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Algiers, Algeria

LONG-TERM PROSPECTS
OF
INDUSTRIAL
DEVELOPMENT
IN IRAQ

Volume I

Prepared jointly by
the Secretariat of UNIDO and ECWA

PREFACE

This country study is prepared as part of the work programme of the ECHA/UNIDO Industry Division relating to the periodic review and analysis of industrial trends and potential in the ECWA region. The in-depth country studies will provide also the building blocks for visualizing a regional picture for the industrial development of the ECWA region. An important objective of this programme is to monitor industrial trend and potentials for meeting the targets of the Lima Declaration and Plan of Action and the New International Economic Order.

The study has referred to industrial policy very briefly as the latter is a subject of a separate study currently underway at the Joint ECHA/UNIDO Industry Division. The projections of industrial development up to the year 2000 will be the subject of a second phase to this study.

The period of the study 1960-1976, is dictated by the availability of data. Iraq has published Annual Industrial Surveys, through 1976, the last year for which the survey could be obtained. In this study, the period 1960-1976 has been dealt with in greater detail. This period is particularly important in Iraq's modern history. Firstly, because it was during this period (in 1972) that the important act of the nationalization of oil companies took place; and secondly, because of the quadrupling of Iraq oil revenue in 1973/74.

Finally, the study is divided into two volumes. The first, which contains eight chapters is an analysis of the development in the economy and the manufacturing sector. For the latter the major industrial variables are measured and analysed. An attempt is also made to assess the prospect for import substitution. The second volume, which falls in three chapters, is a study of methods of measurement employed in this study. The appendix to the last chapter of this volume contains series for the following variables in manufacturing, at different level of aggregation: value of gross output, input, gross value added, physical quantity of output; employment; total wages; profits; operatives; non-manual workers; productivity; input-output ratio; and unit values. The series are constructed for large and small establishments separately.

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Chapter I

INDUSTRIALIZATION IN AN OIL DOMINATED ECONOMY

Introduction.

The distinct characteristics of an oil dependent economy impose a special imprint on the pattern and strategies of economic and industrial development. This chapter shall examine the industrialization processes within the context of the overall development. The effects of the special characteristics of an oil economy on industrial development will also be examined.

The historical pattern of sectoral growth has in most cases fitted a three phase sequence; initially agriculture, industry, services; in the second phase, industry, agriculture, services; and the third mature economic phase ends in most cases by industry, services, agriculture or services, industry, agriculture. The widely accepted strategy for economic development regards industrialization as the motive force for development. The high growth of the industrial sector is called for in order to absorb the widespread disguised unemployment in the rural sector, raise productivity in agriculture and provide cheap wage-goods and raw materials for industry. As industry expands and more people are engaged in productive activities, more capital would be accumulated leading to further expansion and continual infusion of technical progress into agriculture. The growth of complementary activities as well as services would in this strategy be tailored primarily to the needs of the expanding industry and agriculture. Financial, trade, and industrial policies would also be geared towards facilitating this progress. The aim of course is to use scarce resources in most productive and promising activities.

An oil dependent economy introduces new elements into the process of economic industrial development in the form of access to foreign exchange and high investment/saving potentials. These special characteristics are reflected on important planning issues relating to investment versus consumption, rural versus urban, commodity producing activities versus non-commodity producing activities and growth versus welfare.

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In these economies therefore, the traditional dichotomies of investment versus consumption, or growth versus welfare, are relatively less pressing compared to non-oil producing countries. And on the scale of oil revenues that are available now, planners can indeed reduce the conflict between the needs of present and future consumption. In other words, oil producing countries afford to adopt a wider concept of balanced growth, one in which besides the growth of industry and agriculture, the development of rural areas, of welfare apparatus, as well as of infrastructure, can also be pursued.

The oil sector in these economies has been the major impetus, both direct and indirect, behind the relatively high economic development. As a longer run strategy the manufacturing sector has been singled out to carry the double burden of gradually replacing the oil sector and introduce the required economic structural changes. With the objective of developing a dynamic manufacturing sector should the process of industrial development follow the traditional market oriented pattern or forge a balanced pattern of industrial growth.

In the following we shall study (I) the effect of oil revenues on the aggregate supply; (II) the pattern of government allocations and investment; (III) the dominance of the public sector in the economy; (IV) the changing economic structure; (V) the effects of oil revenue on consumption and saving patterns; and finally, (VI) the market for manufactured goods. Issues relating to industrial development proper shall be the subject of the remaining chapters of this study.

Needless to say that each of the general issues raised above could be subject to a separate detailed study. In this chapter, they will be covered only broadly and in so far as they are important to the industrialization process.

(I) Oil revenues and Iraqi economy.

Until 1972, when most of the foreign shares in the oil companies were nationalized, Iraq received only half of the annual profits from the export of crude oil, and the other half belonged to the oil companies. After nationalisation, the revenues all accrued to the government. But how do the revenues enter the economy.

At any moment in time ex-post aggregate supply and aggregate demand in the economy are equal. The oil revenues on the supply side just mentioned, are transferred to the demand side through government consumption, investment and import expenditure. Government channels these expenditures through the current budget and the investment budget. The first is allocation for government ordinary functions, such as defence, justice, health and education. The second is investment allocation for the purpose of economic development. It is usually planned on a five-yearly basis, and apportioned annually.

The immediate effect of oil revenues would be to shift the level of consumption and investment upward by the amount of government expenditure - which is financed exogenously from oil revenues. Whatever the multiplier, the effects on income of an autonomous change in investment and consumption would be to shift the level of national income upward, or which amounts to the same thing, to extend the production boundary of the economy. In this case, the change should be thought of in terms of GNP and not GDP, as transfer of profits to oil companies abroad (before nationalization), made an appreciable difference between the two in the period before the nationalization.

One has to distinguish, however, between the initial shift in income and those in the subsequent years. Income for each succeeding year will embody the injection of the preceding year. But each year a larger part of the new injection will be needed to maintain the previous year's level of consumption and investment. Therefore, the shift effect of the revenues in the succeeding years will be less than the full sum of the revenues. It will be, with regard to consumption, equal to the annual increase in the share of consumption. In the case of investment, it will equal the annual share of investment less allowance for renewal and maintenance of previous investment.

Oil revenues also have a substantial indirect effect on demand in the economy. The size of the multiplier itself is likely to be positively affected as a result of the continuous influx of oil revenues into the economy. There is evidence to suggest that the endogenous marginal propensity to save, tends to be lower in an oil economy like Iraq than in a non-oil producing economy. While these factors and their effects on the size of the market for industrial

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goods will be discussed further later in this chapter, we would only add that the latter induced expansions are also facilitated by the availability of foreign exchange reserve for imports, cheap credit system and liquidity injection.

The sizeable and growing effect of oil revenues on the aggregate supply side of the national accounts is indicated in table I.1, which shows the oil revenues share in the national income, GNP, investment budget and current budget. In terms of value added, the mining sector - 99 per cent crude oil extraction - comprised a major part of the GDP throughout the period 1960-1975*. In terms

TABLE I.1 SHARE OF OIL REVENUE IN NATIONAL INCOME, GNP, INVESTMENT BUDGET AND CURRENT BUDGET FOR SELECTED YEARS, 1951-1976.
(Current factor costs)

Year	Percentage of oil revenues in:			
	National income	GNP	Investment budget	Current Budget
1951	6	-	-	-
1953	14	13	100	-
1960	22	20	100	45
1965	23	22	91	38
1970	23	22	87	39
1971	32	30	90	52
1972	34	32	80	32
1973	40	37	93	67
1974	67	65	91	81
1975	61	59	100	81
1976	n.a.	53	100	76

Source: See Appendix I, Table 1.

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of GNP, i.e. after adjusting for net factor income abroad, about 22 to 25 per cent of the GNP was generated in the oil sector between 1953 and 1972. (See table I.7). From 1973 onwards, and after the quadrupling of oil revenues, the share of oil sector in the GNP increased and reached as high as 28 to 30 per cent. This was accompanied by increases in the GNP. The average annual rate of growth of GNP, and oil sector have been compatible during the periods 1960-1970, and 1970-1975, (See table I.5). The close association between the volume of GNP and oil revenues is also borne out by the high value of R^2 , when regressing annual GNP against annual oil revenues between 1960 and 1975. The value of R^2 yield by the regression was 0.97. The regression coefficient, which measures the elasticity of change in the GNP as a result of a unit change in oil revenues was also high 1.55.

However, one has to differentiate between the effect of oil extraction activities on the economy and the effect of revenues from the export of crude oil. The former has had very little impact on the economy. For example, in 1975, total employment in oil companies was less than 2 per cent of the labour force in the country and the investment by the oil companies did not exceed ID 5 million per annum during the whole period under discussion. The effect of oil revenues, on the other hand, has been substantial. Not only oil sector has been a major contributor to the growth of the economy, but also in the period 1953-1971 nearly one-fifth to one-fourth of the national income originated in this sector. From 1974 onwards, the ratio of oil revenues to national income was 0.53 to 0.65. Between 1960 and 1970, 81 per cent of Iraq's foreign exchange was earned from export of crude oil. After 1973, non-oil foreign exchange earnings became relatively trivial.

II. Government investment and expenditures.

The pattern of government allocation of the revenues is the most important factor which influenced the development of Iraqi economy. This is so because of the high weight government investment represented in the aggregate investment in the country. Nearly 52 per cent of the total investment between

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1957 and 1970 was made by the public sector^{1/}. Also, government investment tends to be in key sectors with important feed backs to the rest of the economy. For these reasons, we have summarized in table I.2 government expenditure during the period 1951-1975.

The information in the table suggest that the development process in Iraq went through three phases. Development priority in each phase is indicated by the pattern of allocation in government investment budget and current budget. The first phase corresponds roughly to the years from 1952-1959. The second extends from 1960 to 1970, and the third covers the period after 1970, especially the years following the quadrupling of oil revenues in 1973.

We have to point out, however, that the term "phase" is used primarily in a descriptive sense and for convenience. In reality, it is difficult to draw clear demarcation lines or set-up definite time limits between the phases. In addition, there is a number of common features which underline the working of the Iraqi economy in all three phases.

During the first phase, the country was facing a situation close to a total absence of basic social and economic infrastructure. Low standard of health, high illiteracy, bad housing, floods and parasitic diseases were only some of the problems which had to be dealt with. On the economic side, agriculture, the largest sector was very backward, and industry hardly existed. The country also suffered from acute shortage in electricity supply, roads and communication system, and in nearly all other apparatus of modern economy. It is, therefore, not surprising to see in table I.2 that most of the investment budget, 85 per cent, was between 1951 and 1959, spent on irrigation and reclamation projects in agriculture, on transport and communication, on housing and an important part of the current budget, 33 per cent of current budget on

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^{1/} After the four-fold increase in the oil revenues, the share of private investment has become relatively very small. In 1975, for example, it represented 16 per cent of total investment.

TABLE I.2 ALLOCATION OF GOVERNMENT CURRENT, AND INVESTMENT BUDGET, 1951-1975 AND (ID. MILLION, AND PERCENTAGES)

Expenditure items	Current Budget						Investment Budget (actual)						
	1951 - 1959		1960 - 1971		1970/71 - 1975		Items	1951 - 1959		1960 - 1970		1970/71 - 1975	
	ID.m.	%	ID.m.	%	ID.m.	%		ID.m.	%	ID.m.	%		
Security and Defence	217	62	890	41	1424	44	Agriculture Irrigation & Reclamation	85	30	108	16	308	20
Information and Youth Organization	(included with the other items)		71	3	30	0.1	Manufacturing mining and power	36	13	168	24	619	41
Pension			158	7	177	5	Transport & communication	69	25	151	22	315	21
Others			20	1	106	3	Housing, Building & other construction works	85	30	264	38	272	18
Education and Health	116	33	623	29	631	20	Administration	6	2	2	0.3	10	0.1
Municipalities	(included with the other items)		100	5	115	4						(loans granted to government)	
												145	(?)
Productive activities	19	5	311	14	521	16							
Total	352	100	2153	100	3180	100	Total	281	100	693	100	1524	100
												excluding last item	

Source: Ministry of Finance Annual Accounts, and the Central Bank Bulletin, 1967, No. I, 1970, No. II, 1972 No. III, 1974 No. IV and 1977 June-July.

- Notes:
- Productive activities refer to the administrative expenditure of government department in Agriculture, Industry, Transport and Communication.
 - Municipal expenditure includes lighting, sewage, public cleaning and alike works.
 - Percentages are taken from the totals or given in the budget. The items of foreign affairs and interior are not included in the table here, but they feature in the total.
 - The item 'other' is not specified in the original document.

education and health. Industry was allocated a small share and high preference was given to electricity. But the private sector, as we shall see later, played an active role in industry in this period. These briefly were the major characteristics of development in the first phase.

In the second phase, there was a marked preference for industry, and particularly manufacturing. Investment in industry was during the eleven years in this phase about five times greater than that during the eight years in the first phase. Also a number of institutional and organizational measures were introduced aimed at stimulating industrial development, and enhancing the role and ownership of public sector in the economy. Outstanding among these measures were the wide scale nationalization of business, which included in addition to all banks and insurance companies 27 large manufacturing firms producing at the time 21 per cent of the total manufacturing output. As a result of these measures, the share of private manufacturing contracted significantly, which in turn must have partly vitiated the growing emphasis on industrialization.

Significantly, in this phase, the growing relative importance of industry in public investment was on the expense of agriculture alone. The share of agriculture in total public investment declined to 16 per cent, from 30 per cent in the first period. Although investment of private sector in agriculture rose and therefore, partly compensated for the relative decline in government investment, the share of agriculture in the total investment remained, throughout the period 1960-1970, below that of industry, and below its own share in the preceding period. The share of transport and communication, housing and other construction works increased from 30 to 38 per cent. The share of education and health recorded a small decline. (See table I.2).

This phase is also characterized by an important shift in the government allocation of its oil revenues between investment and current budget. Unlike in the first period, where government oil revenues were largely designated for investment, now only 50 per cent of the revenues were allocated to investment budget. There have also been occasions when appreciable sums were transferred from the investment budget to the current budget.

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Consequently, government current expenditure continuously escalated. Table I.2 shows that for every ID 39 million per annum in the current budget during the first period, there was ID 179 million in the second period.

Defence and security featured high on the list, but the current budget also provided for the administrative expenditure of government departments engaged in such productive activities as agriculture, industry, transport and communication. About 14 per cent of the current expenditure during 1960-1971 was in these fields.

The expenditure pattern just discussed resulted in a number of changes in the economy. The industrial sector featured for the first time among the important activities of the GDP. The infrastructural sectors, although were by no means complete, have had their basic foundation laid down, specially in urban sector. Much was still to be done in the rural sector. But on average the standard of living has improved. The per capita real GDP increased from \$ 290 in 1960 to nearly \$ 370 in 1970. The largest part of the benefits from the government welfare expenditure was also accruing to lower and medium income groups. There are no income distribution data to substantiate this point. There is, however, abundant indirect evidence to support it. As the evidence concerns all three phases, they will be considered later.

An important characteristic of the third phase is that expenditure figures have become amplified. The arithmetic is quite stunning. For example, the current budget for the five years from 1971 to 1975, was ID 3,180 million. This is more than one and a quarter times greater than the aggregate current budget for the preceding twenty one years. (See table I.2). The growth was even greater regarding the investment budget. Actual public investment in the five years just mentioned was 156 per cent of the total public investment in the whole period from 1951 to 1970.

Except for education and health, the pattern of expenditure in the current budget was not very different from that observed for the second period. The pattern, however, was somewhat different regarding the investment allocation. Agriculture managed to raise its share to 20 per cent of the total. This was slightly higher

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than preceding period, but was still well below the first period. The increase in the allocation to industry was substantial. In absolute terms, it rose from ID 168 million in the second period to ID 619 million. More than 35 per cent of the industrial investment was in mining and power. But the share of manufacturing was still very high. Transport and communication kept their share unchanged by doubling their investment volume compared to the second period. The major change was in "housing and other construction Works". Here, the share declined by 53 per cent below the level in the previous period. The volume was not significantly different either.

This change, however, was short lived. To explain this: the authorities, prudently, at the beginning of the four-fold increase in the oil revenues, were keen to channel most of the additional revenues toward essential activities: like mining, power, manufacturing and agriculture. As the continuity of the revenue influx became more secure, the old expenditure pattern was gradually restored. But there were also other reasons. Judging by the trend in the price of building materials, and by the length of delivery time, the activities in the construction sector seems to have reached the critical maximum capacity limit. Time was needed for further capacity expansion, and any additional demand would have been absorbed merely in price increases. Indeed high inflation rate has already become the second most important characteristic of this third phase.

The high government expenditure in phase three was not without detrimental effects. The rapid growth of GDP in the first two periods considered was accompanied by a minimal rate of inflation. By contrast, the period 1970-1975 was characterized generally by an accelerating rate of inflation. Measured by the implicit GDP inflation, the average annual rate of increase was 16 per cent in 1970-1975, compared with 2 per cent during 1965-1969 for example. Estimate of GDP at constant prices for the years after 1975, are not available to derive the implicit deflator. And the relatively small decline in the rate of increase in 1975 indicated by the implicit deflator for this year is by no means sufficient to conclude that the inflationary trend has tapered off. (See appendix tables 2 and 3).

Far from it, judging by the increase in the wholesale price index, and the consumer price index, the inflation continued escalating, and began running at two digit-figures, rising respectively from 130.9 per cent to 181.2 per cent and from 127.3 per cent to 174.6 per cent in the years 1973 and 1976.

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Inspection of the annual rate of increases in the GDP deflator, and in the oil revenues in the post 1974 years shows that there has been close links between the two. Indicating that inflation and injection of liquidity into the economy moved hand in hand. Thus, it seems that soon after the quadrupling of oil revenues, the Iraqi economy reached its absorptive capacity and exceeded it in many areas. Shortages in skilled workers, infrastructural facilities, and managerial qualities were becoming increasingly acute. Consequently, important structural changes took place in wages and prices. New social and functional groups also emerged on the scene.

The inflation, of course, was not all home produced. As the economy had become more and more dependent on imports, it was difficult to immunize it against the global inflation; itself partly precipitated by the oil price increases. However, irrespective of how it began galloping inflation once underway has damaging effect on development prospects. Real financial resources would be diverted to contain prices increases; therefore, further distorting the price structure. Artificial bottlenecks irrupt leading to misallocation of scarce resources, and ultimately the negative redistributive effects of inflation would cut into the real income of low and fixed income groups who usually represent the largest segment of the population. Perhaps it was in anticipation of this last consequence that a number of measures were lately introduced by the authorities to alleviate the situation. This we shall consider later. Meanwhile, what was unmistakably missing was more flexibility in the management of supply of goods and in this application of the usual fiscal and monetary apparatus to contain the prices increases until the planned capacity expansions are achieved.

III. Dominance of public sector in Iraqi economy.

A characteristic feature of Iraqi economy is the public ownership of the modern sector including finance and trade. Recently, this ownership has been extended to the traditional sector, government farms began to represent an increasing portion of the agricultural activities.

The vehicle for government's increasing role in the economy has been the expenditure of oil revenues. But this was also accompanied by a number of

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socialistic measures which included: nationalization of rural estates in 1953 and 1968; nationalization of a large number of businesses in 1964; control of wholesale trade, of imports and exports in 1970's, and the nationalization of foreign oil companies operating in Iraq in 1972. Judging from official declaration, the tendency is towards further government control of the economy. Table I.3 gives an example of the magnitude of governmental interest in Iraqi economy. It can be seen that the public sector occupies more than three quarters of the economy in Iraq, measured by share in the expenditure, and by contribution to the GNP.

TABLE I.3 AVAILABILITY AND USES OF RESOURCES 1974
(ID. million at current market prices)

Availabilities	ID million	of which % public	Uses	ID million	of which % public
GNP	3 136.0	71.0	Consumption	1 640.0	46.0
Indirect taxes minus subsidies	33.0	100.0	Investment	531.9	84.0
Imports	1 073.8	100.0	Exports	2 075.9	99.5
Total availabilities	4 247.8		Total users	4 247.8	

Source: AAS 1976, and Central Bank Bulletin 1977.

Note : Our consumption estimate is somewhat higher than the official estimate, because as a residual it contains errors in the other times - which have been obtained from different sources.

In addition to its large expenditure, government also administers the flows of export and imports. All wholesale trade, banking, insurance, modern manufacturing, utilities, communication and transport (same for small scale urban transportation), are in government hand. Recently, large government construction companies are set up, and retail trade is brought under government control through price and supply management. Government stores are now playing an increasing role in retail trade.

The private sector is active in agriculture, traditional handicrafts, small scale industry, repair shops, housing and professional services. However, public sector has begun operating in agriculture, hotels and tourism. Regarding agriculture for example, in 1976, state farms and collective farms together

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represented nearly 15 per cent of the total cultivated lands (1,319 thousand out of 9,020 thousand dunnams). In 1971, the former did not exist, and the area of the farms under the latter amounted only to 0.1 per cent (90 thousand out of a total of 11,407 thousand dunnams cultivated)^{1/}. There were also 46 thousand employed in government agricultural activities in 1976 (See table I.4 below).

Government's increasing control of the economy is also clearly reflected by (i) changes in the composition of its employment, and (ii) changes in the aggregate employment in the public sector. In table I.4, the comparison is carried out for 1972 and 1976, for which data were available.

TABLE I.4. CHANGES IN THE STRUCTURE OF GOVERNMENT EMPLOYMENT IN SELECTED YEARS AND PERCENTAGES CHANGES.
(Thousands and percentages)

Year	Agriculture	Mining	Manufacturing	Electricity	Construction	Trade	Transport	Banking	Services	Total
1972	26.5	15.9	52.7	n.e.	13.4	11.2	47.4	11.5	207.4	385.9
1976	46.3	13.2	78.4	11.5	20.3	30.3	62.2	10.0	254.4	526.6
Per cent change 1972/76	75	-17	49	-	51	170	31	-14	23	36

Source: LLS, 1974 pp. 340-341. LLS, 1976 pp. 308-309.

(i) In terms of aggregate, excluding the armed forces and security, the number employed by the government totalled 526 thousand in 1976, which was an increase of 36 per cent on 1972. This may, based on rough estimates of total employment in the country, have represented between one third and one quarter of the total; against 18 per cent in 1972. Thus in 1972, total wages in the government sector amounted to nearly ID 15 million.^{2/}

(ii) As the table shows between 1972 and 1976, public sector employment in trade trebled, in agriculture and construction almost doubled. In manufacturing, increased by 49 per cent, reaching 78 thousand, and in services by 23 per cent reaching more than a quarter million.

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^{1/} LLS 1976, pp. 77-79 and p. 115. LLS 1971 p. 109 and p. 120. The total area cultivated is for the main agriculture crops.

^{2/} No estimate for total wages in the economy or in the public sector could be obtained to compare the results.

IV. Structural change in the Iraqi economy.

Structural change in the economy relates to the sectoral composition of the GNP and their relative growth over time. Analysis of structural change has been carried out and presented in Table I.5-9. The analysis includes comparison of growth rates of the component sectors of the GNP. We have also measured the contribution of each sector to the overall growth of the GNP. Growth rates, however, could be misleading. They are influenced by initial values. To circumvent this problem, we have, as a second step, measured changes in the share of the sectors in the GNP after grouping the various GNP sectors in four major categories: agriculture, mining, industry and service. In a further step, we have segregated these activities into commodity and non-commodity producing. Finally, within the non-commodity producing sectors distinction is made between traditional services, modern services and government services. We shall also note that, throughout, the analysis is conducted once with oil sector included and once excluded. So that changes in relatively lesser activities would not be blurred by the dominance of the oil sector.

Regarding the agricultural sector, all evidences point to the descent of this sector. For example, except for 1972, the GNP in agriculture has been continuously declining since 1969 (see tables I.5 and I.7). In fact, the level of agricultural output in 1975, was below that ten years ago. The average annual rate of growth in agriculture between 1970 and 1975, was practically zero. All other sectors, however, scored well.

In the period 1960-1970, the growth rates of mining and manufacturing were close to the overall rate in the economy. The growth of services and electricity were higher than the average; the latter high rate reflecting a small base.

In the period, 1970-1976, the growth of the GDP was almost twice as high as in the second period. This is also, excluding agriculture and electricity, true for the individual sectors. Construction seems to have done exceptionally well; therefore, reversing its low profile in the growth chart during the preceding

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TABLE I.5 GDP AND ITS SECTORAL COMPOSITION AND THEIR AVERAGE ANNUAL RATE OF GROWTH: 1960-1976. (CONSTANT 1969 PRICES) (ID. MILLION)

Year	Agriculture	Mining	Manufacturing ^{1/}	Construction	Electricity gas & water	Services	G D P
1960	104.4	234.9	65.7	28.4	2.4	228.9	664.7
1961	128.0	242.6	73.7	21.7	3.4	272.3	741.7
1962	151.5	240.3	79.5	117.5	3.7	290.5	783.1
1963	114.1	267.9	75.8	17.6	3.4	292.7	771.5
1964	151.4	288.4	73.3	25.0	4.9	314.3	857.3
1965	172.9	321.8	79.1	23.2	6.5	364.4	927.9
1966	176.5	326.7	83.1	30.7	7.9	375.5	1 000.4
1967	170.7	266.6	88.4	27.9	7.8	354.0	915.4
1968	186.3	342.7	96.7	30.4	9.6	401.0	1 066.7
1969	191.0	343.2	103.0	30.5	10.9	425.3	1 103.9
1970	186.6	352.4	105.1	39.3	12.7	439.4	1 135.5
1971	179.7	382.7	122.5	40.0	11.9	455.1	1 191.9
1972	228.6	333.0	132.6	42.3	13.7	480.3	1 230.5
1973	180.5	457.8	143.5	51.1	16.0	511.1	1 360.0
1974	166.1	443.4	153.7	52.7	18.6	664.7	1 499.2
1975	165.5	515.4	182.4	69.1	23.4	820.6	1 774.4
1976	185.6	611.3	236.8	148.9	28.3	929.1	2 140.0
AAROG							
1960-70	6.0	4.1	4.8	3.3	18.1	6.7	5.5
1970-76	-0.1	9.6	14.5	24.8	14.3	12.6	11.1

Source: For the years 1960 to 1969, they are the estimates made by the Special Fund Project, Ministry of Planning 1970, converted from 1966 prices to 1969 prices by splicing. The estimates for 1970 to 1975, are taken from AAS 1976, and for 1976 from ECWA's statistical Abstract of the Region of the Economic Commission for Western Asia. 2nd Issue, Part 1, Beirut 1978, p. 62.

^{1/} GDP in manufacturing for 1970-1976 are ECWA estimates.

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TABLE I.6 THE SHARE OF GDP SECTORS IN THE OVERALL GROWTH OF THE GNP 1960-1970 AND 1970-1975 (ID MILLION AND PERCENTAGES)

	Agriculture	Mining	Manufacturing	Construction	Electricity and water	Services	GDP
1960-1970 (ID million)	82.2	117.5	39.4	10.9	10.3	210.5	470.8
% of GDP growth 1960-1970	17.4	24.9	8.4	2.3	2.2	44.7	100.0
1970-1975 (ID million)	21.1	163.0	77.3	29.8	10.7	381.2	640.9
% of GDP growth 1970-1975	3.6	25.4	12.0	4.6	1.6	59.5	100.0

Source: Based on table I.5.

period. Services were still rising high, but what is particularly interesting is to see manufacturing among the high growth performers. It has moved up one place (to the third place) among the contributors to the growth of GDP during 1970-1976. However, services and mining remained in the first and the second places respectively throughout the periods covered (see table I.6). The dominance of the service sector in the GNP is also clearly indicated when comparing the share of the different sectors in the GNP (Table I.7). This is true whether oil sector is excluded or included. Excluding oil sector from the GNP, services represented about 42.4 per cent of the real GNP in 1960, rising uninterruptedly throughout the period, until in 1976, it reached 61 per cent of the GNP. Even when mining is included, the share of service sector stands very high at nearly 44 per cent in 1976 for example. The share of industry has been either stagnant or shown moderate increases since 1960. But the share of agriculture has contracted substantially: from 18.5 per cent in 1960 to 8.7 per cent in 1976. The net gainer has been the services, whose share increased from 40.6 per cent in 1960 to 43.9 per cent in 1976.

Thus contrary to the experience of many advanced countries, Iraq began its modern economic history with a relatively dominant service sector, whose dominance accentuated as the economy developed. After the quadrupling of oil revenues, not only mining, but industry as well for the first time superseded agriculture in 1973.

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A cursory look at the composition of the service sector in Table I.9, shows that the relative importance of the activities within the service sectors has been changing in favour of government services. Until very recently, distribution activities were the most prominent among the services. Finally, in 1975, they were superseded by government services. While the share of distribution services in GNP was practically stable; the traditional services showed limited increase.

While the large share of distribution activities - in which transport and communication have the lion's share - can be explained by the fact that in terms of area Iraq is a very large country (434.4 thousand kms²), and is also geographically a cross road between the east and the west of Asia; the large and the increasing government service is, on the other hand, the direct result of the allocation pattern of oil revenues which we discussed earlier.

V. Effect of oil revenues on consumption and saving patterns.

This section examines the consumption and saving patterns and how different they are compared with non-oil producing economies.

In any economy, there are two types of domestic savings: voluntary and compulsory. The former is made up of corporation savings, households, and non-corporative savings. As table I.10 shows, most of the voluntary savings in Iraq are by corporations, and this also represented the largest part of the private savings. But these savings, as we shall see in the chapter about financing the industry development are the main source for financing private businesses in Iraq. Therefore, their effect on the marginal propensity to consume, contrary to the effect of households' savings, is positive. The share of households' saving in private saving amounted to 35 per cent in the years 1964-1970, for which data were available.

As for compulsory saving, government investment in Iraq is financed largely from the oil revenues (92 per cent of the investment and 40 per cent of the current budget between 1960 and 1970, for example). But what would compulsory saving have been, and how would it have been raised if there were no oil revenues? Of course, government expenditure might not have been as high as it is now in the absence of the oil revenues; but the tax rates as will be elaborated later would have been higher, and tax allowance lower than the present.

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TABLE I.7 SHARE OF INDUSTRIAL SECTORS IN GNP AND GDP WITH OIL SECTOR INCLUDED AND EXCLUDED IN SELECTED YEARS
(CONSTANT 1969 PRICES) (PERCENTAGES)

	GNP and GDP exclusive of oil sector							GNP and GDP inclusive of oil sector						
	1953	1960	1965	1970	1973	1975	1976	1953	1960	1965	1970	1973	1975	1976
Agriculture	32.9	19.3	26.3	23.6	18.6	12.9	12.1	24.4	18.5	21.0	19.0	12.7	9.2	8.7
Mining	0.4	0.3	0.8	1.0	1.0	0.4	n.a.	24.5	23.8	20.7	20.0	32.4	29.0	28.5
Industry	16.7	17.9	17.3	20.0	21.8	21.7	27.1	12.4	17.1	13.8	16.1	14.9	15.5	19.3
Manufacturing	(10.3)	(12.2)	(12.0)	(13.3)	(14.9)	(14.4)	(15.5)	(7.6)	(11.6)	(9.6)	(10.7)	(10.1)	(10.3)	(11.0)
Services	50.0	42.4	55.5	55.5	58.5	64.9	60.8	37.2	40.6	44.4	44.8	40.2	46.2	43.9
GNP at factor cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: See table I.5.

Note: Estimates for the years 1973, 1975, and 1976 are based on GDP instead of GNP. (See footnote to table II.1, Chapter II).

TABLE 1.8 DISTRIBUTION OF GNP AND GDP BETWEEN COMMODITY AND NON-COMMODITY PRODUCING ACTIVITIES IN THE ECONOMY
IN SELECTED YEARS (CONSTANT 1969 PRICES) (PERCENTAGES)

Years	Commodity Producing Activities		Non-Commodity Producing Activities	
	Excluding oil sector	Including oil sector	Excluding oil sector	Including oil sector
1953	50.0	62.8	50.0	37.2
1960	57.6	59.4	42.4	40.6
1965	44.5	55.6	55.5	44.4
1970	44.5	55.2	55.5	44.8
1973	41.5	59.8	58.5	40.2
1975	35.1	53.8	64.9	46.2
1976	39.2	56.1	60.8	43.9

Source: See table I.5.

TABLE I.9 COMPOSITION OF SERVICE SECTOR AND SHARE IN NON-OIL GNP IN SELECTED YEARS
(CONSTANT FACTOR COSTS) (PERCENTAGES)

Year	Distribution activities as percentage of		Traditional activities as percentage of		Government services as percentage of	
	Total services	GNP	Total services	GNP	Total services	GNP
1961	47.1	23.0	28.4	14.2	29.0	14.4
1965	42.4	21.7	22.7	11.7	34.8	17.9
1971	40.0	22.3	31.3	17.5	28.8	16.1
1973	36.7	13.8	33.1	12.4	30.2	11.3
1975	36.8	23.9	25.3	16.4	38.0	24.5

Source: See table I.8.

Note : Distribution activities include trade, communication, storage, transport, banking and insurance. Traditional activities refer to dwellings, restaurants, hotels, repair activities and like services. Government services composed mainly of public administration, defence and security.

TABLE I.10 PRIVATE AND PUBLIC SAVING, IN SELECTED YEARS (IN MILLION) (CURRENT PRICES)

	1960	1964	1965	1966	1967	1968	1969	1970
1. Aggregate G.F.C.F.	102							185
2. Net export	-13							35
3. Gross national saving	89*	102	107	60	147	165	123	221
4. G.F.C.F. change in stocks in government sector	41	38	46	38	52	49	41	101
5. Surplus on government account	-11	-18	7	-46	18	3	-26	22
6. Gross private saving	59	82	54	68	77	113	108	97
6a. Saving by corporation	n.a.	n.59.	34	51	56	62	66	n.a.
6b. Saving by households and unincorporated businesses	n.a.	23	20	17	21	51	42	n.a.

Source: Saving estimates for 1960 and 1970 were not available. Here they are calculated from the aggregate gross fixed capital formation (G.F.C.F.) in the table as follows:
 Aggregate G.F.C.F. + change in stocks + surplus (-deficit) on the current balance of payment = Gross national saving.
 Gross national saving - G.F.C.F. and change in stocks in public sector + surplus (-deficit) on government current account = private saving (gross).
 For the rest of the years (1964 to 1969), saving for government, businesses, and for household, etc., were given in the National Development Plan, for the fiscal years 1970-74. Ministry of Planning. pp. 94-97.

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As indicated in table I.11, data relating to gross national saving broken down by private and public sectors are available for selected years from 1960 to 1970. The data reveal that the ratio of gross national savings to GNP for the selected years ranges for total savings between 15 per cent to 21 per cent, and for private savings between 7 per cent to 14 per cent.

TABLE I.II, GROSS NATIONAL SAVINGS AND GNP, SELECTED YEARS 1960-70

Year	G N S / G N P	
	Total	Private
1960	19	13
1964	16	13
1965	15	7
1966	8	9
1967	19	10
1968	20	14
1969	14	12
1970	21	9

Source: See table I.10.

Considering that most of the public sector's savings are oil revenue based, then the private sectors savings could be used as a very rough proxy for comparison. As data in tables I.11 and I.12 indicate, saving ratios in Iraq are lower than those recorded for other countries; including the low per capita income countries of India and Pakistan. Thus, there is evidence to suggest that the endogeneous marginal propensity to save tends to be lower in an oil economy like Iraq than in a non-oil producing economy, implying, ceteris paribus, high level of effective demand in the economy.

VI. Effect of oil revenues on income distribution.

At the early stage of industrial development in developing countries, import substitution has been the main contributor to rapid industrial growth. It has been observed that after exhausting import substitution possibilities and at a latter stage of industrial development, the process of industrialization could be seriously

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TABLE I.12. GROSS DOMESTIC INVESTMENT, SAVING, AND THE IMPORT SURPLUS
ON GOODS AND SERVICES - 1961-66
(percentage of GDP)

Item	Argentina	Brazil	Mexico ^b	India ^c
Domestic saving	21.4	18.0 ^a	15.2	13.2
Import surplus	<u>-1.0</u>	<u>-1.6</u>	<u>0.1</u>	<u>2.6</u>
Domestic investment	20.4	16.4 ^a	15.3	15.8

Item	Pakistan ^d	Philippines	Taiwan
Domestic saving	12.?	20.0	23.3
Import surplus	<u>4.2</u>	<u>1.8</u>	<u>3.3</u>
	16.4	21.8	26.6

Source: Industry and Trade in Some Developing Countries, by I. Little Oxford University Press. London 1970, p. 48.

a - Excludes net investment in stocks in 1965 and 1966.

b - Percentages of GDP at market prices. Net investment in stocks excluded from investment and savings throughout.

c - Years 1955-1960

d - Years ending 30 June

c - 1952-4.

Note: Data on saving for selected developing countries are presented in Table I.12. Although these data are not strictly comparable, they can still give indication for the difference in the pattern of savings between Iraq and non-oil producing developing economies.

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constrained by slow expanding local demand for manufactured products. The latter has been brought about because of the inability to create local market except in urban centres which were also limited to certain upper income groups. In good part, the concentrated local market reflected an adverse maldistribution of wealth associated with economic and industrial development. How different has been the Iraqi experience?

On the supply side of the market for manufactures, this pattern and strategy of industrial growth developed a heavy dependence on imports, comprised mainly of raw materials, components and parts, as well as capital goods. For a number of developing countries, the growth in import was not matched by export and serious bottlenecks have been encountered in supplying the imports needed for expansion and full utilization of existing manufacturing capacity.

While the implication for the supply side of the market for manufactured goods will be the subject of chapter II, the effect of oil revenues on income distribution shall be examined here.

First let us examine the income groups that have benefited most from the expenditure of oil revenues. In the absence of any study of income distribution in Iraq, this aspect will, by no means, be exhaustive and can at best be indicative of the direction of the benefits.

As was indicated earlier, because of the oil revenues tax rates have been low. In the absence of oil revenues, of course, these rates would have been higher. Therefore, the relevant question is 'how would the extra tax revenue have been raised, or distributed, between the different income groups in the absence of oil revenues?' This is the mirror image of the question 'who gets the benefits of not paying the extra taxes?' The best way to approach the answer, therefore, is to examine the tax structure and rates that are in existence.

One major characteristic of taxation in Iraq is its narrow base and generally low rate. For example, in 1968 only 0.8 per cent of the population was subject to income tax. Tax revenues from agriculture and estates amounted to ID 4 million. The ratio of total tax revenues to GNP in Iraq was 10.2 per cent in 1953, declined to 8.3 per cent in 1970 and to 4.4 per cent in 1976. In Turkey, a neighbouring non-oil producing country, for example, the ratio was 12.8 per cent in 1962, and increased

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to 15.7 per cent in 1967. More important with regard to lower income group is that the tax system was not regressive. The ratio of indirect taxes to total tax revenues was lower in Iraq than in Turkey. In fact, very few locally produced goods and services are taxed in Iraq. In addition, all imported capital goods, spare parts, and a large number of raw materials are exempted from duties. Between 1960 and 1969, the ratio of import tax revenue to total value of imports in Iraq was 19 per cent. In Turkey, it was 42 per cent. In table I.13 nearly 91.0 per cent of the total tax on manufactured goods was carried by three commodities. In recent years, the ratio of indirect taxes minus subsidies to gross value of output has further declined.

TABLE I.13 INDIRECT TAX REVENUES FROM MANUFACTURED GOODS, AND THEIR RATIO TO THE VALUE OF GROSS OUTPUT IN MANUFACTURING, IN SELECTED YEARS, (CURRENT PRICES) (ID MILLION AND PERCENTAGES)

Year	(1) Value of gross output in mfg.** ID	(2) Indirect taxes on mfg. goods ID	(3) Indirect tax on 3 mfg.goods* ID	(4) Ratio of (2) to (1) Percentage	(5) Ratio of (3) to (2) Percentage
1961	115.9	11.8	7.7	10.2	65.5
1970	195.1	28.8	26.2	14.8	91.0
1974	463.6	29.2	27.1	5.3	92.0

Source: For 1961, T.H. Kanaan, 'Input-Output and Social Accounting of Iraq', 1960-1963.

For 1970, CSO Industrial Census 1970. For 1974 from our estimate of gross output for large and small establishments, tax and subsidy data for 1974 are obtained from the social accounting matrix for 1974. The share of the three major tax revenues for this year is a rough estimate as taxes and subsidies are intermingled.

* Cigarettes, alcoholic drinks and petroleum products

** Gross value of output is exclusive of repair industries and is at market prices.

The leniency of the tax system in Iraq is also indicated by the low income elasticity of tax revenues, and low incremental tax/GNP ratio. For example, in Turkey, the former increased from 0.53 to 1.72 and the latter from 19.8 per cent to 25.1 per cent, between 1962 and 1967. In Iraq income elasticity of tax revenues rose from 0.86 to 1.3, and the incremental tax/GNP ratio from 6.7 per cent to 10.1 per cent both between 1961 and 1968. With the increase of oil revenues tax returns have

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become even less important as a source of government income. The incremental tax/GDP ratio fell to 0.02 per cent between 1971 and 1975. But there are also other indicators that lower income groups are the largest beneficiaries from the oil revenue spending.

We saw earlier that a substantial part of the ordinary budget was spent on public services, health, education, social services, public amenities, etc. Their advantage, although universal, are of greater benefit to the poor. In addition, the employment created by these expenditure, and those on defence and security, and the higher employment and productivity from the structural changes brought about by the high government investment, are likely to increase the average real income of the lower and medium income groups more than the higher.

TABLE I.14 SHARE OF WAGES AND SALARIES IN NON-OIL NATIONAL INCOME. INCOME TAX FROM INDIVIDUALS AND THEIR SHARE IN THE NON-OIL NATIONAL INCOME AND IN DIRECT TAXES, IN SELECTED YEARS (ID MILLIONS AND PERCENTAGES) (CURRENT PRICES)

Year	Wages and salaries ID	Share in non-oil national income%	Income tax from individuals ID	Share in direct tax Percentage	Income tax from government employees ID	Share in direct tax Percentage
1965	196	37.5	2.9	18	0.4	3
1969	259	39.4	5.0	18	2.1	7
1972	399	47.7				
1975	834	56.7	6.5	20	1.1	3

Source: AAS, 1965, p. 380. AAS, 1970, p. 270, AAS 1976, p. 176, and p. 259. Central Bank Bulletin, New Series, 1972, No. 3, p. 25.

The share of wages and salaries in the current national income - excluding income from oil - increased from 37.5 per cent in 1965, to 56.7 per cent in 1975. Table I.14 above shows that the increase has been persistent since 1965, implying that the share of income of non-wage and salary earners in the economy has been falling: from nearly 62 per cent to 43 in the same years. The table also shows that the contribution of wage and salary earners to direct taxes remained almost stable at around 18 to 20 per cent throughout, a clear indication of gains in terms of disposable income.

The growth of employment in the government sector was 6 per cent per annum compared to the average annual growth of employment in the economy of 3 per cent, during

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the period 1960-1976. This has resulted in a substantial rise in the share of government employment in the total employment as mentioned earlier. In addition, the average annual growth of wages and salaries in the government sector was higher than the national average: 9.8 per cent against 6.0 respectively, between 1960 and 1971 for which data could be obtained.^{1/} (See appendix tables 4 and 5). Table I.15 shows that within the earning scale of government employees, medium income earners (ID 20-70 per month represented 70 per cent of the total. Those who earned less than ID 10 per month were very small in number 0.1 per cent of the total. Recently government pay scale as well as the minimum wage level have been raised appreciably. However, there is no official source to quote from.

TABLE I.15 SCALE OF EARNINGS IN THE GOVERNMENT SECTOR, AND PERCENTAGE OF EMPLOYEES IN EACH SCALE IN 1972 (ID)

Wage and salary earned per month	Percentage of total employed
Between ID 20 and 80	73
Between ID 20 and 70	70
Less than ID 20	20
Less than ID 10	0.1

Source: AAS 1973, p. 411

Although - for lack of data - it is not possible to calculate the terms of trade between agricultural and industrial products, an analysis of the partial price statistics available for these products indicates that the terms of trade may not have been against the farmers. Or they have, but not by a large margin.

A study of price changes during 1953-1970 arrives at this conclusion for the period^{2/}. We shall see in a moment that despite the prevailing high inflation

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^{1/} Measurement of changes in the share of wages and salaries in the government sector, in the total wages and salaries in the economy, cannot be accurate as the latter excludes, wages in the agriculture sector.

^{2/} This study is carried out by Dr. Zeki Fattah, Op.cit.

rate this conclusion also holds for the post 1970 period. In other words the relative price relations between agricultural and manufactured goods did not alter much in the latter period. The price data indicating this are shown in table I.16.

TABLE 1.16 AVERAGE ANNUAL RATE OF GROWTH IN THE WHOLESALE PRICE INDEX, AND CONSUMER PRICE INDEX FOR AGRICULTURAL AND MANUFACTURED PRODUCTS.
(Percentages)

(a) Wholesale price index (1962=100)

Period	Meat	Animal products	Grain and pulses	Vegetable and other agri products	Foodstuffs index
1970-76	11.1	7.0	2.0	8.7	5.6

(b) Consumer price index (1963=100)

Period	Foodstuffs	Clothing and textiles	Cleaning materials	Fuels and lighting	Cigarettes
1970-76	7.3	8.0	7.6	-2.4	2.8

Source: AAS 1976, pp. 191-202.

While the wholesale price index for grain and pulses records a very low percentage increase, due mainly to government's subsidised imports of these products, the percentage growth rate in the wholesale price index of meat, animal products and vegetables and other agricultural products are high and comparable with those recorded for the manufactured goods. Thus against the average annual growth rate of 5.6 per cent in the foodstuffs index, the textile index records 6.9 per cent, which is not a very large margin of difference.

Similarly, the increase in the consumer price index for foodstuffs is close to that of clothing and textiles, and cleaning materials. The index for fuel records an average decline of 2.4 per cent per annum. The increase in the price of cigarettes has been a moderate 2.8 per cent per annum.

It is interesting to note here that on the basis of value added data that are available for the main activities in agriculture for the years 1953-1960, and 1966-1970 (only), the share of animal products, vegetables and fruits represented 60-70

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per cent of the total value added in agriculture in these periods respectively. Knowing that demand for those products is usually highly income elastic, one may expect their share in the value added to increase even more in the latest years. The agricultural data, which are not generally very reliable, also suggest that in 1966-1970, the share of subsistence sector in agriculture has fallen from its 1953-1960 level^{1/}.

Perhaps a more direct indication that oil revenues have been put more to the advantages of lower income groups is the parallel increase in per capita food supply and in income. Table I.17 shows that the average annual rate of growth of food supply was 6.3 per cent, and, that of per capita income 6.6 per cent. This compatibility is also indicated by the annual changes in their respective indices through the period 1956-1976.

This is in contrast to the experience of many developing nations^{2/}. Its relevance in our case is all the more important in view of the low growth rate of field crops: roughly between 1.6 and 1.3 per cent during the period considered. Thus, as column 3 in the table shows, increasing sums from the oil revenues have been devoted to alleviate food supply shortages. While in 1956-1958/9, the content of food supply from imports was nil in 1968-1970/1, around 25 per cent of total supply of agricultural (food) products was imported. In 1975-1976/7, this ratio increased to 33 per cent.

The effect of this on stabilizing real wages in the economy should not be overlooked. It is also useful in this respect to mention that motivated by this reason government total subsidy in the economy increased from ID 1.4 million in 1966, to ID 1.6 million in 1970, and to ID 70.5 million in 1975. Most of this was directed to subsidizing the food supply.

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^{1/} See Haseeb K. The National income of Iraq, Oxford University Press 1964, p. 53 p. 55 and p. 59. Also CSO National Income of Iraq, selected studies 1970, pp.46-48.

^{2/} I. Little, I. Scitovisky, M. Scott, 'Industry and trade in some developing countries', Oxford University Press, 1970, ch. 3, pp. 105-111.

TABLE I.17 PER CAPITA INCOME, PER CAPITA CONSUMPTION OF FOOD, AND PER CAPITA IMPORT OF FOOD, AND THEIR INDICES AND GROWTH RATES, IN SELECTED YEARS.
(ID and percentages)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Period	Per capita income	Per capita domestic output of agriculture	Per capita import of agriculture	(3) as % of total supply of agricultural prods. (2 + 3)	Per capita consumption of agricultural prod.	Index of (1)	Index of (2)	Index of (5)
1956-58/9	61.5	16.8	0	0	16.8	100	100	100
1964-65/6	76.1	19.6	3.3	14	22.9	124	117	136
1968-1970/1	90.0	20.9	6.9	25	27.8	146	124	166
1975-76/7	360.0	28.4	14.3	33	47.3	585	169	282
Non-oil GNP (186)								
Rate of growth (1956-76)						300 (0.6)	(3.1)	(6.3)

Source: CSO, National Income of Iraq 1962-66, and Special Fund Project's Estimate of National Income, 1970.
Also, AAS, 1973, the sections on agriculture and population, pp.43-60 and 91-106. Import figures were taken from Central Bank Bulletins, 1967, No. 1, 1970, No. 2, and 1972 No. 3.

The terms of trade between the country's exports and imports - calculated by dividing the index of value of exports by the index of price of imports - has been favourable for all the years between 1953-1970, save for 1963 and 1964, when it was 97 per cent and 98 per cent, respectively^{1/}. Pertinent data, especially the index for import prices, are not available for the years after 1970, but there is every reason to believe that the terms of trade remained favourable, particularly after the four-fold increase in the price of crude oil. This means that the country has been obtaining a large volume of imports for the sale of its exports.

Finally, the effect of government grants for private housing on income and expenditure.

The rent index in the consumer price index has been very stable: an increase of 5 per cent in 1970 over its 1963 level, and an average of 2 per cent per annum

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^{1/} Central Bank Annual Reports 1953-1970

in 1977 over the 1970 level. This must have been the result of a combination of government rent control legislation, large public housing programmes, and particularly generous government grant for private housing.

Except for two years 1974 and 1975, separate estimate for government investment in housing is not available. In those two years public investment in housing amounted to ID 27 million (constant 1969 prices). Private investment in housing in the period 1957-1970 amounted to ID 341 million (constant 1962 prices), which was 40 per cent of total private investment (ID 844.3 million). In the period 1971-75, 53 per cent of total private investment (ID 209 million - 1969 constant prices), was in housing. But 18 per cent of this investment in the first period, and 30 per cent in the second was financed by the government's Estate Bank^{1/}. This was in the form of grant extended to anyone who had laid the foundations of a building. The interest rate on these grants is nominal, 2 per cent, and the repayment is over 15 to 20 years usually less than the annual rent which would have been paid for the rented house.

Now, for the income groups which could have afforded the total costs of the buildings without the grant, the grant would be akin to Friedman's concept of transitory income; in the short run, it would augment spending on consumer durables, or furniture. In the long run, by paying annual instalments which are lower than the market rent, it would augment consumption generally by raising permanent income. (We say augment consumption, rather than saving, because the largest income group benefiting from this grant is the medium income group). This last aspect would also apply to the lower income group; but the effect on this group, until the foundations of the building are laid, would probably be to increase the propensity to save, to raise the required initial cost. The overall effect would undoubtedly be to reinforce the demand, especially considering the complementary investment in amenities that housing invites; the generally high forward and backward linkages, and the low import content of housing.

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^{1/} Central Bank Bulletin, New Series, Issues 1967-1977.

APPENDIX I
 TABLE 1. NATIONAL INCOME, GROSS NATIONAL PRODUCT, OIL REVENUES, INVESTMENT BUDGET, CURRENT BUDGET,
 RATIO OF OIL REVENUES TO NATIONAL INCOME; TO GNP, TO INVESTMENT BUDGET AND CURRENT BUDGET: 1950-1976,
 (Current factors costs)(ID. million and percentages).

Year	National income ID. m.	G N P ID.m.	Oil re- venues ID.m.	Investment budget ID. m.		Current budget ID.m.		Percentage of oil revenues in:						
				Total	Allocation from oil revenues	Total	Allocation from oil revenues	National income	GNP	Investment budget	Current budget			
1950	n.a.	n.a.	5	0.3	n.a.	33	n.a.							
1951	184		11	8		38		6						
1952	217		24	24		51			11					
1953	244	265	35	35		48		14	13	100				
1954	284	307	58	41		52		20	19	100				
1955	289	315	61	61		65		21	19	100				
1956	335	363	72	51		63	21	21	19	100				
1957	353	383	52	36		62	15	15	14	100				
1958	374	406	88	62		76	26	23	22	100				
1959	392	424	88	45		90	43	22	21	100				
1960	437	470	95	48	48	104	47	22	20	100			45	
1961	484	521	95	67	58	121	58	22	18	86			48	
1962	526	564	98	70	50	115	48	19	17	71			42	
1963	525	562	124	68	57	127	57	24	22	84			45	
1964	596	637	142	76	65	146	66	24	22	85			45	
1965	659	701	136	75	68	179	68	23	22	91			38	
1966	705	750	127	71	67	159	60	18	17	94			38	
1967	715	760	152	82	76	210	76	21	20	93			36	
1968	783	833	175	80	83	220	92	23	22	94			42	
1969	827	879	170	91	84	261	86	21	20	92			33	
1970	957	1 032	221	111	97	293	114	23	22	87			39	

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APPENDIX I.
TABLE 1. (CONTINUED)

Year	National income	G N P ID.m.	Oil re- venues ID.m.	Investment budget		Current budget		Percentage of oil revenues in:			
	ID. m.			ID. m.	Total Allocation from oil revenues	ID. m.	Total Allocation from oil revenues	ID. m.	National income	G N P	Investment budget
1971	1 081	1 160	349	189	170	341	179	32	30	90	32
1972	1 167	1 252	331	136	109	345	109	34	32	80	32
1973	1 421	1 505	823	442	411	590	412	40	37	93	67
1974	3 002	3 106	2 023	662	601	1 400	1 128	67	65	91	81
1975	3 750	3 855	2 279	700*	700	814*	659	61	59	100	81
1976	n.a.	4 583	2 446	1 258	1 258*	1 324	1 010		53	100	76

Source:

- Notes:
- 1) Current and investment budget figures for 1975 and 1976 are provisional. GNP estimate for 1976 does not exist. The figure here is for GDP.
 - 2) Total oil revenues tend to differ from one government source to another. Here they are obtained as the aggregate of allocations to public current and investment expenditure.

APPENDIX I.

TABLE 2. OIL REVENUES, GDP IN CURRENT AND CONSTANT PRICES, VARIATIONS IN THE GDP DEFLATOR AND ITS RATE OF INCREASE, 1960 - 1975

Year	GDP Current prices	GDP constant 1966 prices	GDP constant 1969 prices	GDP deflator 1966=100	Annual rate of increase in GDP deflator	GDP deflator 1969=100	Annual rate of increase in GDP deflator	Government oil revenues constant prices	Annual rate of increase
1960	601.9	627.8		95.8	...			95	
1961	653.9	700.0		93.4	- 2.5			95	
1962	695.9	734.9		94.7	1.4			94	
1963	706.5	721.6		97.9	3.4			114	
1964	804.5	804.5		100.0	2.1			126	
1965	862.4*	911.6	923.7	94.6	- 5.4	93.3	...	134	...
1966	940.6	940.6	986.8	100.0	5.7	95.3	2.1	122	- 9.0]
1967	942.2	867.6	910.3	103.5	3.5	103.5	8.6	152	24.0
1968	1 062.6*	1 010.6	1 060.3	100.2	- 3.0	100.2	-3.0	175	15.0
1969	1 109.8	1 057.8	1 109.8	101.0	0.7	100.0	0.0	169	- 3.5
1970	1 197.3		1 135.5			105.4	5.4	212	25
1971	1 375.0		1 191.9			115.4	9.5	171	-20
1972	1 388.8		1 230.5			112.9	-2.0	109	-36
1973	1 587.5		1 360.0			116.7	3.3	412	378
1974	3 347.7		1 449.1			231.0	97.9	601	146
1975	3 970.5		1 774.5			223.7	-3.0	700	116
1976			(n.a.)					1 258	180
Average annual rate of growth	1969-1975 } = 23.6%	1960-1969 } = 6%	1969-1975 } = 8.1%	1965-1969 } = 2%		1970-1975 } = 16%		1970-1975 } = 34%	

Source: GDP figures from 1960 to 1969 at current and constant prices are taken from: Ministry of Planning. Special Fund Project 1969. From 1969 onwards at current and constant 1969 prices they are given in the ASI 1976, and "Long Term Prospects of Industrial Development in Iraq". Minister of Planning Report. 1977. Oil revenues are given in Central Bank Bulletin, New Series, Issues 1967-1977.

Notes: 1. Comparison of estimates showed that GDP figures for the overlapping years 1965, 1968 and 1969 were not consistent. In the first source the estimate at current prices for 1965 and 1969 were about ID 15 million, and ID 11 million respectively, higher than the second. For 1968, the second source is ID 6 million greater than the first. No changes have been made here.

2. Oil revenues are only for government nationalized oil companies. Revenues from government own oil companies are not included. These revenues are not specifically shown. Generally they are not very important, except for the last two years in the series.

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APPENDIX I.

TABLE 3. WHOLESALE PRICE INDEX AND CONSUMER PRICE INDEX FOR THE CITY OF BAGHDAD. RATE OF GROWTH, 1960-1970

Year	Wholesale price index 1962=100	Consumer price index 1963 = 100
1960	103	94
1961	103	96
1962	100	96
1963	108	100
1964	110	100
1965	107	99
1966	106	101
1967	114	103
1968	109	104
1969	112	111
1970	122	115
1971	130	120
1972	125	127.3
1973	130.9	133.5
1974	147.2	144.6
1975	162.6	158.2
1976	181.2	174.6
Average annual rate of growth: 1960-1970	1.7%	2%
1970-1976	6.8%	7.2%
1973-1976	11.4%	10.0%

Source: Central Bank of Iraq, New Series, Various Issues.

APPENDIX I.

TABLE 4. GROWTH RATE AND TOTAL NUMBER EMPLOYED IN THE ECONOMY, THE NUMBER EMPLOYED IN THE GOVERNMENT SECTOR, AND THEIR SHARE IN THE TOTAL, IN SELECTED YEARS

	(1) No. employed in government sector Thousands	Growth rate per cent	(2) Total no. employed in the economy Thousands	Growth rate	Ratio of (1) to (2) per cent
1960	208		1 896	(1960-64)	11
1967	319	(1960-67) 6.3	2 461	(1964-67) 3.8	13
1972	386	(1967-72) 4.9	2 676	(1967-72) 2.1	15-20
		(1960-72) 5.9		(1960-71) 3.2	25-33
1976	527	(1972-76) 8.1	3 030	(1972-76) 3.2	25-33

Source: AAS, 1965, pp. 136-139. AAS, 1970 pp. 411-417. AAS, 1973, pp. 403-417
AAS 1976, p. 297.

Note: Number of government employees is overstated, as it does not exclude those retired. Army and security are excluded.

APPENDIX I.

TABLE 5. NATIONAL INCOME, WAGES AND SALARIES OF GOVERNMENT EMPLOYEES, AND IN THE ECONOMY, AND SHARES AND RATE OF GROWTH OF WAGES AND SALARIES IN SELECTED YEARS

(ID million and percentages)

	(1) Wages and salaries in the gov. sector (ID)	Rate of growth per cent	(2) Wages and salaries in the economy(ID)	Rate of growth per cent	(1) as per cent of (2)	(1) as per cent of nat. income	(2) as per cent of nat. income
1960	5.3		141.3				
1964	9.4	(1960-64) 15.3	169.6		4	1.2	28.5
1967	11.1	(1964-67) 4.2	218.0	(1960-67) 4.1	5	1.6	
1970	n.a.	(1960-67) 7.0	259.0	(1960-70) 6.0	5	1.6	31.3
1971	14.9	(1967-71) 7.6 (1960-71) 9.8	n.a.				

Source: Col. (1) as in table 16 above. Col. (2) CSO, Special Fund Project 1970.

Note: Total wages and salaries in the economy are understated; wages in the agriculture sector are excluded. 1971 is the last year for which data about wages are available.

Chapter II

THE DEVELOPMENT OF IRAQI MANUFACTURING INDUSTRY

Introduction.

Manufacturing has become an important sector of the Iraqi economy. The share of manufacturing in non-oil GNP has increased from some 10.3 per cent in 1953 to 16 per cent in 1976. Employment has increased from 127.5 thousand in 1970 to around 189 thousand persons which may be about 12 per cent of the civilian labour force. The volume of manufacturing export increased from ID 4.8 million to nearly ID. 17.0 million between 1970 and 1975. In relative terms it increased from 24 per cent to 36 per cent of non-oil exports of the country in the same years. As the importance of manufacturing in the economic structure increased its relative contribution to the growth of non-oil GNP tended to become significant. In the period from 1970 to 1976, it has contributed about 18.0 per cent of the incremental real non-oil GNP.

The process of industrial development involves more than just output and employment growth. It extends to the transformation of the industrial structure. These changes often precipitate further industrialization. Therefore, this study does not only deal with the growth of output, input, and employment in manufacturing industry, but also the nature and extent of the industrial transformation and structural changes that have taken place. This will help to put the development of the sector in perspective, and make better assessment of its prospects.

The development of the manufacturing sector will be carried out under the following headings: (i) the place of manufacturing in the industrial sector; (ii) the growth of output in manufacturing; (iii) the growth

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of manufacturing and its composition; (iv) structural changes in manufacturing; (v) the structure of input in manufacturing; (vi) the size composition of manufacturing establishments; (vii) the regional distribution of manufacturing establishments in Iraq; (viii) the ownership structure. Throughout the discussion will cover both large and small establishments. And in the appendix attached to this chapter estimates of gross value added at constant factor cost for each of the 74 industries covered for the years from 1970 to 1976, are shown. The related indices are given in chapter 3, volume II.

(i) The industrial sector and its composition.

The large size of crude oil extraction in mining sector obscures the place of industrial sector in Iraqi economy. This is even more so after the quadrupling of oil revenue in 1973. Table II-1, shows the dominant and increasing role of crude oil extraction not only in the industrial sector but in the economy at large. In 1976, for example, the oil revenues from export of crude oil amounted to 53 per cent of the GNP. The table also shows that the share of manufacturing having shifted in 1960 to an appreciably higher level compared with 1953, were the sector was very small, did not sustain this level. In 1963, the share declined and for all the years after that it stagnated around 10 to 11 per cent. When 1976 is excluded, the same description would also apply to the industrial sector as a whole. In 1965, and following the initial shift between 1953-1960, the share of the industrial sector declined and then stagnated around 15 per cent in the subsequent years. Even in 1976, it can be seen that the increases in the share were in electricity and water. This latter increase is more likely to be of a once and for all type. However, regarding the share of electricity and water one can see that the share is relatively small and for most years the increases if any were marginal.

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Table II.1 SHARE OF INDUSTRIAL SECTORS IN THE GNP AND GDP IN FACTOR COSTS IN SELECTED YEARS (CONSTANT 1969 PRICES(PERCENTAGES))

Industrial sectors	1953	1960	1965	1970	1973*	1975*	1976*
Agriculture	<u>24.4</u>	<u>18.5</u>	<u>21.0</u>	<u>19.0</u>	<u>12.7</u>	<u>9.2</u>	<u>8.7</u>
Mining and quarrying	<u>24.9</u>	<u>23.8</u>	<u>20.7</u>	<u>20.0</u>	<u>32.4</u>	<u>29.0</u>	<u>28.5</u>
Crude oil	24.5	23.5	20.0	19.2	31.7	28.7	n.a.
Others	3.4	6.4	0.6	0.8	0.6	0.3	n.a.
Industry	<u>12.4</u>	<u>17.1</u>	<u>13.3</u>	<u>16.1</u>	<u>14.9</u>	<u>15.5</u>	<u>19.3</u>
- Manufacturing	7.6	11.6	9.6	10.7	10.1	10.3	11.0
- Construction	4.4	5.0	3.4	4.0	3.6	3.9	1.3
- Electricity and water	0.4	0.4	0.7	1.3	1.1	1.3	6.9
Services	<u>37.2</u>	<u>40.6</u>	<u>44.4</u>	<u>44.3</u>	<u>40.2</u>	<u>46.2</u>	<u>43.9</u>
GNP at factor costs	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: For the years 1953-1965 from CSO, Special Fund Project, Ministry of Planning, 1970. Converted from 1966 prices by splicing. For the year 1970-75 from AAS 1976. For 1976, from ECWA, Statistical Abstract of the Region of the Economic Commission for Western Asia, Second issue, pt. 1, Beirut, 1978, p.62.

* Note: Estimates for 1973, 1975 and 1976 could only be made from GDP and not GNP, because after the nationalization of oil companies in Iraq, it has become almost impossible to allocate the 'net factor income abroad' between the sectors, and there is no official data to guide us. Before the nationalization almost the bulk of this item is charged against the crude oil sector. After nationalization factor income abroad was relatively small, 0.8 per cent to 3 per cent between 1974-76, as compared to 10 - 15 per cent during 1968-73.

The small share of other-mining, however, remains conspicuous. The substantial increase in the absolute value of GNP in other mining is perhaps the only consolation. For, in 1976, this value amounted to ID 29 million as against ID. 6 million in 1969.

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Table II.2. Value of gross output and gross value added in manufacturing with and without petroleum products. At constant and current factor costs. Large and total establishments. Average annual rate of growth, 1970-1976
ID. million and percentages

	1970	1971	1972	1973	1974	1975	1976	Average annual rate of growth 1970-1976
I. <u>Value of gross output at constant factor costs</u>								
All manufacturing including petroleum	202.5	n.a.	n.a.	298.7	361.1	445.0	542.7	17.8
All manufacturing excluding petroleum	177.3	n.a.	n.a.	252.3	287.0	355.5	423.0	15.6
Large establishments including petroleum	183.3	214.8	237.8	280.9	344.1	393.1	494.8	18.0
Large establishments excluding petroleum	158.1	186.9	203.5	234.5	270.1	303.6	375.1	15.5
II. <u>Value of gross output at current factor costs</u>								
All manufacturing including petroleum	250.6	n.a.	n.a.	358.6	422.0	663.6	778.1	20.8
All manufacturing excluding petroleum	228.9	n.a.	n.a.	331.8	384.8	617.7	722.9	21.1
Large establishments including petroleum	184.0	216.5	241.1	284.2	341.2	409.6	548.1	20.0
Large establishments excluding petroleum	162.3	195.5	218.3	257.4	304.1	363.7	482.9	19.9
III. <u>Gross value added at constant factor costs</u>								
All manufacturing including petroleum	90.8	n.a.	n.a.	128.6	148.8	200.4	237.4	17.4
All manufacturing excluding petroleum	76.6	n.a.	n.a.	103.7	102.9	145.5	159.8	13.0
Large establishments including petroleum	71.6	79.5	91.8	110.8	131.8	148.5	189.5	17.6
Large establishments excluding petroleum	57.4	63.2	77.6	85.9	88.2	93.6	111.9	11.8
IV. <u>Gross value added at current factor costs</u>								
All manufacturing including petroleum	90.4	n.a.	n.a.	132.0	148.0	228.3	265.4	19.7
All manufacturing excluding petroleum	78.2	n.a.	n.a.	118.2	127.0	201.2	225.5	19.3
Large establishments including petroleum	71.3	78.6	91.1	109.5	123.5	144.4	178.1	16.5
Large establishments excluding petroleum	59.1	66.5	78.3	95.7	102.6	117.3	138.2	15.2

Source: Based on estimates of value of gross output and value added, calculated from data given in the Annual Industrial Surveys.

(ii) The growth of output in manufacturing.

The growth of manufacturing output during the period 1970-1976 has been very high, whether measured in quantity or value terms, in current or constant prices. This is borne out by data in Table II.2. The value of gross output in manufacturing increased between 1970 and 1976 from ID 202.5 million to 542.7 at constant factor costs, representing an annual growth rate of 17.8 per cent. In the same years, the gross value added (at constant factor costs), went up from ID 90.8 million to ID 237.4 million: a growth rate of 17.4 per cent per annum. The geometric mean index for the physical quantity of output for the overall manufacturing in Table II.3 records an average annual growth rate of about 14 per cent for the period 1970 and 1976. Both growth rates incidentally far exceeded those achieved during the period 1960-1970. However, within the period 1970-1976, the annual increments tend to be much higher after 1974, when the large investments in manufacturing began to mature and exert influence. For example, the average annual growth between 1974 and 1976 was 22.6 for value of gross output and 26.3 per cent for gross value added, against 15.5 per cent and 13.1 for value of gross output and gross value added respectively between 1970 and 1974.

TABLE II.3 GROWTH OF MANUFACTURING OUTPUT, 1960-1970 AND 1970-1976
(PERCENTAGES) (10 PLUS ESTABLISHMENTS)

Years	Physical quantity	Value of gross output		Gross value added	
		Current factor costs	Constant factor costs	Current factor costs	Constant factor costs
1960-70	5.3	9.9	6.7	10	n.a.
1970-76	13.7	20.0	18.0	16.5	17.6

Source: Estimates for 1960-1970 are taken from Fattah, op cit. For 1970-76, they are based on ECWA estimates see volume 2, ch. 3.

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The overall performance of manufacturing is still greatly influenced by movement in the output of few industries, notably petroleum refineries. The value added index in Table II.4 ceases to be smooth when this industry is excluded and the average annual rate of growth falls noticeably: from 17.4 to 13.0 per cent (see Table II.2). While more will be said about this later, it is important to note that the expansion of oil products is essential for Iraq. It utilises the comparative advantages of the country by using resources in which the country is amply endowed. Indeed in recent years, this activity has become the most important exporter of manufactured products (see chapter VII). But the objective of diversifying sources of revenue in the country demands that other manufacturing activities are also expanded and their contribution to export increased.

TABLE II.4. COMPARISON OF THE SERIES FOR GROSS VALUE ADDED WITH AND WITHOUT PETROLEUM PRODUCTS, 1970-1976. (CONSTANT FACTOR COSTS) (10 PLUS ESTABLISHMENTS)(PERCENTAGES)

	1970	1971	1972	1973	1974	1975	1976	Average annual growth rate 1970-1976
Overall manufacturing including petroleum products	100	108.9	126.5	156.3	230.0	278.9	381.5	25.0
Annual increments		8.9	16.2	23.5	47.1	21.2	36.8	
Overall manufacturing excluding petroleum products	100	103.2	113.1	136.3	134.2	139.2	161.7	8.3
Annual increments		3.2	9.6	20.5	-1.5	3.7	16.2	

Source: Estimates for this study are based on the data in the Annual Industrial Surveys.

Note: The weighing system for the series here is different from that of the same series in volume (II). The weights here are gross output at constant 1969 factor costs.

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(iii) The Growth of Manufacturing and its Composition.

Gross value added in manufacturing industry (at constant 1969 factor costs) increased from ID 90.8 million in 1970 to ID 237.4 million in 1976, representing an average annual rate of growth of 17.4 per cent per annum. Employment in the same years rose from 127.5 thousand to 189 thousand, which is an increase of 6.8 per cent per annum. However, when the relative importance of each component industry is also counted, as it is the case in the indices, then the growth of value added and employment appear to be much greater. (See table II.4, for example). This is a clear indication of imbalance growth within the sector. In the following, we shall examine the contribution of each industrial group to these increments. Table II.5, contains the relative breakdown of the share of each industrial group to the increment in gross value added and employment. The contribution to the gross value added is measured both at current and constant factor costs so that the effect of price increases on the relative position of each group can be seen. We also examine the relative position of the industrial group before and after including small establishments. This way we can find out about the role played by these establishments.

Therefore, before ranking industrial groups by contribution to the increment in value added and employment, let us consider first how have the measurements at two different prices affected the groups position? And secondly, which industrial group's position has altered as a result of including small establishments?

Comparison of contribution to the growth of value added at current and constant prices (in table II.5), shows that in thirteen out of the seventeen groups, the shares at current prices are higher than at constant prices indicating that inflation in these groups exceeded the average for the sector as a whole. The groups involved are: Beverages and tobacco, textiles, clothing, wood and furniture, printing, leather, rubber, chemicals

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TABLE II.5. CONTRIBUTION OF MANUFACTURING GROUPS TO THE GROWTH OF GROSS VALUE ADDED (CONSTANT CURRENT AND FACTOR COSTS), AND EMPLOYMENT DURING 1970-1976. LARGE AND SMALL ESTABLISHMENTS. (ID THOUSANDS AND PERCENTAGES)

	Δ in value added (current prices) 1970-1976				Δ in value added (constant prices)				Δ in employment 1970-1976			
	Large establish- ments		Large and small establishments		Large estab- ments		Large and small establishments		Large estab- ments		Large and small establishments	
	ID.	%	ID	%	ID	%	ID	%	ID	%	ID	%
Food	9 121	8.1	21 838	12.3	13 349	12.0	25 623	18.0	4 623	10.8	6 856	11.2
Beverages & tobacco	9 172	8.1	9 192	5.2	6 800	6.1	6 795	4.8	2 390	5.6	2 031	3.3
Textiles	13 643	12.1	19 813	11.1	3 071	2.7	3 968	2.8	7 845	18.3	9 545	15.6
Clothing	- 868	- 0.8	18 591	10.4	-1 420	-1.3	1 773	1.2	1 588	3.7	6 520	10.7
Wood and furniture	574	0.5	8 231	4.6	- 14	0	2 848	2.0	127	0.3	2 602	4.3
Paper	2 911	2.6	3 895	2.2	1 057	0.9	1 403	1.0	2 325	5.4	2 542	4.2
Printing	1 866	1.7	1 866	1.0	356	0.3	356	0.3	1 362	3.2	1 362	2.2
Leather	3 974	3.5	6 263	3.5	2 533	2.3	3 573	2.5	2 654	6.2	2 049	3.4
Rubber	172	0.2	172	0.1	15	0	15	0	150	0.3	150	0.2
Chemicals	9 162	8.1	10 333	6.8	2 219	2.0	4 049	2.8	2 765	6.4	3 397	5.6
Petroleum products	27 246	24.1	27 246	15.3	63 229	56.9	63 229	44.5	3 301	7.7	3 301	5.4
Plastic products	2 440	2.2	2 440	1.4	4 280	3.8	4 240	3.0	744	1.7	744	1.2
Glass products	417	0.4	417	0.2	256	0.2	-	-	*		*	
Non-metallics	5 432	4.8	11 005	6.2	153	0.1	- 620	-0.4	6 855	16.0	10 218	16.7
Metal products	2 101	1.9	12 614	6.5	440	0.4	2 112	1.5	257	0.6	2 929	4.8
Durable consumer goods	11 795	10.5	10 346	5.8	5 985	5.4	5 985	4.2	4 005	9.3	4 519	7.4
Machinery	1 571	1.4	1 571	0.9	1 571	1.4	1 571	1.1	1 201	2.8	1 201	2.0
Transport equipment	12 007	10.7	12 858	7.2	7 291	6.5	7 593	5.3	673	1.6	1 134	1.9
Total manufacturing	112 741	100.0	177 692	100.	111 171	100.0	142 062	100.0	42 881	100.0	61 103	100.0

Source: Based on BLS estimates of value added and employment calculated from the annual industrial surveys.

Note (1)* Glass products are included with non-metallics. Percentages do not add up to 100 because of rounding.

(ii) The percentages are measured from the aggregate for the manufacturing sector as a whole. Sometimes this exceeds the total of the figure produced here.

glass, non-metallics, durable-consumer goods and transport equipment. In three groups, however, (food, petroleum products and plastics), the contribution to the increment in value added was higher at constant prices; indicating decreases in prices. At least one group, machinery, shows no sign of change. These findings regarding the effect of price changes do not alter when large and small establishments are considered together. Suggesting that prices in both types of establishments moved in parallel.

Inclusion of small establishments into the account has affected different groups differently. To begin with, the contribution of six industrial groups either changed very little, or did not change at all. These are: textiles, paper, leather, chemicals, non-metallics, and machinery. This implies that the changes in the value added of each of these groups and in the value added of the sector as a whole as a result of adding small establishments have been either proportional or diverged only slightly. On the other hand, the contribution of four groups - food, clothing, wood and furniture, and metallics was enhanced as a result of including small establishments. Indicating the importance of the latter in those groups, and their more than proportional contribution. Finally, the shares of six groups: printing, rubber, petroleum products, plastic, durable-consumer goods, and transport equipment fell because none of these activities are performed by small establishments.

We can now examine how the industrial groups rated in terms of contribution to the increment in real gross value added and employment.

The answer is contained in table II.5. Based on this table industrial groups are ranked in table II. 6 below, according to their share in the incremental value added at constant and current prices. (Ranking by share in the incremental employment is in table II.7).

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TABLE II.6. RANKING OF INDUSTRIAL GROUPS BY SHARE IN THE INCREMENTAL VALUE ADDED IN MANUFACTURING. LARGE AND SMALL ESTABLISHMENTS. (PERCENTAGES)(ALL CONTRIBUTIONS AROUND OR EXCEEDING 2.6%) (1970-1976)

Ranks by share in the growth of real value added		Ranks by share in the growth of current value added	
All establishments	Percent share	Large establishment	Percent share
1. Petroleum products	44.5	Petroleum products	24.1
2. Food industries	18.0	Textiles	12.1
3. Transport equipment	5.3	Transport equipment	10.7
4. Beverages & tobacco	4.8	Durable-consumer goods	10.5
5. Durable-consumer	4.2	Food beverages and tobacco and chemicals	8.1
6. Plastic products	3.0	Non-metallics	4.8
7. Textiles	2.8	Leather	3.5
8. Chemicals	2.8	Paper	2.6
9. Leather	2.5		

All establishments	Percent share
Petroleum products	15.3
Food industries	12.3
Textiles	11.1
Clothing	10.4
Transport equipment	7.6
Metal products	6.5
Non-metallics	6.2
Chemicals	5.8
Durable consumer	5.8
Leather	3.7

Source: Based on table II.5

The ranking of industrial groups by large establishments under real value added is not shown because they follow exactly the same order. The ranking of industrial groups tend to differ when the contribution is measured at constant prices than when it is measured at current prices. However, in all cases the major contributions were petroleum products and such traditional activities as food industries, textiles and clothing. In the following, we shall concern ourselves with the contributions at constant prices. Two thirds of the contribution to the growth of output was made by two activities alone: petroleum products and food industries. Other non-traditional sectors which also figured prominently were transport equipment and durable-consumer goods followed by plastic products and chemicals whose contribution together with that of textiles and leather were quite moderate.

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It can also be noticed in Tables II.6 that in column 1, the difference between the highest and the lowest share is very large compared with the corresponding range in column 3. This emanates from the fact that petroleum products group has, simultaneously, enjoyed both expansion of output and fall in prices. The place of transport equipment and durable consumer goods in the ranking, compared with the position of textiles and leather, is indicative of the stage of industrialisation Iraq has just entered. These developments will be considered further in the section concerning structural changes in Iraqi manufacturing.

In terms of contribution to the increment in employment shown in table II.7, the ranking of industrial groups tend to differ from that observed for value added. Secondly, two new industrial groups show up among the eight most important contributors to employment in table II.7, column 1. These groups are non-metallics, and metal products. Thirdly, excluding food industries and chemicals, there are also changes in the order of importance of the groups when small establishments counted.

TABLE II.7. RANKING OF INDUSTRIAL GROUPS BY SHARE IN THE GROWTH OF EMPLOYMENT. LARGE AND SMALL ESTABLISHMENTS, 1970-1976 (Shares exceeding 4.5 per cent) (Percentages)

All establishments		large establishments					
1.Non-metallics	16.7	5.Durable-consumer	7.4	1.Textiles	18.3	5.Petroleum	7.7
2.Textiles	15.6	6.Chemicals	5.6	2.Non-metal-lics	16.0	6.Chemicals	6.4
3.Food	11.2	7.Petroleum	5.4	3.Food	10.8	7.Leanher	6.2
4.Clothing	10.7	8.Metal products	4.8	4.Durable-consumer	9.3	8.Beverages and tobacco	5.6

Source: Based on table II.5.

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(iv) Structural changes in manufacturing.

Having discussed in the foregoing sections the overall performance of the industrial sectors, the growth and trends in manufacturing output, value added, employment and inputs, we turn now to the pattern of changes that emerged in the Iraqi manufacturing sector. But first a brief review shall be made of the historical patterns of industrial development and advocated industrialisation theories and strategies.

Historically, one can generally distinguish two patterns of industrial development. The market oriented economies pattern that has been characterised initially by the development of import substitution of mainly consumer non-durable goods (at a later stage durable consumers goods), along with development of certain construction material industries. This stage of development is distinguished by the predominance of purely assembly type industries or purely mixing processing industries that are heavily dependent on imported intermediates including raw material, components and parts. In subsequent stages industries producing intermediates and capital goods are developed. A second pattern of industrial development was adopted by the centrally planned countries. Hence industrial growth has followed a pattern whereby consumer industries are developed along with intermediate and capital goods industries. In most cases, this pattern was biased towards the latter group of industries. As part of this pattern, planners have emphasised fully integrated industries that include production of raw material, intermediate and components and parts. Although most developing countries have followed the traditional market-oriented pattern, some countries have followed a strategy which to a varying degree combines the two.

Studies on the pattern of industrial growth include Chenery's studies (1960) and (1961); Chenery and Taylor study (1968), and the study by the UN's Department of Economic and Social Affairs, in 1961 and 1963^{1/}.

^{1/} Chenery H.B. "Patterns of Industrial Growth". American economic review, September 1960. Also "Comparative Advantage and Development Policy", American economic review, March 1961.

Chenery H.B. and L. Taylor, "Development patterns: among countries over time", Review of economic and statistics, November 1968.

UN Department of Economics and Social Affairs, "World economic survey, 1961. New York, 1962. Also, A study of industrial growth", New York, 1963.

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All these studies have shown that the share of manufacturing in the GNP increased as per capita income increase. Chenery (1960), further sub-divided the manufactured goods into investment and related goods, intermediate goods and consumer goods. The regression of per capita value added in each type against the per capita income and population in a cross-section of countries, showed that at higher income level, the share of investment goods increased on the expense of consumer goods. The share of intermediate goods remained fairly constant. In this respect Chenery merely confirmed the conclusion already reached by Kusents and Hoffmann^{1/}. UN's study (1961) supported the broad results achieved in Chenery (1968), and in Hoffmann, regarding the change in the structure of output between capital goods and consumer goods.

In development planning two industrialization policies and strategies have been advanced. One group of economists, among them Mahalanobis believe that planned shift in the industrial structure from consumer goods to capital goods - or heavy industries - lead to higher rates of economic growth.^{2/} This belief has greatly influenced the industrialisation strategy in India and Egypt in 1950s. A number of economists favoured this strategy for the large feed backs and linkages it involved, as well as for the economies of scale and other externalities.^{3/}

Walter Hoffmann who reflects position of the second group, purports the existence of a uniform pattern of industrial growth. According to him, irrespective of the relative state of factor endowment; of the state of technology; and of the location of factors, structural changes in

^{1/} See Kusents, S., "Quantitative aspects of the economic growth of nations", Economic development and cultural change, part II, July 1957, pp.23-32.

