is achieved and the production process mastered, productivity should rise substantially. Whether this will happen remains to be seen.

Conclusions

The following conclusions emerge from the preceding cost comparisons.

1. Egypt has an advantage in industries using substantial amounts of non-traded goods. This advantage depends upon low labor costs incurred in the extraction of the nontraded input (cement), on savings in transportation costs for a bulky material (phosphates), or savings in nontraded resources such as hydro-electric power or natural gas (nitrate fertilizers).

2. Labor costs in Egypt in all of the industries surveyed compare favorably with those of higher-income countries. At the same time, labor productivity is relatively high in Egyptian industries like cement, phosphates, nitrates, and rubber tires. Here a combination of low labor costs and a relatively high level of skills seems to have given Egypt an advantage. Indeed, the rubber tire experience indicates that even if most material inputs are imported (provided they are high-value inputs bearing low freight margins), a relatively labor-intensive

import-substituting industry may be competitive.

3. The skill constraint is in the steel and paper industries. Insufficiency of skill appears on the organizational and engineering levels as well as in manual labor.[18]

[18]Cairo's small private machine tool shops employ a large number of skilled operatives, but, by and large, the wages and other incentives offered in the public enterprises have failed to attract skilled labor.

Table 1

Effective Rates of Protection, ERP, and Domestic Resource Costs, DRC, for Major Field Crops, 1961, 1963 and 1964

| | Effective rates of protection, ERP, percent | | | Domestic Resource Costs, DRC, piasters per US$1 | | | | | |
| | | | | 1961 | | 1963 | | 1964 | |
	1961	1963	1964	excluding trade and transport margins	including trade and transport margins	excluding trade and transport margins	including trade and transport margins	excluding trade and transport margins	including trade and transport margins
Summer Crops:									
Cotton (lint and seeds)	-7	-2	-22	29	32	36	32	27	32
Rice	-26	-48	-54	24	29	21	26	24	32
Corn	18	1	-14*	35	39	45	45	48*	53*
Millet	0	-2	16	36	40	49	55	55	75
Peanuts	-50	-52	n.a.	18	22	55	68	75	n.a.
Sesame	35	10	n.a.	35	39	17	21	n.a.	n.a.
Autumn Crops:									
Corn	16	0	-14	48	52	56	62	48	53
Winter Crops:									
Wheat	16	-13	-10	45	50	44	49	46	51
Barley	-6	-2	-3	34	38	41	46	43	47
Beans	62	51	51	64	69	60	65	65	59
Lentils	-5	4	n.a.	29	33	38	43	54	51
Onions	-31	-47	-56	14	18	11	16	11	16
Chick-peas	45	56	n.a.	27	31	50	55	55	n.a.
Perennial Crops:									
Sugar, including refining	46	-69	-47	53	53	22	22	30	30
Weighted average:									
All 14 crops	-0.4	-25.1	n.a.	32.9	36.4	32.3	36.6	n.a.	n.a.
10 crops	—	-25.2	-24.4	—	—	32.5	36.7	32.7	36.9
Official exchange rate, piasters per US$1				35.2		43.5		43.5	

* Average of autumn and summer corn, the latter of rapidly increasing importance.

Sources: Tables 2.A to C, 3.A to C, and 4.A to C

Table 2

Major Field Crops: Output, Value Added, And Returns to Capital and Management 1961
At Domestic and International Prices

Crops	Quantity per feddan domestic ex farm MT (1)	Unit price, PT/kg International at off. exch. rate (2)	Unit price at domestic prices (3)	Output Value £E/feddan at domestic prices (4)	Output Value at international prices (5)	Domestic value added, DVA £E/feddan at domestic prices (6)	DVA at international prices (7)	Value added by primary factors £E feddan at domestic prices (8)	VA by primary factors at international prices (9)	Return to capital and management, residual £E/feddan at domestic prices (10)	Return at international prices (11)
Cotton.lint,	0.169	-	24.954	46.804	42.172						
seed	0.335	-	3.520	1.516	11.792						
stalk		0.152			1.516						
Total**	1.000			48.320 (73.930)	51.730* (81.134)	41.430* (67.040)	43.620 (72.424)	31.050 (56.660)	32.640 (62.044)	-1.380 (24.230)	-7.263 (22.141)
Rice, grain	2.127	1.798	2.333	38.242	49.623						
straw	1.125	0.096		1.082	1.082						
total				39.524	50.705	33.064	44.720	26.504	38.170	9.744	18.326
Millet, grain	1.381	2.411	2.207	33.295	30.483						
straw	1.501	0.091		1.368	1.368						
total				34.663	31.851	26.263	26.205	23.543	23.485	9.283	6.376
Peanuts	0.758	5.205	10.014	39.455	75.909	35.125	70.521	28.375	63.771	10.155	42.184
Sesame, grain	0.385	8.600	6.322	33.111	24.342						
straw				33.111	24.342	29.461	21.902	26.151	18.592	15.031	5.032
total											
Corn, grain	1.009	2.543	2.095	25.661	21.140						
straw	1.375	0.121		1.658	1.658						
total				27.319	22.798	23.349	20.158	16.179	12.988	3.239	-2.969
Wheat, grain	1.038	2.833	2.204	29.411	22.879						
straw	1.549	0.580		8.987	8.987						
total				38.398	31.866	31.578	27.175	26.678	22.275	9.618	0.392

Table 2 ___, Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Barley, grain	1.099	2.012	2.017	22.116	22.824						
straw	1.132	0.474		5.364	5.364						
total				27.478	28.188	23.778	25.198	20.768	22.188	8.608	6.682
Beans, beans	0.491	5.591	3.135	27.454	15.393						
straw	0.927	0.405		3.753	3.753						
total				31.207	19.146	26.977	24.317	13.946	9.827		-4.684
Lentils, beans	0.540	5.867	6.255	31.683	33.779						
straw	1.413	0.400		5.651	5.651						
total				37.334	39.430	32.654	34.440	30.364	32.150	13.274	10.097
Onions (w.)	4.741	1.814	2.541	85.979	120.483	71.619	103.345	66.589	98.315	43.379	69.673
Chick-peas, peas	0.671	9.793	6.764	65.714	45.384						
straw											
Total				65.714	45.384	59.484	57.394	38.991	40.134	16.782	
Sugar, cane	37.375	0.234		87.402	142.943	64.022		58.642	62.413	24.632	-1.464
'Ref.			183.133	183.133	118.680	81.260		99.833	44.098	44.098	

*Ginning and pressing costs ₤E3.750 deducted.
**Figures in parentheses are calculated on the assumption of "normal" cotton crop in 1961
+unginned cotton

Sources: Cols. (1),(2),(4) from Agricultural Economy, Ministry of Agriculture, 1960, 1961, 1962, 1963 and 1964

Cols. (3) and (5), our estimates, international prices from official Egyptian trade statistics cotton seed (FAO, Production Yearbook, Sudanese), cotton lint (average of officially announced export prices), ref. sugar (see Table 13.C). The international prices, used here, differ in some cases slightly from those presented in Table 12. The latter were taken from international trade publications and dollar prices converted to ₤E at the official exchange rate. Both commodiclassifications and conversion rates may thus differ; the differences are entirely insignificant, however.

Cols. (6) - (11), our calculations:
Col. (6) = Col. (4) - Col. (7), Table 3.A
Col. (7) = Col. (5) - Col. (8), Table 3.A
Col. (8) = Col. (6) - Col. (9), Table 3.A
Col. (9) = Col. (7) - Col. (9), Table 3.A
Col. (10) = Col. (8) - Cols.(10) + (11), Table 3.A
Col. (11) = Col. (9) - Cols.(10) + (12), Table 3.A

Table 3

Major Field Crops: Output, Value Added, And Returns to Capital and Management – 1963
At Domestic and International Prices

Crops	Quantity per feddan domestic MT ex farm (1)	Unit price, PT/kg — International at off. exch. rate (2)	Unit price, PT/kg — at domestic prices (3)	Output Value, £E/fed. — at domestic prices (4)	Output Value, £E/fed. — at international prices (5)	Domestically value added £E/feddan — at domestic prices (6)	Domestically value added £E/feddan — at international prices (7)	Value added by primary factors £E/feddan — at domestic prices (8)	Value added by primary factors £E/feddan — at international prices (9)	Return to capital and management £E/feddan — at domestic prices (10)	Return to capital and management £E/feddan — at international prices (11)
Cotton, lint	0.271	31.128	-	78.008†	84.496						
seed	0.527	4.002	-		21.079						
stalk		0.159		2.255	2.255						
total	1.422			80.323	103.590*	73.139	92.199	61.402	80.462	25.742	35.222
Rice, grain	2.326	3.342	1.798	41.821	77.727						
straw	1.454		0.093	1.347	1.347						
total				43.168	79.074	37.311	71.425	30.974	65.088	12.238	42.525
Millet, grain	1.569	2.060	2.122	33.288	32.315						
straw	2.274		0.100	2.281	2.281						
total				35.569	34.596	25.604	26.122	22.905	23.423	8.479	5.372
Peanuts, nuts	0.849	12.066	5.820	49.415	102.441						
straw	1.774		0.134	2.377	2.377						
total				51.792	104.868	47.537	98.824	39.852	91.139	21.572	68.568
Sesame, grain	0.434	7.129	7.936	34.441	30.942						
straw	1.254		0.118	1.475	1.475						
total				35.916	32.417	30.934	28.130	27.524	24.720	14.670	8.482
Corn, grain	0.921	2.584	2.686	24.739	23.797						
straw	1.608		0.118	1.900	1.900						
total				26.632	25.697	22.042	22.067	15.452	15.477	2.392	-1.182
Wheat, grain	1.110	3.233	2.874	31.904	35.882						
straw	1.624		0.372	6.038	6.038						
total				37.942	41.920	31.160	35.717	26.000	30.557	8.232	6.803

Table 3 — Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Barley, grain	1.107	2.637	2.654	29.190	29.374	29.089	29.797	25.653	26.361	12.719	9.144
straw	1.273	0.307	0.307	3.909	3.909						
total				33.099	33.283						
Beans, beans	0.731	5.079	(3.295)	37.131	24.086						
straw	1.028	0.307		3.153	3.153						
total				40.284	27.237	34.256	31.363	22.684	19.791	16.564	-0.099
Lentils, beans	0.603	6.064	5.784	36.564	34.879						
straw	0.859	0.727		6.244	6.244						
total				42.808	41.123	37.616	36.170	35.022	33.576	17.578	10.052
Onions	7.119	1.680	3.092	119.621	220.141	99.141	187.034	93.371	181.264	69.241	150.662
Chick-peas, peas	0.692	7.346	4.531	50.833	31.353						
straw	n.a.	n.a.		3.083	3.083						
total				53.916	34.435	47.422	30.430	44.881	27.889	24.486	4.414
Sugar, cane	38.744	0.239		92.453	383.592	67.288	310.265	61.434	288.590	23.513	216.559
, ref.				168.247		95.834		74.159		12.762	

*Ginning and pressing costs ŁE 4.240 deducted.
Unginned cotton

Major Field Crops: Output, Value Added, and Returns to Capital and Margement – 1964
At Domestic and International Prices

1964	Quantity per feddan MT (1)	Unit price, PT/kg and domestic ex farm rate (2)	Output Value, £E/fed. at international at off. exch. rate (3)	at domestic prices (4)	at international prices (5)	Domestically value added, £E/feddan at domestic prices (6)	at international prices (7)	Value added by primary factors and management £E/feddan at domestic prices (8)	at international prices (9)	return to capital and management £E/feddan at domestic prices (10)	at international prices (11)
Cotton,lint.seed	0.313	-	35.293	100.191†	110.466						
seed	0.566	-	4.350	2.423	24.625						
stalk	1.528	0.159		2.423	2.423						
total				102.614	133.274*	92.518	118.602	82.047	108.131	41.849	54.873
Rice,grain	2.123	1.798	3.747	38.171	79.549						
straw	1.327	0.093		1.229	1.229						
total				39.400	80.778	32.637	71.611	25.416	64.390	4.345	37.696
Millet,grain	1.513	2.413	2.081	36.509	31.486						
straw	n.a.	n.a.									
total						25.863	22.350	21.933	18.420	6.405	-2.006
Peanuts,nuts											
straw											
Total											
Sesame,grain											
straw											
total											
Corn,grain	1.166	2.686	2.609	32.319	30.421						
straw	2.041	0.110		2.253	2.253						
total				30.066	32.674	25.311	29.278	18.174	22.141	3.349	2.395
Wheat,grain	1.155	2.874	3.219	33.197	37.179						
straw	1.686	0.372		6.269	6.269						
total				39.466	43.448	32.576	36.309	26.946	30.679	8.576	4.201

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Barley, grain	1.165	2.741	2.741	31.927	31.933	30.818	31.756	27.278	28.216	13.308	8.139
straw	1.150	0.307		3.531	-3.531						
total				35.458	35.464						
Beans, bean	0.895	5.158	3.295	46.167	29.490						
straw	1.262	0.311		3.931	3.931						
total				50.098	33.421						
Lentils, bean	0.667	n.a.	n.a.			44.178	29.181	40.888	-25.891	24.188	1.686
straw		n.a.									
total											
Onions	6.978	1.461	3.216	101.958	224.413	84.938	192.914	78.908	186.884	55.428	154.704
Chick-peas, pea	n.a.	n.a.									
straw	n.a.	n.a.									
total											
Sugar, cane	36.767	0.239		87.735	321.698	61.478	247.188	53.820	223.309	12.650	137.450
ref.				204.318		130.815		106.936		35.463	

*Costs of ginning and pressing, £E4.240 deducted
+unginned cotton

Sources: Cols (1), (2), (3) as in Table 2.A
Cols. (4) - (11) our calculations

Table 5

Major Field Crops: Costs of Traded and Non-Traded Produced Inputs at Domestic and International Prices

With Primary Inputs at Actual and Imputed Market Prices - 1961

(£E per feddan)

| Crops | Traded, Produced Inputs | | | | | | | | Non-traded, produced inputs: manures, draught-power, others | Primary factors | | |
| | Seeds | | Fertilizers | | Irrigation (fuel) | | Total | | | Labor costs | Land rent | |
	at domestic prices (1)	at international prices (2)	at domestic prices (3)	at international prices (4)	at domestic prices (5)	at international prices (6)	at domestic prices (7)	at international prices (8)	(9)	(10)/(11), (10)	actual (11)	imputed (12)
Cotton	0.880	4.679	3.900	2.468	2.110	1.563	6.890	8.710	10.380	11.080	21.350	28.823
Rice	2.900	3.763	3.000	1.807	0.560	0.415	6.460	5.985	6.560	7.950	8.810	11.894
Millet	0.310	0.290	4.600	2.771	3.490	2.585	8.400	5.646	2.720	6.120	8.140	10.989
Peanuts	1.830	3.521	1.390	1.045	1.110	0.822	4.330	5.388	6.750	8.600	9.620	12.987
Sesame	0.310	0.228	1.900	1.145	1.440	1.067	3.650	2.440	3.310	4.150	6.970	9.410
Corn	1.120	0.923	2.850	1.717	–	–	3.970	2.640	7.170	4.320	8.620	11.637
Wheat	2.870	2.233	3.380	2.036	0.570	0.422	6.820	4.691	4.900	3.280	13.780	18.603
Barley	1.570	1.622	1.520	0.916	0.610	0.452	3.700	2.990	3.010	2.600	9.560	12.906
Beans	3.320	1.862	0.390	0.293	0.520	0.385	4.230	2.540	2.660	2.660	11.830	15.970
Lentils	4.680	4.990	–	–	–	–	4.680	4.990	2.290	2.910	14.180	19.143
Onions (W)	10.500	14.714	3.150	1.898	0.710	0.526	14.360	17.138	5.030	7.690	15.520	20.952
Chick-peas	6.230	4.303	–	–	–	–	6.230	4.303	2.090	3.120	14.140	19.089
Sugar, cane	3.940	3.940	12.220	7.361	7.220	5.348	23.380	16.649	5.380	9.730	24.280	32.778
Sugar, ref.							64.453	61.683	18.848	31.884	24.280	32.778

Source: Cols (1), (3), (5), (7), (9),/(11), Agricultural Economics, op.cit.
Cols (2), (4), (6), (8), (12), our calculation.

Table 6

Major Field Crops: Costs of Traded and Non-Traded Produced Inputs at Domestic and International Prices

With Primary Inputs at Actual and Imputed Market Prices – 1963

(LE per feddan)

Crops	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Cotton	1.000	6.137	4.354	3.511	1.830	1.743	7.184	11.391	11.737	13.380	22.280	31.860
Rice	2.961	8.504	2.896	2.145	–	–	5.857	10.619	6.337	9.836	8.900	12.727
Millet	0.272	0.264	4.863	3.602	4.830	4.608	9.965	8.474	2.699	5.996	8.430	12.055
Peanuts	1.630	3.379	1.225	1.332	1.400	1.333	4.255	6.044	7.685	8.300	9.980	14.271
Sesame	0.302	0.271	2.083	1.543	2.597	2.473	4.982	4.287	3.410	4.984	7.870	11.254
[illegible]	1.040	1.000	3.550	2.630	–	–	4.590	3.630	6.590	4.690	8.370	11.969
Wheat	2.748	3.091	3.448	2.554	0.586	0.558	6.782	6.203	5.160	3.848	13.920	19.906
Barley	1.557	1.567	1.970	1.459	0.483	0.460	4.010	3.486	3.436	2.974	9.960	14.243
Beans	4.579	3.062	0.839	0.912	0.610	0.581	6.028	4.555	2.893	2.959	11.840	16.931
Lentils	5.192	4.953	–	–	–	–	5.192	4.953	2.594	3.304	14.140	20.220
Onions (W)	16.090	29.616	3.260	2.415	1.130	1.076	20.480	33.107	5.770	9.080	15.050	21.522
Chick-peas	6.494	4.005	–	–	–	–	6.494	4.005	2.541	3.255	14.140	20.220
Sugar,cane	4.146	4.146	14.482	10.727	6.537	6.226	25.165	21.099	5.854	13.191	24.730	35.364
Sugar,ref.	4.146	4.146					72.413	73.327	21.675	36.667	24.730	35.364

Source: Agricultural Economics, Ministry of Agriculture.

Note: Column headings as in Table 3 A.
Cols. (1), (3), (5), (7), (9), (10), (11), our calculations.
Cols. (2), (4), (6), (8), (12), our calculations.