^{2/} Mahalanobis, P.C. The Approach of Operational Research to Planning in India. Sankhya 16, 1955. And Mabro R. and Radwan S., the Industrialisation of Egypt, 1939-1973. Clarndon Press, Oxford, 1976, pp. 90-92.

^{3/} R. Findlay, "Capital Theory and Development Planning". Reviews of economic studies 39, February 1962.

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manufacturing sector always follows a regular pattern. Hoffmann distinguishes three stages each defined in terms of certain specific values of the net output ratios between consumer and capital goods^{1/}. His sequence of structural shifts runs from basic consumer goods (textiles, food, clothing, etc.) to intermediate industries (including chemicals, paper petroleum products, cement, basic metals), and finally to modern consumer goods (pharmaceuticals, durables) and machinery. At the final stage, for example, the share of capital goods balances with that of consumer goods, but the rate of growth of the former would be higher.

Analysis of structural changes in Iraqi manufacturing is carried out in terms of percentage contribution to value added and employment by major manufacturing groups, both in large and small establishments. Two groupings of industries have been constructed each with the aim of serving different aspects of industrial development. The first grouping follows, as far as possible the ISIC of 1968 (Tables II.8-11 and II.16-17 at the end of this section). The second grouping aims at bringing out the special features of Iraqi manufacturing and highlights the growth of such modern industries as chemicals, glass, plastic, rubber and paper as well as the growing importance of consumer durables and capital goods (Tables II.14 and II.15). This should help to compare the pattern of industrialization with those observed elsewhere.

In this study the dual system of appraisal (value added and employment) is used to assess the relative importance of industries. The inclusion of employment is important for an oil economy, where paramount objective of economic development should be to implicate a growing number of the working force in productive activities to help them gain training, experience, and skills, needed to open avenues other than oil for creating wealth.

The following analysis relies on data covering total manufacturing for the period of seven years (1970-1976).

^{1/}Hoffmann, W. "The Growth of Industrial Economies", Manchester 1958. Also see Sutcliffe, R.B. "Industry and Development", Addison-Wesley Publishing Co. Inc. London 1971, Ch. 2.

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Analysis of structural changes in Iraqi manufacturing is carried out by answering the following two questions. First, does combining large and small establishments together alter the structural changes that can be observed when large establishments alone are considered? and two, do measurements at current and constant prices affect the outcome? The answer to the first question is generally negative. But let us consider it in more detail (see tables II.8 and II.9).

Disregarding changes in magnitude, the direction of movements of shares in the value added has - save for two groups - been consistent. The two exceptions are wood and furniture and metallics. The former, which has not rated among the ten important groups since 1970, has been the most problematic regarding the data. The apparent inconsistency in the movement of shares (in large establishments, the share continuously declines, whereas in large and small combined, the share increases slightly in 1973, then declines in 1976), therefore, may have been caused by statistical anomalies than anything else. In metallics, while the shares in large establishments persistently declined, in total establishments it declines in 1973, but increases in 1976. However, the increase in 1976 over 1973 is fractional. The difference nonetheless indicates that small establishments had added proportionately more to the value added of the group than to that of the sector.

However, the inclusion of small establishments affected the shares in another way. Except for five industrial groups: food, clothing, wood and furniture, leather and metallics, whose relative shares have been enhanced by counting the small establishments, the relative shares of the rest of the groups declined.

To see if measurements at current and constant prices have affected the outcome, consider table II.12, which is based on tables II.9 and II.19, and containing the ranking of the ten most important industrial groups in terms of relative contribution to the total gross value added in three years: 1970, 1973 and 1976.

In 1970, among the ten most important industrial groups, seven groups are the same and appear in the same order of importance. Only the rank of three groups, at the tail end of the list, tend to change. The range between the highest and the lowest share among the ten groups is not very different at the two price measurements.

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TABLE II.8 SHARE OF INDUSTRIAL GROUPS IN THE GROSS VALUE ADDED
IN MANUFACTURING IN SELECTED YEARS. (LARGE AND SMALL
ESTABLISHMENTS) (CONSTANT FACTOR COSTS)
(IN THOUSANDS AND PERCENTAGES)

Industrial Groups	1970		1973		1976	
	ID	Per cent	ID	per cent	ID	per cent
Food	13 085	18.2	17 867	16.4	26 434	14.1
Beverages and tobacco	6 608	9.2	17 058	15.6	13 408	7.1
Textiles	7 681	10.7	11 031	10.1	10 752	5.7
Clothing	3 298	4.6	1 986	2.7	1 878	1.0
Wood and furniture	397	0.5	415	0.4	387	0.2
Paper	587	0.8	2 550	2.3	1 644	0.9
Printing	972	1.3	1 037	1.0	1 328	0.7
Leather	428	0.6	974	0.9	2 961	1.6
Rubber	100	0.1	74	0.1	115	0.1
Chemicals	3 713	5.0	5 743	5.2	5 932	3.1
Petroleum products	14 185	20.0	25 462	23.4	80 259	42.8
Plastic products	586	0.8	1 188	1.1	4 866	2.6
Glass products	56	0.1	359	0.3	312	0.2
Non-metallics	10 668	14.8	11 805	10.8	10 821	5.8
Metal products	1 001	1.4	1 084	1.0	1 441	0.8
Durable consumer goods	1 132	1.6	3 016	2.8	7 117	3.8
Machinery non-electrical	2 667	3.7	1 439	1.3	4 238	2.3
Transport equipment	4 660	6.5	4 707	4.3	11 951	6.4
Total manufacturing (large establishments only)	71 824	100.0	109 020	100.0	187 541	100.0

Source: Calculated from data in the annual industrial survey.

Note: Percentages do not add up to 100 because some minor industries are excluded. All repair activities are also excluded.

In 1973, the first eight in the ten most important groups are the same and except for petroleum products and textiles, their ranks did not differ greatly. The two industrial groups at the tail differ in scale at the two price measurements.

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TABLE 1.9. SHARE OF INDUSTRIAL GROUPS IN THE GROSS VALUE ADDED IN MANUFACTURING IN SELECTED YEARS. (LARGE AND SMALL ESTABLISHMENTS) (CONSTANT FACTOR COSTS)
(IN THOUSANDS AND PERCENTAGES)

Industrial groups	1970		1973		1976	
	ID	per cent	ID	per cent	ID	per cent
Food	18 581	21.0	24 910	19.6	44 204	18.7
Beverages and tobacco	6 746	7.6	17 198	13.5	13 541	5.7
Textile	8 425	9.5	11 581	9.1	11 393	4.8
Clothing	7 812	8.8	5 510	4.3	9 585	4.0
Wood and furniture	1 137	1.3	2 527	2.0	3 985	1.7
Paper	844	1.0	2 839	2.2	2 247	1.0
Printing	972	1.1	1 037	0.8	1 328	0.5
Leather	1 895	1.0	2 705	2.1	5 458	2.3
Rubber	100	0.1	74	0.05	115	0.05
Chemicals	3 821	4.3	6 121	4.8	7 870	3.3
Petroleum products	14 185	16.0	25 462	20.0	80 259	34.1
Plastic products	475	0.5	1 077	0.95	4 715	2.0
Non-metallic	11 163	12.6	12 462	9.8	10 543	4.5
Metallics	3 800	4.3	2 453	1.9	5 912	2.5
Durable consumer goods	1 132	1.3	3 016	2.3	7 117	3.0
Machinery (non-electrical)	2 667	3.0	1 439	1.1	4 238	1.8
Transport equipment	4 740	5.3	4 774	4.0	12 333	5.2
All manufacturing	88 485	100.0	127 143	100.0	235 430	100.0

Source: Based on estimates calculated from the Annual Industrial Survey.

Note: Percentages do not add up to 100 because some minor activities are excluded. All repair activities are also excluded.

In 1976, except for leather, which replaces metal products among the first ten, the remaining nine industrial groups are the same, but their ranking order differs. Change in relative prices between industries now show itself more clearly than in 1973.

We turn now, to the analysis of structural changes based on measurements at constant factor costs, as it will give a more accurate

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Table II.10 EMPLOYMENT BY BRANCHES OF MANUFACTURING IN SELECTED YEARS.
(TEN PLUS ESTABLISHMENTS)(NOS. AND PERCENTAGES)

ISIC Code	Industrial Branch	1960		1970		1973		1976	
		No. employed	Per cent	No. employed	Per cent	No. employed	Per cent	No. employed	Per cent
20	Food	8 522	25.0	16 441	19.8	24 478	21.7	21 080	16.3
21	Beverages	19 771	5.7	3 474	4.2	4 797	4.2	4 995	3.9
22	Tobacco	2 246	6.5	3 773	4.5	3 818	3.4	4 651	3.6
23	Textiles	7 804	22.7	14 344	17.3	22 332	19.8	22 189	17.1
24	Clothing	1 711	5.0	6 102	7.9	8 007	7.1	7 690	5.9
25	Wood	n.a.		83	0.1	86	0.1	141	0.1
26	Furniture	1 332	3.9	983	1.2	1 145	1.0	1 052	0.8
27	Paper	159	0.5	843	1.0	2 575	2.3	3 168	2.5
28	Printing	1 380	4.0	1 677	2.0	1 911	1.7	3 039	2.4
29	Leather	644	1.9	841	1.0	1 022	0.9	3 495	2.7
30	Rubber	0		104	0.1	224	0.2	254	0.2
31.1	Chemicals	592	1.7	4 001	4.8	5 698	5.0	6 766	5.2
31.2	Petroleum products	2 215	0.4	3 820	4.6	4 242	3.8	7 121	5.5
32	Plastic products	0		518	0.6	783	0.7	1 262	1.0
33	Non-metallics	4 521	13.1	18 524	22.3	18 759	16.7	25 379	19.6
35	Metallics	1 310	3.8	2 252	2.7	2 260	2.0	2 509	1.9
36.1	Durable consumer goods	0		2 049	2.5	3 899	3.4	6 504	5.0
36.2	Machinery	0		2 414	2.9	3 467	3.1	3 615	2.8
38	Transport equipment	0		504	0.6	555	0.5	1 177	0.9
	All Manufacturing (large establishments)	34 470	100.0	83 226	100.0	112 498	100.0	129 278	100.0

Source: The estimates for 1960 are taken from Fattah Zeki, *op cit* p. 179.
For other years, they are our estimates calculated from the annual industrial survey.

Note: Percentages do not add up to 100 because some minor industries are excluded. All repair activities are also excluded.

Table II. 11. EMPLOYMENT BY BRANCHES OF MANUFACTURING INDUSTRY IN SELECTED YEARS. LARGE AND SMALL ESTABLISHMENTS. (NUMBERS AND PERCENTAGES)

ISIC Code	Industrial branches	1970	Per cent	1973	Per cent	1976	per cent
20	Food	29 617	23.2	37 689	24.4	36 473	19.3
21-22	Beverages and tobacco	7 870	6.2	9 027	5.6	9 901	5.2
23	Textiles	16 694	13.1	24 274	15.7	26 242	13.9
24	Clothing apparel	14 679	11.5	18 601	12.0	21 199	11.2
25-26	Wood and furniture	6 452	5.5	6 103	4.0	9 051	4.8
27	Paper	1 500	1.2	3 162	2.0	4 042	2.1
28	Printing	1 677	1.3	1 911	1.2	3 039	1.6
29	Leather	4 421	3.5	3 825	2.4	6 470	3.4
30	Rubber	104	0.01	224	0.1	254	0.1
31.1	Chemicals	4 181	3.2	5 910	3.8	7 578	4.0
31.2	Petroleum products	3 820	3.0	4 242	2.7	7 121	3.7
32	Plastic products	518	0.3	783	0.5	1 262	0.6
33	Non-metallics	20 077	15.7	21 126	13.6	30 295	16.0
35	Metallic products	6 494	5.1	5 955	3.8	9 423	5.0
36.1	Durable consumer goods	2 148	1.7	3 999	2.6	6 667	3.5
36.2	Machinery	2 414	1.9	3 467	2.2	3 615	1.9
38	Transport equipment	712	0.5	826	0.5	1 846	0.9
	Total manufacturing	127 551	100.0	154 486	100.0	188 994	100.0

Source: Based on estimates calculated from the Annual Industrial Surveys.

Note: Percentages do not add up to 100 because some minor industries are excluded. All repairs industries are also excluded.

In 1973, the first eight in the ten most important groups are the same and except for petroleum products and textiles did not differ greatly. The two industrial groups at the tail differ in scale at the two price measurements.

In 1976, except for leather, which replaces metal products among the first ten, the remaining nine industrial groups are the same, but their ranking order differs. Change in relative prices between industries now show itself more clearly than in 1973.

We turn now to the analysis of structural changes based on a measurements at constant factor costs, as it will give a more accurate and representative picture.

In the following discussion we should show how the ranking of industrial groups changed over years within the measurements at constant prices.

In terms of shares in the real gross value added, a major characteristic of Iraqi manufacturing has been, throughout the period 1960-1976, the dominance of petroleum products. Rising from 18.1 per cent in 1960; to 34.1 per cent of total value added in manufacturing in 1976. The second characteristic is the relatively high weight of five industrial groups: food industries, non-metallics, textiles, clothing and beverages and tobacco. They represented 59.5 per cent of the value added in 1970; and 38 per cent in 1976. However the rank of some of these groups tend to change over time and according to whether small establishments are included or not. This can be seen by comparing the ranking of industries in Table II.13, which contains large establishments only, with that in table II.12, which contains large and small establishments. Thus chemicals, which feature among the six most important groups when large establishments alone are considered is relegated to the seventh place when small establishments are brought in. Conversely, clothing, which falls out of the six important large industrial groups in 1970, retains its place when small establishments are also counted. Finally, in 1976, clothing drops to the seventh place, and a new industrial group, transport equipment, features for the first time among the six important groups. The presence of this group here, and of durable consumer goods among the ten important groups in table II.12, as well as the general decline in the share of the dominant industries - save for petroleum products - signals the beginning of a new stage in the development of Iraqi manufacturing. To this we shall return in a moment.

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Table II.12. RANKING OF INDUSTRIAL GROUPS ACCORDING TO THEIR SHARE IN THE GROSS VALUE ADDED AT CONSTANT AND CURRENT FACTOR COSTS, IN SELECTED YEARS (LARGE AND SMALL ESTABLISHMENTS) (THE TEN MOST IMPORTANT CONTRIBUTORS) (percentages)

Rank	1 9 7 0 constant and current prices		1 9 7 3 constant prices current prices		1 9 7 6 constant prices current prices					
	Industrial groups	Per cent	Industrial groups	Per cent	Industrial groups	Per cent				
1.	Food industries	21.0	Petroleum prod.	20.0	Food indus.	20.0	Petroleum products	34.1	Food indust.	15.2
2.	Petroleum products	16.0	Food industries	19.6	Textiles	14.1	Food indust.	18.7	Petroleum products	15.0
3.	Non-metallios	12.6	Beverages and tobacco	13.5	Beverages and tobacco	12.3	Beverages and tobacco	5.7	Textiles	11.0
4.	Textiles	9.5	Non-metallios	9.8	Petroleum products	10.5	Transport equipment	5.2	Clothing	9.7
5.	Clothing	8.8	Textiles	9.1	Non-metallios	9.4	Textiles	4.8	Non-metallios	8.3
6.	Beverages and tobacco	7.6	Chemicals	4.8	Clothing	6.4	Non-metallios	4.5	Beverages and tobacco	5.9
7.	Chemicals	4.3	Clothing	4.3	Chemicals	6.1	Clothing	4.0	Chemicals	5.3
8.	Metallios	4.3	Transport equip.	4.0	Transport equip.	3.6	Chemicals	3.3	Metal prod.	5.2
9.	Leather	1.0	Durable consumer goods	2.3	Durable consumer goods	3.5	Durable consumer goods	3.0	Transport equipment	4.9
10.	Wood and furniture	1.3	Paper products	2.2	Leather	2.9	Leather	2.3	Durable consumer goods	4.4

Source: Based on tables II.9 and II.18 and II.19.

Note: The shares in 1970 are at constant prices.

TABLE II.13. RANKING OF INDUSTRIAL GROUPS ACCORDING TO SHARES IN THE
REAL GROSS VALUE ADDED IN MANUFACTURING IN SELECTED
YEARS. LARGE ESTABLISHMENTS ONLY (PERCENTAGES)

1960	Per cent	1970	Per cent	1973	Per cent	1976	Per cent
Non-metallics	22.6	Petroleum prod.	23.0	Petroleum prod.	23.4	Petroleum prod.	42.8
Petroleum prod.	18.1	Food industries	17.7	Food industries	16.4	Food industries	14.1
Textiles	16.0	Non-metallics	14.4	Beverages and tobacco	15.0	Beverages and tobacco	7.1
Food industries	15.0	Textiles	10.4	Non-metallics	10.8	Transport equip	6.4
Clothing	7.3	Beverages and tobacco	8.9	Textiles	10.1	Non-metallics	5.8
Beverages and tobacco	9.2	Chemicals	5.3	Chemicals	5.2	Textiles	5.7

Source: Based on Table II.8. The estimates for 1960 are at current factor costs and taken from Zeid Fattah p. 173.

Note: Ranking of industrial groups when large and small establishments are connected is given in table II.12.

The dominance of petroleum products, non-metallics, food industries and textiles in the manufacturing sector simply reflects the nature of the Iraqi economy. For petroleum products, on the supply side, there are abundant and cheap raw materials. On the demand side, the size of the country and the rapid expansion of its infrastructure and industrial activities, as well as the belated expansion in export of these products provided a growing market. The prominence of non-metallics - cement and bricks being the chief among them - is the result of the expenditure of oil revenues on the country's economic infrastructure, and the housing schemes referred to in chapter 1. The country also managed to export cement to the tune of a maximum ID 3.4 million in 1973. (This fell to ID 597 thousand in 1973, afterwards the bulk of the production was absorbed by the expanding local market).

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As for textiles and clothing, these are usually one of the first to attract industrialists and governments in most developing countries. Their relatively simple technology and the availability of raw materials and sizeable local market for their products make them the first candidates for import-substitution industries.

The food industries group alternated between the first and the second place among the highest contributors to the value added and employment. A salient feature of the food industries group is that it has been dominated by such traditional food industries as vegetable oil, grain milling, sugar, confectionary and dates packing. The value added generated in canning, a relatively modern activity, for example, amounted to ID 9.2 million in 1976; and it was only in this year that the value added in dairy products reached a sum of ID 10 million. In 1973, it was just ID 6.8 million. The factors which constrained faster development of food industries in Iraq seem to lie both on the demand and supply side. Domestic preference is still overwhelmingly for fresh food (fruits, vegetables and meat). The country is endowed with a large and hitherto unexploited potential for the production of these products both for the local market and export. The neighbouring Gulf countries provide a readily available market for the expansion of canned food. But this would require construction of a wide range of supporting activities eg. transport, storage and marketing facilities, and especially supply of raw materials of the right quantity and quality, which seem to be a major bottleneck at the moment.

Another characteristic of food industries is the important and increasing role small establishments play. In 1976, for example, nearly 44 per cent of the real value added and 42 per cent of the employment in this group was generated in small establishments (in 1970, the contribution was 30 per cent for value added, and 44 per cent for employment). The share of small establishment in tobacco and beverages was incidentally much smaller.

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The expansion of textile industries has not been very remarkable. The value added increased from ID 8.4 million in 1970, to only ID 11.4 million in 1976. In a number of activities, eg. synthetic textiles, clothing and to a lesser extent cotton and woolen textiles, the import-substitution has gone a long way. There is nevertheless still a wide scope for expansion to meet the growing final demand. The significance of textile industry in a country like Iraq lies in the fact that it can help to integrate production of primary products into the economy. Therefore by extending the process of production a few stages beyond ginning, wool washing, pressing etc., the prospect for increasing domestic value added will be enhanced. It is this type of horizontal integration which should be aimed at in view of the large primary sector in the country.

In what way is the pattern of changes in Iraqi manufacturing similar to the 'general' pattern observed for other developing countries?

Petroleum products (and to some extent non-metallics) may be excluded here because of their special place in Iraq.

TABLE II.14. SUMMARY OF SHARES OF INDUSTRIAL GROUPS IN GROSS VALUE ADDED IN MANUFACTURING IN SELECTED YEARS. (CONSTANT FACTOR COST) (LARGE AND SMALL ESTABLISSEMENTS)
(ID THOUSANDS AND PERCENTAGES)

	1970	1973	1976
Group 1. Food, beverages, tobacco	28.6	33.1	24.4
Group 2. Textiles and clothing	18.3	13.4	8.8
Group 3. Wood, paper, rubber, plastics, leather, glass, chemicals	8.3	12.3	11.4
Group 4. Non-metallics and metallic products	16.9	11.7	7.0
(Sub-total :group 3 and group 4)	25.2	24.0	18.4
Group 5. Non-electric and electric machinery and durable consumer goods	4.3	3.4	4.8
Group 6. Furniture, printing	2.1	2.8	2.2
Group 7. Petroleum products	16.0	20.0	34.1
Group 8. Transport equipment	6.5	4.0	5.2
All manufacturing establishments	100.0	100.0	100.0

Source. Based on table II.9.

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The first feature of changes which indicate similarity between Iraqi industrialization and the patterns discussed at the outset is a decline in the share of basic consumer-goods industries. The share in the total gross value added in manufacturing of the five basic consumer-goods industries (food, beverages, tobacco, textiles and clothing) fell from 46.9 per cent in 1970 to 33.2 per cent in 1976 (see table II.14). When large establishments alone are considered in table II.15, the share declines from 47.5 per cent in 1960 to 42.7 per cent in 1976. The share of food, beverages and tobacco fell from 24.2 per cent in 1970 to 21.2 per cent in 1976, after it had reached a peak of 32.0 per cent in 1973. The decline in the share of textiles and clothing is marked. It went down from 18.3 per cent in 1970, to 8.8 per cent in 1976 for all establishments. This decline in share is even greater when large establishments alone are considered in table II.15. The major reason being the large number of establishments in clothing which moved out of large establishments and into small establishments between 1973 and 1976.

TABLE II.15. SUMMARY OF SHARES OF INDUSTRIAL GROUPS IN GROSS VALUE ADDED IN MANUFACTURING IN SELECTED YEARS. (CURRENT FACTOR COSTS) (LARGE ESTABLISHMENTS ONLY) (IN THOUSANDS AND PERCENTAGES)

	1960*	1970	1973	1976
Group 1: Food, beverages, tobacco	24.2	27.4	32.0	21.2
Group 2: Textiles, and clothing	23.3	15.3	12.8	6.7
Group 3: Wood, paper, rubber, plastic, leather, glass and chemicals	4.2	7.9	10.3	8.7
Group 4: Non-metallic and metallic products	25.0	16.2	11.8	6.6
(Sub-total: group 3 + 4)	29.2	23.2	22.1	15.5
Group 5: Non-electric, electric machinery and consumer durable goods	0.03	5.3	4.1	6.1
Group 6: Furniture and printing	5.1	1.0	1.2	1.5
Group 7: Petroleum products	18.1	20.0	23.4	42.8
Group 8: Transport equipment	0	6.3	4.3	6.4
All large manufacturing establishments	100.0	100.0	100.0	100.0

Source: The estimates for 1960 are at current factor costs, and taken from Zeki Fattah, p. 173. For the rest, they are based on table II.8.

* No estimate at constant prices existed. The values however may not have been very different from those at constant prices in view of the very low rate of inflation during 1960-1970.

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The second apparent similarity with the 'general' pattern is the relative stagnation in the share of intermediates following the initial increases. Intermediate industries correspond roughly to group 3 in tables II.14 and II.15. We excluded petroleum products because of its disproportionately large share in Iraqi manufacturing. Group 4, non-metallics and metallic products is added, to show that the conclusion does not change much even if we extend the definition of intermediates. Thus the share of group 3, after increasing from 8.3 per cent in 1970, to 12.3 per cent in 1973, remained close to this share (at 11.4 per cent) in 1976. The decline in the sub-total of groups 3 and 4 is more marked. However, not all activities in group 4 can be considered as intermediates.

The employment shares, especially between 1970 and 1976 depicts similar picture (see tables II.10 and II.11).

As the industries of this group are still infants, the similarity with the 'general' pattern just stated should not be over emphasized. The industries have still a lot of ground to cover. Large changes in some of the activities could easily change the picture. The inclusion of petroleum products would also alter the conclusion.

Within this group, however, some interesting changes have taken place. Chemicals - comprised mainly of large establishments - and composed of such activities as fertilizers, liquified gases, paints, matches, cosmetics, detergents, and pharmaceuticals, raised their share in the value added (current prices) from 1.6 per cent in 1960 to 7.3 per cent in 1976 (table II.16). That is from ID 374 thousand to about ID 13 millions (no comparison can be made with 1960 at constant prices for lack of data). Some of these activities have strong forward linkages with agriculture, and others with industry, and some, especially the last three enjoy high-income elasticities of demand. These factors have been the force behind the rapid expansion of chemical industries, which in recent years have made an appreciable in-road into the import-substitution market. But the present growth in the final demand for chemicals (the value of imports of various chemical products in 1976, amounted to about ID 64 million, as against ID 6.6 million in 1970), provides a secure market for further expansions.

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The increases in the contribution in terms of employment have also been large, but with a smaller magnitude compared to value added.

The shares of paper, leather and plastic in the value added have all increased in tables II-8 and II-9. The increase in the case of plastic products has been more pronounced. But these industries are still represented by relatively small magnitudes.

Finally, we turn to the development of capital goods and consumer durable industries. We are referring to groups 5 and 8 in table II-14, and the corresponding industries in table II-15. The activities here include car-assembling, electrical equipment and non-electrical machinery. These industries were practically non-existent in 1960 and have gained in importance since 1960. In relative terms their combined shares increased from 0.03 per cent in 1960 to 12.5 per cent in 1976. (See table II-15). In terms of employment their contribution has also increased but not as markedly, see tables II-10 and II-11.

However, the structural changes here should not be taken as indicative of emergence of a strong capital-goods sector. For, among the major activities car assembling by far outstrips the rest. The fact the share of radio and television assembling alone - which are durable-consumer goods, exceeded that of non-electrical machinery - the nearest to the definition of capital goods proper.

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Table II.16. GROSS VALUE ADDED BY BRANCHES OF MANUFACTURING INDUSTRY IN
 EXTENDED YEARS. LARGE ESTABLISHMENTS ONLY (CURRENT FACTOR COSTS)
 (ID THOUSANDS AND PERCENTAGES)

Industrial Branches	1960		1970		1973		1976	
	ID	per cent	ID	per cent	ID	per cent	ID	per cent
20 Food	3 509	15.0	13 097	18.4	19 453	17.8	22 218	12.5
21 Beverages	1 132	4.8	2 468	3.4	6 713	6.1	7 970	4.5
22 Tobacco	1 037	4.4	3 976	5.5	9 394	8.6	7 646	4.3
23 Textiles	3 761	16.0	8 677	12.1	17 730	16.2	22 320	12.5
24 Clothing	1 711	7.3	2 952	4.1	4 110	3.7	2 084	1.2
25 Wood	n.a.		23	0.03	16	0	50	0
26 Furniture	555	2.4	403	0.5	459	0.4	950	0.5
27 Paper	142	0.6	571	0.8	2 290	2.1	3 482	2.0
28 Printing	623	2.7	946	1.3	931	0.9	2 812	1.6
29 Leather	424	1.8	463	0.6	1 388	1.3	4 442	2.5
30 Rubber	n.a.		115	0.2	130	0.1	287	0.2
31 Chemicals	374	1.6	3 839	5.4	7 749	7.1	12 992	7.3
31.2 Petroleum products	4 244	18.1	12 248	17.2	13 823	12.6	39 879	22.4
32 Plastic products	42	0.2	545	0.7	862	0.8	2 985	1.7
33.1 Glass products	6	0	55	0.1	340	0.3	472	0.3
33.2 Non-metallics	5 279	22.6	10 653	15.0	11 709	10.7	16 085	9.0
35 Metal products	554	2.4	1 282	1.8	1 617	1.5	3 383	1.9
36.1 Durable consumer goods	0	0	1 019	1.4	4 558	4.6	12 814	7.2
36.2 Machinery	0	0	2 667	3.7	1 439	1.3	4 238	2.4
38 Transport equipment	7	0	165	0.2	4 739	4.3	12 172	6.8
All large manufacturing (10 plus establishments)	23 400	100.0	71 131	100.0	109 529	100.0	178 074	100.0

Source: Estimates for 1960 are from Zeki Fattah, *Op. cit.* p. 172.
 for the rest of the years, they are based on estimates calculated from the
 Annual Industrial Surveys.

Note: Percentages do not add up to 100 because some minor industries are
 excluded. All repair industries are also excluded.

Table II.17. GROSS VALUE ADDED BY BRANCHES OF MANUFACTURING INDUSTRY
IN SELECTED YEARS. (LARGE AND SMALL ESTABLISHMENTS)
(CURRENT FACTOR COSTS) (ID THOUSANDS AND PERCENTAGES)

ISIC	Industrial branches	1 9 7 0		1 9 7 3		1 9 7 6	
		ID	Per cent	ID	Per cent	ID	Per cent
20	Food	16 593	20.5	26 330	20.0	40 431	15.2
21-22	Beverages and tobacco	6 582	7.3	16 248	12.3	15 774	5.9
23	Textiles	9 421	10.4	18 585	14.1	29 234	11.0
24	Clothing	7 280	8.0	8 510	6.4	25 871	9.7
25-26	Wood and furniture	2 166	2.4	2 891	2.2	10 397	3.9
27	Paper	846	0.9	2 549	1.9	4 759	1.8
28	Printing	946	1.2	931	0.7	2 812	1.0
29	Leather	1 925	2.1	3 855	2.9	8 188	3.1
30	Rubber	115	0.1	130	0.1	287	0.1
31.1	Chemicals	3 947	4.3	8 062	6.1	14 280	5.2
31.2	Petroleum products	12 248	13.5	13 823	10.5	39 874	15.0
32	Plastic products	545	0.7	862	0.6	2 985	1.1
33	Non-metallics	11 148	12.3	12 449	9.4	22 153	8.3
35	Metallic products	1 282	1.4	3 694	2.8	13 896	5.2
36.1	Durable consumer goods	1 401	1.5	4 708	3.5	11 747	4.4
36.2	Machinery	2 667	2.9	1 439	1.1	4 238	1.6
38	Transport equipment	216	0.2	4 839	3.6	13 074	4.9
	Total manufacturing	90 227	100.0	131 997	100.0	265 346	100.0

Source: Based on our estimates made for this study for value added calculated from the data in the Annual Industrial Survey.

Note: Percentages do not add up to 100 because some minor industries are excluded. All repairs industries are also excluded.

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(v) The structure of input in manufacturing.

An input-output table provides a systematic and detailed record of economic activities. Beside providing an overall picture of the economy, it also gives an idea of production processes and the interrelation between the sectors. The informations included are usually comprehensive enough to calculate the impact of a change in one sector on the whole economy, and vice versa. Input-output table also enables to estimate the direct and indirect inputs needed to meet any changes in the given sector of final demand.

In Iraq input-output tables exist for several years: 1960 to 1963, 1968 and 1974. The tables for the latter years unfortunately are not in the detailed required. Thus, while the 1960-1963 tables identify 25 manufacturing activities, and conveniently differentiates between local and imported inputs as well as between complementary and competitive imports, the 1968 table omits the important separation of imports and local inputs. The 1974 table further exacerbate the limitation by reducing the activity breakdown to 11, i.e. it is constructed at industrial division level only.

Regarding analysis of changes in the structure of inputs, these limitations entailed the following:

First, for reasons of comparability, we had to compress the dimension of the 1960 table (which is, together with that of 1974 used as a benchmark for our analysis), to match that of 1974; therefore foregoing the advantages a detailed breakdown of activities provides. Secondly, the omission of the breakdown of imported inputs by activities has eliminated the chances for comparing changes in the technical import coefficients during the period 1960-74.

As a result, below, the analysis of structural changes in the manufacturing inputs is carried out at four stages. First, changes in the aggregate inputs are discussed and compared with changes in imported inputs. Second, input-output ratios are studied in large and small establishments, followed by a study of changes in the direct and indirect requirements of

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inputs for a given final demand sector in the economy. Finally, measurement is made of changes in the forward and backward linkages in the manufacturing and the economy. It should be noted that the component items of the inputs are : value of raw materials, fuels, electricity, marketing costs, and repair costs as they are reported in the annual industrial surveys; and the input-output ratios are calculated in current prices.

TABLE II.18. VALUE AND INDEX OF INPUTS TO MANUFACTURING INDUSTRIES. LARGE AND SMALL ESTABLISHMENTS, AVERAGE ANNUAL RATE OF GROWTH. (IN MILLION AND PERCENTAGES) 1970-76

	1970	1971	1972	1973	1974	1975	1976	Rate of growth
<u>Large establishments</u>								
Index of inputs	100.0	110.0	114.7	142.3	170.0	199.3	262.4	17.4
Value of inputs	112.9	137.9	150.0	174.7	217.8	265.2	370.0	
<u>Small establishments</u>								
Index of inputs	100.0	n.a.	n.a.	105.3	111.6	283.3	266.6	17.7
Value of inputs	48.4			52.3	56.4	170.0	151.7	

Source: Based on CSO Annual Industrial Surveys. See volume II of this study.

Note : In the following discussion, and for lack of data, we assume that inputs to small establishments remained unchanged in 1969 and 1970.

The index for inputs in large establishments in table II.18, shows continuous increases. The annual rises tended to be smaller in the years before the oil revenue increases, but the pace of the increases widened considerably immediately after; resulting in an annual growth of 17.4 per cent between 1970-76. Input of small establishments recorded a similar growth rate. Total manufacturing input increased by nearly three folds between 1970-1976. But how does this increase compare with that of gross output? And how much of it was home produced as against imported?

First, the share of imports in the aggregate manufacturing input. The figures for inputs and intermediate imports for manufacturing are shown in Table II.19 below. The import figures of course are subject to classification anomalies. (This is particularly clear for 1976 below). Nevertheless they give an idea about the magnitude of the change, and its direction.

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TABLE II.19 CHANGE IN IMPORT CONTENT OF MANUFACTURING INPUTS 1970-1976
(IN MILLIONS AND PERCENTAGES)

	1970	1971	1972	1973	1974	1975	1976	AAROG
Total manufacturing inputs	161.3			227.0	273.3	435.2	521.9	21.6
Intermediate imports for manufacturing	26.3	31.1	30.0	28.0	80.8	140.0	367.2	55.1
Percentage of inputs imported	16.3			12.3	29.5	32.2	70.4	

Source: Estimates made for this study and based on CSO's Foreign Trade Statistics.

It is evident from table II.21, that industrial development has generated a large demand for locally produced inputs. From 1970 until 1975, between 84 and 68 per cent of the inputs to manufacturing were local production. The imported inputs in 1976 seems to be grossly exaggerated. However, even excluding this year, the increase in the imported inputs is noticeable. Compared to 1970, the ratio in 1975 doubled, and the value increased by five-folds. There is no doubt that the increases in imported inputs in recent years have been much greater. (More on this in the chapter about foreign trade).

To show these changes separate measurements are made for the input-output ratios for large and small establishments. This will partly indicate the relative efficiency of each in the use of inputs. The figures below show that while the value of inputs in large establishments more than trebled, the value of gross output increased by about two and a half times. Conversely in the case of small industries. Here, the increase in output has been greater than the inputs. This contrast in the movement of input-output ratios between large and small industries is clearly indicated by the changes in the annual ratios in table II.20. Against the almost continuous decline in input-output, ratios of small establishments, the ratio in large establishments records an average annual rise of 2.2 per cent per annum during 1970-76.

TABLE II.20. COMPARISON OF INCREASES IN THE VALUE OF INPUTS AND OUTPUT,
AND IN THE RATIO OF INPUT-OUTPUT IN LARGE AND SMALL
INDUSTRIES 1970/76 (RATIOS AND ID MILLIONS)

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
<u>Large establishments</u>								
Value of gross output		190.4	216.5	241.1	284.2	341.2	409.6	548.1
Input/output (ratio)		59.3	63.7	62.2	61.5	63.3	64.7	67.5
<u>Small establishments</u>								
Value of gross output	70.5	n.a.	n.a.	n.a.	85.2	92.3	275.5	262.7
Input/output (ratio)	68.6				61.3	60.8	60.7	57.7

Source: Based on CSO Annual Industrial Surveys 1970-1976.

Of course, not every increase in the ratio of input-output can be construed as indication of change in efficiency, (i) often in developing countries with rigid trade practices stocking up imported inputs is considered a sound policy. (ii) Statistical anomalies and tendencies for relating all existing stocks of inputs to current production in the annual industrial survey returns also counts for variation in the ratio. (iii) The change in the ratio may also be due to changes in the product-mix, or in the quality of products. (iv) in some industries the change may be caused by differential rates of growth. (v) or brought about by a change in the quantity of material input per unit of output of some or all of the products caused by an increase or a decrease in the intermediate processing stages within the industry. (vi) Finally, as the results are calculated in current prices, differential changes in the price of materials or output affect the ratio. Similarly, differential changes in the prices of imported and locally made inputs could also influence the results, although the effect here will depend on the extent of reliance on imported inputs.

All these factors eliminate the possibility of efficiency comparison on a technical ground, i.e. measuring material input or total input per unit

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of output. Nevertheless, the observed decline in the aggregate input-output ratio for small industries may, even when the factors just mentioned are present save for (iii) and (iv), still imply efficiency gains. But the nature of the input data for small industries makes it difficult to assert this conclusion.

To discuss the industries with high efficiency performance in the use of raw materials, input-output ratio is computed for all the 74 large industries covered in this study and for seven years 1970-1976. The results are shown in the tables relating to input-output ratios in volume II of this study. The most interesting cases are reproduced below in table II.23.

Out of the 74 industries, the input-output ratio in 25 industries fell below their respective 1970 level. The decline in the ratio in 15 of these industries was on the whole consistent and relatively sizeable: ranging between average 2 per cent per annum and 15 per cent per annum. The ratio in the remaining 10, although was at the terminal year lower than in the initial year, the margin of difference was trivial and the ratios fluctuated from one year to another. In 40 industries the ratio increased, and only in 20 industries the rate of the increase was less than 2 per cent per annum. Industries in which the rate of increase exceeded 4 per cent per annum are shown in table II.21. Lesser changes in the ratio are not emphasized in view of the generally untested quality of the input data. Therefore, it may not be unrealistic to regard ratios which have changed between 1 and 3 per cent as being stable. Ratio in nearly 15 industries fell in this category.

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TABLE II.21 CHANGES IN INPUT-OUTPUT RATIO IN SELECTED INDUSTRIES

(a) Industries in which the rate of decline in input-output ratio exceeded 2 percent per annum, 1970-1976 (percentages)

Industries	Average annual rate of growth	Industries	Average annual rate of growth
1. Sulfur refining	- 15.3	4. Other chemicals	- 4.8
2. Wool washing	- 9.0	5. Electrical equipment (batteries)	- 4.2
3. Drug packing	- 5.1	6. Tanning	- 3.2
		7. Soft drinks	- 3.0

(b) Industries in which input-output ratio increased on average more than 4 per cent per annum

Industries	Average annual rate of growth	Industries	Average annual rate of growth
1. Bicycles	15.8	8. Glass products	7.3
2. Macaroni	13.1	9. Soap and detergents	7.3
3. Synthetic fiber	9.5	10. Pipes	7.0
4. Rubber products	8.7	11. Jars (clay)	6.6
5. Cement	7.8	12. Tailoring	5.6
6. Vegetable oil	7.7	13. Damp proofing materials	4.6
7. Bricks	7.6	14. Footwear	4.0

Source: Based on input-output ratios shown in tables in volume II of this study.

Inspection of the table shows that most industries in which input output ratios declined were either consumer goods, or intermediate goods producers. Whereas those in which the ratio increased were either capital goods or consumer goods producers, with the latter being predominantly in the field of clothing and food processing.

Sectoral interdependence in Iraqi manufacturing. A common characteristic of developing countries, which is well brought out by input-output tables, is the weakness of structural interdependence between the economic sectors. In Iraq the 1960 input-output table reveals this clearly. Tables II.22 and 23, contain aggregates of inter-dependences, during 1960-1974.

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Table II.22 shows the effect of change in the output of each industry on the activity of sectors from which it purchases its intermediates. Table II.23, on the other hand, shows the sensitivity of the sector itself to changes in the output of sectors to which it supplies.

In 1960, no manufacturing sectors* (of which only 5 are shown in the table) - as well as two of the manufacturing groups (chemicals and non-metallics), purchased less than 40 per cent of their input requirements from other sectors. Most of their inputs came directly from domestic primary factors and imports. This weak interrelation is also exemplified by agriculture sector whose purchase from other sectors was only 15 per cent of the value of its gross output (which amounted to ID 17.9 million in 1960). Manufacturing and construction, on the whole, showed up relatively better. Eight out of the ten manufacturing groups, as well as the construction sector, purchased more than 57 per cent of their intermediate input requirements from other sectors. These groups were: food, beverages and tobacco, textiles and clothing, leather products, paper products, wood and furniture, oil refining, machinery and metallics. However, even here the interrelations may not be as impressive as it looks.

A major limitation of the data concerning intermediate purchases is that they do not separate the import contents. Nevertheless, judging from the type of industries involved, one may surmise that an important proportion of the first six groups just mentioned would be made up of local production. But common feature of the intermediate purchases of the industries mentioned is that the major part of their input comes from the so-called 'primary sectors', like agriculture, livestock, forestry and mining. In addition column 3 in table II.22, shows that purchases by three groups: Food, textiles, and oil refining, accounted for about 72 per cent of the total inputs to manufacturing.

* Excluding construction.

Table II-22. Value of Interindustry Purchase and their Ratio to Total Production
1960 and 1974 (percentage)
Manufacturing activities are listed by degree of importance

	1 9 6 0			1 9 7 4		
	Inputs ID million	Input as percentage of output	Input as percentage of total input in manufact.	Inputs ID millions	Input as percentage of output	Input as percentage of total input in manufacturing
1. Machinery and equipment	10.0	75.4	12.4	187.9	96.2	36.2
2. Textile and clothing	23.0	73.8	26.1	30.0	92.5	5.7
3. Food, beverage and tobacco	29.8	72.7	33.9	14.6	86.2	2.8
4. Leather products	1.0	67.1	1.1	19.2	74.2	3.6
5. Metallic products	1.9	63.6	2.1	14.7	71.1	2.8
6. Paper and products	1.1	58.1	1.2	27.2	70.7	5.2
7. Wood and furniture	4.2	57.2	4.7	33.0	67.2	6.3
8. Oil refining	10.2	57.2	11.6	63.4	65.2	12.2
9. Chemicals and rubber	0.9	40.0	1.0	96.4	63.4	18.5
10. Non-metallios	4.8	39.5	5.4	32.6	43.0	6.2
Total manufacturing inputs	87.8	68.1	100.0	519.0	75.8	100.0
Agriculture, foresting and fishing	17.9	14.7		110.5	32.3	
Crude oil	10.1	4.5		45.3	2.2	
Other mining	0.3	10.0		12.0	75.0	
Electricity	27.1	1.4		3.4	20.6	
Construction	35.8	62.5		105.4	54.9	
Services	29.2	19.6		151.8	22.5	

Source: See table II-23.

TABLE II.23. VALUE OF INTERINDUSTRY SALE AND THEIR RATIO TO TOTAL PRODUCTION 1960 and 1974 (PERCENTAGE)

	1 9 6 0							1 9 7 4							
	Intermediate ID	%	Final Demand ID	%	Exports ID	%	Total 100	Intermediate ID	%	Final Demand ID	%	Exports ID	%	Total 100	
Metallics	21.0	95.4	1.0	4.5	0	0	100.0	Non metallics	49.7	80.7	10.6	17.2	1.3	2.1	100.0
Non-metallics	11.8	82.5	2.5	17.5	0.5	0	100.0	Paper and products	27.7	75.3	9.1	24.7	0	0	100.0
Machinery	11.8	80.8	2.8	19.2	0	0	100.0	Oil refining	46.7	54.8	31.0	36.0	8.3	9.6	100.0
Leather products	1.5	71.4	0.6	28.6	0	0	100.0	Food, beverages and tobacco	96.1	45.7	112.8	57.7	1.2	0.5	100.0
Oil refining	13.8	71.1	5.6	28.8	0	0	100.0	Wood & furniture	9.3	26.9	25.3	73.1	0	0	100.0
Food, beverages and tobacco	100.8	64.4	55.6	35.5	1.0	0.6	100.0	Leather products	7.7	26.2	19.2	65.3	2.5	8.5	100.0
Paper and products	3.5	61.4	2.2	38.6	0	0	100.0	Textile and clothing	35.4	24.9	106.4	74.8	0.5	0.3	100.0
Wood and furniture	5.0	46.0	6.0	54.0	0	0	100.0	Metallics	45.0	24.3	140.0	75.6	0	0	100.0
Textile clothing	16.9	31.7	36.3	68.2	0	0	100.0	Machinery	56.8	16.3	292.0	83.7	0	0	100.0
Rubber products	n.a.	0	4.3	100.0	0	0	100.0	Rubber products	46.9	52.0	42.4	47.0	0.9	1.0	100.0
Total manufactur.	186.1		116.9		1.5			Total manufacturing	421.3		788.8		14.7		
Agriculture, forestry and fishing	32.0	22.9	101.4	72.6	6.2	4.4	100.0	Agriculture, forestry and fishing	125.7	29.6	286.9	67.5	12.1	2.8	100.0
Electricity	1.9	35.8	3.4	64.1	0	0	100.0	Electricity	7.8	46.4	9.0	53.6	0	0	100.0
Crude oil	1.6	0.7			221.8	99.3	100.0	Crude oil	6.1	0.2			2 063.2	98.8	100.0
Other mining	3.5	92.1	0.3	0.8	0	0	100.0	Other mining	17.2	92.4	0.7	3.7	0.7	3.7	100.0
Construction	2.3	4.0	55.0	95.9	0	0	100.0	Construction	7.2	3.7	185.0	96.2	0	0	100.0
Services	15.9	29.1	38.7	70.8	0	0	100.0	Services	362.3	41.8	410.0	47.3	94.0	10.8	100.0

Source: Tables II-22 & II-23. Ministry of Planning. Input-output and social accounts of Iraq 1960. Also CSO, Input-output tables 1974.

The input-output table for 1974, shows certain progress in the structural interdependence. (i) The number of sectors with intermediate purchases equal or exceeding 55 per cent of the output value increased. Almost all manufacturing groups, except for oil refining, as well as 'other mining' crossed this demarcation line. (ii) the ratios of intermediate purchase to output were generally higher than in 1960. The average for manufacturing as a whole rose to 75.8 per cent as against 68.1 per cent in 1960. (The abnormally high ratio for food and beverages, metallic products and wood and furniture are probably due to statistical anomalies). (iii) most important the ratio of intermediate purchase by agriculture more than doubled. (iv) finally, the share of the three major purchasers of intermediate inputs, referred to earlier, has declined from 77 per cent to 55 per cent of the total purchase in manufacturing. The last two are better indicators of advancement in structural interrelationships in the economy. The first two may simply reflect higher level of activities. However, the large primary base of intermediate supply is still apparent. Furthermore, intermediate purchases with high import content, like metallics, machinery, and recently textiles have also raised their shares.

Table II.23 shows that within manufacturing while every group increased the volume of its intermediate sale, the tendency nevertheless has been more towards catering for the final demand expansion. Thus while in 1960, only two groups, wood and furniture, and textile and clothing, sold more to final demand than to intermediate demand, in 1974, only four out of the ten groups were still selling more to intermediates demand. These were: non-metallics, paper, oil refining and rubber. Only few industries, namely, oil refining, leather and cement, in non-metallics, exported part of their output. All non-manufacturing sectors catered primarily for the final demand in both years.

So far only the direct input coefficients have been dealt with. These coefficients do not give a complete picture of the process of production. Leontief inverse matrix measures the total effects which result from change in the demand of one sector for the product of another. By means of the inverse matrix in tables II.23 and II.29 and the final demand in the I-O tables of 1960, and 1974 (tables II. 23), the total demand is calculated. The column under total demand in table II.24 is measured by

$$Z = (I - A)^{-1} Y$$

where:

Z is total demand, A the technical input-output coefficients, and Y, the final demand. The inverse tables for 1960 and 1974, provide a comprehensive insight into the structure of production by counting not only the direct inputs, but also the indirect effects on related activities. The total (direct and indirect) coefficients for the input of agriculture for example into textiles and clothing in 1974, was 0.1452, as against the direct coefficients of 0.0734. Thus to produce one unit of textiles and clothing there are direct requirements of 0.3254 from textiles itself, 0.0187 from chemicals, 0.0030 from fuel 0.0090 from electricity, etc. (see table II.29). The indirect requirements from the other sectors are, for example: 0.0002 from leather, 0.00343 from chemicals, 0.0009 from other mining, etc. These indirect relations are derived from tables II.28 and II.29 as well as tables II.30 and 31.

Thus, for each sector the column of the inverse coefficients in tables II.30 and 31 represent the value of demand generated in all inter-related sectors per unit of final demand for the output of that sector. In the column of food industries in 1974, an initial increase of ID one million in final demand for the output of food industries leads to an increase of ID 507,100 in the total demand for agricultural products; ID 105,300 for the output of paper products, and ID 2,083,300 for the output of all sectors including food industries itself. The ultimate total demand generated is therefore always greater than the initial final demand, and in this case the excess alone was larger than the initial sum, and the total was more than twice the original size. (See table II.24).

Table II.26 shows that the demand generation effect differ from one sector to another, and that between 1960 and 1974 there has been wide changes in the sectors demand generation capacity. In 10 out of 17 sectors, the capacity has increased. These are agriculture, other mining, food industries, papers, chemicals, non-metallics, other manufacturing, electricity, construction and services. In the rest the capacity declined.

TABLE II.24. DIRECT AND INDIRECT DEMAND FOR THE OUTPUT OF VARIOUS MANUFACTURING SECTORS 1960 and 1974 (IN THOUSANDS)

S e c t o r s	1 9 6 0			1 9 7 4		
	Direct demand	Indirect demand	Total demand	Direct demand	Indirect demand	Total demand
Agriculture, forestry and fishing	101 426	50 048	151 474	286 861	168 649	455 510
Crude oil and natural gas	221 792	2 315	224 107	2 063 635	8 573	2 072 208
Other mining	367	3 983	4 350	714	19 832	20 546
Food, beverages and tobacco	55 808	17 649	73 457	112 760	142 552	235 480
Textiles and clothing	37 296	26 597	63 893	106 394	60 795	167 189
Leather products	577	2 790	3 367	19 187	8 550	27 737
Wood and furniture	215	2 746	2 961	25 284	20 498	45 782
Paper and paper products	2 199	4 346	6 545	9 122	58 363	67 485
Chemicals and rubber	5 379	9 180	14 559	42 435	92 631	135 066
Petroleum products	5 609	27 512	33 121	31 044	75 144	106 188
Non-metallics	2 575	11 531	14 106	10 656	54 182	64 838
Metal products	9 218	30 543	39 761	139 927	124 956	264 883
Machinery and equipment	25 922	61 602	87 524	291 983	109 215	401 198
Other manufacturing	3 005	115	3 120	4 445	1 567	6 012
Electricity, water and gas	3 382	3 161	6 543	8 972	13 812	22 784
Construction	54 979	2 524	57 503	184 924	12 723	197 647
Services	112 902	38 662	151 564	410 080	765 996	1 176 076

Source: based on input-output tables for 1960 and 1974.

The large ratios in 1960 for other mining, leather products, metallics and machinery are the result either of small final demand in 1960, or high import component. In table II.25 below, the sectors have been ranked according to their demand generation capacity in 1960 and 1974. (The two extremely high ratios, other mining and wood and furniture - are excluded from the ranking. The former because it is a trivial sector and the latter because it contains large statistical anomalies).

TABLE II.25. RANKING OF INDUSTRIES WITH THE HIGHEST DEMAND - GENERATION EFFECT IN 1960 and 1974

Rank	1960	Rank	1974
1. Petroleum products	5.98550	1. Paper and products	7.3980
2. Leather products	5.8353	2. Non-metallics	6.0846
3. Non-metallics	5.4780	3. Petroleum products	3.4205
4. Metal products	4.3134	4. Chemicals and rubber	3.1829
5. Machinery and equipment	3.3764	5. Services	2.8678
6. Paper and products	2.9763	6. Electricity and gas	2.5594
7. Chemical and rubber	2.7066	7. Food, beverages and tobacco	2.0883

Source: Based on table II.26

As can be seen in table II.25, two non-traditional sectors: paper products and chemical and rubber, which were in the tail end among activities with high demand generation affect in 1960, raised their coefficients appreciably in 1974. Two other sectors, petroleum products and non-metallics, remained in the list. The former with a much reduced coefficient and the latter with a slightly increased one. But three sectors: leather, metal products and machinery lost their places in the list in 1974. Their respective coefficients were much below the 1960 level. They were replaced by three traditional activities: services, electricity and food industries.

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TABLE II 26. CHANGE IN THE DEMAND GENERATING EFFECT OF
INDUSTRIES BETWEEN 1960 - 1974
(RATIO OF TOTAL DEMAND TO FINAL DEMAND)

Sector	1960	1974
Agriculture, forestry and fishing	1.4934	1.5879
Crude oil and natural gas	1.0104	1.0041
Other mining	11.8528	28.7759
Food, beverages and tobacco	1.3162	2.0883
Textiles and clothing	1.7131	1.5714
Leather products	5.8353	1.4456
Wood and furniture	13.7721	2.1667
Paper and products	2.9763	7.3980
Chemicals and rubber	2.7066	3.1829
Petroleum products	5.9050	3.4205
Non-metallics	5.4780	6.0846
Metal products	4.3134	1.8930
Machinery and equipment	3.3764	1.3740
Other manufacturing	1.0383	1.3525
Electricity, water and gas	1.9346	2.5394
Construction	1.0459	1.0688
Services	1.3424	2.8678

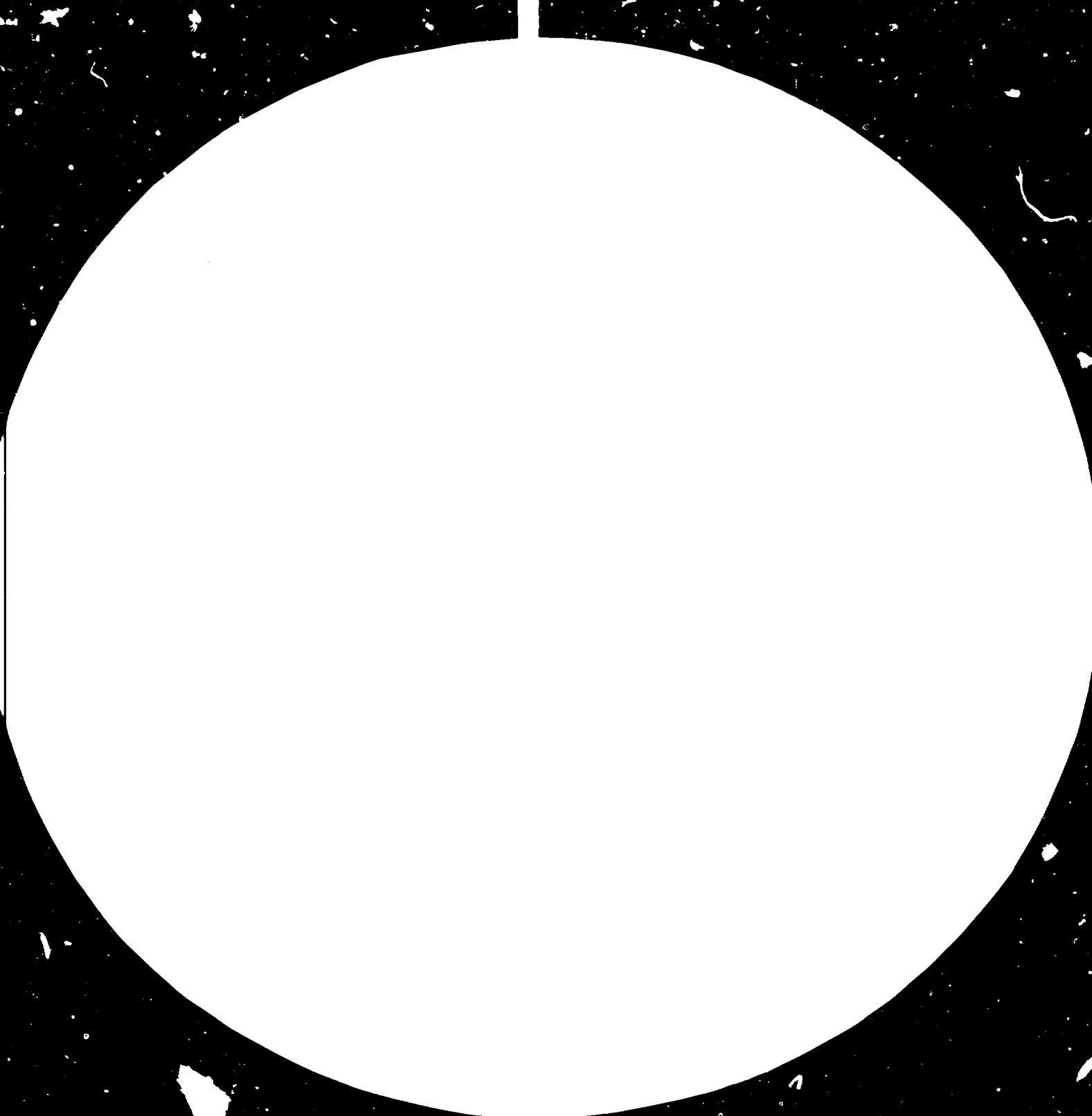
Source: based on input-output tables for 1960 and 1974.

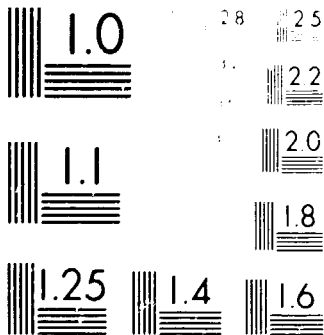
TABLE II- 27. FORWARD AND BACKWARD LINKAGES IN IRAQI ECONOMY
1960 - 1974

	Forward linkages		Backward linkages	
	1960	1974	1960	1974
Agriculture, forestry, fishing and hunting	0.2399	0.3047	0.1288	0.2679
Crude oil and natural gas extraction	0.0073	0.0030	0.0412	0.0219
Other mining	0.9067	0.9601	0.0903	0.6714
Food, beverages, and tobacco	0.6261	0.4602	0.5175	0.8994
Textiles and ready made garments	0.4085	0.2495	0.6405	0.4473
Leather and leather products	0.7202	0.2881	0.7376	0.7114
Wood and furniture	1.0199	0.2701	0.3110	0.4216
Paper, paper products and printing	0.6209	0.7521	0.1843	0.3993
Rubber and chemicals	0.3426	0.5253	0.0605	0.3050
Oil refining	0.7481	0.6010	0.2916	0.4200
Non-metallic mineral products	0.8215	0.8236	0.2899	0.5467
Metallic mineral products	0.3782	0.2432	0.1421	0.1622
Machinery and equipment	0.2423	0.1628	0.1801	0.2764
Other manufactured products	0.0215	0.1149	0.0212	0.2176
Electricity, water and gas	0.3634	0.4649	0.2652	0.2062
Construction	0.0404	0.0374	0.5665	0.5490
Services	0.2237	0.4693	0.1755	0.1964

Source: based on input-output tables for 1960 and 1974.

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A factor which weakens demand generation capacity of activities is the increase in the import content. In fact in a number of sectors in which the coefficient declined, namely textile, metal products and machinery, there are indications that the import coefficient had gone up considerably, implying that the leakages of demand to foreign supplies had also increased. But the effect of statistical anomalies, and changes in input composition of material input and factor input may also have been responsible. More detailed analysis would be needed to pin down the exact causes.

Given the demand generating capacities of the various sectors, the direct and indirect output required from each sector for the production of a given sector of final demand can be estimated. This is done for the 17 sectors considered in 1960 and 1974 in table II.26 shown earlier.

Forward and backward linkages: The forward linkages (U_i) and the backward linkages, (U_j) in table II.27 are calculated by the following formula:^{1/}

$$U_i = \frac{1}{n} \sum_{j=1}^n z_{ij} / \frac{1}{n^2} \sum_{j=1}^n z_j \quad (i, j = 1 \dots 17)$$

$$U_j = \frac{1}{n} \sum_{i=1}^n z_{ij} / \frac{1}{n^2} \sum_{j=1}^n z_j$$

where Z is the total demand which equal total supply.

Considering first the forward linkages. Other mining, food industries, leather products, paper products, oil refining and non-metallics, featured among the sectors with high forward linkages. Most of these industries kept their position in 1974. In two cases: other mining, paper products, they even increased their magnitude. But the magnitude in the remaining sectors

^{1/} See H.B.Chenery and P.G.Clark; inter-industry economies, John Wiley and Sons, N.Y., 1959 ch. 3. Also, Lo Sum Yee, the development performances of West Malaysia Heinemann educational books, Kuala Lumpur, 1972. Footnote to p.45.

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declined compared to 1960. However, four new sectors arrived on the scene in 1974, with relatively increased magnitude, compared with 1960. These were: chemicals and rubber products, electricity and services. Agriculture has also increased its forward linkages, but at least in three sectors the forward linkages were small in 1960, and remained so in 1974. These were: crude oil, textiles, metallics, machinery and construction. (The measurement for wood and furniture is affected by statistical anomalies).

However, forward linkages are less important compared to backward linkages. Because it is the latter which usually initiate the former. In other words change in demand stimulates backward linkages, if any, which in turn encourages expansion in other activities. Forward linkages generally reinforce existing backward linkages and do not create them.

Generally, primary activities have small backward linkages. This in table II.27 is clearly indicated by the magnitude of the linkage for agriculture and mining. The table also shows the generally high level of backward linkages in manufacturing compared to agriculture, electricity and services.

The five most important sectors in terms of backward linkages have been food industries, leather products, other mining, construction, non-metallics, and oil refining. Some industries, like paper products, chemicals and machinery, increased their backward linkages in 1974 compared with 1960. But in some industries notably textiles the magnitude declined. All those industries in which backward linkages have been significant and increased are traditional consumer and raw-material goods producers, which enjoy abundant supply of inputs and relatively large local markets. None of the modern industries has been developed far enough to generate backward linkages of appreciable magnitude. Whether or not the record of the last two years (1977 and 1978) will show otherwise remains to be seen.

To conclude this analysis of change in the input structure of manufacturing one can say that the analysis indicated two things: firstly, -- -- that the level of manufacturing activity is highly dependent on the level of domestic demand; and secondly, like in most other developing countries, the greater part of the industrial activity is directed to the processing of raw materials, or semi-finished products for the final demand or import substitution.

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Table II.28, INPUT-OUTPUT COEFFICIENTS 1960

	Agriculture forestry and fishing	Crude oil & natural gas	Other mining	Food, Beverages and tobacco	Textiles & clothing	Leather and leather products	Wood and furniture	Paper and paper products	Chemicals and rubber	Oil refining	Non- metallics	Metal products	Machinery & equipment	Other manufactur- ing	Electricity water and gas	Construction	Services
Agriculture, forestry and fishing	0.1028	-	-	0.3730	0.0801	0.3931	-	-	-	-	-	-	-	-	-	-	0.0042
Crude oil and natural gas	-	0.0037	-	-	-	-	-	-	-	0.0449	-	-	-	-	-	-	-
Other mining	-	-	-	0.0005	-	-	-	-	0.0063	-	0.0493	0.0034	-	0.0330	-	0.0500	-
Food, beverages and tobacco	-	0.0010	-	0.2266	0.0002	-	-	0.0005	0.0348	-	-	-	-	-	-	-	0.0017
Textiles and clothing	-	-	-	-	0.4136	0.0138	-	-	-	-	-	-	-	-	0.0005	-	0.0008
Leather and leather prods.	-	-	-	-	0.0436	0.0013	-	-	-	-	-	-	-	-	-	-	-
Wood and furniture	-	-	-	-	-	-	0.3712	-	0.0770	-	-	-	0.0019	-	-	0.0132	0.0002
Paper and paper prods.	-	-	-	0.0072	0.0002	0.0006	-	0.4973	-	0.0005	0.0026	-	-	-	0.0052	0.0001	0.0030
Chemicals and rubber	0.0008	0.0040	-	0.0125	0.0105	0.1400	0.0215	0.0104	0.0781	0.0195	0.0030	0.0043	0.0011	0.4380	0.0088	0.0150	0.0105
Oil refining	0.0238	0.0044	0.0999	0.0082	0.0026	0.0072	0.0010	0.0036	0.0095	0.0119	0.0925	0.0145	0.0130	0.0082	0.1193	0.0241	0.0374
Non-metallics	-	0.0002	-	-	-	-	-	-	-	-	0.0534	0.0008	-	-	-	0.1861	-
Metal prods.	-	0.0048	-	-	0.0007	0.0131	0.0099	0.0010	-	0.0238	0.0061	0.4523	0.0298	0.0082	-	0.1360	0.0002
Machinery and equipment	0.0044	0.0104	-	0.0081	0.0040	0.0092	0.0010	0.0115	0.0084	0.0066	0.0300	0.0031	0.5433	-	0.0976	0.0541	0.0360
Other manu- facturing	-	-	-	-	0.0018	-	-	-	-	-	-	-	-	-	-	-	-
Electricity water and gas	-	-	-	0.0034	0.0050	0.0032	0.0069	0.0083	0.0095	0.0001	0.0194	0.0078	0.0055	0.0165	0.0237	0.0003	0.0071
Construction	-	-	-	0.0010	0.0002	0.0026	-	-	0.0052	0.0005	0.0002	-	-	-	-	-	0.0154
Services	0.0078	0.0121	-	0.0727	0.0796	0.0473	0.0454	0.0267	0.0306	0.1934	0.0841	0.0301	0.0023	0.0330	0.0097	0.0861	0.0615
Σ xij	0.1396	0.0406	0.0999	0.7132	0.6421	0.6314	0.4569	0.5593	0.2594	0.3010	0.3406	0.5163	0.5969	0.5369	0.2648	0.5658	0.1780

Source: Input-output table 1960

Table II.29 INPUT-OUTPUT COEFFICIENTS 1974

	Agriculture forestry & fishing	Crude oil & natural gas	Other mining	Food, Beverages & tobacco	Textiles & clothing	Leather and leather products	Wood and furniture	Paper and paper products	Chemicals and rubber	oil refining	Non- metallies	Metal products	Machinery and equipment	Other manufac- turing	Electricity water and gas	Construction	Services
Agriculture, forestry and fishing	0.1889	0.0000	-	0.2305	0.0734	-	0.0055	0.0077	0.0017	-	-	-	-	-	-	-	0.0128
Crude oil and natural gas	-	0.0000	-	-	-	-	-	-	0.0001	0.0808	-	-	-	-	-	-	-
Other mining	-	0.0000	0.0053	0.0007	-	0.0002	0.0002	-	0.0060	-	0.0967	0.0001	0.0003	0.0104	-	0.0620	-
Food, beverages and tobacco	0.0134	-	-	0.4160	0.0005	0.0130	-	0.0003	0.0107	-	0.0001	-	0.0001	-	-	-	0.0142
Textiles and clothing	-	0.0000	0.0020	0.0084	0.3254	0.0271	0.0165	0.0028	0.0093	-	0.0005	0.0011	0.0013	0.0175	-	-	0.0004
Leather and leather prod's.	-	-	-	-	-	0.2941	0.0005	0.0002	-	-	-	-	-	0.0006	-	-	0.0003
Wood and furniture	-	0.0000	-	0.0028	0.0001	0.0002	0.2789	0.0014	0.0003	-	-	0.0030	0.0047	0.0313	-	0.0144	0.0001
Paper and paper prod's.	-	0.0002	0.0047	0.0318	0.0097	0.0148	0.0015	0.3666	0.0384	0.0040	0.0611	0.0017	0.0047	0.0109	0.0030	-	0.0098
Chemicals and rubber	0.0165	0.0003	0.0655	0.0341	0.0187	0.0997	0.0348	0.0383	0.2241	0.0352	0.0166	0.0100	0.0140	0.0129	0.0247	0.0048	0.0171
Oil refining	0.0141	0.0004	0.0242	0.0063	0.0032	0.0033	0.0018	0.0019	0.0035	0.0175	0.0413	0.0012	0.0016	0.0829	0.1114	0.0147	0.0452
Non-metallies	-	-	-	0.0034	0.0003	-	0.0060	-	0.0142	-	0.0259	0.0023	0.0016	0.0003	-	0.2439	-
Metal prod's.	-	-	-	0.0155	0.0010	0.0086	0.0333	0.0022	0.0066	0.0177	0.0055	0.2439	0.0510	0.0138	-	0.0727	0.0141
Machinery and equipment	0.0035	0.0003	0.0095	0.0082	0.0157	0.0042	0.0013	0.0101	0.0146	0.0104	0.0261	0.0074	0.0790	0.0105	0.0048	0.0077	0.0521
Other manu- facturing	-	0.0001	-	-	0.0025	0.0001	-	-	0.0001	-	0.0003	0.0024	0.0002	0.0316	-	-	-
Electricity water & gas	-	0.0001	0.0085	0.0040	0.0090	0.0086	0.0026	0.0096	0.0111	0.0064	0.0172	0.0014	0.0023	0.0066	0.0387	-	0.0038
Construction	-	0.0001	0.0001	0.0005	0.0007	0.0006	0.0002	0.0004	0.0005	0.0007	0.0035	0.0003	0.0018	0.0003	-	-	0.0034
Services	0.0864	0.0207	0.6309	0.2004	0.1922	0.2682	0.4800	0.2701	0.3504	0.2578	0.3779	0.6507	0.4724	0.0840	0.0257	0.1291	0.0468
Σ xij	0.3228	0.0222	0.7507	0.9626	0.6524	0.7429	0.8631	0.7116	0.7076	0.4305	0.6727	0.9255	0.6303	0.3137	0.2053	0.5433	0.2261

Source: Input-output table 1974.

Table II.30 INVERSE MATRIX 1960

	Agriculture forestry and fishing	Crude oil and natural gas	Other mining	Food, Beverages and tobacco	Textiles and clothing	Leather and leather products	Wood and furniture	Paper and paper products	Chemicals and rubber	Oil refining	Non- metallics	Metal products	Machinery & equipments	Other manufacturing	Electricity, water and gas	Construction	Services
Agriculture, forestry & fishing	1.1147	0.0007	0.0002	0.5386	0.1868	0.4446	0.0012	0.0013	0.0207	0.0017	0.0009	0.0006	0.0006	0.0093	0.0006	0.0012	0.0065
Crude oil & natural gas	0.0013	1.0041	0.0046	0.0016	0.0010	0.0013	0.0004	0.0009	0.0009	0.0463	0.0056	0.0016	0.0134	0.0011	0.0070	0.0036	0.0025
Other mining	0.0000	0.0001	1.0001	0.0010	0.0005	0.0014	0.0004	0.0002	0.0073	0.0006	0.0523	0.0064	0.0006	0.0363	0.0002	0.0617	0.0011
Food, beverages & tobacco	0.0001	0.0016	0.0002	1.2942	0.0024	0.0071	0.0019	0.0025	0.0492	0.0017	0.0006	0.0006	0.0007	0.0217	0.0008	0.0013	0.0030
Textiles and clothing	0.0000	0.0000	0.0000	0.0002	1.7073	0.0237	0.0001	0.0001	0.0001	0.0003	0.0002	0.0001	0.0001	0.0001	0.0009	0.0002	0.0015
Leather and leather products	0.0000	0.0000	0.0000	0.0000	0.0745	1.0023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
Wood and furniture	0.0003	0.0007	0.0003	0.0027	0.0045	0.0192	1.5952	0.0032	0.1337	0.0033	0.0013	0.0014	0.0080	0.0587	0.0025	0.0243	0.0027
Paper and paper products	0.0001	0.0001	0.0002	0.0193	0.0019	0.0018	0.0007	1.9899	0.0012	0.0024	0.0066	0.0006	0.0009	0.0009	0.0111	0.0022	0.0067
Chemicals & rubber	0.0018	0.0048	0.0025	0.0205	0.0350	0.1552	0.0387	0.0240	1.0898	0.0249	0.0080	0.0103	0.0108	0.4784	0.0142	0.0223	0.0142
Oil refining	0.0292	0.0086	0.1026	0.0346	0.0221	0.0285	0.0090	0.0202	0.0199	1.0266	0.1235	0.0351	0.2967	0.0252	0.1560	0.0790	0.0554
Non-metallics	0.0001	0.0003	0.0001	0.0006	0.0006	0.0009	0.0003	0.0002	0.0013	0.0008	1.0569	0.0018	0.0004	0.0007	0.0002	0.1973	0.0033
Metal prods.	0.0020	0.0106	0.0048	0.0046	0.0078	0.0287	0.0304	0.0081	0.0065	0.0480	0.0225	1.8289	0.1334	0.0191	0.0194	0.2631	0.0120
Machinery & equipment	0.0125	0.0245	0.0035	0.0403	0.0345	0.0358	0.0139	0.0599	0.0293	0.0348	0.0866	0.0220	2.2043	0.0202	0.2261	0.1479	0.0908
Other manu- facturing	0.0000	0.0000	0.0000	0.0000	0.0031	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
Electricity water & gas	0.0002	0.0004	0.0003	0.0060	0.0109	0.0061	0.0126	0.0180	0.0124	0.0026	0.0227	0.0154	0.0142	0.0228	1.0263	0.0086	0.0088
Construction	0.0003	0.0003	0.0004	0.0032	0.0032	0.0045	0.0015	0.0011	0.0065	0.0040	0.0022	0.0011	0.0013	0.0035	0.0008	1.0023	0.0167
Services	0.0155	0.0155	0.0215	0.1139	0.1572	0.0703	0.0818	0.0626	0.0513	0.2154	0.1222	0.0669	0.0721	0.0619	0.0452	0.1369	1.0807
$\sum_{i,j}$	1.1781	1.0722	1.1413	2.0813	2.2533	1.8314	1.7881	2.1922	1.4299	1.4134	1.5121	1.9928	2.7575	1.7577	1.5113	1.9518	1.3060

Source: Input-output table 1974.

TABLE II-39. . INVERSE MATRIX 1974

	Agriculture forestry and fishing	Crude oil & natural gas	Other mining	Food, beverages & tobacco	Textiles & clothing	Leather and leather products	Wood and furniture	Paper and paper products	Chemicals and rubber	Oil refining	Non- metals	Metal products	Machinery and equipment	Other manufactur- ing	Electricity water and gas	Construc- tion	Services
Agriculture, forestry and fishing	1.2449	0.0006	0.0197	0.5071	0.1452	0.0300	0.0334	0.0296	0.0268	0.0088	0.0159	0.0242	0.0162	0.0083	0.0025	0.0112	0.0269
Crude oil & natural gas	0.0021	1.0001	0.0052	0.0039	0.0023	0.0030	0.0037	0.0026	0.0032	0.0837	0.0063	0.0041	0.0028	0.0080	0.0099	0.0040	0.0044
Other mining	0.0004	0.0000	1.0069	0.0033	0.0009	0.0025	0.0027	0.0013	0.0105	0.0008	0.1011	0.0018	0.0016	0.0114	0.0004	0.0875	0.0013
Food, beverages and tobacco	0.0329	0.0006	0.0217	1.7401	0.0151	0.0503	0.0235	0.0167	0.0399	0.0099	0.0165	0.0261	0.0175	0.0060	0.0031	0.0119	0.0292
Textiles and clothing	0.0010	0.0001	0.0056	0.0244	1.4839	0.0612	0.0365	0.0088	0.0200	0.0014	0.0031	0.0043	0.0038	0.0288	0.0008	0.0023	0.0018
Leather and leather products	0.0001	0.0000	0.0003	0.0003	0.0002	1.4169	0.0014	0.0007	0.0003	0.0002	0.0003	0.0004	0.0003	0.0010	0.0000	0.0002	0.0005
Wood and furniture	0.0007	0.0000	0.0022	0.0090	0.0016	0.0038	1.3890	0.0049	0.0162	0.0012	0.0018	0.0073	0.0086	0.0457	0.0006	0.0215	0.0015
Paper and paper products	0.0055	0.0008	0.0289	0.1053	0.0337	0.0593	0.0260	1.5951	0.0947	0.0167	0.1150	0.0251	0.0231	0.0251	0.0067	0.0358	0.0226
Chemicals and rubber	0.0333	0.0011	0.1103	0.1110	0.0530	0.2062	0.0904	0.0963	1.3160	0.0579	0.0570	0.0473	0.0410	0.0331	0.0417	0.0372	0.0330
Oil refining	0.0256	0.0016	0.0641	0.0479	0.0278	0.0363	0.0454	0.0320	0.0379	1.0359	0.0778	0.0508	0.0343	0.0990	0.1227	0.0500	0.0548
Non-metals	0.0010	0.0001	0.0038	0.0096	0.0026	0.0050	0.0124	0.0031	0.0213	0.0021	1.0301	0.0067	0.0049	0.0018	0.0009	0.2528	0.0035
Metal prods.	0.0056	0.0007	0.0226	0.0537	0.0148	0.0349	0.0844	0.0211	0.0306	0.0344	0.0275	1.3499	0.0912	0.0297	0.0060	0.1126	0.0294
Machinery and equipment	0.0147	0.0018	0.0586	0.0548	0.0500	0.0459	0.0551	0.0514	0.0595	0.0335	0.0686	0.0705	1.1261	0.0269	0.0129	0.0444	0.0673
Other manu- facturing	0.0000	0.0001	0.0001	0.0002	0.0039	0.0004	0.0003	0.0001	0.0003	0.0001	0.0004	0.0034	0.0005	1.0328	0.0000	0.0004	0.0001
Electricity water & gas	0.0014	0.0002	0.0144	0.0128	0.0169	0.0193	0.0097	0.0198	0.0199	0.0094	0.0244	0.0076	0.0066	0.0099	1.0421	0.0036	0.0059
Construction	0.0015	0.0003	0.0078	0.0066	0.0049	0.0067	0.0087	0.0060	0.0068	0.0042	0.0096	0.0102	0.0084	0.0025	0.0010	1.0053	0.0110
Services	0.1537	0.0245	0.7896	0.5770	0.3915	0.5821	0.8619	0.5509	0.6224	0.3545	0.6118	1.0132	0.6663	0.2111	0.0917	0.4460	1.1500
Σ	1.5254	1.0326	2.1618	3.2670	2.2483	2.5638	2.6844	2.4404	2.3263	1.6547	2.1672	2.6529	2.0532	1.5811	1.3430	2.1317	1.4432

Source: Input-output table 1974.

(vi) The size composition of manufacturing establishments.

Total number of large manufacturing establishments in Iraq increased from 1,148 in 1970, to 1,421 in 1976: an increase of nearly 24 per cent. But the size composition of these establishments has generally been lopsided. This remains true even in 1976, despite the noticeable redressing that has taken place compared with 1970. Thus in table II.32, in 1970, 9 per cent of the establishments produced 77 per cent of the real value added in manufacturing, and occupied 47 per cent of the total employed. The concentration is still evident in 1976, but the base of contribution has widened comparatively. Thus against the 2 per cent of the establishments which generated 33 per cent of the value added in 1970, in 1976, 3 per cent of the establishments produced 31 per cent of the value added. Nevertheless 25 per cent of the establishments still produced 90 per cent of the total value added and employed 73 per cent of the labour force in modern manufacturing.

TABLE II.32. SIZE COMPOSITION OF ESTABLISHMENT IN MANUFACTURING. GROSS VALUE ADDED (FACTOR COST) PER WORKER BY SIZE OF ESTABLISHMENTS 1970-1976 (10 PLUS ESTABLISHMENTS)

Class	No. of establishments	Per cent	Total no. employed thousand	Per cent	Average no. of persons employed per establishment	Value added per person employed ID.	Total Index value added ID thousand	Per cent	
<u>(a) 1970</u>									
10-49	721	63	18.0	21	23	572	100	9 732	12
50-99	319	28	26.0	31	81	314	55	8 153	10
100-499	85	7	16.0	15	189	2 129	372	34 176	44
500 and over	83	7	23.5	28	1 012	1 105	193	25 519	33
Total	1 148	100	83.5	100				77 545	100
<u>(b) 1976</u>									
10-49	624	49	16.2	12	23	827	100	13 442	7
50-99	362	25	17.7	14	49	295	36	5 228	5
100-499	319	22	50.9	39	156	2 263	274	105 275	59
500 plus	46	3	44.5	34	963	1 227	148	54 642	31
Total	1 421	100	129.3	100				178 594	100

Source: Estimates based on the Annual Industrial Surveys.

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The size composition of establishments depicted in table II.32, shows some other changes.

(i) The growth of the modern industrial sector has originated mainly in high medium-size units (class 100-499). This is clear whether measured in terms of number of establishments; employment; or value added. This conclusion applies to both years under consideration, but more to the last year, where the relative importance of the high medium-class units increased. Thus between 1970 and 1976, high medium-size establishments increased in number from 85 to 319 units; employment from 16 thousand to 51 thousand, and value added from ID 34.2 million to ID 105.3 million.

(ii) Low medium-class (50-99), seems to have been the class whose importance has declined in terms of value added and employment both absolutely and relatively. Although the number of establishments increased, their relative importance declined significantly. Productivity in terms of value added per employee has also markedly declined in this group.

(iii) The role of small-size units class 10-49 has diminished. This is shown by the decline in the share of this class in all three indicators in the table (i.e. number of establishments, employments and value added).

(iv) The fall in the labour-output ratio observed for the manufacturing sector as a whole is also clearly reflected by the universal decline in the average number employed per establishment in all classes in 1970 and 1976. This is indicated by the average number of persons employed per establishment in column 6.

(v) Large firms - 500 plants - whose number doubled during the period considered, have had the highest employment per establishment. They rated second in terms of total employment and total value added. Their position in this respect has not changed during the years considered. In fact, if we exclude oil refineries, which fall in class 100-499, the value added of this class surpasses that of each other class separately. All this suggests that large, and high-medium-size (class 100-499) plants together, attracted most of the public funds allocated to industrial investments in the post 1970 years. These plants were also responsible for the greater part of the output and employment growth.

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(vi) Finally, the highest productivity increase (in terms of gross value added per employee) has been achieved in class 10-49. This is so despite the fact that it remained the third in terms of order of importance in productivity performance.

VII. Regional Distribution.

Regional distribution of manufacturing in Iraq is characterized by heavy concentration in Baghdad governorate. This is clearly indicated by table II.34 which shows the percentage distribution of the main industrial variables between the eighteen governorates of the country in 1970 and 1976 (three of the governorates: D'hok, Salah Al-Din, and Al-Najaf, were founded after 1970).

It can be seen in Table II.33 that, in 1970, more than 60 per cent of the large manufacturing establishments (employing 10 persons or more) were located in greater Baghdad. They produced 72 per cent of the gross output and value added, as well as more than 61 per cent of the employment, wages and profits. None of the other governorates singularly could claim the second place of importance in all the variables. However, three governorates: Ninevah - in the north-west of the country and with a second largest population after Baghdad, Babylon, a central governorate adjacent to Baghdad; and Basrah, the port city in the southern most, together represented the second place, but with a share far smaller than that recorded for Baghdad.

TABLE II.33 REGIONAL DISTRIBUTION OF MAIN INDUSTRIAL VARIABLES
(TEN PLUS ESTABLISHMENTS) AND POPULATION IN SELECTED
YEARS (PER CENTAGES)

	Baghdad		Basrah, Ninevah & Babylon		The rest of the country	
	1970	1976	1970	1976	1970	1976
No. of establishments	60	58	21	24	18	18
Value of gross output	72	58	16	24	12	18
Gross value added	72	53	14	22	14	25
Employment	61	55	22	23	17	22
Share in total population	28	26	22	23	50	51

Source: Based on table II.34. For population figures, see AAS 1973, p.49 and 1976 p.52.

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They represented 21 per cent of the establishments, 15 per cent of the gross output, 14 per cent of the value added, and 22 per cent of the employment. This means that the rest of the country which counted for more than half of the total population during the two years considered had 18.3 per cent of the large establishments, and produced only 12 per cent of the gross output; 14 per cent of the value added and 17 per cent of the employment.

In 1976, as table II.34 shows, Baghdad was still the major centre of manufacturing activities. However, a tangible shift seems to have taken place between the years considered. But neither the magnitude of the shift, nor its regional allocation has been greatly advantageous to the majority of the governorates. The greater part of the shift as can be seen from the table, has gone to the three governorates just mentioned. The large share, in the value added appears for the 'rest of the country' in column 6 of table 33, is in fact due to the negative value added recorded for Nineveh (one of the governorates in the trio). This is because of the large subsidies given to the sugar manufacturing, which is situated in the capital city of this governorate.

Concentration of industries in Baghdad is explained by a combination of factors: the size of the population between 2.5 and 3 million, provided a close market, and the availability of infrastructural and administrative facilities reduced production costs. The geographic location of Baghdad in the centre of the country gave it accessibility to sources of supply of raw materials and power. The country however is entering a new phase in its industrialization effort. More emphasis is being put on heavy industries - chemical, petro-chemical and engineering industries. New industrial poles are emerging in the midland and in Basrah. The present economic plan shows awareness of the existing polarization in industrial distribution. However the small shift that has occurred so far is quite insufficient to redress the abnormal anomalous situation, which may even deteriorate as a result of the new polarization. Unless conscious and active planning decisions are taken in this respect, large parts of the country would remain relatively starved of new industrial projects. A situation which would impede the country's drive for fairer regional development and fuller utilization of manpower and natural resources.

TABLE II.3 NO. OF ESTABLISHMENTS, VALUE OF GROSS OUTPUT, VALUE OF INPUTS, GROSS VALUE ADDED, EMPLOYMENT, WAGES AND PROFITS OF LARGE MANUFACTURING ESTABLISHMENTS IN IRAQ, ACCORDING TO REGIONAL DISTRIBUTION 1970 and 1976 (IN MILLIONS) (EMPLOYMENT IN THOUSAND PERSONS)

	No. of establishments		Value of gross output		Value of inputs		Gross value added		Employment		Wages		Profits	
	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976
Mineveh	5.35	7.33	8.18	8.08	8.51	11.84	7.65	-0.42	7.38	7.57	7.77	8.30	6.83	-5.30
Al Ta'meem	2.63	3.62	0.43	1.76	0.40	0.99	0.47	3.13	1.52	1.43	1.33	1.61	-0.25	3.90
Diala	1.70	2.27	1.25	1.70	1.08	1.69	1.53	1.55	1.65	1.71	1.81	1.49	1.16	1.44
Baghdad	60.27	58.22	72.21	58.08	72.45	57.77	71.86	53.49	61.08	54.66	68.38	58.08	67.91	44.51
Al Anbar	1.00	0.92	0.70	1.06	0.45	0.91	1.11	1.27	0.56	1.53	0.50	1.60	1.50	0.89
Babylon	4.26	8.70	3.93	10.15	4.56	8.65	2.90	12.25	5.93	8.56	5.60	7.82	0.47	14.14
Kerbela	4.49	2.34	1.26	1.27	1.21	1.32	1.32	1.06	2.59	1.83	1.89	1.59	0.75	0.57
Al Qadisiya	0.85	2.27	0.11	0.32	0.05	0.19	0.21	0.57	0.66	0.83	0.40	0.44	0.03	0.60
Al Muthanna	0.54	0.92	1.62	0.90	0.90	0.56	2.82	1.49	1.01	1.42	0.91	1.49	4.08	1.34
Thi Kar	1.47	0.71	0.20	0.22	0.16	0.14	0.26	0.38	0.75	0.82	0.38	0.47	0.14	0.28
Nasir	0.85	0.78	1.30	2.06	0.86	1.62	1.49	2.76	3.01	2.90	2.01	2.27	9.45	2.81
Diyyan	2.71	2.20	2.17	2.26	2.31	5.43	1.85	-4.12	2.83	3.16	2.59	2.56	1.22	-4.80
Basrah	11.63	8.11	3.78	6.26	4.03	4.22	3.36	9.77	8.75	6.61	4.08	6.53	2.47	11.07
D'kok	-	0.07	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0
Arbil	1.16	2.13	0.14	1.76	0.19	1.34	0.06	2.45	0.33	2.15	0.27	1.27	-0.16	3.04
Al Sulaymania	1.3	1.63	2.86	1.77	2.77	1.66	3.02	1.81	2.06	2.86	1.99	2.56	3.56	1.08
Salah Al Din	-	0.42	-	1.91	-	1.26	-	3.02	-	1.15	-	1.17	-	4.04
Al Najaf	-	2.27	-	0.35	-	0.31	-	0.37	-	0.72	-	0.68	-	0.12
All Iraq	100.0	100.0	100.0	1100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on data given in the Annual Industrial Surveys 1970-76.

Note: The ratios to value of gross output and value added are based on absolute value. The minus sign therefore indicates subsidy.

(viii) The ownership structure in manufacturing:

Until 1964, government ownership of manufacturing was rather small. It was confined to oil refineries and a small number of large establishments. In 1963 for example, government ownership represented only 11 per cent of the large manufacturing establishments, employed 25 per cent of their work force, used 19 per cent of the material inputs, and generated 24 per cent of the gross output and 30 per cent of the total wages. Expansion of government manufacturing activities until that year was a function of government investment allocation to the sector and reinvestment by the existing public firms. The far reaching nationalization measures in 1964, put all large manufacturing firms under government control. Here it suffices to say that by the end of 1969, the public sector owned 179 out of 294 very large establishments in manufacturing. They employed 52 per cent of the work force in these establishments, used 52 per cent of the material inputs, and produced 61 per cent of the gross output and 65 per cent of the total wages in large establishments. On average public investment in manufacturing amounted to ID 12.5 million annually between 1960-1970 and ID 86.8 million between 1970 and 1976. In the private sector it was, respectively: ID 12.5 million and ID 29.0 million.

Table II.35 summarizes the share of public sector in selected industrial variables.

TABLE II.35. SHARE OF PUBLIC SECTOR IN SELECTED INDUSTRIAL VARIABLES;
IN 1970, 1973 and 1975. LARGE AND SMALL ESTABLISHMENTS
(PERCENTAGES)

Industrial variables	1970	1973	1976
Share in number of large establishments	9.3	12.0	13.4
Share in number of total establishments	n.a.	0.5	0.4
Share in gross value added in large establishments	63.7	77.7	78.5
Share in gross value added in total establishments	n.a.	61.0	67.6
Share in wages in large establishments	59.8	72.2	72.8
Share in wages in total establishments	n.a.	64.1	60.4
Share in employment in large establishments	50.9	64.2	68.9
Share in employment in total establishments	n.a.	41.9	41.4

Source: Calculated from data in the Annual Industrial Surveys.

Note: For 1976 data for public sector were not available for industrial variables which are included in the table

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The ownership structure by type of manufacturing activities is shown in table II.36. Considering large establishments first, government operate virtually in every manufacturing activity: traditional and modern. The small share shown for machinery is a statistical anomaly. Comparison between the shares in 1970 and 1975 shows that wherever government present was relatively weak in 1970 - and this included chemicals, paper, metallics, and machinery, it was strengthened in 1976. Government stronghold over activities in transport equipment, tobacco, food, textiles, non-metallics and leather has been maintained and extended to new activities like beverages, printing, paper and metallics. There has been inroads even into such traditionally small establishment operated activities such as wood and furniture, and clothing. New government firms appear in brewing industry, plastic products, fertilizers, glass products, tiles and mosaic, steel pipes, non-electric machinery. Only shirt making activity does not have government enterprises.

TABLE II.36. PUBLIC SECTOR SHARE IN GROSS VALUE ADDED IN MANUFACTURING IN SELECTED YEARS 1970,1975 (CONSTANT FACTOR COSTS)(PERCENTAGES)

	1 9 7 0	1 9 7 5		1 9 7 5
	Share of public sector in large establishments	Share of public sector in total establishments	Share of public sector in large establishments	Share of public sector in total establishments
Food	84.7	60.0	46.1*	20.4*
Beverages	40.0	37.0	75.3	74.4
Tobacco	88.0	88.0	100.0	100.0
Textiles	79.7	72.7	82.1	68.1
Clothing	43.1	18.2	42.4	15.2
Wood and furniture	7.8	2.7	51.2	3.0
Paper	25.7	17.9	57.7	41.7
Printing	n.a.	n.a.	63.7	63.7
Leather	54.6	12.4	82.9	19.8
Rubber	100.0	17.0	61.6	7.0
Chemicals	41.3	40.1	78.2	61.7
Petroleum products	100.0	100.0	100.0	100.0

(continued...)

TABLE II.36. (CONTINUED...)

	1 9 7 0	1 9 7 0	1 9 7 5	1 9 7 5
	Share of public sector in large establishments	Share of public sector in total establishments	Share of public sector in large establishments	Share of public sector in total establishments
Plastic products	0	0	0	0
Non-metallics	65.8	62.9	84.6	76.3
Metallics	11.7	3.1	54.5	10.7
Durable consumer goods	n.a.	n.a.	n.a.	n.a.
Machinery	3.7	3.7	19.8	19.8
Transport equipment	100.0	100.0	100.0	100.0
All manufacturing	66.0	52.1	61.6 (78.0)**	41.5 (52.0)**

Source: Annual Industrial Surveys and ICA estimate of gross value added at constant factor costs. No estimate for the public sector was available here for 1976.

Note*: All subsidized industries are excluded from this calculation. Sugar industry alone got ID 21 million in subsidy in 1975.

** : Percentages in parenthesis include subsidized industries.

The private sector remained however very active in small establishments and small workshops. Their activity centered (judging by share in the value added of each group in table II.36) around plastic products, wood and furniture, rubber, metallics, clothing, leather, food industries and paper, in that order. In terms of magnitude the largest value added was - in order of importance - produced in food industries, clothing, textiles, wood and furniture, non-metallics, metallics, leather and chemicals. Some of these industries as it was indicated earlier, sell a relatively high proportion of their output to intermediate demand. This indicates that some sort of inter-industrial integration has been taking place between large and small enterprises through sub-contracting, etc. But the bulk of the private sectors output has been primarily for final consumption.

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APPENDIX TABLE 1

Gross value added in Iraqi Manufacturing industries
and changes in value added 1970-1976
(Constant factor costs) (ID Thousands)

Industrial Classifica- tion	Industries	1970	1971	1972	1973	1974	1975	1976	Δ value added 1970-1976
31.1.2	Dairy	1 267	1 444	1 648	1 872	1 990	1 776	10 176	8 909
31.1.3	Canning	335	978	1 266	1 510	846	1 748	1 972	1 637
31.1.4	Dates	1 015	1 780	2 175	2 196	3 013	1 677	2 903	1 808
31.1.5	Vegetable oil	5 390	2 939	4 887	3 639	6 068	6 042	22 268	- 3 122
31.1.6	Grain milling	2 498	2 927	1 878	1 947	2 220	2 123	2 069	- 429
31.1.7	Bakery	179	172	229	200	147	202	207	28
31.1.7	Macaroni	114	16	26	21	34	22	53	- 61
31.1.8	Sugar	1 530	1 201	2 979	5 035	4 454	4 134	5 659	4 129
31.1.9	Confectionery	715	818	535	1 317	802	505	1 033	318
31.2.2	Animal food products	42	29	45	130	67	54	94	52
31.3.1	Brewing	1 372	1 346	2 361	3 258	3 557	4 156	6 241	4 869
31.3.4	Soft drinks	1 181	2 207	2 105	3 606	3 639	4 307	2 407	1 226
31.4.0	Cigarettes	3 658	4 519	5 042	9 378	7 149	6 480	3 472	- 186
31.4.0	Tobacco curing	397	314	284	816	1 077	2 050	1 288	891
32.1.1	Cotton ginning	266	99	292	1 200	645	653	119	- 147
32.1.1	Wool washing	29	24	11	4	3	1	1	- 28
32.1.1	Medicated cotton	194	165	123	121	121	145	150	- 44
32.1.1	Jute	321	531	949	730	1 313	1 071	1 245	924
32.1.1	Cotton textiles	3 408	4 530	5 607	5 733	5 652	5 420	5 826	2 418
32.1.1	Wool textiles	1 761	1 662	1 600	1 586	1 725	1 627	1 855	94
32.1.1	Silk textiles	1 036	1 830	2 766	2 417	1 768	2 254	2 205	1 169
32.1.3	Hosiery	269	348	366	363	478	402	552	283
32.1.3	Knitting	469	242	264	332	411	527	576	107
32.1.4	Carpets	89	2	17	90	61	72	58	- 31
32.1.5	Shoe laces	97	92	103	233	108	55	133	+ 36
32.1.9	Cotton waste	11	6	12	11	7	10	17	6
32.2.0	Shirt making	261	231	172	75	99	96	97	- 164

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APPENDIX TABLE 1 (continued...)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	△ value added 1970-1976
32.2.0	Tailoring	579	640	1 026	1 038	931	1 308	233	- 346
32.3.1	Tanning	376	350	549	916	1 031	882	2 940	2 564
32.3.2	Leather salting	47	19	44	52	19	2	14	- 33
32.3.3	Other leather prod.	5	7	7	6	4	8	7	2
32.4.0	Footwear	1 720	1 285	1 127	1 179	1 372	1 553	1 420	- 300
33.1.1	Wood	21	10	16	14	23	2	19	- 2
33.2.0	Carpentry	376	385	437	401	408	371	364	- 12
34.1.1	Paper and prod.	587	337	202	2 550	3 190	1 734	1 644	1 057
34.2.0	Printing	572	1 884	1 291	1 037	1 191	1 022	1 328	356
35.1.1	Sulfur refining	61	61	337	556	1 379	1 412	2 673	2 612
35.1.2	Fertilizers	580	580	137	1 022	1 024	1 019	938	358
35.1.3	Plastic products	475	549	767	1 077	2 116	3 201	4 715	4 240
35.1.3	Crude plastic	111	111	111	111	116	240	151	40
35.2.1	Paints	123	220	269	250	349	681	1 053	930
35.2.2	Drug packing	146	411	808	1 227	1 385	1 155	1 308	1 162
35.2.3	Soaps & Detergents	1 300	2 225	1 259	947	1 092	1 061	934	- 366
35.2.3	Cosmetics	31	58	62	60	75	57	95	14
35.2.5	Matches	359	392	610	605	449	569	640	281
35.2.9	Synthetic silk	1 074	2 153	1 310	1 458	754	894	739	- 335
35.2.9	Other chemicals	48	121	132	164	144	148	225	177
35.3.0	Petroleum prod.	14 185	16 326	19 832	24 906	43 624	54 923	77 586	63 401
35.5.1	Rubber prod.	100	85	126	74	181	133	115	15
36.1.0	Pottery	38	33	35	35	37	39	41	3
36.2.0	Glass & prod.	56	198	635	359	875	897	312	256
36.9.1	Bricks	2 725	2 836	2 728	2 685	2 914	2 842	2 226	- 499
36.9.1	Juss	142	90	87	70	74	61	47	- 95
36.9.2	Cement	6 231	6 479	6 044	7 126	6 518	7 355	7 572	1 341
36.9.2	Tiles & mosaic	435	394	377	321	330	343	288	- 147
36.9.2	Concrete prod.	275	301	295	306	427	361	326	51
36.9.9	Deep proofing material	49	41	54	72	44	28	44	- 5

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APPENDIX TABLE 1 (Continued...)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Δ Value added 1970-1976
36.9.9	Asbestos	670	821	1 112	1 089	1 658	1 781	259	- 411
36.9.9	Stones	141	166	53	136	65	41	59	- 82
37.2.0	Pipes	30	31	32	27	53	258	254	224
37.2.0	Foundry	53	63	50	54	70	90	115	52
38.1.1	Aluminum utensils	157	71	130	99	161	147	121	- 36
38.1.2	Metal furniture	278	452	435	440	170	87	195	- 83
38.1.3	Smithy	369	243	451	373	361	530	624	255
38.1.9	Nails & razor blades	104	103	126	91	216	140	132	28
38.2.1-4	Non-electrical machinery	2 667	2 667	2 821	1 439	2 661	934	4 238	1 571
38.3.3	Air coolers & heaters	590	393	619	691	857	1 322	1 092	502
38.3.2	Radios & T.V.	11	161	1 050	1 621	2 582	3 993	4 000	3 989
38.3.9	Batteries	132	407	838	843	1 042	1 090	2 745	2 613
38.3.9	Other electrical equipment	531	153	798	704	703	1 222	2 025	1 494
38.4.3	Radiators	59	54	57	52	62	107	107	48
38.4.3	Car assembling	4 531	4 531	4 531	4 531	1 444	4 596	11 473	6 942
38.4.4	Bicycles	70	73	83	124	164	211	371	301
39.0.9	Miscellaneous	36	55	40	41	41	22	43	7

Source: Annual Industrial Surveys, 1970-1976.

Chapter III

EMPLOYMENT IN IRAQI MANUFACTURING

Introduction.

This chapter aims at answering the following questions. How has employment in the industrial sector performed? What was the sectoral composition of employment within industry and how did it evolve? How did employment growth in the industrial sector compare with that in the service sector in Iraqi economy? How did employment growth in Iraqi manufacturing compare with those in fast growth developing economies? How did employment in large establishments compare with that of small establishments? Which industrial divisions had best employment performance? Which individual industries generated large employment increases? In which size group lied the best employment industries? How did the best employment industries do in terms of output increases? How did best employment industries perform in terms of growth of productivity of wages, and of profits? And finally, whether there was any relation between employment performance and degree of capital intensity in the best employment industries.

But first a word about the definition of employment. There is a lot of controversy regarding which concept of employment is best suited for developing countries. For example at least one economist suggests that 'it is absurd to define the employment norm (in these countries) in terms of the conditions enjoyed by a tiny minority of the labour', (that is, wage employment in the modern sector)^{1/}. Fortunately, in manufacturing, because

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^{1/} Weeks, J., (1971). Reprinted in Solly E., De Kadt E., Singer E., and Wilson F. (eds.) (1973) Third World Employment, Penguin. p. 62.

the greatest part of the employment is composed of paid workers in large establishments, the choice of appropriate definitions, therefore, becomes less problematic. Nevertheless, a significant number is still employed by small establishments (which employ less than ten persons). In these establishments, and to a lesser extent in the former establishments, employment data do not only include paid workers in manufacturing production, but also working proprietors, business partners and unpaid family workers. While more will be said about this in the chapter concerning productivity, one should bear in mind that for the reasons just mentioned the relationship between employment and manufacturing production does not lend itself to an examination as precise as one would have hoped for.

The discussion in this chapter will fall under the following headings: (I) employment in industry and manufacturing; (II) the growth of employment in industry and services; (III) employment in large and small manufacturing establishments; (IV) employment by industrial divisions; (V) employment by individual industries; (VI) employment and the size distribution of establishments; (VII) employment and growth of output, productivity, capital intensity, wages and profits; (VIII) the skill composition of workers in manufacturing.* In the appendix to the chapter, government projected employment figures are critically assessed.

Employment in industry and manufacturing.

Employment in the industrial sector as a whole amounted to 225,000 in 1970, and increased to 342,200 by 1976: an increase of 52% and an average annual growth of 7.2%. The largest part of this employment throughout the period under discussion was in manufacturing

* Employment figures at an industry level are shown in Tables III-12 at the end of the chapter.

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followed by construction, mining and electricity in that order, as can be seen in Table III.1. Only a slight change has occurred in the proportional share of these component elements between 1970 and 1976: a 3 per cent gain by the construction sector at the expense mainly of manufacturing. Apart from this, the relative importance of the sectors remained more or less unchanged.

TABLE III.1 EMPLOYMENT IN THE INDUSTRIAL SECTOR AS A WHOLE IN SELECTED YEARS
(Thousands and percentages)

Years	Mining	Share in industry per cent	Manufac- turing	Share in industry per cent	Elec- tri- city	Share in industry per cent	Cons- truc- tion	Share in industry per cent	Total Indus.
1970	16.0	7	127.5	57	13.9	6.0	67	30	225
1976	21.4	6	139.4	55	13.4	5.4	113	33	342

Source: Manufacturing, mining and electricity are taken from the Annual Industrial Surveys. Construction is taken from Annual Abstract of Statistics. Pocket book 1976.

Manufacturing, the most important among the activities in the industrial sector in terms of employment engaged-139,400 persons in 1976. This was an increase of 43.5 per cent over 1970, which totalled 127,500 and an annual growth rate of 7 per cent (See table III.2). The growth of employment in manufacturing is reasonably high at 7 per cent per annum, and is greater than the 5 per cent growth rate during 1960-1970. Although these rates are higher than the average growth recorded for developing countries, 3.4 per cent (1960-70). It is still low compared with that recorded for manufacturing in Singapore, Sirlanka, Republic of Korea, and Malaysia, between 1963 and 1970. These countries all achieved a growth rate exceeding 11 per cent per annum^{1/}.

^{1/} UNIDO, Industrial Development Survey, pp. 15 and 91, New York, 1974. In the latter UNIDO Survey, July, 1979, constant annual rates of growth for developing countries were reported at 5 per cent between 1960-1975 and 7 per cent between 1963-1975.

The growth of employment in industry and services.

There is no way to show accurately what proportion the employment figures mentioned earlier represented of total employment in the economy. No actual estimates exist in the country either for total employment, or for various sectors. The figures that are available are projections, and as detailed in the appendix to this chapter, there is good reason to believe that they are not reliable. Meanwhile it is important both for planners and policy makers to know at least whether employment in industry generally and manufacturing particularly performed favourably or not compared with services (or non-commodity producing activities).

For this comparison, an estimate of employment in services is needed for the terminal year 1976. Actual employment figures for manufacturing and industry were available for 1970 and 1976, but for services it was available only for the initial year 1970^{1/}. The 1976 employment figures for services were estimated by the help of (1) labour-output ratio in services in 1970; (2) GNP in services in 1976; and (3) an estimated growth in the labour-output ratio in services during 1970-1976.

Among the growth rates which were available for labour-output ratio, that of construction, at 5 per cent per annum, is considered as the most suitable for the services^{2/}. It yielded a labour-output ratio of 1.45 for 1976, as against 1.94 in 1970. By dividing the GNP of services in 1976, by the estimated labour-output ratio, a figure of 569.8 is obtained. When employees in other government services are also added at both ends, an average annual rate of growth of employment in services of 10.4 per cent would result,

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1/ For manufacturing and industry as a whole from the Annual Industrial Surveys. For services in 1970, from the Annual Abstract of Statistics.

2/ Actual estimates for labour-output ratios and their growth rates were available for mining, manufacturing, construction and electricity. Mining was not suitable for obvious reasons. The growth of L/Q in manufacturing was high at 13 per cent. That of electricity was too low at 1 per cent. The 5 per cent of construction was considered reasonable in view of the fact that services generally are more labour-intensive just as construction.

which is much greater than the 7 per cent of manufacturing and the 7.2 per cent of industry. Also, the ratio of employment in the manufacturing to services fell from 25 per cent to 21 per cent, that of industry from 44 to 37 between 1970 and 1976.

Employment in large and small manufacturing establishments.

The highest growth of employment in manufacturing took place in modern and large establishments (employing 10 persons and more). Their share during 1970-1976, ranged between 55 and 74 per cent of the total as can be seen in tables 2 and 3. In absolute terms, the number employed by large establishments increased from 87 thousand

TABLE III.2. TOTAL EMPLOYMENT IN MANUFACTURING: LARGE AND SMALL ESTABLISHMENTS, 1964, 1968, 1970-1976 (Thousands and percentages)

	1964	1968	1970	1971	1972	1973	1974	1975	1976
Total manufacturing(Thousands)	86.8	105.0	127.5	n.a.	n.a.	154.5	157.5	194.5	189.4
Large establishments(Thousands)	46.0	58.0	83.2	93.2	109.0	112.5	116.3	126.4	129.3
Annual increment (Percentage)		5	20	12	17	3	3	9	2
Small establishments(Thousands)	38.8	47.0	44.3	n.a.	n.a.	42.0	41.2	68.1	60.1

Source: Based on Annual Industrial Survey.

in 1964 to 127.5 thousand in 1970, and to 189.4 thousand in 1976, representing a growth rate of 6.8 per cent per annum, during 1970 and 1976. This growth rate is slightly higher than the rate recorded by small establishments which was 5.2 per cent per annum. Statistics in tables III.2 and 3 indicate that the fall in the share of small establishments which began in 1970, seems to have been arrested in 1974, when a sharp rise amounting to between 20 and 27 thousand employees was recorded. These data, however, have to be interpreted with caution as there were large reclassification of establishment.

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as indicated earlier, it is interesting to note here that the employment elasticity in small establishments was 0.55 and higher than 0.39 for large establishments during 1970 and 1976.

TABLE III.3 SHARE OF LARGE AND SMALL ESTABLISHMENTS IN TOTAL EMPLOYMENT IN MANUFACTURING 1964, 1968, 1970 - 76.
(Percentages)

	1964	1968	1970	1971	1972	1973	1974	1975	1976
Total manufacturing	100	100	100	100	100	100	100	100	100
Share of large establishments	55	55	65	n.a.	n.a.	73	74	65	68
Share of small establishments	45	45	35	n.a.	n.a.	27	26	35	32

Source: Based on table III.2

But tables III.2 and 4, tell another interesting story. Consider first the annual increases in the total employment in manufacturing. They did not change much after the quadrupling of oil revenues in 1973. Table III.4 shows that the annual growth of employment did not change significantly from the 1973 figure of 6.5 per cent, and that the share of small establishments increased substantially in 1975 and 1976. However, because of the nature of employment data in small industries, we should rely more on employment figures for large establishments to get a clearer picture of the actual development. The annual increments show that growth rates before 1973 were generally much higher than those after 1974. The large

TABLE III.4 RATE OF GROWTH OF EMPLOYMENT IN MANUFACTURING 1960 - 1976.
(Percentages)

	1960-70	1964-70	1970-73	1970-76	1973-76
Total manufacturing	n.a.	6.6	6.6	6.8	7.0
Large establishments	5.0	9.6	9.4	7.6	4.7
Small establishments	n.a.	2.2	-13	5.2	12.7

Source: Based on Table III.2.

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investment allocation to industrial development that followed the increase in oil royalties in 1973, has not apparently produced commensurate increases in employment. The largest increase in 1975 was relatively modest and of a 'one-off' nature. Thus, while investment in manufacturing machinery alone more than doubled between 1973 and 1974 (from ID 33 million to ID 69 million), and quadrupled between 1974 and 1975 (ID 113 million), employment in large manufacturing increased only by about 4 thousand persons between 1973 and 1974, and by 13 thousand between 1973 and 1975. In terms of growth rate only in 1975 did it reach a high rate of 9 per cent, after that the increase tapered off and settled even below the level of the previous years. It is too early to assess the full impact on employment of the high investment in manufacturing and we should await the availability of employment figures for a reasonably longer period after 1974.

Employment by industrial divisions.

To find out in which manufacturing activities large and small establishments made their greatest or smallest contribution, table III.5 was constructed. It shows employment by industrial division, size of establishment, rate of growth and their ranking. The ranking of industrial divisions in terms of employment has, throughout the period under study been by and large as follows: (1) textiles, clothing and leather; (2) food, beverages and tobacco; (3) non-metallics; (4) fabricated metal products, and (5) chemicals, petroleum and rubber, in that order. However, the rate of growth and the increments over the period tend to differ between the divisions. In terms of growth rates, the order of importance was as follows: (1) paper and printing (2) chemical and petroleum; (3) fabricated metal products, machinery and equipment, (4) non-metallics, (5) basic metals and textiles and clothing. Wood and furniture and food, beverages and tobacco came

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TABLE III.5. EMPLOYMENT BY INDUSTRIAL DIVISIONS AND BY LARGE AND SMALL ESTABLISHMENTS.
AVERAGE ANNUAL RATE OF GROWTH 1970-1976 (THOUSANDS AND PERCENTAGES)

Industrial Division	1970	1971	1972	1973	1974	1975	1976	AAROG* 1970-76	Ranking by growth rate		
									Total	Large	Small
Food, beverages & tobacco	39.8	n.a.	n.a.	47.6	45.9	58.7	50.3	3.9	7		
large establishments	23.7	25.7	29.6	32.1	30.5	32.9	30.7	4.4		7	
small establishments	16.1	n.a.	n.a.	15.5	15.4	25.8	19.6	3.3			7
Textiles, clothing and leather	35.8	n.a.	n.a.	46.6	46.8	51.6	53.9	7.0	5		
large establishments	21.9	25.5	30.4	33.6	34.1	35.1	35.3	8.3		5	
small establishments	13.9	n.a.	n.a.	13.0	12.7	16.5	18.6	5.0			6
Wood and furniture	6.5	n.a.	n.a.	6.1	6.1	12.1	9.1	5.7	6		
large establishments	1.1	1.2	1.1	1.2	1.3	1.2	1.2	1.4		8	
small establishments	5.4	n.a.	n.a.	4.9	4.8	10.9	7.9	6.5			4
Paper and printing	3.1	n.a.	n.a.	5.0	5.6	6.9	7.1	14.8	1		
large establishments	2.5	3.2	3.9	4.5	5.0	6.0	6.2	16.3		1	
small establishments	7.6	n.a.	n.a.	0.5	0.6	0.9	0.9	7.0			3
Chemical, petroleum and rubber	8.2	n.a.	n.a.	10.7	12.4	14.3	15.7	11.4	2		
large establishments	8.0	8.9	10.1	10.5	12.2	13.7	14.9	10.9		3	
small establishments	0.2	n.a.	n.a.	0.2	0.2	0.6	0.8	26.0			1
Non-metallics	20.3	n.a.	n.a.	22.6	23.9	26.9	32.0	7.9	4		
large establishments	18.7	20.7	24.2	20.3	21.6	24.3	27.1	6.4		6	
small establishments	1.6	n.a.	n.a.	2.3	2.3	2.6	4.9	2.0			8
Basic metal products	0.8	n.a.	n.a.	0.6	0.7	1.1	1.2	7.0	5		
large establishments	0.3	0.2	0.3	0.3	0.4	0.5	0.5	8.9		4	
small establishments	0.5	n.a.	n.a.	0.3	0.3	0.6	0.7	5.7			5
Fabricated metal products											
Machinery & equipment	11.4	n.a.	n.a.	13.8	21.9	20.1	20.9	10.6	3		
large establishments	6.9	7.6	9.2	9.8	11.0	12.4	13.2	11.4		2	
small establishments	4.5	n.a.	n.a.	4.0	10.9	7.7	7.7	9.3			2

Source: Based on data in the annual industrial surveys.

* Average annual rate of growth

last. In most cases, the growth of employment in large establishments followed the growth of total employment, and was very close to the growth rate for the division as a whole. Non-metallics, and wood and furniture were the exceptions. Here the growth of large establishments fell behind total growth. Further, deviations from this pattern occur when small establishments alone are considered. But growth rates are not the most satisfactory indicators of performance. It can be seen in the table that all high employment rates relate to small bases. For this reason, industrial divisions have been ranked according to the size of the increment at two end points in table III.6.

TABLE III.6 RANKING OF INDUSTRIAL DIVISIONS ACCORDING TO SIZES, IN THE GROWTH OF EMPLOYMENT BETWEEN 1970 AND 1976
(Thousands and percentages)

Industrial Divisions	In employment between 1970 & 1976 (Thousands)			Share in total change in employment (Percentages)		
	Total	Large	Small	Total	Large	Small
1. Textiles, clothing and leather	13.1	13.4	5.0	27	28	27
2. Non-metallics	11.7	3.4	3.3	17	17	13
3. Food, beverages and tobacco	10.5	7.0	3.5	16	14	19
4. Chemical, petroleum and rubber	10.5	6.9	0.6	16	14	3
5. Fabricated metals and machinery	9.5	6.3	3.2	14	13	17
6. Paper & printing	4.0	3.7	0.3	6	3	2
7. Wood and furniture	2.6	2.1	2.5	4	4	13
8. Basic metals	0.4	0.2	0.2	0.6	0.4	1
Total employment in manufacturing	57.3	43.0	13.4	100.0	100.0	100.0

Source: based on data in the Annual Industrial Surveys.

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The ranking turned out to be entirely different from that based on growth rates. Industries with heavy weights in the total employment were the largest contributors to the increment in employment. The contribution by large establishments follows more or less the same pattern as the total. But the ranking changes considerably among small establishments. This is due to the fact that small industries in traditional fields like textiles, clothing, non-metallics, food, beverages and furniture are well established and have benefited from the expansion of demand that took place after 1974. Whereas in the relatively new fields of chemicals and basic metals very few small establishments usually operate. In addition, the structural changes that took place in the sector were on the whole neither of the type which strengthened inter-dependence nor of the kind which encouraged subcontracting.

Employment by individual industries.

Having identified industrial divisions in which highest employment increases were achieved, we shall now examine the individual industries that performed best. Table III.12 attached to this chapter is included for this purpose.

In the food group, the industry with the highest weight in the base year was dates packing, followed by vegetable oil, grain milling, sugar and dairy products. By 1976, the order has changed. Sugar assumed the first place, followed by vegetable oil, dates, dairy products, grain milling and canning. The effect of seasonal changes on date packing is evident. The highest increases in employment, however, was achieved by sugar, dairy products, canning and vegetable oil. This, together with the change in order of importance between the industries just mentioned, and the emergence of such new industries as canning, indicate that progress in food industries has been towards high degree of processing.

In tobacco and beverages, the increases in the brewing and soft drinks have been rather modest. In tobacco, a large definitional anomaly is discernible regarding cigarettes and tobacco curing.

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In textiles the order of importance of the component industries has not altered much. Cotton textiles, synthetic textiles and woolen textiles remained the dominant in that order. But jute textiles records a substantial increase. This also applies to synthetic textiles. Thus when the increases alone are counted, the order of industries becomes: cotton with an increase of (3113); synthetic textiles (2377); and jute (1397). The changes in the remaining industries in this group have been either moderate or negative.

In the clothing group, the increase in the major industries, hosiery, knitting, shirt making and footwear, have been very moderate. Only two industries: tailoring and carpet scored high increases: 2111 and 1289 respectively. The figure for footwear in the final year 1976, is grossly understated. The entire share of the public sector was excluded in this year. We assumed that this share remained at the previous year level.

In wood and carpentry the increases have been negligible. But this could have been caused by seasonal variations or definitional anomalies and incomplete coverage. The same applies to the negative increases in metal furniture, leather products, and crude plastics. The increases recorded for plastic products and rubber products, although very large compared with base year values, were nonetheless trivial at the sectoral level. Unlike the increases in paper(2325), printing (1362), tanning (2676), and petroleum products (3223), where they were important both at industry and sectoral level.

Within the chemical group only one change occurred. Fertilizers climbed to the fourth place from the fifth in 1970. The dominant industries in this group were, in terms of weights in the groups' employment: synthetic fibre, drug packing, soap and detergent, matches. But when the increases alone are counted, fertilizers becomes first (777), followed by drug packing (603), synthetic fibres (583), and soap and detergent (332). All these increases were significant at industry level but not so much at a sectoral level.

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Industries in the non-metallic group had a mixed fortune. Employment in pottery, tiles and mosaic, damp proofing materials, juss (clay), and stones, have fallen below the 1970 level. Again incomplete coverage may well have been the cause. However, among the dominant industries in non-metallic group some interesting changes have taken place. While bricks and cement kept their relative position and achieved substantial increases, glass products progressed to the third place replacing tiles and mosaic. Asbestos occupied the fourth place replacing concrete products which has now been relegated to the sixth place. In terms of increments, bricks came first (3745), followed by cement (2310), and glass products (1533).

None of the increases among metallic industries was significant at sectoral level. On the other hand, the increase in machinery (1201) was important, similarly for car assembling although its 484 increase was comparatively small. Consumers durables (radio and television, batteries, and electrical equipment), all registered significant employment increases: in excess of 1000 mark.

Employment and size distribution of establishments.

In what size establishments were the best employment industries? Consider Table III.7.

At least five of the best employment industries: bricks, synthetic textiles, paper products, tailoring, and printing, included a large number of establishments both at the initial year and the terminal year. Almost all these industries fell in the lower (10-40) and lower-medium (50-99) class category defined in chapter II^{1/}. In all these industries

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^{1/} Except for bricks and paper products, when the average employee per establishment in 1976 was slightly higher at 111 and 127 respectively. See table 7.

TABLE III.7

NUMBER OF ESTABLISHMENTS, AVERAGE NUMBER OF EMPLOYEE PER ESTABLISHMENTS, FACTOR INTENSITY, AND WAGE PER EMPLOYEE AND PROFIT PER EMPLOYEE AMONG THE 20 BEST EMPLOYMENT INDUSTRIES IN IRAQI MANUFACTURING 1970 AND 1976.

Ranking in terms of change in employment	Number of establishments		Average number of employee per establishments (nos.)		Factor intensity (ID)		Average wage per employee (ID)		Average profits per employee (ID)	
	1970	1976	1970	1976	1970	1976	1970	1976	1970	1976
	1. Bricks	137	147	92	111	217	136	179	365	49
2. Petroleum products	9	31	373	212	6 436	11 786	617	928	3 028	5 130
3. Tanning	7	7	111	493	483	851	366	657	162	619
4. Silk textiles	53	78	63	73	229	38	335	563	9	208
5. Paper products	24	25	35	127	696	519	336	619	342	480
6. Cement	5	8	602	665	2 071	1 423	436	800	1 579	454
7. Sugar	2	3	981	1 387	779	1 360	437	657	389	1 245
8. Tailoring	68	71	29	52	365	63	337	447	98	217
9. Tobacco curing	2	1	451	2 469	880	552	206	506	718	288
10. Jute textiles	4	3	247	963	324	431	298	506	52	202
11. Radio & television	2	2	26	854	207	2 340	358	738	-151	1 401
12. Glass products	2	8	65	208	431	188	346	564	77	230
13. Dairy products	8	6	149	447	1 063	3 793	358	657	699	268
14. Canning	6	10	102	201	546	980	287	615	257	518
15. Printing	37	40	45	76	580	437	395	581	169	315
16. Carpets	1	1	265	1 554	336	37	294	197	53	-136
17. Electric equipment	7	10	106	113	793	965	463	670	280	833
18. Non-electric equip.	1	4	2 414	903	1 105	1 172	474	638	631	534
19. Batteries	3	8	141	196	311	1 753	295	660	17	1 093
20. Soft drinks	15	11	193	220	409	647	370	650	66	428

Source: Our calculation based on data in the Annual Industrial Surveys. Details in relevant tables in Appendix

the number of establishment as well as the average number of employee per establishment has increased between 1970 and 1976.

In at least three industries (tanning, radio and television, and carpets) the number of establishments did not change, but the number of employee per establishment increased substantially. In fact, in all three cases, the class of the industry in the size distribution has climbed up from the low to the high level.

In eight industries the number of establishment has increased. These industries were petroleum products, cement, sugar, glass products, canning, electric equipment, non-electric equipment, and batteries. In at least three: petroleum products, glass products and batteries, the increases have been relatively large. However, almost all these industries fell in the upper-medium, and higher group class in the size distribution.^{1/}

In four industries: tobacco curing; jute, dairy products; and soft drinks, the number of establishment has declined, although not by a large margin. However, in each case, the number of employee per establishment has increased the industry was in the higher-medium class category to begin with.

Employment and growth of output, productivity, capital intensity, wages and profits.

Regarding employment and output, we shall consider the relation for the twenty best employment industries first, and then for the manufacturing sector as a whole. The former is shown in table III.3 and the latter in table III.12. (at the end of this chapter)

In at least two out of the twenty best employment industries, the positive (and substantial) increases in employment were accompanied by negative increases in output (represented by gross value added at constant prices). These two industries were bricks and tailoring. In four other industries: tobacco curing, jute, glass products, and

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Table III.8 Ranking of the twenty highest industries in terms of employment and gross value added (Constant factor costs) (ID thousands and Numbers).

Rank	Industries	△ in employ- ment (Numbers)	Rank	Industries	△ in output (ID Thousands)
1.	Bricks	3 745	1.	Petroleum products	63 401
2.	Petroleum products	3 225	2.	Dairy products	8 904
3.	Tanning	2 676	3.	Car assembling	6 943
4.	Synthetic textile	2 377	4.	Brewing	4 860
5.	Paper products	2 325	5.	Plastic products	4 240
6.	Cement	2 310	6.	Sugar	4 129
7.	Sugar	2 199	7.	Radio & television	3 939
8.	Tailoring	2 111	8.	Batteries	2 613
9.	Tobacco curing	2 018	9.	Sulfur refining	2 612
10.	Jute textiles	1 897	10.	Tanning	2 564
11.	Radio & television	1 656	11.	Cotton textiles	2 418
12.	Glass products	1 533	12.	Dates packing	1 888
13.	Dairy products	1 491	13.	Canning	1 637
14.	Canning	1 390	14.	Non-electric machinery	1 571
15.	Printing	1 362	15.	Other electric equipment	1 499
16.	Carpets	1 209	16.	Cement	1 341
17.	Electric equipment	1 270	17.	Soft drinks	1 226
18.	Non-electric machinery	1 201	18.	Silk textiles	1 169
19.	Batteries	1 142	19.	Drug packing	1 162
20.	Soft drinks	833	20.	Paper products	1 057
			21.	Paints c	930
			22.	Tobacco curing	891
			23.	Jute	924
			24.	Glass products	356
			25.	Carpets	31

Source: ECHA calculation based on data in the Annual Industrial Surveys.

carpets, while the increases in employment were among the best twenty, the increases in output were not. In the remaining 14 industries, the high employment rises were accompanied by output increases, (although the rank of the industries tends to differ between the two variables as shown in Table III.8).

The coefficient of correlation between changes in employment and changes in output in the twenty industries concerned was 0.564. Although accepted at 95 per cent confidence level, this correlation coefficient is very low. The same correlation when measured between changes over the 74 industries (large establishments) which made up the greatest part of the manufacturing sector was even lower: 0.340.

How did the best employment industries fair in terms of productivity and capital intensity? For the purpose at hand, the latter two measurements are represented by gross value added (constant factor costs) per employee. Thus, if any industry is capital intensive because it has a high gross value added per employee, then it also has a high productivity per worker.^{1/}

Table III.9 shows that in 1970, only in 8 out of the 20 best employment industries the capital intensity, in the way just defined, was high and above the average for the whole sector. The industries were petroleum products, cement, sugar, tobacco, curing, dairy products, electric equipment (consumer durable type), non-electric equipment and paper products. (The latter was close to the average). In 1976, 10 of the industries had high and above average capital intensity. Six of them namely, petroleum products, sugar, cement, dairy products, electric equipment, non-electric equipment, were the same as in 1970. The three new comers included radio and television, canning, and batteries. Tobacco curing went out, and tanning came very close to the average for the year^{2/}.

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^{1/} See Chapter on productivity.

^{2/} In the calculation of the averages for the years concerned, the extreme values of petroleum products and car assembling have been excluded. The average for 1970 was ID 741, and for 1976, ID 952.

Table III. 9. Summary of classification of the 20 best employment industries by output growth, size distribution, factor intensity (productivity), wages and profits in 1970 and 1976. (Large establishments only).

Industries ranked in terms of contribution to the increase in employment	Average number of employee per establishments	Performance in terms of:			
		Output increase	Productivity	Wages	Profits
1. Bricks	HM	Negative	L	L	L
2. Petroleum products	HM	H	H	H	H
3. Tanning	HM	H	L	H	L,H
4. Silk textiles	LM	H	L	L	L
5. Paper products	LM	H	L	L,H	H,L
6. Cement	H	H	H	H	H,L
7. Sugar	H	H	H	H	H
8. Tailoring	LM	Negative	L	L	L
9. Tobacco curing	H	L	H,L	L	H,L
10. Jute textiles	HM,H	L	L	L	L
11. Radio and television	L,H	H	L,H	H	L,H
12. Glass products	LM,HM	H	L	H,L	L
13. Dairy products	HM,H	L	H	H	H,L
14. Canning	HM	H	L,H	L,H	L,H
15. Printing	LM	H	L	H,L	L
16. Carpet	HM,H	L	L	L	L
17. Electric equipment	HM	H	H	H	L,H
18. Non-electric machinery	H	H	H	H	H
19. Batteries	HM	H	L,H	L,H	L,H
20. Soft drinks	H	H	L	H	L

Source. Based on tables 8 and 9. in this chapter.

Notations: L = low.
 H = high.
 L,H = low in 1970 and high in 1976.
 H,L = high in 1970 and low in 1976.
 HM = high medium size.
 LM = low medium size.
 The last two when mentioned together refer to 1970 and 1976.

The information in the table also clearly indicate that at least in 10 industries in which high employment increases were achieved the intensity of capital in the production tended to be below the average in the sector. The industries here included, bricks, synthetic textiles tailoring, and soft drinks. One has to bear in mind that the criterion used for measuring the capital intensity is only an indirect one. Therefore the conclusion suffers by the extent that this criterion is inexact.

Before considering the next questions, two more conclusions should be added here. One is that, except for petroleum products, which composed of a large number of establishments, almost all the other capital intensive and high employment industries contained small number of establishments: 10 and less.

Secondly, half of the industries with high capital intensity and high employment, were in the upper-medium class, and the other half in the high class in terms of distribution according to number of employee per establishment.

How did best employment industries perform in terms of profits and wages?

Both in the way it's calculated, in the causes of its increases, and in its function as a source of finance, profits in the context of Iraqi manufacturing, tends to differ from its conventional meaning. To begin with it contains depreciation which is by no means a negligible part. (See chapter on wages and profits). It may also have been inflated by price distortion, and bear no relation to economic efficiency. Finally, how instrumental have profits been in financing business expansion in Iraq is not known. Nevertheless, as these conditions are more or less faced by all industries, profit level, may indirectly indicate successful performance. To this extent, therefore, it would be interesting to know which of the best employment industries has also achieved high profits.

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In table III.9, seven best employment industries which scored high output increases were also among high and above average profit industries in 1970. In 1976, the number increased to eight - although two of the original industries cement and soft drinks, were now close runners. These industries included petroleum products, cement, tobacco curing, radio and television, dairy products, non-electric machinery, batteries and soft drinks. Electric equipment jointed in 1976. Paper products was a close runner in 1976.

It can also be seen that three industries, synthetic textiles, radio and television and batteries have raised their profits dramatically as they increased their employment and output. But one industry, carpets, whose output increase was almost negligible, was running close while employment was expanding.

Regarding wages, all best employment industries, with high output, productivity and profits were also among high and above average wages. The opposite, however, is not true. Wages are determined as much by economic factors as by non-economic factors. One can see in table III.7, that except in carpet industry, wages in every one of the twenty best employment industries have increased including those in which output per employee has declined e.g. bricks, synthetic textiles, tailoring and glass products.

Skill composition of workers in manufacturing.

Table III.10 shows trends in skill composition by the two broad categories of labour employed in (large scale) manufacturing: operatives and non-manual. The ratio of non-manual workers to the total number employed has been increasing, and that of operatives declining from 34.2 per cent in 1970 to 31.5 per cent in 1976. Excluding management, non-manual workers, include workers who are in complementary activities rather than in the production process proper. Compared with operatives demand for their services is less functionally related to the expansion of output.

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TABLE III.10 INDICES AND GROWTH RATES OF OPERATIVES AND NON MANUAL WORKERS
IN IRAQI MANUFACTURING 1970-1976.
(Thousands and percentages)(Large establishments)

	1970	1971	1972	1973	1974	1975	1976	Annual growth rate
Total employment	83.2	93.2	109.0	112.5	116.3	126.4	129.3	7.6
Index (percentage)	100.0	108.6	121.6	121.4	140.2	157.6	168.9	
Operatives	70.1	77.5	91.8	94.5	95.8	103.8	105.4	7.0
Index (Percentage)	100.0	107.4	120.6	124.1	134.2	148.4	157.3	
Non-manual	13.1	15.6	17.3	18.0	20.5	22.6	23.6	10.3
Index (percentage)	100.0	114.6	126.7	128.0	169.5	201.3	223.8	
Ratio of operatives to total employment (percentage)	84.2	83.2	84.2	84.0	82.3	82.1	81.5	

Source: Calculated from data in the Annual Industrial Surveys, Iraq.

How have the component elements in each of the broad employment categories changed?

Movements in the skill composition are given in table III.11.

The largest group among the operatives has been the semi-skilled and the non-skilled workers. But their share in the total has been falling: from 54.6 per cent in 1970 to 50 per cent in 1976. The greater increase has been in skilled workers foremen, and technicians, among the operatives, and in service workers among the non-manual. The share of skilled workers and foremen has increased only marginally, but that of technicians gained by a full one per cent. Semi-skilled, however, gained more than two per cent. The share of management, workers in marketing, and highly qualified workers remained more or less unchanged. In absolute terms increase in technicians tended to be very small. There were only 1,500 technicians in 1970 and 3,500 in 1976. The number of highly qualified workers was also small at 1,100 in 1970 and 1,900 in 1976. Furthermore, these groups appear even smaller in the light of high capital accumulation during that period, which increased by ID 232 million in manufacturing during that time.

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TABLE III.11 SKILL COMPOSITION IN IRAQ MANUFACTURING, 1970-1976 (LARGE ESTABLISHMENTS ONLY).
(Numbers and percentages)

Year	Management		Marketing		Services		Highly Qualified		Technicians		Skills & foremen		Semi & unskilled		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1970	362	0.3	8076	8.8	6040	6.6	1154	1.3	1473	1.6	24527	26.8	49987	54.5	91619	100
1971	337	0.3	9446	9.1	7021	6.8	1277	1.9	11923	1.9	26012	25.2	57133	55.4	103149	100
1972	333	0.2	10022	8.3	8364	7.0	1704	1.4	2490	2.1	30360	25.3	66775	55.6	120068	100
1973	393	0.3	9927	8.3	8789	7.4	1626	1.4	2734	2.3	29385	24.7	66263	55.6	119117	100
1974	462	0.3	11064	9.0	9905	8.1	1748	1.4	3322	2.7	34143	27.9	61718	50.4	122362	100
1975	423	0.3	11902	8.9	11527	8.7	1911	1.4	3563	2.7	37393	28.1	66208	49.8	132927	100
1976	(n.a.)		n.a.		n.a.		n.a.		n.a.		n.a.		n.a.		n.a.	

Source: Based on information in the Annual Industrial Survey, Iraq.

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TABLE III.12 EMPLOYMENT IN IRAQI MANUFACTURING 1970-76 AND ITS INCREASES BETWEEN INDUSTRIES. LARGE ESTABLISHMENTS ONLY.
(Numbers)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Δ in employment 1970-76
31.1.2	Dairy	1 192	1 440	1 751	1 885	2 276	2 510	2 683	1 491
31.1.3	Canning	614	628	1 128	1 454	1 937	2 060	2 013	1 399
31.1.4	Dates	6 275	5 809	9 039	10 440	6 456	7 081	3 411	-2 364
31.1.5	Vegetable oil	2 137	2 609	2 553	2 973	3 183	3 453	3 561	1 24
31.1.6	Grain milling	2 102	2 282	2 403	2 334	2 234	2 450	2 195	93
31.1.7	Bakery	754	736	744	698	669	717	736	-18
31.1.7	Macaroni	63	53	62	58	68	63	84	21
31.1.8	Sugar	1 963	3 265	2 968	3 172	3 571	3 598	4 162	2 199
31.1.9	Confectionary	1 301	1 415	1 454	1 422	1 524	1 666	1 879	578
31.2.2	Animal products	40	37	40	42	54	48	356	316
31.3.1	Brewing	585	579	695	753	907	1 212	1 273	688
31.3.4	Soft drinks	2 889	3 321	3 377	3 022	3 890	3 608	3 722	833
31.4.0	Cigarettes	3 322	2 764	2 246	2 418	2 397	3 821	2 182	-1 140
31.4.0	Tobacco carring	451	755	1 194	1 400	1 353	632	2 469	2 018
32.1.1	Cotton ginning	281	227	853	700	371	405	325	44
32.1.1	Wool washing	164	109	152	25	10	2	6	-158
32.1.1	Medicated cotton	237	228	215	196	217	230	212	- 25
32.1.1	Jute	989	1 342	2 070	2 748	2 941	3 006	2 836	1 897
32.1.1	Cotton textiles	6 212	7 703	9 112	9 795	9 850	9 850	9 325	3 113
32.1.1	Wool textiles	3 208	2 931	3 176	3 751	3 935	3 602	3 674	466
32.1.1	Silk textiles	3 344	4 095	5 076	5 069	5 341	5 594	5 721	2 377
32.1.3	Hoisery	727	750	777	862	811	930	1 093	366
32.1.3	Knitting	831	436	505	727	768	951	1 190	359
32.1.4	Carpets	265	538	1 397	2 000	1 557	1 684	1 554	1 289
32.1.5	Shoe laces	243	225	322	232	303	310	349	106
32.1.9	Cotton waste	41	48	38	48	39	43	40	- 1
32.2.0	Shirt making	821	909	1 024	957	910	911	922	101
32.2.0	Tailoring	1 585	2 953	3 154	3 411	3 483	3 636	3 696	2 111
32.3.1	Tanning	778	804	976	972	1 155	1 472	3 454	2 676
32.3.2	Leather salting	42	96	39	31	26	11	21	- 21
32.3.3	Other leather products	21	23	26	20	24	24	20	- 1
32.4.0	Footwear	2 138	2 120	1 489	2 050	2 359	2 414	2 789	651
33.1.1	Wood	83	89	37	86	87	112	141	50

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TABLE III-12 (Continued...)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Δ in employ- ment 1970-76
33.2.0	Carpentry	983	1 088	1 059	1 145	1 200	1 077	1 052	69
34.1.1	Papers and products	843	1 275	2 024	2 575	2 872	3 144	3 168	2 325
34.2.0	Printing	1 677	1 952	1 922	1 911	2 171	2 927	3 039	1 362
35.1.1	Sulfur refining	460	460	434	436	440	521	538	78
35.1.2	Fertilizers	220	220	633	786	863	990	997	777
35.1.3	Plastic products	429	443	710	696	765	1 078	1 191	762
35.1.3	Crude plastic	89	89	89	87	74	109	71	- 18
35.2.1	Paints	156	178	191	200	222	348	375	219
35.2.2	Drug packing	969	1 141	1 155	1 183	1 149	1 232	1 572	603
35.2.3	Soaps and detergents	545	680	688	780	821	871	877	332
35.2.3	Cosmetics	102	91	97	104	138	133	135	33
35.2.5	Matches	464	467	433	488	581	558	499	35
35.2.9	Synthetic silk	1 003	1 305	1 556	1 592	1 551	1 578	1 586	583
35.2.9	Other chemicals	82	115	120	129	146	155	187	185
35.3.0	Petroleum products	3 360	3 577	3 842	3 806	5 184	5 927	6 583	3 223
35.5.1	Rubber products	104	110	206	224	242	248	254	150
36.1.0	Pottary	80	58	118	125	145	129	66	-14
36.2.0	Glass and products	130	764	1 391	1 460	1 456	1 458	1 663	1 533
36.9.1	Bricks	12 570	13 673	16 271	12 207	12 092	14 544	16 315	3 745
36.9.1	Lime	268	240	261	193	185	186	210	-58
36.9.2	Cement	3 009	3 128	3 386	3 523	4 691	4 739	5 319	2 310
36.9.2	Tiles and mosaic	1 352	1 340	1 277	1 247	1 009	1 064	1 055	- 297
36.9.2	Concrete products	572	706	785	712	884	942	1 039	467
36.9.9	Damp-proof material	73	72	63	62	59	56	58	- 15
36.9.9	Asbestos	443	512	561	713	969	1 060	1 157	714
36.9.9	Stones	237	287	103	102	110	154	226	-11
37.1.0	Pipes	77	77	77	77	157	216	238	161
37.2.0	Foundry	222	164	210	242	277	286	312	90
38.1.1	Aluminum utensils	352	346	382	337	291	386	364	12
38.1.2	Metal furniture	778	810	772	718	429	450	456	-322
38.1.3	Smithy	664	667	664	706	849	1 098	946	282
38.1.9	Nails and razor blades	159	203	218	180	182	182	193	34
38.2.1-4	Non-electrical machinery	2 414	2 414	3 234	3 467	3 644	3 573	3 615	1 201

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TABLE III-12 (Continued...)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	in employ- ment 1970-76
38.3.3	Air coolers and heaters	744	402	544	623	980	1 056	1 131	387
38.3.2	Radios and televisions	53	445	770	751	1 215	1 257	1 709	1 656
38.3.9	Batteries	424	665	841	913	695	1 046	1 566	1 142
38.3.9	Other electrical equip- ment	828	1 107	1 202	1 612	2 006	2 389	2 098	1 270
38.4.3	Radiators	90	94	94	90	99	151	146	56
38.4.3	Car assembling	356	356	356	356	520	717	840	484
38.4.4	Bicycles	58	108	106	109	118	145	191	133
39.0.9	Miscellaneous	89	88	73	80	80	89	97	8

Source: Annual industrial survey, 1970-1976.

In manufacturing, the projected employment figure tends to be over-estimated for 1970, whereas the figure for 1976 is under-estimated. Thus, the projected figure for employment between 1970 and 1976 is below the actual employment (reported in the Annual Industrial Surveys) by 27,000: i.e. 15 per cent of the total.

Finally, it is interesting to note that according to the projected labour force and employment estimates there were in 1975 nearly a quarter million able persons who were willing to work but did not find jobs.

The projected figures for labour force, total employment unemployment and the sectoral breakdown of the number employed is reproduced in table III.13 for the benefit of the reader.

TABLE III.13 ESTIMATE OF TOTAL EMPLOYMENT AND EMPLOYMENT BY SECTORS, IN SELECTED YEARS.
(In thousands and percentages)

	1961	Percentage of total employment	1971	Percentage of total employment	1973	Percentage of total employment	1975	Percentage of total employment
Total employment	1 689.0	100.0	2 592.0	100.0	2 762.2	100.0	2 941.4	100.0
Agriculture	780.5	46.0	1 433.7	55.3	1 540.4	55.7	1 654.4	56.2
Mining	11.5	0.06	16.5	0.0	18.5	0.06	20.0	0.06
Industry	199.9	11.8	242.4	9.3	257.3	9.3	277.0	9.4
Tertiary (Services)	697.0	41.3	899.0	34.7	946.2	34.2	990.0	33.6

Source: AAS 1976, and table III.13

* There is a calculation error in the document (AAS 1976) regarding this figure.

TABLE III.14 PROJECTED LABOUR FORCE, TOTAL NUMBER EMPLOYED, ITS SECTORAL COMPOSITION, AND NUMBER UNEMPLOYED IN THE IRAQI ECONOMY, 1960-1975 (NUMBER IN THOUSANDS)

	Agriculture	Mining	Manufacturing	Electricity, gas & water	Construction	Trade	Transport	Services	Others	Total employed	Population unemployed	Labour force
1960	733.9	11.0	130.0	11.8	58.0	100.0	110.0	245.0	200.0	1 599.7	31.4	1 631.1
1961	730.5	11.5	130.0	11.9	58.0	105.0	114.0	250.0	210.0	1 670.9	63.6	1 734.5
1962	827.0	12.0	130.0	12.0	50.0	110.0	117.0	255.0	215.0	1 728.0	109.8	1 837.8
1963	873.5	12.5	130.0	12.0	43.1	115.0	121.0	260.0	220.0	1 787.1	154.1	1 941.2
1964	920.1	13.0	130.0	12.0	47.2	120.0	125.0	265.0	220.0	1 852.1	192.5	2 044.6
1965	1 009.6	13.5	131.0	12.2	61.0	125.0	129.0	270.0	230.0	1 985.3	162.7	2 148.0
1966	1 103.1	14.0	140.0	12.4	70.0	130.0	133.0	275.0	230.0	2 107.5	143.8	2 251.3
1967	1 177.4	14.5	140.0	12.6	59.1	135.0	137.0	285.0	240.0	2 200.6	154.1	2 354.7
1968	1 253.6	15.0	146.0	12.8	66.0	140.0	140.0	290.0	260.0	2 323.4	134.7	2 458.1
1969	1 306.4	15.5	148.0	12.9	67.0	145.0	143.0	295.0	270.0	2 402.8	138.7	2 561.5
1970	1 385.7	16.0	150.0	13.0	67.0	150.0	150.0	300.0	275.0	2 506.7	138.2	2 664.9
1971	1 434.7	16.5	160.0	13.4	69.0	155.0	154.0	310.0	280.0	2 592.6	166.5	2 759.1
1972	1 486.2	17.5	165.0	13.9	71.0	160.0	158.0	320.0	285.0	2 676.6	181.4	2 858.0
1973	1 540.4	18.5	170.0	14.3	73.0	164.0	162.0	330.0	290.2	2 762.2	200.1	2 962.3
1974	1 596.6	19.2	178.0	14.6	75.0	167.0	166.0	340.0	295.0	2 851.4	218.9	3 070.3
1975	1 654.4	20.0	185.0	15.0	77.0	170.0	170.0	350.0	300.0	2 941.4	240.1	3 181.5

Source: Central Statistical Organization Ministry of Planning, 1976.

Note: In the calculation of averages in the text, the extreme value of petroleum products have been excluded. All extreme values have been excluded in calculating average profits.

APPENDIX

Total employment and projected sectoral employment.

Accurate data regarding supply of labour in Iraq are not available. The data that are available are mere projections^{1/}. The methodology behind the projection is not discussed. But there are reasons to believe that they are made on weak basis. Detailed assessment of the employment estimates is given elsewhere - here are some examples^{2/}.

The projected figures do not take into consideration the trend in the structural changes in the economy, whether before the increase in oil revenues or after. It also fails to take account of rural emigration. Thus while recent population census shows marked decline in rural vis-a-vis urban population, and the structural analysis shows continual contraction in the agricultural output, both in absolute and relative terms throughout the period 1965-1975, (see chapter I), the projected employment figures for agriculture show increases in the number employed, and a sustained increase in the share of agriculture in total employment^{3/}. (See table III.13).

The second inconsistency relates to employment projection for services. Data indicated that the growth rate and the share in GNP of services were the highest, and were continuously increasing, especially after the quadrupling of oil revenues. Knowing that services are also by nature labour intensive activities, therefore, it would be reasonable to expect an increase in their share in total employment and not a decline as projected in table III.14.

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1/ These estimates are made by Nils Strom and published in the AAS 1973.

2/ Zeki Fattah, op.cit, pp. 132-134.

3/ According to the estimates given in AAS 1976, more than 51 per cent of the population now lives in urban centres.

Chapter IV

CAPITAL AND LABOUR PRODUCTIVITY IN IRAQI MANUFACTURING

Introduction.

The significance of industrialization for economic development stems partly from higher productivity in manufacturing compared with other economic sectors, and from the role of total factor productivity as a source of growth. Industry is the vehicle and the focus of technological progress. Although very little is generated in developing countries in the way of technical innovation they nonetheless benefit from the transfer of technology from abroad and from the process of learning by doing which accompanies industrialization. Additional important factors also contribute to labour productivity, the rate of capital accumulation, change in the level of education and health, composition of skill of worker, and management, and scale of production. Labour productivity here is considered as an index for all the factors affecting production; be it improvement in quality of labour, introduction of new techniques of production, increases in investment, or gains from returns to scale.

The concept of labour input applied here is employment in person-years i.e. the number of persons engaged in a given year weighed by the duration of their employment. Only two types of labour have been distinguished: operatives and non-manual workers. The application of the concept, however, is dictated by the availability of data, and it suffers from quantitative and qualitative limitations^{1/}.

Since 1959 a number of labour-laws have been introduced in Iraq and recently, union organization, especially in large firms, was strengthened. The labour laws introduced changes against freedom of dismissal, which together with the provision of social security, sick leave, profit sharing, over-time pay and minimum wage legislation greatly helped to stabilize employment in manufacturing.

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^{1/} For available data on labour and limitations, see appendix I to this chapter.

In the measurement and analysis of productivity in Iraqi manufacturing, an attempt will be made to answer the following questions.

How did the overall labour productivity in manufacturing perform over the years, and was it influenced by changes in capital - labour ratio? How did capital productivity perform? Did this change affect labour productivity? How did productivity index change according to the major types of skills? How did labour productivity in large and small establishments compare? How did the various industrial divisions perform in terms of labour productivity? Were there large differences in productivity between industries producing consumer goods, intermediates and capital goods? Which were the individual industries with high productivity? Were they users of capital intensive techniques? Were they industries with large scale production? And finally, how did productivity in Iraqi manufacturing compare with those of other countries?

The study of capital and labour productivity falls under the following sections: (I) capital and labour productivity; (II) productivity in large and small establishments; (III) productivity and factor intensity; (IV) productivity and scale of production; and (V) international comparison of productivity in manufacturing. There are also two appendices. The first concerning the source and the limitation of data used for the measurement and analysis of productivity and the second relate to the definition and measurement of capital intensity.*

I. Capital and labour productivity

In table IV.1, capital productivity, labour productivity and capital-labour ratio for aggregate manufacturing are measured during the years 1964 and 1970 to 1976. The indices for those three ancillary series and for the basic series, output (gross value added at constant factor costs) employment and capital stock are shown in table IV.2. These indices show annual changes more clearly, they also separate large establishments from the total manufacturing.

Definition and methods of measurement of gross value added, employment and capital stocks have been discussed in relevant chapters in this study. Here we only need to repeat that capital stock is measured ex-ante, i.e. inclusive

* Indices for productivity are shown in Vol. II. ch. 3.

of capital under-utilization. Capital productivity is derived by dividing the output index by the index for capital stocks, and labour productivity, by dividing the output index by the index for employment. The capital productivity series is the reciprocal of the capital-output ratio: a fall in capital productivity means a rise in the capital-output ratio.

Analysis of the three basic series (output, employment and capital stock) are given elsewhere in this study. It suffices here to observe that all three show a steady and uninterpreted increase throughout the period. The growth of output and capital stock were both high and above that of employment, and the margin of difference widens during the seventies. The growth of output exceeds that of capital stock only marginally, and even this marginal increase takes place in the second period (1970-1976) (See table IV.2).

Now, considering the three ancillary series, and beginning with the labour-output ratio (L/Q) (the inverse of the labour productivity), one can see in table IV.1, that there has been a continuous decline in this ratio, indicating increases in labour productivity. The L/Q ratio, however, has in every year been lower when large establishments alone are considered - implying that labour productivity in the latter has been higher than in small establishments. Even within large establishment, labour productivity tends to change considerably when petroleum products is excluded. While these will be discussed in detail in the following sections, it is interesting to note that the growth of labour productivity in manufacturing during 1970-76, was much higher than during 1964-70: 9.9 per cent as against 4.1 per cent per annum respectively. The differential, however, narrows when petroleum products industry is excluded. The growth rates become 4.0 per cent and 3.4 per cent per annum respectively. But how has productivity increase been influenced by capital accumulation in manufacturing?

Between 1970 and 1975, the total increase in employment in Iraqi manufacturing amounted to 67 thousand persons: an increase of 52 per cent and an average rate of growth of 8.8 per cent per annum. During the same period, capital stock in manufacturing increased by ID 374 million: an increase of 108 per cent and an average

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rate of 15.8 per cent per annum. This high rate of capital accumulation is reflected in the column for K/L ratio in table IV.1 and IV.2. This ratio in table IV.1 increases from 2:1 in 1964 to 2.7:1 in 1970, and finally, reaches as high as 3.7:1 in 1975. The high ratio of K/L, is also indicated by the average annual increases based on the K/L indices in table IV.2. But how has capital productivity itself performed?

Columns 1 and 2 in table IV.1, show that while the value of gross capital stock in Iraqi manufacturing increased from ID 345 million in 1970 to ID 719 million in 1975, the gross value added rose from about ID 91 million to ID 200 million, yielding a K/Q ratio of 3.8:1 and 3.6:1 respectively in the years mentioned. This means that in 1975, there was for every Iraqi dinar worth of manufactured goods produced, 3.6 dinars worth of capital invested in manufacturing. This ratio is marginally higher than the ratio for 1964, and much higher than those observed for other developing countries.^{1/}

In table IV.2, the index for capital productivity also bears this out. While capital productivity in manufacturing throughout the 1970s is above the initial year's level (1970), it still is below the level of 1964. The index for large establishments shows greater changes. The data indicate a tangible improvement in capital utilization up to the year in which massive increase in capital accumulation in manufacturing has occurred, following the quadrupling of oil revenues. Since then capital productivity seems to have sunk again.

The relatively high and stagnant capital-output ratio has to be viewed against a background of large expansion in the activities of capital intensive industries (e.g. petroleum products, dairy products, sugar, brewing, consumer durables, non-electric machinery and batteries), and construction of a number of new capital intensive industries (sulfur refining, crude plastic, paints, car assembling, for example). The significant output expansion that has taken place in such industries as cotton textiles, synthetic textiles, cigarettes, tanning, cement, paper products and the rest of the industries which are characterized by relatively low capital intensive techniques of production has apparently not been sufficient to redress the situation.

^{1/} See Zaki Fattah ch. 4.

TABLE IV.1 GROSS VALUE ADDED (CONSTANT FACTOR COSTS), EMPLOYMENT, CAPITAL-OUTPUT RATIO, AND CAPITAL-LABOUR RATIO IN IRAQI MANUFACTURING 1964 AND 1970-1976 (ID million and ratios)

Year	Gross Value added		Employment		Capital stocks	L / Q		K/Q	K/L
	Total	Large	Total	Large	Total	Total	Large	Total	Total
1964	50.4	34.8	86.9	48.0	170.5	1.7:1	1.4:1	3.4:1	2.0:1
1970	90.8	71.6	127.5	83.2	345.0	1.4:1	1.2:1	3.8:1	2.7:1
1971	n.a.	79.5	n.a.	93.2	374.6	n.a.	1.2:1	n.a.	n.a.
1972	n.a.	91.8	n.a.	109.0	406.9	n.a.	1.2:1	n.a.	n.a.
1973	128.6	110.8	154.5	112.5	453.8	1.2:1	1.0:1	3.5:1	2.9:1
1974	148.8	131.8	157.5	116.3	549.9	1.06:1	0.88:1	3.7:1	3.5:1
1975	200.4	148.5	194.5	126.4	719.0	0.97:1	0.85:1	3.0:1	3.7:1
1976	237.4	189.5	189.4	129.3	n.a.	0.80:1	0.68:1	n.a.	n.a.

Source: Figures for 1964 are taken from Zeki Fattah, p. 151. For the rest of the years, capital stock, figures are estimated in chapter IV & II and the figures for value added and employment are estimates based on data in the Annual Industrial Surveys.

TABLE IV.2 INDICES AND AVERAGE ANNUAL GROWTH RATES OF GROSS VALUE ADDED (CONSTANT FACTOR COSTS), EMPLOYMENT, CAPITAL STOCK, LABOUR-OUTPUT RATIO, CAPITAL-OUTPUT RATIO, AND CAPITAL-LABOUR RATIO IN IRAQI MANUFACTURING, 1964 AND 1970-1976. (ID Million and percentages)

	Gross value added		Employment		Gross capital stock	L / Q		K / Q		K / L	
	Total	Large	Total	Large	Total	Total	Large	Total	Large	Total	Large
1964	55.5	59.3	51.1	67.3	49.4	92.1	113.5	112.3	120.0	96.7	73.4
1970	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1971	n.a.	111.0	n.a.	112.0	108.6	n.a.	101.0	n.a.	102.2	n.a.	97.0
1972	n.a.	128.2	n.a.	131.0	117.9	n.a.	102.2	n.a.	108.7	n.a.	90.0
1973	141.6	154.7	121.2	135.2	131.5	85.5	87.4	107.7	117.6	108.5	97.2
1974	163.9	184.1	123.5	139.8	159.4	75.3	75.9	102.8	115.5	129.1	114.0
1975	220.7	208.8	152.5	151.9	208.4	69.1	72.7	105.9	100.2	136.6	137.2
1976	261.4	264.6	148.5	155.2	n.a.	56.8	68.6	n.a.	n.a.	n.a.	n.a.
1964/ 1976	13.8	13.3	9.3	7.2	13.9	-4.1	-5.6	-0.5	-1.6	-3.2	5.8
1970/ 1976	17.3	17.6	6.8	7.6	15.8	-9.9	-9.3	1.0	0.03	6.4	6.5

Source: Figures for 1964 are taken from Zeki Fattah, p. 151. For the rest of the years, capital stock figures are estimated in chapter I, Vol. 2, and the figures for value added and employment are estimates based on data in the Annual Industrial Surveys.

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TABLE IV.3 AVERAGE ANNUAL RATE OF GROWTH OF VALUE OF GROSS OUTPUT, GROSS VALUE ADDED (CONSTANT 1967 FACTOR), EMPLOYMENT, OPERATIVES, NON-MANUAL WORKERS AND GROSS VALUE ADDED: PER EMPLOYEE, PER OPERATIVE AND PER NON-MANUAL WORKER IN IRAQI MANUFACTURING, 1970-76. (OVERALL MANUFACTURING AND MAJOR INDUSTRIAL GROUPS)(PERCENTAGES)(LARGE ESTABLISHMENTS ONLY)

	Value of gross output	Gross value added	Emplo- ment	Opera- tives	Non- manual worker	Value Emple- yee	Value added Opera- tive	per: non- manual
All manufacturing	24.9	25.0	7.0	7.8	14.4	9.3	9.9	6.7
Food	15.1	3.7	6.2	4.5	11.9	7.9	9.7	1.0
Beverages	18.1	21.9	7.3	8.7	6.0	15.3	14.2	15.3
Tobacco	8.0	-0.1	-3.6	-4.3	0.7	-0.8	-0.04	-5.5
Textiles	10.0	8.8	7.4	8.1	8.3	1.0	1.1	0.3
Clothing	10.5	-2.9	6.4	10.4	18.5	-11.7	-11.4	-13.7
Leather	28.5	40.6	28.1	28.2	27.7	8.9	8.8	8.9
Wood	7.6	-1.6	9.2	9.0	9.6	-2.0	-9.8	-10.3
Furniture	-2.4	-0.5	1.1	1.4	-0.5	-10.0	-1.9	-0.1
Paper & production	15.4	18.7	24.7	25.0	23.9	-4.8	-5.0	-4.1]
Printing	12.7	5.3	10.4	9.0	18.4	-4.6	-3.3	-11.0
Industrial Chemicals	26.6	27.1	16.9	16.4	18.3	16.4	17.3	14.1
Chemical products	21.0	0.7	7.9	7.3	11.1	0.2	1.0	-3.1
Petroleum products	29.7	32.7	11.9	9.7	19.6	18.7	21.0	10.9
Rubber products	12.7	2.4	16.0	16.8	12.7	-11.8	-12.3	-9.2
Plastic products	39.3	45.6	18.1	19.3	14.1	22.7	21.7	26.3
Non-metallics	12.6	2.5	6.8	6.9	6.5	-4.9	-4.9	-4.9
Basic metals	29.7	25.8	11.0	8.6	24.1	13.6	16.2	1.5
Fabricated metals	6.4	5.1	1.8	0.5	6.8	2.7	3.6	-0.7
Machinery	11.0	8.2	7.0	8.3	0.3	1.0	-0.2	7.7
Durable consumer goods	40.1	40.3	20.3	20.7	18.4	16.2	16.0	17.3
Transport equipment	18.2	16.7	15.4	16.3	10.1	1.6	0.6	6.4

Source: Based on indices calculated from data in the Annual Industrial Surveys, and shown in Volume II, Chapter 3.

Note: The growth rates here are based on the geometric indices shown in Vol. II, Chapter 3.

Analysis of labour productivity by industrial groups is based on tables IV.3 and IV.4. Table IV.3 shows the average annual rate of growth of gross output, gross value added, employment, operatives and non-manual workers. It also shows the growth of productivity in terms of gross value added per employee, per operative, and per non-manual worker both at major industrial group level and overall manufacturing.

Table IV.4 contains the ranking of major industrial groups according to the gross value added (at constant factor cost) per employee. This is the concept of labour productivity applied here. The indices relating to labour productivity are shown in appendix to chapter 3, Vol. II.

Productivity as indicated earlier represents the contribution of all production factors. The most refined measurement would include each production factor with weighted components. No such procedure is applied here. Therefore, the productivity of labour here should be taken as reflecting changes in efficiency, capital input, and in the quality of the labour force. The productivity index is obtained by dividing the index of gross value added at constant factor costs by the indices of total employment, operatives, and non-manual workers separately.

The following can be seen in table IV.3.

- The rate of growth of productivity in Iraqi manufacturing during 1970-1976 has been greater than the growth of employment in the sector but not by a large margin: 9.3 per cent against 7.0 per cent per annum respectively.
- The rate of growth of employment has been far below that of real value of gross output and of real gross value added: 7 per cent against 25 per cent per annum was the highest, compared with total employment and operatives, the growth of productivity per non-manual worker (6.7 per cent per annum), was the lowest at the manufacturing level.
- In ten out of twenty industrial groups in table IV.6 the growth of non-manual workers was higher than that of operatives and total employment. And in each case, the growth in productivity by non-manual workers was lower.

- In at least six industrial groups the growth in productivity (gross value added per employee) was higher than the average growth recorded for the manufacturing sector as a whole. These industries were: beverages, industrial chemicals, petroleum products, plastic products, basic metal, and durable consumer goods. In two other cases, food and leather products, the growth rates were very close. The same industrial group also recorded higher than average growth for productivity per operative. But fewer industries score above average growth of productivity per non-manual, and some different from those just mentioned, (beverages, leather, industrial chemicals, plastic products, machinery, durables consumer and transport equipment).

- The six industries with high productivity growth mentioned in IV.3 above also had a high rate of growth in value added. But in at least eight cases, high or positive growth rates for value added were accompanied by low or negative growth in productivity.

Table IV.4 ranks industrial groups in terms of value added produced by an employee in 1970/1973 and 1976.

- As mentioned earlier, the average value added generated by an Iraqi worker in manufacturing has increased from ID 855 in 1970 to 1,377 in 1976: an increase of 61 per cent; or an average annual growth of nearly 8.3 per cent.^{1/} This is reasonably high rate, but how does it compare with the growth of wages and the growth of productivity in other countries? This will be seen later.

- Considering the ten highest generators of value added in 1970 and 1976, six of the groups which qualified in 1970, did so also in 1976, with the top two remaining unchanged (petroleum products, and transport equipment).

- The industrial groups which were among the top ten in 1970, but slipped to a lower place in 1976, included: footwear and rubber products. And the industries which climbed up the list were: beverages, basic metal products, and electrical machinery and fabricated metal products.

^{1/} The figures for the overall manufacturing in table IV.3 relates to large establishments alone. There is a slight difference between the growth of productivity in total manufacturing and in large establishments. In total manufacturing value added per employee rose from ID 712 in 1970 to ID 1,237: an increase of 74 per cent and an average annual rate of growth of 9.6 per cent. /...

- Excluding food and tobacco, all industrial groups which recorded relatively high value added per employee (either above or around the average for manufacturing), also have had high and in most cases above average growth of gross value added (in table IV.3).
- Judging by the type of industrial groups (at the top) of the productivity list, capital intensive industries are most likely to produce relatively high value added per employee. However, not every industry with capital intensive techniques would produce high value added per employee. Among the top ten one can still find traditional industries like beverages, food, and tobacco which are not known for the capital intensity of their production techniques. And among producers of low value added per employee there are such industries as fabricated metal products, printing and paper products, which use modern techniques of a capital intensive nature. The scale of production seems also to have played a role. More about this later.
- Keeping in mind the effect of price distortion on the estimates of value added, and profits, since the latter is derived as a residual, almost every industrial group (except machinery) which was among the top ten producers of value added per employee, was also among the highest producers of profit per employee (See chapter on wages and profits).

Having considered the industrial groups which ranked high in terms of labour productivity, what are the individual industries in each group that performed very well?