Table 7

Major Field Crops: Costs of Traded and Non-Traded Produced Inputs at Domestic and International Prices

With Primary Inputs at Actual and Imputed Market Prices – 1964

(LE per feddan)

Crop	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Cotton	0.998	6.657	4.241	3.476	4.857	4.539	10.096	14.672	10.471	17.680	22.518	35.578
Rice	3.016	0.285	3.747	2.882	-	-	6.763	9.167	7.221	11.376	9.695	15.318
Millet	0.309	0.268	4.791	3.685	5.546	5.183	10.646	9.136		7.083	8.445	13.343
Peanuts	1.766		1.167	1.167	1.324	1.237	4.257		7.124	9.162	10.572	16.704
Sesame	0.329		1.782	1.371	2.251	2.104	4.362	3.396	3.750	5.752	7.894	12.473
Corn	1.053	0.527	3.571	2.747	0.131	0.122	4.755			6.068	8.657	13.678
Wheat	2.720	3.835	3.590	2.762	0.580	0.549	6.890	7.139		7.137	13.980	22.088
Barley	2.060	1.634	2.040	1.569	0.540	0.505	4.640	5.630	5.630	10.530	16.637	—
Beans	4.560	2.913	0.860	0.860	0.500	0.467	5.920	3.708	3.540	3.760	12.940	20.445
Lentils	5.570		-	-	-	-	5.570	4.240	3.290	3.570	13.950	22.041
Onions (W)	12.760	28.085	3.430	2.638	0.830	0.776	17.020	31.499	6.030	8.480	15.000	23.700
Chick-peas	6.440		-	-	-	-	6.440		2.830	3.940	14.080	22.246
Sugar,cane	4.013	4.013	15.241	11.724	7.003	6.545	26.257	22.282	7.658	16.366	24.804	39.190
Sugar, ref.							73.503	74.510	23.875	46.669	24.804	39.190

Source: Agricultural Economics, Ministry of Agriculture, Cairo, 1966, quoted in M. Clawson, H. L. Landsberg, L. T. Alexander, The Agricultural Potential of the Middle East, Elsevier, New York, 1971, p. 284.

Note: Column headings as in Table 3 A.

Table 8

Calculation of DRC per US$1
(1US$ = £E 0.352) 1961

Crops	DVA International prices £E/fed. (1)	Non-traded outputs £E/fed. (2)	Net foreign sales £E/fed. (3)	labor costs (4)	Imputed rent (5)	Normal gross return to capital (6)	Non-traded inputs minus outputs total (7)	total (8)	Trade & transport margin (t & t) (9)	total (10)	DRC excluding t & t marg. (11)	DRC including t & t marg. (12)
cotton	72.424	1.516	70.908	11.080	28.823	9.000	8.864	57.767	6.452	64.219	.29	.32
rice	44.720	1.082	43.638	7.950	11.894	5.000	5.478	30.322	5.192	35.514	.24	.29
millet	26.205	1.368	24.837	6.120	10.989	7.000	1.352	25.461	3.048	28.509	.36	.40
sesame	21.902	n.a.	21.902	4.150	9.410	5.000	3.310	21.870	2.494	24.364	.35	.39
peanuts, maize	70.521	n.a.	70.521	8.600	12.987	8.000	6.750	36.337	7.591	43.928	.18	.22
summer	27.195	1.658	25.537	4.320	11.637	4.000	5.512	25.469	2.818	28.287	.35	.39
autumn	20.158	1.658	18.500	4.320	11.637	4.000	5.512	25.469	2.114	27.583	.48	.52
wheat	27.175	8.987	18.188	3.280	18.603	6.000	-4.087	23.796	2.288	26.084	.45	.50
barley	25.198	5.364	19.834	2.600	12.906	6.000	-2.354	19.152	2.282	21.434	.34	.38
beans	16.606	3.753	12.853	2.660	15.970	6.000	-1.093	23.543	1.539	25.082	.64	.69
lentils	34.440	5.651	28.789	2.910	19.143	5.000	-3.361	23.692	3.378	27.070	.29	.33
onions	103.345	-	103.345	7.690	20.952	8.000	5.030	41.672	12.048	53.720	.14	.18
chick-peas	41.081	n.a.	41.081	3.120	19.089	7.000	2.090	31.299	4.538	35.837	.27	.31
sugar, ref	81.260	-	81.260	31.884	32.778	37.742	18.848	121.252	-	121.252	.53	.53

Sources:

Col(1) = Col(7)', Table 6.4.9.A
Col(2) = Col(5), Table 6.4.1.A
Col(3) = Col(1) - Col(2)
Col(4) = Col(10), Table 6.4.3.A, stalk or straw
Col(5) = Col(12), Table 6.4.3.A
Col(6) = our calculation, see text
Col(7) = Col(9), Table 6.4.3.A - Col(2), this table
Col(8) = Col.s (4) + (5) + (6) + (7)
Col(9) = Col.s (4) + (5) + (6), Table 6.4.2.A
Col(10) = 10 percent of Col(5), Table 6.4.2.A
Col(11) = Col.s (8) + (9)
Col(12) = Col.s (8) + (9)
Col(11) = [Col(8)/Col(3)]0.352
Col(12) = [Col(10)/Col(3)]0.352

Table 9

Calculation of DRC per US$1, 1963

(US$1 = LE 0.435)

Crops	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
cotton	92.199	2.255	89.944	13.380	31.860	10.800	9.482	65.522	8.450	73.972	.32	.36
rice	71.425	1.347	70.078	9.836	12.727	6.000	4.990	33.553	7.773	41.326	.21	.26
millet	26.122	2.281	23.841	5.996	12.055	8.400	0.418	26.869	3.231	30.100	.49	.55
sesame	28.130	1.475	26.655	4.984	11.254	6.000	1.935	24.173	3.094	27.267	.39	.44
peanuts	98.824	2.377	96.447	8.300	14.271	9.600	5.308	37.479	10.244	47.723	.17	.21
corn,												
summer	29.999	1.900	28.099	4.690	11.969	4.800	4.690	26.149	3.173	29.322	.40	.45
autumn	22.067	1.900	20.167	4.690	11.969	4.800	4.690	26.149	2.378	28.527	.56	.62
wheat	35.717	6.038	29.679	3.848	19.906	7.200	−0.878	30.076	3.588	33.664	.44	.49
barley	29.792	3.909	25.888	2.974	14.243	7.200	−0.473	23.944	2.937	26.881	.41	.46
beans	**22.684**	**3.153**	**19.531**	**2.959**	16.931	7.200	**−0.260**	**26.830**	2.483	**29.313**	**.60**	**.65**
lentils	36.170	6.244	29.926	3.304	20.220	6.000	−3.650	25.874	3.488	29.362	.38	.43
onions	187.034	−	187.034	9.080	21.522	9.600	5.770	45.972	22.014	67.986	.11	.16
chick-peas	30.430	3.083	27.347	3.255	20.220	8.400	−0.542	31.333	3.135	34.468	.50	.55
sugar ref	310.265	310.265	310.265	36.667	35.364	60.500	21.675	154.206	−	154.206	.22	.22

Note: Column headings as in Table 4A

Sources: As in Table 4.A., mutatis mutandis with respect to exchange rate

Table 10

Calculation of DRC per US$1, 1964

(US$1 = LE 0.435)

Crop	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Cotton	118.602	2.423	116.179	17.680	35.578	11.880	8.848	73.186	11.047	84.233	.27	.32
Rice	71.611	1.229	70.382	11.376	15.318	6.660	5.992	39.346	7.955	47.301	.24	.29
Millet	22.350	(2.281*)	20.069	7.083	13.343	9.240	1.649	31.315	3.149	34.466	.68	.75
Sesame	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Peanuts	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Corn, summer autumn	29.278	2.253	27.025	6.068	13.678	5.280	4.884	29.910	3.042	32.952	.48	.53
Wheat	38.309	6.269	32.040	4.390	22.088	7.920	-0.639	33.759	3.718	37.477	.46	.51
Barley	31.756	3.531	28.225	3.440	16.637	7.920	0.009	28.006	2.533	30.539	.43	.47
Beans	29.181	3.931	25.250	3.760	20.445	7.920	-0.641	31.484	2.049	34.433	.54	.59
Lentils	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Onions	192.914	-	192.914	8.480	23.700	10.560	6.030	48.770	22.441	71.211	.11	.16
Chick-peas	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sugar,ref.	247.188	-	247.188	46.669	39.190	61.940	23.879	171.678	-	171.678	.30	.30

Note: Column headings as in Table 4A.

Sources: As in Table 4.A., mutatis mutandis with respect to exchange rate.

* 1963

Table 11 Crop areas, 1913-1969

(000 feddan)

Year	Cotton	Rice	Wheat	Corn	Millet	Barley	Cane	Beans	Onions (winter)	Lentils	Helba
1912	1722	226	1287	1633	200	364	50	518	26	60	50
1913	1723	225	1306	1686	204	369	48	478	28	60	50
1914	1755	43	1253	1820	285	383	48	428	16	35	37
1915	1186	320	1534	1777	275	446	52	623	23	63	48
1916	1656	148	1394	1675	245	423	59	503	30	62	57
1917	1677	263	1076	1623	264	479	62	472	28	92	92
1918	1316	371	1239	1745	303	324	64	476	44	68	103
1919	1574	144	1275	1727	257	343	57	505	29	62	92
1920	1828	159	1147	1867	249	328	52	413	33	70	90
1921	1290	312	1405	2009	259	380	64	424	27	78	79
1922	1801	48	1462	1960	237	361	63	476	35	85	75
1923	1715	179	1481	1797	224	386	56	471	40	80	76
1924	1788	246	1364	1809	230	359	51	436	39	73	84
1925	1924	137	1329	2000	213	353	51	416	39	64	103
1926	1786	229	1475	2086	273	321	52	414	36	63	74
1928	1738	255	1532	2055	232	353	57	511	52	84	64
1929	1841	316	1555	2086	255	386	54	502	58	69	70
1930	2082	346	1466	1827	260	332	54	424	41	74	75
1931	1683	65	1589	2113	330	295	65	424	43	82	105
1932	1094	472	1697	1968	346	352	70	592	45	91	122
1933	1804	422	1374	1578	263	282	71	469	64	85	88
1934	1732	392	1389	1572	295	274	60	432	41	88	87
1935	1669	471	1410	1575	335	271	60	416	35	81	81
1936	1716	471	1410	1520	333	272	61	395	33	78	74
1937	1978	263	1369	1559	320	261	68	386	42	76	92
1938	1784	476	1416	1497	390	264	68	385	26	79	86
1939	1625	545	1446	1549	412	263	72	385	35	81	83
1940	1685	509	1506	1540	374	268	76	394	30	82	80
1941	1644	448	1502	1527	429	256	78	369	33	82	79
1942	706	673	1576	1983	824	321	88	359	17	76	110
1943	713	642	1917	1951	729	419	87	381	19	57	57
1944	853	620	1651	1890	728	331	96	425	21	81	52
1945	982	630	1647	1879	684	359	96	392	22	75	55
1946	1212	632	1586	1653	551	245	92	381	24	78	65
1947	1254	776	1630	1608	543	237	94	382	33	73	61
1948	1441	786	1516	1551	525	220	91	398	33	73	64
1949	1692	703	1417	1494	499	168	85	424	40	71	55
1950	1975	700	1372	1451	393	117	81	356	36	81	53
1951	1979	488	1497	1655	423	118	86	320	37	75	53
1952	1967	374	1412	1704	433	137	92	355	32	58	54
1953	1324	423	1790	2015	486	116	104	299	35	69	53
1954	1579	610	1795	1904	457	122	115	310	45	87	51
1955	1816	600	1523	1833	437	136	111	358	50	81	61
1956	1653	690	1570	1836	478	132	110	337	46	82	61
1957	1818	731	1514	1769	449	133	109	355	50	83	65
1958	1905	518	1425	1955	423	136	113	360	49	73	58
1959	1760	729	1475	1859	467	141	112	354	49	79	58
1960	1873	706	1456	1821	454	148	111	377	49	85	62
1961	1786	537	1384	1603	457	121	112	361	58	63	40