Petroleum products, is made up of one industry. In food industries, dates packing, dairy, canning and sugar rated the highest in that order. Four industries: vegetable oil, grain milling, macaroni, animal fodder had negative productivity growth. The remaining industries in this group recorded low productivity growth as can be seen in table IV.1C attached to this chapter. In beverages both soft drink and brewing recorded high productivity growth: 8 and 13 per cent respectively. Cigarettes had a positive growth, and tobacco curing recorded a negative growth. Textiles as a group had a productivity growth of 1 per cent only. A large number of activities in this group had negative growth rates. This also applies to the whole of clothing industries

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Table IV.4 Ranking of Industrial Groups According to Gross Value Added per Employee in Iraqi Manufacturing in Selected Years.
(Large establishments)(Constant factor costs)(Iraqi Dinars)

1970 rank	Industry	Value added per employee	1973 rank	Industry	Value added per employee	1976 rank	Industry	Value added per employee
	Overall manufacturing	860	1	Overall manufacturing	987		Overall manufacturing	1 473
1.	Transport equipment	9 246	1.	Transport equipment	8 481	1.	Petroleum products	11 786
2.	Petroleum products	4 222	2.	Petroleum products	6 544	2.	Transport equipment	10 154
3.	Plastic products	1 131	3.	Cigarettes	2 670	3.	Plastic products	3 856
4.	Non-electrical machinery	1 105	4.	Beverages	1 818	4.	Industrial chemicals	2 352
5.	Cigarettes	1 075	5.	Plastic products	1 517	5.	Beverages	1 731
6.	Rubber products	962	6.	Industrial chemicals	1 291	6.	Electrical machinery and supplies	1 516
7.	Chemical products	943	7.	Chemical products	1 055	7.	Food manufacturing	1 254
8.	Industrial chemicals	943	8.	Electrical machinery and supplies	990	8.	Non-electrical machinery	1 172
9.	Footwear	804	9.	Papers and products	990	9.	Cigarettes	1 023
10.	Food manufacturing	796	10.	Leather and products	952	10.	Chemical products	955
11.	Beverages	735	11.	Food manufacturing	730	11.	Leather & products	847
12.	Paper and products	696	12.	Non-metallic products	692	12.	Footwear	712
13.	Electrical mach.& supplies	617	13.	Footwear	575	13.	Basic metal products	671
14.	Printing & publishing	580	14.	Printing & publishing	543	14.	Pottery & earthenware	627
15.	Non-metallic products	576	15.	Textiles	527	15.	Fabricated metal prods.	547
16.	Leather and products	509	16.	Fabricated metal prods.	517	16.	Paper and products	519
17.	Textiles	485	17.	Manufacturing not else-where classified	512	17.	Textiles	515

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Table IV.4 "Continued"

1970 rank	Industry	Value added per employee	1973 rank	Industry	Value added per employee	1976 rank	Industry	Value added per employee
18.	Pottery & earthenware	475	18.	Non-electrical machinery	415	18.	Rubber products	453
19.	Fabricated metal prods.	465	19.	Furniture & fixture	350	19.	Manufacturing not else- where classified	443
20.	Glass and products	431	20.	Rubber products	330	20.	Printing & publishing	437
21.	Manufacturing not else- where classified	404	21.	Pottery & earthenware	280	21.	Non-metallic products	426
22.	Wearing apparel	394	22.	Wearing apparel	260	22.	Furniture & fixtures	346
23.	Furniture & fixtures	383	23.	Basic metal products	254	23.	Glass and products	188
24.	Basic metal products	311	24.	Glass and products	246	24.	Wearing apparel	187
25.	Wood except furniture	253	25.	Wood except furniture	163	25.	Wood except furniture	135

Source. Based on the estimate for value added, and employment from figures given in the Annual Industrial Survey 1970-1976.

recording as a group a negative growth of 12 per cent. Leather industries on the other hand recorded a 9 per cent productivity growth contributed mainly by tanning. Productivity in wood and furniture declined. But there are large statistical anomalies with regard to these industries. The productivity growth in paper and printing was also negative. The high growth in the industrial chemicals takes place mainly in sulfur refining. Fertilizers, the other industry in this group had a negative growth. The very low productivity growth in chemical industries (0.2 per cent per annum) was caused by the negative growth rates in the major industries in this group, namely, soaps, cosmetics and synthetic fibres. Other like matches, drug packing and paints scored positive growth rates. Rubber products industry was among the negative productivity growth group. But plastic products and crude plastics both had a high productivity growth with the former being higher. Most of the industries in non-metallics had a negative growth of productivity. In fact, only the damp proofing material industry recorded a positive growth of productivity of about 2.1 per cent per annum. In contrast, basic metals which included foundry and pipes manufacturing scored positive productivity growth. Similarly for fabricated metal products, although the growth rate here was small: 2.7 per cent per annum. In machinery group too, the growth rate was positive but was low: 1 per cent per annum. Among durable consumer goods, radio and television assembly recorded the highest productivity growth: nearly 50 per cent per annum. In aircoolers and heaters, and other electrical equipment, the productivity growth was positive but much smaller. Finally, in transport equipment, car assembling and radiators had a positive but small growth of productivity: around 2 per cent per annum. Bicycles on the other hand had a growth rate of 8 per cent per annum.

Labour productivity by major types of manufacturing, consumer, intermediate and capital goods is shown in table IV.5.

TABLE IV.5 THE GROWTH OF LABOUR PRODUCTIVITY IN MANUFACTURING INDUSTRIES 1970-76.
(Percentages)(Large establishments)

	All manu- facturing	Consumer goods	Inter- mediates	Capital goods	Non- durable goods	Durable goods
Gross value added per employee	9.3	5.5	14.7	1.2	11.3	3.5
Gross value added per operative	9.9	6.2	15.7	1.1	12.1	3.6
Gross value added per non-manual	6.7	2.4	10.5	1.4	7.8	3.1

Source: Based on the estimates of productivity in the table IV.10.

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Table IV.5 shows that among the major industrial goods the productivity performance in intermediate goods at 14.7 per cent per annum, has been the highest. This is true whether labour productivity is measured in terms of gross value added per employee; 14.7 per cent per annum, per operative 15.7 per cent per annum, or per non-manual worker 10.5 per cent per annum. However, one major reason for this relatively high performance is due to the fact that petroleum products - the fastest expanding industry and the largest in the manufacturing sector in terms of absolute and relative value added- is included in this group.

The second group, in terms of all three versions of productivity measurement, is the consumer goods industry. The effect of high growth in productivity in intermediates and consumer goods is also transmitted to non-durable goods. The growth of productivity in capital goods has been very low. It is the lowest of the three groups, according to all three methods of measurement. Low productivity in capital goods has influenced productivity in those durable goods which are predominantly capital goods.

II. Productivity in large and small establishments.

Output, as before, is measured in terms of gross value added at constant factor costs. And in comparing productivity between large and small establishments, value added (or output) per employee is measured for large establishments with petroleum products once included and once excluded. It can be seen in table IV.6 that value added per employee in large establishments has always been higher than in small establishments. But the inclusion of petroleum products industry widens the margin of difference appreciably. Output per employee in small establishments

TABLE IV.6 COMPARISON OF LABOUR PRODUCTIVITY IN LARGE & SMALL ESTABLISHMENTS IN IRAQI MANUFACTURING, 1964, 1970-76. (ID Indices and percentages)

Gross value added per employee (ID)	1964	1970	1971	1972	1973	74	1975	1976	Change over 1970/76	ΔAROG*
I. Large establishments including petroleum	725	860	853	842	987	1 133	1 175	1 473	613	
II. Large establishments excluding petroleum	588	719	705	737	790	794	777	912	193	
III. Small establishments	405	433	n.a.	n.a.	424	413	762	780	347	
Ratio of III to I (%)	56	50	-	-	43	36	65	53		
Ratio of III to II (%)	69	60	-	-	54	52	98	85		

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TABLE IV.6 "Continued"

Gross value added per employee (ID)	1964	1970	1971	1972	1973	1974	1975	1976	Change over 1970/76	AAROG*
<u>Labour productivity indices</u>										
Large establishments including petroleum	84.3	100	99.1	98.0	114.5	131.7	136.5	171.2		9.3
Large establishments excluding petroleum	81.8	100	98.0	102.5	110.0	110.4	108.1	126.8		4.0
Small establishments	93.5	100	n.a.	n.a.	93.5	91.6	174.9	178.1		10.1

Source: From 1970 to 1976 estimates are based on data in the Annual Industrial Surveys. The figures for 1964 are from Zeki Fattah.

Note: The indices are the geometric means of laspeyres and paasche.

AAROG* = Average annual rate of growth.

ranges between 36 and 65 per cent of that in large establishments. But when petroleum products is excluded, the productivity of labour in small establishment represents between 52 and 98 per cent of large establishments during 1964-1976. In fact the absolute change in the productivity of labour (ID 347), and the average annual rate of growth (10.1 per cent) between 1960 and 1976, were higher in small establishments compared to large establishments excluding petroleum. However, when petroleum products is also included with large establishments, the situation changes. The differential productivity widens in favour of the latter, and the growth rates become almost comparable.

Some additional points also can be noticed in table IV.6

- For large establishments, excluding the relative stagnation of 1971/1972, the productivity index shows persistent increase during 1964, 1970-1976. Whereas the index for small establishments declines by a large margin during 1973 and 1974. This may have been caused primarily by incomplete coverage.
- The increases in the productivity of small establishments are confined only to two (final) years of the period. And the increases are quite large comparatively.

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Tables IV.10 and IV.11 attached to this chapter show that productivity gains among small establishments have been more widespread compared to large establishments. In small establishments, there were only two industries, aluminium products and smelting, which had negative growth of productivity. Whereas among large establishments out of the 74 industries covered, only 37 had positive productivity growth.

III. Productivity and factor intensity.

To see whether or not industries with high productivity growth were also users of capital intensive techniques analysis is made of the 37 industries which had positive productivity growth during 1970-1976. These industries and their corresponding gross value added per employee (used as an approximate indicator of capital intensity)^{1/} are shown in table IV.7.

In 24 out of the 37 industries, the positive productivity growth was in industries which had capital intensity below the average for the manufacturing sector as a whole. At the same time all industries, but four, which had above average capital intensity, also had above average rate of productivity growth. The exception has been car assembling, bicycles, cigarettes and synthetic silk. Whereas at least four industries cotton waste, leather products, jute and foundry achieved relatively high productivity growth with relatively low capital intensive techniques.

To sum up, while almost all capital intensive industries enjoyed high productivity growth, the opposite is not necessarily true. Not all high productivity industries were also capital intensive. In fact, a number of the high productivity industries were not capital intensive at an average sectoral level. Clearly, therefore, there were other factors which played a role in determining productivity performance.

IV. Productivity and scale of production in Iraqi manufacturing.

The scale of production has been measured by the absolute size of the increase in gross value added between 1970 and 1976. Table IV.8 shows the ranking of the highest 25 industries in terms of expansion in gross value added during the period considered. It also shows the absolute size of output produced in 1976. The last column of the table presents the corresponding average annual growth of productivity. The following can be noted.

^{1/} For definition of capital intensity, see appendix II to this chapter.

TABLE IV.7 RANKING OF INDUSTRIES WITH POSITIVE GROWTH OF GROSS VALUE ADDED DURING 1970-1976, AND THEIR CORRESPONDING GROSS VALUE ADDED PER EMPLOYEE IN 1976. (Constant factor costs)(ID thousands and percentages)

	Average annual growth rates 1970-1976 (Percentage)	Gross value added per employee (ID Thousands)
1. Sulfur refining	82.8	4 968
2. Radio and television	49.8	2 340
3. Batteries	33.4	1 753
4. Drug packing	32.9	831
5. Date packing	31.8	851
6. Dairy products	23.6	3 793
7. Plastic products	23.6	3 959
8. Paints	23.6	2 808
9. Pipes	18.2	1 067
10. Brewing	13.1	4 902
11. Other chemicals	12.7	1 203
12. Petroleum products	18.7	11 786
13. Canning	10.2	980
14. Tanning	9.9	851
15. Sugar	9.7	1 368
16. Crude plastic	9.3	2 127
17. Cotton waste	8.0	425
18. Matches	8.8	1 282
19. Bicycles	8.2	1 942
20. Soft drinks	7.9	647
21. Other electric equipment	7.0	965
22. Leather products	6.6	350
23. Cigarettes	6.3	1 551
24. Hosiery	5.3	505
25. Jute	4.9	431
26. Pottery	4.5	621
27. Foundry	4.4	368
28. Synthetic silk	3.6	2 205
29. Consumer durables	3.3	965
30. Metal furniture	3.1	428
31. Bakery	3.0	281
32. Smithy	2.9	660
33. Cotton textiles	2.2	625
34. Damp proofing material	2.1	759
35. Radiators	2.0	735
36. Car assembly	1.2	13 652
37. Non-electric machinery	1.0	1 172
Average manufacturing	9.3	1 473

Source: Based on the productivity indices, in Vol. II, ch. 3, and factor intensity measurement in appendix II, to this chapter.

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TABLE IV.8 RANKING OF INDUSTRIES ACCORDING TO THE SIZE OF CHANGE IN GROSS VALUE ADDED (CONSTANT FACTOR COSTS), GROWTH OF PRODUCTIVITY (AVERAGE ANNUAL 1970-76. (ID million and percentages)

Industries	Gross value added in 1976 (ID million)	Δ in gross value added 1970-1976 (ID million)	Productivity: Average Annual rate of growth 1970-76 (Percentage)
1. Petroleum products	77.6	63.43	10.6
2. Dairy products	10.2	8.9	23.6
3. Car assembling	11.5	6.9	1.2
4. Brewing	6.2	4.9	13.1
5. Plastic products	4.7	4.2	23.6
6. Sugar	5.6	4.1	9.7
7. Radio and television	4.0	4.0	49.8
8. Batteries	2.7	2.6	33.4
9. Sulfur refining	2.7	2.6	82.6
10. Tanning	2.9	2.5	9.9
11. Cotton textiles	5.8	2.4	2.2
12. Dates packing	2.9	1.9	31.8
13. Canning	2.0	1.6	10.2
14. Non-electric machinery	4.2	1.5	1.0
15. Other electric equipment	2.0	1.5	7.0
16. Cement	7.6	1.3	(negative)
17. Soft drinks	2.4	1.2	7.9
18. Silk textiles	2.2	1.1	3.6
19. Drug packing	1.3	1.1	32.9
20. Paper products	1.6	1.0	(negative)
21. Paints	1.0	0.9	23.6
22. Jute	1.2	0.9	4.9
23. Tobacco curing	1.3	0.9	(negative)
24. Consumer durables	1.1	0.5	3.3
25. Printing	1.3	0.3	(negative)

Source: Based on estimates for gross value added and indices for productivity. See volume II, chapter III.

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Firstly, except for two industries, non-electric machinery, and cement, the size of the change in output is proportionate with the volume of output in 1976. In the two exceptional cases the sizes of the changes were relatively small. Secondly, generally, the industries with negative productivity growth tend to be at the lower end of the table, implying both relatively small size and increment, in output. Thirdly, only in three cases car assembling, cotton textiles and non-electric machinery, the relatively large sizes of and the increments in the output, were related to low productivity growth. In 18 out of 21 cases in which productivity was positive, high productivity rates were related to a relatively large output in 1976, and to a large change in output between 1970 and 1976. Therefore, scale of production seems to have been more detrimental than capital intensity in productivity growth.

V. International comparison of productivity.

International comparison of productivity inevitably suffers from a number of pitfalls including comparability of data, currency conversion etc. The relatively strong currencies of the oil producing countries for example give them an advantage. Also large differences in the purchasing power of foreign currencies in the local market may confuse the outcome. One dollar may buy a lot in the Phillipines compared to Iraq. Therefore, an output of \$ 1,000 per employee in the former may be quite high when compared to Iraq. In any comparative analysis however, those factors usually weigh in Iraq's advantages. In addition, a large part of Iraq's manufacturing is in the petroleum products industry. This industry is a heavy user of capital intensive technology, therefore, its productivity is high, as we saw in the earlier sections.

All these advantages notwithstanding labour productivity in Iraqi manufacturing has not comparatively been remarkable. In fact, as table IV.9 shows it has been below certain developing industries. And when compared with that of an advanced industrial country like West Germany, it is both low and declining. In 1970, the dollar's value of the gross value added (constant factor costs) produced by a worker in Iraqi manufacturing represented 24.6 per cent of the value produced in West Germany. Four years later (in 1974), it fell to 19.1 per cent. This performance should be noted, is inclusive of petroleum products and when excluded the performance becomes even lower.

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TABLE IV.9 COMPARISON OF LABOUR PRODUCTIVITY IN MANUFACTURING IN IRAQ AND A NUMBER OF SELECTED COUNTRIES, 1970-1974. (GROSS VALUE ADDED PER EMPLOYEE IN U.S. DOLLARS, AND PERCENTAGES)

	1970	1971	1972	1973	1974	Countries as % of Germany (FR) 1970	Countries, as % of Germany (FR) 1974
<u>Philippines</u>							
Gross value added per employee	2 645.6	2 758.2	3 004.0	3 085.7	4 328.5	27.1	21.6
<u>Syria</u>							
Gross value added per employee	1 658.6	1 933.5	2 551.5	3 095.5	4 181.5	17.0	20.9
<u>Turkey</u>							
Gross value added per employee	6 067.3	n.a.	5 172.9	6 095.2	8 119.5	62.1	40.5
<u>Germany (F.R.)</u>							
Gross value added per employee	9 772.4	11 119.8	13 290.7	17 778.5	20 026.6	100.0	100.0
<u>Iran</u>							
Gross value added per employee	3 396.5	3 604.0	4 029.5	5 061.2	n.a.	34.8	28.5
<u>Iraq</u>							
Gross value added per employee	2 408.0	2 456.6	2 559.7	3 306.2	3 827.0	24.6	19.1

Source: United Nations (1975), Statistical Office, Yearbook of Industry Statistics 1975 edition, Vol. 1, New York, 1977. For Iraq, estimates based on data in the Annual Industrial Surveys.

Note: All values except for Turkey are at producers' prices. In Turkey, no adjustment is made for taxes and excises. The estimates for Iraq and West Germany are at constant prices. For the rest, it is not specified in the document what prices are used. But they are most likely to be at current prices.

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Table IV-10 (a)

MEASUREMENT OF FACTOR INTENSITY IN MANUFACTURING INDUSTRIES, 1970 - 1976. (INDUSTRIES - 74)
(Gross value added per employee - constant factor costs) (Iraqi Dinar)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	GNV/employee constant factor cost 1970-1976
31.1.2	Dairy	1.063	1.003	941	993	874	707	3.793	2 730
31.1.3	Canning	546	1.557	1 122	1.038	437	818	900	434
31.1.4	Dates	162	306	241	210	467	237	051	689
31.1.5	Vegetable Oil	2 522	1 126	1 914	1 224	1.906	1.730	637	-1 885
31.1.6	Grain Milling	1.180	1 203	701	834	994	066	942	- 246
31.1.7	Bakery	237	234	308	206	220	282	281	44
31.1.7	Macaroni	1 809	302	419	362	500	349	631	-1 178
31.1.8	Sugar	779	360	1.004	1.507	1.247	1 149	1.360	581
31.1.9	Confectionary	549	570	402	926	526	303	550	1
31.2.2	Animal Products	1.050	704	1.125	3.095	1.241	1 125	264	- 786
31.3.1	Brewing	2.345	2.325	3.397	4 327	3.922	3 429	4.902	2 557
31.3.4	Soft Drinks	409	664	623	1 193	935	1 194	647	238
31.4.0	Cigarettes	1.101	1.635	2 245	3 078	2.902	1.696	1.591	490
31.4.0	Tobacco Curing	800	416	230	503	796	3.244	522	- 358
32.1.1	Cotton Ginning	947	436	342	1 714	1 738	1 612	366	- 581
32.1.1	Wool Washing	177	220	872	160	300	500	167	- 10
32.1.1	Medicated Cotton	818	724	572	617	558	630	707	- 111
32.1.1	Jute	324	396	450	204	446	356	431	107
32.1.1	Cotton Textiles	549	500	615	505	574	550	625	76
32.1.1	Wool Textiles	549	567	504	401	436	452	505	- 44

* For productivity indices, not industry, industrial group, industrial development, major product and overall manufacturing see vol.II, ch. 3.

(continued..)

TABLE IV.10(a) Continued...

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Δ GVA/employee constant factor cont 1970-1976
32.1.1	Silk Textiles	310	447	545	477	331	403	385	75
32.1.3	Hosiery	370	464	471	421	589	432	505	135
32.1.3	Knitting	564	560	523	455	535	554	404	- 80
32.1.4	Carpets	336	4	12	45	39	43	37	-299
32.1.5	Shoe Laces	399	409	320	1 004	356	177	301	- 18
32.1.9	Cotton Waste	260	125	316	229	179	232	425	157
32.2.0	Shirt Making	310	254	160	70	109	105	105	-213
32.2.0	Tailoring	365	217	325	304	267	360	63	-302
32.3.1	Tanning	483	435	562	942	893	599	851	368
32.3.2	Leather Salting	1.119	190	1 120	1.677	731	102	667	-452
32.3.3	Other Leather Products	230	304	269	300	167	1 333	350	112
32.4.0	Footwear	804	606	757	575	502	643	712	- 92
33.1.1	Wood	253	112	104	163	264	10	135	-118
33.2.0	Carpentry	302	354	413	350	340	344	346	- 36
34.1.1	Papers and Products	696	303	100	990	1.111	551	519	-177
34.2.0	Printing	500	965	672	543	540	349	437	-143
35.1.1	Sulfur Refining	133	133	776	1 275	3 134	2 710	4.960	4 835
35.1.2	Fertilizers	2 636	2 636	216	1.300	1 186	1.029	941	-1 695
35.1.3	Plastic Products	1.107	1 219	1.000	1.547	2.766	2.969	3.959	2 852
35.1.3	Crude Plastic	1.247	1.247	1.247	1.276	1 567	2 202	2 127	880
35.2.1	Paints	788	1.236	1 400	1.250	1 572	1 957	2 000	2 020

continue ...

TABLE IV.10(a) Continued...

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Δ GVA/employee constant factor cost 1970-1976
35.2.2	Drug Packing	151	360	701	1 046	1.205	937	832	681
35.2.3	Soaps	2 305	3 272	1 830	1 214	1 330	1 218	1 065	-1 328
35.2.3	Cosmetics	794	637	639	577	446	420	704	- 90
35.2.5	Matches	774	839	1 409	1.240	773	1.020	1 202	508
35.2.9	Synthetic Silk	1 071	1 650	842	916	486	566	466	605
35.2.9	Other Chemicals	585	1 052	1 517	1 271	986	955	1 203	618
35.3.0	Petroleum Products	4 232	4 564	5 175	6 544	0.415	9 266	11 706	7 566
35.5.1	Rubber Products	961	773	612	330	748	536	453	- 508
36.1.0	Pottery	475	569	297	200	255	302	621	146
36.2.0	Glass & Products	431	259	456	246	601	615	188	- 243
36.9.1	Bricks	217	207	168	220	241	195	136	- 81
36.9.1	Juss	530	375	333	363	400	320	224	- 306
36.9.2	Cement	2.071	2.071	1.705	2 023	1 309	1 552	1 423	- 648
36.9.2	Tiles and mosaic	322	294	295	257	327	322	273	- 49
36.9.2	Concrete Products	481	426	376	430	483	383	314	- 167
36.9.9	Damp Proofing material	671	569	857	1 161	746	500	759	88
36.9.9	Asbestos	1 512	1 603	1 982	1 527	1 711	1 680	224	-1 288
36.9.9	Stones	595	578	514	1 333	600	266	261	- 334
37.1.0	Pipes	390	402	415	351	337	1 194	1 067	677
37.2.0	Foundry	284	304	230	223	253	315	360	84

continue ..

TABLE IV.10 (a) Continued...

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Δ GVA/employee constant factor cost 1970-1976
30.1.1	Aluminum Utensils	446	205	340	294	553	301	332	- 114
30.1.2	Metal Furniture	357	558	563	613	396	193	428	71
30.1.3	Smithy	556	364	679	520	425	403	660	104
30.1.9	Nails & Razor Blades	654	507	578	505	1 187	770	684	30
30.2.1-4	Non-electrical machinery	1 105	1 105	872	415	730	261	1 172	67
30.3.3	Air Coolers and Heaters	793	978	1 130	1 109	885	1 252	965	172
30.3.2	Radios & Televisions	207	362	1 364	2 158	2 125	3 177	2 340	2 133
30.3.9	Batteries	311	612	996	923	1 499	1 042	1 753	1 442
30.3.9	Other Electrical Equipment	641	138	664	437	350	511	965	324
30.4.3	Radiators	655	574	606	578	626	709	733	78
30.4.3	Car Assembling	12 727	12 727	12 727	12 727	2 777	6 410	13 658	931
30.4.4	Bicycles	1 207	676	783	1 138	1 390	1 455	1 942	735
39.0.9	Miscellaneous	404	625	548	512	512	247	443	39

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table -IV.10 (b)

MEASUREMENT OF FACTOR INTENSITY IN MAJOR INDUSTRIAL GROUPS. Average annual rate of growth, 1970 - 1976.
(Values at constant factor costs) (Dinars)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	796	673	710	730	894	772	1 254	7.87
31.3	Beverages	735	911	1 097	1 818	1 500	1 756	1 731	15.34
	Cigarettes	1 075	1 373	1 548	2 670	2 194	1 915	1 023	- 0.82
	Textiles	485	530	549	527	494	492	515	1.01
32.2	Wearing Apparel	394	268	271	260	267	292	187	-11.68
32.3	Leather and products	509	407	576	952	875	592	847	8.86
32.4	Footwear	804	606	757	575	582	643	532	- 6.65
33.1	Wood except furniture	253	112	184	163	264	18	135	- 9.94
33.2	Furniture and fixtures (except of metal)	382	354	413	350	340	344	346	- 1.64
34.1	Papers and products	696	303	100	990	1 111	551	519	- 4.77
34.2	Printing and publishing	580	965	672	543	548	349	437	- 4.61
35.1	Industrial Chemicals	943	943	444	1 291	1 844	1 609	2 352	16.45
35.2	Chemical products	943	1 403	1 062	1 055	916	936	955	0.21
35.3	Petroleum products	4 222	4 564	5 175	6 544	8 415	9 266	11 786	18.66
35.5	Rubber products	961	773	512	330	748	536	453	-11.78
35.6	Plastic products	1 131	1 224	1 099	1 517	2 660	2 899	3 856	22.68
36.1	Pottery and earthenware	475	569	297	280	255	302	621	4.57
36.2	Glass and products	431	259	456	246	601	615	188	-12.91
36.9	Non-metallic products	576	557	473	629	601	563	426	- 4.90

continues ...

TABLE IV.10 (b) Continued...

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of growth
37.1	Basic metal products	311	390	286	254	283	693	671	13.67
38.1	Fabricated metal products	465	429	561	517	518	427	547	2.74
38.2	Non-electrical machinery	1 105	1 105	872	415	730	261	1 172	0.98
38.3	Electrical machinery and supplies	617	425	984	990	1 061	1 327	1 516	16.16
38.4	Transport equipment	9 246	8 348	8 401	8 481	2 266	4 851	1 0154	1.57
39.C	Manufacturing not elsewhere classified	404	625	548	512	512	247	443	1.55

Source: based on our estimate of gross value added and employment.

Table IV.10 (b)

Factor intensity in manufacturing. Average annual rate of growth, 1970 - 1976.

(Gross value added-at constant factor cost-per employee) (Industrial Divisions)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	831	805	860	1 089	1 149	1 070	1 297	7.69
32.	Textiles, Wearing Apparel and Leather	499	473	495	478	462	459	466	-1.13
33.	Wood and products, including furniture	372	336	395	337	335	314	321	-2.44
34.	Paper, printing and publishing	619	704	378	800	869	454	479	-4.18
35.	Chemicals, Petroleum, Rubber and Plastic products	2 335	2 623	2 547	3 089	4 317	4 764	6 133	17.46
36.	Non-metallic products	574	547	472	600	599	565	412	-5.38
37.	Basic metal industries	311	390	286	254	283	693	671	13.67
38.	Fabricated metal products machinery & equipment	1 373	1 222	1 300	1 116	946	1 155	2 046	6.88
39.	Other manufacturing industries	404	625	548	512	512	247	443	1.54

Source: based on our estimate of gross value added and employment.

TABLE IV.10(d). FACTOR INSTENSITY IN MANUFACTURING SECTOR. AVERAGE ANNUAL RATE OF GROWTH
1970-1976. (constant factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
Manufacturing sector	861	853	842	985	1 134	1 175	1 466	9.28
Consumer goods	687	631	703	819	863	828	946	5.48
Intermediate goods	2 205	2 355	2 142	2 651	3 784	4 152	5 024	14.71
Capital goods	783	727	668	713	624	661	840	1.17
Non-durable goods	902	914	910	1 073	1 313	1 352	1 713	11.28
Durable goods	773	720	695	756	701	764	951	3.50

Source: based on our estimate of gross value added and employment.

Table - IV - 11

Factor intensity and productivity in small manufacturing industries. Average annual rate of growth, 1969-1976.
(Gross value added at constant factor cost per employee) (Iraqi Dinars)

Industries	Factor Intensity and Productivity					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
All Industries	417.1	533.1	521.5	1 070.2	1 154.4	100.0	127.0	125.0	256.6	276.0	15.65
Beverages & Cigarettes	221.3	340.3	536.7	597.0	522.4	100.0	153.0	242.5	270.1	236.1	13.06
Textiles	316.6	283.4	335.6	517.1	911.0	100.0	89.5	106.0	163.3	280.0	16.31
Apparel	530.0	263.2	257.0	871.4	647.6	100.0	49.6	48.6	161.2	122.0	2.88
Leather Products	406.9	617.9	644.9	677.2	839.5	100.0	151.9	158.5	166.4	206.3	10.90
Wood & Furniture	323.1	428.2	364.1	550.0	450.2	100.0	132.5	112.7	170.5	141.0	5.12
Paper Products	418.3	492.3	811.7	760.0	690.0	100.0	117.7	194.0	181.7	165.0	7.42
Chemical Products	600.0	1 705.4	1 252.4	1 900.2	2 306.2	100.0	293.1	208.7	316.7	397.7	21.00
Non-Metallic Products	319.1	277.8	292.2	530.2	526.0	100.0	87.1	91.6	168.7	164.0	7.40
Aluminum Products and Utensils	945.5	-	-	540.0	520.7	100.0	-	-	57.1	55.1	-8.16
Foundry	330.2	259.4	198.4	356.0	443.9	100.0	76.7	58.7	105.5	131.3	3.97
Metal Furniture	503.0	341.5	272.4	397.0	781.4	100.0	67.9	54.2	79.1	155.3	6.49
Smithy	674.1	337.4	225.0	440.0	613.7	100.0	50.1	33.4	66.5	91.0	-1.31
Nails and Other Metallic Products	323.5	815.4	584.6	542.3	1 392.3	100.0	252.1	100.7	167.6	430.4	23.10
Machinery (not including repairs)	303.1	-	-	621.7	676.7	100.0	-	-	162.3	176.6	8.46

continue..

Table (IV.11) (Continued)

Industries	Factor Intensity and Productivity					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	396.5	240.0	197.0	923.4	571.4	100.0	61.2	51.0	238.9	147.0	5.74
Other Miscellaneous Industries	717.7	361.7	416.7	809.6	890.3	100.0	50.4	50.1	112.0	125.0	3.33
Industrial Services (including machinery repairs)	260.4	370.4	394.4	534.0	500.1	100.0	130.0	146.9	199.3	109.3	9.54
OVERALL INDUSTRIES											
Laspeyre's index						100.0	82.5	80.3	161.4	155.5	
Paasche's index						100.0	105.9	104.4	109.6	201.1	
Geometric mean						100.0	93.5	91.6	174.9	170.1	

APPENDIX I

Labour in manufacturing: Source of Data and Limitations.

There is only one source of information about labour in manufacturing: the Annual Industrial Surveys ("the Survey"). Labour figures in the survey refer to employment in each industry during a payment period - which is a month both for operatives and non-manual workers. Employment figures include both permanent and temporary workers. But besides the paid workers, the surveys also report 'unpaid workers'. The function of these workers is not specified. Therefore, they were excluded when measuring productivity. (This distinction of course, does not apply to small establishments).

A large part of Iraq's manufacturing is made up of activities that are highly seasonal, e.g. food, beverages, cotton ginning. These activities are performed by a large number of small establishments, whose reports may not be all together reliable. Also because their operations are seasonal, they may frequently cross the demarcation line between large and small establishments, causing significant variation in aggregate employment. Therefore, not all changes in the employment figures are actual. Sometimes they may be merely definitional or seasonal. Seasonal variations are more likely to distort the results when employment figures are considered on a monthly basis. Since employment figures here are annual, they are most likely to suffer from definitional problems at sub-aggregate levels rather than from seasonal distortions.

The annual industrial surveys give a breakdown of labour input by skill and sex composition at industry level. No age-composition is given. In the skill composition seven categories are separated. These are: highly skilled, technicians, foremen and skilled workers, and semi-skilled and non-skilled workers - which we have classified under operatives; the second group, which we classified under non-manual workers, includes management and workers in marketing and services.

A superior measurement of labour inputs than person-years especially for the purpose of productivity analysis is person-hour-year, which is the average number of hours worked by an employee during the year. This is a better concept

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because the number of hours worked may differ from one industry to another or from one period to another. Even granting that there are no such differences, hours worked would still be a closer estimate of labour inputs because it includes overtime hours, and excludes holidays and strikes. The intensity and quality of work performed is also reflected better by hours worked. However, essential as they are for productivity measurement, hours worked are not reported in the annual industrial surveys from 1970 onwards.^{1/} Productivity measurement based on output per-employee-hour-year have been constructed for the years 1960 to 1970.

^{1/} Zaki Fattah, ch. 5

APPENDIX II

Capital Intensity in Iraqi Manufacturing

Reference to the definition of capital intensity and to industries classified as capital intensive has already been made in the earlier chapters. In this chapter, we shall discuss the definition a bit further pointing out its major limitations. Secondly, we shall compare capital intensity in Iraqi and Egyptian industry, for which similar data happened to be available, and, thirdly, classify and analyse capital intensive industries in Iraq using more than one criteria.

Measurement of capital intensity.

There is a lot of controversy regarding measurement of capital intensity. They mostly arise from the difficulties surrounding measurement of capital stocks^{1/}. As a result, there are several definitions of capital intensity each satisfying a need. For example, capital intensity may be defined as the ratio of the costs of capital to the total costs of all production factors. And in a simple world with two homogeneous factors of production, scarce capital (K), and abundant labour (L), capital intensity may be measured as the ratio of stock of physical capital per worker (K/L). Once the heterogeneity of each production factor is recognized the composite elements have to be weighted.

However, for the purpose of cross industry study of capital intensity even an unweighted capital stock series would have been sufficient. But this, as we have discussed earlier, could, in our case, be constructed only at the overall manufacturing level. At an industry level, annual investment data were not available, and the capital stock data which were given in the 1969 survey, for firms employing 30 persons and more, proved to be both ambiguously defined and grossly understated as we said in the chapter about the capital stock.

Therefore, while at the overall manufacturing level, the measurement is based on the capital-labour ratio, at an industry level, it is based on two indirect indicators: gross value added per employee, and non-wage value added (or profit) per

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^{1/} D. Morawetz "Employment Implication of Industrialization" in Developing Countries: A survey, The Economic Journal, Sept. 1974.

employee. A number of studies have shown that a close relationship exists on the one hand between profits and physical capital per employee, and on the other hand between the share of wages in value added and the proportion of skilled workers in total employment^{1/}.

There are a number of reservations regarding indirect methods of measuring capital intensity. To begin with value added, figures are inclusive of depreciation, and of such expenses as advertisement, rent, etc. Secondly, value added embodies distortion even when measured at constant prices. In addition, the relative size of profits and wages can be affected by such factors as the strength of labour organization, degree of market protection, change in labour and management skills, and level of capital utilization.

There are also a number of other factors which determine the degree of capital intensity. For example, at an industry level, the type of products, the relative factor prices, and factor substitution, and at the sectoral level, by these, and by the degree of diversification of activities, degree of concentration and changes in the size structure.

In this study, it is assumed that the effects of all these factors on the industries involved are equal. It is, however, believed that the limitation just delineated are more serious when the measurement is used to project employment or investment requirement, or assess capital efficiency than, as in this study, used just to rank industries and compare them.^{2/}

Capital intensity at overall manufacturing level.

Measurement and comparison of capital intensity at overall manufacturing level is in terms of capital-labour ratio. At an industry level in the next section, it is measured in terms of gross value added per employee, capital stock per employee, and profit per employee. No measurement of capital-labour ratio in manufacturing exist for any of Iraq's neighbouring countries to compare with.

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^{1/} See H.B. Lary, Imports of Manufacturing from Less Developed Countries. N.B.E.R. New York, 1968. K.A. Kennedy, Productivity and Industrial Growth: The Irish experience, Clarendon Press, Oxford, 1971, ch. 3, pp. 80-81.

^{2/} See A.R. Khan. "Capital Intensity and the Efficiency of Factor Use". The Pakistan Development Review 1971.

Nor could we find comparable figures for any developing country except Egypt. Even here the data available covered until 1970 only. Below we have reproduced these figures, and taken the correspondent figures for Iraq from Fattah, for the purposes of comparison.

APPENDIX TABLE 1. INDICES OF CAPITAL INTENSITY IN IRAQ AND EGYPT, 1963-1970.

Year	Iraq M/L	Egypt M/L
1963-64	100.0	100.0
1966-67	128.8	84.4
1969-70	158.3	73.7

Source: For Egypt from E. Mahru and S. Radwan op.cit, p. 170.

For Iraq from Zeki Fattah, p. 154.

M = Stock of machinery in manufacturing

L = Number of workers employed.

Capital stock in manufacturing related to machinery only, and employment indices are for large establishments. It can be seen in the table that the index for Iraq was in 1970 more than twice as high as in Egypt. Also while the aggregate capital intensity in Iraq has been continuously rising, in Egypt it was declining.

Capital intensive industries in Iraqi manufacturing

Ranking of industries according to the three definitions of capital intensity is shown in tables 2 and 3 in this appendix. In table 2, capital intensity is measured in terms of capital stocks per employee. In the remaining two tables, it is measured in terms of gross value added per employee and profits per employee. Capital stock figures are the book value of physical capital assets as reported in the (industrial) survey of 1969/70, and relate to firms employing 30 persons and more. As the stock data are given to one year only the comparisons with the other measurements had to be confined to that year also.

Do the three measurements of capital intensity give different results?
The best 25 industries in terms of profits per employee are almost identical with

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the gross value added per employee. Inspection of tables 1 and 2 shows that the ranking of industries in terms of capital stock per employee is quite different from that in terms of gross value added per employee. However, it can still be seen that in 12 out of 20; in 22 out of 40; in 37 out of 45, and in 40 out of the 53 industries in the two tables, industries for which data in both measurements were available, were the same. This is a fairly strong evidence of closeness between the two measurements.

Differences in ranking could be due to a number of reasons. Firstly, as capital stock figures relate to a specific point in time, it is possible that the capital was just installed at that particular time or year. More time would be needed to engage more workers and expand output, therefore momentarily capital stock per worker would be very high compared to gross value added per worker. This applies to synthetic fibre, bicycles, and electric machinery for example.

Secondly, while output has a flow concept, capital by definition has a stock concept. It is very likely for the flow to fluctuate from one year to another. Therefore, taking measurement in one as we have done is not sufficient. Stock and flow figures for more than one year would be needed to obtain a more conclusive results.

Finally, while gross value added and employment figures in table 3^{*} relate to all large establishment (10 employees and above) the figures for capital and labour in table 3 hence, concern firms employing 30 persons and more. Therefore, just as in point 2 above, data limitations could be the primary source of differences.

* Table 3 in this chapter.

Appendix II, Table 2

Ranking of large manufacturing establishments according to gross value added per employ at constant factor costs in 1970. (ID).

Rank	I N D U S T R I E S	Gross value added per employee (ID)	Rank	I N D U S T R I E S	Gross value added per employee (ID)
1	Car assembling	12728	30	Paper and products	696
2	Petroleum products	4222	31	Damp proofing material	671
3	Fertilisers	2636	32	Radiators	656
4	Vegetable oil	2522	33	Fabricated metal products	654
5	Soap and detergent	2385	34	Other electric equipment	641
6	Brewing	2345	35	Stones	595
7	Cement	2071	36	Other chemicals	585
8	Macaroni	1810	37	Printing	580
9	Asbestos	1512	38	Knitting	564
10	Crude plastic	1247	39	Smithy	556
11	Bicycles	1207	40	Confectionary	550
12	Grain milling	1188	41	Wool textiles	549
13	Leather salting	1119	42	Cotton textiles	549
14	Plastic products	1107	43	Canning	546
15	Non-electric machinery	1105	44	Juss	530
16	Cigarettes	1101	45	Tanning	483
17	Synthetic silk	1071	46	Concrete products	481
18	Dairy products	1063	47	Pottery	475
19	Animal products	1050	48	Aluminium products	446
20	Rubber products	962	49	Glass & products	431
21	Cotton Ginning	947	50	Soft drinks	409
22	Tobacco curing	880	51	Miscellaneous	404
23	Medicated cotton	819	52	Shoe laces	399
24	Footwear	804	53	Pipes	390
25	Cosmetics	794	54	Carpentry	383
26	Air cooler and heaters	793	55	Hoisery	370
27	Paints	788	56	Tailoring	365
28	Sugar	799	57	Metal furniture	357
29	Matches	774			

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Appendix II, Table 2 (cont'd)

Ranking of large manufacturing establishments according to gross value added per employ at constant factor costs in 1970, (ID),
(cont'd)

<u>Rank</u>	<u>I N D U S T R I E S</u>	<u>Gross value added per employee (ID)</u>
58	Carpets	336
59	Jute textiles	325
60	Tiles and mosaic	322
61	Shirt making	318
62	Batteries	311
63	Silk textiles	310
64	Foundry	284
65	Cotton waste	268
66	Wood and products	253
67	Other leather products	238
68	Bakery	237
69	Bricks	217
70	Radio and television	208
71	Wool washing	177
72	Dates packing	162
73	Drug packing	151
74	Sulfur refining	133

Source: Based on our estimate of gross value added and employment.
Original data from Annual Industrial Surveys.

Appendix II. Table 3

Ranking of industries in Iraqi manufacturing according to capital stock per employee, 1969-70. (Firms employing 30 persons or more). (Iraqi Dinars)

Rank	INDUSTRIES	Capital stock per employee (ID.)	Rank	INDUSTRIES	Capital stock per employee (ID.)
1	Synthetic silk	13 701.4	28	Air coolers & heaters	1 208.7
2	Petroleum refining	10 114.4	29	Canning	1 192.5
3	Cement	5 310.7	30	Matches	1 154.7
4	bicycles	5 051.5	31	Hoisery	1 147.9
5	Sugar	4 302.8	32	Metal furniture	1 051.4
6	Knitting	3 892.9	33	Tobacco curing	1 042.2
7	Electric machinery	3 864.8	34	Paper products	1 019.9
8	Brewing	3 208.4	35	Tailoring	1 008.3
9	Dairy	2 856.4	36	Wool textiles	984.2
10	Grain milling	2 674.5	37	Confectionary	955.8
11	Juss	2 550.7	38	Footwear	943.4
12	Soaps and detergents	2 384.2	39	Silk textiles	889.7
13	Smithy	2 328.1	40	Damp proofing material	854.1
14	Wood	2 103.2	41	Cotton textiles	846.6
15	Pencils	2 076.7	42	Cigarettes	738.6
16	Plastic products	1 966.4	43	Medicated cotton	732.4
17	Vegetable oil	1 931.0	44	Aluminium utensils	729.2
18	Foundry	1 926.8	45	Dates packing	681.3
19	Concrete products	1 804.4	46	Shirt making	619.6
20	Fabricated metal products	1 687.9	47	Chalk	593.3
21	Asbestos	1 687.5	48	Printing	570.3
22	Soft drinks	1 629.9	49	Paints	385.2
23	Radios and Televisions	1 424.3	50	Carpentry	384.9
24	Tanning	1 373.6	51	Tiles and mosaic	319.9
25	Cotton ginning	1 335.4	52	Glass products	275.5
26	Rubber products	1 307.6	53	Bricks	162.9
27	Bakery	1 268.5			

Source. CSO - Industrial Survey (1970 (IDCAS)

CHAPTER V

WAGES AND PROFITS IN MANUFACTURING

The discussion in this chapter will fall under the following headings: (I) Definition of wages and profits; (II) Changes in wages and profits in the manufacturing sector; (III) Comparison of changes in wages and profits by size of establishments; (IV) Wages and profits in large and small establishments; (V) The highest wages and profits industries in Iraq manufacturing. In the appendix chapter wages and profits separately for each industry, industrial group, industrial division as well as overall manufacturing are also presented.

I. Definition of wages and profits

Total wages include wages, salaries, overtime earnings and social benefits, (hence the word total), but excludes workers' share in profits. The Annual Industrial Surveys, for most years, lump overtime earnings with social benefits under 'additional wages'. They do not show the composition of social benefits. And give separate recordings for social benefits only for three years, 1970, 1975 and 1976.

Gross profits are approximated by non-wage value added, which is the residual after deducting total wages from gross value added in manufacturing. Net profits are then obtained by excluding depreciation allowance. (more on this latter). Throughout this section values at constant prices are obtained by deflating series at current prices by the consumer price index for the city of Baghdad, after shifting the base from 1962 to 1970. Finally, measurement of average wages and average profits in manufacturing is based on large establishments alone. Data for wages and profits in small establishments although existing may not be all that authentic. The discussion of small establishments is given separately.

II. Changes in wages and profits in the manufacturing sector

The development of total wages and non-wage value added (henceforth wages and profits, respectively) is shown in tables V.1 to V.16. It can be seen in table V.1, that the wage bill in Iraqi manufacturing increased, in

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real terms from ID 22.1 million in 1964 to ID 32.5 million in 1970, and to about ID 63 million in 1976: an increase of nearly 93 per cent, and an average annual growth rate of 11.5 per cent between 1970 and 1976.

Table V.1 - Profit - capital ratio - capital-labour ratio and wage-profit ratio in Iraqi manufacturing: 1960, 1964 and 1970-1976 (Constant 1970 Prices) (large and small establishments) (ID million, ratio and percentages).

YEAR	Gross Capital Stock (ID. m.)	Profits (ID.m.)	Profit-Capital ratio (per cent)	Capital-Labour ratio	Total wages (ID. m.)	Wage-profit ratio
1960	101.1	22.3	22.1	1.3	22.1	0.99
1964	170.5	34.5	20.2	2.0	22.0	0.62
1970	345.0	57.6	16.7	2.7	32.5	0.56
1971	375.6	n.a.	n.a.	n.a.	n.a.	n.a.
1972	407.4	n.a.	n.a.	n.a.	n.a.	n.a.
1973	453.8	72.0	15.9	2.9	41.3	0.57
1974	549.9	70.0	12.7	3.5	48.1	0.69
1975	719.0	101.4	14.1	3.7	64.8	0.64
1976	n.a.	117.5	n.a.	n.a.	62.6	0.53

Source: Column 1, from Chapter 1 Volume II, Column 4 from Chapter IV Vol.I. The rest from data in the Annual Industrial Surveys.

Note: No figures for profits and wages in small establishments existed from 1960, here they are extrapolated on the basis of their separate ratio in 1964. The estimates for the latter year is taken from Zeki Fattah.

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Real (net) profits were greater and have risen at a higher rate than wages. They have, between 1970 and 1976, risen from ID.45.6 million to ID.98.1 million: representing an increase of 115 per cent in index values, and an average annual growth of 13.6 per cent. Depreciation allowances ranged between 17 and 21 per cent of the value of gross profits during the period considered. (Table V.2). However, profit analysis in the following is conducted in gross terms, because no separate estimate of depreciation for large establishments could be obtained. And most of the profit (and wage) analysis are based on large establishments as their data are generally more dependable.

Table V.2 - Gross profits, depreciation and net profits in Iraqi manufacturing 1970-1976 (current and constant prices) (ID. million).

	1970	1971	1972	1973	1974	1975	1976	AAROG 1970-76
Gross profits at current prices	57.6	n.a.	n.a.	83.6	87.7	139.6	178.4	20.7
Depreciation at current prices	12.0	12.8	13.6	14.7	18.6	25.6	29.4	16.1
Net profits at current prices	45.6	n.a.	n.a.	68.9	69.1	114.0	149.0	21.8
Net profits at constant prices	45.6	n.a.	n.a.	59.3	55.0	82.8	98.1	13.6

Source: All profit figures are estimates based on data from the annual industrial surveys. Depreciation rates are from Ch.1 Vol.II. Constant values obtained by deflating by consumer price index. Depreciation for 1976 is extrapolated on the basis of ratios in earlier years.

Before discussing the trends in wages and profits; in their share in manufacturing value added; and in the share of large and small establishments in wages and profits, we shall first consider the profit-capital ratio in Iraqi manufacturing and see how it has changed during the period 1960-1976. Secondly, whether inclusion, or exclusion, of wages and profits, in petroleum products industry significantly affect the absolute values, indices and growth rates, of these two variables? And thirdly, how did real wages and real profits perform in Iraqi manufacturing?

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Table V.1, column 4, shows that profit-capital ratio in Iraqi manufacturing declined almost continuously as capital accumulation increased. It also shows, in column 5, that the decline in the profit-capital ratio was accompanied by a continuous increase in the capital-labour ratio. Both indicating that capital accumulation in Iraqi manufacturing took place at a much higher rate than employment, and that the additional capital (and labour) were not contributing to the revenue proportionately.

Regarding the second question, it can be seen in Table V.3, that neither the size nor the index nor the growth rate of total wages are greatly affected when petroleum products is excluded. The same, however, does not apply to profits. Although the growth rate is only marginally affected, the size tends to fall markedly. (see tables V.3 and V.4). The share of profits of petroleum product in total manufacturing profits ranged between 13 and 19 per cent between 1970 and 1976.

As for the performance of real wages and profits increases in the wage bill are the product of both increases in employment (52 per cent between 1970-1975), and increases in average wages (79 per cent) (see table V.5). The latter is the result of changes in wage rates; in the skill composition of employment in manufacturing; and in the provision for social benefits. Separate data for social benefits and overtime earnings, as mentioned earlier, are given for three years only: 1970, 1975 and 1976. Social benefits in these years amounted to 6.4 per cent, 13.8 per cent and 13 per cent of the total wage bill respectively^{1/}. As for skill composition, the data are not sufficiently disaggregated to assess the effect of changes in the skill composition on wage rates. But as the period considered is relatively short, the changes tend to be small. Also these changes usually account for not more than one or two per cent increase in the wage bill annually. The most significant influence on the wage bill is therefore increases in money wage rates for which increases in average wages are a good proxy, although slightly biased upward.

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^{1/} Annual Industrial Surveys: 1964, 1975 and 1976.

Table V.3 - Total wages and indices in overall manufacturing and in large establishments (inclusive and exclusive of petroleum products). Average annual rate of growth, 1964, 1970-1976 (ID million and percentages) (current factor prices).

I. All manufacturing	1964	1970	1971	1972	1973	1974	1975	1976	AAROG 1970-1976
Total wages inclusive of petroleum products (ID.m.)	18.7	32.5	n.a.	n.a.	48.0	60.5	89.2	95.1	19.6
Index (per cent)	57.5	100.0	n.a.	n.a.	127.7	186.1	274.4	292.6	
Total wages exclusive of petroleum products (ID.m.)	17.4	30.4	n.a.	n.a.	45.1	56.2	84.4	89.0	19.6
Index (per cent)	57.2	100.0	n.a.	n.a.	148.3	185.0	277.6	292.7	
II. Large establishments. Total wages inclusive of petroleum products (ID.m.)									
	15.2	28.3	33.3	38.0	43.4	55.9	65.9	78.8	18.6
Index (per cent)	53.7	100.0	117.7	134.3	153.3	197.5	232.9	278.4	
Total wages exclusive of petroleum products (ID.m.)									
	13.9	26.2	30.8	35.4	40.5	51.6	61.1	72.7	18.5
Index (per cent)	53.1	100.0	117.6	138.1	154.2	196.9	233.2	277.5	

AAROG = Average Annual Rate of Growth. Index for aggregate wages in large establishments is shown in Vol.II.

Source: See Table V.4

Table V.4 - Gross profits, and indices, in overall manufacturing and large establishments (inclusive and exclusive of petroleum product. Average annual rate of growth 1964, 1970-1976 (ID.million and indices) (current prices).

I. All Manufacturing	1964	1970	1971	1972	1973	1974	1975	1976	AAROG* 1970-76
Profit inclusive of petroleum products(ID.m)	30.0	57.6	n.a.	n.a.	83.6	87.7	139.6	178.4	20.7
Index (per cent)	52.1	100.0	n.a.	n.a.	145.1	169.6	242.3	309.7	
Profits exclusive of petroleum products(ID.m)	23.4	47.4	n.a.	n.a.	72.7	71.1	117.3	144.6	20.4
Index (per cent)	49.4	100.0	n.a.	n.a.	153.4	150.0	247.5	305.1	

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Table V.4 (cont'd)

II. Large establishments	1964	1970	1971	1972	1973	1974	1975	1976	AAROG* 1970-76
Profits inclusive of petroleum products (ID.m)	21.4	42.8	45.5	54.8	66.1	67.7	79.2	107.2	16.5
Profits exclusive of petroleum products (ID.m)	14.8	32.6	35.8	44.7	55.2	51.1	56.9	73.4	14.5

Source: For 1964 from Zaki Fattah. For the rest of the years, based on estimates from data in the Annual Industrial Surveys, 1970-76.

* AAROG: Average annual rate of growth. Index for aggregate profits for large establishments is shown in Vol. II of this study.

Note: Profits are inclusive of depreciation allowance. For net profits see Table V.2.

The index for the average nominal wages in table V.5, increased by 79 per cent between 1970 and 1976. At the same time the consumer price index rose by 52 per cent. But the rise in the average real wages was much smaller: 18 per cent only. The average annual growth rate of the average real wages was 3.2 per cent, against the 11.3 per cent of average nominal wages, and 7.8 per cent of the consumer price index. Table V.5 clearly shows that the average real wages in 1970 was below 1964, and that the overall trend between 1970 and 1973 was a declining one, reaching its lowest point in 1972. In 1974, after the quadrupling of oil revenues and promulgating a number of legislations raising the level of wages and social benefits to workers, the declining trend was redressed. In the following two years the new level was maintained. However, an increase of around 20 per cent in average real wages between 1973 and 1976, is still very modest. It represents an average rate of growth of 6.3 per cent per annum. It was much lower than the average annual of 14 per cent growth in labour productivity in the corresponding years. Similarly the average annual growth of real wages of 3.2 per cent for the period (1970-1976) was lower than the average annual growth of about 9 per cent recorded for labour productivity. (see Table V.5 in the Chapter about productivity).

Turning now to the trends in average real wages and profits and to the changes in their respective shares in the value added of the manufacturing sector. Figure 1, shows that between 1970 and 1976, the trends of movements in average real wages and profits have more or less been similar. The two exceptional years have been 1971 and 1974. The former may have been caused by statistical anomalies in the

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data relating to profits. In the latter, while average profit decreases, average wage increases. This must have been the direct result of the re-distribution legislations introduced in that year and referred to earlier.

Table V.5 - Total wages and wages per employee in large establishments at current and constant 1970 prices. Indices, annual and average annual growth rates, 1964, 1970-1976. (ID. and percentages).

	1964	1970	1971	1972	1973	1974	1975	1976	AAROG 1971-76
Total wages at current prices (ID.m.)	15.2	28.5	33.3	38.1	43.4	55.9	65.9	78.8	
Annual changes (per cent)		10.9	17.6	14.1	14.1	28.8	17.9	19.5	18.1
Deflator (consumer price index, 1970= 100)	86.9	100.0	104.3	110.7	116.1	125.7	137.6	151.8	7.8
Total wages at constant price (ID.m.)	17.5	28.3	31.9	34.4	37.4	44.5	47.9	51.9	
Annual changes (per cent)		8.3	12.7	7.8	8.7	19.0	7.6	8.3	10.2
Wages per employee at current prices (ID)	317	340	357	349	386	481	521	609	
Index(percent)	93	100	105	103	113	141	153	179	
Annual changes (per cent)		1.2	5.0	- 2.2	10.6	24.6	8.3	16.9	11.3
Wages per employee at constant prices (ID)	107	100	101	93	98	112	111	118	
Annual changes (per cent)		-9.9	-0.02	-7.19	5.4	15.1	-1.0	6.1	3.2

Source: The consumer price indices are taken from the annual abstract of statistics. For the rest, see Table V.4.

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Table V.6 -- Gross profits, and gross profits per employee in large establishments at current, and constant 1970 prices. Indices, annual and average annual growth rates, 1964, 1970-1976 (ID and per cent).

	1964	1970	1971	1972	1973	1974	1975	1976	AAROG 1971-76
Gross profits at current prices (ID.m.)	21.4	49.3	45.5	54.8	66.1	67.7	79.2	107.2	
Annual increases (per cent)		14.9	- 7.7	20.4	20.7	2.4	16.9	35.4	18.7
Gross profits at constant prices (ID.m.)	24.6	49.3	43.6	49.5	56.9	53.8	57.5	70.6	
Annual increases (per cent)		12.3	-11.5	13.5	15.0	-5.4	6.9	22.8	10.1
Profits per employee at current prices (ID)	445	592	488	502	588	582	626	829	
Index (percent)	75	100	82	85	99	93	106	140	
Annual increases (per cent)		4.8	-17.5	2.8	17.1	-1.0	7.5	32.4	11.1
Profits per employee at constant prices (ID)	513	592	468	453	506	463	455	546	
Index (per cent)	87	100	79	76	85	78	77	92	
Annual increases (per cent)		2.4	-21.0	- 3.2	11.7	-8.5	-1.7	20.0	3.1

Source: See Table V.4.

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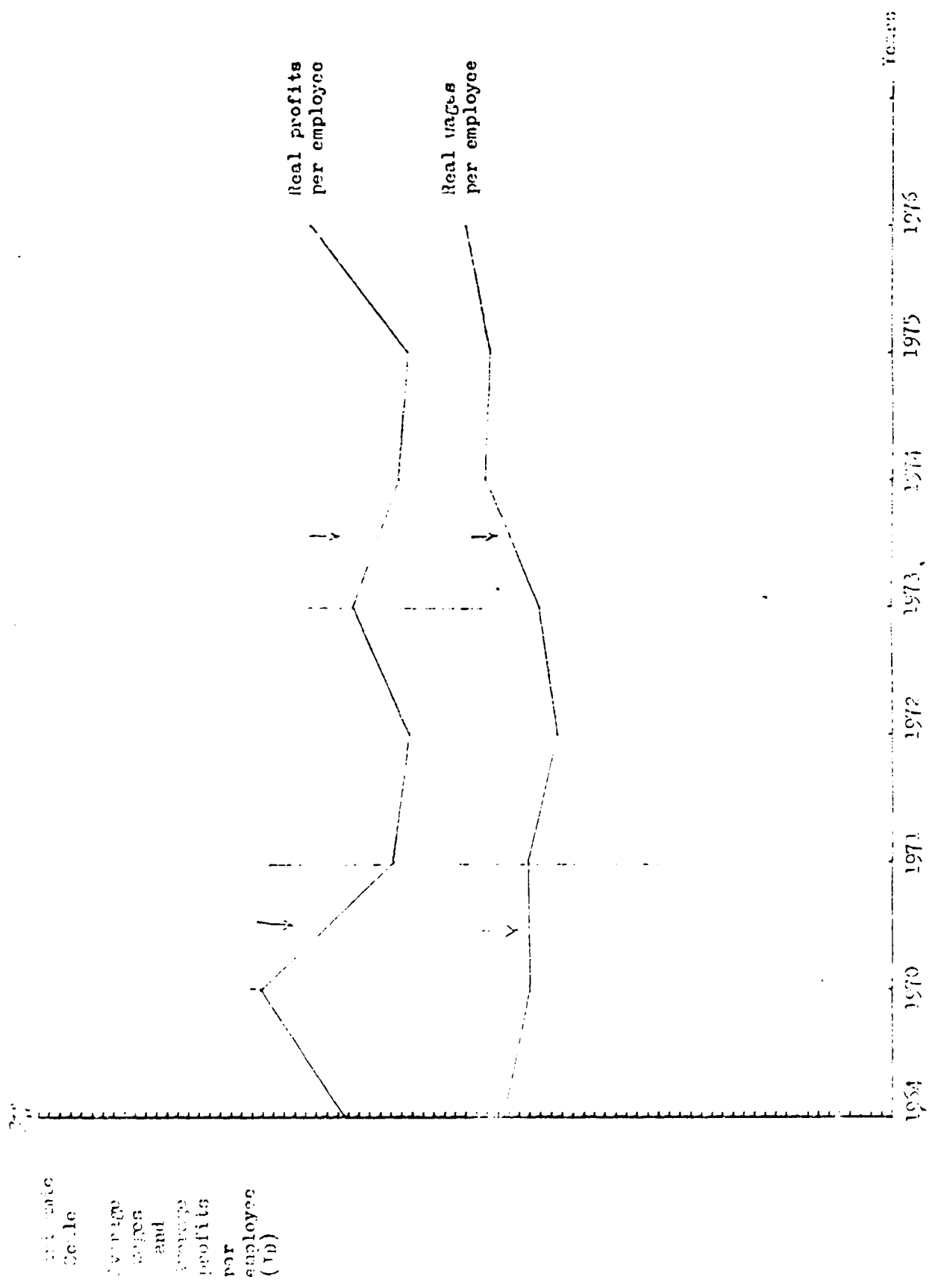


Figure 1. The trend in real profits per employee and real wages per employee in Iraqi manufacturing: 1964, 1970-1976.

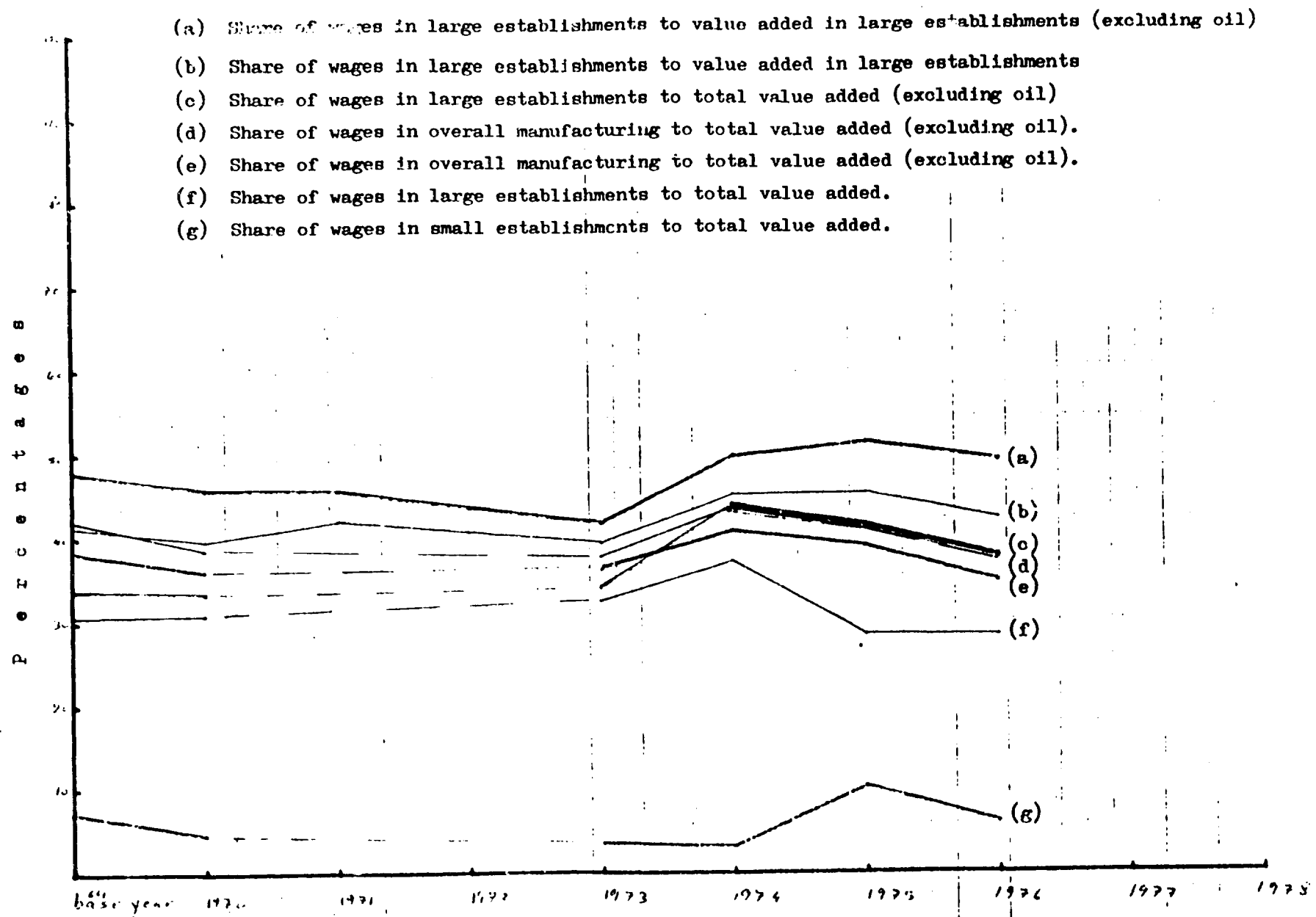


FIG. 2. CHANGES IN THE SHARE OF WAGES IN VALUE ADDED IN IRAQI MANUFACTURING 1970-1976.

The trends in the wage and profit ratios depicted in Table V-1, column 7 show that between 1960 and 1973 the wages profit ratio declined continuously: from 99 per cent in 1960, to 62 per cent in 1964, and to 57 per cent in 1973. In 1974 and 1975, following the increase in oil revenues and the wage legislations referred to earlier, the downward trend was arrested and reversed, and the ratio rose to 69 per cent and 64 per cent in 1974, and 1975 respectively. In 1976, however, the ratio fell to 53 per cent.

With respect to the share of wages in total value added, table V-7 and chart 2, present ratios for all manufacturing and large establishments (exclusive and inclusive of petroleum) and for small establishments. Two observations need to be stressed. First, the share of wages in total value added is accentuated when petroleum products industry is excluded. Similarly when large establishments alone are considered. Second, the effects of wage legislation in 1974, have extended to small establishments, apparently mainly indirectly, and a year later, when a number of large establishments shook off some of their workers and crossed over to join the less than 10 employment group, in order to avoid the consequences of the wage legislation. This cross over, together with the high tide in wages in that time, contributed to the large rise in the share of wages in value added in 1975: from 3.1 per cent to 10.2 per cent. But this high level was not maintained in the subsequent year. It fell to 5.9 per cent.

III. Comparison of changes in wages and profits by size of establishments.

The question now is how have shares in wages and profits of large and small establishments changed over years?

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Table V-7 shows the share of large establishments in aggregate wages and aggregate profits in manufacturing in 1964, and 1970 to 1976. Needless to say that large establishments generated the larger part of wages and profits throughout: on average 84 per cent of total wages and 69 per cent of profits between 1970-76. But the relative weights changed over years. The relative importance of wages of large establishments in aggregate wages in manufacturing shows a persistent increase in the years 1964 and 1970 to 1974. It has risen from 81.4 per cent in 1964 to 87.1 per cent and 92 per cent in the last two years respectively. The share of profits of large establishments exhibits a different trend. While it increases markedly between 1964 and 1970 from 71.1 per cent to 85.6 per cent respectively, from 1970 onwards, the share tends to decline gradually reaching nearly 60 per cent in 1976.

The come-back staged by small establishments in 1975, which was discussed earlier, shows here as well. The rise in the share of wages in large establishments was reversed and reduced in 1975, from 92 per cent to 74 per cent. The share in profits was cut even more: from 77 per cent to

TABLE V-7. THE SHARE OF WAGES AND PROFITS IN LARGE ESTABLISHMENTS IN THE AGGREGATE WAGES AND PROFITS IN MANUFACTURING 1964, 1970-1976. PERCENTAGES

	1964	1970	1971	1972	1973	1974	1975	1976	Average 1970-76
Share of large establishments in aggregate wages	81.4	87.1	n.a.	n.a.	90.5	91.9	73.9	82.9	84.2
Share of large establishments in aggregate profits	71.1	85.6	n.a.	n.a.	79.0	76.8	56.7	60.1	69.0

Source: Based on tables V-1, V-5 and V-6.

57 per cent. But neither levels were maintained in the subsequent year. The share of large establishments in wages increased abruptly to 83 per cent, and in profits gradually to 60 per cent.

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IV. wages and profits in large and small manufacturing establishments.

Tables V-8 to V-10 show wages, profits and their respective averages per employee in small establishments. Total real wages generated by small establishments was as low as ID 4 million yearly at constant prices in the period 1964-1974 (table V-10). This amounted to between 8.2 per cent and 23 per cent of wages in large establishments in that period (see table V-11). At the same time wages per employee in small establishments represented between 23 and 28 per cent of that in large establishments, as shown in table V-8.

However, from 1975 onwards the volume of wages in small establishments and its relative size, compared with large establishments, expanded noticeably.

TABLE V-8. REAL WAGES PER EMPLOYEE AND REAL PROFITS* PER EMPLOYEE IN SMALL ESTABLISHMENTS AS PER CENT OF LARGE ESTABLISHMENTS 1964, 1970-1976 (PERCENTAGES)

	1964	1970	1971	1972	1973	1974	1975	1976	Average 1970-76
Wages per employee in small establishments as per cent of wages per employee in large establishments	28	28	n.s.	n.a.	28	23	65	62	38
Profits per employee in small establishments as per cent of profits per employee in large establishments	50	56	n.a.	n.a.	71	84	142	144	98

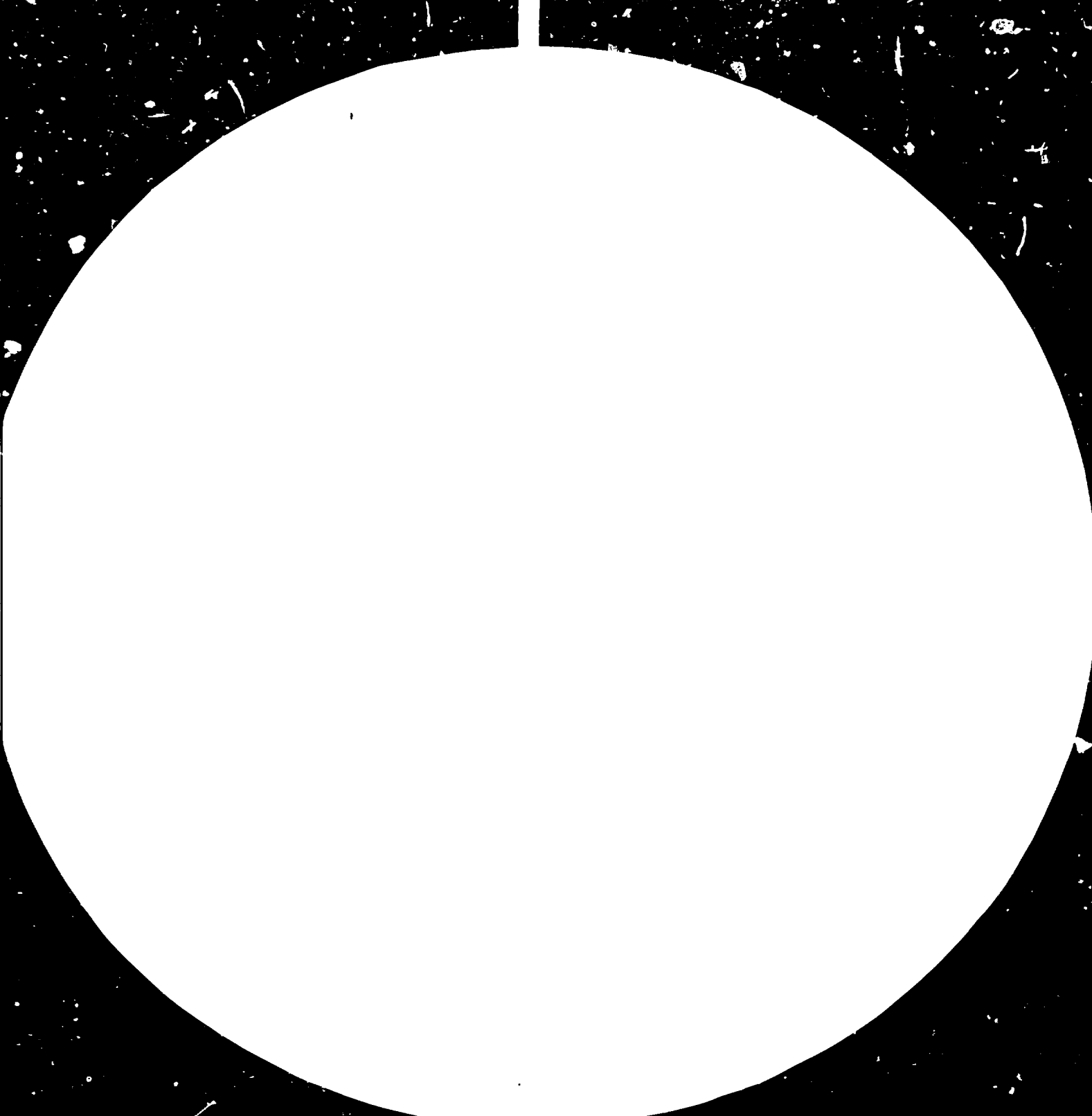
Source: Based on data in tables V-11 and V-12.

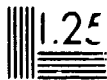
* Profits include depreciation

Profits in small establishments, on the other hand, amounted to a higher percentage of that in large establishments: around 30 per cent between 1964/74. (See table V-11 and V-12). Profits per employee was even higher: around 50 and 84 per cent in the same period. And on average, between 1970 and

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1976, profits per employee amounted to 98 per cent of that in large establishments against the 38 per cent of wages. In the last two years of the period considered, profits per employee in small establishments, in fact exceeded that of large establishments. Definitional differences and statistical anomalies notwithstanding, this is an indication that the expansion of output, revenues, and employment in small establishments were more functionally related compared with large establishments.

V. The highest wages and profits industries.

In this section, we shall deal with two questions. Firstly, which were the most important industries in terms of wages and profits? Secondly, how have their shares changed over the years? In tables V-13 and V-14, the highest 25 industries are ranked in terms of wages and profits and their respective shares in aggregate wages and profits in manufacturing. In tables V-15 and V-16, the best industries in terms of wages per employee, and profits per employee are ranked for selected years. Average wages per employee and profits per employee for large establishments as a whole are also shown.

Consider first tables V-13 and V-14. (1) Out of the 74 industries covered, the highest 25 industries generated 81 per cent of the profits in 1970, and raised it to 89 per cent in 1976. This concentration is also applicable to wages in tables V-13, although here a faint sign of increased dispersion is evident.

TABLE V-9. TOTAL WAGES, AND WAGES PER EMPLOYEE IN SMALL ESTABLISHMENTS AT CURRENT AND CONSTANT PRICES. ANNUAL AND AVERAGE ANNUAL GROWTH 1964, 1970-76 (ID AND PERCENTAGES)

	1964	1970	1971	1972	1973	1974	1975	1976	AAROG 1970-76
Total wages at current prices (ID m.)	3.5	4.2	n.a.	n.a.	4.6	4.6	23.3	16.3	25.3
Annual changes per cent		3.1	n.a.	n.a.	3.1	0	4.06	-30.0	25.3
Total wages at constant prices (ID m.)	4.0	4.2	n.a.	n.a.	4.0	3.7	17.0	10.7	
Annual changes percent		0.8	n.a.	n.a.	-1.0	-7.5	359.0	-37.0	16.9
Wages per employee at current prices (ID m.)	90.0	95.0	n.a.	n.a.	109.0	112.0	342.0	273.0	
Annual changes		1.0			4.7	2.7	205.0	20.0	19.2
Wages per employee at constant prices (ID)	103.0	95.0	n.a.	n.a.	94.0	89.0	248.0	180.0	
Annual changes		- 1.0			-1.0	-5.3	179.6	-27.4	11.2

Source: See table V-4.

Note: Geometric index for current wages is shown in appendix to Chapter 3, Vol. II.

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TABLE V-10 PROFITS* AND PROFITS PER EMPLOYEE IN SMALL ESTABLISHMENTS
AT CURRENT AND CONSTANT PRICES. ANNUAL AND AVERAGE ANNUAL
GROWTH RATES 1964, 1970-1976 (ID AND PERCENTAGES)

	1964	1970	1971	1972	1973	1974	1975	1976	AARGO 1970-76
Profits at current prices ID n.	8.6	14.8	n.a.	n.a.	17.5	20.0	60.4	71.2	
Annual changes per cent		9.5	n.a.	n.a.	5.7	14.3	202.0	18.0	30.0
Profits at constant prices ID n.	9.5	14.8	n.a.	n.a.	15.1	15.9	43.9	51.9	
Annual changes per cent		6.9	n.a.	n.a.	0.7	5.3	176.1	18.2	23.2
Profits per employee at current prices ID	222.0	334.0	n.a.	n.a.	417.0	487.0	887.0	1193.0	
Annual changes		7.0	n.a.	n.a.	7.7	16.8	82.1	34.5	23.6
Profits per employee at constant prices(ID)	255.0	334.0	n.a.	n.a.	359.0	387.0	645.0	786.0	
Annual changes		4.6	n.a.	n.a.	2.4	7.8	66.7	21.9	15.3

Source: See table V-4.

Note: Geometric index for current profits is shown in volume II of this study.

* : Profits here correspond to non-wage value added.

(ii) Within the highest 25 industries in profits the top five industries alone generated more than 50 per cent of the aggregate profits in the randomly selected years. The top five in wages produced 30 per cent of the aggregate wages.

(iii) Six out of ten of the highest profit making industries were also among the highest wage generating industries in 1970. In 1973, there were eight such industries, but in 1976 the number fell to four. These were cotton textiles, cement and sugar. They were among the highest in absolute and relative terms throughout the years selected.

(iv) The composition of the best 25 industries tend to change during the years regarding both profits and wages. For example, in profits, in table V-14, there were in 1976 eight new industries compared with 1970. These industries were drug packing, radio and television, sulfur refining, tanning,

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other electrical equipment, batteries, synthetic textiles, animal products and canning in that order. Similarly, regarding wages. The new industries here included tanning, paper products, jute, radio and television, tobacco curing, canning and batteries. The ranking of the industries within each group has also changed. Such industries as car assembling, brewing, dates packing, and plastic products, have all moved up in the list and raised their shares in 1976 in comparison with 1970. The shares of cement and non-electrical machinery in profits however declined in 1976.

Now consider tables V-15 and V-16 concerning wages per employee and profits per employee respectively.

(i) In 1970, out of the 25 industries with highest wages per employee there were 12 which were not among the highest profits per employee^{1/}. And 5 of these missing industries were among the first 10 in the wages list in table V-15. In 1976, 10 of the 25 highest wages per employee were not among the 25 highest profits per employee, but only 4 were among the first 10 in the wage list. These were vegetable oil, radiators, soups, and matches.

(ii) Some industries, notably, brewing, petroleum products, sulfur refining and cigarettes, were generally prominent in both lists for most of the years selected.

(iii) All 25 industries in the wage list (table V-15) had wages per employee above the average calculated for large establishments as a whole. But the margin of difference, between the lowest value in the list and the average, narrowed subsequently. The opposite is true for profits per employee. Not only the averages for large establishments as a whole were higher than in a number of industries each year, but the margin of difference also widened in the subsequent years.

(iv) Even when petroleum products and car assembling are excluded from the profits list, because of their relatively very high profits per employee, the range between the highest and the lowest profits per employee in the list was much larger than in wages per employee, and was widening over the

^{1/} These industries were, other chemicals, sulfur refining, metal furniture, air coolers and heaters, other electrical equipment, fabricated metal products, drug packing, sugar, paints, radiators, cotton ginning and smelting.

years from ID 1,744 in 1970 to ID 3,377 in 1976. (The range between the highest and the lowest wages per employee in the list was reduced from ID 378 to ID 336 in the same years).

(v) Throughout the period average wages per employee was much lower than average profits per employee. But the differential was markedly narrowed over the period. Thus, while in 1970, average wage per employee represented 57 per cent of average profit per employee in 1976 the ratio rose to 72 per cent.

TABLE V-11. RATIO OF TOTAL WAGES IN GROSS VALUE ADDED IN OVERALL MANUFACTURING LARGE ESTABLISHMENTS (INCLUSIVE AND EXCLUSIVE OF PETROLEUM PRODUCTS), AND SMALL ESTABLISHMENTS. AVERAGE ANNUAL RATE OF GROWTH, 1964, 1970-76 (PERCENTAGES) (CURRENT FACTOR COSTS)

	1964	1970	1971	1972	1973	1974	1975	1976
I. All manufacturing								
Total wages inclusive of petroleum products as percent of value added in manufacturing								
- Inclusive of petroleum products	38.4	36.1	n.a.	n.a.	36.5	40.8	39.0	34.8
- exclusive of petroleum products	42.6	39.1	n.a.	n.a.	38.3	44.1	41.8	38.1
II. Large establishments								
Total wages of large establishments as percent of value added in mfg.								
- Inclusive of petroleum products	31.2	31.4	n.a.	n.a.	33.0	37.7	29.0	28.8
- Exclusive of petroleum products	34.1	33.7	n.a.	n.a.	34.4	44.1	41.8	38.1
Total wages of large establishments as per cent of value added in large establishments								
- Inclusive of petroleum products	41.5	39.8	42.2	40.9	39.6	45.2	45.4	42.4
- Exclusive of petroleum products	48.4	46.3	46.2	44.2	42.3	50.2	51.8	49.7
III. Small establishments								
Total wages of small establishments as per cent of value added in mfg.	7.2	4.7	n.a.	n.a.	3.5	3.1	10.2	5.9
Total wages of small establishments as per cent of value added in small establishments	8.9	22.1	n.a.	n.a.	20.8	18.7	27.8	18.4
Total wages of small establishments as per cent of total wages in large establishments								
- inclusive of petroleum products	23.0	14.8	n.a.	n.a.	10.6	8.2	35.4	20.7
- exclusive of petroleum products	25.2	15.9	n.a.	n.a.	11.3	8.9	38.1	22.4

Source: Based on table V.3 - 6 in this chapter.

Table V-12. Ratio of Non-Wage Gross Value Added (Profits) in Overall Manufacturing, Large Establishments (inclusive and exclusive of petroleum products) and Small Establishments. Average Annual Rate of Growth 1964, 1970 - 1976. (Percentages)
(Value added in gross and current factor costs)

	1964	1970	1971	1972	1973	1974	1975	1976	AAROG 1970/76
<u>ALL MANUFACTURING:</u>									
Profits inclusive of petroleum products as per cent of value added in manufacturing	61.6	63.9	n.a.	n.a.	63.5	59.2	61.0	65.2	0.3
Profits exclusive of petroleum products as per cent of value added in manufacturing	57.9	60.9	n.a.	n.a.	61.7	55.8	58.1	61.9	0.3
<u>LARGE ESTABLISHMENTS</u>									
Profits inclusive of petroleum products as per cent of value added in manufacturing	43.9	47.5	n.a.	n.a.	50.2	45.7	34.6	39.2	-3.2
Profits exclusive of petroleum products as per cent of value added in manufacturing	36.3	39.3	n.a.	n.a.	46.8	40.1	28.2	31.4	-3.8
Profits inclusive of petroleum products as per cent of value added in large establishments	58.5	60.2	57.7	59.1	60.4	54.8	54.6	57.6	-0.7
Profits exclusive of petroleum products as per cent of value added in large establishments	51.5	53.7	53.7	55.8	57.7	50.0	48.2	50.2	-1.1
<u>SMALL ESTABLISHMENTS</u>									
Profits of small establishments as per cent of value added in manufacturing	17.6	16.4	n.a.	n.a.	13.3	13.5	26.4	26.0	8.0
Profits of small establishments as per cent of value added in small establishments	71.1	77.9	n.a.	n.a.	79.2	81.3	72.2	81.4	0.7
Profits of small establishments as per cent of profits in large establishments: inclusive of petroleum products	23.5	34.6	n.a.	n.a.	26.5	29.5	76.3	66.4	11.5
Profits of small establishments as per cent of profits in large establishments: exclusive of petroleum products	30.0	48.4	n.a.	n.a.	31.7	32.1	106.1	97.0	

Source: Based on tables 4-6 in this chapter.

Table V-13 Ranking of the 25 highest wages industries and their shares in aggregate wages in Iraqi manufacturing in selected years. (Large establishments)
(Current prices) (ID Thousands and percentages)

1 9 7 0			1 9 7 3			1 9 7 6		
Industries	Value ID000	% of mfg.	Industries	Value ID000	% of mfg.	Industries	Value ID000	% of mfg.
Bricks	2 244	7.9	Cotton textiles	3 966	9.1	Petroleum prods.	6 107	7.7
Cotton textiles	2 241	7.9	Petroleum prods.	2 914	6.7	Bricks	5 947	7.5
Petroleum products	2 074	7.3	Bricks	2 673	6.2	Cotton textiles	5 807	7.4
Cigarettes	1 507	5.3	Silk textiles	1 958	4.5	Cement	4 255	5.4
Cement	1 313	4.6	Cement	1 934	4.5	Silk textiles	3 222	4.1
Wool textiles	1 263	4.4	Wool textiles	1 681	3.9	Vegetable oil	3 135	4.0
Non-electrical mach.	1 144	4.0	Soft drinks	1 583	3.6	Sugar	2 736	3.5
Silk textiles	1 120	3.9	Cigarettes	1 541	3.5	Soft drinks	2 421	3.1
Soft drinks	1 068	3.8	Vegetable oil	1 521	3.5	Wool textiles	2 326	2.9
Vegetable oil	971	3.4	Non-elect. mach.	1 420	3.3	Non-elect. mach.	2 306	2.9
Footwear	953	3.3	Sugar	1 266	2.9	Tanning	2 271	2.9
Sugar	858	3.0	Tailoring	1 234	2.8	Paper products	1 962	2.5
Grain milling	728	2.6	Footwear	1 133	2.6	Printing	1 765	2.2
Printing	663	2.3	paper & products	1 124	2.6	Dairy products	1 763	2.2
Dates packing	566	2.0	Grain milling	937	2.2	Cigarettes	1 742	2.2
Tailoring	534	1.9	Dairy	905	2.1	Tailoring	1 653	2.1
Brewing	470	1.7	Dates	889	2.0	Grain milling	1 481	1.9
Drug packing	428	1.5	Jute	848	1.9	Jute	1 460	1.8
Dairy products	427	1.7	Printing	826	1.9	Other elect.equip	1 405	1.8
Other electrical equip.	383	1.3	Other elect.equip.	702	1.6	Brewing	1 281	1.6
Metal furniture	377	1.3	Synthetic silk	681	1.6	Radios & T.V.	1 261	1.6
Air coolers & heaters	348	1.2	Brewing	663	1.5	Tobacco curing	1 249	1.6
Tiles & mosaic	347	1.2	Drug packing	584	1.3	Canning	1 239	1.6
Carpentry	337	1.2	Canning	534	1.2	Dates packing	1 136	1.4
Synthetic silk	300	1.0	Glass products	527	1.2	Batteries	1 033	1.3
Sub-Total		80.1			78.4			77.4

Source. Based on data in Annual Industrial Surveys.

Table V-14. Ranking of the 25 Highest Profit Making Industries and Their Shares in Aggregate Profits in Manufacturing in Selected Years (Large establishments)(Current prices)(ID thousands and percentages)

1 9 7 0			1 9 7 3			1 9 7 6		
Industries	Values ID.000	% of Mfg.	Industries	Values ID.000	% of Mfg.	Industries	Values ID.000	% of Mfg.
Petroleum products	10 174	20.6	Petroleum prods.	10 909	16.5	Petroleum prods.	33 772	31.5
Cement	4 750	9.6	Cigarettes	6 862	10.4	Car assembly	11 002	10.3
Car assembly	4 383	8.9	Sugar	5 093	7.7	Sugar	5 181	4.8
Vegetable oil	4 311	8.7	Cement	4 451	6.7	Drug packing	4 543	4.2
Cigarettes	2 052	4.2	Car assembly	4 383	6.6	Cigarettes	3 945	3.7
Grain milling	1 708	3.5	Cotton textiles	3 762	5.7	Cotton textiles	3 870	3.6
Non-electric mach.	1 523	3.1	Soft drinks	3 123	4.7	Brewing	2 676	2.5
Cotton textiles	1 430	2.9	Vegetable oil	1 834	2.8	Cement	2 416	2.2
Soaps	997	2.0	Dates packing	1 740	2.6	Radios and T.V.	2 395	2.2
Footwear	944	1.9	Silk textiles	1 667	2.5	Dates packing	2 197	2.0
Synthetic silk	868	1.7	Drug packing	1 644	2.5	Sulfur refining	2 150	2.0
Dairy products	833	1.7	Synthetic silk	1 351	2.0	Tanning	2 139	2.0
Sugar	764	1.5	Brewing	1 344	2.0	Plastic prods.	2 107	2.0
Brewing	740	1.5	Cotton ginning	1 192	1.8	Non-elec.mach.	1 932	1.8
Wool textiles	702	1.4	Paper products	1 166	1.7	Other elec.eqp.	1 852	1.7
Bricks	612	1.2	Confectionary	1 141	1.7	Batteries	1 712	1.6
Dates packing	495	1.0	Radios and T.V.	1 067	1.6	Soft drinks	1 592	1.5
Fertilizers	481	1.0	Canning	958	1.4	Paper & prods.	1 520	1.4
Asbestos	381	0.8	Dairy products	920	1.4	Footwear	1 461	1.4
Confectionary	343	0.7	Tailoring	842	1.3	Silk textiles	1 188	1.1
Tobacco curing	324	0.7	Grain milling	821	1.2	Asbestos	1 153	1.1
Plastic products	299	0.6	Tanning	792	1.2	Wool-textiles	1 145	1.1
Air coolers & heaters	295	0.6	Fertilizers	695	1.0	Animal prods.	1 113	1.0
Paper and products	288	0.6	Wool textiles	660	1.0	Canning	1 104	1.0
Printing	283	0.6	Bricks	651	1.0	Printing	1 047	1.0
Sub-total		81.2	Sub-total		89.3	Sub-total		88.8

Source: Based on data in Annual Industrial Surveys.

Table V-15. Ranking of Industries According to Wages per Employee in Iraqi Manufacturing in Selected Years. ID and Current Prices

1 9 7 0			1 9 7 3			1 9 7 6		
Rank	Industries	Values ID	Rank	Industries	Values ID	Rank	Industries	Values ID
1	Brewing	803	1	Brewing	880	1	Brewing	1 006
2	Other chemicals	622	2	Petroleum products	766	2	Sulfur refining	972 .
3	Petroleum products	617	3	Sulfur refining	752	3	Petroleum prods.	928
4	Sulfur refining	541	4	Other chemicals	736	4	Vegetable oil	880
5	Crude plastics	528	5	Radiators	667	5	Radiators	856
6	Metal furniture	485	6	Cigarettes	637	6	Soaps	854
7	Leather salting	476	7	Metal furniture	636	7	Air coolers and heaters	851
8	Non-electrical mach.	474	8	Paints	620	8	Paints	835
9	Air coolers & heaters	468	9	Crude plastics	586	9	Medicated cotton	825
10	Radiators	467	10	Air coolers and heaters	584	10	matches	814
11	Other elec. equipment	463	11	Nails and razor blades	561	11	Other chemicals	813
12	Vegetable oil	454	12	Footwear	553	12	Cement	800
13	Cigarettes	454	13	Radios and T.V.	550	13	Cigarettes	798
14	Nails & razor blades	453	14	Cement	549	14	Smithy	789
15	Fertilizers	450	15	Tanning	528	15	Crude plastics	775
16	Medicated cotton	447	16	Soft drinks	524	16	Nails & razor blades	762
17	Footwear	446	17	Damp proofing mat.	516	17	Pipes	748 .
18	Soaps	446	18	Vegetable oil	512	18	Radios and T.V.	738
19	Asbestos	445	19	Rubber products	509	19	Asbestos	736
20	Drug packing	442	20	Medicated cotton	500	20	Concrete products	720
21	Sugar	437	21	Drug packing	495	21	Damp prof. material	690
22	Paints	436	22	Soaps	495	22	Grain milling	675
23	Cement	436	23	Smithy	493	23	Rubber products	673
24	Cotton ginning	434	24	Dairy	480	24	Other elec. equip.	670
25	Smithy	425	25	Batteries	476	25	Miscellaneous	670
All	Manufacturing	340	All	Manufacturing	386	All	Manufacturing	609

Source: Based on wage and employment data in the Annual Industrial Surveys.

Table 7-16. Ranking of Industries According to Profits Per Employee in Large Manufacturing Establishments in Selected Years (Iraqi Dinars at current prices)

1 9 7 0			1 9 7 5		1 9 7 6	
Rank	Industries	Values ID	Industries	Values ID.	Industries	Values ID
1	Car assembly	12 312	Car assembly	12 312	Car assembly	13 098
2	Petroleum products	3 028	Petroleum products	2 866	Petroleum products	5 130
3	Fertilizers	2 186	Cigarettes	2 838	Sulfur refining	3 996
4	Vegetable oil	2 017	Animal products	2 786	Animal products	3 126
5	Soaps	1 829	Leather salting	2 000	Drug packing	2 890
6	Macaroni	1 683	Brewing	1 785	Bicycles	2 178
7	Cement	1 579	Cotton ginning	1 703	Brewing	2 102
8	Brewing	1 265	Sugar	1 606	Cigarettes	1 808
9	Bicycles	914	Radios and T.V.	1 421	Plastic products	1 769
10	Synthetic silk	865	Drug packing	1 390	Pipes	1 769
11	Asbestos	860	Cement	1 263	Radios and T.V.	1 401
12	Grain milling	813	Shoe laces	1 060	Crude plastics	1 352
13	Leather salting	738	Soft drinks	1 033	Paints	1 323
14	Animal products	725	Air coolers & heaters	978	Medicated cotton	1 264
15	Crude plastics	719	Medicated cotton	954	Sugar	1 245
16	Tobacco curing	718	Fertilizers	884	Batteries	1 093
17	Rubber products	712	Stones	873	Other chemicals	1 053
18	Dairy	699	Synthetic silk	849	Asbestos	997
19	Plastic products	697	Tanning	815	Cosmetic	933
20	Non-electrical machinery	631	Confectionary	802	Other electric.equip.	883
21	Cosmetics	627	Matches	791	Fabricated metal prod.	808
22	Cigarettes	618	Other chemicals	780	Smithy	767
23	Medicated cotton	570	Bicycles	743	Air coolers and heaters	767
24	Cotton ginning	548	Crude plastics	690	Dates packing	644
25	Footwear	442	Cosmetics	663	Tanning	619
	All manufacturing	591	All manufacturing	588	All manufacturing	829

Source: Based on profits and employment data in the Annual Industrial Survey.

APPENDIX TABLE I
 Average profit per employee in manufacturing. Average annual rate of growth, 1970 - 1976.
 (Major Groups) (current factor costs) (Iraqi Dinars)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	534	398	458	517	572	435	587	1.59
31.2	Beverages	268	436	499	1183	841	1074	854	21.31
31.4	Cigarettes	630	880	999	1967	1462	1796	1001	8.02
32.1	Textiles	177	251	329	312	294	247	288	8.45
32.2	Wearing Apparel	100	63	181	173	180	160	238	15.55
32.3	Leather and products	190	9	314	839	734	423	616	21.66
32.4	Footwear	441	233	352	298	356	458	274	-7.62
33.1	Wood except furniture	24	-135	-80	-139	80	-348	-142	
33.2	Furniture & fixtures	67	79	132	73	168	213	339	31.02
34.1	Papers and products	342	-74	361	453	473	174	480	5.81
34.2	Printing and publishing	169	556	213	55	-30	-39	344	12.57
35.1	Industrial Chemicals	431	431	209	755	1173	934	1586	24.25
35.2	Chemical products	568	1059	770	901	656	741	1137	12.26
35.3	Petroleum products	4937	2702	2643	2866	3207	3760	5130	0.64
35.5	Rubber products	711	582	432	71	892	585	457	-7.10
35.6	Plastic products	701	658	488	655	1249	1337	1746	16.43
35.1	Pottery and earthenware	212	241	110	-144	76	85	333	7.82

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APPENDIX TABLE 1 (CONTINUED)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	77	-63	103	-128	79	157	280	24.01
36.9	Non-metallic products	333	311	238	320	244	236	201	-8.07
37.1	Basic metal products	100	174	56	-41	166	1143	927	44.94
38.1	Fabricated metal products	163	40	223	233	503	493	579	23.52
38.2	Non-electrical machinery	631	631	444	5	199	-352	534	-2.74
38.3	Electrical machinery and supplies	257	17	710	679	710	920	1049	26.42
38.4	Transport equipment	8847	7962	8014	8077	1748	4345	9741	1.62
39.0	Manufacturing not elsewhere classified	123	409	329	337	325	-146	134	1.44

Source: based on estimate of gross value added, total wages and number employment. See text, Chapter .

APPENDIX TABLE 2

Average profit per employee in manufacturing. Average annual rate of growth, 1970 - 1976.
(Industrial Divisions) (current factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	510	470	527	768	724	712	693	5.24
32.	Textiles, Wearing Apparel and Leather	195	212	309	309	299	297	314	8.26
33.	Wood & products, including furniture	64	63	116	58	162	160	282	28.04
34.	Paper, printing and publishing	226	307	289	293	256	71	413	10.57
35.	Chemicals, Petroleum, Rubber and Plastic products	2406	1643	1391	1560	1840	2112	2992	3.70
36.	Non-metallic products	331	297	230	205	232	231	206	-7.60
37.	Basic metal industries	100	174	56	-41	166	1143	927	44.94
38.	Fabricated metal products, machinery and equipment	986	800	954	771	578	761	1611	8.53
39.	Other manufacturing industries	123	409	329	337	325	-146	134	1.44

Source; based on estimate of gross value added, total wages and number employment. See text, chapter .

APPENDIX TABLE 3 -

Average profit per employee in manufacturing. Average annual rate of growth, 1970 - 1976.
(current factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
Manufacturing sector	592	488	502	588	582	626	829	5.77
Consumer goods	363	367	439	542	533	534	592	8.49
Intermediate goods	2326	1421	1147	1319	1563	1759	2296	-0.22
Capital goods	501	438	405	405	281	348	616	3.50
Non-durable goods	640	517	540	650	685	719	906	5.96
Durable goods	490	424	421	429	334	413	669	5.33

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Source: based on estimate of gross value added, total wages and number employment. See text, Chapter .

CHAPTER VI

FINANCING INDUSTRIAL DEVELOPMENT

In Iraq there have generally been four sources of financing industrial development: government, private savings, undistributed profits of companies, and foreign loans. It would have been very helpful if we could show the share of each source in the finance of manufacturing development. As it turned out this task was difficult to attain. For, investment figures in the development plans are given for the industrial sector as a whole and it is difficult to separate between oil revenues and undistributed profits in the finance of public manufacturing, and between private savings per se and undistributed profits in the private sector. Thus while the composition of capital formation in manufacturing by ownership and by type of commodities is available, the distinction between the sources is not. In fact even foreign loans can only be shown for the economy as a whole and not for manufacturing.^{1/}

In the following, each of the four sources will be discussed separately. But it has to be noted that the figures presented overlap, as in reality no separate estimate exists. To show the degree of dependence of manufacturing firms on the money market, analysis was made of the financial structure of all firms employing 30 persons or more. The role of the Industrial Bank and Commercial Banks in financing manufacturing are discussed in the last two sections. But first a general view of investment in manufacturing and the economy.

Investment in manufacturing and the economy.

In the chapter about capital stocks, the magnitude, the ownership, and the commodity composition of capital formation in manufacturing will be discussed. Here, only changes in the relative importance of the investment would be considered.

Appendix Tables 1 to 3 to this chapter show estimate of capital formation in Iraqi economy and its sectoral composition. The sectoral break down of the expenditure of the development during 1960 to 1976, and the percentage share of activities in the aggregate investment. Table VI.1 below shows the highlights of the information in the tables just mentioned.

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^{1/} There is very little foreign or Arab investment if any in Iraqi manufacturing.

It can be seen in table I.1, that between 1970 and 1975, investment in industry and manufacturing quadrupled. The average annual rate of growth of investment in industry (and manufacturing) was higher than the overall rate of growth for the economy. Industrial investment represented no less than one third of the total investment. In 1975, it increased to 42 per cent of the total. Manufacturing raised its share from 8 per cent of the total in 1960 to 23 per cent in 1970, and to 27 per cent in 1975. It is also interesting to note that while in 1960 only one quarter of industrial investment was in manufacturing, in 1975, three-fourth of the industrial investment was in manufacturing.

TABLE VI.1 INVESTMENT IN THE ECONOMY, INDUSTRY AND MANUFACTURING, AND THEIR SHARES IN SELECTED YEARS (CURRENT PRICES, ID MILLION AND GROWTH RATES)

Year	Industry		Manufacturing			Total investment	
	ID million	Percent of total	ID million	percent of total	percent of industry	ID million	percent
1960	40.7	34.5	9.3	7.9	23	117.8	100.0
1970	57.6	35.8	37.0	23.0	64	160.9	100.0
1975	227.4	42.1	147.8	27.4	65	239.9	100.0
ΔAROG							
1960-70	3.5		14.8			3.2	
ΔAROG							
1970-75	31.6		31.9			27.4	

Source: Appendix tables 1 to 3.

What interests us, however, is government allocation for investment in industry and manufacturing. For this consider the detailed tables in the appendix to this Chapter.

Industrial sector's movement to prominence can be followed in appendix table 2. In 1960, for example, ID 21.2 million - representing 44.5 per cent of total government investment, was in construction against only 12 per cent in industry. In 1970, more than a quarter of government's ID 78 million investment was in industry. In the two years which followed industry and agriculture changes places. But from 1973 onwards industry has become dominant. In 1974 and 1975, the share of industry was twice as high as the second highest share in those two years.

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We have already seen that within industry the share of manufacturing has prevailed by a large margin throughout the period. (See appendix table 3). But how much of this investment was from the oil revenues and how much was from other sources. Unfortunately there is no way to ascertain the magnitude of any of the sources. However, if the relative contribution of each source in the Development Plan 1970-1975, is anything to go by then one can say that well above 90 per cent of the manufacturing investment was from oil revenues.

II. Profits and investment in manufacturing.

Data on private savings generally, let alone for the part channelled to investment in manufacturing is hard to come by. The situation regarding profit data, however, is relatively better. But there is still a lot left to be desired. For one thing there are no profit data for small industries for the years from 1960- 1968, for 1971 and for 1972. For another, profits in the way they are calculated here are only substitutes for the actual figures. While more is said about this in the Chapter relating to wages and profits, it suffices to point out here that profits are derived as a residual after subtracting total wages from gross value added.

In order to provide an approximate picture for the magnitude and the role of profits in financing manufacturing, (on the basis of some rough estimates of profits in small industries for the years 1970 to 1972. and estimate of depreciation in chapter 1, v. II) net profits have been calculated for total (large and small) manufacturing establishments for the years 1970 to 1972, as shown in table VI.2 Analysis of profits figures was given in Chapter 5, v. I. It is only to be noted that the rate of profit in Iraqi manufacturing has been the highest compared with other ECW countries^{1/}. What is interesting to know is, first, the size of the undistributed profits, and second, the share of public and private firms in that profit. Unfortunately information about neither was forthcoming. Data concerning undistributed profits were available only for firms employing 50 persons and more and just for one year 1969/70^{2/}. They are shown in table VI.3.

^{1/} UNESOB (1973) Financing of Industrial Development in various countries of the Middle East. June 1973 pp. 172/18/Rev.1

^{2/} CSO, Survey of Industrial Development in Iraq, 1970. Carried out by IDC'S.

If it is assumed that manufacturing firms in general retained undistributed percentage of their profits equal to that shown for firms in table VI.3, then the size of investable funds out of profits would be in the magnitude shown in table VI.4. The percentage of undistributed profit in total investment tended to decline as more external resources were diverted to manufacturing with the increase in oil revenues.

TABLE VI-2. GROSS AND NET PROFITS IN IRAQI MANUFACTURING, 1970-1976
(LARGE AND SMALL ESTABLISHMENTS) (ID MILLIONS, CURRENT PRICES)

	1970	1971	1972	1973	1974	1975	1976	Aggregate of growth 1970-1976
<u>Gross profits of:</u>								
Large industrial establishments	49.3	45.5	54.8	66.1	67.7	79.2	107.2	13.8
Small industrial establishments	16.3*	15.0*	18.1*	17.5	20.0	60.4	71.2	27.8
Total gross profit	57.6	60.5	72.9	83.6	87.7	139.6	178.4	20.7
Total net profits	45.6	54.4	65.6	59.3	55.0	82.8	98.1	13.6

Source: Based on estimate of profits from data in the Annual Industrial Surveys. Also see Chapter on wages and profits.

Note:* For 1970, 1971 and 1972, profits of small industries are estimates based on the ratio of profits in small to large industries in 1969 and 1973.

TABLE VI-3. PROFITS AND ITS DISTRIBUTION IN MANUFACTURING FIRMS EMPLOYING 30 PERSONS AND MORE, 1969 (ID MILLIONS, CURRENT PRICES AND PERCENTAGES)

	Total profits	Undistrib- uted profits	Direct taxes on profits	Owners' share	Workers share
	19.5	11.1	43.9	28.6	12.2
Percentage of total	100.0	56.6	22.5	14.6	6.2

Source: CSO, Survey of Industrial Development, 1970. Carried out by IDC.S.

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TABLE VI-4. APPROXIMATE FIGURES OF UNDISTRIBUTED PROFITS AND THEIR SHARE IN TOTAL INVESTMENT IN IRANIAN MANUFACTURING, 1970-1976 (ID. MILLION AND PERCENTAGES)

	1970	1971	1972	1973	1974	1975
Undistributed profits in ID million	25.8	30.8	37.1	33.5	31.1	46.9
Share of undistributed profits in total investment in manufacturing (per cent)	112	141	128	78	37	32

Source: Based on tables VI-2 and VI-3, in this Chapter and total net investment in Chapter .

Of course, undistributed profits need not all be reinvested. They may be used to rebuild the stock, they may be invested in other activities, or reallocated to meet the demand for variable capital, or maintenance costs, etc. In fact, as shall be seen in a moment manufacturing firms relied heavily on their undistributed profits as a cushion against shortages in the supply of short term funds. Nevertheless, undistributed profits have been a major source of finance although with a declining importance.

III. Private savings.

Again it is hard to establish the exact magnitude of the private savings directed to investment in manufacturing. Figures regarding private savings exist only at the overall economy level. The indication, however, is that private saving has been declining in relative terms. As more activities in manufacturing, construction, wholesale and retail trade, transport and even agriculture have been brought under state control, opportunities for raising private saving have been narrowing. And as far as manufacturing is concerned, discussion of the role of Industrial Bank will show that not only the size of private investment in manufacturing has markedly declined in the years 1973 to 1975, but that more than two thirds of the low investment was financed from loans by the Industrial Bank. There is, however, a possibility that private investment in manufacturing is grossly understated.

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Private loans.

As stated earlier, there is no way to know how much of the foreign loans was channelled to manufacturing. The share of foreign loans in total investment in each year of the Development Plan 1970-1975, is shown in Table VI-5. On average foreign loans represented 4.5 per cent of the investment.

TABLE VI-5. RATIO OF FOREIGN LOANS IN TOTAL INVESTMENT IN THE DEVELOPMENT PLAN OF 1970-1975 (PERCENTAGES)

	1970	1971	1972	1973	1974	1975	Average 1970-75
Ratio of foreign aid to total investment in the development plan of 1970-1975	1.3	0.8	7.7	2.8	2.7	6.8	4.5

Source: Annual Abstract of Statistics 1976.

IV. The policies of financial intermediaries towards manufacturing.

The size of private investment at any given time depends on the one hand on its profitability, and on the other, on the supply of finance available. Regarding the former, oil revenue expenditure, as indicated earlier, helps to raise demand and open avenues for private businesses, hence, increase profitability and saving. As for the latter, the supply of money in Iraq, is closely linked to oil revenues, which have been continually increasing. The authorities therefore could, through the banking system, use part of the revenues to encourage private businesses by (1) increasing the availability of credits to investors, and (2) lowering the cost of borrowing. How far has this been so regarding manufacturing?

For manufacturing firms to have benefited from policies in (1) and (2) just mentioned, they would have had:

- (i) a low liquidity ratio in their current assets, and
- (ii) a low ratio of internal funds to external finance in the total investment funds of firms^{1/}. In studying these ratios we have relied on the balance sheets of firms covered and reproduced in CSO's survey of industrial development 1970.

^{1/} Liquidity ratio is defined as the ratio of current assets to current liabilities.

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As table VI-6 shows, the first ratio was very high in the Iraqi manufacturing. The liquidity ratio for all manufacturing firms employing 30 persons or more, representing 89 per cent of the gross output and 91 per cent of the capital in the manufacturing sector in 1969/1970 was 194; which was higher than in Japan, for example. The ratio was also high when the firms were disaggregated into major industrial groups in table VI-8. But significantly, cash and marketable securities in the current assets represented the smallest proportion, both at sector and major group level - except for textiles and hosiery, and non-metals. The second ratio, which is usually considered a better indicator of sensitivity to banking policy was low. The ratio of bank loans in the external finance, and this in the current liabilities were the largest: 68 per cent and 77 per cent respectively. (See tables VI-6, VI-8 and VI-9).

TABLE VI-6. COMPARISON OF THE RATIO OF CURRENT ASSETS AND LIABILITIES OF CORPORATIONS TO CURRENT LIABILITIES, IN IRAQ AND IN JAPAN (AVERAGE 4 YEARS 1960-1964 FOR JAPAN, AND 1969 FOR IRAQ) (PERCENTAGES)

C o u n t r i e s	Current Assets			Current Liabilities		
	Cash and marketable securities	Debtors and stocks	Total current assets	Bank loans	Other debts	Total current liabilities
<u>Japan.</u>						
all corporations	19	86	105	35	65	100
Manufacturing	23	91	114	38	62	100
<u>Iraq.</u>						
All manufacturing corporations employing 30 and above	35	159	194	77	23	100

Source: For Iraq, CSO, op cit. For Japan, E. Sahag, The Relative Efficacy of Monetary Policies in Selected Industrial and Less Developed Countries. Economic Journal Vol. 81, 1971.

TABLE VI-7. SOURCE OF FUNDS AS PERCENTAGE OF TOTAL FUNDS USED BY CORPORATIONS IN IRAQ AND JAPAN. (AVERAGE FOUR YEARS 1960-1964 FOR JAPAN, 1969 FOR IRAQ) (PERCENTAGES)

Countries	Internal	External			
		Total	Equity and loan capital	Trade credits	Bank loans
Japan	30	70	10	25	35
Iraq, all manufacturing corp. employing 30 persons and plus	32	68	not separated		68

Source: See table VI-6 above.

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TABLES VI-8. CURRENT ASSETS AND LIABILITIES AS PERCENTAGE OF CURRENT LIABILITIES IN MANUFACTURING FIRMS EMPLOYING 30 PERSONS OR MORE, AT MAJOR INDUSTRIAL GROUP LEVEL, 1969

Major industrial group	Current assets				Current liabilities		
	Cash	Debtors	Stocks	Total	Bank loans short term reserves	Income tax reserves	Dividends
Food	28	67	67	162	70	16	14
Drinks	4	51	55	110	89	7	4
Tobacco	38	29	64	129	70	18	12
Textiles	50	112	168	330	88	5	7
Clothing	4	55	68	126	97	0.1	2
Shoes	2	59	123	184	87	4	9
Paper products	24	36	63	122	77	11	12
Chemicals*	42	140	319	501	87	6	7
Non-metallics	86	118	63	267	63	10	19
Metallics	4	60	158	222	86	1	13
Machinery	1	57	96	154	96	0	3
All manufacturing**	35	78	93	159	77	12	11

Source: See table VI-9.

* Includes petroleum products

** All manufacturing firms employing 30 persons or more.

TABLE VI-9. SOURCE OF FUNDS, AS PERCENTAGE OF TOTAL CURRENT FUND USED BY FIRMS EMPLOYING 30 PERSONS OR MORE (MAJOR INDUSTRIAL GROUPS) 1969

	Food	Drinks	Tobacco	Texts.	Clothing	Shoes	Tanning	Paper prods.	Chemicals
Internal funds (%)	19	12	21	13	6	18	16	54	85
External funds (%)	81	88	79	87	94	82	84	46	15
	Non-metallics	Metallics	Machinery	All Mfg.†					
Internal funds (%)	31	14	14	32					
External funds (%)	69	86	86	68					

Source: Tables VI-6 and Table VI-8 are based on the data in the 'Survey of Industrial Development, 1970. Carried out by IDC&S.

* All manufacturing firms employing 30 persons or more.

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(These findings also apply to major industrial groups, in table VI-8). But this could be because bank loans include the share of other components of external finance, which were not separately recorded. Further, the relative low ratio for (2) is due mainly to the use of the rather narrow concept of internal funds in the tables for international comparison. (Tables VI-6 and VI-8). Internal funds include only 'additions to general reserves, undistributed profits, and depreciation funds'.^{1/} Apart from the fact that the internal funds in our case are the record of one year, as against the average of four years for Japan in the table (and therefore excludes the undistributed profits of earlier years), in Iraq, the required initial paid-up capital and reserves demanded from manufacturers are high: 73 per cent of the total capital invested, and 63 per cent of the total liabilities in the firms referred to (see table VI-10). Therefore, had a wider definition been adopted, the ratio of internal funds in the total funds would have been much higher. But this does not reduce the usefulness of the ratio. It merely points to the presence of other reserves which may blunt the response to banking policy unless dealt with first.

TABLE VI-10. CONSOLIDATED BALANCE SHEET OF MANUFACTURING FIRMS EMPLOYING 30 PERSONS OR MORE 1969 (ID MILLION AND PERCENTAGES)

Liabilities	Amount	Percent
<u>Net worth</u>	106.0	73
Paid up capital and reserves	94.9	65
Undistributed profits	11.1	8
Long and medium term loans	5.9	4
<u>Current Debt</u>	33.6	23
Short term loans and loans from creditors	29.2	20
Income tax reserves	4.4	3
Total Liabilities	145.5	100

Continued...

^{1/} See source to table VI-6.

TABLE VI-10 (CONTINUED...)

Liabilities	Amount	Percent
<u>Assets</u>		
Gross fixed assets	112.1	77
Depreciation	59.7	41
<u>Net fixed assets</u>	52.4	36
<u>Current assets</u>	77.6	53
Cash	13.1	9
Inventories	35.0	24
Debtors	29.4	20
Others*	3.5	2
Total assets	145.5	100

Source: Based on data in the Survey of Industrial Development 1970.

Notes*: The item 'others' is not defined in the record. This is more likely to represent intangible assets, which are also not identified in the report. Gross fixed assets are those at historical costs. Depreciation is obtained as a residual. As net fixed assets are grossly understated in the report, depreciation is overstated here. All the figures, however, are under-estimated.

Indeed the disparity between the two ratios considered reveals the financial difficulty faced by Iraqi manufacturing firms. For, while the high ratio of external finance shows their reliance on outside loans, the shortcomings of these loans can be seen from the relatively small share loans represented in the working capital (i.e. current assets). Again referring to the firms just mentioned, the working capital represented 53 per cent of the total liabilities and 60 per cent of the total invested capital. External finance represented 45 per cent of the working capital, and this falls to 37 per cent when long term loans are excluded, as they should be. This means that manufacturers themselves supplied the largest part of their own working capital. (Bank loans represented about one third of the liquidity ratio - see footnote to table VI-6).

The results just shown, however, represent a substantial improvement on the record of earlier periods. Based on the consolidated balance sheet

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of 30 major manufacturing firms in 1962, it was found that short-term commercial loans to manufacturing amounted to only 23 per cent of the working capital, (against the 45 per cent stated above), and that 15 per cent of this was provided by suppliers' credit.^{1/} Long-term loans amounted to ID 844 thousand, against ID 5 million in 1969.^{2/} Nevertheless, the banking system's policy towards manufacturing was strict and unforthcoming: commercial banks were discouraged by the central bank from granting long-term loans, and the non-organised capital market was small. The Industrial Bank was the only official body supplying long-term loans for the private manufacturing sector.

v. The role of Industrial Bank.

The Industrial Bank was established as long ago as 1936. At first, it was part of the Agriculture Bank, then in 1941 it was made independent, and in 1958 it was linked with the Ministry of Industry when the latter was established. Until recently, the Bank's capital was very small. It remained around ID 5 million for most of the years during 1960-1973. In 1974, it was raised to ID 10 million only to be raised again in 1976 to ID 16 million. Its nominal capital now is ID 25 million.

Government allocation has been the main source of the Bank's finance. Profits, interest rates and commissions represented the smaller part. For example in 1976, accumulated profits and reserves amounted to 17.6 per cent of the paid-up capital in that year (see table VI-11). This latter source of revenue was drastically reduced after the nationalization of industries in 1964, but the subsequent increases in the paid-up capital in 1970s, and the expansion in the Bank's activities that followed compensated for the constraints. The Bank was also made to provide short-term loans, and loans for the nationalized industries, a practice which seems to have subsided as government began air-marking funds for variable capital in the years following the oil revenue increases.

TABLE VI-11. RESOURCES OF THE INDUSTRIAL BANK IN 1976 (ID MILLION)

Nominal capital	Paid-up capital	Profits & reserves	Central Bank	Commercial banks	International org.	Deposits etc.	Total resources
25.0	15.9	2.8	0	0	0	0	18.7

Source: Industrial Bank's annual reports.

^{1/} Jalal, P. The role of government in the industrialization of Iraq, 1950-65, Frank Cass, London 1972, table 5.2, p.63.

^{2/} Annual report of the Ministry of Industry 1969.

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In addition to providing long and short-term loans, participating in mixed ventures, carrying out other banking operation and feasibility studies for existing and new projects, the Bank has also been made to play the role of intermediary in importing raw materials and machinery. Total documentary letter of credit issued by the bank amounted to ID 27.9 million in 1976 as against ID 2.7 million in 1971; the beginning of this function. The shares of private and public sector in this operation seems as shown in table VI-15, to have alternated in claiming importance.

The function of the Bank which is of special interest to us is the loans to industry, particularly long and medium term loans as they are used for investment. Comparison of tables VI-13 and VI-14, would show that progressively long and medium term loans assumed greater significance among the Bank's operations. Thus, while in 1969, long and medium term loans amounted to ID 334 thousand; compared with ID 287 thousand for short term loans, in 1970, the former amounted to ID 7.3 million as against nearly ID 3 million for the latter. And it can also be seen in tables VI-15 and VI-16, that while the private sector had the edge in the long term loans, the mixed sector had the highest share in the short-term loans in most of the years considered. But how important has long and medium term loans been in the total and private investment in manufacturing?

TABLE VI-12. THE CONTRIBUTION OF THE INDUSTRIAL BANK TO GROSS FIXED INVESTMENT IN MANUFACTURING IN SELECTED YEARS (ID MILLION AND PERCENTAGES)

	1965/69	1970	1973	1975
1. Gross investment in manufacturing (ID million)	167.0	42.5	69.1	216.3
2. Private investment in manufacturing (ID million)	74.0	20.8	4.3	4.6
3. Industrial Bank's total investment loans (ID m.)	2.4	0.271	0.875	3.9
4. Industrial Bank's loans to private industry (ID m.)	n.c.	n.c.	0.875	3.4
3 as percentage of 1 (%)	1.4	0.06	1.3	1.8
4 as percentage of 2 (%)	n.c.	n.c.	20.3	74.0

Source: Industrial Bank's annual reports.

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TABLE VI-13 INDUSTRIAL BANK'S SHORT TERM CREDIT FACILITIES BY SECTORS
(ID THOUSAND AND PERCENTAGES)

Sector	1970		1971		1972		1973		1974		1975		1976	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Private	n.a.	n.a.	214	42	86	73	134	94	465	26	381	26	670	23
Mixed	n.a.	n.a.	299	58	33	27	245	61	313	74	1 078	74	2 300	77
Total	287	100	513	100	119	100	379	100	1 778	100	1 459	100	2 970	100

Source: The annual reports of the Industrial Bank.

TABLE VI-14. INDUSTRIAL BANK'S LONG AND MEDIUM TERM LOANS BY SECTORS
(ID THOUSANDS AND PERCENTAGES)

Sector	1969		1970		1971		1972		1973		1974		1975		1976	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Private	n.a.	n.a.	n.a.	n.a.	657	62	1 054	80	875	100	1 360	99	436	87	6 557	99.5
Mixed	n.a.	n.a.	n.a.	n.a.	93	8	12	1	0	0	86	6	491	13	760	0.5
Public	n.a.	n.a.	n.a.	n.a.	339	30	251	19	0	0	0	0	0	0	0	0
Total	334	100	271	100	1 129	100	1 317	100	875	100	1 446	100	3 927	100	7 314	100

Source: See table VI-15.

TABLE VI-15. INDUSTRIAL BANK'S DOCUMENTARY LETTER OF CREDIT BY SECTORS
(ID THOUSANDS AND PERCENTAGES)

Sector	1971		1972		1973		1974		1975		1976	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Private	1 837	67	1 033	41	1 926	25	3 762	25	6 709	75	8 021	72
Mixed	891	32	1 481	59	5 651	75	11 012	75	18 592	25	19 919	28
Public	6	0.2	3	0.1	0	0	0	0	0	0	0	0
Total	2 734	100	2 517	100	7 577	100	14 774	100	25 301	100	27 940	100

Source: See table VI-12

Table VI-12 shows that the Industrial Bank's investment loans were almost a negligible portion of the total investment in manufacturing. Even its share in the private investment in manufacturing only acquired some significance when

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the magnitude of this investment decline substantially. In absolute terms both the size of the loans and the magnitude of the private investment remained of little importance. Another striking feature to notice is that in 1975, two thirds of the very low private investment in manufacturing was provided from loans from the Industrial Bank. Without these loans there seem to have been very little private investment in manufacturing in that year.

TABLE VI-16. EQUITY INVESTMENT OF THE INDUSTRIAL BANK IN SELECTED YEARS (ID. MILLION AND PERCENTAGES)

	1 9 7 0		1 9 7 2		1 9 7 4		1 9 7 6	
	Paid up capital by the bank ID.M.	Percent of total paid up capital	Paid up capital by the bank ID.M.	Percent of total paid up capital	Paid up capital by the bank ID.M.	Percent of total paid up capital	Paid up capital by the bank ID. M.	Percent of total paid up capital
	1.4	41	1.6	43	3.0	41	7.1	47
No. of firms involved	12		9		11		17	

Source: Industrial Bank's annual reports.

Another important operation of the Bank has been participation in joint manufacturing firms. Table VI-16, shows that in 1970, there were 12 such industries with paid-up capital totalling ID 3.4 million. The Bank's share in their capital averaged 41 per cent. In 1976 there were 17 such industries with a total paid-up capital of ID 15.1 million and the industrial Bank's share increased to an average of 47 per cent. There are clear evidences that the Bank increased the rate of its participation in the existing firms in order to strengthen its control. It also raised its financing for new industrial projects from 40 to 60 per cent of the total amount invested in the project. The upper bound on private projects loans was raised from ID 50,000 to ID 70,000. The Bank also raised the percentage of funds for all kinds of guarantees from 50 to 60 per cent of values. For machinery locally bought or imported the Bank raised the financing from 40 to 50 per cent of the machine value.

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However, the activities of the Industrial Bank has been marred by gross regional ill-distribution. For example, Baghdad, the capital city, polarized 92.3 per cent and 69.4 per cent of the total long and medium term loans in 1970 and 1976 respectively. Ninevah, the second largest city, got 17 per cent and 7 per cent of these loans in the same years respectively. Whereas the combined share of the four northern governates (Dahok, Arbil, Sulaymania and Kirkuk), did not exceed 2 per cent in 1970, and 4.6 per cent in 1976. This inequal distribution persisted throughout the period 1960-76, and with regard to all activities of the Bank. The introduction of differential interest rates system in 1970, whereby less developed regions are charged lower interests (4 per cent instead of 5 per cent), has not evidently been very successful in correcting the situation.

The role of commercial banks.

Commercial banks showed greater preference in their loans for trade and related business rather than manufacturing. Thus, out of ID 43 million short-term loans extended to the private sector in 1962, only ID 3 million were given to manufacturing.^{1/} This situation improved relatively in the latter part of the sixties. In 1970, for example, about ID 25 to 35 million was lent to manufacturing, against ID 87 million to the private sector as a whole. In 1972, the sum lent to manufacturing was ID 30.6 million, but 68 per cent of it was extended to public owned firms.

Thus it is clear that the commercial banks lending to manufacturing was far below the lending capacity of the banks which throughout the sixties, held cash reserve far above the 15 per cent limit imposed by the Central Bank. They also had, and still do, high liquidity ratios and kept large excess reserve.^{2/} Yet despite these shortcomings, the Central Bank did very little to encourage them.

^{1/} Jalal, F., p. 97

^{2/} The total commercial loans amounted to ID 102, ID 118 and ID 133 respectively in 1974, 1975 and 1976. No data however are available about lending to manufacturing. /...

The interest rates charged by the commercial banks were fairly low and stable: around 7 per cent per annum. The interest rate of the Industrial Bank was 4 per cent per annum for long-term loans. Both rates were much lower than that charged outside the banking system. But most important to manufacturing was the availability of funds, the shortage of which often forced them to seek it from money lenders, at the much higher interest rate of 12 per cent per annum.^{1/} Of course, the recent quadrupling of oil revenues, and the subsequent rise in government allocation, and in the capital of the Industrial Bank, has substantially improved the supply of funds for manufacturing. A new shortage, that of qualified workers and of materials is now acting as constraint.

^{1/} Jalal, F. op cit, ch. 5.

APPENDIX TABLE 1
AGGREGATE FIXED CAPITAL FORMATION IN IRAQ BY ECONOMIC SECTORS IN CONSTANT 1962 PRICES
(Values in 10 Thousands)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973*	1974	1975
Agriculture	12 320.4	14 048.0	11 103.0	8 682.0	9 622.6	11 162.0	15 131.6	14 755.8	15 280.6	20 239.2	20 071.1	25 020.9	26 599.9	30 611.6	42 408.8	44 147.3
Mining and quarrying	22 533.4	22 626.0	4 943.5	1 734.6	809.9	1 099.4	1 383.9	1 325.8	1 089.9	996.4	6 508.9	8 989.5	11 146.8	12 999.5	33 141.0	48 292.6
Manufacturing industries	9 306.0	12 995.3	20 888.4	20 946.6	21 762.2	24 681.3	29 182.5	31 559.5	32 943.7	35 761.8	36 968.0	34 402.0	42 478.5	48 737.5	85 911.6	147 825.4
Construction	1 354.5	1 927.1	1 662.5	1 130.5	1 278.0	1 792.5	2 194.0	2 281.2	1 534.5	3 481.6	3 591.4	4 317.4	4 200.4	4 697.8	11 781.6	17 300.7
Electricity and water	7 643.1	5 010.9	4 867.2	7 377.6	11 239.1	10 382.4	10 984.2	11 674.0	7 889.9	7 635.4	10 573.1	9 521.9	9 087.9	10 646.3	7 731.5	13 874.7
Transport	25 192.1	32 058.9	28 947.8	27 287.6	24 841.1	22 785.3	26 639.7	20 531.3	1 798.0	16 110.2	22 709.6	23 494.3	25 880.1	29 599.9	76 471.2	87 842.9
Wholesale and retail trade	2 081.9	2 983.8	2 921.7	2 964.9	3 645.8	4 328.9	4 422.8	5 089.9	6 760.8	4 908.2	6 889.7	5 412.2	5 983.6	6 909.3	7 571.1	12 650.2
Banking and insurance	499.1	866.6	1 275.7	712.6	753.2	748.1	798.9	927.0	1 031.9	1 152.1	1 333.3	2 199.6	1 073.9	1 241.3	271.1	494.4
Ownership of dwellings	22 145.1	25 325.2	24 193.3	22 002.3	24 179.3	27 132.7	30 750.3	22 791.0	23 829.3	29 209.4	28 769.4	25 906.8	33 500.9	37 794.6	37 401.1	58 876.3
Public administration	3 127.4	4 030.8	5 082.9	3 760.4	3 660.7	3 375.7	3 444.7	5 435.0	4 163.1	3 489.4	4 522.8	4 619.6	4 983.1	5 814.9	19 073.3	24 290.9
Services	11 639.6	13 789.9	13 268.7	11 240.8	15 881.8	18 256.9	15 219.7	15 724.7	17 093.3	17 911.2	19 203.6	16 898.2	18 874.1	21 476.1	62 971.6	71 622.8
Total	117 890.6	136 460.5	119 233.5	107 810.7	117 782.7	125 953.2	140 350.1	132 040.2	129 612.0	140 960.9	160 933.9	164 787.4	183 725.2	210 908.8	303 041.1	529 814.0

SOURCE: Washin, J., Capital Formation in Iraq, 1957-1970, Baghdad October 1972, p.17 (for the years 1960-1970)
Green fixed capital formation in Iraq, 1973-1975, CMO, July 1976 (for the years 1974-1975) table 4, 14.
Fixed capital formation in Iraq, 1970-1974 CMO, April 1975 (for the years 1971-1973) table 5.

Note: * Values for 1973-1975 which were reported at 1969 prices only, in the source above, were converted to 1962 prices on a proportionality basis.

APPENDIX TABLE 2
 EXPENDITURE OF THE ECONOMIC INVESTMENT PLAN (ACTUAL INVESTMENT)
 (Values in ID thousands)

Sector	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Agriculture	10 819	5 602	6 302	4 907	6 734	5 997	37 089	11 024	13 244	17 506	14 058	49 310	29 276	37 706	78 043	207 300	248 000	248 000
Industry	5 681	7 072	10 327	9 530	16 316	15 129	40 460	20 722	18 168	17 592	21 145	35 917	22 212	66 360	104 075	448 000	709 000	709 000
Transport and communication	7 922	14 110	15 793	18 320	18 080	12 443	27 230	13 600	9 924	10 092	7 406	16 963	19 064	27 376	105 630	166 000	242 500	242 500
Construction and social services	21 357	26 303	10 141	14 318	16 194	16 194	26 075	13 295	12 956	11 831	9 093	17 605	16 717	36 471	90 624	188 000	213 200	213 200
Planning and follow-up studies	-	-	-	-	39	57	484	44	75	162	730	980	995	1 906	3 083	6 274	9 293	9 293
Loans to government	-	-	-	-	-	-	-	-	-	-	6 809	18 125	21 132	33 502	52 927	11 850	10 484	10 484
International obligations	-	-	492	676	1 033	2 430	5 000	2 240	4 330	7 806	6 496	11 979	7 713	11 776	10 308	8 600	12 811	12 811
Investment expenditures	-	-	-	-	-	-	-	-	-	88 435	11 713	2 903	10 620	28 608	51 597	41 976	26 222	26 222
Total	47 565	51 522	59 297	54 255	75 275	59 825	131 504	68 915	64 406	170 749	79 050	153 742	129 329	245 905	576 367	1 076 300	1 493 910	1 493 910

PERCENTAGE SHARE OF EACH SECTOR IN THE TOTAL

Agriculture	22.7	18.8	10.6	6.3	8.9	10.0	24.5	15.0	20.6	10.3	18.0	32.1	22.8	15.5	13.5	19.2	17.9	17.9
Industry	11.9	13.7	17.4	17.6	21.9	25.3	26.7	41.7	29.2	10.3	27.1	23.4	17.3	27.2	31.9	41.6	47.5	47.5
Transport and communication	16.7	27.4	26.6	33.8	25.1	20.8	18.0	19.7	15.4	5.9	9.5	11.0	15.5	11.3	18.1	15.4	16.2	16.2
Construction and social services	44.5	41.5	44.5	18.7	19.3	27.1	17.2	19.3	20.1	6.9	12.7	11.4	13.0	14.9	15.7	17.5	14.3	14.3
Others	4.2	0	0.3	21.6	24.8	16.8	13.6	3.3	13.7	66.6	32.7	22.1	31.4	31.1	20.8	6.3	4.1	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Based on data reported in the Central Bank bulletin, new series 1960-1976.

APPENDIX TABLE 3
 PERCENTAGE SHARE OF ACTIVITIES IN THE APPROPRIATE CAPITAL FORMATION IN THE SECTOR FOR 1960 - 1975
 (Constant 1962 prices)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Overall industry	34.6	31.2	27.2	26.9	29.9	30.1	31.2	35.4	33.5	34.0	35.8	34.8	36.4	36.5	36.2	42.1
Mining and quarrying	19.1	16.6	4.2	1.6	0.8	0.9	1.0	1.0	0.8	0.7	4.1	5.5	6.1	6.2	6.7	6.9
Manufacturing industry	7.9	9.5	17.5	19.4	16.5	19.6	20.8	23.9	25.4	25.4	23.0	20.9	23.1	23.1	22.4	27.4
Construction	3.1	1.4	1.4	1.0	1.1	1.4	1.6	1.7	1.2	2.5	2.1	2.6	2.8	2.2	3.1	3.2
Electricity and water	6.5	3.7	4.1	6.8	9.5	8.2	7.8	8.8	6.1	5.4	6.6	5.8	4.9	5.0	2.0	2.6
Mining and quarrying	55.2	53.2	35.3	35.6	23.5	23.9	31.2	23.8	23.5	23.1	31.5	35.7	16.7	16.9	23.9	21.2
Manufacturing industry	22.8	30.5	64.5	67.3	61.9	65.0	66.7	67.5	75.8	74.7	64.3	60.1	63.5	63.1	62.0	65.0
Construction	1.1	4.5	5.1	3.6	3.6	4.7	5.0	4.8	3.3	3.3	3.9	7.5	6.3	6.1	6.3	7.6
Electricity and water	18.7	11.8	35.0	23.5	32.0	27.3	25.1	25.0	18.1	15.9	16.7	16.7	15.6	13.8	5.6	6.1
Total industry	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: See table above.

Chapter VII

EXPORT, IMPORT AND TRADE POLICY IN MANUFACTURING

Exports.

Good export performance is an important push factor for a successful industrialization. It contributes to the growth of income and the balance of payment. Iraq's dependence on oil revenues while reduces the role of non-oil export earnings in the economy, does not viciate its importance. In an oil dominated economy, an important objective of industrialization is diversification of export in which manufacturing plays a dominant role. However, in assessing the performance of manufacturing exports in the years following the large increase in the oil revenues in 1974, it is essential to note that this increase entailed raising the foreign exchange value of the Iraqi currency; and increasing the absorption capacity of the local market for exportable goods. In the short run, both factors tend to cut the size of the export. But in the long run, the latter may play a positive role in enlarging export potentials: by increasing competitiveness, through reducing per unit cost of production, as a result of large scale production.

In the following we shall be concerned with two questions: first, how has manufacturing export performed? And second, how has its composition changed? Discussion of these two questions should provide a clue about the likely course of development in the coming years. But first a general view of export in the economy.

TABLE VII.1 RATIO OF NON-OIL EXPORTS IN GDP 1970 - 1976
(Current prices and percentages)

	1970	1971	1972	1973	1974	1975	1976
Exports as per cent of GDP	1.8	1.7	2.0	2.0	1.2	0.9	1.0

Source: Based on GDP figures in ALS 1976, and table VII.3 in this chapter.

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TABLE VII.2 RATIO OF EXPORT OF MANUFACTURING TO TOTAL NON-OIL EXPORTS, AND THE SHARE OF MAJOR MANUFACTURING EXPORTS IN TOTAL MANUFACTURING EXPORTS, 1970-1976 (ID MILLION AND PERCENTAGES).

Year	Total non-oil exports	Export of manu- facturing products	Ratio of export of manufac- turing to total non- oil exports (per cent)	Ratio of export of major manufacturing products to total export of mfg.		
	(ID.m)	(ID.m)	(per cent)	(i) Petroleum products (ID.m)	(ii) Cement (ID.m.)	(i+ii) as per cent of col.3 (per cent)
1970	22.5	8.3	36.9	1.4	2.5	47.0
1971	23.5	10.9	47.4	2.9	2.7	51.4
1972	28.6	11.3	39.5	1.7	2.7	39.0
1973	32.5	11.4	35.1	2.4	3.5	51.7
1974	28.1	13.9	49.5	3.3	1.3	69.1
1975	35.5	19.6	55.2	15.5	0.6	82.1
1976	46.5	29.1	62.6	25.6	2.2	95.5

Source: Based on table VII.3, and Foreign Trade Statistics of Iraq.

Exports in GDP. Iraq's non-oil exports have been predominantly agricultural, and remained so until 1974, when the balance tipped for the first time in favour of manufacturing. This can be seen in table VII.2. For most years between 1950 and 1974, when agriculture was dominant, exports were relatively stagnant. Although in absolute terms the value of non-oil exports has doubled between 1970 and 1976 (from ID 22.5 million to ID 46.5 million respectively), the share of non-oil export in GDP in fact declined from 1.3 per cent to 1 per cent. The size and the share of non-oil export, therefore, remained conspicuously small.

Composition of exports. Tables VII.3 and VII.4 summarize manufacturing exports by broad economic categories. The first table shows the magnitude, volume, and value of manufacturing exports, and the second their respective share in the total non-oil exports, commodity groups, and sub-groups. The share of major manufactured commodities in total manufacturing exports is shown in table VII.2.

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The shift in the composition of manufacturing export is discernable in table VII.2. The value of manufacturing exports increased from ID 3.3 million in 1970 to ID 29.1 million in 1976: raising the share of manufacturing exports in total non-oil exports from nearly 37 per cent in 1970, to about 63 per cent in 1976: representing an average annual rate of growth of 23.3 per cent. But the table also shows that this growth has been lopsided. One activity alone, petroleum products, contributed more than 90 per cent of the manufacturing exports. And this lopsidedness moreover was not confined to one year either. For most of the years, two activities the second being cement, (in the item 'other manufacturing classified by materials'), together, represented more than 95 per cent of manufacturing exports, as well as over half of the total non-oil exports in the period 1970-1976. (See tables VII.2 and VII.4).

The third column under each year in table VII.4 shows the relative importance of each item, sub-group, and group of manufacturing export in total non-oil exports. The first and second column respectively show the share of the item in the sub-group and groups. In the third column the ranking of the groups in terms of relative importance has in 1970 been as follows: intermediate, raw materials, consumer goods and capital goods. The first represented 20 per cent and the last 1 per cent of total non-oil exports. In 1973 the range of the difference widened: 22 per cent to 1 per cent. But significantly the share of exported raw material declined from 12.5 per cent to 4.2 per cent, while that of consumer goods increased from 3.1 per cent to 7.1 per cent. The share of capital stagnated at 1 per cent.

In 1976, the situation as far as exports of consumer goods were concerned was reversed. While the share of intermediate products increased to as high as 56 per cent of the total manufacturing, the share of consumer goods declined from 7.1 per cent to a new level of 1.5, which was lower than the 1970 level. This is a clear indication that the local market was absorbing the increases.

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Table VII.3 - Summary of exports of manufactured commodities to Iraq by broad economic category, 1970-1976. (Current market prices) (Quantity in ton and value in ID thousands) (Values exclude custom duties)

Commodity Description	1970		1971		1972		1973		1974		1975		1976	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
I. COMMERCE - FOOD														
(a) Exportable Goods														
Food (processed)	1,303	571	1,132	1,441	1,121	2,223	1,121	2,223	1,121	2,223	1,121	2,223	1,121	2,223
Beverage and tobacco	1,571	309	2,492	372	3,130	653	3,908	145	4,936	145	4,936	145	4,936	145
Animal & vegetable oil and fats	14	7	8,742	12	84	12	0	0	48	45	0	0	0	0
Medicinal, pharmaceutical products	4	16	8	63	82	4	3	30	18	16	14	27	39	64
Essential oils & perfume materials, toilet polishing & cleaning	842	89	1,673	282	1,396	290	3,332	308	452	151	730	200	1,106	331
Glasses of all kinds	33	86	84	314	147	794	118	612	65	300	18	93	2	9
Footwear	201	78	177	195	79	152	88	109	51	85	0	3	20	34
(b) Non-Exportable Goods														
Biocellulose manufactured articles	522	82	1,307	106	845	180	221	124	303	122	744	80	216	41
(c) Exportable Goods														
Raw silk	10	22	33	32	23	22	32	22	2	23	5	22	2	2
Wool, mohair, lighting fixtures & fittings	2	1	0	0	1	1	1	2	0	0	0	0	0	0
Travel goods, etc.	1	1	21	14	22	18	29	16	0	0	3	3	2	1
Scientific, control instruments, photo goods, watches, and clocks	7	18	4	16	0	0	0	1	2	13	2	15	0	1
II. RAW MATERIALS														
(a) Raw Materials - Exportable														
Textile fibres (not manufactured)	74,321	2,216	21,333	2,024	13,326	2,112	112,218	1,132	22,132	1,112	16,328	1,221	21,126	2,221
Crude fertilizers and minerals	4,225	1,712	6,339	1,485	6,863	2,024	2,785	823	3,217	1,101	2,234	1,037	3,484	1,221
Metalliferous ores and metal concentrates	25,339	1,022	8,730	428	3,522	77	1,098	25	1,600	9	0	0	0	0
Chemical elements and compounds	150	4	142	6	63	1	703	16	949	21	3,447	64	3,233	151
Dyeing, tanning, coloring materials	7	7	110	15	347	22	202	13	9	0	0	0	0	0
(b) Intermediate Products														
Alcohol fuels, lubricants and related materials	468,822	4,528	244,811	6,728	320,026	3,124	722,221	2,422	200,222	10,224	822,221	14,224	1,022,221	26,221
Fertilizers (manufactured) etc.	129,167	1,286	171,812	2,270	67,926	1,759	181,011	2,424	304,817	8,224	703,228	15,229	1,078,224	25,221
Explosive & pyrotechnic products	0	0	0	0	72,115	807	25,645	264	7,763	79	100	6	401	31
Plastic materials, regular cellulose & artificial resins	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chemical materials and products (other)	1,736	296	1,332	227	1,544	293	1,284	211	1,339	611	1,042	359	1,241	24
Manufactured goods classified by material (leather, rubber, wood, paper, iron, cement, textile yarn)	337,902	2,844	371,671	3,600	370,328	3,534	314,966	4,501	194,805	3,524	104,971	805	9,009	410
(c) Raw Materials - Non-Exportable														
Manufactured metal (MFC)	404	112	1,222	321	321	222	708	222	662	222	761	422	443	231
Machinery other than electrical	23	10	1	1	14	8	86	8	369	175	165	66	18	10
Electrical machines, apparatus	11	7	352	100	16	15	6	3	13	7	15	11	13	20
(d) Raw Materials - Permissible														
Total of items listed above	347,851	8,261	643,343	10,911	601,329	11,265	952,112	11,402	702,102	11,905	297,314	13,611	1,146,261	23,107
Total Exports (All commodities, including the few which are not cited)	1,088,310	22,565	1,999,324	22,782	1,661,321	28,614	1,422,232	12,523	225,814	28,123	1,106,748	33,545	1,468,231	46,321

Source: Foreign Trade Statistics, 1970-1976. MFC - items not elsewhere classified.

Table VII.4 Percentage of export of manufactured commodities in totals in selected years: 1970, 1973 and 1976.
(Values exclusive of custom duties).

Economic Categories	1970			1973			1976			Percentage of total exports
	Percentage of group	Percentage of total exports	Percentage of sub-group	Percentage of group	Percentage of total exports	Percentage of sub-group	Percentage of group	Percentage of total exports		
I. COMMERCE GOODS										
(a) Non-Durable Goods										
Food (Processes)	10.7	2.6	100.0	10.0	6.7	100.0	10.0	7.1	1.5	
Beverages and tobacco	35.0	0.5	5.1	4.8	0.3	16.4	15.2	0.3	0.2	
Animal and vegetable oil	1.1	0.0	0.0	39.6	2.8	16.8	15.5	0.0	0.2	
Medicinal and pharmaceutical products	2.7	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	
Essential oils and perfume materials, toilet, polishing and cleansing	14.9	0.4	17.9	16.8	1.2	52.8	48.9	0.7	0.1	
Clothes of all kinds	11.4	0.4	28.2	26.5	1.9	1.4	1.3	0.0	0.0	
Footwear	13.0	0.3	5.1	4.7	0.3	1.6	1.5	0.0	0.0	
(b) Semi-Durable Goods	100.0	0.3	100.0	5.4	0.4	100.0	7.1	0.1	0.1	
Electromechanical manufactured articles	100.0	0.3	100.0	5.4	0.4	100.0	7.1	0.1	0.1	
(c) Durable Goods	100.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	
Seating, sanitary, lighting, fixtures & fittings	5.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	
Travel goods, etc.	5.0	0.0	84.2	0.7	0.0	75.0	0.3	0.0	0.0	
Scientific control instruments, photo goods, watches and clocks	90.0	2.6	5.2	0.0	0.0	25.0	0.1	0.0	0.0	
II. RAW MATERIALS										
(a) Raw Material - Non-Durable										
Textile fibres (non-manufactured)	60.8	7.6	60.8	60.8	2.5	50.3	50.3	4.2	4.5	
Crude fertilizers and minerals	2.5	0.3	35.1	35.1	1.5	34.2	34.2	1.5	2.6	
Metalliferous ores and metal scrap	36.3	4.6	1.8	1.8	0.0	0.0	0.0	0.0	1.5	
Chemical elements and compounds	0.1	0.0	1.2	1.2	0.0	7.3	7.3	0.0	0.0	
Dyeing, tanning, colouring, etc.	0.2	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	
(b) Intermediate Products	100.0	20.0	100.0	100.0	22.8	100.0	100.0	56.0	56.0	
Mineral fuels, lubricants and related materials	30.7	6.1	32.6	32.6	7.5	98.0	98.0	35.0	35.0	
Fertilizers (manufactured) etc.	0.0	0.0	3.6	3.6	0.8	0.1	0.1	0.0	0.0	
Explosive and pyrotechnic products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Plastic materials, regular cellulose & artificial resins	6.5	1.3	3.1	3.1	0.7	0.2	0.2	0.1	0.1	
Chemical materials and products NEC*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Manufactured goods classified by material (leather, rubber, wood, iron, non-ferrous, textile yarns)	62.8	12.6	60.6	60.6	13.8	1.6	1.6	0.9	0.9	
(c) Capital Goods	100.0	1.0	100.0	100.0	1.0	100.0	100.0	0.5	0.5	
(a) Capital-Equipment and machinery	87.9	0.5	99.2	70.5	0.7	100.0	98.5	0.4	0.4	
Manufactured metals NEC*	7.6	0.4	3.4	2.5	0.0	4.3	4.0	0.0	0.0	
Machinery other than electrical	5.3	0.3	1.3	0.9	0.0	12.0	11.0	0.0	0.0	
Electrical machines apparatus	100.0	0.4	100.0	24.3	0.2	100.0	7.5	0.0	0.0	
(b) Capital-Transport Equipment	100.0	0.1	100.0	4.9	0.0	100.0	0.0	0.0	0.0	
(c) Capital-Furniture	100.0	0.1	100.0	4.9	0.0	100.0	0.0	0.0	0.0	
Total Export of Manufactured Goods		100.0			100.0			100.0	100.0	

*Based on table 3
NEC* - Items not elsewhere classified.

Among consumer goods group, the sub-group, non-durable goods, came first throughout. Durable-goods came last, with a continuously declining share. Within the sub-groups, beverages and tobacco counted for the highest shares, but its share fell in 1976, and was replaced by essential oils, toilet and cleaning materials. The absolute value involved in the latter amounted to a relatively trivial sum of nearly \$ 300 thousand. The same also applies to the export of durable consumer goods. In the raw materials group, while the relative importance of textile fibres remained more or less intact, the relative importance of metalliferous, ores, etc. declined to be succeeded by crude fertilizers and minerals. This exchange of roles also took place between petroleum products and cement. While the share of the former was rising the share of the latter was falling: from 62.8 per cent in 1970, to 1.6 per cent in 1976, which is yet another indication of increasing demand in the home market. (Table VII.3, the first column under each year).

In the capital goods group metal products seems to have been the major exported capital goods, but the entire export in this group did not exceed the trivial sum of \$ 300 thousand a year.

The growth of industrial export is a reflection on both the strategy and the stage of industrialization in the country. Despite its reliance on oil exports and large imports, Iraq's industrial strategy was and still is basically inward-looking. The development strategy only paid-lip service to export promotion. Investment decision evidently were not related to export prospects or comparative advantages. Only recently, planners have given priority to the development of export oriented industries.

Imports.

Because of oil revenues Iraq rarely suffered from shortage of foreign exchange as a constraint on its development. Since 1969, the country in fact has enjoyed a small surplus in its current trade account,

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which grew much larger with the quadrupling of oil revenues in 1974. The country, therefore, was able to carry out successive development plans. The effects of these plans are reflected both in the change in import composition and in the size of import-coefficients. These two are studied in detail. Meanwhile Iraqi data show that a close association existed between, on the one hand, the size and rate of growth of imports, and on the other hand between the former and industrial development. During 1970-76, the average annual rate of growth of 25.1 per cent in the GDP was accompanied by an average annual growth of 36 per cent in imports. At the same period, the share of oil revenues in GDP rose from 25 per cent to 30 per cent, and that of imports increased from 15.2 per cent to 25.1 per cent.

Imports in GDP. Total imports in Iraq increased from about ID 182 million in 1970 to ID 1,151 million in 1976: an increase of more than six folds. In the same years, imports of manufacturing goods also increased by six folds, as shown in table VII.6.

TABLE VII.5 - RATIO OF IMPORTS IN GDP, 1970-76 (PERCENTAGES)

	1970	1971	1972	1973	1974	1975	1976
Imports as percentage of GDP	15.2	18.0	17.0	17.0	30.0	31.3	25.1

Source: Based on GDP estimates in AAS 1976, and imports of manufacturing and their composition. (See table VII.7 in this chapter).

Composition of Imports. The composition of manufacturing imports by broad economic categories is shown in table VII.7. The share of each item, sub-group, and group in table VII.7 is shown in table VII.8. Highlights of tables VII.7 and VII.8 are reproduced in table VII.6. The ensuing discussion is based on information in these three tables.

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TABLE VII.6 THE SHARE OF MAJOR MANUFACTURING IMPORTS IN TOTAL IMPORTS AND IN TOTAL MANUFACTURING IMPORTS IN SELECTED YEARS.
(ID millions and percentages)

	1970		1973		1976	
	ID.M.	%	ID.M.	%	ID.M.	%
Total imports	181.6	100.0	270.0	100.0	1 150.9	100.0
Total manufacturing imports	157.5	92.2	251.6	93.2	1 044.1	90.6
Capital goods	61.0	33.6	104.8	38.8	618.8	53.7
Intermediates	63.3	34.6	76.2	28.2	264.3	23.0
Consumer goods	32.3	17.8	58.4	21.6	114.0	9.9
Raw materials	10.9	6.0	12.2	4.5	47.0	4.0

Source: Based on tables VII.7 and VII.8.

It can be seen in table VII.6 (VII.7 and VII.8), that throughout the period imports of capital goods not only had the highest weight in the total imports, but its share was also continuously increasing: from 33.6 per cent in 1970 to 38.8 per cent in 1973 and 53.2 per cent in 1976. This trend which actually began in 1966, is a reversal of the trend prevailed during 1950 and 1965, which was characterised by the dominance of consumer goods.

In absolute terms the value of capital goods imports increased from ID 61 million in 1970 to ID 619 million in 1976: a ten fold increase in seven years.

In table VII.8, within the capital goods group, imports of capital equipment accounted for the highest share, followed by machinery (excluding electrical machinery). Transport equipment which occupied the fourth place after electrical machinery in 1970, succeeded to the third place in 1973 and 1976. Imports of furniture were insignificant throughout.

The second most important group was intermediate products. However, although the share was high here, nearly 35 per cent in 1970, it declined in 1976 to 23 per cent of total imports in 1976. The absolute

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value, however, increased by four folds: from ID 63.2 million in 1970, to ID 264.3 million in 1976. The item "intermediate products classified by materials" (leather, rubber, wood, paper, iron, non-ferrous, etc.), claimed the largest share in this group: between 31 and 20.3 per cent in 1970 and 1976 respectively. Other items came a poor second. This included chemical materials and plastic and related materials.

Consumer goods group ranked third in terms of shares in total imports. Like intermediate products, the share of this group in the total also declined over years: from 17.3 per cent to 21.6 per cent and finally to 9.9 per cent in 1970, 1973 and 1976 respectively. Its absolute value, however, increased by four folds: from ID 32 million to ID 114 million between 1970 and 1976.

The last group in terms of relative importance in total imports was raw materials. Here again while the value increased by more than four folds between 1970 and 1976, the share declined from 6 per cent to 4 per cent of the total imports.

To consider the consumer goods and raw materials groups in more details. Within the consumer goods, the sub-group, non-durable consumer goods, maintained its dominance throughout. It can be seen in table VII.8 that its share rose from 14.1 per cent in 1970, to about 20 per cent in 1973. Although the share declined in 1976 to 7.4 per cent, the absolute value of this item was still very large at ID 114 million, (\$ 365 roughly). Durable consumer goods, which was the second most important sub-group, represented 2 per cent of the total imports and amounted to roughly \$ 68 million in 1976

Within the non-durable consumer goods, the item of 'processed food' assumed the highest weight. Its share in the sub-group rose substantially: from 43 per cent in 1970 to 64.2 per cent in 1976. In absolute terms, its value increased from \$ 35 million to \$ 175 million. The imports of vegetable oil and medical and pharmaceutical products came second and third respectively in 1970 and 1973, with order of their importance changing in 1976.

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In the raw material group, primary agricultural items and non-durable raw materials were very close in claiming the highest shares. However, while the share of the former increased in 1976, after falling in 1973, the share of the latter increased in 1973 and declined in 1976. In both cases the absolute values increased markedly. Thus, while Iraq's imports of all raw materials of primary agriculture amounted to a mere ID 5 million in 1970, in 1976 it reached ID 29 million. Nearly ID 21.6 million of this was in wood, lumber and corks (obviously used in construction, furniture and manufacturing). And more than ID 5 million in pulp and paper and crude animal and vegetable materials. Incidentally, the value of all three items put together did not exceed ID 4.2 million in 1970.

Imports of raw material of non-durable type also raised their values: from ID 5.6 million in 1970 to ID 18.2 million in 1976. Also just like the preceding sub-group, the relative importance of most of the composite items changed visibly. At the end, chemical elements and compounds were the most important items. Crude fertilizers and minerals raised their share. The share of dyeing, tanning and colouring materials declined, and only that of crude fertilizers remained unchanged. Needless to say the absolute value of imports of all these items increased by many folds between the initial and the terminal years.

Trade Policy and Manufacturing.

Like in many other developing countries, Iraq's trade policy has been designed with two main objectives in mind: to supplement domestic production, and protect local manufacturing. Industrial planning has always emphasized use of locally produced raw materials (petroleum, cotton, hides and skins, oil seeds, etc.); and reduction of imports, particularly of essential items to which later activities in the light and medium engineering were also added. The trade policy in exports and imports was directed to this end. The following is a brief discussion of the trade policy with respect to manufacturing.

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(Current market prices) (Constant prices of 1970) (Value in million dollars)

Economic Categories	1970		1971		1972		1973		1974		1975		1976	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
I. CONSUMER GOODS	362 921	12 318	402 087	11 518	347 221	10 411	376 617	50 408	520 068	111 072	511 968	162 220	137 525	111 921
(a) Non-Durable Goods	331 977	23 674	328 263	16 351	340 220	14 447	370 643	51 227	317 402	26 224	312 467	119 432	116 720	81 229
Food (processed)	244 275	11 042	290 332	16 093	236 427	16 741	475 999	30 043	446 908	69 584	347 239	91 369	154 090	54 759
Beverages and tobacco	1 004	704	764	483	1 169	545	606	292	1 209	2 242	4 125	2 419	7 096	5 219
Animal & vegetable oil and fats	102 043	1 153	90 297	9 073	92 453	7 140	84 990	7 846	83 226	12 630	126 833	22 699	41 922	6 213
Medicinal, pharmaceutical products	4 121	481	7 186	8 809	5 106	8 224	2 255	5 631	3 042	9 027	5 513	15 503	5 814	19 530
Essential oils and perfume materials	1 946	1 420	1 725	1 488	1 521	1 385	1 646	1 970	2 595	2 011	7 874	3 631	4 908	4 106
Toilet polishing and cleaning	570	645	334	422	184	47	111	193	298	679	799	1 747	844	2 365
Clothes of all kinds	16	17	24	16	5	7	35	24	43	63	25	123	44	89
Footwear	1 425	2 265	2 331	1 693	3 142	2 210	2 721	1 658	4 540	4 531	7 097	7 617	6 204	7 331
(b) Semi-Durable Goods	1 425	2 265	2 331	1 693	3 142	2 210	2 721	1 658	4 540	4 531	7 097	7 617	6 204	7 331
Miscellaneous manufactured articles	1 425	2 265	2 331	1 693	3 142	2 210	2 721	1 658	4 540	4 531	7 097	7 617	6 204	7 331
(c) Durable Goods	1 589	4 064	4 322	1 464	1 899	1 753	1 243	1 448	8 925	11 085	12 491	18 181	5 671	21 112
Heating, sanitary, lighting, fixtures & fittings	4 419	1 390	3 332	1 203	2 803	874	2 081	547	6 421	3 554	8 463	4 560	5 897	3 818
Travel goods, etc.	27	15	18	8	6	3	3	4	3	4	20	20	21	21
Scientific, control instruments, photo goods, watches and clocks	1 146	2 659	1 040	2 254	1 089	2 875	1 158	2 897	2 301	7 524	3 920	13 601	3 753	17 539
II. RAW MATERIALS	147 011	10 220	122 074	12 221	124 531	11 621	126 422	12 172	111 842	11 922	112 702	28 277	221 746	17 024
(a) Primary-Agricultural	86 721	2 134	84 411	2 725	21 410	6 117	22 422	4 742	122 422	20 245	225 602	25 604	112 964	22 822
Rides, skins and fur skins, undressed	3 242	702	2 713	443	764	194	1 325	590	2 836	801	2 946	1 059	697	225
Oil seeds, oil nuts and oil kernels	1 136	333	8 209	649	303	30	24	12	16 585	1 563	3 747	365	10 047	84
Latex rubber	1 544	295	1 710	322	1 947	349	2 766	583	3 377	1 027	2 776	795	3 045	851
Wood, lumber and cork	75 586	2 911	53 442	2 433	56 352	2 836	39 773	1 840	136 146	11 540	179 441	16 720	178 832	21 591
Pulp and paper	3 344	289	16 424	1 065	18 144	1 211	13 854	1 059	21 090	3 941	33 542	5 074	16 091	2 670
Crude animal & vegetable materials, NEC**	1 899	1 024	2 362	844	13 959	1 555	1 479	645	2 532	1 493	2 956	1 591	7 211	2 645
(b) Primary-Non-Agricultural	10	1	0	0	2 424	268	0	0	1 422	281	0	0	0	0
Coal, petroleum and natural gas	10	1	0	0	2 424	268	0	0	1 422	281	0	0	0	0
(c) Raw materials - Non-Durable	62 231	2 583	107 661	6 338	20 626	7 248	27 069	7 420	142 824	21 261	214 101	32 671	172 721	12 122
Textile fibres (not manufactured)	14 555	1 949	7 818	1 023	8 075	1 265	14 871	1 805	10 381	6 759	28 281	10 115	6 052	709
Crude fertilizers and minerals	12 400	446	20 255	716	10 276	705	25 208	1 133	36 742	1 925	80 992	3 494	84 105	4 052
Metalliferous ores and metal scrap	91	8	22 183	19	189	6	103	12	265	14	36	11	0	0
Chemical elements and compounds	22 841	1 444	50 315	3 395	56 540	3 419	47 978	2 474	72 964	8 932	93 731	14 197	75 816	8 347
Dyeing, tanning, colouring materials	10 364	1 737	6 371	1 355	15 546	1 792	8 808	1 805	17 521	5 634	11 063	4 456	9 810	5 047
III. INTERMEDIATE PRODUCTS	616 864	61 269	710 482	67 269	717 125	63 622	822 440	76 202	1 562 152	221 712	1 831 376	242 132	1 522 604	244 123
Mineral fuels, lubricants and related materials	2 242	158	66 158	895	78 684	1 078	97 459	1 019	25 686	2 008	24 787	3 440	12 359	1 818
Fertilizers, manufactured	58 510	1 035	34 372	750	48 233	1 105	25 062	1 033	19 914	883	49 091	9 135	33 985	2 484
Explosives and pyrotechnic products	204	39	404	91	150	49	2 679	518	3 631	820	1 101	528	2 600	1 325
Plastic materials, regular cellulose & artificial resins	11 105	1 532	12 974	1 715	15 744	2 213	16 158	2 371	19 790	6 146	31 921	10 606	40 269	11 174
Chemical materials and products NEC**	27 152	1 888	31 588	4 558	21 304	4 146	22 226	4 582	38 640	8 593	38 343	14 987	40 250	13 515
Manufactured goods classified by material, (leather, rubber, wood, paper, iron, non ferrous)	923 252	56 614	564 984	59 959	573 062	57 036	725 357	64 679	1 454 497	203 889	1 704 132	324 436	1 376 141	234 404
IV. CAPITAL GOODS	122 420	61 043	121 041	14 835	121 474	21 221	225 612	104 812	221 512	207 512	570 200	555 248	612 128	618 024
(a) Capital-Equipment and Machinery	109 027	48 876	123 276	22 147	120 271	24 110	161 072	81 112	212 812	148 242	366 267	311 222	422 541	431 627
Manufactured metals NEC**	23 022	9 754	35 961	7 990	51 544	14 116	51 673	15 510	59 371	22 828	108 196	45 062	127 630	59 311
Machinery other than electrical	56 673	28 809	62 740	35 098	72 925	44 447	78 432	47 890	105 646	84 536	185 532	202 315	268 700	225 364
Electrical machines, apparatus	29 402	14 310	24 555	15 053	25 803	15 547	32 975	17 901	53 800	41 196	73 039	81 890	86 212	106 929
(b) Capital-Transport Equipment	20 052	12 077	23 617	15 545	11 048	18 982	62 201	23 403	74 576	58 799	202 815	224 109	115 847	145 202
Transport equipment	20 052	12 077	23 617	15 545	11 048	18 982	62 201	23 403	74 576	58 799	202 815	224 109	115 847	145 202
(c) Capital-Furniture	264	92	150	149	153	122	122	106	172	174	312	371	1 413	1 927
Furniture	264	92	150	149	153	122	122	106	172	174	312	371	1 413	1 927
Total of items cited above	1 246 219	167 548	1 450 487	146 515	1 450 511	212 265	1 848 254	251 605	2 735 460	585 051	3 393 351	1 146 647	3 149 742	1 044 146
Total imports (all commodities, including the few which are not cited)	1 470 628	191 651	1 250 904	247 870	1 629 744	234 620	2 100 228	270 317	3 824 611	700 047	4 237 529	1 244 749	4 149 377	1 150 894

Source: Foreign Trade Statistics, 1970-1976.

** Estimated, using preceding and following years.

Table VII.6 - Percentage of imports of manufactured commodities by broad economic categories in totals in selected years: 1970, 1971 and 1976. (Values exclusive of custom duties)

Economic Category	1970			1971			1976			Percentage of total imports
	Percentage of sub-group	Percentage of group	Percentage of total imports	Percentage of sub-group	Percentage of group	Percentage of total imports	Percentage of sub-group	Percentage of group	Percentage of total imports	
I. CONSUMER GOODS										
(a) Non-durable Goods										
Food	100.0	100.0	11.8	100.0	100.0	21.6	100.0	100.0	16.8	2.3
Beverages and tobacco	41.0	34.1	6.1	71.4	65.1	14.0	65.1	64.2	48.0	7.4
Animal and vegetable oil	2.7	2.2	0.4	0.5	0.5	0.1	0.5	6.0	4.4	0.4
Medicinal and pharmaceutical products	24.7	19.7	3.5	14.7	13.4	1.9	13.4	7.3	5.5	0.5
Essential oils and perfume, toilet polishing and steaming	21.3	17.0	3.0	10.6	9.6	2.3	14.7	14.7	11.0	1.0
Clothes of all kinds	5.5	4.4	7.8	2.4	2.2	0.5	4.8	4.8	3.6	0.3
Footwear	2.6	2.0	0.4	0.0	0.3	0.0	2.8	2.8	2.0	0.2
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
(b) Semi-durable Goods	100.0	8.9	1.4	100.0	2.8	0.6	100.0	100.0	6.4	0.6
Rubber, plastics and miscellaneous manufactured articles	100.0	8.0	1.4	100.0	2.8	0.6	100.0	100.0	6.4	0.6
(c) Durable Goods	100.0	12.6	2.2	100.0	6.0	1.3	17.9	18.8	1.8	1.8
Textiles, amitory, lighting, fixtures and fittings	34.9	4.3	0.8	16.4	1.0	0.2	0.1	0.1	3.4	0.3
Travel goods, etc.	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Scientific, optical instruments, photo goods and watches	65.4	6.2	1.5	84.0	5.0	1.1	82.0	15.4	15.4	1.5
II. RAW MATERIALS										
(a) Primary-Materials										
Rubber and latex, etc.	100.0	13.0	2.3	100.0	19.0	1.7	100.0	100.0	61.3	2.5
Oil seeds, oil cake, etc.	13.2	6.4	3.8	12.4	4.8	0.2	0.8	0.8	0.5	0.0
Oil seeds, oil cake, etc.	2.5	1.2	0.1	0.7	0.3	0.0	0.3	2.3	1.8	0.0
Crude rubber	5.5	2.7	0.2	12.3	4.8	0.2	2.9	2.9	1.8	0.0
Wood, lumber and cork	34.5	26.6	1.6	34.7	15.1	0.7	74.9	45.9	1.8	1.8
Pulp and paper	5.4	2.6	0.2	22.3	8.7	0.4	9.3	5.7	0.2	0.2
Crude animal and vegetable materials	18.8	9.2	0.5	13.6	5.3	0.2	9.2	5.6	0.2	0.2
(b) Primary-Manufactures	100.0	91.0	91.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0
Coal, petroleum and natural gas	100.0	0.0	0.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0
(c) Semi-Manufactures - Non-durable	100.0	33.0	3.1	100.0	61.0	2.7	100.0	38.7	1.5	1.5
Textile fibres (not manufactured)	34.9	17.6	1.1	24.3	14.8	0.7	3.9	3.5	1.5	0.0
Crude fertilizers and minerals	8.0	4.1	0.2	15.2	9.3	0.4	22.5	8.7	0.3	0.3
Metalliferous ores and metal scrap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chemical elements and compounds	25.8	13.2	0.8	34.0	22.0	1.0	45.9	37.0	0.7	0.7
Dyestuffs, tanning, coloring material	11.1	15.9	1.0	24.3	14.8	0.7	27.7	10.7	0.4	0.4
III. INTERMEDIATE PRODUCTS										
Mineral fuels, lubricants, etc.	0.2	0.9	0.0	1.3	1.3	0.4	0.7	0.7	0.2	0.2
Fertilizers (manufactured)	1.6	1.6	0.5	1.4	1.4	0.4	0.9	0.9	0.2	0.2
Explosives and pyrotechnic products	0.1	0.1	0.0	0.7	0.7	0.2	0.5	0.5	0.1	0.1
Plastic materials, regular cellulose & artificial resins	2.4	2.4	0.8	3.1	3.1	0.8	4.2	4.2	7.0	7.0
Chemical materials and related products	6.1	6.1	2.0	6.0	6.0	1.7	5.1	5.1	1.2	1.2
Manufactured goods classified by materials (leather, rubber, wood, paper, iron, non-ferrous)	89.5	89.5	31.0	87.5	87.5	24.7	88.5	88.5	20.3	20.3
IV. CAPITAL GOODS										
(a) Machinery-Equipment and Miscellaneous										
Manufactured metal pieces	100.0	80.0	21.0	100.0	77.6	16.8	100.0	100.0	73.0	33.7
Machinery other than electrical	12.0	9.4	3.1	19.0	14.8	5.7	13.1	9.6	5.1	5.1
Electrical machinery and apparatus	59.0	47.2	16.0	54.9	45.7	17.7	63.2	46.1	24.8	24.8
Electrical machinery and apparatus	29.0	23.4	7.8	22.1	17.1	6.4	23.7	17.3	9.3	9.3
(b) Shipbuilding-Transportation Equipment	100.0	18.7	5.6	100.0	22.3	8.7	100.0	24.7	14.3	14.3
(c) Shipbuilding-Transportation Equipment	100.0	0.1	0.0	100.0	0.1	0.4	100.0	0.3	0.2	0.2
Total imports			100.0			100.0			100.0	100.0

Source: Based on table VII.7

* The percentages in this column are measured from the total of imports and not the total of imports considered in table VIII.1 since not elsewhere classified.