Year	Cotton	Rice	Wheat	Corn	Millet	Barley	Cane	Beans	Onions	Lentils	Helba
1962	1657	830	1455	1832	454	131	121	383	50	79	(60)
1963	1627	959	1345	1721	484	121	133	382	59	78	(59)
1964	1611	962	1296	1661	496	126	134	443	62(54)	79	62
1965	1900	848	1145	1455	501	128	130	445	58(51)	89	52
1966	1859	844	1303	1583	518	101	133	427	68(58)	75	43
1967	1626	1078	1262	1494	525	154	137	350	55(42)	66	35
1968	1464	1208	1432	1561	535	155	156	348	51(39)	52	34
1969	1622	1196	1265	1491	476	148	170	366	70	46	38

Source: For Tables A-11 through A-13: 1913 through 1957, M. M. El Imam, "A Production Function for Egyptian Agriculture, 1913-1955." Memo No. 259, Institute of National Planning, Cairo, December 31, 1962. For 1912 and 1958-61, Annuaire Statistique, several issues, Agricultural Economy, Ministry of Agriculture, several issues, and Economic Bulletin, National Bank of Egypt, several issues. Kantar, dariba, and ardeb are volume measures. The weight equivalents can be found in Agricultural Economy, op. cit., 1962, p. 42. The cotton lint Kantar used here is the "old" Kantar. 1&E = 100 piasters = 1000 millieme. 1/eddam = 0.42 ha = 1.04 acres.

For 1962-63, Economic Bulletin, op. cit., 1970, and 1964-1969, Development of the Agricultural Sector, 1964-1969, Central Department of Mobilization and Statistics, April 1962, op. cit., 1969. Beans, including humus. For onions, the figures in parentheses from 1964 to 1968 are from Economic Bulletin; the reason for the rather large deviations between the two sources is not clear. For helba, 1961 figure is from Agricultural Economy, op. cit., 1962, p. 142, 1962 and 1963, our interpolation.

Table 12   Yields per 100 feddan

Year	Cotton, Lint Kantars	Cotton, Grain Kantars	Rice, dariba	Wheat, ardeb	Corn, ardeb	Millet, ardeb	Barley, ardeb	Cane, 100 Kantars	Beans, ardeb	Onions (winter), 100 Kantars	Lentils, ardeb	Helba ardeb
1913	444	304	162	525	633	746	586	655	553	190	470	380
1914	367	260	113	475	716	807	524	675	441	144	388	380
1915	402	306	137	463	741	826	560	668	447	157	352	380
1916	306	233	123	475	696	811	565	675	400	157	396	391
1917	375	287	146	503	715	733	572	655	453	141	362	369
1918	366	281	147	471	681	840	568	635	473	157	398	380
1919	354	271	134	429	672	843	533	675	448	150	391	371
1920	330	253	141	502	686	842	578	689	446	151	359	365
1921	337	259	120	478	607	807	571	652	446	146	399	335
1922	373	286	91	455	615	797	568	654	444	141	358	330
1923	381	292	134	498	678	805	564	684	443	141	304	303
1924	407	309	132	455	678	823	544	742	395	148	406	334
5	414	316	136	494	700	845	572	693	445	148	402	335
1926	429	327	138	457	701	877	571	704	387	141	375	316
1927	401	305	136	505	696	833	600	692	465	151	412	347
1928	464	351	142	442	692	902	555	747	380	148	278	309
1929	463	351	141	528	701	917	595	664	456	160	374	332
1930	397	300	139	492	694	858	574	644	431	143	380	321
1931	378	285	118	526	671	895	597	725	417	149	376	325
1932	453	342	125	560	701	885	621	718	487	149	393	325
1933	475	358	135	528	668	823	595	724	447	148	382	320
1934	436	329	140	487	714	921	598	787	409	144	349	310
1935	511	380	160	556	766	987	701	771	455	141	412	331
1936	531	399	157	588	749	875	722	773	489	147	421	360
1937	557	370	151	601	756	908	735	782	494	156	449	363
1938	467	316	163	588	749	862	735	751	478	163	404	371
1939	535	360	174	615	703	926	755	759	513	171	484	384
1940	544	365	139	602	709	867	750	733	509	166	480	384
1941	509	340	135	499	600	781	686	678	498	169	472	490
1942	600	399	148	534	523	836	717	633	498	139	460	378
1943	500	343	113	449	404	758	625	557	481	135	468	358
1944	544	373	139	382	589	749	571	604	490	125	397	368
1945	431	361	145	479	645	766	608	611	507	162	440	394
1946	500	306	157	489	615	681	605	611	508	141	400	383
1947	508	336	174	427	623	761	596	644	442	139	391	374
1948	617	402	176	475	649	760	630	609	466	143	420	381
1949	514	339	176	549	598	813	684	586	488	154	416	398
1950	430	295	188	495	643	773	649	691	359	121	393	342
1951	408	282	135	539	613	873	702	727	468	142	339	383
1952	504	353	146	518	631	862	719	785	453	134	345	402
1953	535	381	163	576	657	855	740	790	451	132	427	399
1954	490	348	194	642	658	858	789	817	490	138	433	415
1955	410	294	231	635	667	878	778	831	473	129	380	416
1956	438	319	241	657	643	886	813	828	394	129	363	422
1957	476	347	247	646	604	901	818	842	461	132	399	428
1958	521	368	224	661	637	959	828	830	467	128	361	420
1959	578	398	237	652	563	1010	838	861	379	133	380	418
1960	570	390	223	686	663	950	876	871	517	148	368	442

Sources: See Table 5.

Table 13 — Ex farm prices of crops, milliemes per unit

Year	Cotton, Kantar Lint Kantar	Cotton, Kantar Grain Kantar	Rice, dariba	Wheat, ardeb	Corn, ardeb	Millet, ardeb	Barley, ardeb	Cane, Kantar	Beans, ardeb	Onions, (winter), Kantar	Lentils, ardeb	Helba, ardeb
1913	3803	895	8750	1406	1093	1006	958	32	1343	105	1428	1148
1914	2402	673	8146	1381	925	828	789	33	1334	316	1577	1389
1915	3857	1056	8706	1526	1051	1017	1036	35	1156	200	1791	1763
1916	7562	1184	13676	1880	1603	1435	1110	40	1822	168	1871	2417
1917	7703	891	15251	3081	1956	1974	1415	49	2224	307	2068	3728
1918	7440	973	15663	3107	2195	2064	1710	55	2450	165	2520	3008
1919	17562	2157	28306	3649	3040	3553	2505	65	4036	391	3814	3280
1920	6900	1252	16293	3275	1294	1216	2072	102	4093	326	3554	3348
1921	6858	1235	14228	1989	1110	1120	951	92	1569	434	1811	1818
1922	6142	1038	15243	1684	1162	1227	1135	60	2043	293	1565	1944
1923	7959	1236	11585	1469	1245	1216	941	48	2138	142	1514	2947
1924	7897	1365	13011	1961	1688	1787	1221	50	2423	204	2102	3914
25	6093	984	13571	2158	1282	1361	1182	43	2305	244	2540	2089
1926	4306	873	10771	1703	878	902	1009	38	2638	243	2141	1505
1927	5936	1130	9861	1385	1113	1177	880	39	1872	208	1701	1402
1928	5176	975	10246	1620	1279	1220	940	38	1590	166	2108	2020
1929	4072	818	9511	1420	950	751	720	37	1510	109	1851	2030
930	2410	540	8313	1291	950	890	700	41	1830	206	1721	1740
931	2016	612	9730	1320	775	740	880	38	1590	234	1429	1227
932	2456	690	6020	1070	590	550	560	35	850	162	900	800
933	2278	393	6248	1120	1043	939	465	34	878	46	1022	996
934	2650	596	7403	1499	1060	908	901	34	1550	173	1755	2480
935	2726	643	6668	1427	734	629	847	34	1527	151	1704	2234
936	2870	768	7070	1149	838	820	505	34	1277	193	1469	1280
937	2154	532	8129	1265	1073	972	738	34	1332	90	1529	1150
938	2136	604	6799	1445	1051	779	703	34	1497	231	1555	1217
939	2896	509	6991	1355	942	782	682	36	1262	139	1414	1414
940	2818	640	8409	1364	1253	972	763	44	1154	146	1776	2009
41	3320	641	10518	1781	1210	1035	1300	45	2476	120	2463	2706
42	4094	1022	15181	2900	2330	2330	2200	71	3290	180	2790	2770
943	5184	1010	17351	2900	2330	2330	2250	91	4020	390	4450	3600
944	6116	1010	19085	3980	2630	2630	2250	91	4020	660	4450	6171
945	6526	1010	19085	3980	2630	2630	2490	91	4020	380	4450	5670
946	7470	1007	19295	3594	2350	2350	1850	95	4050	690	4450	4780
947	12052	1007	20065	3287	2350	2050	1600	95	4380	380	4450	4400
948	11174	1016	20065	3300	2350	2050	1600	95	4450	550	4450	4765
949	15000	1016	20065	3300	2300	2100	1220	95	3510	960	4600	4130
950	25110	1016	18485	3300	2450	2450	2620	115	5840	1030	6110	6200
951	18650	800	18485	3300	2450	2200	3070	115	6230	755	6240	7440
952	12420	800	14500	3300	2700	2360	2060	115	5760	754	9080	4560
953	12097	800	15250	4900	2700	2430	2750	115	5370	766	9150	5690
954	12538	800	15750	4400	2641	2648	1949	110	4847	324	9150	6433
955	14214	800	16500	3900	3776	3547	2869	105	5659	355	6294	8292
956	17020	800	16500	3900	4188	3622	2492	100	6613	548	9150	6787
957	14790	800	16500	4070	3500	3520	2280	115	6520	413	9110	4960
958	13630	800	16500	3700	3300	3554	3320	105	5670	682	9210	4700
959	14970	791	16500	3700	3300	3210	2930	105	6530	361	9150	6670
960	(14500)	791	17000	4290	3680	3060	2570	105	5820	350	9140	6210
961	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