Export promotion. The state has become increasingly in control of exports in Iraq. In 1973, for example, eleven major non-oil exports were exclusively state controlled. In an effort to promote export, government promulgated two laws, one in 1969, establishing export subsidy funds, and the second, activated in 1971, granting refunds (drawbacks) up to 35 per cent of custom duties on the imported components of the exported manufactured goods. No information, however, exists regarding the magnitude of the refunds granted.

The export subsidy fund is an autonomous body attached to the Ministry of Economy, and managed by director generals from five ministries (Economy, Trade, Agriculture, Industry as well as the Export Organization). The facilities are extended to the private and public sectors. And funds are made available mainly from the taxes levied on imports licenses, with different rates for different categories of commodities. Donation, grants, interest earnings, as well as borrowing are also cited as channels of finance. But the import boom that followed the oil revenue increases has rendered the available funds far in excess of the utilized funds. It is estimated that just about 10 per cent of the funds has actually been used.

It is perhaps also useful to refer to the promotion measures outside the trade policy. These included exemption from profit taxes up to 5 years for profits amounting to 10 per cent of the paid up capital. Exemption of undistributed profits committed to reinvestment and expansion on the condition that they do not exceed 25 per cent of the total annual profits. Exemption from property tax for ten years and from stamp duty tax. Lease of state land to industrial enterprises at favourable terms, and exemption of all manufacturing machinery, most of raw materials and building materials from custom duties.

Import Policy. Tariffs as well as quantitative restrictions were used to control and regulate imports. These measures, however, have become increasingly policy tools than sources of revenue to the central government.

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The average nominal tariff rate in Iraq amounted to 23 per cent, as against 44 per cent in Egypt, and 13 per cent in Jordan and Syria^{1/}. Tariff on imported goods differ by type of commodities. Imports of consumer goods, and particularly luxury consumer goods and consumer durables are heavily discriminated against. In the absence of offsetting domestic indirect taxes, local manufacturers of such goods were given a clear pricing advantage. Imported machinery and equipment were mostly exempted from duty when imported for industry, when imported for services or were composed of transport equipment for industrial use, the rate ranged between 10 and 13 per cent. Generally finished manufactured goods received the highest tariffs (between 15 and 478 per cent), followed by semi-finished intermediate goods (between 10 and 17.5 per cent), and unprocessed raw materials (between 0 and 1 per cent)^{2/}. Thus, the effective or implicit rates of protection would be higher than nominal rates on finished consumer goods, particularly luxury goods. There are also indications that the differential in the rate structure of the tariff has been widening. Consumer durables have been bearing the brunt, whereas semi-manufactured and unprocessed raw materials have been treated favourably. Imports of machinery and equipment are encouraged but the parts manufactured locally are well protected.

Tariffs are supplemented by quantitative restrictions. The latter include quotas as well as absolute prohibition of imports. The general policy is to allow only imports which are not produced at home or not produced in sufficient quantities. Complete quantitative restriction is confined to commodities whose demand can be fully satisfied from local production. However, since the increase in the oil revenues, fewer and fewer commodities have been included in the list.

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1/ & 2/: CAEU, UNCTAD, ECMA, (1974) Seminar on Trade Expansion and Economic Integration among the Arab States: Cairo, May 1974. Means of Establishing United Tariffs for Member Countries of the Arab Common Market and the Problem Related thereto. (C/ECMA/SEMINAR/IT/2) Beirut 1974,

Note: Tariff rates relate to regulation effective in 1968.

Partial protection is granted for a limited time and is subject to revision and adjustment depending on progress in the local production. The authorities draw up an import programme annually to allocate the foreign exchange requirements. Five major economic sectors and three basic commodity groups are distinguished. The economic sector include public industries, public commercial sector, private commercial sector, private and mixed industrial sector and government department sectors. Imports by the latter are linked to implementation of development projects in infrastructure, agriculture and industry. Allocation by commodities distinguishes between consumer, intermediate, and capital goods. Whenever needs have arisen allowances for imports outside the programme have been made to meet them.

Finally, government controls the largest part of the import trade. Imports of such commodities as sugar, tea, edible oil, jute, certain medical supplies, machine tools, consumer durables and vehicles are all government monopoly. Licensing is used to control and regulate. However, while enterprises in the public sector are issued one general import license that of the private importer is tailored to the annual needs as laid down in the import programme. But imports for major development programmes are not subject to permits.

CHAPTER VIII

IMPORT SUBSTITUTION IN IRAQI MANUFACTURING 1960-1975

This chapter will be composed of the following five sections:

(i) definition of import-substitution; (ii) the import-substitution model; (iii) sources of growth in gross manufacturing output; (iv) sources of growth in gross value added in manufacturing; and (v) import substitution and intermediate consumption in manufacturing. The source of data is discussed in appendix 1.

Definition of import-substitution.

Import-substitution has featured as an important part in the industrialization strategy of most developing countries. Yet, the term import-substitution itself still remains ambiguous. Generally, the term is applied when a set of trade and industrial policies are used to promote domestic production of hitherto imported products. But expansion in the production of industrial goods may at the same time entail increases in the import of capital and intermediate goods. Thus, as far as the overall economy is concerned, the term import-substitution at least in the short run is not a synonym for decline in imports, although often it has been used to imply that.

Even when import-substitution is defined narrowly to mean measuring the effects of industrialization on imports, there still arises some conceptual and empirical problems.

To begin with, the effects of industrialization on imports cannot be easily isolated from those of other changes. In addition, what is really interesting to know is what would have happened to imports had there been no import-substitution.

The empirical problem arises from the fact that measurement of import-substitution is only part of the objective. This is so irrespective of how the measurement is made: as changes in import-coefficients; or, as changes in the relative share of domestic production in the growth of total supply of output. Ultimately the aim is to assess the import-substitution that has

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taken place against an optimum social objective. That is to say, in measuring import-coefficients, the aim is to compare them with the changes that would have taken place had optimum policies been followed.

Needless to say realization of such an aim is difficult. Therefore, the present study is confined to the measurement of import-substitution in the narrow sense of actual import effects. That is to say measuring expansion in the production of manufactured goods that would have otherwise been imported.^{1/} It is hoped to establish facts that would help planners and policy makers to have fuller understanding of the present state and potentials regarding the strategy of import-substitution that has been pursued in the country.

Framework of the import-substitution model.

This model follows roughly the method used by Chenery in his "Patterns of Industrial Growth". According to Chenery the growth of domestic output can be broken down into (i) growth of domestic demand; (ii) growth of exports; and (iii) change in the ratio of imports to total supply, which he defines as import substitution. A constant proportion of the total supply is assumed to be imported. Thus, in each line of activity, import substitution takes place whenever domestic output increases at a rate higher than imports. Conversely, when imports increase at a rate higher than domestic output, negative import substitution is taking place.

The segregation of the growth of domestic production can be formalized as follows:

Let Z = total supply; Q = total demand; G = domestic production;
D = final demand; W = Intermediate demand; X = exports ; and
M = imports.

Beginning with the identity

$$\Delta Z = \Delta Q \quad (1)$$

and substituting for the variable just defined we get;

$$\Delta G + \Delta M = \Delta D + \Delta W + \Delta X \quad (2)$$

$$\text{or } \Delta G = \Delta D + \Delta W + \Delta X - \Delta M \quad (3)$$

^{1/} See Habbro, R. and Radwan, S. op cit, ch. 12.

Let $U_t = G_t / Z_t$, and $U_{t+1} = G_{t+1} / Z_{t+1}$, (i.e.) the ratio of domestic output to total supply in the base year and end year respectively.

For any given change in total demand, the change in domestic output which would have taken place had there been no import substitution is given by: $U_t \Delta (D + W + X)$ (4)

In other words, expression (4) measures the change in domestic output which would have been needed to meet the given change in domestic and international demand had the ratio of domestic output to total supply remained unchanged at its base year level.

Furthermore, expression (4) can be broken down into three component elements: final demand; intermediate demand; and exports. In our case however, for reasons discussed later, it was difficult to separate final and intermediate demand. Therefore our measurement of expression (4) was carried out in the following form:

$$U_t \Delta (D+W) + U_t \Delta X \quad (5)$$

As indicated earlier, the share of import substitution in the growth of domestic output is measured by the expression $(U_{t+1} - U_t) Z_{t+1}$, i.e. it represents that part of the change in the domestic output which has been caused by change in the proportion of import in the total supply during two periods, with demand held constant.

Thus the total increase in domestic output is measured by:

$$\Delta G = u_t \Delta (D+W) + u_t \Delta x + (u_{t+1} - u_t) Z_{t+1} \quad (6)$$

The three components of the change in domestic output, i.e., change in domestic demand, change in export demand, and import substitution, can be clearly seen in equation (6). As mentioned earlier, we have applied equation (6) for each of the twenty five industries considered; for the commodity groupings; and for the overall manufacturing. For the overall manufacturing, we have summed up the component elements of the growth of output over the twenty five industries. Thus, using (i) to refer to the individual industries, the estimation equation for the whole of manufacturing becomes:

$$\sum_{i=1}^n \Delta G_{t+1}^i = \sum_{i=1}^n \left\{ \left[\Delta (D^i + W^i) U_t^i \right] \right\} + \sum_{i=1}^n \left[(\Delta X^i) U_t^i \right] + \sum_{i=1}^n$$

$$\left[(U_{t+1}^i - U_t^i) Z_{t+1}^i \right] \dots (7)$$

$$\left[i = 1, 2, \dots, n, \text{ and } n = 25 \right]$$

Analysis of growth in value added.

In measuring the contribution of the 'sources' of growth in terms of value added, the change in value added can, except for one additional factor, be attributed to the same factors (or sources) as the change in gross output. The additional factor relates to the changing relation between value added and gross output over time and between industries. In any industry the ratio of value added to gross output may change over years. As a result the proportion of the change attributable to any of the sources of growth would also tend to change. Of course, the change in the ratio of value added to gross output, and the consequential change in the share of the sources of growth, at individual industry level will, concurrently, lead to proportionate changes in the overall manufacturing. The equation used in distributing the change in value added between its component elements has been the following:

$$\begin{aligned} \sum_{i=1}^n \Delta V^i &= \sum_{i=1}^n u_t^i r_t^i \left[\Delta (D^i + W^i) \right] + \sum_{i=1}^n U_t^i r_t^i \Delta X^i \\ &+ \sum_{i=1}^n (u_{t+1}^i - u_t^i) r_t^i Z_{t+1}^i + \sum_{i=1}^n (r_{t+1}^i - r_t^i) u_{t+1}^i Z_{t+1}^i \quad \text{---(8)} \end{aligned}$$

where r^i is the ratio of value added to gross output in the i^{th} industry in the base year t . The suffix, $t+1$, refers to the end year. V , is value added at current factor costs.

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As in the case of equation (7), the first two terms in equation (8), measure the amount of change in value added which is due to the changes in domestic demand and in exports, respectively - assuming that the ratio of domestic output to total supply (U_t), and the ratio of value added to gross output (r_t) remain unchanged at their respective base year values. The third term measures the importance of import substitution. Note that while the ratio of domestic output to total supply changes, the ratio of value added to domestic output remains constant at its base year value. The last term of the equation is basically a residual. It reflects all technical and economic changes that take place inside the industry. Specifically, it measures the effect on value added of changes in the ratio of value added to domestic output. But the change in the ratio itself is brought about by movement in the output composition and technical efficiency.

To end this section an explanation is given to the reasons for taking the measurements in the three years; 1960, 1969 and 1975. The year 1960 coincides with the beginning of active industrialization in Iraq. It also marks the start of the period of regular documentation of industrial data. The year 1969, is chosen as the first terminal year. The required data are also fully and well recorded for this year. The second terminal year: 1975 falls in the new era in Iraq's economic history. In addition to the availability of detailed data, this year is also distant enough from the first base year (1960), to render the results meaningful.

Sources of growth in gross output.

First, the factors contributing to the growth of output in the manufacturing sector as a whole shall be considered. The sector is the aggregate of the 25 industries concerned, and is shown in the first row of each of the three periods in table VIII-1.

In the table, two stages can be distinguished regarding the rate of import substitution in the growth of manufacturing output: before and after the quadrupling of oil revenues in 1973. The differences are striking.

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Import substitution, measured by $(U_{t+1} - U_t) Z_{t+1}$, was responsible for almost one fifth (18.9 per cent) of the output growth in the first period 1960-1969. Even exports, whose contribution was negative in the second period (-0.61 per cent) played some role in the first period, all be it minimal (2.0 per cent).

The picture however changed diametrically in the second period: 1969-1975. The growth of final and intermediate demand after the quadrupling of oil revenues was so large that it outstripped that of domestic production by almost one and a half times. Further, although the volume of import substitution output nearly doubled in this period, the share of positive import substitution in the total output remained unchanged at around 18.4 per cent of the first period. The overall contribution of import substitution however, i.e. the total over the 25 industries concerned was negative: -47 per cent. This means that the potential for the expansion of import substitution output was almost two and a half times greater than the actual substitution that took place in manufacturing. To put it differently, the Iraqi manufacturing industries could have produced about ID 127.7 million more than they actually produced for the domestic market. Instead only ID 47 million was produced and the gap was filled by imports (see tables VII to IX Appendix 2).

The third part of the table puts things in a better perspective. The period covered is long enough for import substitution exercise to yield more meaningful results. Import substitution in the overall manufacturing represented a mere 7 per cent of the change in output. Change in the final and intermediate demand on the other hand accounted for 93.1 per cent. These results are undoubtedly affected by the declining ratio of domestic output to total supply in the end year. Nevertheless, the overall picture shows that at no time did import substitutions output assumed greater importance than in the first period. And that a substantial domestic market is now open to Iraqi manufacturing to exploit.

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TABLE VIII/1. PERCENTAGE CONTRIBUTION OF FINAL AND INTERMEDIATE DEMAND, EXPORTS AND IMPORTS - SUBSTITUTION TO THE CHANGE IN DOMESTIC OUTPUT IN THE PERIOD 1960 - 1975

1960-1969	$U_1(\Delta D + \Delta W)$	$U_1(\Delta X)$	$(U_2 - U_1) Z_2$	ΔG
Overall mfg.	79.1	2.0	18.9	100.0
Consumer goods	76.8	0.1	23.1	100.0
Intermediate goods	210.0	0.7	7.3	100.0
Capital goods	68.5	6.3	25.1	100.0
1969-1975	$U_2(\Delta D + \Delta W)$	$U_2(\Delta X)$	$(U_3 - U_2) Z_3$	ΔG
Overall mfg.	148.0	- 0.61	-47.3	100.0
Consumer goods	118.0	0.01	-18.5	100.0
Intermediate goods	88.3	- 0.41	12.1	100.0
Capital goods	209.0	- 1.5	-107.4	100.0
1960-1975	$U_1(\Delta D + \Delta W)$	$U_1(\Delta X)$	$(U_3 - U_1) Z_3$	ΔG
Overall mfg.	93.1	-0.01	- 6.9	100.0
Consumer goods	79.9	- 0.07	20.1	100.0
Intermediate goods	132.5	0.02	- 32.6	100.0
Capital goods	104.0	0.08	- 3.8	100.0

Source: Computed from tables VII to IX in annex 2 in this chapter.

Consumer goods industries include sugar, vegetable oil, beverages, cigarettes, textiles, synthetic silk, clothing, footwear, and soap and detergents.

Intermediate goods include, textile yarn, paper and printing, leather, rubber, paints, chemicals, and plastic products.

Capital goods industries include glass products, cement, other non-metallics, metal products, machinery, electric equipment, and transport equipment.

In the light of the industrial development plan perceived for Iraq, the analysis in the lower panel of each period in table VIII-1, assumes special importance. Here we have classified the 25 industries into three sub-groups, producing consumer, intermediate and capital and related goods. In the first period import substitution in consumer goods and capital goods claimed almost equal importance (23.1 per cent against 25.1 per cent respectively). In the second period they both plunged into minus; with capital goods industries losing more opportunities. But the period from 1969 to 1975, may be too short to draw any meaningful conclusions. The estimates for the total period 1960-1975, however, shows that the actual import substitution which took place was almost wholly in the consumer goods industries (20.1 per cent) and that the ratio of intermediate and capital goods output to their respective total supply declined substantially (see table VIII-1). The result has been that the respective contributions to import substitution output by the latter two were negative (-32.6 per cent and -3.8 per cent respectively). This of course is a clear indication of the existence of a potential market for the expansion of both industries, but especially intermediate industries.

Among the consumer goods industries in the first period (1960-69) (Table I Appendix 2 to this chapter), the one which made the largest contribution to import substitution output in the first period was synthetic silk industry, 96 per cent, followed by sugar manufacturing, 85 per cent, soap and cosmetics, 60 per cent, textiles, 51 per cent, paper and printing, 44 per cent; clothing and footwear, 32 per cent, in that order. Among the intermediate industries paints, 97 per cent came first, followed by plastics, 92 per cent, leather products and chemicals, 38 per cent and 8 per cent respectively. In the capital goods group, transport equipment was the most important, followed by machinery and non-electric machinery. Non-metallics did not play any important role.

In the second period, however, (Table II, Appendix 2), the effect of the substantial expansion in demand for final and intermediate goods on imports and total supply, and consequently, on the import substitution

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coefficient, is evident. For example, in the synthetic silk industry, the share of import substitution in the growth of output declined from 96.1 in the first period to 19 per cent only, in the second period. For the rest of industries in the consumer goods group, the coefficient has a minus sign, but the contribution of import substitution in intermediate goods industries has relatively increased compared to the first period where it was negative.

In the total period, 1960 to 1975 (Table III, Appendix 2) and among consumer goods industries, synthetic silk industry seems to have retained its successful drive to replace imports, followed, although at a much reduced level compared to the first period, by soap and cosmetics, sugar manufacturing, clothing, paper and printing, textiles and footwear. But the expansion in the import substitution output in such industries as vegetable oil, beverages and cigarettes were unsatisfactory.

Intermediate goods industries also fall into two groups. Those with a positive and relatively high contribution, which included paints and plastic products and chemicals and those with a negative contribution, which included textile yarn and rubber products. However, as the latter two industries have higher weights in the group the average for the group also has a negative sign. This implies that the substantial rise in the demand for the intermediate products, and especially textile yarn, has now provided Iraqi manufacturing a good chance to move a stage further in the development of its manufacturing.

Exports of manufactured goods generally did not play any significant role in the growth of manufacturing output. In all three sub-groups the contribution of exports indicated by $U_i (\Delta \bar{X})$ has either been trivial, or negative. Only in the first period can one see a recognizable contribution by exports. But even this was primarily the contribution of one industry alone, namely cement. In the second period, export yield a negative sign. (Petroleum products have been considered non-substitutable in this exercise).

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Source of growth in value added.

To measure the performance of industries by their contribution to the gross output may be misleading. A more appropriate yardstick is the contribution to value added. Because, value added measures the industry's contribution to national income.

Table VIII-3 gives the value added by industries as well as by the major type of commodities produced, and the overall sector.

In general, the picture emerging from table VIII-3, has some similarities with that portrayed in table VIII-1. But there are noticeable differences as well. To show this, consider table VIII-2 first, where value added is allocated percentage-wise between the industries producing the three major types of goods.

TABLE VIII-2. GROSS VALUE ADDED BY INDUSTRY GROUPS IN SELECTED YEARS (CURRENT PRICES) (MILLION IRAQI DINAR) (PERCENTAGE)

	1960		1969		1975	
	(ID m.)	percent	(ID m.)	Percent	(ID m.)	Percent
Total manufacturing	25.0	100.0	60.9	100.0	154.6	100.0
Industries producing consumer goods	16.6	66.6	40.7	66.8	83.8	54.2
Intermediate goods	0.7	2.8	1.5	2.4	11.5	7.4
Capital goods	7.6	30.4	18.7	30.7	59.3	38.3

Source: Computed from Appendix 2 Tables VII, VIII and IV in this chapter.

Although consumer goods industries are still dominant, the effect of the differential growth rates of the three groups is evident. The importance of consumption goods industries relatively declined: from 66.6 per cent in 1960, to 54.2 per cent in 1975. Intermediate goods and capital goods industries on the other hand have relatively raised their respective share; from 2.8 per cent to 7.4 per cent for the former, and from 30.4 per cent

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to 38.3 per cent for the latter. In this respect, therefore, the development pattern projected by tables VIII-2 and VIII-3 is different from that indicated in table VIII-1, as discussed earlier.

Within the three categories of goods in table VIII-2, it can be seen that textiles and clothing industries have been prominent among the industries producing consumer goods. Metal products and furniture have dominated the share of capital goods industries, and chemicals, the share of intermediate goods industries.

Table VIII-3, gives the distribution of the growth in value added over the total period 1960-1975 and the two sub-periods, both by industrial group and by source of value added growth, calculated by the same method discussed in the outset. The top panel in Table VIII-3 shows that one-fifth of the total growth (20 per cent) was contributed by import substitution, $V_i (U_{i+1} - U_i) Z_{i+1}$ and only 1.7 per cent by the growth of export $V_i (U_i - \Delta X)$. More than two-thirds (67 per cent) of the growth in value added (ΔV), was contributed by the consumer goods industries. Capital goods industries and intermediate goods industries accounted respectively for 31 per cent and 2 per cent of the growth of value added. Again the changes in the subsequent period have been quite striking. Exports have ceased to be of any importance, and the share of import substitution has actually declined, although only by a small margin (-6.6 per cent). The dominance of domestic demand in the growth of value added can be seen throughout the periods under consideration. It reached a very high proportion (161.7 per cent) in the second sub-period (1969-1975), and in the total period (1960-1975), nearly four-fifths (79.8 per cent) of the growth in value added could be attributed to it.

What is equally interesting to observe is the structural changes in terms of commodity grouping. Both, in the second sub-period and the total period, the shares of capital goods industries and intermediate goods industries in the growth of value added have increased at the expense of consumer goods industries. Also, measured in terms of contribution to

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TABLE VIII/3. PERCENTAGE DISTRIBUTION OF GROWTH IN VALUE ADDED BY SOURCE AND BY INDUSTRY GROUPS. (1960-1975)

1960-1969	$V_1 / [V_1 (\Delta D + \Delta W)]$	$V_1 (U_1 \Delta X)$	$V_1 / [(U_2 - U_1) Z_2]$	$(V_2 - V_1) G_3$	ΔV
Total mfg.	57.5	1.7	20.0	20.7	100.0
Consumer goods	38.3	0.07	12.0	16.5	67.0
Intermediate goods	1.7	0.0	1.6	-1.3	2.0
Capital goods	17.5	1.6	6.4	5.5	31.0
1969-1975	$V_2 / [V_2 (\Delta D + \Delta W)]$	$V_2 (V_2 \Delta X)$	$V_2 / [(U_3 - U_2) Z_3]$	$(V_3 - V_2) G_3$	ΔV
Total mfg.	161.7	- 0.6	- 54.3	-6.6	100.0
Consumer goods	66.3	0.0	- 9.3	-10.7	46.3
Intermediate goods	6.4	- 0.03	3.2	0.8	10.4
Capital goods	88.9	- 0.7	- 48.2	3.3	43.3
1960-1975	$V_1 / [V_1 (\Delta D + \Delta W)]$	$V_1 (U_1 \Delta X)$	$V_1 / [(U_3 - U_1) Z_3]$	$(V_3 - V_1) G_3$	ΔV
Overall mfg.	79.8	0.0	18.7	1.4	100.0
Consumer goods	40.3	0.03	11.9	- 0.2	52.1
Intermediate goods	4.2	0.0	8.1	- 4.0	3.3
Capital goods	35.8	0.03	- 1.3	5.5	39.6

Source: Computed from appendix 2 tables VII to LX in this chapter.

the growth of value added, a noticeable change can be seen in the relative importance of the commodity grouping, for intermediate goods industries and capital goods industries. This is especially true in the total period. For while the relative share of import substitution for the overall manufacturing and consumer goods remain almost stable (around 20 per cent), that of intermediate goods industries records a continuous increase; from 1.6 per cent to 3.2 per cent and finally to 8.1 per cent, against the decreases recorded for capital goods industries. (see table VIII-3).

Detailed analysis of the contribution of individual industries in each category of goods, in the sub-periods as well as in the total period are shown in Appendix 2, tables IV, V and VI in this chapter. The following is a brief discussion. Again in the first period, and among the consumer goods, import substitutions in synthetic silk was the highest, followed by sugar, textiles, soap and detergents, clothing and footwear (see appendix 2 table IV). In the intermediate group, import substitutions in chemicals, plastics, paints, paper and leather products in that order, were evident. In the capital goods group inroads have been made in machinery, transport equipment and electric equipment. In the total period (Appendix 2, table VI), the industries in the consumer goods group remained the same, only their order of importance changes. Soap and detergent, and clothing now superseded textiles. In the intermediate group the commodities and their order of importance remained unchanged, in the capital goods group, machinery has lost its place and ended up with large negative import substitution. On the other hand, metal products raised the import substitution contributions. But in terms of importance, electrical equipment came first followed by metal products and transport equipment.

We can summarize the major findings of the analysis as follows:

(i) Although the expansion of the manufacturing sector has been at a high rate it has not been compatible with that of the final and intermediate demand for manufactured goods;

(ii) Import substitution as a source of growth of manufacturing output has, relatively, been contracting, whether measured in terms of

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gross output or value added. But the decline has been smaller when measured in the latter term than the former. The best performance for import substitution was recorded in the first period (1960-1969);

(iii) there is a large scope for the expansion of import substitution in the production of all three types of goods: consumer, intermediate and capital;

(iv) finally, export of manufactured goods played an extremely rudimentary role in the promotion of industrial growth throughout the period under consideration.

Import substitution and intermediate consumption in manufacturing.

So far, we have dealt with import-substitution in the final products of industries. Final products are used for final consumption, intermediate use, capital formation and exports. However, intermediate uses of an industry is not usually restricted to its own products only. It also includes inputs from other sectors; services, agriculture, mining etc. Each of these inputs in turn may have an import content. Therefore, it is interesting to know how the growth of the industrial sector has been related to the growth of intermediate imports. This is particularly useful because while industrialization may reduce the ratio of imports to total supply of manufactured goods, it may also entail higher imports of raw materials and intermediate services.

T. King suggests a method of measuring import-substitution in intermediate products where two input-output tables are used.^{1/} Import savings are measured hypothetically by assuming constant technology, and by relating the import coefficients of the base year to the level and pattern of final demand of the end year, or vice versa. i.e. the hypothetical import savings in the base year is measured by applying the import coefficient, of the end year to the final demand in the base year.

The existing input-output tables for 1960 and 1974, have been utilized. But only the first version of the method just mentioned could

^{1/} King, T., Mexico: Industrialization and trade policies since 1940. London, 1970.

be applied. The 1974 table did not give inter-industry breakdown of imports. In order to make the dimensions of the two tables comparable, the number of rows in the 1960 table was aggregated to reduce them, first to 18 activities, to match the number of industries covered in our previous nodal, and, second to 11 industrial divisions, which is the level of activity disaggregation in the 1974 table.

All activities in which imports represented an important part of the intermediate use are shown in table VIII-4. We can see from the table that at least in one activity, paper and printing, the 1960 technology was higher in its import content than the technology actually used in 1974. But in the rest of the activities covered there would have been marked savings in imports had the 1960 technology been used. However, it is difficult to determine exactly how much import savings would have been achieved as the figures for most of the activities in 1974, still contain some part of imports for final demands. This is especially true for wood and furniture, and for metal products. As stated earlier, the 1974 table does not clearly distinguish between final and intermediate uses of imports. Therefore the second part of the exercise, normally using 1974 technology with 1960 final demand cannot be carried out.

TABLE VIII-4. IMPORT SUBSTITUTION FOR INTERMEDIATE PRODUCTS, 1974
(ID Thousands)

Industries	1974 imports of intermediate products and services	1974 imports of intermediate products with 1960 technology and 1974 final demand
Textiles and clothing	44 466	38 637
Paper and printing	16 132	28 876
Chemicals and rubber	42 670	12 126
Wood and furniture	17 705	2 712
Metal products	152 457	12 989

Source: Based on input-output tables in Iraq for 1960 and 1974.
Published by CSO, Ministry of Planning.

APPENDIX I

Source of data

As indicated earlier the study covers all manufacturing establishments. i.e. large and small establishments. But it is confined to those industries which produce substitutable goods. The data necessary for the study are series for value added for value of gross output for exports and for imports. The following shall consider these in detail.

Value added and value of gross output in manufacturing.

Value added is defined in gross terms and at current factor costs. Value of gross output is at current market prices. For large establishments the estimates for the two variables concerned for the years 1960 and 1969 are taken from Fattah.^{1/} For 1975 they are based on our estimates discussed in Volume 2 chapter . However as there was no survey of small industries for 1960, the estimates regarding small establishments are derived in two ways.

(i) For a number of industries (footwear, wood and furniture, leather products machinery and transport equipment), they are obtained from the input-output, table of 1960. In a few cases the input-output figures had to be disaggregated before deriving the share of small establishments in the industry concerned. This was done on the basis of the ratio of output of large establishments in each industry in the aggregated figure.

(ii) For a number of other industries (textiles, clothing, beverages, metal products, and non-metallics), the share of small establishments is calculated on the basis of the ratio of their respective output to that of large establishments in 1965. In the remaining industries small establishments were negligible.

^{1/} Zeki Fattah, Ibid.

The allocation of demand for domestic output into final and intermediate demand was obtainable from the I-0 table but for 1960 only. In the I-0 tables of the years 1969, and 1974, activities are highly aggregated. In fact the activity breakdown has been carried out at industrial division level only. Therefore it was difficult to separate final and intermediate demand for the industries concerned on the basis of their estimates in the I-0 tables. As a result these two types of demand have been lumped together.

The estimates of gross output were initially at current factor costs. They were converted to current market prices by adding indirect taxes. Tax incidents are adequately reported in the I-0 tables, and in the Annual Industrial Survey of 1970. Furthermore, industries whose products are taxed are very small.

Exports and imports of manufactured goods.

Export data are fully reported in the foreign trade statistics. Exports are also reported at f.o.b. values. Imports, however, although reported in detail, are at c.i.f. values. To convert them to market prices, was done by applying the tariff rates which are given in the foreign trade statistics for each group of commodities.

Finally, the total supply figures in Appendix 2 tables VII to IX, are obtained by adding the value of domestic output (for final, intermediate and export demand), to the value of imports. The domestic demand figures are derived by deducting exports from the total supply.

APPENDIX 2

TABLE I. DETERMINANTS OF GROWTH OF OUTPUT IN MANUFACTURING
1960-1969

	\bar{u}_1	\bar{u}_2	$\bar{u}_2 - \bar{u}_1$	$\bar{u}_1(\Delta X)$	$\bar{u}_1(\Delta X)$	$(\bar{u}_2 - \bar{u}_1)\bar{u}_2$	ΔG
Sugar mfg.	0.147	0.401	0.254	618	0	3 456	4 074
Vegetable oil	0.798	0.767	-0.031	7 119	-179	- 545	6 395
Beverages	0.935	0.985	0.0	11 409	12	0.0	11 421
Cigarettes	0.932	0.982	0.0	10 635	- 49	0.0	10 536
Textiles(cotton and wool)	0.537	0.630	0.093	1 606	59	1 730	3 395
Silk textiles	0.140	0.294	0.154	50	0	1 416	1 474
Textile yarn	0.624	0.177	-0.447	5 663	0	- 5 300	238
Clothing	0.771	0.927	0.156	6 345	45	3 272	10 162
Footwear	0.949	0.996	0.047	1 793	78	344	2 220
Wood and furniture	0.638	0.729	0.091	1 439	12	536	1 937
Paper and printing	0.329	0.451	0.122	1 551	30	1 257	2 338
Leather mfg.	0.476	0.516	0.040	244	0	149	393
Rubber products	0.030	0.041	-0.039	201	- 0.5	- 139	71
Paints	0.058	0.237	0.229	11	0.4	428	440
Soap and cosmetics	0.329	0.664	0.335	1 111	60	1 778	2 949
Chemicals	0.020	0.072	0.052	97	- 0.2	347	4 441
Plastic products	0.075	0.523	0.448	32	24	1 271	1 377
Glass products	0.036	0.041	0.005	73	0	12	35
Cement	0.963	0.963	-0.005	3 070	1 519	- 51	4 538
Other non-metallics	1.0	0.223	-0.777	4 340	14	-3 653	701
Metal products	0.354	0.261	-0.093	5 114	41	-2 938	2 217
Machinery	0.093	0.179	0.086	2 467	1	3 164	5 632
Electrical equipment	0.086	0.139	0.053	554	0.6	646	1 200
Transport equipment	0.004	0.472	0.468	29	0.2	8 555	8 584
Miscellaneous mfg.	0.008	0.050	0.042	4	0.6	125	130
Total mfg.	0.477	0.534	0.057	66 151	1 663	15 768	83 586
Consumer goods	0.597	0.770	0.173	42 754	51	12 833	55 644
Intermediate goods	0.306	0.218	-0.088	6 311	24	- 3 324	3 011
Capital goods	0.339	0.354	0.015	17 036	1 587	6 259	24 932

TABLE II. DETERMINANTS OF GROWTH OF OUTPUT IN MANUFACTURING
1969 - 1975

Industries	U_2	U_3	$(U_3 - U_2)$	$U_2(\Delta D + \Delta W)$	$U_2(\Delta X)$	$(U_3 - U_2)Z_3$	ΔG
Sugar mfg.	0.401	0.240	- 0.161	33 903	0	-15 802	13 101
Vegetable oil	0.767	0.523	- 0.244	22 103	0	-11 323	10 780
Beverages	0.935	0.939	- 0.046	9 220	- 11	- 1 251	7 950
Cigarettes	0.982	0.933	- 0.044	12 993	0	- 1 551	11 442
Textiles (cotton and wool)	0.630	0.610	- 0.020	26 670	6	- 1 221	25 455
Silk textiles	0.846	1.00	0.154	3 587	0	2 055	10 642
Textile yarn	0.177	0.054	- 0.123	8 521	0	- 7 401	1 120
Clothing	0.927	0.964	0.037	34 990	11	2 095	37 096
Footwear	0.997	0.981	- 0.016	603	- 1	- 251	351
Wood and furniture	0.729	0.439	- 0.240	37 807	- 12	-15 582	22 213
Paper and printing	0.451	0.509	0.058	13 076	- 41	2 274	15 309
Leather mfg.	0.516	0.960	0.444	4 803	0	5 705	10 583
Rubber mfg.	0.041	0.051	0.010	499	- 0.2	158	657
Paints	0.287	0.563	0.276	761	- 2	1 246	2 005
Soap and cosmetics	0.664	0.584	- 0.080	3 422	14	- 839	2 597
Chemicals	0.072	0.135	0.113	3 746	1	6 635	10 382
Plastic products	0.523	0.376	- 0.147	8 421	-123	- 2 749	5 549
Glass products	0.041	0.230	0.189	226	0.2	1 481	1 707
Cement	0.963	0.937	- 0.026	10 261	-1 489	- 502	8 270
Other non-metallics	0.223	0.392	0.169	5 244	- 9	4 775	10 010
Metal products	0.261	0.462	0.201	13 325	-30	16 609	29 904
Machinery	0.179	0.035	- 0.144	25 362	43	-25 735	- 330
Electrical equipment	0.139	0.203	0.064	11 240	0.7	5 956	17 196
Transport equipment	0.472	0.071	- 0.401	27 834	7	-90 505	7 396
Miscellaneous mfg.	0.050	0.047	- 0.003	223	0	- 22	201
Total mfg.	0.534	0.334	- 0.200	393 900	-1 635	-125 665	266 600
Consumer goods	0.770	0.612	- 0.158	165 790	- 22	- 25 836	139 932
Intermediate goods	0.213	0.216	- 0.002	26 751	-125	3 674	30 300
Capital goods	0.354	0.203	- 0.151	201 359	-1 469	-103 503	96 367

* The positive portion of the import substitution

APPENDIX 2

TABLE III. DETERMINANTS OF GROWTH OF OUTPUT IN MANUFACTURING
1960 - 1975

	U_1	U_3	$(U_3 - U_1)$	$U_1(\Delta D + \Delta W)$	$U_1(\Delta X)$	$(U_3 - U_1)Z_3$	ΔG
Sugar mfg.	0.147	0.240	0.093	13 046	0	9 128	22 174
Vegetable oil	0.798	0.523	- 0.275	30 115	- 179	-12 761	17 154
Beverages	0.985	0.939	- 0.046	20 629	1	- 1 251	19 379
Cigarettes	0.982	0.940	- 0.042	23 628	- 49	- 1 431	22 098
Textiles (cotton and wool)	0.537	0.610	0.073	24 339	53	4 456	28 795
Silk textiles	0.140	1.000	0.860	639	0	11 477	12 116
Textile yarn	0.624	0.054	- 0.570	35 706	0	-34 300	1 406
Clothing	0.524	0.964	0.340	29 093	- 54	19 968	49 007
Footwear	0.949	0.931	0.032	2 372	3	251	2 626
Wood and furniture	0.632	0.489	- 0.199	37 120	1.4	-12 920	24 201
Paper and printing	0.329	0.509	0.180	11 090	0	7 057	18 147
Leather mfg.	0.476	0.960	0.484	4 675	0	6 306	10 981
Rubber products	0.080	0.051	- 0.029	1 190	0	- 453	- 732
Paints	0.053	0.563	0.505	165	0	2 230	2 445
Soap and cosmetic	0.329	0.584	0.255	2 307	67	2 673	5 547
Chemicals	0.020	0.185	0.165	11 139	0.1	9 639	10 323
Plastic products	0.075	0.376	0.301	1 289	6	5 629	6 924
Glass products	0.036	0.230	0.194	271	0.2	1 520	1 791
Cement	0.962	0.937	- 0.031	13 384	22	- 599	12 807
Other non-metallics	1.000	0.392	- 0.608	27 356	53	-17 130	10 729
Metal products	0.354	0.462	0.108	23 191	0.	3 913	32 104
Machinery	0.093	0.035	- 0.058	15 644	23	-10 365	5 302
Electrical equipment	0.086	0.203	0.117	7 508	1	10 868	13 397
Transport equipment	0.004	0.071	0.067	858	0.3	15 122	15 980
Miscellaneous mfg.	0.008	0.047	0.039	40	0.6	289	329
Total mfg.	0.477	0.334	- 0.143	327 794	- 41	24 331	352 034
Consumer goods	0.597	0.612	0.015	157 798	-147	39 806	197 457
Intermediate goods	0.300	0.216	- 0.084	44 164	6	-10 354	33 316
Capital goods	0.338	0.203	- 0.135	125 832	100	- 4 621	121 311

TABLE IV. SOURCE OF CHANGE IN VALUE ADDED: 1960-1969

Industries	V_1	V_2	$(V_2 - V_1)$	$V_1 \int_0^1 (\Delta D_{1+M}) J$	$V_1 \int_0^1 (\Delta X) J$	$V_1 \int_0^1 (\Delta V_1) J$	$(V_2 - V_1) G_2$	ΔV
Sugar mfg.	0.300	0.335	0.035	135	0.0	1 037	191	1 413
Vegetable oil	0.253	0.383	0.130	1 801	-45	- 138	1 753	3 371
Beverages	0.429	0.456	0.027	4 894	5	0.0	475	5 374
Cigarettes	0.241	0.307	0.066	2 563	-12	0.0	1 428	3 979
Textile(cotton and wool)	0.424	0.404	-0.020	681	25	733	- 234	1 205
Silk textiles	0.396	0.368	-0.028	23	0.0	561	- 76	503
Textile yarn	0.050	0.066	0.016	283	0.0	-269	34	48
Clothing	0.343	0.422	0.079	2 383	16	1 139	1 430	4 975
Footwear	0.193	0.322	0.129	347	15	66	942	1 370
Wood and furniture	0.417	0.337	-0.080	1	5	223	- 763	65
Paper and printing	0.422	0.330	-0.092	1	13	530	- 428	769
Leather mfg.	0.328	0.306	-0.022	30	0.0	49	- 42	86
Rubber products	0.627	0.534	-0.093	131	0.0	- 87	- 14	31
Paints	0.289	0.223	-0.066	3	1	123	- 35	92
Soap and cosmetics	0.188	0.312	0.124	209	11	334	437	992
Chemicals	0.784	0.371	-0.413	76	0.0	272	- 199	150
Plastic products	0.399	0.252	-0.147	32	9	494	- 203	332
Glass products	0.545	0.479	-0.066	40	0	6	- 6	40
Cement	0.453	0.473	0.020	1 391	638	- 23	196	2 252
Other non-metallics	0.454	0.610	0.156	1 970	6	-1 658	163	481
Metal products	0.241	0.378	0.137	1 232	10	- 708	1 130	1 664
Machinery	0.400	0.404	0.004	187	0.4	1 266	26	2 279
Electrical equipment	0.092	0.268	0.176	51	0	50	297	403
Transport equipment	0.140	0.453	0.313	4	0	1 198	2 704	3 904
Miscellaneous mfg.	0.360	0.267	-0.093	1.5	0	46	- 15	33
Total mfg	0.327	0.380	0.053	20 599	619	7 181	7 416	35 816
Consumer goods	0.320	0.378	0.058	13 741	28	4 303	5 911	23 968
Intermediate goods	0.200	0.221	0.021	605	10	582	- 459	739
Capital goods	0.366	0.409	0.043	6 253	581	1	1 964	11 039

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TABLE V. SOURCE OF CHANGE IN VALUE ADDED: 1969-1975

Industries	V_2	V_3	$(V_3 - V_2)$	$V_2 \int_2^3 (\Delta u_2 / u_2)$	$V_2 (u_2 \Delta X)$	$V_2 \int_2^3 (u_3 - u_2) / u_2$	$(V_3 - V_2) G_3$	V_3
Sugar mfg.	0.335	0.240	-0.095	11 357	0	-5 052	-2 235	4 070
Vegetable oil	0.333	0.243	-0.140	3 465	0	-4 336	-3 399	730
Beverages	0.456	0.458	0.002	4 204	- 5	- 570	51	3 630
Cigarettes	0.307	0.245	-0.062	3 909	0	- 475	-2 051	1 462
Textiles(cotton and wool)	0.404	0.407	0.003	10 775	2	- 493	112	10 394
Silk textiles	0.568	0.307	-0.061	3 160	0	756	- 814	3 102
Textile yarn	0.066	0.248	0.182	562	0	- 488	590	664
Clothing	0.422	0.443	0.021	14 766	5	884	1 189	16 844
Footwear	0.322	0.337	0.015	194	- 0.3	- 80	116	230
Wood and furniture	0.337	0.375	0.038	12 741	- 4	-5 251	1 207	3 693
Paper and printing	0.330	0.217	-0.113	4 315	-13	750	-2 255	2 797
Leather mfg.	0.306	0.342	0.036	1 470	0	1 770	430	3 690
Rubber products	0.534	0.371	-0.163	266	0	- 26	- 14	226
Paints	0.223	0.205	-0.018	246	- 0.4	- 22	- 46	403
Soap and cosmetics	0.312	0.183	-0.129	1 068	4	- 141	- 790	20
Chemicals	0.371	0.331	-0.040	1 390	0.4	2 461	- 435	3 416
Plastic products	0.252	0.280	0.028	2 122	-31	- 693	197	1 595
Glass products	0.479	0.455	-0.024	108	0.0	709	- 43	774
Cement	0.473	0.356	-0.117	4 853	-704	- 237	-2 302	1 813
Other non-metallics	0.610	0.357	-0.253	3 199	- 5	2 913	-2 802	3 305
Metal products	0.378	0.504	0.226	5 037	-11	6 278	8 623	19 932
Machinery	0.404	0.162	-0.242	10 246	17	-10 397	-1 527	-1 661
Electrical equipment	0.263	0.364	0.096	3 012	0.0	1 596	1 818	6 426
Transport equipment	0.453	0.326	-0.127	44 347	3	-40 999	-2 036	1 315
Miscellaneous mfg.	0.267	0.293	0.026	59	0	- 6	9	62
Total mfg.	0.380	0.350	-0.030	151 943	-742	-51 044	-6 130	93 977
Consumer goods	0.378	0.318	-0.060	62 353	- 4	- 8 764	-10 068	43 517
Intermediate goods	0.221	0.310	0.089	6 055	-31	3 003	742	9 379
Capital goods	0.409	0.417	0.008	83 543	-707	-45 233	3 146	40 694

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TABLE VI. SOURCE OF CHANGE IN VALUE ADDED: 1960-1975

Industries	V_1	V_3	$(V_3 - V_1)$	$V_1 / \pi_1 (P_1 / P_3)$	$V_1 / u_1 \Delta x$	$V_1 / ((u_3 - u_1) P_3)$	$(V_3 - V_1) P_3$	ΔV
Sugar mfg.	0.300	0.240	-0.060	3 914	0	2 738	- 1 412	5 240
Vegetable oil	0.253	0.243	-0.010	7 619	- 45	- 3 228	- 243	4 103
Beverages	0.429	0.473	0.029	8 850	0.4	- 537	741	9 054
Cigarettes	0.241	0.245	0.004	5 694	- 12	- 357	141	5 466
Textiles (cotton and wool)	0.424	0.407	-0.017	10 320	27	1 839	- 633	11 603
Silk textiles	0.396	0.307	-0.089	253	0	4 545	- 1 188	3 610
Textile yarn	0.050	0.248	0.198	1 785	0	- 1 715	642	712
Clothing	0.348	0.443	0.095	10 124	- 19	6 949	5 380	22 434
Footwear	0.193	0.337	0.144	458	0.6	48	1 131	1 637
Wood and furniture	0.417	0.375	-0.042	15 479	0.6	- 5 238	- 1 334	8 753
Paper and printing	0.422	0.217	-0.205	4 680	0	2 978	- 4 092	3 566
Leather mfg.	0.328	0.342	0.014	1 533	0	2 068	182	3 783
Rubber products	0.627	0.371	-0.256	746	0	- 287	- 206	253
Paints	0.289	0.205	-0.084	48	0	659	- 214	493
Soap and cosmetics	0.188	0.183	-0.005	528	13	502	- 51	992
Chemicals	0.784	0.331	-0.453	893	0	7 596	- 4 923	3 566
Plastic products	0.339	0.230	-0.109	501	2	2 190	- 767	1 926
Glass products	0.545	0.455	-0.090	148	0	828	- 162	814
Cement	0.453	0.356	-0.097	6 063	10	- 271	- 1 755	4 047
Other non-metallics	0.454	0.357	-0.098	12 647	24	-7 800	- 1 035	3 786
Metal products	0.241	0.604	0.363	5 589	0.0	2 148	13 850	21 595
Machinery	0.400	0.162	-0.238	6 258	9	-4 146	- 1 502	619
Electrical equipment	0.092	0.364	0.272	691	0.0	1 032	5 152	6 844
Transport equipment	0.140	0.326	0.186	120	0.0	2 117	2 983	5 219
Miscellaneous mfg.	0.368	0.293	-0.075	15	0.0	106	- 26	95
Total mfg.	0.327	0.362	0.035	104 015	4	24 405	1 824	130 248
Consumer goods	0.320	0.338	0.018	52 455	-35	15 535	- 252	67 753
Intermediate goods	0.200	0.310	0.110	5 506	2	10 511	- 5 176	10 843
Capital goods	0.366	0.417	0.051	46 054	37	- 1 691	7 252	51 652

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TABLE VII. SUMMARY STATISTICS BY INDUSTRY: 1960 (ID THOUSANDS)

Industry	Gross Value added current cost	Gross output current factor cost	Gross output current market price	Imports at c.i.f. value	Imports at market price	Total supply market price	Exports f.o.b.	Domestic demand
Sugar mfg.	415	1 384	1 384	8 019	8 019	9 403	0	9 403
Vegetable oil	1 796	7 095	7 095	1 795	1 795	8 890	224	8 666
Beverages	2 648	4 444	6 164	95	95	6 259	0	6 259
Cigarettes	2 665	7 335	11 061	100	200	11 261	50	11 211
Textiles (cotton and wool)	3 556	8 368	8 330	6 022	7 226	15 606	0	15 606
Silk textiles	489	1 223	1 235	6 285	7 547	8 782	0	8 732
Textile yarn	92	1 343	1 343	1 028	1 110	2 953	0	2 953
Clothing	3 229	7 511	9 277	2 300	2 760	12 037	28	12 009
Footwear	980	5 039	5 084	225	270	5 354	0	5 354
Wood and furniture	3 152	7 365	7 547	3 111	3 422	10 969	0	10 969
Paper and printing	765	1 811	1 811	3 354	3 689	5 500	0	5 500
Leather mfg.	501	1 529	1 529	1 400	1 630	3 209	0	3 209
Rubber products	47	75	75	787	366	941	0	941
Paints	28	97	97	1 434	1 577	1 674	0	1 674
S soap and cosmetics	108	494	575	1 065	1 171	1 746	0	1 746
Chemicals	29	37	37	1 634	1 797	1 834	7	1 827
Plastic products	42	108	108	1 200	1 320	1 428	0	1 428
Glass products	6	11	11	264	290	301	0	301
Cement	2 396	5 286	5 286	161	177	5 463	574	4 889
Other non-metallics	158	304	340	0	0	348	0	348
Metal products	1 454	6 029	6 029	10 000	11 000	17 029	0	17 029
Machinery	380	950	950	9 300	9 300	10 250	0	10 250
Electrical equipment	46	497	497	4 767	5 243	5 740	0	5 740
Transport equipment	7	50	50	10 000	11 000	11 050	0	11 050
Miscellaneous mfg.	7	19	19	2 132	2 345	2 364	0	2 364
Total mfg.	24 996	68 901	76 492	76 478	83 899	160 391	883	159 508
Consumer goods	16 658	44 743	52 085	31 392	35 117	87 202	302	86 900
Intermediate goods	739	3 623	3 689	7 483	8 350	12 039	7	12 032
Capital goods	7 599	20 536	20 718	37 603	40 432	61 150	574	60 576

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TABLE VIII. SUMMARY STATISTICS BY INDUSTRY: 1969

	Gross Value added current cost	Gross output current factor cost	Gross output current market price	Imports at c.i.f. value	Imports at market price	Total supply market price	Exports f.o.b.	Domest demand
Sugar mfg.	1 826	5 455	5 455	8 151	8 151	13 606	0	13 606
Vegetable oil	5 168	13 354	13 487	4 100	4 100	17 537	0	17 537
Beverages	8 070	12 681	17 589	133	266	17 854	12	17 842
Cigarettes	6 655	14 351	21 641	200	400	22 041	0	22 041
Textiles (cotton and wool)	4 739	11 715	11 715	5 743	6 092	18 607	110	18 497
Silk textiles	995	2 702	2 702	6 229	6 493	9 195	0	9 195
Textile yarn	142	2 133	2 133	9 255	9 903	12 036	0	12 036
Clothing	8 215	17 718	19 437	1 400	1 536	20 973	36	20 837
Footwear	2 357	7 307	7 307	17	20	7 327	78	7 249
Wood and furniture	3 213	9 255	9 533	3 224	3 546	13 079	18	13 061
Paper products and printing	1 536	4 652	4 652	5 140	5 654	10 306	91	10 215
Leather mfg.	538	1 922	1 922	1 500	1 800	3 722	0	3 722
Rubber products	78	146	146	2 855	3 426	3 572	6	3 566
Paints	120	537	537	1 212	1 333	1 870	7	1 863
Soap and cosmetics	1 100	3 523	3 527	1 484	1 781	5 308	184	5 124
Chemicals	179	482	482	5 832	6 195	6 677	0	6 677
Plastic products	374	1 485	1 435	1 229	1 352	2 837	315	2 522
Glass products	46	96	96	2 019	2 221	2 317	0	2 317
Cement	4 643	9 823	9 823	346	331	10 204	2 143	8 061
Other non-metallics	639	1 047	1 047	3 323	3 655	4 702	14	4 688
Metal products	3 122	8 250	8 250	21 219	23 341	31 591	116	31 475
Machinery	2 667	6 598	6 598	30 195	30 195	36 793	10	36 783
Electrical machinery	454	1 691	1 691	9 810	10 497	12 188	7	12 181
Transport equipment	3 911	8 640	8 640	8 764	9 640	18 280	59	13 221
Miscellaneous mfg.	40	150	150	2 565	2 821	2 971	80	2 891
Total Mfg	60 877	145 713	160 044	135 745	139 599	299 643	3 336	296 307
Consumer goods	40 701	93 607	107 664	35 162	32 114	139 775	641	139 134
Intermediate goods	1 481	6 705	6 705	21 683	24 009	30 714	328	30 386
Capital goods	18 695	45 400	45 678	78 900	83 476	129 154	2 367	126 787

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TABLE IX. SUMMARY STATISTICS BY INDUSTRY: 1975

Industry	Gross Value added current cost	Gross output current factor cost	Gross output current market price	Imports at c.i.t. value	Imports at market price	Total supply at market price	Exports f.o.b.	Domestic demand
Sugar mfg.	5 660	21 767	23 530	4 623	74 623	98 153	0	98 153
Vegetable oil	5 891	22 231	24 276	22 129	22 129	46 405	0	46 405
Beverages	11 712	13 416	25 543	830	1 660	27 203	1	27 202
Cigarettes	8 106	21 946	33 094	1 589	2 178	35 272	0	35 272
Textiles(cotton and wool)	15 114	37 252	37 252	19 830	23 796	61 048	117	60 931
Silk textiles	4 103	13 345	13 345	0	0	13 345	0	13 345
Textile yarn	805	3 245	3 245	53 206	56 930	60 175	0	60 175
Clothing	25 109	56 635	56 635	1 747	2 096	58 731	98	58 633
Footwear	2 599	7 709	7 709	123	143	7 857	3	7 854
Wood and furniture	11 910	31 766	31 766	30 144	33 158	64 924	2	64 922
Paper and printing	4 341	13 999	19 963	17 496	19 246	39 209	0	39 209
Leather mfg.	4 284	12 512	12 512	432	518	13 030	0	13 030
Rubber products	299	305	305	13 648	15 013	15 818	0	15 818
Paints	523	2 544	2 544	1 792	1 971	4 515	0	4 515
Soap and cosmetics	1 120	6 126	6 126	3 631	4 357	10 483	205	10 278
Chemicals	3 598	10 869	10 869	43 503	47 853	58 722	12	58 710
Elastic products	1 972	7 038	7 038	10 605	11 665	18 703	80	18 623
Glass products	819	1 799	1 799	5 438	6 037	7 836	6	7 830
Cement	6 443	18 095	18 095	1 107	1 218	19 313	597	18 716
Other non-metallics	3 952	11 077	11 077	15 518	17 180	28 257	53	28 204
Metal products	23 078	38 177	38 177	40 322	44 354	82 531	0	82 531
Machinery	1 025	6 311	6 311	172 403	172 403	178 719	249	178 470
Electrical machinery	6 889	18 940	18 940	69 268	74 117	93 057	11	93 046
Transport equipment	5 223	16 036	16 036	190 602	209 662	225 698	74	225 624
Miscellaneous mfg.	102	348	348	6 432	7 075	7 423	80	7 343
Total mfg.	154 677	398 988	427 035	796 573	849 392	1276 427	1588	1274 839
Consumer goods	33 793	219 774	247 821	143 430	157 308	405 129	504	404 625
Intermediate goods	11 481	37 013	37 013	123 186	135 950	170 967	92	170 871
Capital goods	59 339	142 201	142 201	524 957	558 134	700 335	992	699 343

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FOR ARAB STATES

Algiers, Algeria

LONG-TERM PROSPECTS
OF
INDUSTRIAL
DEVELOPMENT
IN IRAQ

Volume II

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the Secretariat of UNIDO and ECWA

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Volume II

Chapter I

CAPITAL STOCK IN IRAQI MANUFACTURING
(MEASUREMENT AND ANALYSIS)

Introduction

Aggregate planning models (e.g. Harrod-Domar Model) which identify capital as the scarce production factor determines the investment requirement of any desired rate of growth in the economy in relation to the capital-output ratio.

The capital-output ratio, conventionally, represents a stock-flow concept relating the value of the stock of capital to the value of the stock of capital to the value of the flow of output at a given time. This concept however has been criticized for overlooking differences in longevity (or durability) of capital goods. A number of other practical limitations have also been pointed out. For example, fuller utilization of capacity; increase in the number of work shifts, and improvement in the method of management are all likely to increase output without necessarily increasing capital. For these reasons the capital-output ratio relating annual investment to output - i.e. based on a two-flow concepts - is thought to be more appropriate.^{1/}

However, while the two-flow concepts may be suitable when applied at an individual plant or industry level, it itself suffers from overlooking differences in the gestation periods of investment in different types of capital goods, at the sectoral or economic level. Secondly, the effect of differences in the durability of capital goods on the efficiency of the stock-flow concept of capital-output ratio, is related more to the way capital stock is measured than to anything else. Thus granting that appropriate allowance is made for differences in the durability of capital goods, an aggregate capital output ratio, measured in the conventional way, would be most relevant for economic or sectoral planning. To explain this, let us briefly review the methods of measurement of capital usually applied.

^{1/} L.S. Bhatta (ed.) Technology and employment in industry. ILO. Geneva, pp. 26-27.

Capital, in the stock concept, is more often (for lack of pertinent data) measured either by aggregating annual gross (or net) investments over years, or by basing it on the balance sheet values of assets. The latter is usually derived from the business accounts of firms.

Both methods, however, are deficient. For, although capital goods are characterized by longevity, they will, nevertheless, have to be scrapped at some time. Unless, therefore, allowance is made for scrapping of capital goods, the initial investment would remain in the stock indefinitely. As a result, the capital stock measurement would be overstated. The balance sheet values of capital, on the other hand, are at historical (or original) costs. Therefore, they may not bear any relation to the real present value of the assets. In addition, balance sheet values tend, generally to be distorted. The depreciated value of assets also are, often, grossly understated.

In the estimate of capital stock here, we have made allowance for the scrapping of capital goods. We have also applied more realistic rates of depreciation. Differences in the length of active life of assets have also been observed. But as the measurements could only be constructed at aggregate sectoral level (for lack of data at an industry level), the allowances just mentioned had to be made on an average basis.

There are also other reasons for constructing capital stock series. Firstly, by making separate series for each of the major types of capital goods, it would be possible to study the changes in the structure of the capital stock in manufacturing. Secondly, capital has to be measured in stock terms to assess its partial and total productivity as a factor of production.

But measurement of capital stocks is not without problems. In the first section, we shall briefly discuss the concept and definition of capital stock as we measured it. (I) Method of measurement, and deflators are discussed in the annex to this chapter. The other sections will be under the following headings: (II) Analysis of the structure of capital stocks in Iraqi manufacturing; (III) Capital stock by individual industries; (IV) Analysis of the structure of capital formation in manufacturing: commodity composition and ownership; and (V) capacity utilization in Iraqi manufacturing.

I. Concept and definition of capital stock and capital formation

We have defined capital stock as the stock of all tangible assets used in the production of goods in manufacturing. Thus all financial claims, stocks of raw materials and finished goods, as well as human capital, are excluded. The latter is excluded because it is difficult to measure human capital, and the former because there are no accurate data for them. In other words, the items included in the measurement are essentially man-made fixed assets.^{1/}

However, controversy usually arises regarding which concept of capital is more appropriate for productivity measurement: gross or net capital stock. The consensus is that in using each concept one should take into account both the objective of the study and the time period covered.

In this survey, we have measured capital stock in gross and net terms. Recently, accumulation of capital in Iraq has been taking place at a very high rate. This usually gives rise to a high rate of obsolescence, maintenance costs and wear and tear. In addition, changes in the rate of capital formation, and in the composition of capital stock which would follow would affect the growth of gross and net capital differently.

A direct method of measuring capital stocks would be to value the existing stocks at the market values of new and used capital assets. Very few countries in the world have undertaken such a study. Most of the available capital stock series have been constructed by Goldsmith's indirect method of 'Perpetual inventory'.

The variant of this method which is applied here involves the accumulation of the flows of investment from the initial year where a fixed asset still existent in the latest years of the series was first installed. As the method utilizes the capital formation series, we shall briefly consider this series.

Source of data for the capital formation, and assessment of the estimates for the period 1957 onwards are discussed elsewhere.^{2/} Similarly with regard to the method of estimation, the sectoral breakdown, the commodity composition and the deflators. Therefore, below we shall give only the definition of capital formation and a general view of the estimation procedure.

1/ See Zeki Fattah, Ch. 4.

2/ See Zeki Fattah, Ch. 5.

Capital formation is defined as expenditure on fixed assets only. These include expenditures on machinery, building (including land), furniture and fixtures, and transport equipment. Working capital, and all expenditures on human capital (health and education as stated earlier for capital stock) are excluded. Also excluded are expenditures on repair and maintenance. Thus capital formation is strictly defined as addition to the physical stock of fixed assets. The original estimates are made in gross terms and no attempt has been made to measure depreciation or change in inventories. But the series are given both at current and constant prices. They are also given by type of assets, by economic sector, and by ownership.

The first step in estimating capital formation for each year has been to establish aggregate annual investment figures for each of the four types of assets just mentioned. A combination of commodity flow and expenditure method has been employed for each type of assets. For industrial machinery and equipment, transport equipment and furniture and fixtures the series have been constructed mainly by commodity-flow approach from the import statistics. The latter is sufficiently detailed regarding capital goods. For industrial buildings and other construction work for manufacturing, the expenditure method is used. The aggregate estimates here are based on building permits and some measures of average costs.

II. Analysis of the structure of capital stocks in manufacturing

Estimates of capital stock in Iraqi manufacturing are presented in table I.1. The table shows the accumulation of capital stock and its commodity composition over the years 1970-1975. It can be seen that aggregate gross and net capital stock have more than doubled in the five years since 1970. Gross capital stock increased from ID 345 million in 1970; to ID 719 million in 1975, and the net from ID 254.5 million to ID 578.6 million. In dollars, and at current average exchange rate, the value of gross capital stocks in Iraqi manufacturing in 1975, amounted to \$ 2.3 billion, and the net to about \$ 1.9 billion. The bulk of the increase, has, not surprisingly, taken place between 1973 and 1975. In that period, the gross stock increased by sixty per cent, and the net by sixty seven per cent. Generally, this also applies to the increases in the component element of the capital stock, i.e. machinery and buildings.

Table I.1

Analysis of composition of capital stocks in Iraqi manufacturing.
(Indices, percentages and ID. million)

Year	(1) Aggregate gross capital stocks (ID. million)	(2) Index of gross capital stocks	(3) Aggregate net capital stocks (ID. million)	(4) Index of net capital stocks	(5) Index of gross capital stocks in machinery	(6) Index of net capital stocks in machinery
1970	345.0	100.0	254.5	100.0	100.0	100.0
1971	374.6	108.6	276.1	108.5	109.2	109.8
1972	407.4	118.1	305.0	119.8	118.7	123.1
1973	453.8	131.5	347.7	136.6	129.5	139.0
1974	549.9	159.4	430.4	169.1	160.5	178.3
1975	719.0	208.4	578.6	227.3	213.0	245.4
(AAROC) 1970-75		15.8		17.8	16.3	19.7
	(7) Index of gross capital stocks in buildings	(8) Index of net capital stocks in buildings	(9) Change in the ratio of:			
			Aggregate net to gross	Gross machinery to gross aggregate	Net machinery to net aggregate	
			1960* = 79.4%	56.2%	52.1%	
			1969* = 73.9%	58.9	53.2	
1970	100.0	100.0	73.8	59.5	54.0	
1971	107.6	106.9	73.7	59.8	54.7	
1972	117.2	115.9	74.9	59.8	55.5	
1973	134.5	133.7	76.6	58.6	55.0	
1974	157.7	158.3	78.3	59.9	57.0	
1975	201.8	206.7	80.5	60.7	58.3	
(LLROG) 1970-75	15.1	15.6				

Source: Based on tables 1 and 2 in the appendix II to this chapter.

* Ratios for these two years are based on Fattah's estimates ch. 4 P. 97 and P. 100.

The table also shows some other interesting changes. First, the share of net capital in the aggregate stock has increased at a faster rate than the gross. This is due to the higher rates of annual investment. Depreciation of capital stock, it should be noted, takes place regardless whether the stock is utilized or not. Therefore, the higher the rate of accumulation the greater the net stock. The implication of this for productivity analysis is important. Because, it indicates that the average age of assets in existence is low. This in turn means that the installed capacity is more likely to be of a new vintage embodying recent technological changes usually characterized with high efficiency.

Second, the stock of machinery (both gross and net) have together grown at a faster rate than has the aggregate stock over the period. Implying that the share of machinery in the stock expanded at the expense of buildings. The effect of this would be to enhance the productivity of capital.

Thus in studying capital productivity, these favourable conditions for the performance of capital productivity should be noted. We should also examine if the accumulation of capital stock has been related to changes in the commodity composition of manufacturing sector.

III. Capital stock by individual industries 1969/70

'The (Industrial) Survey' of 1969/70*, gives the book value of fixed assets for all (53) industries employing 30 persons or more. Two major types of capital assets were distinguished: 'machinery and others': and 'land, building, and other constructions'. The historical values of assets as well as the 'cost value of assets' (i.e. including costs of transport, insurance, installation, and other costs) are given. Although depreciation allowance at each industry is also shown, we measured capital-output ratio at an industry level in gross terms.

* CSO, Survey of Industrial Development 1969/70. Carried out by IDCLS.

In table I.2, the aggregate value of fixed assets of each of the industries covered in the survey is ranked, and the corresponding K/C ratio is also shown. These and the K/L ratio based on value of fixed assets per employee in the industries concerned will be discussed in the appendix in the chapter about productivity. Here we should only point out that capital estimates in the survey, being confined to one year only, is of limited use. It is useful only for cross section analysis. The more important time series analysis has to await another survey. Moreover, the survey estimates of capital are suspect. They proved to be grossly understated. But before considering this a brief review of the sources and method of data compilation in the survey.

The survey of Industrial Development (or The Survey) gives data on the fixed and working capital in each industry. The former, as mentioned earlier, is also broken down by types of capital. The historic cost of capital assets in each industry is reported but this is not disaggregated by types.

The information has been collected from manufacturing firms, which are classified by industrial groups. The data had been compiled in two ways: each firm employing 30 persons or more, directly from their accounts; and for firms employing fewer than 30, but more than ten persons, on a sample survey of accounts.

Firms in the first group were of three types: a small number of large firms which possessed proper business accounts and balance sheets, a much larger number which possessed the necessary financial records but no balance sheets and finally those with no proper business accounts of any sort. These included a few private and a few government owned firms, which did not have separate accounts. But they had records of the initial costs of their fixed assets. The depreciated value of their stock was derived in consultation with the owners or managers.

For firms employing fewer than thirty but more than ten persons, only values of capital invested are given, and it is not specified whether they are at original costs or depreciated values. We assumed them to be at historical costs. These data, as mentioned earlier, are recorded separately. They have been collected on a sample survey basis. They cannot be expected to be of great value as they are based more on scattered records and consultations, rather than on proper business accounts. However, the value involved is of a small magnitude; it represented only twelve per cent of the total value of capital at original costs.

Table I.2 Value of fixed assets in manufacturing firms employing 30 persons or more. And capital-output ratio. (ID 000's and ratio) 1969/70.

	Value of fixed capital at factor cost	Ratio of capital to value added		Value of fixed capital at factor cost	Ratio of capital to value added
Petroleum refinery	28 825.9	2.60	Radios & televisions	474.3	1.93
Cement	17 034.6	3.62	Hoisery	471.8	2.69
Synthetic silk	11 961.3	59.54	Plastics	450.3	2.46
Soft drinks	4 587.7	2.58	Matches	443.4	1.24
Vegetable oil	4 588.2	0.95	Rubber	430.2	1.48
Wool textiles	4 080.3	2.24	Bakery	414.8	7.34
Cotton textiles	3 821.7	1.45	Cotton ginning	347.2	6.32
Bricks	3 088.3	1.29	Canning	335.1	3.82
Dairy	2 859.3	3.30	Tobacco curing	301.2	2.50
Sugar	2 624.7	2.48	Shirt making	256.5	0.93
Dates	2 576.6	1.62	Metallic furniture	181.0	1.61
Cigarettes	2 374.7	0.86	Medicated cotton	180.9	1.47
Grain milling	2 265.3	3.00	Juss	170.9	5.27
Electrical machinery	2 218.4	33.71	Bicycles	166.7	61.74
Wool knitting	2 071.0	6.42	Wood	132.5	6.08
Brewing	1 751.8	1.74	Carpentry & furniture	112.0	1.06
Concrete products	1 741.2	3.44	Tiles	91.8	0.58
Silk textiles	1 263.4	2.00	Soaps and detergents	90.6	4.58
Footwear	1 176.4	1.32	Foundry	79.0	3.48
Tailoring	866.1	2.39	Utensils	77.3	1.09
Tanning	837.9	1.60	Miscellaneous industries	62.3	2.42
Printing	768.2	0.85	Nails and wires	55.7	2.36
Confectionary	737.9	2.01	Glass	52.9	1.30
Asbestos	688.5	1.71	Chalk	35.6	2.12
Air coolers & heaters	679.3	1.30	Damp proofing material	31.6	1.21
Smithy	589.0	2.95	Paints	20.8	0.37
Paper and products	492.6	1.24			

Source: CSO, The Survey of Industrial Development, 1969/70. Carried out by IDCAS.

Fattah has shown that the value of fixed assets reported in the survey are grossly understated. To test the survey estimates, all values at historical costs were converted to values at constant prices. (Capital stock can only be measured in real terms). For this purpose two special price indices were constructed: one for machinery; and the second for buildings. For the former, the average price index for imported machinery in the period 1957-70 was used, and for the latter, the average price index for building raw materials in the same period. Fattah's aim has been to recalculate depreciation allowances using more realistic depreciation rates. This was done by first establishing the average number of years the assets have been in existence, and then cumulating depreciation by applying a weighted average rate of depreciation. The average age of assets in existence was obtained by dividing the difference between the gross and net values of assets in the survey by the estimated rate of depreciation. The newly calculated net value of assets although much larger than the value reported in the survey was still far below the values obtained using Goldsmith 'Perpetual inventory method', which Fattah applies for his own series. (See table I.3 below).

TABLE I.3 Three estimates of net value of fixed assets in Iraqi manufacturing in 1969/70 (ID million constant prices)

Depreciated balance sheet value of fixed assets in the 'Survey'	Depreciated value of assets using the 'Survey' values and new depreciation rates	Depreciated value of assets using the, Perpetual inventory method and the same depreciation rates in Column 2.
56.5	102.1	231.7

Source: Zeki Fattah, Ch. 4 p. 93, tables 8-a and 8-b.

Of course, part of the discrepancy between the two estimates is due to the fact that Fattah's estimates cover all establishments, large and small, whereas the survey estimates relate to large establishments alone. The difference however is much too large to be explained by the exclusion of small establishments.

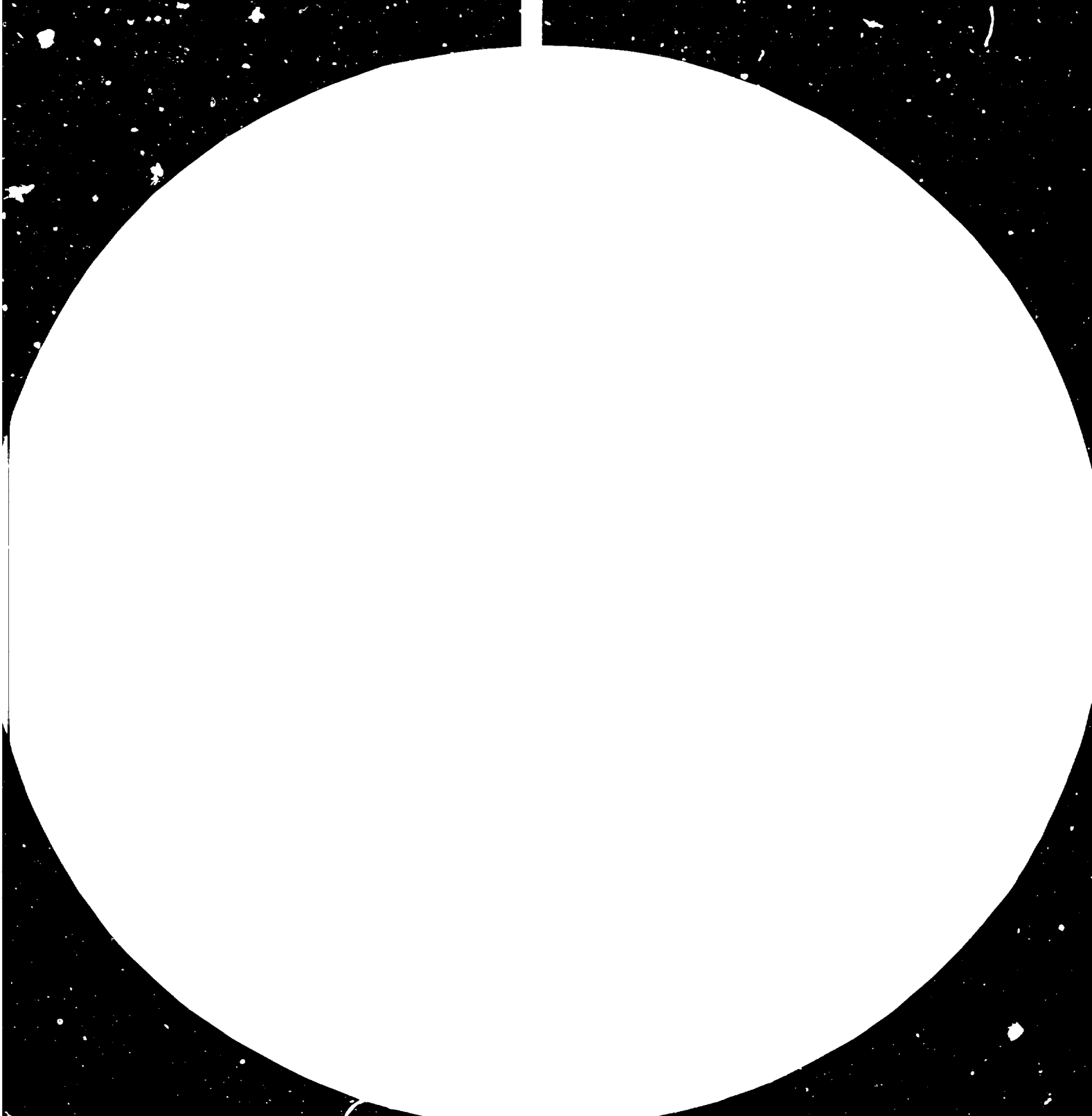
Analysis and comparison of capital estimates have been discussed together with other measurement of capital intensity in chapter V. in volume I of this study.

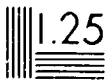
IV. Capital Formation, Commodity Composition and Ownership

In Table 1, in appendix II to this chapter, a breakdown of capital formation in manufacturing by public sector, by private sector, as well as by types of capital goods is shown. The period covers from 1960 to 1976. The years 1976 and 1977 are not included for lack of data. The percentage shares of the component elements of table 1, are shown in table 2 in appendix III.

It can be seen from those two tables that firstly, the increase in investment in manufacturing has been without interruption. Secondly, there has been a substantial increase in the share of public investment: from a mere 12 per cent in 1960, to 98 per cent in 1975. In absolute terms it increased from ID 1.2 million in 1960, to ID 18.9 million in 1970, and to ID 170 million in 1975. Thirdly, although the share of the private sector in the aggregate investment has declined over the period, the margin of difference with investment of the public sector was not very large during 1960-1970. The magnitude in fact increased for most of the years. Indeed, in 1969 and 1970, the gap with public investment was bridged. The situation, however, changed diametrically after 1973. Not only the relative but even the absolute investment of the private sector has declined. Unless there is some gross under-recording, private sector's investment in manufacturing has become almost negligible relative to public and aggregate investment. The absolute value in table 8 declines from nearly ID 18 million in 1970 to ID 3.8 million in 1975, and the share from 49 per cent to 2.2 per cent respectively in the years mentioned.

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28 25

22

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Fourthly, regarding the commodity composition, machinery has been dominant throughout the period. Its share in the aggregate capital formation ranged between 57.5 per cent and 71 per cent (excluding 1960).

Fifthly, within the ownership structure, commodity composition has been different. In the private sector machinery retained its dominance almost every year. In the public sector it climbed up gradually. It reached prominence only from 1970 onwards. This, as we shall see later, has been related to changes in the commodity composition of Iraqi manufacturing.

Sixthly, another contrast also emerges when one compares the composition of buildings in the public sector with that in the private sector. In the former, although the share of other construction works is smaller than that of building, the margin is not very wide. Only from 1973 onwards construction takes the lead and by a large margin. In the private sector, on the other hand, building is dominant, except for 1969: and from 1973 onwards, no investment seems to have taken place in construction. This however could be just a definitional anomaly.

Seventhly, the share of furniture both in the public and private sector, is small and remains so. The exception is 1973 in the former. Generally, however, furniture and fixtures assumed a slightly larger share in the private sector compared with the public sector.

Finally, investment in transport equipment averaged to about ID 314,000 and ID 367,000 per year in the public and private sector respectively during 1960-1970. But from 1973 onwards the average increased to ID 3.8 million per year in the public sector.

No such changes took place in the private sector. Nevertheless, excluding the few exceptional years, the amount invested in this item did not exceed seven to eight per cent of the aggregate investment in manufacturing.

V. Capacity Utilization in Iraqi Manufacturing

Our estimate of capital stock is ex-post, i.e. it is not adjusted to reflect under-utilization (or excess capacity). Yet whether measuring the productivity of capital, or its reverse, the capital-output ratio, it is more relevant to measure the capital actually used up in production than that available.

However, the available evidence on the incidence of under-utilization is scant and fragmentary. It does not cover any of the years after 1970 nor the whole period before it. Nor does it include all the commodities produced. Furthermore, the methods usually devised for measuring excess capacity are not very suitable to the conditions of developing countries. Nevertheless, an analysis of the data available could help to form an idea about industrial performance at least for the years for which they are reported.

Data on capacity utilization are available for three years, 1963/1964, 1966/67 and 1969/70. But they give information about output producible at one, two and three working shifts, as well as the actual output for a relatively large number of commodities. For one year 1969/70, they also give the 'attainable' level of output for each commodity. Fattah uses this information to calculate the weighted average aggregate ratio of 'attainable' output to actual output of all the commodities covered.^{1/} This amounted to 59.6 per cent of the capacity in 1969. But he does not read much into this result because 'attainable output is not clearly defined'.^{2/} Fattah's analysis however showed that in 1966/67, more than two thirds of the manufacturing commodities covered were produced at a level lower than the producible at one work shift.

1/ Zeki Fattah, pp. 83-98, table 5

2/ CSO, Survey of Industrial Development in Iraq. Carried out by IDCAS, Baghdad, 1970.

In tables I.4 and I.5 we represent the information about capacity utilization given in the CSO's Survey of Industrial Development, 1969/70. This document, as stated earlier, gives information on the actual output, and 'attainable', or 'capacity' output, as well as the 'optimum' output, for 86 commodities for 1969/70. The degree of utilization according to both measurements is shown in the table and in reverse order.

No clear pattern can be discerned from the tables regarding firstly, degree of utilization and type of industry to which the commodities belong, or secondly, factor intensity in the method used in their production. But the following remarks can be made.

First, about 46 per cent of the commodities considered were produced at a capacity level below 60 per cent, and 31 per cent below half the 'attainable' capacity.

Secondly, naturally, there are more commodities above the mid-point of under-utilization when capacity is measured from the optimum output than from the attainable output. But optimum output may be a mere engineering proposition, which need not correspond to reality. Such result, therefore, should not be misconstrued.

Thirdly, in the top of the league, i.e. among the commodities which are produced with a high excess capacity, one can distinguish modern ones which are usually produced with capital intensive techniques - e.g. synthetic silk, liquid gas, metal cylinder, glass products, one can also see traditional consumer-goods of labour intensive-type; such as woolen carpets, jute textiles, dairy products, shirts. The presence of latter commodities is rather surprising. Yet, nails, soap, paper, dyes which are also relatively modern and are in the bottom panel.

Fifthly, the number of commodities in the top panel, or close to it - is smaller in the first table than in the second.

Finally, most of the traditional consumer-goods fall in the middle range.

We have, however, to add that for a number of industries, especially in such food industries as sugar, milling, dairy products, various sweets, etc. utilization of capacity is intimately affected by seasonality. Installed capacity is usually related to peak rather than average demand in these industries. Excess capacity is often a built-in feature which meets a need and should not necessarily indicate inefficiencies.

We can also add that to the extent that excess capacity was the product of limited market, the boom in demand that began in 1973, must have substantially reduced its magnitude.

The almost universal expansion indicated by the series for industrial variables below, support such expectation. Excess capacity however, may well have been the result of supply bottlenecks, import restrictions, policy decisions, anomalous price systems, and mismanagement in the economy. To this extent under-utilization is an indication of sheer wastage.

TABLE I.4

CAPACITY UTILIZATION IN IRAQI MANUFACTURING

Commodities	'Utilized' as percentage of 'attainable output'	Ranks in (reverse order)
Sodium hypochloride.	4	10
Asphalt, synthetic silk fibers, woolen carpets, bicycles.	16 - 20	9
Jute products, synthetic sponge, metal cylinders for liquid gas, renewed tires.	22 - 30	8
Flax shoes, synthetic silk (rayon) plastic products (excluding shoes) televisions (assemblings) canned products, hydrochloric acid, aluminium utensils.	34 - 39	7
Pencils, jute textiles, socks, petrol heaters, sulphuric acid, various sweets, chocolate, glass products, water boilers, combed woolen spins, car handles, rubber and spongy soles.	41 - 50	6
Trico and flannel products. Dairy products, air coolers rubber products (excluding shoes), tanned sole leather, ready-made shirts and pyjamas.	51 - 60	5
Cotton yarns, asbestos sheets, medicated cotton, concrete blocks, molds, and platforms; woolen blankets, plastic shoes, metallic furniture, various tiles, pasturized milk, silk textiles, vegetable fat and margarine, leather shoes.	61 - 70	4
Rubber boots and shoes, woolen textiles, soap-wash, beer, cured tobacco, toilet soap, industrial detergents, concrete pipes, tanned coating leather, damp proofing material, asbestos pipes, araq-nastaki, matches, concrete piles and beams, cotton textiles.	71 - 80	3
Biscuits, cigarettes, soldering sticks, plastic molecules, woolen spins, cotton gauze and bandage, cotton spins, dibbis, bread, pure ethyl alcohol, tanned face leather, hydrochloric acid, oil refining.	81 - 88	2
Nails and wire products, paper bags, dyes, cement, wood cosmetic soaps, white sugar, grain milling.	91 - 99	

Source: See table I.5.