PARTLY RETYPED

Table 14 — Labour and water input, 1912-1968

Year	Labour, index, 1950-54 = 1000	Water, billion m³ May - June	September	Year	Labour, index, 1950-55 = 1000	Water, billion m³ May - June	September
1912	(575)	3.01	18.20	1941	1,014	6.25	14.20
1913	580	3.83	12.20	1942	1,013	7.38	20.10
1914	585	3.18	20.00	1943	1,017	6.48	24.40
1915	593	4.05	14.90	1944	1,019	7.21	17.90
1916	602	4.14	26.60	1945	1,016	6.75	18.80
1917	612	5.40	27.80	1946	1,014	7.14	26.90
1918	627	8.62	17.70	1947	1,009	8.57	22.30
1919	644	4.52	20.80	1948	1,002	8.72	19.10
1920	661	4.90	17.80	1949	999	7.68	20.10
1921	692	4.00	19.60	1950	999	8.08	22.30
1922	726	3.35	23.60	1951	1,001	6.58	17.50
1923	753	5.38	21.40	1952	998	6.56	20.90
1924	784	4.63	22.30	1953	999	8.61	20.60
1925	810	4.67	16.50	1954	1,003	6.80	27.00
1926	840	5.49	20.50	1955	1,010	8.09	22.50
1927	862	4.89	18.30	1956	1,010	8.30	20.50
1928	888	5.33	19.90	1957	1,010	9.12	21.10
1929	908	6.17	24.40	1958	1,010	6.65	24.90
1930	926	5.33	17.50	1959	1,010	7.63	27.90
1931	942	3.80	21.20	1960	1,010	7.65	20.20
1932	958	4.99	22.80	1961	1,010	7.30	26.10
1933	975	5.61	22.10	1962	1,025	8.98	22.20
1935	978	7.23	23.90	1964	1,041	8.94	25.30
1936	986	6.75	23.80	1965	1,070	11.93	12.60
1937	990	5.60	22.10	1966	1,086	(14.00)	(11.00)
1938	1,007	6.16	28.10	1967	1,084	(15.00)	(10.50)
1939	1,014	7.37	18.20	1968	1,081	(16.00)	(10.00)
1940	1,019	6.37	17.90	1969			

Sources: Labour: 1912-1955, El Iman (1962); 1959-1969, George Abed, _Industrialization, Employment Growth, and Economic Development_, unpublished thesis, University of California, Berkeley, 1972; our interpolation for 1955-1959. Water: Discharge of Nile River at Aswan; M. Clawson, H.H. Landsberg and L.T. Alexander, _The Agricultural Potential of the Middle East_, Elsevier, New York, 1971

Table 15   Yields, MT/feddan

Year	Cotton Lint	Cotton Seed	Rice	Corn	Millet	Wheat	Barley	Beans	Onions	Lentils	Helba	Cane
1961	0.169	0.332	2.13	1.09	1.38	1.04	1.10	0.45	4.85	0.54	0.54	37.38
1962	0.276	0.525	2.46	1.09	1.45	1.09	1.12	0.86	7.20	0.71	(0.73)	39.74
1963	0.287	0.533	2.31	1.08	1.51	1.11	1.11	0.69	6.70	0.60	(0.71)	38.74
1964	0.312	0.567	2.12	1.17	1.50	1.16	1.17	0.86	7.52	0.66	0.76	36.49
1965	0.250	0.504	2.11	1.48	1.61	1.11	1.04	0.79	7.74	0.69	0.76	36.74
66	0.245	0.441	1.99	1.51	1.66	1.13	1.04	0.91	7.47	0.59	0.76	39.02
1967	0.269	0.466	2.12	1.46	1.69	1.04	0.93	0.56	7.65	0.52	0.74	38.37
1968	0.298	0.538	2.15	1.48	1.70	1.07	1.03	0.92	6.84	0.69	0.69	38.82
1969			2.15	1.58	1.72	1.01	1.01	0.88	6.84	0.52	0.64	40.33

Sources: Economic Bulletin, op. cit. 1970, and Development of the Agricultural Sector, op. cit., 1972.

Table 16   Domestic   prices, ex farm, piasters/MT

Year	Cotton Lint	Cotton Seed	Rice	Corn	Millet	Wheat	Barley	Beans	Onions	Lentils	Helba	Cane
1960	29,300	652	1,799	2,629	2,186	2,827	2,142	3,755	(778)	5,713	4,006	234
1961	26,400	652	1,798	2,543	2,411	2,833	2,012	5,591	1,814	5,867	(4,196)	234
1962	26,300	652	1,792	2,304	1,960	2,856	2,157	4,867	1,763	6,675	(4,386)	234
1963	27,800	652	1,798	2,686	2,122	2,874	2,637	5,079	1,680	6,064	(4,576)	239
1964	30,800	652	1,798	2,686	2,413	2,874	2,741	5,158	1,461	4,101	4,767	239
1965	34,000	652	2,013	2,802	2,506	3,199	2,416	5,207	2,071	4,840	5,109	281
1966	30,300	652	2,531	3,388	2,760	3,455	2,707	5,318	1,778	4,680	5,293	281
1967	31,800	652	2,840	3,790	3,112	3,937	2,993	5,864	2,007	5,095	5,580	293
1968	32,500	652	2,980	3,016	2,656	3,392	2,183	4,697	1,856	5,860	5,213	295
1969	30,600	652	2,909	3,438	2,742	3,459	2,053	4,064	1,481	4,939	5,058	292

Sources: 1960 to 1964 – Agricultural Economy, op. cit.   , several issues.
1964 to 1969 – Development of the Agricultural Sector, 1964-1969, op. cit.

The two series were spliced together in 1964 at the level of the data for 1960-64.
For millet and lentils overlapping data for 1964 were not available and the figures
for 1964-67 were used without corrections (which for the other crops remained within
5 per cent). For helba, data were available for 1960 and 1964-69; the years 1961-63
were obtained by linear interpolation.
The price for cotton lint is the implicit price for "unginned lint", calculated through
deducting from the total value of unginned cotton, the value of cotton seed
(quantity times official producer price) and dividing by the volume of ginned lint.

Table 17 International prices, piasters per metric ton

	Cotton		Rice	Corn	Millet	Wheat	Barley	Beans	Onions	Lentils	Helba	Cane
	Lint	Seed										
1	24,900	3,520	2,333	2,119	2,207	2,028	2,077	3,135	2,325	6,255	4,196	166
2	30,300	3,467	2,971	2,058	2,225	2,569	2,640	3,397	3,460	5,240	4,386	172
3	31,100	4,002	3,346	2,580	2,060	2,926	2,654	3,499	3,098	5,784	4,576	487
4	35,300	4,350	3,748	2,888	2,081	3,286	2,741	3,295	3,060	(5,447)	4,767	335
5	34,500	4,568	3,898	3,067	2,122	2,970	2,358	3,771	3,516	(6,233)	5,109	122
6	36,500	4,524	3,977	2,823	2,122	2,876	3,089	4,144	3,500	(6,850)	5,293	107
7	41,600	(4300)	4,456	2,819	2,260	2,911	2,871	3,533	6,662	(5,840)	5,580	114
8	45,600	(4100)	5,128	2,658	2,390	2,596	2,436	4,518	5,333	(7,468)	5,213	114
9		3,959	4,653	2,788		2,547	2,262		4,812		5,058	

rces:

Cotton - lint: average price of crop at officially announced export prices for individual varieties and grades. Ashnouni and Other at price of comparable medium stapl variety. Rounded to nearest hundred.
— seed: Sudanese, c.i.f., European port. FAO sources. publications

Rice: average export price f.o.b. for milled rice, converted to paddy, 100 MT paddy = 65 MT milled rice.

Corn: average import price, c.i.f.

Millet: average import price, c.i.f., 1961-1963. From 1964 U.K. import price c.i.f., Argentina "granifero", adjusted to Egyptian level of 1963. FAO sources. publications

Wheat: average import price, c.i.f.

Barley: U.K. import price, c.i.f., Canadian No 2. FAO sources. publications

Beans: average import price, c.i.f., 1961-1962. From 1963 U.K. import price, c.i.f., adjusted to Egyptian level of 1962. FAO sources. publications

Onions: average export price, f.o.b.

Lentils: average import price, c.i.f., 1961-1964; from 1965 proportional to beans.