TABLE 1.5 CAPACITY UTILIZATION IN IRAQI MANUFACTURING

Commodities	Utilized as percentage of optimum output	Rank in reverse order
Bicycles (assembling only) sodium hypochloride, synthetic sponge, renewed tires	3 - 10	10
Pencils, televisions (assembling only), woolen carpets, aluminum utensils, jute products, asphalt, cured tobacco, various sweets, synthetic silk fibers, water boilers, car handles, petrol heaters, rubber products (excluding shoes), dairy products.	12 - 20	9
Air coolers, flax shoes, plastic products (excluding shoes) asbestos sheets, various tiles, leather shoes, metallic furniture, damp proofing material, concrete rods and beams, concrete pipes, soldering sticks, jute products.	21 - 30	8
Trico and flannel products, socks, combed wollen spins, wood, cosmetic soaps, ready-made shirts and pyjamas, wollen textiles, wollen blankets, synthetic silk (rayon) metallic cylinders for liquid gas, dyes, jute products, hydrochloric acid, canned products, glass products, cotton yashimacs.	31 - 40	7
Spongy rubber soles, silk textiles, sulphuric acid bread, nails and wire products, matches, paper bags, chocolate, biscuits, industrial soaps, toilet soap.	41 - 49	6
Plastic shoes, cotton gause and bandages, Araç-mastaki, pasturized milk, debbis, tanned sole, leather.	52 - 59	5
Wash soap, medicated cotton, cotton textiles, cigarettes	60 - 68	4
Vegetable fat and margarine, rubber boots and shoes, asbestos pipes, pipes, cotton spins, tanned coating, leather.	70 - 78	3
Plastic molecules, tanned face leather, oil refining, pure ethyl alcohol	81 - 88	2
Cement, grain milling, white sugar	95 - 98	1

Source: CSO Survey of Industrial Development of Iraq 1970 (table 8).

Appendix I.

Method of estimation of capital stock

Following Pottah, the aggregate capital stocks for the years 1970-1976, are estimated by Goldsmiths' 'Perpetual Inventory Method'. According to this method, the gross stock is measured by cumulating the fixed investment after adjusting for scrapping (retirement); the net (or depreciated) stock by cumulating the adjusted fixed investment, and deducting cumulated depreciation to follow the procedure let:

I_{g_t} and I_{n_t} be gross, and net investment respectively during the year t;

K_{g_t} and K_{n_t} be gross and net stock of capital respectively at year t;

S_t scrapping during the year t;

D_t annual depreciation at the end of year t, after deducting the value of assets scrapped (s);

$\sum_{i=1}^t D_i$ accumulated depreciation at the end of year.

$i=1$

r annual rate of depreciation, which is determined at 6.35, and 2 per cent per annum for machinery and buildings respectively.

a The salvaged value of machinery scrapped at the end of its active life.

The procedure for estimating the stock of machinery for example can be summarized as follows:-

$$K_{G_t} = \sum_{i=1}^t I_{G_i} \quad (i = 1, 2, \dots, 15.8 \text{ years})$$

$$D_t = r (K_{n_{t-1}} + I_{G_t} - S_{G_t})$$

$$\sum_{i=1}^t D_i = \sum_{i=1}^t r (K_{n_{i-1}} + I_{G_i} - S_i)$$

$$K_{n_t} = K_{G_t} - \sum_{i=1}^t D_i$$

$$\text{or } K_{n_t} = \sum_{i=1}^t I_i - \sum_{i=1}^t r (K_{n_{i-1}} + I_{G_i} - S_i)$$

S = 0 throughout.

Once the capital stock of the initial year is known the procedure becomes as follows:

$$K_{G_t} = K_{G_{t-1}} + I_{G_t} - S_t \quad (\text{where } K_{G_{t-1}} \text{ is capital stock at the initial year})$$

$$D_t = r \left(\sum_{i=1}^t (I_{G_i} - S_i) - \sum_{i=1}^t D_{i-1} \right)$$

$$\sum_{i=1}^t D_i = \sum_{i=1}^t D_{i-1} + D_t$$

$$I_{n_t} = I_{G_t} - D_t$$

$$K_{n_t} = K_{n_{t-1}} + I_{n_t}$$

$$\text{or } K_{n_t} = K_{n_{t-1}} + I_{G_t} - D_t$$

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APPENDIX I. TABLE 1

GROSS AND NET CAPITAL STOCK ESTIMATES IN MACHINERY IN IRAQI MANUFACTURING
1970-1975
(000's ID.)

Years	$I_{\mathcal{E}_t}$	$I_{\mathcal{E}_{t-1}} (1-x)$	S_t	$K_{\mathcal{E}_t}$	D_i	$\sum_{i=1}^t D_i$	I_{n_t}	K_{n_t}
1969				<u>184783</u>		55042		<u>123282</u>
1970	23810	3199	168	205226	9537	64579	14273	137555
1971	23574	4490	236	224074	10128	74707	13446	151001
1972	29109	9207	485	243491	10718	85425	18391	169392
1973	33333	10473	551	265800	11454	96879	21879	191271
1974	68784	7743	108	329433	14767	111646	54017	245288
1975	112753	5006	264	436916	20654	132300	92099	337387

APPENDIX I. TABLE 2

GROSS AND NET CAPITAL STOCKS IN BUILDINGS AND OTHER CONSTRUCTION WORKS IN
IRAQI MANUFACTURING, 1970-1975.
(000's ID.)

Years	$I_{\mathcal{E}_t}$	$K_{\mathcal{E}_t}$	D_i	$\sum_{i=1}^t D_i$	I_{n_t}	K_{n_t}
1969		<u>128699</u>		14472		<u>108397</u>
1970	11144	139793	2506	16978	8637	117034
1971	10808	150551	2671	19649	8137	125171
1972	13370	163871	2884	22533	10486	135657
1973	24168	187989	3309	25842	20859	156516
1974	32584	220523	3894	29736	28690	185206
1975	61626	282099	5047	34783	56579	241785

Source: The initial capital stock figures are taken from Fattah's estimates of capital stocks in the Iraqi manufacturing, P. 97 and P. 100. For the years 1970 to 1975, they are obtained by applying Goldsmith's "Perpetual Inventory" method to the CSO's capital formation series for manufacturing, as discussed earlier in the text. See section of this chapter.

The major problems that arise in constructing capital stock series relate to depreciation, scrapping and choice of deflators. In all these we have followed Fattah in toto. Reference has already been to deflators. Detailed account is given in Fattah.^{1/} The remaining two will now be briefly considered.

Depreciation

The depreciation rate for machinery is calculated as a weighted average of the rates based on close technical and economic studies of the life pattern of assets in similar branches of industries in Egypt. The Central Auditing Organization in Egypt has documented detailed lists for depreciation rates for a large number of capital assets in different activities.^{2/} The weights are taken as ratio of investment in the corresponding industries in Iraq. The resulting average rates of depreciation are 6.35 per cent per annum for machinery, and 2 per cent per annum for buildings. These rates are comparable to those obtained for Egypt and India, for example.^{3/}

Scrapping

In estimating scrapping Fattah follows approximately the practice in the United Kingdom. He applies a scrap value of 5 per cent of the original cost for manufacturing only.^{4/} In our estimation in section II, we applied the same rate. See table I.6 in this annex.

1/ Zeki Fattah, Ch. 4. pp. 75-80.

2/ 3/ 4/ See I bid, Ch. 4 pp. 68-72

Chapter II

REPAIR INDUSTRIES

Background

Repair activities in the field of manufacturing are becoming increasingly important not only for the income and employment they generate but also for the good opportunities they create for learning and acquiring skills. It is therefore not surprising that recently greater importance is given to the role played by repair industries among manufacturing activities. Thus while the 1958 U.N. classification of industrial activities see 'the best solution to be - to exclude repair work generally, unless it is carried out essentially under industrial conditions', and suggest that only building repairs should be included, while ship and car repairs should be excluded, the 1971 classification of industrial activities on the other hand include more than sixteen types of repair activities.^{1/}

However, in constructing indices for manufacturing variables in this survey repair industries were not included because the coverage of the repair activities in Iraq's annual industrial surveys was, as we shall see, inadequate and unsatisfactory. As table 1 shows, only six types of repair activities are singled out in the Annual Industrial Surveys. Even for these six activities complete data are given only for two: repair of electric machinery, and ship repairs. For car repairs, one of the most important and flourishing activity, the vital data of input are not reported. nor are there complete data for railway repairs, telephone repairs and plane repairs, as indicated in table 1. Inclusion of the latter three activities therefore would have made our measurement inconsistent. Luckily however, repair activities in non-electric machinery, pens and watches were all taken care of although included with their respective parent industries.

^{1/} See U.N. Index Number of Industrial Production, Department of Economic and Social Affairs Statistical Office, New York 1961. Studies in methods series F, no.1, page 11, para 25. And U.N. Indexes to the International Standard Industrial Classification of all Economic Activities, statistical papers, series M, no.4, rev.2, add.1. Indexal edition, New York, 1971, p.220.

Even the two repair activities which possessed complete data and could have been incorporated with the rest of manufacturing in the earlier chapters are not free of problems. A careful examination of section VI in table 1, shows that for most years the data for repairs of electric machinery emanated from one establishment only. It is very improbable that there was only one such repair workshop in the whole country during that period. In other words ship repair remains the only unproblematic activity in the whole list of repair activities. And this activity as can be seen in table 1, was trivial by all accounts. This finding together with the fact that data regarding the most important repairs activity (car repairs) were not readily available imposed the following strategy regarding construction of statistical series for manufacturing.

(i) In constructing series for all manufacturing (large and small establishment), repair activities were excluded. Firstly, because data for car repairs were incomplete; secondly, because the data for the second most important repair activity - repair of electric machinery were questionable, and thirdly, because excluding ship repairs, which was not a very significant activity, data for the rest of repair activities were not given for most of the years.

(ii) For the three repair activities: car repairs, repair of electric machinery, and ship repairs, (hereforth, and in the table below referred to as 'repair industries'), aggregate series were constructed for value of gross output, employment and total wages, as well as productivity, from the data reported in the annual surveys. In order to calculate the value added, the missing input values were estimated for car repairs on the basis of input-output ratio in the repair of electric machinery during 1970-1976. (This amounted to an average of 50 per cent of the value of gross output). The series for gross value added for the three activities concerned is measured at constant prices by deflating by the same index of unit values used in deflating aggregate values in the earlier chapters. The aggregate series for repair industries are shown in table ..

(iii) Separate series for four industrial variables (presented in table 2) at overall manufacturing level, this time inclusive of repair industries, are then calculated. The variables are value of gross output,

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gross value added, employment and total wages. The four corresponding series could not be presented in the relevant chapter earlier for a number of reasons.

Firstly, because only data concerning the trivial part of the repair activities are complete and dependable. For the greater part, the data are questionable, therefore while the series are useful for showing approximate value of aggregates, they cannot form the basis for analysis. Secondly, the data concerning repair industries were available for just the four variables shown in table 2. The inclusion of these variables for repair industries in the overall manufacturing in the earlier chapters would have rendered any comparative analysis impossible. Thirdly, the coverage of the repair industries was incomplete. And it would have been illegitimate to generalise the results to all repair activities. Thus separate presentation of the repair industries covered is the only way to indicate the anomalies inherent in the data. Finally, as will be seen later, the repair industries covered assumes a significant weight only in the case of one variable: total wages, and even this may be due to definitional reasons than anything else.

Development in Repairs Industries.

The analysis in the following relate to table 2. And in this table 'repair industries' are made up only of the three activities mentioned earlier. Among these three, for most of the years, the most important in terms of gross value added was the car repairs, followed by repair of electric machinery and ship repairs. In terms of employment and total wages, car repairs occupies the first position all the way.

The three repair industries between them, employed more than eight thousand persons in 1976. They earned about ID 6 million in total wages, and generated ID 6.5 million in gross value added. The growth of value added between 1974 and 1976 is phenomenal. Both car repairs and repair of electric machinery contributed to this expansion. The latter scored higher growth rate between 1970 and 1976, but the former had larger share in the output. While the growth of the repair industries surpasses that of the

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manufacturing as a whole in each variable shown in table 2, the relative importance of the three repairs industries in total manufacturing does not seem to have changed much, except for total wages. The share of the three repair industries in the total wages increased from 5 per cent to 8.3 per cent. This of course may be explained partly by the fact that most repair industries are owneroperated, where it is very difficult to separate wages from profits. The share in the overall gross value added, value of gross output, and employment, however did not alter much. The first two (as can be seen in table 2), centered around 2 per cent, and the last one, around 4 per cent, throughout the period under consideration. Finally, in table 3, the average gross value added per employer in the three repair industries was for every year below the average for large and small manufacturing establishments. The average growth of productivity during 1970-1976, however was appreciably higher at 14.6 per cent per annum.

Table II.1 Repair Industries. Value of Gross Output, Input, Employment, Wages and No. of Establishments (current prices)

I. <u>Value of Gross Output (ID. thousands)</u>							
	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Car repairs	2 070	2 549	2 158	2 225	3 799	3 742	7 855
Repair of electric machinery	1 224	914	2 235	2 848	3 435	4 667	6 463
Ship repairs	46	46	43	81	70	89	108
Railway repairs	1 365	429	123	n.a.	n.a.	n.a.	n.a.
Telephone repairs	170	130	98	n.a.	n.a.	n.a.	n.a.
Plane repairs	417	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Continued...

Table II. (Continued...)

II. Inputs (ID thousands)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Car repairs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Repair of electric machinery	609	709	996	1 583	1 972	2 475	3 206
Ship repairs	21	21	16	36	33	51	58
Railway repairs	300	557	198	n.a.	n.a.	n.a.	n.a.
Telephone repairs	58	95	65	n.a.	n.a.	n.a.	n.a.
Plane repairs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

III. Employment (Nos.)

Car repairs	4 550	4 777	5 026	5 159	5 207	5 860	6 152
Repair of electric machinery	828	1 107	1 202	1 612	2 006	2 389	2 098
Ship repairs	25	46	58	44	41	43	39
Railway repairs	3 120	3 251	3 156	n.a.	n.a.	n.a.	n.a.
Telephone repairs	1 602	1 459	1 824	n.a.	n.a.	n.a.	n.a.
Plane repairs	526	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

IV. Gross Value added (ID. thousands)

Car repairs	1 035*	1 275*	1 079*	1 112*	1 899*	1 871*	3 927*
Repair of electric machinery	615	205	1 239	1 265	1 463	2 192	3 257
Ship repairs	25	25	27	45	37	38	50

V. Total wages (ID thousands)

Car repairs	1 428	1 690	1 800	1 932	2 596	2 957	4 295
Repair of electric machinery	383	515	512	702	1 025	1 419	1 405
Ship repair	6	12	17	17	22	20	26
Railway repairs	1 230	938	1 293	n.a.	n.a.	n.a.	n.a.
Telephone repairs	454	450	570	n.a.	n.a.	n.a.	n.a.
Plane repairs	334	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Continued....

Table II.1 (continued...)

VI. No. of Establishment (Nos.)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Car repairs	52	54	43	43	46	41	52
Repair of electric machinery	6	8	3	1	1	1	1
Ship repairs	3	3	3	3	3	3	3
Railway repairs	14	14	14	n.a.	n.a.	n.a.	n.a.
Telephone repairs	16	16	16	n.a.	n.a.	n.a.	n.c.
Plane repairs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Based on Annual Industrial Surveys.

* Input values are estimated on the basis of 50 per cent of value of gross output.

Table II.2 Repair Industries and Total Manufacturing:
Value of Gross Output, Gross Value Added, Wages and Employment
in Iraqi Manufacturing 1970-1976

I. Gross Value of Output (at constant prices) (ID. million and percentage)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>AAROG</u> <u>1970/76</u>
1. Repair industries	3.3	3.5	4.4	5.1	7.4	8.1	13.0	25.7
2. All manufacturing excluding repair industries	202.5	n.a.	n.a.	298.7	361.1	445.0	542.7	17.8
3. Including repair indus.	205.8	n.a.	n.a.	303.8	368.5	453.1	555.7	18.0
4. Ratio of repair indus. to (3) (%)	1.6	n.a.	n.a.	1.7	2.0	1.8	2.3	

II. Gross Value Added (at constant prices) (ID. thousands and percentages)

1. Repair industries	1.9	1.5	2.3	2.4	3.4	3.9	6.5	22.7
2. All manufacturing: excluding repair indus.	90.8	n.a.	n.a.	128.6	148.8	200.4	237.4	17.4
3. Including repair indus.	92.7	n.a.	n.a.	131.0	152.2	204.3	243.9	17.4
4. Ratio of repair to (3) (%)	2.0	n.a.	n.a.	1.8	2.2	1.9	2.7	

Continued...

Table II.2 (continued...)

III. Employment (Thousands and Percentages)

	1970	1971	1972	1973	1974	1975	1976	AAROC 1970/76
1. Repair industries	5.4	5.9	6.3	6.8	7.2	8.3	8.3	7.4
2. All manufacturing: excluding repair indus.	127.5	n.a.	n.a.	154.5	157.5	194.5	189.4	6.8
3. Including repair indus.	132.9	n.a.	n.a.	161.3	164.7	202.8	197.7	6.8
4. Ratio of repair to (3)(%)	4.1	n.a.	n.a.	4.2	4.4	4.2	4.4	

IV. Total wages (at current prices) (ID. million and percentages)

1. Repair industries	2.7	2.2	2.3	2.6	3.6	4.4	5.7	22.3
2. All manufacturing: excluding repair indus.	32.5	n.a.	n.a.	41.3	48.2	64.8	62.6	11.5
3. Including repair indus.	34.2	n.a.	n.a.	43.9	51.7	69.2	68.3	12.2
4. Ratio of repair to (3)(%)	5.0	n.a.	n.a.	5.9	7.0	6.3	8.3	

Source: Based on data in the Annual Industrial Survey and our estimate for each variable in the relevant chapter earlier. II. to VI in volume I.

Table II. 3. Productivity and Its Growth in Repair Industries, Large Manufacturing establishments and small manufacturing establishments (ID. per person and percentage growth rate, constant prices)

	1970	1971	1972	1973	1974	1975	1976	AAROC 1970/76
Gross value added per employee in repair industries	347	252	368	351	473	475	787	
Index (per cent)	100	73.0	106.2	101.3	136.4	136.9	227.2	14.6
Gross value added per employee in large establishments	860	853	842	987	1 133	1 175	1 473	9.4
Gross value added per employee in small establishments	719	705	737	790	794	777	912	10.1

Source: Based on data in the Annual Industrial Surveys and table 5 in chapter.

Chapter III

MEASUREMENT OF INDUSTRIAL VARIABLES

Introduction.

For the purpose of this survey and based on published statistics series for a number of industrial variables have been constructed. They included output, input, value added, employment, wages, profits, number of establishments, productivity, factor intensity and skill and input composition.

The statistical and conceptual difficulties which arise in estimating changes in the variables just mentioned, shall be discussed. Reference will also be made to the method, and the sources of data used in constructing the series. But first some general remarks about the series.

Altogether eighteen series have been constructed. Only twelve are produced here. The remaining ones, relating mainly to skill composition, will be introduced at a later date. Each series covers the period 1970-1976. For the period 1960-1970, comprehensive series for all the variables mentioned earlier have been constructed elsewhere^{1/}.

For each variable the series measures changes for 74 individual industries. The coverage is at 3 digit level for each industry, every year, throughout the period 1970-1976. The classification of industries and industrial groups is based on the latest ISIC of 1968.

For each variable five sets of groups are presented. One for the manufacturing sector as a whole; which is the weighted sum of all the 74 industries; the second for manufacturing divisions, the third for major manufacturing groups; the fourth for consumer goods, intermediate goods, and capital goods; and the fifth for durable and non-durable goods. The weighting systems used in these groupings will be discussed in a separate section.

To cover the whole manufactured sector, Repair Industries' in manufacturing are also covered, but their series are shown separately. The series relate to

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^{1/} See Zaki Fattah, Chapters I and IV, and appendices.

large establishments only, i.e. establishments employing 10 persons or more. They cover both public and private ownerships.

Series concerning small establishments - employing less than 10 persons - are also constructed, but they are discussed elsewhere. Similarly for the public sector manufacturing.

The measurement of industrial variables will be discussed under the following headings: (I) source of manufacturing data; (II) methods of measuring manufacturing output; (III) grouping and formula; (IV) index of physical quantity of output; (V) analysis of output series; (VI) causes of differences in the official estimates of gross value added and estimates in this study; (VII) limitation of the official series of physical output in manufacturing; (VIII) deflators for value of gross output and for gross value added in manufacturing and (IX) special aspects of some of the series.

I. Source of industrial data.

The major source of our data has been the Annual Industrial Surveys, which are published by the Industrial Statistics Department of the Central Statistical Organization (CSO). This organization has been publishing annual surveys for large manufacturing establishments since 1960. From 1965, onwards it began publishing annual surveys for small manufacturing establishments as well. But the issues of this survey for the years 1970, 1971 and 1972, are either unobtainable or incomplete, as in 1972.

For most years, the industrial surveys contain detailed information regarding output, input, employment, wages, and their composition, as well as number of establishments. These data are also broken down by type of ownership and by the country's regions.

However, beginning at 1970, some basic alternations concerning definitions, tabulation and coverage have been introduced into the Annual Surveys. Some have been disadvantageous from the point of view of constructing continuous series covering the whole period 1960-1976. There have also been some unfortunate omissions of several vital statistics. The following is a brief discussion of these anomalies.

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1. Data concerning hours worked, which are essential for productivity analysis, are excluded from 1971 onwards.
2. Information at industry level is not shown in the regional breakdown of the data from 1970 onwards.
3. Input data for 1976, are not complete. (For this study they were estimated on the basis of input-output ratio, of the previous years).
4. Data for gross output are given at factor costs, without specifying the amounts of indirect taxes involved, or indicating whether there has been any change in taxation rate.
5. Data concerning quantity and value of commodities which were so fully covered in the surveys of the years before 1970, are either omitted altogether, or insufficiently produced for a few scattered years. Furthermore, the specification and the unit of measurement of the commodities tend to change from one year to another. And the commodities are not listed under their respective industries. These have made the task of monitoring changes in the quantities produced very difficult.
6. The definitions and composition of skills have been altered compared with those adopted in the pre-1970 period.

Methods of measuring industrial output.

A brief review of the several methods for measuring changes in output is in order. Each method as we shall see has its own advantages and disadvantages. The best method of course is that which suits the data available.

One method defines 'volume of production' as net output. Both output and inputs will be deflated by suitable price-indices before calculating the net output. However, it has been shown that errors tend to be amplified with this method where there are inaccuracies in the data concerning output, input and deflators^{1/}.

Another method measures changes as the weighted sum of the quantity relatives of all the commodities produced. This method is more appropriate for studying changes in the commodity composition in manufacturing. Two things,

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^{1/} Hill T.P. "The Measurement of Real Product" OECD. Economic Studies Series, Paris 1971.

however, have to be pointed out here. Firstly, as physical quantities of commodities can only be measured in gross terms they fail to reflect: (a) changes in input-output ratios; (b) deepening of industrial processes within industries; and (c) change in efficiency. Secondly, as mentioned earlier, not all recent issues of the industrial surveys contain data for physical quantities. Nevertheless, because measurements based on physical quantities are immune from inflationary effects, a series for the volume of output have been constructed from the quantity data that were available. This series will be further discussed later.

The limitations just discussed regarding physical quantity series apply pari-passu to the series of value of gross output. The latter, in addition, also suffers from embodying changes in prices. However, the effect of price inflation may, to some extent, be mitigated by deflating by a suitable price index. Although, finding appropriate price deflators often proves to be the real problem.

For this study, series for value of gross output at current and constant prices have been constructed. Both series proved to be useful for the purpose. The deflator used is discussed in a separate section.

Finally, change in output is often measured as changes in the gross value added in constant prices. The differences between this measurement and the first one, is that value added here is calculated from values of output and input both at current prices. However, as the measurement is gross of inputs, it probably is the closest approximate to the real concept of output.

Two series for value of gross output have been constructed (one at current and the other at constant factor costs); a series for gross value added at constant factor costs; and a series for the physical quantity of output. More will be said regarding these series later.

The problem that arises once the type of series is decided is the choice of formula. Whether to use Laspeyres or Paasche-type index. This is the classical index number problem. Usually the former will overstate, and the latter understate the results. As Laspeyres uses base year weights, and as quantities will

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increase most when prices increase, least, the weights will favour expanding activities. Conversely in the case of Paasche-type index. This however does not mean that one index is superior to the other. They simply measure changes from a different standpoint. Laspeyres assumes that base year relative weights prevails during the period covered, whereas Paasche applies current relative weights throughout. In most cases the choice between these two methods is quite arbitrary. For this study both methods have been applied, and the changes in each of the variable considered have been by the geometric mean of Laspeyres and Paasche-type index. As can be seen from the tables in the appendix to this chapter, the geometric mean index strikes a balance between the results yielded by each of the former methods. There were also other reasons.

Firstly, the expansion in output that has taken place during the period under consideration was not, in most cases, accompanied by any price reduction. Out of 238 manufactured commodities for which consistent unit values could be obtained in the years 1969, 1974 and 1975 (the only years for which detailed value and quantity figures are given at commodity level), the unit values of only 50 commodities recorded any appreciable decline. The unit values of 118 commodities substantially increased, of 23 slightly, increased, and of 36 remained more or less unchanged. The remaining few fluctuated. As a result and contrary to expectations, the Paasche-type index, yields, in most cases, higher results than Laspeyres. In quite a few cases the differential was too large. The geometric index narrowed the gap.

Secondly, construction of several series for the same variable, and application of different methods, were the only way to check our results and detect anomalies.

III Grouping and formula.

In all the series, the method of constructing indices at industry level (3rd digit), differs from that applied at aggregated level. It is the simple (unweighted) average relatives of the annual quantities, with the base and reference year taken in 1970. In symbols it can be written as:

$$I_{ij} = (X_{ij}/X_{ii}) \times 100 \quad \left. \begin{array}{l} (i = 1 - 74 \\ j = 1 - 7 \end{array} \right\}$$

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Where X_{ij} is the value of the variable i , in year j ; and X_{i1} is the same variable at the base year 1970.

For the overall manufacturing sector, manufacturing divisions, major manufacturing groups, consumer goods, intermediate goods, and capital goods, as well as durables and non-durables, the index, as mentioned earlier, is the geometric mean of Laspeyres and Paasche-type indices, i.e. it is the geometric mean of the weighted average relative of quantities; with the weights taken once in the base year, and once at the current years.

In symbols the formula applied for the over-all manufacturing for example, can be written as

$$I_j = \frac{\sum_i W_{it} X_{ij}}{\sum_i W_{it} X_{it}} \left(\frac{\sum_i W_{ij} X_{ij}}{\sum_i W_{ij} X_{it}} \right) \times 100 \quad \left. \begin{array}{l} (i = 1 - 74 \\ j = 1 - 7 \\ t, \text{ is the base year } 1970) \end{array} \right\}$$

where W_{it} and W_{ij} are the weights in base and current years respectively, and X_{it} and X_{ij} are the variables measured in base and current years respectively. The term $W_{it} X_{ij} / W_{it} X_{it}$ is Laspeyres' constant weight index, $W_{ij} X_{ij} / W_{ij} X_{it}$ is Paasche's current weight index.

Weights.

For all the variables, except gross value added at factor costs, the indices are constructed with gross value added at constant factor costs as weights. For gross value added, however, two indices are constructed using two different sets of weights. For one index the deflated value of gross output is used. For the other, the volume of output in 1969. It is to be noted here that the second index is made once with oil refineries included, and once excluded^{1/}. The results and the discussion are shown in a separate section below.

IV. Index of the physical quantity of output.

As mentioned earlier, data concerning physical quantity of output are not published, neither regularly nor in detail. This is quite in contrast with the practice in the years before 1970. Fattah, for example has constructed a physical quantity series for the period 1960-1969, based on 202 commodities every year.^{2/}

^{1/} A dominant industry throughout.

^{2/} See Zeki Fattah, ch. 2 and Appendix 1 and 2.

Since 1970, physical quantity series can count only on 133 commodities. Even this number was available for two years, 1974 and 1975 only. For 1970, 1971 and 1972 a much smaller number of commodities was covered. For 1973 and 1976, no quantity data existed.

The physical quantity index is constructed by the Laspeyres-type index with the weights being the unit value of each commodity in 1969. The over-all manufacturing index is the weighted sum of quantity relatives of 105 commodities. The weights are taken in 1969, instead of 1970, because no unit values could be obtained in the latter year. On the other hand, the industrial survey of 1969 is one of the most detailed regarding values and quantities of manufactured goods.

The physical quantity indices for manufactured commodities, industries, and the over-all manufacturing sector are shown in appendix to this chapter. Similarly, regarding the unit values in 1969, which are used as weights. In constructing the series, the number of commodities included were determined by whether they were recorded for 1969 or not. (Hence the difference between the total number of commodities for which data were available in 1974 and 1975, and the number included in the over-all index).

7a Analysis of output series.

The physical quantity of output, value of gross output at current and constant factor costs (hence for the ECMA series) as well as the official index for the physical output are shown in Table III.1. Output series here are for large establishments only, (10 plus).

Considering, first, the physical quantity series, for which an official series (the only one) for the overall manufacturing exists, the overall trend in ECMA and the official series for the physical production is similar. This is true whether comparing the annual increments, or the average annual rate of growth. But except for one year, 1971, where ECMA series exceeds the official series by about 1.4 per cent, the official series results are slightly higher than ECMA's, with the margin of difference widening in 1975, where it reaches 4.8 per cent. However, in view of the different commodity average and the different weighing systems applied in the two series, the observed differences are not very large.

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TABLE III.1 INDICES OF PHYSICAL OUTPUT, GROSS VALUE OF OUTPUT, AND THEIR ANNUAL INCREMENTS (10 PLUS ESTABLISHMENTS)(PERCENTAGES)

	1969	1970	1971	1972	1973	1974	1975	1976
Physical output series	100.0	106.4	126.5	n.a.	n.a.	154.3	181.5	n.a.
Annual increments		6.4	18.9			6.8	17.6	
The official physical output series	100.0	107.3	125.1	135.5	146.5	156.9	186.3	230.0
Annual increments		7.3	16.6	8.3	8.1	7.1	18.7	30.9
Value of gross output:								
At constant factor costs:	-	100.0	117.2	129.7	153.2	239.9	285.0	379.7
At current factor costs:	-	100.0	107.7	115.8	141.3	171.7	207.6	286.2

Source: The official series is given in CSO (Industrial Department) "Index number of quantity of production in manufacturing industries, 1970-1976". Baghdad, 1977. The rest are estimates presented in the appendix to this chapter.

The trends in the physical quantities series and the value series are also comparable. The latter, however, yields high increment both annually and on average. This, besides the difference in the weighing system attached to commodities in the quantity series and to industries in the value series, is due to the fact that the physical quantity series cover only representative commodities, whereas the value series cover all commodities. Changes in value and quantity are also behind the high magnitude in the value series.

Despite comparability in trends, growth rates recorded by the value series for the two years 1971, 1972, tend to be lower than that recorded by the quantity series. This is due to the fact that in these two years the output of a number of manufacturing industries actually declined. An inspection of the indices of value of gross output at constant and at current prices for individual industries in the appendix verifies this. For example, the value of gross output at constant factor costs in nearly 24 out of the 74 industries declined in 1971 below the 1970 level. In 1972 there were 26 industries whose output was below the 1970 level. Most of the industries in which output declined in those two years are similar

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and the important ones are given in Table III.2 below. But in 1972, while output in 14 out of the 26 industries is below the 1970 and 1971, in at least 12, output is above 1971 level (which explains the increase in the index value in 1972 over 1971). These latter industries are also shown in Table III.2.

TABLE III.2 THE MAIN INDUSTRIES IN WHICH REAL VALUE OF GROSS OUTPUT DECLINED BELOW THE 1970 LEVEL:

Soft drinks, silk textiles, woollen textiles, carpets, shoe laces, shirt making, knitting, footwear, tanning, petroleum products, plastic products, matches, paints, aluminium utensils, air coolers.

The main industries in which real value of gross output exceed the 1971 level but was still below the 1970 level:

Soft drinks, silk textiles, knitting, carpets, paints, aluminium utensils, air coolers.

Source: Based on the index of gross value of output at constant factor costs in the appendix calculated from the annual industrial surveys.

However, excluding petroleum products, ~~neither~~ the industries involved, nor the magnitude of the decline of their output were important enough to cause the overall index of manufacturing output in 1971 and 1972 to fall below the 1970 level.

Comparison of the indices for the value of gross output at constant and current factor costs reveals an interesting phenomenon, namely that the values and the annual increases in the series at constant prices are higher than those in the series at current prices. This at a time when the overall inflation rate in the economy reached 16 per cent per annum in the period under study.^{1/} The reason, however, can be supported by cogent evidence. Despite the high increases in the consumer price index, and in the index for such manufactured goods as textiles and furniture (which are included in the consumer price index), there are a number of important manufactured products: petroleum products, soap and detergent, vegetable oil, paints and cement, whose prices - as shown in the

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^{1/} See Chapter I, Vol. I, of this study.

deflation index in the appendix, have substantially declined. The industries producing these products (which are incidentally not fully covered in the consumer price index), collectively assumed a much greater weight than the rest in the overall manufacturing index: nearly 43^{1/2} per cent of the total gross value added was produced by them. As the deflated value of output of the industries producing the six products just mentioned were greater than their respective values at current prices, the deflated series, therefore, yields values higher than the undeflated series. But the industry which singularly assumes the highest weight is the petroleum products. When this industry is excluded, the series at current prices for the value of gross output and for the gross value added yield higher values. As petroleum product industry occupies such an important place in the Iraqi manufacturing, and in order to give a more accurate and a representative picture of manufacturing development, we have calculated the series once with oil products included and once excluded, and tested the consistency of reporting in the annual industrial surveys, regarding this industry. The latter has revealed that the value of gross output of petroleum products in the 1970 issues of the survey was grossly overstated. To support this claim, consider in Table III.3 the value of gross output, input, employment, the input-output ratios and the value of current output per employee in petroleum products in the years from 1970 to 1976. For a difference of ID 827 thousand in the value of inputs and 217 persons in the number employed between 1970 and 1971, there is a difference of ID 7.3 million in the value of gross output. Input-output ratio in 1970 is the lowest than in any other year from 1971 to 1975, and output per employee is the highest than any in the same years. All these are clear indications that the value of gross output in 1970 is overstated.

TABLE III.3 VALUE OF GROSS OUTPUT(CURRENT FACTOR COSTS), INPUTS, EMPLOYMENT, INPUT-OUTPUT RATIO, CURRENT VALUE OF OUTPUT PER EMPLOYEE IN PETROLEUM PRODUCTS 1970-76. (ID thousands and percentages)

	1970	1971	1972	1973	1974	1975	1976
Value of gross output	28 157*	20 831	22 124	25 777	35 473	44 142	61 530
Value of inputs	9 495	8 660	9 340	11 954	14 577	17 065	21 651
Employment (Nos.)	3 360	3 577	3 842	3 806	5 184	5 921	6 583
Input-output ratio (%)	33.7	41.6	42.2	46.3	41.1	39.0	35.2
Current values of output per employee	8.4	5.8	5.8	6.7	6.8	7.4	9.3

Source: Based on the estimates calculated from data in the annual industrial surveys.

Note: * For the correct value of gross output for 1970, see the following text.

1/ in 1975 for example.

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On the basis of average input-output ratio for the year 1971-1973, the value of gross output in 1970 was recalculated. This yields the figure of ID 21.7 million as against ID 28.1 in the table. The new value for 1970 is only marginally above the output value for 1971. Knowing that the price of petroleum products declined appreciably in the post 1969 period, and that the deflator for 1970 was 0.863 and was for 1971, 0.745 (see the deflator index in the appendix), then the real value of output in 1971 should be ID 27,961 (which is greater than ID 25,195 in 1970).

VI Causes of differences in the official estimates of gross value added and estimates in this study.

The following explain the difference:

- The estimates in this study are based on an industry by industry calculation for each year and for both large and small establishments. Whereas the official estimates are based on national income accounting which tends to aggregate the gross value of output for all industries and subtract the aggregate value of inputs.
- In calculating the value added for each industry, irregularities and inconsistencies were found between the value of output and value of inputs. Often these anomalies have been corrected either by computing average input-output ratios for a number of years, or interpolating on the basis of movements in employment or wages or use of electricity, or physical quantities, etc., in order to adjust the given estimates. The main industries for which adjustments were made were petroleum products, synthetic silk, and vegetable oil. It is very unlikely that national income accounting would be able to observe inconsistencies at individual industry level or adjust for anomalies. A detailed list for the type of anomalies that exist in Iraqi Annual Industrial Surveys has been given elsewhere^{1/}.
- It is shown in chapter II of Vol. II, the 'Repair Industry' is not fully recorded in the Annual Industrial Survey. The national income accounting neither recognise this nor states whether repair industries are included or not.

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^{1/} See Zeki Fattah, Chapter III.

- In converting the current price estimates to constant prices, different deflator from that used in the national income accounting was applied (See last section in the appendix to this chapter). In fact, there is no reference to the type of deflators used in the official series.

VII. Limitation of the official index of physical output in manufacturing.

Discussion of differences between the series constructed for this study and the official series of physical quantity of output brings us to a general assessment of the latter.

Full discussion of the limitation of the official series for the period 1960-1970 (the first period) is given elsewhere^{1/}. Most of the points raised there also apply to the series for the post 1970 years (the second period). Therefore, here reference shall only be made to the main limitations.

- The total number of products included in the series for the first period was small, 92 against 180 covered in Fattah's series^{2/}. In the second period the number of products included was further reduced to 56, against 80 covered in our series. In a country like Iraq bent on a serious industrial development, measurement of movements in secondary products is as useful as in major products. They will reflect any vertical or horizontal deepening of industrial processing inside the country.

- The document concerning the index of physical output in the second period does not contain any information about the weighing system; whether for combining products within the industry, or combining industries for the overall manufacturing. However, judging from the weighting system used in the series for the first period, the weights for products have apparently been their relative shares in gross output and for industries their respective value added. But even there, it was not clear how the relative values were obtained. Were they at current or constant prices? At market prices or factor costs? Also, how was the value added of each industry obtained? Were all input costs counted? Finally, has there been any updating of the weights in the second period?

^{1/} and ^{2/} See Zeki Fattah, op cit. ch. 2 p. 9 and pp 10-12. For the official series see note to table III.1

VIII. Deflator for value of gross output and for gross value added in manufacturing 1970-1976.

The Annual Industrial Surveys for the years after 1970, have, compared with those for the years before 1970, two advantages. The first is that marketing costs (trade, insurance, packing and advertising), are now included in input costs. The second is that the estimates are given at factor costs. That is to say the incident of indirect tax has been excluded from the values. However, all value figures for manufactured goods are still reported at current prices and, very little information is made available regarding prices of manufactured goods.

Any value series constructed for the period 1970-1976, in Iraq, has to be deflated to be meaningful. The rate of inflation in the country has reached 16% per annum during the period; and the increase has been universal regarding commodities, services, and the regions of the country. Prices of manufactured goods have not be spared. Yet, no comprehensive, or sufficiently detailed, or even consistent set of price statistics could be obtained for manufactured goods.

The Wholesale and Retail price indices both quote prices of manufactured goods. But their coverage is very insufficient. In addition, the weighting systems applied in these indices render them quite unsuitable for deflating series of value of manufactured goods.

Faced with this problem student of Iraqi economy resorted to constructing indices for unit values of manufactured goods. In this, they were helped by the Industrial Statistics Department's commendable practice of publishing detailed information regarding quantities and values of each commodity in each industry. This practice, unfortunately, was terminated from 1970. Although some quantity figures are now published in the Annual Statistical Abstract, they are neither comprehensive nor consistent in terms of coverage, unit of measurement, and specification. Furthermore, corresponding value figures are not published to enable to obtain unit values. Detailed value and quantity figures on a commodity level however are published for two years: 1974 and 1975. Although, a large

number of the commodities are included for the first time, and unit of measurement and specifications for a number of others, differ from those in 1969, (the last year for which detailed value and quantity data were published), there are still data for quantity and value for about 105 commodities. These are consistent with those in 1969. This information have been used to construct the index of unit values for manufactured goods. This index was used to deflate the value series. The procedure in constructing the index for unit values has been as follows:

1. From the value and quantity figures, in 1969, 1974, and 1975, unit values were calculated for 105 commodities, these were used as bench-marks.
2. The average annual compound rate of growth of the unit values between the bench-marks were computed.
3. The unit values for the intervening years were then derived by applying the formula:

$$\begin{aligned} L_k &= L_{k-i} (1+r)^i && (i = 1, \dots, 5) \\ &= L_0 (1+r)^k \end{aligned}$$

where, $r = \left(\frac{L_k}{L_0} \right)^{1/k} - 1 \times 100$

(i.e. r = average annual compound rate of growth), and L_k = the unit value at year k .

Finally, the unit value index of an industry was obtained by combining the unit values of the commodities in the industry; using the quantities produced of each commodity in 1969, as weights.

Two things however have to be noted:

Firstly, for six industries no price deflator of any sort could be obtained. These industries were: crude plastic, sulfur refining, fertilizers, non-electrical machinery, batteries and car assembling. All these industries, as can be seen, are new, and late comers. Therefore it is unlikely that their prices have changed a lot. The value of their output, here, is at current prices.

Secondly, for at least seven other industries, only the wholesale price index could be used. However, the industries concerned (tile and mosaic, wood, pottery, smithy, foundry, pipes and metal furniture), are all either non-metallic or metal product. The best coverage of the wholesale price index concerns these activities.

IX. Special aspects of some of the series.

In the series for profits, profit is obtained as a residual after deducting total wages from gross value added at factor costs. Total wages include salaries and overtime payments. Wages at constant prices are obtained by deflating wages at current prices by the cost of living index. Strictly speaking profits here correspond to non-wage value added because no allowance is made for depreciation. But this is perhaps the closest estimate of profits one can get. No allowance could be made for depreciation for lack of any data.

The estimates for operatives and non-manual workers are obtained by combining the component elements. Thus operatives include: skill and semi-skilled workers, foremen, technicians and highly qualified workers. Non-manual, include management, and workers in service and marketing department. The surveys also list some unpaid workers, but the nature of their work is not specified.

A P P E N D I X

to

Chapter III

Volume II

Index of gross output. Average annual rate of growth, 1970-1976.
(current factor costs) (Industries)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	113.0	124.9	167.3	232.6	240.2	261.2	17.35
31.1.3	Canning	100.0	199.0	316.4	350.1	490.4	761.4	876.0	43.50
31.1.4	Dates	100.0	105.4	174.2	212.0	207.1	170.2	203.0	19.62
31.1.5	Vegetable oil	100.0	121.3	116.1	131.3	161.4	173.3	234.1	15.23
31.1.6	Grain Milling	100.0	132.4	100.5	101.2	113.7	137.1	140.0	6.07
31.1.7	Bakery	100.0	94.6	96.5	93.7	95.6	134.4	160.6	9.10
31.1.7	Macaroni	100.0	33.5	61.6	67.1	62.9	70.0	95.7	- 0.73
31.1.8	Sugar	100.0	150.0	206.5	406.5	437.5	415.2	500.7	34.07
31.1.9	Confectionary	100.0	114.2	110.3	150.6	156.2	104.6	279.4	10.50
31.2.2	Animal Products	100.0	102.5	90.5	134.5	179.6	230.9	232.9	71.93
31.3.1	Brewing	100.0	87.4	124.5	143.0	163.3	190.6	333.9	22.26
31.3.4	Soft Drinks	100.0	91.1	104.4	120.6	149.9	901.7	191.2	11.41
31.4.0	Cigarettes	100.0	112.0	110.2	172.6	170.2	229.7	255.9	16.95
31.4.0	Tobacco Curing	100.0	170.4	211.2	401.4	305.0	542.7	650.9	36.64
32.1.1	Cotton Ginning	100.0	42.9	162.6	210.7	193.5	207.9	140.9	6.90
32.1.1	Wool Washing	100.0	105.0	47.3	22.6	2.9	0.7	0.7	-56.26
32.1.1	Medicated Cotton	100.0	103.4	105.9	110.0	149.1	179.2	187.1	11.00
32.1.1	Jute	100.0	100.0	207.5	325.0	391.5	366.6	402.1	29.97
32.1.1	Cotton Textiles	100.0	140.0	160.5	197.7	235.7	240.0	274.5	10.33
32.1.1	Wool Textiles	100.0	97.0	95.0	119.5	175.2	167.7	106.0	10.90
32.1.1	Silk Textiles	100.0	149.2	220.0	240.0	312.1	356.5	454.0	20.72
32.1.3	Hosiery	100.0	100.1	113.9	143.2	194.6	220.2	200.0	19.33
32.1.3	Knitting	100.0	72.0	81.5	119.2	160.7	217.6	200.7	10.46

Table 1 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.4	Carpets	100.0	11.4	22.1	47.9	37.5	58.8	81.6	- 3.33
32.1.5	Shoe Laces	100.0	92.2	103.6	116.8	163.3	169.6	268.8	17.91
32.1.5	Cotton Waste	100.0	71.2	86.4	135.6	125.4	135.6	167.8	9.01
32.2.0	Shirt Making	100.0	105.6	109.0	83.6	124.2	133.2	159.6	8.10
32.2.0	Tailoring	100.0	217.4	260.1	286.9	307.2	460.4	567.1	35.54
32.3.1	Tanning	100.0	97.0	104.3	169.5	229.8	204.9	627.2	35.00
32.3.2	Leather Salting	100.0	136.0	106.6	149.3	44.6	39.6	45.1	-12.43
32.3.3	Other Leather Products	100.0	117.4	130.4	121.7	134.8	156.5	152.2	7.25
32.4.0	Footwear	100.0	97.5	93.4	128.1	173.9	184.2	195.1	11.70
33.1.1	Wood	100.0	91.7	90.0	130.0	178.3	128.3	376.7	24.74
33.2.0	Carpentry	100.0	114.3	123.8	124.2	190.6	215.1	276.3	10.46
34.1.1	Papers & Products	100.0	114.1	198.4	272.5	368.4	449.6	515.6	31.44
34.2.0	Printing	100.0	156.9	117.8	97.9	168.9	254.8	447.1	28.35
35.1.1	Sulfur Refining	100.0	100.0	276.1	432.1	714.5	743.6	1572.6	58.28
35.1.2	Fertilisers	100.0	100.0	97.7	168.1	181.8	216.0	213.8	13.50
35.1.3	Plastic Products	100.0	89.2	90.3	110.1	230.4	370.8	497.3	30.65
35.1.3	Crude Plastic	100.0	100.0	100.0	92.6	153.2	161.1	143.1	6.15
35.2.1	Paints	100.0	114.7	130.2	126.9	163.0	444.0	616.6	35.41
35.2.2	Drug Packing	100.0	335.3	506.8	782.2	972.9	1229.5	2147.1	66.71
35.2.3	Soaps	100.0	150.6	122.6	133.3	164.5	178.0	235.9	15.38
35.2.3	Cosmetics	100.0	113.5	119.1	148.9	176.9	196.3	308.6	20.66
35.2.5	Matches	100.0	90.9	101.0	118.9	143.6	171.0	189.1	11.20
35.2.9	Synthetic Silk	100.0	200.7	173.7	178.3	169.0	216.0	226.4	14.59

continue..

Table 1 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.9	Other Chemicals	100.0	135.6	191.6	245.0	232.5	253.4	409.9	26.51
35.3.0	Petroleum Products	100.0	95.8	101.8	118.6	163.1	203.0	283.0	18.93
35.5.1	Rubber Products	100.0	105.7	203.1	188.1	393.3	417.1	445.1	28.25
36.1.0	Pottery	100.0	72.5	80.4	45.1	92.2	98.0	111.8	1.88
36.2.0	Glass & Products	100.0	433.3	1,034.2	974.4	1,294.0	1,537.6	2,093.2	66.01
36.9.1	Bricks	100.0	14.6	115.4	119.8	131.9	179.8	251.6	16.62
36.9.1	Juss	100.0	85.3	88.7	67.6	120.2	142.8	209.5	13.12
36.9.2	Cement	100.0	103.0	99.6	127.4	136.7	167.8	197.6	12.02
36.9.2	Tiles & Mosaic	100.0	110.1	108.5	114.6	132.6	173.0	190.1	11.30
36.9.2	Concrete Products	100.0	124.0	149.7	156.6	227.0	277.8	358.6	23.72
36.9.9	Damp Proofing Material	100.0	112.1	128.2	125.0	136.3	125.0	172.6	9.52
36.9.9	Asbestos	100.0	110.2	123.1	101.5	134.3	216.8	367.3	24.21
36.9.9	Stones	100.0	140.8	66.5	109.8	91.4	160.0	252.7	16.71
37.1.0	Pipes	100.0	100.0	100.0	100.0	461.0	2,176.6	2,311.7	74.38
37.2.0	Foundry	100.0	80.4	88.8	76.5	135.4	199.2	241.5	15.83
38.1.1	Aluminium Utensils	100.0	94.0	114.4	110.3	129.5	218.6	224.9	14.46
38.1.2	Metal Furniture	100.0	124.4	114.8	129.5	91.7	99.7	107.9	1.27
38.1.3	Smithy	100.0	123.2	149.5	105.8	171.8	235.9	328.7	21.94
38.1.9	Nails and Razor Blades	100.0	113.5	136.4	130.9	228.2	230.9	240.0	15.71
38.2.1-4	Non-Electrical Machinery	100.0	100.0	135.3	67.4	91.6	92.4	187.3	11.02
38.3.3	Air Coolers and Heaters	100.0	73.0	99.1	135.2	186.9	310.0	391.6	25.55

continue..

Table 1 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.3.2	Radios and Televisions	100.0	975.6	2 203.7	3 125.2	4 975.6	7 240.0	12 078.5	122.33
38.3.9	Batteries	100.0	184.0	320.8	354.7	419.8	532.8	1298.3	53.31
38.3.9	Other Electrical Equipment	100.0	74.7	182.6	232.7	280.6	391.3	528.0	31.96
38.4.3	Radiators	100.0	118.6	121.5	114.0	174.0	274.0	272.7	18.20
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	76.6	140.1	272.7	18.20
38.4.4	Bicycles	100.0	275.5	304.3	329.8	429.8	784.0	1370.2	54.70
39.0.9	Miscellaneous	100.0	115.3	150.7	154.7	232.0	215.3	339.3	22.58

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 1 (b)
 Index of value of gross Output in manufacturing industries. Average annual rate of growth,
 1970 - 1976.

(Geometric mean) (Major Industrial Groups) (current factor costs)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	129.9	130.5	171.5	184.0	194.5	265.1	17.65
31.3	Beverages	100.0	90.2	110.4	132.6	155.7	200.8	247.6	16.31
31.4	Cigarettes	100.0	112.5	120.0	174.8	181.8	236.2	265.1	17.64
32.1	Textiles	100.0	133.6	167.0	193.1	235.9	244.9	283.7	13.98
32.2	Wearing Apparel	100.0	156.3	190.6	212.5	283.1	345.0	369.3	24.33
32.3	Leather and products	100.0	97.7	104.4	169.2	227.4	203.0	620.2	35.55
32.4	Footwear	100.0	97.5	93.4	128.1	173.9	184.2	195.1	11.78
33.1	Wood	100.0	91.7	90.0	130.0	178.3	128.3	376.7	24.74
33.2	Furniture and fixtures (except of metal)	100.0	114.3	123.8	124.2	190.6	215.1	276.3	18.46
34.1	Papers and products	100.0	114.1	198.4	272.5	368.4	449.6	515.6	31.44
34.2	Printing and publishing	100.0	156.9	117.8	97.9	168.9	254.8	447.1	28.35
35.1	Industrial chemicals	100.0	100.0	125.8	183.3	237.9	273.3	412.1	26.62
35.2	Chemical products	100.0	167.3	150.4	178.6	210.6	246.1	346.3	23.00
35.3	Petroleum products	100.0	95.3	101.8	118.6	163.1	203.0	283.9	18.93
35.5	Rubber products	100.0	105.7	203.1	188.1	393.3	417.1	445.1	28.25
35.6	Plastic products	100.0	90.0	90.9	109.0	226.5	359.4	480.7	29.91
36.1	Pottery and earthen ware	100.0	72.5	80.4	45.1	92.2	98.0	111.8	1.87

Table 1 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	433.3	1 034.2	974.4	1 294.0	1 537.6	2 093.2	66.01
36.9	Non-metallic products	100.0	104.9	102.4	126.0	136.3	170.6	205.9	12.79
37.1	Basic metal products	100.0	82.8	90.4	79.5	185.1	700.8	838.7	42.54
38.1	Fabricated metal products	100.0	121.3	133.9	116.3	150.9	204.9	260.7	17.32
33.2	Non-electrical machinery	100.0	100.0	135.3	67.4	91.6	92.4	187.3	11.02
38.3	Electrical machinery and supplies	100.0	91.2	189.5	271.2	404.4	602.7	864.2	43.25
38.4	Transport equipment	100.0	100.0	100.0	100.1	76.9	140.3	273.0	18.22
39.0	Manufacturing not elsewhere classified	100.0	115.3	150.7	154.7	232.0	215.3	339.3	22.58

Source; based on the Annual Industrial Surveys. CSO (Iraq).

Table - 1 (e)
 Index of Output in manufacturing. Average annual rate of growth, 1970 - 1976.
 (Geometric mean) (Industrial Divisions) (current factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	122.8	126.4	166.3	179.9	203.6	263.4	17.52
32.	Textiles, Wearing Apparel and Leather	100.0	129.8	159.2	186.5	230.9	242.6	283.2	18.95
33.	Wood and products, including furniture	100.0	114.2	123.7	124.2	190.5	214.9	276.7	18.48
34.	Paper, printing and publishing	100.0	145.1	130.2	190.9	277.2	352.2	479.0	29.83
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	97.7	102.7	119.6	163.9	204.1	284.1	19.01
36.	Non-metallic products	100.0	105.0	102.9	126.3	137.0	171.4	206.4	12.84
37.	Basic metal industries	100.0	82.8	90.4	79.5	185.1	700.8	838.7	42.54
38.	Fabricated metal products, machinery and equipment	100.0	100.1	114.4	102.1	113.5	172.6	283.7	18.98
39.	Other manufacturing industries	100.0	115.3	150.7	154.7	232.0	215.3	339.3	22.58

Source; based on the Annual Industrial Surveys. 1970 - 1976.

Table - 1 (a)

Laspeyres, Paasche and the Geometric mean indices of value of gross output at current factor costs in manufacturing sector, and for main commodity groupings. Average annual rate of growth, 1970 - 1976.

	1970	1971	1972	1973	1974	1975	1976	Average annual rate of growth (1970 - 1976)
<u>Manufacturing sector</u>								
Laspeyres	100.0	107.3	111.9	130.2	159.6	193.0	258.8	17.17
Paasche	100.0	107.7	115.8	141.3	171.7	207.6	286.2	19.15
Geometric mean	100.0	107.5	113.8	135.6	165.5	200.2	272.2	18.16
<u>Consumer goods</u>								
Laspeyres	100.0	124.6	128.0	156.0	182.3	203.3	244.9	16.10
Paasche	100.0	126.4	141.3	188.7	209.3	241.8	330.0	22.02
Geometric mean	100.0	125.5	134.5	171.5	195.3	221.7	284.3	19.02
<u>Intermediate goods</u>								
Laspeyres	100.0	96.5	102.5	119.5	163.7	203.4	283.4	18.96
Paasche	100.0	97.8	102.7	119.9	163.8	203.4	284.8	19.06
Geometric mean	100.0	96.9	102.6	119.7	163.8	203.4	284.1	19.01
<u>Capital goods</u>								
Laspeyres	100.0	102.6	106.3	111.6	114.1	154.2	228.5	14.0
Paasche	100.0	102.9	107.3	115.4	126.0	164.9	240.0	15.0
Geometric mean	100.0	102.7	106.0	113.5	119.9	159.5	234.5	15.3

continue..

Table 1 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Average annual rate of growth (1970 - 1976)
<u>Non-durables</u>	100.0							
Laspeyres	100.0	108.5	113.4	135.1	171.6	203.2	266.7	17.76
Paasche	100.0	108.8	117.0	144.8	174.6	209.2	287.7	19.26
Geometric mean	100.0	108.7	115.2	139.9	173.1	206.2	277.0	18.51
<u>Durables</u>								
Laspeyres	100.0	102.6	106.4	111.7	114.3	154.6	229.3	14.83
Paasche	100.0	103.1	109.9	120.5	141.1	191.9	274.0	18.29
Geometric mean	100.0	102.9	108.1	116.0	127.0	172.3	250.7	16.55

Source: Based on Annual Industrial Surveys. 1970 - 1976.

Table - 2 (a)

Index of Gross Output in manufacturing industries. Average annual rate of growth, 1970-1976.
(constant factor costs) (Industries)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	113.8	126.5	170.5	238.6	239.9	253.3	16.75
31.1.3	Canning	100.0	200.4	318.3	361.3	496.3	706.7	735.0	39.44
31.1.4	Dates	100.0	177.3	159.3	185.2	239.9	148.7	267.0	17.78
31.1.5	Vegetable Oil	100.0	123.8	120.9	139.6	175.0	174.2	217.5	13.82
31.1.6	Grain Milling	100.0	135.9	105.8	109.3	125.9	140.7	141.7	5.98
31.1.7	Bakery	100.0	91.9	90.9	85.7	85.0	118.3	147.0	6.63
31.1.7	Macaroni	100.0	32.7	57.9	61.6	73.6	68.6	83.6	- 2.93
31.1.8	Sugar	100.0	149.8	255.0	391.5	346.4	321.5	440.0	28.01
31.1.9	Confectionary	100.0	107.7	105.3	133.1	123.6	142.9	211.7	13.31
31.2.2	Animal Products	100.0	102.2	89.8	132.5	176.6	193.4	946.4	62.57
31.3.1	Brewing	100.0	98.9	158.7	204.7	261.4	307.3	464.6	29.18
31.3.4	Soft Drinks	100.0	85.2	91.0	105.0	114.2	140.6	122.2	3.39
31.4.0	Cigarettes	100.0	115.1	126.0	187.4	201.1	187.0	152.0	7.23
31.4.0	Tobacco Curing	100.0	162.3	191.7	347.0	251.3	410.7	449.2	28.45
32.1.1	Cotton Ginning	100.0	41.4	151.6	197.7	159.5	174.7	121.4	3.29
32.1.1	Wool Washing	100.0	94.0	38.0	16.4	2.0	0.4	0.4	-60.16
32.1.1	Medicated Cotton	100.0	83.2	68.9	62.5	63.0	75.4	78.4	- 3.97
32.1.1	Jute	100.0	167.4	257.2	261.8	292.2	258.1	316.4	21.16
32.1.1	Cotton Textiles	100.0	129.9	145.0	158.0	174.7	167.0	178.0	10.00
32.1.1	Wool Textiles	100.0	87.6	76.8	85.8	112.7	104.6	111.0	1.75

continue ..

Table 2 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Silk Textiles	100.0	135.7	188.1	178.2	153.3	217.4	254.4	16.68
32.1.3	Hosiery	100.0	102.2	106.5	121.8	157.6	170.2	213.7	13.49
32.1.3	Knitting	100.0	67.3	71.4	97.5	129.2	152.9	181.0	10.39
32.1.4	Carpets	100.0	11.0	20.2	42.7	31.7	43.2	51.7	-10.42
32.1.5	Shoe Laces	100.0	85.8	89.6	93.9	121.9	119.4	176.5	9.93
32.1.9	Cotton Waste	100.0	65.5	74.5	107.3	92.7	94.5	109.1	1.45
32.2.0	Shirt Making	100.0	75.3	55.4	30.3	32.1	31.7	34.9	-16.08
32.2.0	Tailoring	100.0	182.9	184.0	170.7	193.6	200.7	213.1	13.44
32.3.1	Tanning	100.0	88.8	87.4	129.9	161.2	149.2	456.7	28.81
32.3.2	Leather Salting	100.0	124.4	89.1	114.3	31.2	28.9	33.0	-16.89
32.3.3	Other Leather products	100.0	109.5	109.5	95.2	95.2	114.3	109.5	1.53
32.4.0	Footwear	100.0	88.4	76.8	95.6	117.5	121.5	125.6	3.83
33.1.1	Wood	100.0	83.9	87.5	121.4	110.7	73.2	155.4	7.62
33.2.0	Carpentry	100.0	104.6	121.0	116.4	118.7	122.5	113.6	2.14
34.1.1	Papers & Products	100.0	117.3	209.4	295.3	410.2	345.0	236.9	15.36
34.2.0	Printing	100.0	161.3	124.3	106.0	188.1	195.5	205.4	12.74
35.1.1	Sulfur Refining	100.0	100.0	276.1	432.1	714.5	743.6	572.6	58.28
35.1.2	Fertilizers	100.0	100.0	97.7	168.1	181.8	216.0	213.8	13.50
35.1.3	Plastic Products	100.0	97.6	108.1	144.3	330.5	550.1	756.1	40.10
35.1.3	Crude Plastic	100.0	100.0	100.0	92.6	153.2	161.1	143.1	6.16
35.2.1	Paints	100.0	119.9	142.2	144.7	194.2	552.9	767.9	40.46
35.2.2	Drug Packing	100.0	289.1	377.1	502.5	539.3	482.9	587.1	34.31

continues ...

Table 2 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	157.9	134.7	153.6	198.7	234.1	338.4	22.53
35.2.3	Cosmetics	100.0	96.7	86.2	91.7	92.4	117.8	176.8	9.96
35.2.5	Matches	100.0	90.9	101.0	118.9	172.4	205.3	227.0	14.64
35.2.9	Synthetic Silk	100.0	184.8	147.2	139.1	121.3	143.1	136.2	5.28
35.2.9	Other Chemicals	100.0	130.1	175.3	210.2	188.7	191.4	271.0	18.07
35.3.0	Petroleum products	100.0	111.0	136.6	184.3	293.9	355.4	475.1	29.66
35.5.1	Rubber products	100.0	91.7	155.4	123.2	225.6	213.1	204.8	12.69
36.1.0	Pottery	100.0	76.5	84.3	47.1	96.1	96.1	109.8	1.57
36.2.0	Glass and products	100.0	440.3	1063.9	1011.8	1353.8	1384.0	1363.0	54.56
36.9.1	Bricks	100.0	107.3	103.6	101.4	105.6	108.4	114.2	2.24
36.9.1	Juss	100.0	76.4	71.2	48.6	77.1	64.4	66.8	- 6.51
36.9.2	Cement	100.0	105.9	105.2	130.4	152.6	186.4	218.2	13.89
36.9.2	Tiles and mosaic	100.0	99.0	88.0	83.6	87.0	87.8	74.3	- 4.82
36.9.2	Concrete products	100.0	106.1	109.5	98.0	121.6	122.5	132.3	4.77
36.9.9	Damp proofing material	100.0	112.1	128.2	125.0	136.3	125.0	172.6	9.52
36.9.9	Asbestos	100.0	126.7	160.3	152.1	231.7	299.1	40.9	-13.85
36.9.9	Stones	100.0	140.1	66.1	114.0	80.6	65.3	73.6	- 4.99
37.1.0	Pipes	100.0	103.5	108.8	91.2	264.9	1215.8	1610.5	38.91
37.2.0	Foundry	100.0	82.5	95.4	69.1	77.3	110.3	137.1	5.40
38.1.1	Aluminium Utensils	100.0	85.0	93.2	81.1	85.8	114.1	108.9	1.43
38.1.2	Metal Furniture	100.0	127.5	123.3	116.6	92.3	55.3	61.3	- 7.83
38.1.3	Smithy	100.0	126.4	160.4	95.3	98.1	130.8	186.8	10.98
38.1.9	Nails & Razor Blades	100.0	102.4	111.0	96.1	150.8	120.2	116.1	2.52

continue..

Table 2 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.2.1-4	Non-electrical machinery	100.0	100.0	135.3	67.4	91.6	92.4	187.3	11.03
38.3.3	Air coolers and heaters	100.0	67.1	83.6	104.6	132.8	211.0	254.6	16.86
38.3.2	Radios & Televisions	100.0	998.6	2 308.0	3 348.6	5 450.7	7 723.9	12 927.5	124.86
38.3.9	Batteries	100.0	184.0	320.8	354.7	419.8	532.8	1 298.3	53.31
38.3.9	Other electrical equipment	100.0	64.5	136.2	150.0	156.2	246.3	380.2	24.93
38.4.3	Radiators	100.0	106.9	97.7	82.6	113.3	138.5	187.6	11.06
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	76.6	140.1	272.7	18.20
38.4.3	Bicycles	100.0	272.0	298.9	321.5	412.9	648.4	974.2	46.14
39.0.9	Miscellaneous	100.0	104.4	123.7	114.1	154.8	140.0	209.6	13.13

Source: based on the Annual Industrial Surveys. 1970 - 1976. CSO (Iraq).

Table - 2 (b)

Index of Gross Output in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (constant factor costs) (Major Industrial Groups)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	131.4	130.2	165.2	182.1	184.1	232.7	15.12
31.3	Beverages	100.0	89.0	114.0	136.6	152.0	194.5	271.3	18.10
31.4	Cigarettes	100.0	115.5	126.5	188.8	201.7	191.3	158.4	7.97
32.1	Textiles	100.0	123.2	142.0	151.8	164.0	164.8	177.6	10.05
32.2	Wearing Apparel	100.0	131.5	136.9	134.5	157.0	169.5	182.2	10.52
32.3	Leather and products	100.0	89.3	87.4	129.7	159.5	147.8	451.6	28.57
32.4	Footwear	100.0	88.4	76.8	95.6	117.5	121.5	125.6	3.87
33.1	Wood	100.0	83.9	87.5	121.4	110.7	73.2	155.4	7.62
33.2	Furniture and fixtures (except of metal)	100.0	104.6	121.0	116.4	118.7	122.5	113.6	2.14
34.1	Papers & products	100.0	117.3	209.4	295.3	410.2	345.0	236.9	15.46
34.2	Printing & publishing	100.0	161.3	124.3	106.0	188.1	195.5	205.4	12.74
35.1	Industrial chemicals	100.0	100.0	125.8	183.3	237.9	273.3	412.1	26.62
35.2	Chemical products	100.0	164.6	143.2	161.0	194.2	229.0	313.0	20.95
35.3	Petroleum Products	100.0	111.0	136.6	184.3	293.9	355.4	475.2	22.66
35.5	Rubber products	100.0	91.7	155.4	123.2	225.6	213.1	204.8	12.69
35.6	Plastic products	100.0	97.8	107.6	141.5	322.3	530.6	729.8	39.27
36.1	Pottery and earthenware	100.0	76.5	84.3	47.1	96.1	96.1	109.8	1.57
36.2	Glass and products	100.0	440.3	1063.9	1011.8	1353.8	1384.0	1363.0	54.56

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continue ..

Table 2 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.9	Non-metallic products	100.0	106.3	105.7	133.4	147.1	177.6	203.7	12.59
37.1	Basic metal products	100.0	85.1	97.2	71.9	105.8	389.2	477.5	29.76
38.1	Fabricated metal products	100.0	122.2	138.9	102.1	89.9	112.6	145.0	6.38
38.2	Non-electrical machinery	100.0	100.0	135.3	67.4	91.6	92.4	187.3	11.03
38.3	Electrical machinery and supplies	100.0	86.4	170.3	234.8	343.1	512.6	755.2	40.07
38.4	Transport equipment	100.0	100.0	100.0	100.0	76.8	140.2	272.9	18.21
39.0	Manufacturing not elsewhere classified	100.0	104.4	123.7	114.1	154.8	140.0	209.6	13.13

Source: based on the Annual Industrial Surveys. 1970 - 1976. CSO (Iraq).

Table - 2 (e)

Index of Gross Output in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Industrial Divisions) (constant factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	124.4	127.9	167.1	184.2	186.0	223.8	14.37
32.	Textiles, Wearing Apparel and Leather	100.0	118.9	133.8	144.4	158.2	159.6	177.9	10.68
33.	Wood and products, including furniture	100.0	104.5	120.9	116.5	118.7	122.4	113.7	2.16
34.	Paper, printing and publishing	100.0	149.1	145.8	206.8	308.6	270.3	220.1	14.05
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	112.2	136.5	183.8	292.6	354.3	474.5	29.61
36.	Non-metallic products	100.0	106.3	106.2	133.6	147.9	178.3	204.0	12.62
37.	Basic metal industries	100.0	85.1	97.2	71.9	105.8	389.2	477.5	29.76
38.	Fabricated metal products, machinery and equipment	100.0	100.0	113.7	100.6	110.5	167.8	279.7	18.70
39.	Other manufacturing industries	100.0	104.4	123.7	114.1	154.8	140.0	209.6	13.13

Source: based on the Annual Industrial Surveys. 1970 - 1976. CSO (Iraq).

Table - 2 (d)

Laspeyres, Paasche, and Geometric mean indices of Gross Output in manufacturing sectors,
and main commodity groupings. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (constant factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Manufacturing sector</u>								
Laspeyres	100.0	113.7	127.3	160.1	221.2	258.9	335.8	22.37
Paasche	100.0	114.2	131.8	173.9	260.2	313.6	429.3	27.49
Geometric mean	100.0	114.0	129.6	166.9	239.9	285.0	379.7	24.90
<u>Consumer goods</u>								
Laspeyres	100.0	124.1	125.4	151.4	175.4	178.0	196.2	11.89
Paasche	100.0	125.4	135.2	179.0	199.2	211.1	282.0	18.86
Geometric mean	100.0	124.7	130.2	164.6	186.9	193.8	235.2	15.32
<u>Intermediate goods</u>								
Laspeyres	100.0	111.3	136.6	184.0	292.3	353.2	472.2	29.53
Paasche	100.0	111.7	136.7	184.1	293.3	354.6	475.0	29.65
Geometric mean	100.0	111.5	136.6	184.1	292.8	353.9	473.6	29.59
<u>Capital goods</u>								
Laspeyres	100.0	103.3	107.7	114.9	118.5	155.3	221.5	14.17
Paasche	100.0	103.6	108.7	119.5	132.0	165.4	237.2	15.48
Geometric mean	100.0	103.4	108.2	117.2	125.1	160.5	224.3	14.44

continue..

Table 2 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Non-Durable goods</u>								
Laspeyres	100.0	116.3	132.2	171.2	246.4	284.4	363.8	24.02
Frasche	100.0	116.6	135.7	181.6	269.7	324.2	446.0	28.30
Geometric mean	100.0	116.5	133.9	176.3	257.8	303.6	402.8	26.14
<u>Durable goods</u>								
Laspeyres	100.0	103.3	107.8	115.0	118.7	155.8	222.4	14.25
Frasche	100.0	103.9	111.5	124.9	148.6	195.2	273.4	18.25
Geometric mean	100.0	103.5	109.7	119.8	132.8	174.4	246.6	16.23

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 3

Index of Physical Quantity of Output in manufacturing industries, 1970 - 1975.

	1969	1970	1971	1972	1974	1975	Unit Values
Index of physical quantity of output in manufacturing	100.0	106.4	126.5	153.6	135.0	216.1	
<u>Dairy</u>	<u>100.0</u>	<u>140.9</u>	<u>163.2</u>	<u>171.8</u>	<u>302.3</u>	<u>345.2</u>	
Pasturized Milk	100.0	135.7	156.5	161.0	169.0	173.4	85.8
Fresh Cheese	100.0	615.7	781.6	1 093.7	285.8	268.3	0.3
Processed Cheese	100.0	-	-	-	946.3	1 291.6	437.3
Butter	100.0	108.2	120.2	110.6	502.0	546.7	729.9
Stuffed Dates	100.0	-	-	-	126.2	106.6	201.6
Canned Tomato Paste	100.0	-	-	-	9 683.8	13 231.4	194.4
Confectionary	100.0	-	-	-	255.7	290.6	217.4
<u>Vegetable Oil and Fats</u>	<u>100.0</u>	<u>118.0</u>	<u>150.9</u>	<u>127.0</u>	<u>175.0</u>	<u>187.6</u>	
Vegetable Oil	100.0	109.9	145.9	126.1	160.3	158.6	184.6
Liquid Vegetable Fat	100.0	137.7	246.7	197.0	290.6	215.3	249.0
Soap (wash)	100.0	104.1	104.1	103.7	126.2	143.3	78.6
Soap (toilette)	100.0	111.0	130.8	132.0	194.8	223.9	278.6
Shaving Cream	100.0	164.8	296.3	227.8	274.6	269.6	0.84
Detergents	100.0	124.0	163.0	122.9	165.1	175.1	235.3
Tooth Pastes	100.0	97.2	142.9	116.3	178.4	214.7	1.2
<u>Flour</u>	100.0	-	-	-	148.3	165.0	42.3
<u>Bread</u>	100.0	-	-	-	93.7	124.2	53.0
<u>Sugar</u>	100.0	77.9	134.7	212.6	188.4	238.4	81.2

continue..

Table - 3 (cont'd)

	1969	1970	1971	1972	1974	1975	Unit	Value
<u>Araq</u>	<u>100.0</u>	-	-	-	<u>221.8</u>	<u>280.11</u>		
Araq-Mastawi	100.0	-	-	-	131.9	41.5	1	206.0
Araq-Zahlawi	100.0	-	-	-	595.2	3 926.9	1	140.2
Beer	100.0	120.0	131.2	149.6	180.0	281.9		333.5
Soft Drinks	100.0	-	-	-	108.1	132.9		10.8
<u>Cotton Spinning and Ginning</u>	<u>100.0</u>	<u>123.1</u>	<u>145.6</u>	-	<u>174.3</u>	<u>166.38</u>		
Unbleached Calicol	100.0	109.4	125.3	-	108.4	94.1		87.7
Bleached Calicol	100.0	99.7	127.6	-	136.3	131.3		95.3
Medicated Cotton	100.0	-	-	-	95.5	98.0		0.04
Printed Textiles	100.0	226.0	294.7	-	459.0	464.8		103.5
Yashmacs	100.0	-	-	-	119.9	95.2		0.2
Cotton Cloth	100.0	125.6	-	182.0	184.6	174.3		-
<u>Wool Spinning and Ginning</u>								
Blankets	100.0	102.2	94.6	106.9	116.2	107.1	2	438.6
Wollen Cloth	100.0	148.6	-	63.9	133.8	116.5		-
Stain made of Synthetic Silk	100.0	101.1	195.7	-	287.8	288.3		144.3
Lace	100.0	-	-	-	268.7	134.9		38.0
<u>Tailoring Suits</u>								
Suits	100.0	-	-	-	193.0	228.9		1.5
<u>Tanning</u>	<u>100.0</u>	-	-	-	<u>119.1</u>	<u>109.7</u>		
Tanned Sole Leather	100.0				73.1	51.9		0.4

continue..

Table - 3 (cont'd)

	1969	1974	1975	Unit Values
Tanned Upper Leather	100.0	132.7	126.7	0.2
<u>Shoes</u>				
Various Leather Shoes	100.0	148.5	164.4	1.3
<u>Napkins</u>	<u>100.0</u>	<u>170.0</u>	<u>286.0</u>	
Napkins, Large	100.0	129.1	302.4	0.8
Napkins, Small	100.0	246.4	255.6	0.7
<u>Synthetic Silk, Fibers, and Threads</u>	<u>100.0</u>	<u>218.4</u>	<u>224.5</u>	
Synthetic Silk Spinning	100.0	169.7	166.7	502.0
Silk Fibers	100.0	485.6	542.3	240.4
<u>Medicines Manufacturing and Packaging</u>				
Various Syrups	100.0	77,591.0	87,158.3	156.3
Distilled Water	100.0	272.1	289.7	4.0
<u>Cosmetics and Perfumes</u>	<u>100.0</u>	<u>285.5</u>	<u>324.7</u>	
Shampoo	100.0	270.9	273.5	1.1
Face Cream	100.0	289.8	334.4	1.1
<u>Matches</u>				
Matches Ordinary	100.0	131.3	-	0.6
<u>Damp Proofing Material</u>	<u>100.0</u>	<u>128.5</u>	<u>123.1</u>	<u>1.4</u>
<u>Liquid Gas</u>	<u>100.0</u>	<u>608.4</u>	<u>1 081.9</u>	<u>46.0</u>

continue..

Table - 3 (cont'd)

	1969	1974	1975	Unit Values
<u>Plastic Molecules</u>	100.0	834.2	1 004.5	1 575.8
<u>Various Bottles</u>	100.0	345.9	234.3	30.4
<u>Cement</u>	100.0	140.4	185.9	
Cement Ordinary	100.0	118.3	151.9	6.6
Salt Resistant Cement	100.0	229.1	322.0	9.8
<u>Gypsum</u>	100.0	71.6	55.8	
Milled Gypsum	100.0	47.2	35.5	0.6
Gypsum	100.0	179.9	145.9	3.2
<u>Concrete Products</u>				
Concrete Beams	100.0	151.6	122.7	2.0
<u>Tiles</u>				
Plain Tiles (Ordinary)	100.0	44.3	38.5	12.4
Figured Tiles	100.0	41.8	18.7	18.8
Mosaic Tiles	100.0	75.4	88.1	42.2
<u>Asbestos Products</u>				
Various Pipes	100.0	28.7	24.0	0.8
<u>Coolers and Heaters</u>	100.0	219.2	278.3	
Air Coolers	100.0	29 264.3	27 274.4	54.0
Petrol Heaters	100.0	66.6	56.8	20.7
Gas Heaters	100.0	405.0	398.3	33.0
Petrol Heaters (different Types)	100.0	165.9	242.2	5.3

continues..

Table 3 (cont'd)

	1969	1974	1975	Unit Values
Gas Heaters (different types)	100.0	2 314.5	2 753.0	13.5
<u>Electric Equipment</u>	<u>100.0</u>	<u>229.8</u>	<u>371.0</u>	
Electric Engines	100.0	202.2	206.3	7.5
Transformers	100.0	242.9	449.1	321.2
Petrol Stoves	100.0	174.8	62.9	-
<u>Assembling Radios, T.V.'s, Tape Recorders</u>	<u>100.0</u>	<u>476.8</u>	<u>679.2</u>	
Various Televisions	100.0	441.9	637.6	85.6
Tape Recorders	100.0	1 295.7	101.4	26.4
Radios	100.0	241.2	1 469.0	15.0
<u>Radiators</u>	<u>100.0</u>	<u>122.1</u>	<u>177.9</u>	<u>11.1</u>
<u>Bicycles</u>	<u>100.0</u>	<u>8 130.6</u>	<u>12 281.4</u>	<u>13.5</u>
<u>Pencils and Graphite Products</u>	<u>100.0</u>	<u>211.1</u>	<u>177.7</u>	<u>0.8</u>
<u>Oil Refining</u>	<u>100.0</u>	<u>163.3</u>	<u>412.6</u>	
Terpentine Aviation Fuel	100.0	252.6	63.1	37.3
Car Benzine	100.0	119.0	142.2	140.4
Special White Benzine	100.0	17 437.9	5 213.8	221.0
Gasoline	100.0	182.5	257.5	45.0
Diesel Oil	100.0	142.2	73.4	20.2
Fuel Oil	100.0	335.2	171.5	10.0
Black Heavy Petrol	100.0	88.46	22.1	8.0

continue..

Table - 3 (cont'd)

	1969	1974	1975	Unit Values
Lubricating Oils	100.0	197.0	2 222.2	467.4
Grease Oils	100.0	115.5	28.8	150.4
Asphalt	100.0	55.6	67.8	35.0

Source: based on the Annual Industrial Surveys.

Table - 4 (a)

Index of inputs. Average annual compound rate of growth 1970 - 1976
(Current factor costs) (Industries)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	113.0	123.3	177.6	272.6	286.3	343.5	22.83
31.1.3	Canning	100.0	166.4	294.6	325.6	578.9	834.6	940.0	45.27
31.1.4	Dates	100.0	186.8	133.7	188.0	241.2	157.4	279.0	18.65
31.1.5	Veget ble Oil	100.0	168.8	136.4	179.8	201.7	216.6	366.3	24.16
31.1.6	Grain Milling	100.0	135.2	105.1	105.8	118.9	145.6	158.7	8.00
31.1.7	Bakery	100.0	93.6	87.1	86.9	96.4	135.9	177.2	10.00
31.1.7	Macaroni	100.0	80.9	155.3	183.0	206.4	217.0	200.0	12.25
31.1.8	Sugar	100.0	192.7	316.9	499.8	468.8	444.8	622.2	35.62
31.1.9	Confectionary	100.0	112.3	125.5	141.8	160.1	210.3	303.9	20.35
31.2.2	Animal Products	100.0	108.6	87.1	102.1	182.8	244.6	2 483.7	70.81
31.3.1	Brewing	100.0	88.1	113.6	119.3	164.6	201.5	341.0	22.68
31.3.4	Soft Drinks	100.0	64.3	79.8	68.2	87.2	122.5	159.7	8.11
31.4.0	Cigarettes	100.0	107.1	112.5	131.5	183.3	237.0	313.4	20.97
31.4.0	Tobacco Curing	100.0	238.4	314.2	528.5	286.4	434.6	791.6	41.17
32.1.1	Cotton Ginning	100.0	43.9	172.2	159.5	163.1	189.9	170.3	9.28
32.1.1	Wool Washing	100.0	106.9	47.2	23.2	0.8	0.4	0.4	-60.16
32.1.1	Medicated Cotton	100.0	101.0	116.4	119.4	152.2	182.6	191.0	11.39
32.1.1	Jute	100.0	181.2	273.2	338.9	305.6	307.8	422.6	27.15
32.1.1	Cotton Textiles	100.0	136.8	146.3	185.1	247.5	252.0	285.1	19.08
32.1.1	Wool Textiles	100.0	90.9	79.8	119.9	196.8	185.5	194.6	11.73

continuo..