Helba: domestic price; no international price available.

Cane: imputed price; raw sugar export price, Carribean port, raw 90°, bagged, Cuba, f.o.b. minus "normal" costs at international prices in Egyptian sugar factories. FAO sources and Chapter 7. below.

All US $ prices converted to £E at official exchange rate.

Table 18. The Cotton Textile Industry, 1956-70:
Costs and Revenues at Current Domestic and International Prices

(In thousands of LE)

	1956 Domestic Prices	1956 International Prices	1960 Domestic Prices	1960 International Prices [1]/	1960 International Prices [2]/	1965/66 Domestic Prices	1965/66 International Prices	1969/70 Domestic Prices	1969/70 International Prices [1]/	1969/70 International Prices [2]/
Produced outputs										
Cotton yarn	16,567.7	15,396.1	29,884.0	24,777.2	24,777.4	107,211.8	...	79,595.4	79,594.4	...
Grey cotton cloth	...	...	...	...	...	...	...	...	...	...
Bleached cloth	...	...	...	...	...	...	...	...	...	...
Dyed and printed cloth	28,054.1	24,996.0	35,767.0	31,651.3	31,651.3	51,141.9	34,449.0	...	...	...
Rayon yarn	768.9	650.7	827.2	690.7	690.7	3,040.5	...	1,704.5	1,704.5	...
Cotton waste	...	...	...	...	4,410.2 [2]/	...	...	...	2,717.4 [2]/	...
Other products	290.7 [4]/	290.7 [4]/	226.2 [4]/	226.2 [2]/[4]/	7,569.2 [2]/	23,372.8 [6]/	16,334.6 [6]/	12,477.2 [2]/[5]/	...	...
Total value, all outputs	45,681.4	41,333.5	66,704.4	57,345.6	69,099.1	93,240.8	65,464.4	110,252.2	81,298.9	96,493.5
Produced current inputs (traded)										
Cotton lint	23,915.1	23,915.1	35,530.1	35,530.1	...	53,842.6	38,687.4	58,703.1	58,703.1	...
Cotton yarn	...	...	...	...	...	1,055.1	585.3	...	...	...
Rayon yarn	...	...	...	...	...	...	...	...	...	...
Rayon fibers	467.1	436.5	418.5	391.3	391.3	1,788.3	1,788.2	1,088.2	1,088.2	...
Chemicals	676.7	632.4	923.2	858.6	858.6	74.0	74.0	66.1	66.1	...
Starch	231.0	215.9	849.4	789.9	789.9	636.3	636.3	1,666.7	1,666.7	...
Packing material	372.8	372.8	950.7	779.6	779.6	333.3	297.5	665.2	665.2	...
Fuel	445.5	445.5	766.7	628.7	628.7	724.3	603.6	798.3	798.3	...
Electricity	870.2	813.3	1,882.6	1,750.8	1,750.8	353.7	294.7	2,117.6	1,764.1	...
Spare parts	...	...	...	...	...	1,107.3	988.6	1,314.7	1,173.8	...
Other	...	...	1,021.6	1,021.6	443.3	798.3	6,042.4	6,042.4	...	...
Total	26,978.4	26,851.5	41,321.4	40,729.0	9,220.5	58,495.9	42,491.7	65,662.7	65,127.2	12,466.5
Depreciation	1,567.8	1,465.2	2,529.4	2,479.8	2,479.8	834.1	744.7	3,900.8	3,482.8	3,482.8
Total value, traded inputs	28,546.2	28,296.7	43,850.8	43,208.8	10,778.3	59,330.0	43,236.4	70,563.5	68,610.0	15,949.3
Nontraded inputs										
Net services	2,035.7	2,035.7	2,516.3	2,516.3	2,516.3	1,771.0 [10]/	1,771.0 [10]/	1,573.5	1,573.5	1,573.59
Other	...	...	...	...	8,803.8 [9]/	15,302.9	15,802.9	1,554.3	1,554.3	13,719.52
Depreciation	1,045.2	1,045.2	1,931.7	1,931.7	1,931.7	923.6	923.6	908.1	908.1	908.1
Total	3,080.4	3,080.4	4,448.0	4,448.0	13,251.3	18,497.5	18,497.5	4,015.9	4,015.9	16,201.1
All produced inputs	21,627.1	21,377.6	48,298.8	47,656.8	24,029.6	77,827.5	61,733.9	74,579.4	72,625.9	32,150.4
Domestic value added	17,135.2	13,036.8	22,853.6	14,135.8	58,320.8	33,910.8	20,228.0	29,688.8	12,688.9	80,574.2
Domestic resources, of which:	10,584.2	10,584.2	16,018.1	16,018.1	47,401.2 [11]/	27,548.7	27,548.7	21,703.9	21,703.9	21,271.-- [11]
Wages and salaries (including fringe benefits)	7,264.3	7,264.3	11,457.6	11,457.6	22,579.8 [12]/	8,992.0	8,992.0	17,662.7	17,662.7	55,947.9 [12]
Rent	39.0	39.0	112.5	112.5	...	59.2	59.2	25.3	25.3	25.3
Profits	6,751.0	2,652.6	6,835.5	-1,881.3	6,362.1	...	-7,220.7	17,984.9	-9,015.8	...
Rate of return	12.6	4.9	2.0	-0.2	...	13.0	-15.0	20.3	-10.2	...
Investments	53,457.6	53,457.6	76,002.7	76,002.7	...	48,867.0	48,867.0 [13]/	88,371.3	88,371.3 [13]/	...

Footnotes on following page.

Table 18. The Cotton Textile Industry, 1956-70:
Costs and Revenues at Current Domestic and International Prices

(In thousands of LE)

Footnotes:

1/ Textiles considered as a separate manufacturing activity.
2/ Textiles considered as an integrated activity with cotton cultivation.
3/ Waste factor of cotton in the production of yarn was 17.1 per cent of the cotton used in 1956, 16 per cent in 1960 and 14.6 per cent in 1969; of these, about half is recovered as "scarto" which has been assigned a scarto price and included as a joint product.
4/ Medical cotton.
5/ Cotton seed from Tables   and   , and Bachir, op cit, for 1966; yield and export prices for 1969 from FAO yearbook.
6/ Blankets, towels and other ready-made products.
7/ Traded inputs in cotton production: fertilizer, seed and irrigation costs see Table   ; these costs were extrapolated for 1969.
8/ A premium of 100.0 on imported inputs subtracted from total traded inputs.
9/ Includes drought, manure, trade, transport margins and ginning costs; value of cotton wood subtracted.
10/ Payments to subcontractors dyeing the fabric.
11/ Includes imputed rent of LE 11.570 million in 1960 and LE 19.222 million in 1970.
12/ Wages from Bachir, op cit, for 1960 and for 1969/70 assuming no change in wage level between 1966 and 1969/70.
13/ Adjusted for a normal level of inventories equal to 10 per cent of value of production.

Table 19. Domestic and International Unit Values of
Cotton Yarn, Fabrics and Lint, 1956-70

(In LE)

	1956 Domestic	1956 International	1960 Domestic	1960 International	1965/66 Domestic	1965/66 International	1969/70 Domestic	1969/70 International
Cotton yarn	446.3	414.7[1]	427.6[2]	515.3	472.0[3]	657.7	674.3	500.6
Gray cotton cloth	...	...	...	...	735.1	513.7	...	...
Bleached cloth	...	...	...	...	897.9	598.4	...	...
Dyed and printed cloth	777.5	692.7[1]	805.6	712.9[1]	1,278.9	861.5	...	...
Rayon yarn	531.7	450.0	538.9	450.0	901.2	500.0	891.9	320.0
Cotton lint[4]	...	283.0	309.3	...	...	...	...	329.8

1/ Export prices of fabrics and yarn derived from the subsidy received by the industry on exports (exports at domestic prices - subsidy = f.o.b. export price).

2/ F.o.b. unit value adjusted for differences in counts.

3/ Since the domestic average count in 1965/66 was equal to the export average count in 1960, the same value was used, assuming that international prices did not change significantly during that period.

4/ Unit value from CAGMS industry studies. Until 1960 the Minet el Bassal price applied to both export and mill purchases. Between 1961 and 1965 the domestic sale price exceeded the export price while the reverse occurred between 1961 and 1964. In 1969-70 the ex-farm price converted with the domestic sale price (see Economic Review, 1971, No. 4). Other International unit values from Monthly Bulletin of Foreign Trade for all multilateral trading partners.

Table 20

The Sugar Industry
Costs and Revenues at Current Domestic and International Prices
(Values in LE 000)

	1960 At Domestic Prices (I)	1960 At International long term average c.i.f. Import Prices (2)	1970 At Domestic Prices (3)	1970 At International long term average c.i.f. Import Prices (4)
Outputs:				
Sugar, refined	14993.0	14553.1	33699.0	28652.0
Molasses	870.0	1573.0	1346.0	2267.0
All outputs, total value	15863.0	16126.1	35045.0	30919.0
Produced, current inputs:				
Traded: a) in sugar production				
Chemicals	87.8	790.2	360.7	324.6
Fuel	413.6	343.2	683.6	526.4
Packing	662.3	596.1	1094.7	985.2
Spare parts	878.0	790.2	1040.7	936.6
Depreciation	1517.0	1380.5	3581.0	3222.9
Total	3558.7	3900.2	6760.7	5995.7
b) in cane production				
Seeds	341.4	341.4	468.7	468.7
Fertilizer	1057.2	637.8	1524.8	1524.8
Irrigation	625.6	463.6	1249.9	962.4
Total	2024.2	1442.8	3243.4	2955.9
Total traded:	5582.9	5343.0	10004.1	8951.6
Non-traded: Services	593.0	593.0	1926.0	1926.0
Depreciation	628.0	628.0	1482.0	1482.0
Draft and Manure	411.6	411.6	986.7	986.7
Total non-traded	1632.6	1632.6	4394.7	4394.7
All produced inputs, total value	7215.5	6975.6	14398.8	13346.3

(cont.)

Table 20 __, continued

	(1)	(2)	(3)	(4)
Net domestic value added	10,280.1	10,783.1	25,040.9	21,957.4
Net value added	8,647.5	9,150.5	20,646.2	17,572.7
Of which: Rent of land	2,065.8	2,771.2	3,000.8	6,385.2
Labor, agricultural	830.2	830.2	2,476.9	2,476.9
Labor, industrial	1,931.6	1,931.6	6,274.3	6,274.3
Management and capital (residual)	3,819.8	3,617.5	8,894.2	2,436.3
Capital in industry (processing)				
at historical costs	8,500.0	8,500.0	31,800.0	31,800.0
at replacement costs	22,300.0	22,300.0	52,600.0	52,600.0
"Normal" return to management and capital:				
Cultivation		1,039.2		2,253.6
Processing 5 pcb		1,115.0		2,630.0
Processing 10 pcb		2,230.0		5,260.0
Processing 15 pcb		3,345.0		7,890.0
Total at 5 pcb		2,154.2		4,883.6
Total at 10 pcb		3,269.2		7,513.6
Total at 15 pcb		4,384.2		10,143.6
Resource Costs				
at 5 pcb		9,319.8		24,414.7
at 10 pcb		10,434.8		27,044.7
at 15 pcb		11,549.8		29,674.7

Sources: For 1960: The Sugar Industry, CAGMS, Cairo, May 1963; for 1970: Federation of Industries, Yearbook, 1971. Data for packing and fuel, extrapolation from 1960. Data on agricultural inputs for 1970 extrapolated from Table 6 with the priced indices. Data on irrigation costs from Federation of Industries, Yearbook, 1969. Agricultural rents correspond to official, legal maximum average rents for sugar cane land. See Table 6 and Bahia, op. cit. Depreciation and rates of return were based on the 1960 data on investment and the cost of fixed capacity carried out and completed between 1960 and 1970 (LE 23.3 million). The fixed asset figure for 1960 of LE 8.5 million at historical cost was judged far too low. Some of the equipment dates back to the pre-World War I period and the investment in the industry during the 1950's was very small. Assuming the average life of the equipment to be fifteen years and a price increase of capital equipment between 1938 and 1960 to be of 103 per cent (IMF export price index from Western Europe) replacement costs of the fixed assets were estimated at LE 17.2 million in 1960. Total capital for the two years was estimated at LE 22.3 and LE 52.6 million. A depreciation rate of 12.5 per cent used in 1960 was also used for 1970; interest charged in 1960 was carried to 1970.

Table 21

The Cement Industry
Revenues and Costs at Current Domestic Prices
(Values in £E 000)

	1954	1957	1960	1965/66
Outputs:				
Portland Cement	4530.2	5215.9	6116.8	7233.4
White Cement	--	--	--	580.2
Joint products	196.2	245.1	957.3	4830.9
Other revenues	114.5	229.7	410.4	871.0
All outputs, total value	4840.9	5690.7	7484.5	13515.5
Produced, current inputs:				
Traded: Fuel oil	1432.0	1834.5	2382.1	3055.2
Other fuel	53.0	72.7	79.2	198.7
Spare parts	330.6	421.7	512.4	1002.1
Packing material	561.3	645.8	879.2	1680.0
Pyrites	3.4	4.3	5.3	13.7
Gypsum	27.1	39.2	54.0	93.5
Electricity	48.1	46.5	264.7	598.4
Total value	2454.2	3064.7	4176.9	6701.6
Non-traded: Limestone	183.9	219.8	377.1	615.7
Clay	37.6	58.7	71.5	136.8
Other minerals	0.2	0.2	32.1	293.4
Services	312.4	383.0	272.0	1090.1
Total value	534.0	661.7	752.0	2136.0
Total value of produced current inputs	2988.2	3726.4	4928.9	8837.6
Depreciation, value	197.6	366.0	535.0	926.7
of which, traded	94.9	197.7	267.5	407.8
All produced inputs, total value	3185.8	4092.4	5463.9	9764.3
net domestic value added	2291.8	2428.3	3040.1	0406.1

Table 21,   continued

	1954	1957	1960	1965/66
Net value added, total	1655.1	1598.3	2019.9	3751.2
of which: Wages and salaries				
(including fringe benefits)	545.7	791.0	975.0	1285.2
Interest	--	--	37.0	288.1
Rent	--	--	3.0	17.5
Net profits to industry	1109.4	807.3	1004.9	2160.4
Total capital (historical costs minus depreciation)	6136.0	7940.9	13289.6	19786.6*
Rate of return, per cent (net profits on capital)	18.0	10.2	7.6	10.9
Rate of capacity utilization, per cent	89.2	75.0	91.2	106.5

Source: Industrial Studies, The Cement Industry, Central Organisation for Mobilisation and Statistics, Cairo, June 1968 (in Arabic).

*Excludes capital goods in process of installation, £E 10.8 million.

Table 22

The Cement Industry
Revenues and Costs at International Prices
(Values in £E 000)

	1954	1957	1960	1965/66
1. At current international prices:				
Outputs, total value Produced	5638.8	7372.6	8521.1	14823.3
Inputs,[a] traded	2323.2	2918.4	3873.4	5974.7
non-traded	636.8	830.0	1020.2	2654.4
Net domestic value added[b]	3315.6	4454.2	4647.7	8848.6
of which: net profits	2133.1	2833.2	2612.5	4455.2
Rate of return, percent (net profits over capital)	34.7	35.6	19.6	22.5
2. At constant 1954 international prices:				
Outputs, total values Produced	5638.8	6601.2	9657.0	12744.8
Inputs,[a] traded	2323.2	2858.1	4063.0	5570.8
non-traded[c]	636.8	789.0	788.4	1518.4
Net domestic value added[b]	3315.6	3743.1	5594.0	7174.0
of which: net profits	2133.1	2163.1	3790.6	4064.8
Rate of return, percent (net profits over capital)	34.7	27.2	28.5	20.5

Source: See Table 7.A.1 and trade statistics.

[a] Depreciation has been distributed between traded and non-traded input in proportion to the share of machinery and equipment in total capital.

[b] Total value of outputs minus value of traded inputs. Domestic value added thus includes value of non-traded inputs at domestic prices.

[c] At constant domestic prices; services deflated by domestic wholesale price index.

Table 23

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Phosphate Fertilizers
Value and Cost of Production at Current Domestic Prices
(Values in LE 000)

	1954	1957	1964/65
Outputs:			
Super phosphates	1192.8	1972.4	3050.5
Sulphuric acid	61.2	165.8	415.2
Other revenues	49.6	58.7	73.1
All outputs, total value	1303.7	2196.9	3538.9
Produced, current inputs:			
Traded: Rock phosphate	133.5	334.0	601.1
Pyrites	208.9	522.3	388.8
Packing (jute bags)	143.2	175.7	286.0
Sulphur	---	---	324.7
Fuel	32.2	58.3	34.5
Electricity	---	---	2.7
Spare parts	64.4	118.7	71.0
Other inputs	3.8	1.3	29.0
Total	586.1	1210.3	1737.8
Non-traded: Services	83.0	260.8	336.2
Depreciation, value	137.0	165.9	175.7
of which, traded	34.9	42.4	60.6
All produced inputs, total value	806.2	1637.0	2249.7
of which, traded	621.0	1252.7	1798.4
Net domestic value added, total	682.7	944.2	1740.5
Net value added, total	497.5	559.9	1289.3
of which: Wages and salaries (including fringe ben.)	{99.3 35.7}	172.5	312.6[a]
Interest	9.7	6.2	18.7
Rent	0.4	0.4	4.5
Net profits to industry	352.4	380.8	953.4

Table 23 , continued

	1954	1957	1964/65
Total capital (historical costs minus depreciation)	1996.1	2299.6	4449.7
Rate of return, percent (net profits over capital)	17.6	16.5	21.4

a Does not include pension and insurance contributions.

Source: The Phosphatic Fertilizer Industry, Central Organization for Mobilization and Statistics, September 1967 (in Arabic).

Table 24

Nitrogenous Fertilizers
Revenues and Costs at Current Domestic Prices
(Values in LE 000)

	1954	1957	1964/65
Outputs:			
Calcium nitrate 15.5%	4099.4	5919.3	6124.9
Calcium ammonium nitrate 20.5%	--	--	2433.4
Ammonium sulphate 20.6%	--	--	2199.8
Calcium ammonium nitrate 26.0%	--	--	8326.4
Joint products	--	--	55.1
Other revenues	--	--	1516.3
All outputs, total value	4099.4	5919.3	20655.9
Produced, current inputs:			
Traded: Catalysts	30.5	94.6	217.0
Packing	473.7	799.3	2145.2
Fuel	492.3	687.6	1498.8
Spare parts	176.4	217.7	511.8
Sulphur	--	--	402.3
Total	1172.9	1799.2	4775.1
Non-traded: Limestone	46.2	50.5	122.4
Gases	130.6	249.6	416.6
Electricity	--	--	1698.7
Services	805.2	804.6	1402.0
Other inputs a	--	--	538.7
Total	982.0	1104.7	4178.4
Depreciation, value	771.2	1160.2	3822.5
of which, traded	481.0	473.7	1829.1
All produced inputs, total value	2926.1	4064.1	12776.0
of which, traded	1653.9	2272.9	6604.2
Net domestic value added, total	2445.5	3646.4	14057.7

Table 24, continued

	1954	1957	1964/65
Net value added, total	1173.3	1855.2	7879.9
of which: Wages and salaries (including fringe benefits)	283.6	414.1	1872.8
Interest	79.6	--	155.9
Rent	--	1.2	7.3
Net profits to industry	810.1	1439.9	5843.9
Total capital (historical costs minus depreciation)	8611.1	9817.3	43235.1
Rate of return, percent (net profits over capital) per cent	9.4	14.7	13.5
Rate of capacity utilization, percent	63.6	83.2	80.0

^aUnspecified.

Source: The Nitrogen Fertilizer Industry, Central Organization for Mobilization and Statistics, April 1967 (In Arabic).

Table 25

The Fertilizer Industry
Costs and Revenues at Current International Prices
(values in 000)
(≠E)

	1954	1957	1965/65
1) Nitrogen Industry			
Outputs, total value	3339.0	4160.0	16293.1
Inputs, traded	1586.0	2164.0	5868.9
nontraded	1257.3	1776.5	5990.9
Net domestic value added, total	1753.0	1996.0	10424.2
of which: net profits	132.5	195.8	2397.3
Rate of return (per cent)	1.5	−2.0	5.5
2) Phosphate Industry			
Outputs, total value	1100.1	1939.9	3349.1
Inputs, traded	588.9	1206.2	1674.0
nontraded	185.2	384.3	451.3
Net domestic value added, total	511.2	733.7	1675.1
of which: net profits	177.9	169.7	860.0
Rate of return (per cent)	8.9	7.4	19.3

Source: Tables 13F and 13G, and information about prices.

Table 26   118

The Tire Industry
Revenues and Costs at Current Domestic Prices
(Values in .000 £E)

		Current Prices		Constant Prices
		1960/61	1963/64	1963/64
Outputs:				
Tires and tubes		4668.0	5685.8	5685.8
Other products		21.0	66.7	66.7
All Outputs, total value		4689.0	5752.5	5752.5
Produced, current inputs:				
Traded:	Natural rubber	709.0	592.2	610.5
	Synthetic rubber	275.5	509.1	398.4
	Rayon	645.1	841.5	745.9
	Bead wire	109.4	177.0	148.1
	Steel wire	31.5	50.4	36.3
	Chemicals	136.1	199.2	196.2
	Tire cord (cotton)	30.2	44.8	34.9
	Tire valves	25.6	33.0	29.6
	Spare parts	67.4	85.5	73.0
	Fuel/electricity	63.6	88.4	88.4
	Packing	27.5	38.3	38.3
	Depreciation	117.5	160.9	160.9
	Total	2238.4	2820.3	2560.5
Non-traded:	Services	36.0	50.0	50.0
	Depreciation	117.5	160.9	160.9
	Total	153.5	210.9	210.9
All produced inputs, total value		2391.9	3031.2	2771.4
Net domestic value added:		2450.6	2930.2	3192.0
Net value added, total		2297.1	2721.3	2981.1
of which:	wages and salaries (including fringe benefits)	346.5	507.7	396.6
	profits	1950.6	2213.6	2584.5
Capital		2727.0	3700.0	
Rate of return on capital, pct		71.5	59.8	

The Tire Industry
Revenues and Costs at International Prices
(Values in £E 000)

| | 1960/61 | | 1963/64 | |
	At Actual Effective Multiple Rates and c.i.f. prices	At Uniform Official Rates and c.i.f. prices	At 1960/61 c.i.f. Prices and Effective Multiple Rates	At Uniform Official Rates c.i.f. prices
Outputs:				
Tires	2742.8	2346.2	3280.2	3408.0
Other rubber products	21.0	21.0	66.8	66.8
Total	2763.8	2367.2	3347.0	3474.8
Inputs:				
Traded:	2092.9	1902.6	2396.6	2665.0
Nontraded:	153.5	153.5	210.9	210.9
Net domestic value added,	670.9	464.6	950.4	809.7
total of which: net profits	170.9	−35.4	231.8	91.1

Source: Table 13 I and trade statistics

Table 27

Costs and Revenues of the Paper Industry at Domestic and International Prices 1962-63
(LE 000)

	At Domestic Prices	At International Prices
Outputs:		
Writing paper	2334.1	1478.1
Printing paper	473.0	299.2
Straw pulp	126.7	126.7
Outputs, total value	2933.8	1904.6
Produced Inputs:		
Traded: Wood pulp	417.2	375.4
Chemicals	497.2	447.5
Fuel and energy	168.3	134.6
Packing and finishing material	108.5	97.6
Spare parts	73.1	65.3
Depreciation	482.5	434.2
Total, traded inputs	1746.8	1555.1
Non-traded: Rice straw	167.5	167.5
Weed straw	28.3	28.3
Services	88.2	88.2
Depreciation	165.1	165.1
Total, nontraded inputs	449.1	449.1
Domestic value added:	1187.0	349.5
Net value added,	737.9	100.2
of which, wages and fringe benefits	266.9	266.9
Return to ownership:	471.0	367.1
Capital	9500.0	9500.0
Rate of return percent	4.9	-3.8

Source: Abd. El Moneim Ali Soliman: The Rakta Paper Industry, Institute of National Planning, October 1964., p.117 (in Arabic).

Table 28

The Steel Industry
Revenues and Costs of the Helwan Steel Plant
at Domestic and International prices 1964/65
(Values in LE 000)

Outputs:	At Domestic Prices	At International Prices
Semi-finished products	2,692.5	2,140.5
Heavy sections	5,610.6	2,700.0
Light sections	1,325.6	1,060.8
Plates	2,789.4	1,335.8
Sheets	947.2	553.9
Joint products	604.7	604.7
All outputs, total value	13,970.0	8,395.7

Produced inputs:

Traded:	At Domestic Prices	At International Prices
Coke	4,590.5	3,700.6
Iron ore	339.3	305.4
Ferro-silicone	46.4	41.5
Ferro-manganese	142.8	128.5
Schpiegel iron	78.7	70.8
Phosphates	42.3	42.3
Pyrites	39.6	39.6
Fuel and electricity	413.8	360.0
Spare parts	2,263.7	2,037.3
Depreciation	909.1	818.2
Total	8.866.2	7,544.2

Non-traded:	At Domestic Prices	At International Prices
Asswan ore	1,413.9	1,413.9
Dolomite	35.3	35.3
Limestone	204.2	204.2
Clay	18.1	18.1
Services	632.5	632.5
Depreciation	340.8	340.8
Total	2,644.8	2,644.8

	At Domestic Prices	At International Prices
All produced inputs, total value	11,511.0	10.189.0
Net domestic value added:[a]	5,103.8	851.5
Net value added:[b] total	2,459.0	-1,793.3
of which: wages and salaries (including fringe benefits)[c]	2,757.0	2,757.0
Rate of Return Capital (percent)	-298.0	4,550.3
	7.4	11.4
	40,000.0	40,000.0

[a] Total value of output minus traded inputs
[b] Total value of output minus total produced inputs
[c] Not including social security contributions

Source: Iron and Steel Company Annual Report and Budget quoted by:

Table 29

Costs and Revenues of the Automobile Industry
at Domestic and International Prices 1963/1964
(LE 000)

	Unit Value of Finished Vehicles (LE)	Output Quantity (No.)	Value of Production at Domestic Prices (LE 000)	Unit Value Paid for Unassembled Vehicles (LE)	Approx. Int'l. Prices of Finished Vehicles (LE)	Value of Production at Int'l. Prices
Outputs:						
Commercial transport						
Buses (Deutz 6 cyl 4500)	6951[a]	524	3585.7	4599[c]	5535	2900.3
Trucks 3.6 tons	5120	99	506.9	3424	2513	248.8
Trucks (Dump) 5.0 tons	4004	87	348.3	2210	3000	261.0
Trucks 6.0 tons (Deutz 6 cyl 4850)	3604	1029	3708.5	2357	3000	3087.0
Trucks 8.0 tons (Deutz 6 cyl 5000)	4697	150	704.5	2894	3958	593.7
Passenger cars	1046[b]	4591	4802.2	767[b]		1512.0
Nasr 1100 cc (Fiat)		2016			750	1382.5
Nasr 1300 cc (Fiat)		1418			975	1141.0
Nasr 2300 cc (Fiat)		739			1544	209.0
Ramses (NSU engine)		418			500	
Trailers						
7.5 tons	2097	125	262.1	1145	1200	150.0
8.5 tons	2897	40	115.9	1403	1400	56.0
12.5 tons	3625	15	54.4	1923	2000	30.0
Tractors	1388	850	1179.8	1289	1074	912.9
Engines: air-cooled	913	596	544.1	819	760	453.0
water-cooled	675	529	357.0	515	562	297.3
Brake lining (quantity in tons)		77	70.3			70.3
Clutches (quantity in tons)		10	23.7			23.7
Outputs, total value			16263.4			13328.5
Produced Inputs:						
Traded: Vehicles in parts			11516.5			10282.5
Tires			562.8			325.5
Batteries			89.8			80.2
Paint			115.9			103.5
Welding material			0.8			0.7
Side glass			5.6			5.0
Tin plates			2.2			2.0
Upholstery			18.5			16.5
Fuel			66.5			59.4
Electricity			7.0			0.3
Depreciation			126.2			112.7
Other			160.0			142.8
Total, traded inputs			12671.8			11131.4

(Value of Production at Domestic and
International Prices)

Non-traded: Services	846.4	846.4
Depreciation	294.5	294.5
Total Value, all produced inputs:	13812.7	12272.3
Net domestic value added:	3591.6	2191.5
Net value added, of which:	2450.7	1056.2
wages and salaries	1342.5	1342.5
net profits	1108.2	− 286.7
Rate of return: (per cent)	3.4	−0.9
Capital	32162.0	32162.0

Notes:

[a] with body. Price of bus chassis with engine only LE 3975.

[b] average unit value; breakdown by make obtained from Federation of Industries, 1967, p.72.

[c] price paid for complete assembled bus LE 6989

Source: (CAGMS) The Manufacturing of Automobiles and Their Components, Cairo, June 1965,
(in Arabic).