Table 4 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Ratio of Growth
32.1.1	Silk Textiles	100.0	129.2	186.3	207.8	294.3	356.4	486.5	30.17
32.1.3	Hosiery	100.0	96.8	105.9	137.0	184.7	230.8	293.4	19.65
32.1.3	Knitting	100.0	82.5	92.4	139.7	202.8	253.6	349.2	23.17
32.1.4	Carpets	100.0	14.1	22.5	28.6	24.4	43.4	75.2	-4.64
32.1.5	Shoe Laces	100.0	89.5	98.1	65.7	167.0	194.4	285.0	19.07
32.1.9	Cotton Waste	100.0	74.5	76.6	138.3	136.2	136.2	151.1	7.12
32.2.0	Shirt Making	100.0	100.3	103.1	84.9	117.9	127.0	156.4	7.74
32.2.0	Tailoring	100.0	258.2	264.7	280.1	418.4	433.1	785.0	40.97
32.3.1	Tanning	100.0	95.8	86.7	132.2	189.3	175.4	514.7	31.40
32.3.2	Leather Salting	100.0	150.0	105.5	150.0	42.4	44.8	45.8	-12.20
32.3.3	Other Leather Products	100.0	105.9	123.5	111.8	147.1	141.2	141.2	5.92
32.4.0	Footwear	100.0	110.0	104.8	158.2	220.2	223.3	286.3	14.60
33.1.1	Wood	100.0	116.2	97.3	167.6	181.1	197.3	475.7	29.68
33.2.0	Carpentry	100.0	116.0	127.5	132.1	202.8	247.0	307.2	20.57
34.1.1	Papers & Products	100.0	130.1	251.4	231.4	330.1	470.2	485.5	30.13
34.2.0	Printing	100.0	135.5	112.3	97.5	208.9	334.6	548.7	32.81
35.1.1	Sulfur Refining	100.0	100.0	170.6	263.0	169.4	189.6	582.1	34.12
35.1.2	Fertilizers	100.0	100.0	168.9	160.3	186.8	254.8	263.7	17.54
35.1.3	Plastic Products	100.0	84.8	77.0	91.4	206.6	346.0	451.2	28.55
35.1.3	Crude Plastic	100.0	100.0	100.0	91.2	162.2	150.9	144.4	6.31
35.2.1	Paints	100.0	100.2	112.1	113.6	143.7	444.2	598.7	31.75
35.2.2	Drug Packaging	100.0	339.8	386.4	509.0	597.6	830.7	1572.3	58.28

continue..

Table 4 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	142.1	145.7	180.5	228.4	255.9	360.9	23.85
35.2.3	Cosmetics	100.0	125.7	124.3	160.4	176.1	228.7	350.9	23.21
35.2.5	Matches	100.0	78.9	56.1	86.6	169.3	196.4	215.6	13.66
35.2.9	Synthetic Silk	100.0	175.9	217.2	184.6	273.0	347.7	389.9	25.46
35.2.9	Other Chemicals	100.0	90.8	113.4	191.5	183.8	199.3	305.6	20.46
35.3.0	Petroleum Products	100.0	91.3	98.4	125.9	153.5	179.7	228.0	14.72
35.5.1	Rubber Products	100.0	116.7	260.3	298.7	507.7	648.7	733.3	39.38
36.1.0	Pottery	100.0	46.2	61.5	138.5	84.6	76.9	115.4	2.41
36.2.0	Glass & Products	100.0	508.1	972.6	1 290.3	1 114.5	1 321.0	3 188.7	78.07
36.9.1	Bricks	100.0	121.2	123.0	126.3	128.8	192.8	389.8	25.45
36.9.1	Juss	100.0	99.4	100.6	66.1	157.1	187.5	308.3	20.64
36.9.2	Cement	100.0	105.4	109.5	155.8	192.0	246.8	310.0	20.75
36.9.2	Tiles & Mosaic	100.0	118.2	109.8	126.1	147.3	188.2	207.9	12.97
36.9.2	Concrete Products	100.0	121.9	151.6	144.7	191.3	266.4	380.2	24.93
36.9.9	Damp Proofing Material	100.0	130.7	140.0	110.7	166.7	169.3	226.7	14.61
36.9.9	Asbestos	100.0	113.8	118.9	94.8	125.5	240.5	397.2	25.31
36.9.9	Stones	100.0	172.5	106.9	134.3	145.1	284.3	405.9	26.30
37.1.0	Pipes	100.0	100.0	100.0	100.0	621.6	2 343.2	4 232.4	86.68
37.2.0	Foundry	100.0	72.6	96.0	68.0	107.4	171.4	204.0	12.62
38.1.1	Aluminum Utensils	100.0	109.0	118.7	118.5	120.9	232.0	247.2	16.28
38.1.2	Metal Furniture	100.0	112.0	103.7	112.8	86.1	115.3	102.2	0.36
38.1.3	Smithy	100.0	146.3	163.4	103.3	172.0	226.9	340.9	22.68
33.1.9	Nails & Razor Blades	100.0	114.2	133.3	133.7	207.3	223.8	234.3	15.25

Table 4 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.2.1-4	Non-Electrical Machinery	100.0	100.0	155.3	76.6	86.1	131.3	206.6	12.85
38.3.3	Air Coolers and Heaters	100.0	73.3	88.0	128.1	178.3	301.6	438.5	27.94
39.3.2	Radios and Televisions	100.0	937.9	1 608.1	2 208.9	3 557.3	4 929.0	10 201.6	116.16
38.3.9	Batteries	100.0	137.0	202.0	247.3	279.9	422.1	1 002.9	46.85
30.3.9	Other Electrical Equipment	100.0	116.4	163.5	259.9	323.8	406.4	526.4	31.89
38.4.3	Radiators	100.0	124.3	121.5	111.3	178.0	276.8	275.7	18.41
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	115.6	173.8	289.8	19.40
38.4.4	Bicycles	100.0	800.0	869.6	787.0	1 004.3	2 082.6	3 308.7	79.17
39.0.9	Miscellaneous	100.0	96.4	155.5	155.5	254.5	259.1	391.8	25.56

Source: based on the Annual Industrial Surveys, 1970 - 1976.

Table - 4 (b)
 Index of Inputs in manufacturing. Average annual rate of growth, 1970 - 1976.
 (current prices) (Major Industrial Groups)

Industrial Classification	Major Industrial Group	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1-2	Food manufacturing	100.0	150.4	141.3	191.9	203.5	220.3	320.0	21.44
31.3	Beverages	100.0	60.3	06.0	70.0	102.4	130.0	212.0	13.35
31.4	Cigarettes	100.0	100.1	114.0	130.0	141.5	240.7	323.4	21.61
32.1	Textiles	100.0	127.4	145.6	180.3	245.3	258.1	303.0	20.29
32.2	Wearing Apparel	100.0	175.8	191.9	208.5	302.7	335.4	458.6	28.90
32.3	Leather and products	100.0	96.0	07.1	132.5	107.2	173.7	508.6	31.14
32.4	Footwear	100.0	110.0	104.0	150.2	220.2	223.3	226.9	14.60
33.1	Wood except furniture	100.0	116.2	97.3	167.6	181.1	197.3	475.7	29.60
33.2	Furniture and fixtures, (except of metal)	100.0	116.0	127.5	132.1	202.0	247.0	307.2	20.57
34.1	Papers and products	100.0	130.1	251.4	231.4	330.1	470.2	485.5	30.13
34.2	Printing & publishing	100.0	135.5	112.3	97.5	300.9	334.6	540.7	32.01
35.1	Industrial chemicals	100.0	100.0	171.0	160.6	184.1	244.4	333.3	22.22
35.2	Chemical products	100.0	150.5	165.6	192.0	256.0	312.0	447.4	20.37
35.3	Petroleum products	100.0	91.3	90.4	125.9	153.5	179.7	220.0	14.72
35.5	Rubber products	100.0	116.7	260.3	290.7	507.7	640.7	733.3	39.39
35.6	Plastic products	100.0	06.1	70.7	91.4	204.2	334.5	435.5	27.79
36.1	Pottery and earthen ware	100.0	46.2	61.5	130.5	84.6	76.9	115.4	2.41

Continues..

Table 4 (b) (cont'd)

Industrial Classification	Major Industrial Group	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2	Glass and products	100.0	500.1	972.6	1,290.3	1,114.5	1,321.0	3,108.7	70.07
36.9	Non-metallic products	100.0	107.5	111.4	151.4	102.9	240.4	310.4	21.29
37.1	Basic metal products	100.0	75.1	96.4	71.0	166.0	700.4	922.5	44.82
38.1	Fabricated metal products	100.0	127.1	137.0	109.5	147.1	203.1	267.1	17.79
38.2	Non-electrical machinery	100.0	100.0	155.3	76.6	86.1	131.3	206.6	12.05
38.3	Electrical machinery and supplies	100.0	90.2	163.6	257.2	300.2	575.9	920.5	44.77
38.4	Transport equipment	100.0	100.1	100.1	100.1	115.9	174.1	290.1	19.42
39.0	Manufacturing not elsewhere classified	100.0	96.4	155.5	155.5	254.5	259.1	391.0	25.56

Source: based on the Annual Industrial Surveys, 1970 - 1976, CSO (Iraq).

Table -4 (a)

Index of Inputs in manufacturing. Average annual rate of growth, 1970.- 1976.
(Geometric mean) (Industrial Divisions) (current factor costs)

Industrial Classification	Division	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	135.0	130.9	164.8	188.9	214.4	310.9	20.81
32.	Textiles, Wearing Apparel and Leather	100.0	127.6	142.0	178.3	244.1	257.0	305.0	20.42
33.	Wood and products, including furniture	100.0	116.0	127.4	132.2	202.7	246.9	307.8	20.61
34.	Paper, printing and publishing	100.0	133.7	153.1	176.2	281.5	410.3	515.5	31.43
35.	Chemicals, Petroleum, Rubber & Plastic Products	100.0	93.2	100.0	127.3	155.5	182.9	232.5	15.10
36.	Non-metallic Products	100.0	107.6	112.0	151.8	183.6	241.2	319.2	21.34
37.	Basic metal industries	100.0	75.1	96.4	71.0	166.0	700.4	922.5	44.82
38.	Fabricated metal products, machinery and equipment	100.0	100.6	120.7	104.4	135.8	208.8	307.6	20.59
39.	Other manufacturing industries	100.0	96.4	155.5	155.5	254.5	259.1	391.8	25.56

Source: based on the Annual Industrial Surveys, CSO (Iraq).

Table - 4 (a)

Laspeyres, Paasche and Geometric mean indices of Inputs in the manufacturing sector, and main commodity groupings. Average annual rate of growth, 1970 - 1976.

	1970	1971	1972	1973	1974	1975	1976	Rate of growth (1970-1976)
<u>Manufacturing sector</u>								
Laspeyres	100.0	113.5	115.3	139.8	169.5	201.2	270.3	18.03
Paasche	100.0	110.3	117.9	148.0	174.0	202.2	263.9	17.49
Geometric mean	100.0	111.9	116.6	143.8	171.7	201.7	266.6	17.75
<u>Consumer goods</u>								
Laspeyres	100.0	137.3	129.6	159.4	193.4	218.4	294.4	19.72
Paasche	100.0	130.7	138.8	178.0	215.0	248.6	366.8	24.19
Geometric mean	100.0	134.0	134.1	168.5	203.9	233.5	328.7	21.94
<u>Intermediate goods</u>								
Laspeyres	100.0	91.9	99.7	126.8	154.8	181.8	230.7	14.95
Paasche	100.0	92.4	99.7	127.0	154.2	180.4	230.7	14.95
Geometric mean	100.0	92.2	99.7	126.9	154.5	180.8	230.7	14.95
<u>Capital goods</u>								
Laspeyres	100.0	103.8	114.5	122.8	146.5	202.8	294.9	19.75
Paasche	100.0	104.0	115.5	128.4	157.6	217.3	292.6	19.59
Geometric mean	100.0	103.9	115.0	125.5	151.9	209.9	293.7	19.67

Continue..

Table 4 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Rate of growth (1970-1976)
<u>Non-durables</u>								
Laspeyres	100.0	115.8	115.4	143.9	175.1	200.7	264.1	17.57
Pasche	100.0	113.6	117.7	150.9	173.7	197.4	253.0	16.73
Geometric mean	100.0	113.7	116.6	147.0	174.4	199.1	258.5	17.15
<u>Durables</u>								
Laspeyres	100.0	103.9	114.6	122.9	146.6	203.2	295.7	19.81
Pasche	100.0	104.3	118.6	131.7	177.1	251.3	339.7	22.61
Geometric mean	100.0	104.1	116.5	128.7	161.2	226.0	317.0	21.20

Source: based on the Annual Industrial Surveys, CSO (Iraq).

Table - 5 (a)

Index of Gross Value added in manufacturing. Average annual rate of growth, 1970 - 1976.
(Industries) (current factor costs)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	113.1	128.3	144.8	146.1	140.2	82.6	- 3.10
31.1.3	Canning	100.0	291.0	375.7	446.7	249.4	562.0	701.5	38.36
31.1.4	Dates	100.0	183.3	234.3	247.6	355.2	189.1	313.8	21.00
31.1.5	Vegetable Oil	100.0	53.4	87.1	63.5	103.9	111.5	45.3	-12.36
31.1.6	Grain Milling	100.0	114.2	71.4	72.2	80.2	82.8	87.1	- 2.27
31.1.7	Bakery	100.0	98.9	135.9	122.3	92.4	128.3	132.6	..81
31.1.7	Macaroni	100.0	14.5	23.9	20.5	33.3	22.2	53.8	- 9.81
31.1.8	Sugar	100.0	83.2	218.7	392.0	367.7	349.0	488.1	30.24
31.1.9	Confectionary	100.0	121.2	92.0	219.5	141.7	91.3	190.6	11.35
31.2.2	Animal products	100.0	69.0	109.5	314.3	161.9	154.8	133.3	77.55
31.3.1	Brewing	100.0	86.8	135.0	165.9	162.0	195.8	327.0	21.83
31.3.4	Soft Drinks	100.0	199.8	204.5	374.1	404.4	523.1	319.0	21.33
31.4.0	Cigarettes	100.0	120.3	130.5	236.1	175.2	217.6	159.8	8.12
31.4.0	Tobacco Curing	100.0	83.0	78.7	237.6	329.0	681.8	469.8	29.41
32.1.1	Cotton Ginning	100.0	38.4	117.8	500.4	278.6	291.7	55.1	- 9.46
32.1.1	Wool Washing	100.0	90.9	48.5	18.2	18.2	3.0	3.0	-44.26
32.1.1	Medicated Cotton	100.0	105.4	97.1	118.3	146.5	176.3	183.8	10.68
32.1.1	Jute	100.0	177.7	341.6	302.3	547.4	473.4	590.2	34.43
32.1.1	Cotton Textiles	100.0	143.3	191.1	210.5	223.7	229.3	263.6	17.53
32.1.1	Wool Textiles	100.0	105.4	1 .3	119.1	151.4	148.2	176.6	9.94

continue ..

Table 5 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Silk Textiles	100.0	194.2	324.7	315.2	352.2	356.8	383.5	25.11
32.1.3	Hosiery	100.0	136.7	151.7	158.7	219.6	193.4	277.3	18.53
32.1.3	Knitting	100.0	55.3	64.3	86.4	114.6	160.1	197.4	12.00
32.1.4	Carpets	100.0	2.2	20.7	113.0	81.5	110.9	103.3	0.54
32.1.5	Shoe Laces	100.0	101.9	123.1	300.0	150.0	80.8	210.6	13.22
32.1.9	Cotton Waste	100.0	58.3	125.0	125.0	83.3	133.3	233.3	15.16
32.2.0	Shirt Making	100.0	124.0	129.5	79.2	146.2	154.6	170.8	9.33
32.2.0	Tailoring	100.0	131.3	250.4	301.3	321.5	518.0	107.3	1.18
32.3.1	Tanning	100.0	101.7	174.2	317.5	390.5	321.9	1073.0	48.51
32.3.2	Leather Salting	100.0	45.1	113.7	145.1	58.8	5.9	41.2	-13.74
32.3.3	Other Leather Products	100.0	150.0	150.0	150.0	100.0	200.0	183.3	10.63
32.4.0	Footwear	100.0	82.4	79.7	91.9	118.0	137.0	158.9	8.02
33.1.1	Wood	100.0	52.2	78.3	69.6	173.9	17.4	217.4	13.82
33.2.0	Carpentry	100.0	111.9	118.9	113.9	174.4	173.2	235.7	15.36
31.1.1	Papers and products	100.0	64.3	32.6	401.1	488.3	385.1	609.8	35.16
31.2.0	Printing	100.0	188.6	125.8	98.4	110.0	137.0	297.3	19.91
35.1.1	Sulfur Refining	100.0	100.0	522.5	911.5	260.7	314.8	382.0	87.76
35.1.2	Fertilizers	100.0	100.0	23.6	176.2	176.6	175.7	161.7	8.34
35.1.3	Plastic Products	100.0	103.9	134.8	173.0	310.6	454.4	653.0	36.71
35.1.3	Crude Plastic	100.0	100.0	100.0	100.0	104.5	216.2	136.0	5.26
35.2.1	Paints	100.0	170.3	200.0	178.0	237.3	443.2	685.6	37.83

continue...

Table 5 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.2	Drug Packing	100.0	326.6	743.2	1 318.9	1 710.1	2 713.0	3 276.3	78.88
35.2.3	Soaps	100.0	163.3	88.1	63.2	69.6	62.0	50.1	-10.88
35.2.3	Cosmetics	100.0	84.2	106.3	121.1	178.9	117.9	206.3	12.83
35.2.5	Matches	100.0	109.2	169.9	168.5	104.2	132.0	148.5	6.81
35.2.9	Synthetic Silk	100.0	217.7	143.9	174.0	97.8	125.7	114.4	2.27
35.2.9	Other Chemicals	100.0	265.3	418.4	400.0	373.5	410.2	712.2	38.71
35.3.0	Petroleum Products	100.0	99.3	104.4	112.9	170.6	225.1	325.6	21.74
35.5.1	Rubber Products	100.0	98.3	164.3	113.0	315.7	260.0	249.6	16.47
36.1.0	Pottery	100.0	81.6	86.8	13.2	94.7	105.3	110.5	1.68
36.2.0	Glass and Products	100.0	349.1	1 103.6	618.2	1 496.4	1 781.8	858.2	43.09
36.5.1	Bricks	100.0	111.1	111.5	116.4	133.6	173.0	160.0	10.29
36.5.1	Jans	100.0	70.4	76.1	69.2	81.1	95.6	105.0	0.82
36.5.2	Cement	100.0	101.2	91.8	105.3	93.7	106.3	110.0	1.50
36.9.2	Tiles and Mosaic	100.0	100.6	107.0	101.2	115.5	155.3	169.6	9.20
36.9.2	Concrete Products	100.0	127.6	146.3	177.3	289.4	297.8	320.8	21.44
36.9.9	Damp Proofing Material	100.0	83.7	110.2	146.9	89.8	57.1	89.8	- 1.78
36.9.9	Asbestos	100.0	106.6	127.3	108.3	143.4	192.6	346.9	23.04
36.9.9	Stones	100.0	118.2	37.8	92.3	53.1	71.3	143.4	6.19
37.1.0	Pipes	100.0	100.0	100.0	100.0	312.5	1 560.0	1 497.5	57.00
37.2.0	Foundry	100.0	96.5	74.1	94.1	192.9	256.5	318.8	21.32

continues ..

Table 5 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
39.1.1	Aluminium Utensils	100.0	50.0	101.7	86.2	155.2	179.3	159.2	8.06
38.1.2	Metal Furniture	100.0	158.4	145.6	175.6	107.2	56.6	123.6	3.59
38.1.3	Smithy	100.0	64.2	113.9	112.1	171.3	259.0	297.4	19.92
38.1.9	Nails & Razor Blades	100.0	110.4	149.6	119.1	314.8	260.0	263.5	17.52
39.2.1-4	Non-electrical Machinery	100.0	100.0	105.8	54.0	99.8	35.0	158.9	8.02
38.3.3	Air Coolers & Heaters	100.0	72.5	124.4	151.3	206.7	329.1	284.4	19.03
38.3.2	Radios & Televisions	100.0	1400.0	6918.2	13454.5	20963.6	33290.9	33236.4	163.19
33.3.9	Batteries	100.0	308.3	634.8	638.6	789.4	825.8	2079.5	65.83
38.3.9	Other Electrical Equipment	100.0	33.3	201.5	205.7	237.9	356.4	529.6	32.02
38.4.3	Radiators	100.0	103.1	121.5	121.5	163.1	266.2	264.6	17.61
33.4.3	Car Assembling	100.0	100.0	100.0	100.0	31.9	101.4	253.2	16.75
38.4.4	Bicycles	100.0	105.6	121.1	191.7	243.7	363.4	742.3	39.67
39.0.9	Miscellaneous	100.0	167.5	137.5	152.5	170.0	95.0	195.0	11.77

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 5 - (b)

Index of Gross Value added in manufacturing. Average annual rate of growth, 1970 - 1976.
(Major Groups) (Geometric mean) (current factor costs)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	83.7	100.8	113.5	129.9	128.8	113.99	2.19
31.3	Beverages	100.0	163.7	178.9	294.4	306.3	392.7	322.7	21.56
31.4	Cigarettes	100.0	119.8	129.7	236.1	177.0	225.5	100.3	8.85
32.1	Textiles	100.0	142.0	196.5	213.1	229.0	235.1	266.7	17.76
32.2	Wearing Apparel	100.0	115.9	188.5	216.9	242.7	354.0	156.1	7.70
32.3	Leather and products	100.0	100.1	172.8	313.6	385.9	317.6	1060.3	48.22
32.4	Footwear	100.0	82.4	79.7	91.9	118.0	137.0	150.9	18.09
33.1	Wood except furniture	100.0	52.2	78.3	69.6	173.9	17.4	217.4	13.82
33.2	Furniture & fixtures	100.0	111.9	118.9	113.9	174.4	173.2	235.7	15.36
34.1	Papers and products	100.0	64.3	32.6	401.1	408.3	385.1	609.8	35.16
34.2	Printing & publishing	100.0	188.6	125.8	98.4	110.0	137.0	297.3	19.91
35.1	Industrial Chemicals	100.0	100.0	42.7	202.0	270.4	264.2	422.7	27.16
35.2	Chemical products	100.0	182.1	124.9	133.0	117.0	125.4	138.4	5.56
35.3	Petroleum products	100.0	99.2	104.4	112.9	170.6	223.1	323.6	21.74
35.5	Rubber products	100.0	98.3	164.3	113.0	315.7	260.0	249.6	16.47
35.6	Plastic products	100.0	103.6	132.1	168.1	298.2	441.7	627.6	35.81
35.1	Pottery & earthenware	100.0	81.6	86.8	13.2	94.7	105.3	110.5	1.68
36.2	Glass and products	100.0	349.1	103.6	618.2	1496.4	1781.2	858.2	43.09
36.9	Non-metallic products	100.0	102.8	95.3	106.9	100.0	116.0	120.2	3.11

continue ..

Table 5 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
37.1	Basic metal products	100.0	96.9	77.4	94.9	219.1	657.9	695.9	30.17
38.1	Fabricated metal products	100.0	96.4	124.3	138.5	163.1	201.1	243.4	15.98
38.2	Non-electrical machinery	100.0	100.0	105.8	54.0	99.8	35.0	158.9	8.02
38.3	Electrical machinery and supplies	100.0	80.5	244.9	306.1	459.2	674.6	838.9	42.54
38.4	Transport equipment	100.0	100.0	100.0	100.0	32.0	101.6	253.4	16.76
39.0	Manufacturing not elsewhere classified	100.0	167.5	137.5	152.5	170.0	95.0	195.0	11.77

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 5 - (o)

Index of Gross Value added in manufacturing. Average annual rate of growth, 1970 - 1976.
(Industrial Divisions) (Geometric mean) (current factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of growth
31.	Food, Beverages and Tobacco	100.0	94.7	111.1	150.7	150.1	164.9	137.0	5.39
32.	Textiles, Wearing Apparel and Leather	100.0	132.0	181.6	199.5	217.6	229.9	263.3	17.91
33.	Wood and products, including furniture	100.0	111.7	118.7	113.7	174.4	172.7	235.6	15.35
34.	Paper, printing and publishing	100.0	146.0	84.4	247.9	287.0	247.5	420.7	27.06
35.	Chemicals, Petroleum, Rubber and plastic products	100.0	101.5	104.8	113.6	170.3	220.3	323.7	21.61
36.	Non-metallic products	100.0	102.8	95.8	107.1	100.6	110.6	120.4	3.14
37.	Basic metal industries	100.0	96.9	77.4	94.9	212.1	657.9	695.9	38.17
38.	Fabricated metal products, machinery and equipment	100.0	99.4	107.1	99.0	77.0	119.1	259.3	17.21
39.	Other manufacturing industries	100.0	167.5	137.5	152.5	170.0	95.0	195.0	11.77

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 5 - (d)

Laspeyres, Paasche and the Geometric mean indices of Gross Value added in manufacturing sector, and for main commodity groupings. Average annual rate of growth, 1970 - 1976. (current factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Manufacturing sector</u>								
Laspeyres	100.0	101.6	108.8	122.7	148.0	180.3	234.0	15.22
Paasche	100.0	102.4	112.8	132.4	163.4	201.2	279.8	18.71
Geometric mean	100.0	102.0	110.8	127.5	155.5	190.5	255.9	16.95
<u>Consumer goods</u>								
Laspeyres	100.0	104.0	120.1	147.7	158.0	171.9	150.2	7.02
Paasche	100.0	104.9	130.8	175.4	176.5	196.5	196.8	11.94
Geometric mean	100.0	104.5	125.4	161.0	167.0	183.8	171.9	9.45
<u>Intermediate goods</u>								
Laspeyres	100.0	100.3	104.9	114.7	171.3	221.1	325.7	21.75
Paasche	100.0	100.7	105.2	114.6	171.4	221.4	327.6	21.87
Geometric mean	100.0	100.4	105.1	114.6	171.3	221.2	326.7	21.81
<u>Capital goods</u>								
Laspeyres	100.0	101.0	99.0	99.60	81.9	106.4	171.4	9.40
Paasche	100.0	101.3	99.9	102.6	89.2	110.8	178.2	10.11
Geometric mean	100.0	101.1	99.4	101.1	85.1	108.6	174.7	9.74

continue..

Table 5 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Non-durable goods</u>								
Laspeyres	100.0	101.0	111.3	128.7	165.5	199.8	250.2	16.51
Pasche	100.0	102.6	115.1	136.9	171.6	211.8	292.5	19.59
Geometric mean	100.0	102.2	113.2	132.7	168.5	205.7	270.5	18.04
<u>Durable goods</u>								
Laspeyres	100.0	101.2	99.4	100.0	82.5	107.2	172.9	9.55
Pasche	100.0	101.7	102.6	107.4	100.4	129.7	204.0	12.61
Geometric mean	100.0	101.4	101.0	103.6	91.0	117.9	187.8	11.07

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 6 -(a)

Index of gross value added in manufacturing industries. Average annual rate of growth, 1970 - 1976.
(constant factor costs) (Industries)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	114.0	130.1	147.8	157.1	140.2	803.2	41.51
31.1.3	Canning	100.0	291.9	377.9	450.7	252.5	521.8	588.7	34.37
31.1.4	Dates	100.0	175.4	214.3	216.4	296.8	165.2	286.0	19.14
31.1.5	Vegetable oil	100.0	54.5	90.7	67.5	112.6	112.1	42.1	-13.43
31.1.6	Grain Milling	100.0	117.2	75.2	77.9	88.9	85.0	82.8	- 3.09
31.1.7	Bakery	100.0	96.1	127.9	111.7	82.1	112.8	115.6	2.44
31.1.7	Macaroni	100.0	14.0	22.8	18.4	29.8	19.3	46.5	-11.98
31.1.8	Sugar	100.0	78.5	194.7	329.1	291.1	270.2	369.9	24.36
31.1.9	Confectionary	100.0	114.4	81.8	184.2	112.2	70.6	144.5	6.33
31.2.2	Animal Products	100.0	69.0	107.1	309.5	159.5	128.6	223.8	14.37
31.3.1	Brewing	100.0	98.1	172.1	237.5	259.3	302.9	454.9	28.72
31.3.4	Soft Drinks	100.0	186.9	178.2	305.3	308.1	364.7	203.8	12.60
31.4.0	Cigarettes	100.0	123.5	137.8	256.4	195.4	177.1	94.9	- 0.87
31.4.0	Tobacco Curing	100.0	79.1	71.5	205.5	271.3	516.4	324.4	21.67
32.1.1	Cotton Ginning	100.0	37.2	109.8	451.1	242.5	245.5	44.7	-12.56
32.1.1	Wool Washing	100.0	82.8	37.9	13.8	10.3	3.4	3.4	-43.08
32.1.1	Medicated Cotton	100.0	85.1	63.4	62.4	62.4	74.7	77.3	- 4.20
32.1.1	Yute	100.0	165.4	295.6	243.0	409.0	333.6	387.9	25.35
32.1.1	Cotton Textiles	100.0	132.9	164.5	168.2	165.8	159.0	171.0	9.35

continue..

Table 6 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Wool Textiles	100.0	94.4	90.9	85.5	97.4	92.4	105.3	0.86
32.1.1	Silk Textiles	100.0	176.6	267.0	233.3	170.7	217.8	212.8	13.41
32.1.3	Hosiery	100.0	129.4	136.1	134.9	177.7	149.4	205.2	12.73
32.1.3	Knitting	100.0	51.6	56.3	70.6	87.6	112.4	122.0	3.48
32.1.4	Carpets	100.0	2.2	19.1	101.1	68.5	80.9	65.2	- 6.88
32.1.5	Shoe Laces	100.0	94.8	106.2	240.2	111.3	56.7	137.1	5.40
32.1.9	Cotton Waste	100.0	54.5	109.1	100.0	63.6	90.9	154.5	7.52
32.2.0	Shirt Making	100.0	88.5	65.9	28.7	37.9	36.8	37.2	-15.19
32.2.0	Tailoring	100.0	110.5	177.2	179.3	160.8	225.9	40.2	-14.09
32.3.1	Tanning	100.0	93.1	146.0	243.6	274.2	234.6	781.9	40.88
32.3.2	Leather Salting	100.0	40.4	93.6	110.6	40.4	4.3	29.8	-18.27
32.3.3	Other Leather Products	100.0	140.0	140.0	120.0	80.0	160.0	140.0	5.77
32.4.0	Footwear	100.0	74.7	65.5	68.5	79.8	90.3	102.2	- 0.36
33.1.1	Wood	100.0	47.6	76.2	66.7	109.5	9.5	90.5	- 1.65
33.2.0	Carpentry	100.0	102.4	116.2	106.6	108.5	98.7	96.8	- 0.54
34.1.1	Papers & Products	100.0	65.9	34.4	434.4	543.4	295.4	280.1	18.73
34.2.0	Printing	100.0	193.8	132.8	106.7	122.5	105.1	136.6	5.33
35.1.1	Sulfur Refining	100.0	100.0	552.5	911.5	260.7	314.8	382.0	87.76
35.1.2	Fertilizers	100.0	100.0	23.6	176.2	176.6	175.7	161.7	8.34
35.1.3	Plastic Products	100.0	113.7	161.5	226.7	445.5	673.9	992.6	46.60
35.1.3	Crude Plastic	100.0	100.0	100.0	100.0	104.5	216.2	136.0	5.26
35.2.1	Paints	100.0	178.9	218.7	203.3	283.7	553.7	856.1	43.03
35.2.2	Drug Packing	100.0	281.5	553.4	847.3	948.6	791.1	895.9	44.11

continue..

Table 6 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	171.2	96.8	72.8	84.0	81.6	71.8	- 5.37
35.2.3	Cosmetics	100.0	71.6	76.5	74.1	92.6	70.4	117.7	2.69
35.2.5	Matches	100.0	109.2	169.9	168.5	125.1	158.5	178.3	10.12
35.2.9	Synthetic Silk	100.0	200.5	122.0	135.8	70.2	83.2	68.8	- 6.04
35.2.9	Other Chemicals	100.0	252.1	379.2	341.7	300.0	308.3	468.8	29.37
35.3.0	Petroleum Products	100.0	115.1	140.2	175.6	307.5	387.2	547.0	32.74
35.5.1	Rubber Products	100.0	85.0	126.0	74.0	181.0	133.0	115.0	2.36
36.1.0	Pottery	100.0	86.8	92.1	92.1	97.4	102.6	107.9	1.27
36.2.0	Glass & Products	100.0	353.6	1 133.9	641.1	1 562.5	1 601.8	557.1	33.14
36.5.1	Bricks	100.0	104.1	100.1	98.5	106.9	104.3	81.7	- 3.31
36.5.1	Juss	100.0	63.4	61.3	49.3	52.1	43.0	33.1	-16.83
36.5.2	Cement	100.0	104.0	97.0	114.4	104.6	118.0	121.5	3.30
36.5.2	Tiles & Mosaic	100.0	90.6	86.7	73.8	75.9	78.9	66.2	- 6.64
36.9.2	Concrete Products	100.0	109.5	107.3	111.3	155.3	131.3	118.5	2.87
36.9.9	Damp Proofing Material	100.0	83.7	110.2	146.9	89.8	57.1	89.8	- 1.78
36.9.9	Asbestos	100.0	122.5	166.0	162.5	247.5	265.8	38.7	-14.63
36.9.9	Stones	100.0	117.7	37.6	96.5	46.8	29.1	41.8	-13.53
37.1.0	Pipes	100.0	103.3	106.7	90.0	176.7	860.0	846.7	42.76
37.2.0	Foundry	100.0	100.0	79.4	85.7	111.1	142.9	182.5	10.55
38.1.1	Aluminum Utensils	100.0	45.2	82.8	63.1	102.5	93.6	77.1	- 4.24
38.1.2	Metal Furniture	100.0	162.6	156.5	158.3	61.2	31.3	70.1	- 5.75
38.1.3	Smithy	100.0	65.9	122.2	101.1	97.8	143.6	169.1	9.15
38.1.9	Nails & Razor Blades	100.0	99.0	121.2	87.5	207.7	134.6	126.9	4.05

continue..

Table 6 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.2.1-4	Non-Electrical Machinery	100.0	100.0	105.8	54.0	99.8	35.0	158.9	8.02
38.3.3	Air Coolers & Heaters	100.0	66.6	104.9	117.1	146.9	224.1	185.1	10.81
38.3.2	Radios & Televisions	100.0	163.6	545.5	736.4	472.7	300.0	363.6	167.08
38.3.9	Batteries	100.0	302.3	634.8	638.6	789.4	825.8	079.5	65.83
38.5.9	Other Electrical Equipment	100.0	28.8	150.3	132.6	132.4	230.1	381.4	25.00
38.4.3	Radiators	100.0	91.5	96.6	88.1	105.1	181.4	181.4	10.43
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	31.9	101.4	253.2	16.75
38.4.4	Bicycles	100.0	104.3	118.6	177.1	234.3	301.4	530.0	32.04
39.0.9	Miscellaneous	100.0	152.8	111.1	113.9	113.9	61.1	119.4	3.00

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 6 - (b)
 Index of gross value added in manufacturing, and the average annual rate of growth, 1970-1976.
 (Geometric mean) (constant factor costs) (Major Industrial Groups)

Industrial Classification	Major Industrial Group	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1-2	Food manufacturing	100.0	84.6	100.2	107.4	127.5	120.9	124.6	3.74
31.2	Beverages	100.0	154.8	175.7	276.5	286.3	337.5	328.1	21.90
31.4	Cigarettes	100.0	123.0	137.0	255.6	196.3	182.5	99.4	- 0.11
32.1	Textiles	100.0	130.8	166.7	167.7	158.9	158.4	167.1	8.93
32.2	Wearing Apparel	100.0	197.3	134.8	136.8	133.3	168.6	83.8	- 2.90
32.3	Leather and products	100.0	91.7	144.8	240.7	271.0	231.4	772.6	10.60
32.4	Footwear	100.0	74.7	65.5	68.5	79.8	90.3	102.2	10.36
33.1	Wood	100.0	47.6	76.2	66.7	109.5	9.5	90.5	- 1.65
33.2	Furniture and fixtures (except of metal)	100.0	102.4	116.2	106.6	108.5	90.7	96.8	- 0.54
34.1	Papers and products	100.0	65.9	34.4	434.4	543.4	295.4	200.1	18.73
34.2	Printing & publishing	100.0	193.8	132.8	106.7	122.5	105.1	136.6	5.34
35.1	Industrial chemicals	100.0	100.0	42.7	202.0	270.4	264.3	422.7	27.16
35.2	Chemical products	100.0	179.3	117.3	112.3	101.4	106.2	104.3	0.71
35.3	Petroleum products	100.0	115.1	140.2	175.8	307.5	287.2	547.0	23.74
35.5	Rubber products	100.0	85.0	126.0	74.0	181.0	133.0	115.0	2.36
35.6	Plastic products	100.0	112.7	157.1	218.9	426.6	651.5	954.0	15.63
36.1	Pottery and earthen ware	100.0	86.8	92.1	92.1	97.4	102.6	107.9	1.27

/...

Table 6 (b) (cont'd)

Industrial Classification	Major Industrial Group	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	353.6	1133.9	641.1	562.5	601.0	557.1	33.15
36.5	Non-metallic products	100.0	104.2	90.3	112.8	106.9	118.5	116.4	2.56
37.1	Basic metal products	100.0	100.5	82.9	86.3	125.6	365.3	396.5	25.81
38.1	Fabricated metal products	100.0	97.0	128.9	116.0	99.0	110.4	135.1	5.15
38.2	Non-electrical machinery	100.0	100.0	105.0	54.0	99.8	35.0	150.9	8.02
38.3	Electrical machinery and supplies	100.0	70.2	225.2	275.3	410.1	594.3	762.9	40.31
38.4	Transport equipment	100.0	100.0	100.0	100.0	32.0	101.5	253.3	16.75
39.0	Manufacturing not elsewhere classified	100.0	152.0	111.1	115.9	113.9	61.1	119.4	3.00

Source; based on the Annual Industrial Surveys. CSO (Iraq).

Table - 6 - (c)

Index of gross value added in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Industrial Divisions) (constant factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	95.6	111.9	149.6	151.2	147.0	133.7	4.97
32.	Textiles, Wearing Apparel and Leather	100.0	121.1	152.7	154.8	149.1	151.1	167.9	9.02
33.	Wood and products including furniture	100.0	102.2	116.1	106.5	108.5	98.4	96.8	-0.54
34.	Paper, printing and publishing	100.0	150.0	89.1	268.6	319.6	189.9	193.3	11.61
35.	Chemicals, Petroleum Rubber and Plastic products	100.0	116.5	139.6	174.7	304.8	383.8	541.8	32.53
36.	Non-metallic products	100.0	104.2	98.8	113.0	107.5	119.1	116.5	2.58
37.	Basic metal industries	100.0	100.5	82.9	86.3	125.6	365.3	396.5	25.81
38.	Fabricated metal products, machinery and equipment	100.0	99.4	106.2	97.4	74.0	114.4	255.9	16.96
39.	Other manufacturing industries	100.0	152.8	111.1	113.9	113.9	61.1	119.4	3.00

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 6 -(a)
Laspeyres, Paasche and Geometric mean indices for constant gross value added (factor costs) in
manufacturing sector, and for main commodity groupings. Average annual rate of growth, 1970-76.

	1970	1971	1972	1973	1974	1975	1976	Average annual rate of growth (1970-76)
<u>Manufacturing sector</u>								
Laspeyres	100.0	108.6	124.4	150.0	212.1	253.4	337.4	22.47
Paasche	100.0	109.1	128.8	163.0	249.5	306.9	431.4	27.39
Geometric mean	100.0	108.9	126.5	156.3	230.0	278.9	381.5	25.00
<u>Consumer goods</u>								
Laspeyres	100.0	102.4	115.4	140.1	147.3	143.7	127.4	4.12
Paasche	100.0	103.4	124.4	165.6	167.3	170.4	183.1	10.61
Geometric mean	100.0	102.9	119.8	152.3	157.0	156.5	152.7	7.31
<u>Intermediate goods</u>								
Laspeyres	100.0	115.4	140.0	175.9	306.0	384.7	543.5	32.60
Paasche	100.0	115.8	140.2	176.0	307.0	386.2	546.7	32.73
Geometric mean	100.0	115.6	140.1	175.9	306.5	385.5	545.1	32.66
<u>Capital goods</u>								
Laspeyres	100.0	101.8	100.1	101.9	83.6	104.0	163.4	8.53
Paasche	100.0	102.1	101.1	105.9	93.1	111.1	175.0	9.78
Geometric mean	100.0	102.0	100.6	103.9	88.2	107.5	169.1	9.15

continuo..

Table 6 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Average annual rate of growth (1970-76)
<u>Non-durable goods</u>								
Laspeyres	100.0	110.3	130.2	161.7	243.6	290.0	379.9	24.91
Pasche	100.0	110.6	133.7	171.5	266.6	330.6	465.8	29.23
Geometric mean	100.0	110.4	132.0	166.6	254.8	309.6	420.7	27.06
<u>Durable goods</u>								
Laspeyres	100.0	101.9	100.5	102.3	84.3	104.9	165.0	8.70
Pasche	100.0	102.5	103.9	111.1	105.5	131.5	202.8	12.51
Geometric mean	100.0	102.2	102.2	106.6	94.3	117.5	182.9	10.59

Source: based on the Annual Industrial Surveys. CSO (Iraq), and our indices for industries.

Table - 7 - (a)

Index of employment in manufacturing industries. Average annual rate of growth, 1970-1976.
(Industries)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	120.8	146.9	158.1	190.9	210.6	225.1	14.48
31.1.3	Canning	100.0	102.3	183.7	236.8	315.5	335.5	327.9	21.89
31.1.4	Dates	100.0	92.6	144.0	166.4	102.9	112.8	54.4	- 9.65
31.1.5	Vegetable Oil	100.0	122.1	119.5	139.1	148.9	163.5	166.6	8.88
31.1.6	Grain Milling	100.0	108.6	114.3	111.0	106.3	116.6	104.4	0.72
31.1.7	Bakery	100.0	97.6	98.7	92.6	88.7	95.1	97.6	- 0.40
31.1.7	Macaroni	100.0	84.1	98.4	92.1	107.9	100.0	133.3	4.91
31.1.8	Sugar	100.0	166.3	151.2	161.6	181.9	183.3	212.0	13.34
31.1.9	Confectionary	100.0	108.8	111.8	109.3	117.1	128.1	144.4	6.31
31.2.2	Animal Products	100.0	92.5	100.0	105.0	135.0	120.0	890.0	43.96
31.3.1	Brewing	100.0	99.0	118.8	128.7	155.0	207.2	217.6	13.83
31.3.4	Soft Drinks	100.0	115.0	116.9	104.6	134.6	124.9	128.8	4.31
31.4.0	Cigarettes	100.0	83.2	67.6	72.8	72.2	115.0	65.7	- 6.76
31.4.0	Tobacco Curing	100.0	167.4	264.7	310.4	300.0	140.1	547.4	32.75
32.1.1	Cotton Ginning	100.0	80.8	303.6	249.1	132.0	144.1	115.7	2.46
32.1.1	Wool Washing	100.0	66.5	92.7	15.2	6.1	1.2	3.7	-42.27
32.1.1	Medicated Cotton	100.0	96.2	90.7	82.7	91.6	97.0	89.5	- 1.83
32.1.1	Jute	100.0	135.7	209.3	277.9	297.4	303.9	291.8	19.54
32.1.1	Cotton Textiles	100.0	124.0	146.7	157.7	158.6	158.6	150.1	7.00

continues..

Table 7 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Wool Textiles	100.0	91.4	99.0	116.9	122.7	112.3	114.5	2.28
32.1.1	Silk Textiles	100.0	122.5	151.8	151.6	159.7	167.3	171.1	9.36
32.1.2	Hosiery	100.0	103.2	106.9	118.6	111.6	127.9	150.3	7.03
32.1.2	Knitting	100.0	51.3	60.8	87.5	92.4	114.4	143.2	6.17
32.1.4	Carpets	100.0	203.0	527.2	754.7	587.5	635.5	586.4	34.29
32.1.5	Shoe Laces	100.0	92.6	132.5	95.5	124.7	127.6	143.6	6.22
32.1.9	Cotton Waste	100.0	117.1	92.7	117.1	95.1	104.9	97.6	- 0.40
32.2.0	Shirt Making	100.0	110.7	124.7	116.6	110.8	111.0	112.3	1.95
32.2.0	Tailoring	100.0	186.3	199.0	215.2	219.7	229.4	233.2	15.16
32.3.1	Tanning	100.0	103.3	125.4	124.9	148.5	189.2	444.0	28.20
32.3.2	Leather Salting	100.0	228.6	92.9	73.8	61.9	26.2	50.0	-10.94
32.3.3	Other Leather Products	100.0	109.5	123.8	95.2	114.3	114.3	95.2	- 0.82
32.4.0	Footwear	100.0	99.2	69.6	95.9	110.3	112.9	115.5	-12.43
33.1.1	Wood	100.0	107.2	104.8	103.6	104.8	134.9	169.9	9.23
33.2.0	Carpentry	100.0	110.7	107.7	116.5	122.1	109.6	107.0	1.13
34.1.1	Papers & Products	100.0	151.2	240.1	305.5	340.7	373.0	375.8	24.69
34.2.0	Printing	100.0	116.4	114.6	114.0	129.5	174.5	181.2	10.41
35.1.1	Sulfur refining	100.0	100.0	94.3	94.8	95.7	113.3	117.0	2.65
35.1.2	Fertilizers	100.0	100.0	287.7	357.3	392.3	450.0	453.2	28.64
35.1.3	Plastic Products	100.0	103.3	165.5	162.2	173.3	251.3	277.6	18.55
35.1.3	Crude Plastic	100.0	100.0	100.0	97.8	83.1	122.5	79.8	- 3.69
35.2.1	Paints	100.0	114.1	122.4	128.2	142.3	223.1	240.4	15.74
35.2.2	Drug Packing	100.0	117.8	119.0	122.1	118.6	127.1	162.2	8.39

continue..

Table 7 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	124.8	126.2	143.1	150.6	159.8	160.9	8.25
35.2.3	Cosmetics	100.0	89.2	95.1	102.0	164.7	130.4	132.4	4.79
35.2.5	Matches	100.0	100.6	93.3	105.2	125.2	120.3	107.5	1.21
35.2.9	Synthetic Silk	100.0	130.1	155.1	158.7	154.6	157.3	158.1	7.93
35.2.9	Other Chemicals	100.0	140.2	146.3	157.3	178.0	189.0	228.0	14.72
35.3.0	Petroleum Products	100.0	106.5	114.3	113.3	154.3	176.4	195.9	11.86
35.5.1	Rubber Products	100.0	105.6	198.1	215.4	232.7	238.5	244.2	16.04
35.1.0	Pottary	100.0	72.5	147.5	156.3	181.3	161.2	82.5	- 3.15
36.2.0	Glass & Products	100.0	587.7	1070.0	123.1	120.0	121.5	279.2	52.93
36.9.1	Bricks	100.0	108.8	129.4	97.1	96.2	115.7	129.8	4.44
36.9.1	Juss	100.0	89.6	97.4	72.0	69.0	69.4	78.4	- 3.97
35.9.2	Cement	100.0	104.0	112.5	117.1	155.9	157.5	176.8	9.96
36.9.2	Tiles & Mosaic	100.0	99.1	94.5	92.2	74.6	76.7	78.0	- 4.06
36.9.2	Concrete Products	100.0	123.4	137.2	124.5	154.5	164.7	181.6	10.45
36.9.9	Damp Proofing Material	100.0	98.6	86.3	84.9	80.8	76.7	79.5	- 3.75
36.9.9	Asbestos	100.0	115.6	126.6	160.9	218.7	239.3	261.2	17.35
36.9.9	Stones	100.0	121.1	43.5	43.0	46.4	65.0	95.4	- 0.78
37.1.0	Pipes	100.0	100.0	100.0	100.0	203.9	280.5	309.1	20.69
37.2.0	Foundry	100.0	73.9	94.6	109.0	124.8	128.8	140.5	5.83
38.1.1	Aluminium Utensils	100.0	98.3	108.5	95.7	82.7	109.7	103.4	0.56
38.1.2	Metal Furniture	100.0	104.1	99.2	92.3	55.1	57.8	58.6	- 8.52
38.1.3	Smithy	100.0	100.5	100.0	106.3	127.9	165.4	142.5	6.08
38.1.9	Nails & Razor Blades	100.0	127.7	137.1	113.2	114.5	114.5	121.4	3.28

continuo...

Table 7 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.2.1-4	Non-Electrical Machinery	100.0	100.0	134.0	143.6	151.0	148.0	149.8	6.97
38.3.3	Air Coolers and Heaters	100.0	54.0	73.1	63.7	131.7	141.9	152.0	7.23
38.3.2	Radios & Televisions	100.0	839.6	1 452.8	1 417.0	2 292.5	3 371.7	3 224.5	78.41
38.3.9	Batteries	100.0	156.8	198.3	215.3	163.9	246.7	369.3	24.33
38.3.9	Other Electrical Equipment	100.0	133.7	145.2	194.7	242.3	288.5	253.4	16.76
38.4.3	Radiators	100.0	104.4	104.4	100.0	110.0	167.8	162.2	8.39
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	146.1	201.4	236.0	15.38
38.4.4	Bicycles	100.0	186.2	182.8	187.9	203.4	250.0	329.3	21.97
39.0.9	Miscellaneous	100.0	98.9	82.0	89.9	89.9	100.0	109.0	1.45

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 7 - (b)

Index of Employment in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Major Industrial Groups)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	113.7	132.0	147.8	136.3	151.6	143.6	6.22
31.3	Beverages	100.0	112.6	117.3	108.8	138.3	139.4	152.4	7.28
31.4	Cigarettes	100.0	84.2	69.8	75.9	76.1	115.7	80.3	- 3.58
32.1	Textiles	100.0	118.7	141.8	153.0	155.8	155.2	149.8	6.97
32.2	Wearing Apparel	100.0	142.4	161.3	179.3	175.9	191.5	182.5	10.59
32.3	Leather and products	100.0	103.9	125.3	124.7	148.1	188.6	442.5	28.13
32.4	Footwear	100.0	99.2	69.6	95.9	110.3	112.9	115.5	2.43
33.1	Wood	100.0	107.2	104.8	103.6	104.8	34.9	169.9	9.23
33.2	Furniture and fixtures (except of metal)	100.0	110.7	107.7	116.5	122.1	109.6	107.0	1.14
34.1	Papers and products	100.0	151.2	240.1	305.5	340.7	373.0	375.8	24.69
34.2	Printing and publishing	100.0	116.4	114.6	114.0	129.5	174.5	181.2	10.42
35.1	Industrial chemicals	100.0	100.0	178.4	259.7	242.4	278.8	254.7	16.86
35.2	Chemical products	100.0	125.3	135.6	142.8	141.8	149.6	158.1	7.94
35.3	Petroleum products	100.0	106.5	114.3	113.3	154.3	176.4	195.9	11.86
35.5	Rubber products	100.0	105.8	198.1	215.4	232.7	238.5	244.2	16.05
35.6	Plastic products	100.0	103.1	163.0	160.1	175.6	247.3	272.4	19.18
36.1	Pottery & earthen ware	100.0	72.5	147.5	156.3	181.3	161.2	82.5	- 3.16

continue..

Table 7 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	587.7	1 070.0	1 123.1	1 120.0	1 121.5	1 279.2	52.95
36.9	Non-metallic products	100.0	107.1	123.2	104.8	117.8	151.7	148.5	6.81
37.1	Basic metal products	100.0	77.6	95.5	107.7	138.6	175.3	187.4	11.04
38.1	Fabricated metal products	100.0	103.0	101.5	99.1	96.8	127.7	111.1	1.77
38.2	Non-electrical machinery	100.0	100.0	134.0	143.6	151.0	148.0	149.8	6.97
38.3	Electrical machinery and supplies	100.0	104.6	145.4	182.6	251.7	292.8	303.8	20.34
38.4	Transport equipment	100.0	100.2	100.2	100.3	146.4	201.5	236.1	15.39
39.0	Manufacturing not elsewhere classified	100.0	98.9	82.0	89.9	89.9	100.0	109.0	1.45

Source: based on the Annual Industrial Surveys. CSO (Iraq).

Table - 7 - (c)

Index of Employment in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Industrial Divisions)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	105.4	113.5	119.6	119.9	139.5	130.7	4.57
32.	Textiles, Wearing Apparel and Leather	100.0	118.0	137.3	149.7	153.1	154.0	151.4	7.16
33.	Wood and products, including furniture	100.0	110.7	107.7	116.4	122.0	109.6	107.3	1.19
34.	Paper, printing and publishing	100.0	122.1	133.4	186.7	211.6	242.3	240.7	15.77
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	107.5	115.7	115.3	154.4	176.5	195.6	11.83
36.	Non-metallic products	100.0	107.2	124.0	105.3	118.8	132.7	149.0	6.87
37.	Basic metal industries	100.0	77.6	95.5	107.7	138.6	175.3	187.4	11.04
38.	Fabricated metal products, machinery and equipment	100.0	100.5	129.1	141.0	166.0	202.3	194.6	11.73
39.	Other manufacturing industries	100.0	98.9	102.0	89.9	89.9	100.0	109.0	1.45

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 7 - (a)
Laspeyres, Paasche and the Geometric mean indices of employment in manufacturing sector,
and for main commodity groupings. Average annual rate of growth, 1970 - 1976.

	1970	1971	1972	1973	1974	1975	1976	Average annual rate of growth
<u>Manufacturing sector</u>								
Laspeyres	100.0	100.9	120.8	120.9	135.7	150.1	153.8	7.44
Paasche	100.0	108.8	123.9	123.4	142.9	162.4	180.0	10.29
Geometric mean	100.0	108.8	122.4	122.2	139.3	156.2	166.4	8.86
<u>Consumer goods</u>								
Laspeyres	100.0	112.1	121.5	132.7	134.0	145.2	131.5	4.67
Paasche	100.0	111.1	127.7	134.0	138.3	153.7	155.3	7.61
Geometric mean	100.0	111.6	124.5	133.4	136.2	149.4	142.9	6.13
<u>Intermediate goods</u>								
Laspeyres	100.0	107.1	116.6	116.2	155.7	177.5	197.7	12.03
Paasche	100.0	107.6	116.7	115.7	155.6	177.2	198.2	12.08
Geometric mean	100.0	107.3	116.3	116.5	155.6	177.3	197.9	12.03
<u>Capital goods</u>								
Laspeyres	100.0	106.0	123.3	108.8	122.5	135.1	149.3	6.91
Paasche	100.0	106.2	124.6	108.6	124.4	139.3	158.3	7.96
Geometric mean	100.0	106.1	124.0	108.7	123.4	137.2	153.7	7.43

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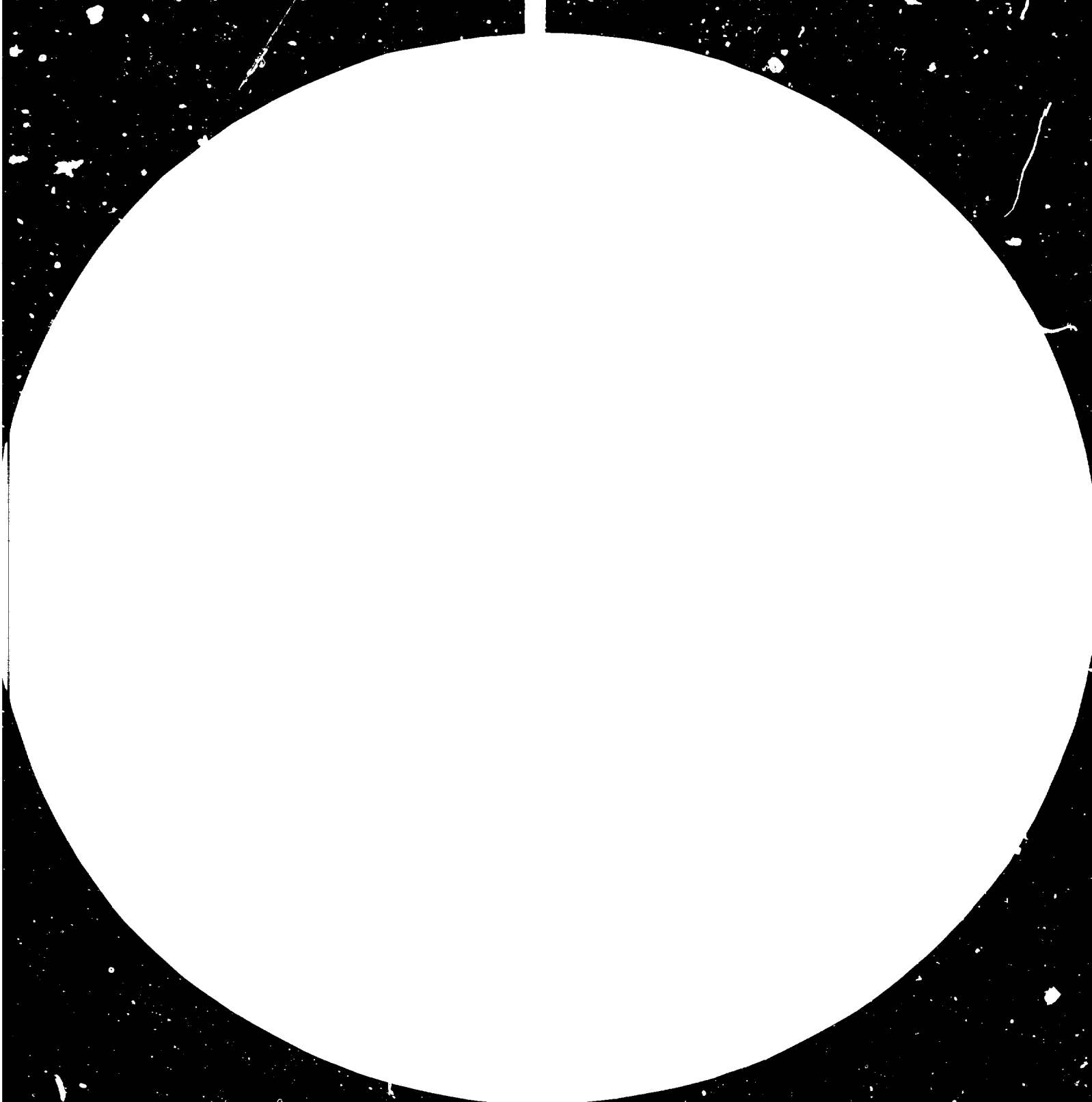
Table 7 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Average annual rate of growth
<u>Non-durables</u>								
Laspeyres	100.0	110.2	119.6	126.5	142.0	157.1	155.8	7.67
Paasche	100.0	109.7	123.1	126.9	146.1	165.7	161.5	10.45
Geometric mean	100.0	110.0	121.4	126.7	144.0	161.4	168.2	9.05
<u>Durables</u>								
Laspeyres	100.0	106.1	123.4	109.0	122.5	135.3	149.6	6.94
Paasche	100.0	106.5	126.2	111.0	129.0	147.2	171.1	9.36
Geometric mean	100.0	106.3	124.8	110.0	125.7	141.1	160.0	8.15

Source: based on the Annual Industrial Surveys. 1970 - 1976.

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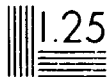


Table - 8 - (a)

Index of total wages in manufacturing industries. Average annual rate of growth, 1970 - 1976, . . .
(Current Prices) (Industries) (Establishments employing ten persons or more).

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	138.4	184.3	211.9	304.0	390.6	412.9	26.66
31.1.3	Canning	100.0	115.3	215.3	303.4	468.2	585.2	704.0	38.44
31.1.4	Dates	100.0	113.6	111.8	157.1	163.3	125.5	200.7	12.31
31.1.5	Vegetable Oil	100.0	118.7	145.2	156.6	213.4	250.1	322.9	21.57
31.1.6	Grain Milling	100.0	112.8	119.4	128.7	151.3	186.5	203.4	12.56
31.1.7	Bakery	100.0	132.1	115.1	113.2	125.0	167.9	206.6	12.85
31.1.7	Macaroni	100.0	90.9	136.4	136.4	200.0	200.0	281.8	18.85
31.1.8	Sugar	100.0	139.5	145.1	147.6	185.0	236.1	318.9	21.32
31.1.9	Confectionary	100.0	108.7	124.1	126.0	164.3	197.8	237.8	15.53
31.2.2	Animal Products	100.0	107.7	130.8	115.4	153.8	223.1	1561.5	58.10
31.3.1	Brewing	100.0	96.8	122.1	141.1	157.2	237.7	272.6	18.19
31.3.7	Soft Drinks	100.0	131.8	149.7	148.2	212.8	248.9	226.7	14.61
31.4.0	Cigarettes	100.0	89.7	85.8	102.3	113.2	147.4	115.6	2.44
31.4.0	Tobacco Curing	100.0	191.4	260.2	368.8	447.3	395.7	343.0	54.17
32.1.1	Cotton Ginning	100.0	84.4	102.5	154.9	126.2	146.7	148.4	6.80
32.1.1	Wool Washing	100.0	73.9	43.5	13.0	4.3	4.3	4.3	-40.81
32.1.1	Medicated Cotton	100.0	100.0	99.1	92.5	117.9	149.1	165.1	8.71
32.1.1	Jute	100.0	148.1	201.7	287.5	456.3	475.3	494.9	30.54
32.1.1	Cotton Textiles	100.0	128.9	148.0	177.0	219.9	240.3	259.1	17.19

continue..

Table 8 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Wool Textiles	100.0	90.2	101.7	133.1	163.6	171.3	184.2	10.72
32.1.1	Silk Textiles	100.0	135.4	156.0	174.8	216.3	250.3	287.7	19.25
32.1.3	Hosiery	100.0	107.3	118.9	142.7	153.9	182.5	238.8	15.61
32.1.3	Knitting	100.0	62.6	82.0	130.6	143.2	184.7	261.7	17.39
32.1.4	Carpets	100.0	61.5	182.1	219.2	274.4	338.5	392.3	25.58
32.1.5	Shoe Laces	100.0	95.0	141.7	110.0	176.7	206.7	250.0	16.50
32.1.9	Cotton Waste	100.0	100.0	80.0	120.0	110.0	150.0	150.0	6.99
32.2.0	Shirt Making	100.0	117.1	129.2	133.5	147.7	149.8	155.9	7.68
32.2.0	Tailoring	100.0	147.2	202.4	231.1	289.3	303.6	309.6	20.72
32.3.1	Tanning	100.0	141.8	153.7	180.0	261.1	242.1	796.8	41.33
32.3.2	Leather Salting	100.0	170.0	60.0	60.0	40.0	20.0	50.0	-10.91
32.3.3	Other Leather Products	100.0	133.3	200.0	166.7	166.7	233.3	200.0	12.25
32.4.0	Footwear	100.0	112.1	103.6	118.9	146.9	156.6	166.8	8.90
33.1.1	Wood	100.0	114.3	119.0	133.3	157.1	204.8	333.3	22.22
33.2.0	Carpentry	100.0	108.3	100.6	111.3	148.7	139.2	176.0	9.88
34.1.1	Papers & Products	100.0	163.3	323.7	397.2	505.3	583.7	693.3	38.09
34.2.0	Printing	100.0	105.4	117.8	124.6	166.8	212.5	266.2	17.72
35.1.1	Sulfur Refining	100.0	100.0	98.8	131.7	155.4	175.1	210.0	13.16
35.1.2	Fertilizers	100.0	100.0	271.7	330.3	492.9	589.9	660.6	36.98
35.1.3	Plastic Products	100.0	122.2	191.9	220.7	265.2	407.4	538.5	32.39
35.1.3	Crude Plastic	100.0	100.0	100.0	108.5	123.4	159.6	117.0	2.65
35.2.1	Paints	100.0	135.3	155.9	182.4	261.6	432.4	460.3	28.97
35.2.2	Drug Packing	100.0	119.2	124.5	136.7	168.0	190.9	232.2	15.07

continue..

Table 8 (2) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	121.0	141.2	158.8	207.4	247.7	308.2	20.63
35.2.3	Cosmetics	100.0	103.2	135.5	148.4	303.2	274.2	225.8	14.54
35.2.5	Matches	100.0	112.0	109.9	114.7	190.6	246.6	212.6	13.39
35.2.9	Synthetic Silk	100.0	167.7	200.0	227.0	294.3	313.7	335.7	22.36
35.2.9	Other Chemicals	100.0	125.5	166.7	186.3	229.4	249.0	298.0	19.96
35.3.0	Petroleum Products	100.0	120.3	126.8	140.5	205.9	231.0	294.5	19.72
35.5.1	Rubber Products	100.0	119.5	243.9	278.5	358.5	375.6	417.1	26.87
36.1.0	Pottery	100.0	81.0	95.2	109.5	119.0	138.1	95.2	- 0.82
36.2.0	Glass & Products	100.0	533.3	1015.6	1771.1	1573.3	1668.9	2084.4	65.89
36.3.1	Bricks	100.0	108.9	115.0	119.1	132.6	182.6	265.0	17.64
36.3.1	Jugs	100.0	97.2	102.8	81.7	97.2	118.3	160.6	8.21
36.3.2	Cement	100.0	112.2	121.8	147.5	202.8	235.2	324.1	21.65
36.3.2	Tiles & Mosaic	100.0	105.5	106.6	105.8	106.6	128.8	145.2	6.41
36.3.2	Concrete Products	100.0	121.8	156.4	141.4	234.5	283.6	340.0	22.62
36.3.9	Damp Proofing Material	100.0	106.7	110.0	106.7	120.0	126.7	133.3	4.91
36.3.9	Asbestos	100.0	106.1	134.0	148.2	252.3	327.9	432.5	27.64
36.3.9	Stones	100.0	122.6	56.5	69.4	79.0	140.3	209.7	13.13
37.1.0	Pipes	100.0	100.0	100.0	100.0	246.7	370.0	593.3	34.55
37.2.0	Foundry	100.0	76.9	87.7	158.5	220.0	241.5	280.0	18.72
38.1.1	Aluminium Utensils	100.0	107.4	121.3	127.8	134.3	172.2	181.5	10.44
38.1.2	Metal Furniture	100.0	105.0	112.7	121.2	65.0	85.4	76.9	- 4.28
38.1.3	Saithy	100.0	156.7	122.7	123.4	177.3	229.4	264.5	17.60

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continue..

Table 8 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.1.9	Nails & Razor Blades	100.0	120.8	138.9	140.3	151.4	176.4	204.2	12.63
38.2.1-4	Non-Electrical Machinery	100.0	100.0	121.0	124.1	169.1	191.6	201.6	12.39
33.3.3	Air Coolers and Heaters	100.0	60.1	87.1	104.6	180.2	243.7	276.4	18.46
38.3.2	Radios & Televisions	100.0	1194.7	1547.4	2173.7	3431.6	4794.7	6636.8	101.21
38.3.5	Batteries	100.0	188.8	269.6	348.0	286.4	476.8	826.4	42.19
33.3.5	Other Electrical Equipment	100.0	134.5	133.7	183.3	267.6	370.5	366.8	24.18
33.4.3	Radiators	100.0	104.8	123.8	142.9	159.5	250.0	297.6	19.93
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	201.4	287.2	318.2	21.28
38.4.4	Bicycles	100.0	211.1	222.2	266.7	388.9	527.8	616.7	35.42
39.0.9	Miscellaneous	100.0	106.9	106.9	117.2	144.8	175.9	224.1	14.39

Source: based on the Annual Industrial Surveys, 1970 - 1976.

Table - 8 - (b)

Index of Total Wages in manufacturing. Average annual rate of growth, 1970 - 1976.
(current prices) (Major Industrial Groups)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	120.6	141.0	154.3	200.2	240.7	312.5	20.91
31.2	Beverages	100.0	122.2	140.5	146.0	195.1	245.3	246.6	16.24
31.4	Cigarettes	100.0	90.3	86.7	103.9	115.9	150.6	133.1	4.80
32.1	Textiles	100.0	123.1	142.3	170.9	212.5	233.3	253.3	16.75
32.2	Wearing Apparel	100.0	125.4	169.7	197.8	237.0	269.7	268.0	17.92
32.3	Leather and products	100.0	141.9	153.0	179.2	259.9	241.1	793.4	41.23
32.4	Footwear	100.0	112.1	103.6	118.9	146.9	156.6	166.0	10.90
33.1	Wood except furniture	100.0	114.3	119.0	133.3	157.1	204.0	333.3	22.22
33.2	Furniture and fixtures (except of metal)	100.0	108.3	100.6	111.3	148.7	139.2	176.0	9.88
34.1	Papers and products	100.0	163.3	323.7	397.2	505.3	503.7	693.3	30.09
34.2	Printing & publishing	100.0	105.4	117.0	124.6	166.0	212.5	266.2	17.73
35.1	Industrial chemicals	100.0	100.0	170.1	249.5	313.3	366.9	307.6	25.33
35.2	Chemical products	100.0	140.2	157.3	175.2	221.3	253.9	291.5	19.52
35.3	Petroleum products	100.0	120.3	126.8	140.5	205.9	231.0	294.5	19.72
35.5	Rubber products	100.0	119.5	243.9	278.0	358.5	375.6	417.1	26.87
35.6	Plastic products	100.0	120.6	106.2	214.6	258.5	394.9	520.2	31.63
36.1	Pottery & earthen ware	100.0	81.0	95.2	109.5	119.0	138.1	95.2	- 0.02

continue..

Table 8 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	533.3	1015.6	1171.1	1573.3	1660.9	2084.4	65.09
36.9	Non-metallic products	100.0	110.7	119.1	135.6	173.4	214.7	301.1	20.17
37.1	Basic metal products	100.0	81.1	90.2	147.7	225.9	280.6	304.0	25.14
38.1	Fabricated metal products	100.0	124.1	118.3	123.0	129.0	170.2	109.2	11.21
38.2	Non-electrical machinery	100.0	100.0	121.0	124.1	169.1	191.6	201.6	12.39
38.3	Electrical machinery and supplies	100.0	109.1	146.0	205.2	317.5	414.6	507.3	31.08
38.4	Transport equipment	100.0	100.2	100.3	100.6	202.5	287.9	319.0	21.33
39.0	Manufacturing not elsewhere classified	100.0	106.9	106.9	117.2	144.0	175.9	224.1	14.39

Source: based on the Annual Industrial Surveys. 1970 - 1976. CSO (Iraq).

Table - 8 - (c)

Index of Wages in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Industrial Divisions)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	110.3	122.8	133.6	171.1	211.8	254.3	16.83
32.	Textiles, Wearing Apparel and Leather	100.0	122.2	140.1	167.5	208.7	227.0	252.3	16.68
33.	Wood and products, including furniture	100.0	108.3	100.6	111.3	148.7	139.3	176.5	9.93
34.	Paper, printing and publishing	100.0	113.6	144.6	218.3	286.4	326.1	382.6	25.06
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	121.9	127.9	141.9	206.8	232.5	295.5	19.79
36.	Non-metallic products	100.0	110.9	120.0	136.2	175.3	216.6	302.1	20.23
37.	Basic metal industries	100.0	81.1	90.2	147.7	225.9	268.6	384.0	25.14
38.	Fabricated metal products, machinery and equipment	100.0	102.0	121.7	135.6	196.6	284.4	275.8	18.42
39.	Other manufacturing industries	100.0	106.9	106.9	117.2	144.8	175.9	224.1	14.39

Source: based on the annual industrial surveys, 1970 - 1976.

Table - 8 - (d)

Laspeyres, Paasche and Geometric mean indices of total wages in manufacturing sector,
and main commodity groupings. Average annual rate of growth, 1970-1976. (Current Prices)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Manufacturing sector</u>								
Laspeyres	100.0	115.8	126.5	142.6	151.7	228.1	269.6	17.97
Paasche	100.0	116.5	120.7	144.7	199.3	231.3	293.7	19.67
Geometric mean	100.0	116.2	127.6	143.6	195.5	226.6	281.4	18.82
<u>Consumer goods</u>								
Laspeyres	100.0	115.3	129.8	140.9	186.7	216.7	235.5	15.34
Paasche	100.0	116.1	133.2	150.4	193.4	232.1	205.3	19.09
Geometric mean	100.0	115.7	131.5	149.7	190.0	224.3	259.2	17.20
<u>Intermediate goods</u>								
Laspeyres	100.0	120.9	128.2	142.4	208.3	233.3	297.8	19.95
Paasche	100.0	121.4	128.1	142.5	207.5	232.1	297.5	19.93
Geometric mean	100.0	121.1	128.1	142.4	207.9	232.7	297.6	19.93
<u>Capital goods</u>								
Laspeyres	100.0	108.6	118.4	132.1	173.9	213.4	282.2	18.00
Paasche	100.0	100.7	119.0	134.6	177.1	224.3	204.0	19.06
Geometric mean	100.0	108.6	119.1	133.4	175.5	210.8	203.5	18.97

continue..

Table 8 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Non-durables</u>								
Lasseyres	100.0	118.0	129.0	145.7	157.1	224.6	255.3	17.67
Pasche	100.0	118.6	130.2	145.7	201.2	229.7	291.5	19.52
Geometric mean	100.0	110.3	129.6	145.7	199.1	227.2	278.2	10.59
<u>Durables</u>								
Lasseyres	100.0	108.7	110.6	132.3	174.1	213.7	282.0	10.92
Pasche	100.0	109.1	122.1	139.1	185.9	243.9	313.4	20.97
Geometric mean	100.0	108.9	120.3	135.7	179.9	228.3	297.7	19.94

Source: based on the annual industrial surveys. 1970 - 1976.

Table - 9 - (a)

Index of Profits in manufacturing. Average annual rate of growth, 1970 - 1976.
(Industries) (current factor costs)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	100.1	99.6	110.4	65.2'	11.9	86.4	- 2.41
31.1.3	Canning	100.0	486.7	554.4	606.3	5.7	536.1	698.7	38.26
31.1.4	Dates	100.0	262.9	374.0	350.8	574.2	263.9	442.9	28.15
31.1.5	Vegetable Oil	100.0	38.7	74.0	42.5	79.2	80.3	17.2	-25.42
31.1.6	Grain Milling	100.0	114.8	50.9	48.1	48.7	38.6	37.5	-15.08
31.1.7	Bakery	100.0	350.0	21.4	53.6	339.3	428.6	692.9	38.07
31.1.7	Macaroni	100.0	6.6	12.3	8.5	16.0	3.8	30.2	-18.09
31.1.8	Sugar	100.0	20.0	301.4	666.6	572.9	475.7	678.1	37.58
31.1.9	Confectionary	100.0	136.4	53.1	332.7	114.3	37.6	133.5	4.93
31.2.2	Animal products	100.0	51.7	100.0	403.4	165.5	124.1	3837.9	83.66
31.3.1	Brewing	100.0	80.4	143.2	181.6	165.0	169.2	367.6	23.89
31.3.4	Soft Drinks	100.0	582.1	512.1	1 643.7	1 481.1	2 064.7	837.9	42.52
31.4.0	Cigarettes	100.0	142.7	163.3	334.4	220.7	269.2	192.3	11.51
31.4.0	Tobacco Curing	100.0	51.9	26.5	200.0	295.1	763.9	219.1	13.96
32.1.1	Cotton Ginning	100.0	1.9	129.9	774.0	399.4	406.5	-18.8	
32.1.1	Wool Washing	100.0	130.0	60.0	30.0	50.0	10.0	10.0	-31.87
32.1.1	Medicated Cotton	100.0	109.6	95.6	138.5	168.9	197.8	198.5	12.10
32.1.1	Jute	100.0	349.0	1 151.0	388.2	1 074.5	462.7	1 141.2	50.05
32.1.1	Cotton Textiles	100.0	165.9	258.6	263.1	229.7	212.1	270.6	18.05
32.1.1	Wool Textiles	100.0	132.8	134.3	94.0	129.5	106.7	163.1	8.49

continue..

Table 9 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Silk Textiles	100.0	2 386.7	6 623.3	5 556.7	5 423.3	4 333.3	3 360.0	84.62
32.1.2	Hosiery	100.0	212.5	236.2	200.0	388.7	221.2	376.2	24.71
32.1.3	Knitting	100.0	49.5	50.2	51.3	91.8	140.5	146.2	6.53
32.1.4	Carpets	100.0	-328.6	-878.6	-478.6	-992.9	-1 157.1	-1 507.1	
32.1.5	Shoe Laces	100.0	111.4	97.7	559.1	113.6	-90.9	156.8	7.78
32.1.5	Cotton Waste	100.0	-150.0	350.0	150.0	-50.0	50.0	650.0	36.61
32.2.0	Shirt Making	100.0	147.1	130.6	-100.0	141.2	170.6	220.0	14.04
32.2.0	Tailoring	100.0	76.8	415.5	543.2	432.3	1 256.8	589.7	34.41
32.3.1	Tanning	100.0	11.1	220.6	628.6	683.3	502.4	1 697.6	60.31
32.3.2	Leather Salting	100.0	-35.5	148.4	200.0	71.0	-3.2	35.5	-15.85
32.3.3	Other Leather products	100.0	166.7	100.0	133.3	33.3	166.7	166.7	8.89
32.4.0	Footwear	100.0	52.4	55.5	64.7	88.9	117.3	154.8	7.55
33.1.1	Wood	100.0	-600.0	-350.0	-600.0	350.0	-1 950.0	-4 000.0	
33.2.0	Carpentry	100.0	130.3	212.1	127.3	306.1	347.0	540.9	32.49
34.1.1	Papers and products	100.0	-33.0	253.5	404.9	471.5	189.9	527.8	31.95
34.2.0	Printing	100.0	383.4	144.5	37.1	-23.0	-39.9	370.0	24.36
35.1.1	Sulfur Refining	100.0	100.0	-48.4	-121.3	-527.7	-519.1	-1 143.6	
35.1.2	Fertilizers	100.0	100.0	27.4	144.5	111.4	90.4	59.0	- 8.42
35.1.3	Plastic products	100.0	95.7	109.0	151.5	331.1	475.6	704.7	38.46
35.1.3	Crude plastic	100.0	100.0	100.0	93.8	90.6	257.8	150.0	6.99
35.2.1	Paints	100.0	218.0	260.0	172.0	204.0	458.0	992.0	46.58
35.2.2	Drug Packing	100.0	-16.2	-279.2	-634.7	-838.2	-998.1	-1 754.1	

continue..

Table 9 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	173.6	75.2	39.9	36.0	16.8	12.8	-29.00
35.2.3	Cosmetics	100.0	75.0	92.2	107.8	118.8	42.2	196.9	11.95
35.2.5	Matches	100.0	106.0	238.1	229.8	6.0	1.8	75.6	-4.55
35.2.9	Synthetic Silk	100.0	235.0	124.5	155.6	29.8	60.7	37.9	-14.93
35.2.9	Other Chemicals	100.0	-3 300.0	-6 000.0	-5 050.0	-3 300.0	-3 700.0	-9 850.0	
35.3.0	Petroleum Products	100.0	99.0	99.8	107.9	163.4	219.0	331.6	22.13
35.5.1	Rubber Products	100.0	86.5	120.3	21.6	291.9	195.9	156.8	7.78
36.1.0	Pottery	100.0	82.4	76.5	-105.9	64.7	64.7	129.4	4.39
36.2.0	Glass and Products	100.0	- 430.0	1 500.0	-1 870.0	1 150.0	2 290.0	4 660.0	89.70
36.9.1	Bricks	100.0	119.4	98.5	106.4	137.1	137.6	131.7	4.70
36.9.1	Jugs	100.0	48.9	54.5	59.1	68.2	77.3	60.2	-8.11
36.9.2	Cement	100.0	89.2	83.5	93.7	63.6	70.6	50.9	-10.64
36.9.2	Tiles and Mosaic	100.0	88.2	108.1	89.7	138.2	222.8	231.6	15.12
36.9.2	Concrete Products	100.0	140.2	124.5	254.9	407.8	328.4	279.4	18.68
36.9.9	Damp Proofing Material	100.0	47.4	110.5	210.5	42.1	-52.6	21.1	-22.84
36.9.9	Asbestos	100.0	106.8	123.9	87.7	87.1	122.6	302.6	20.27
36.9.9	Stones	100.0	114.8	23.5	109.9	33.3	18.5	92.6	-1.27
37.1.0	Pipes	100.0	100.0	100.0	100.0	510.0	5 130.0	4 210.0	86.51
37.2.0	Foundry	100.0	160.0	30.0	-115.0	105.0	305.0	445.0	28.25
38.1.1	Aluminum Utensils	100.0	-43.9	69.7	18.2	189.4	190.9	122.7	3.47
38.1.2	Metal Furniture	100.0	-4 875.0	-2 950.0	-4 950.0	-3 875.0	-2 775.0	-4 275.0	
38.1.3	Smithy	100.0	-58.2	102.3	97.2	163.4	298.1	340.8	22.67

continues..

Table 9 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.1.9	Nails and Razor Blades	100.0	93.0	167.4	83.7	588.4	400.0	362.8	23.96
38.2.1-4	Non-electrical machinery	100.0	100.0	94.4	1.2	47.7	-82.6	126.9	4.05
38.3.3	Air coolers and heaters	100.0	87.1	168.5	206.4	238.0	429.8	293.9	19.68
38.3.2	Radios and televisions	100.0	912.5	-8 587.5-13	337.5-20	675.0-34	387.5-29	937.5	
38.3.9	Batteries	100.0	2 442.9	7 157.1	5 828.6	9 771.4	7 057.1	2 4457.1	250.07
38.3.9	Other electrical equipment	100.0	-133.6	313.4	242.7	188.8	333.2	798.3	41.37
38.4.3	Radiators	100.0	100.0	117.4	82.6	169.6	295.7	204.3	12.64
38.4.3	Car assembling	100.0	100.0	100.0	100.0	26.1	95.2	251.0	16.58
38.4.4	Bicycles	100.0	69.8	86.8	152.8	194.3	307.5	784.9	40.97
39.0.9	Miscellaneous	100.0	327.3	218.2	245.5	236.4	-118.2	118.2	2.82

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 9 - (b)

Index of Profits in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Major Groups) (current factor costs).

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	64.1	94.7	112.3	119.7	102.6	99.4	- 0.10
31.3	Beverages	100.0	198.0	211.0	474.8	420.6	539.2	425.6	27.30
31.4	Cigarettes	100.0	141.4	161.5	332.3	222.1	285.0	193.2	11.60
32.1	Textiles	100.0	173.1	284.6	276.3	246.1	223.1	276.8	18.49
32.2	Wearing Apparel	100.0	85.4	230.5	273.9	254.9	605.8	276.4	18.48
32.3	Leather and products	100.0	10.2	218.8	619.1	672.6	494.5	1671.4	59.90
32.4	Foot wear	100.0	52.4	55.5	64.7	88.9	117.3	154.8	7.55
33.1	Wood except furniture	100.0	-600.0	-350.0	-600.0	350.0	-1950.0	-1000.0	
33.2	Furniture & fixtures	100.0	130.3	212.1	127.3	306.1	347.0	540.9	32.49
34.1	Papers and products	100.0	- 33.0	253.5	404.9	471.5	189.9	527.8	31.95
34.2	Printing & publishing	100.0	383.4	144.5	37.1	- 23.0	- 39.9	370.0	24.36
35.1	Industrial Chemicals	100.0	100.0	242.7	183.6	337.7	307.4		
35.2	Chemical products	100.0	203.1	122.6	155.8	108.8	109.7	169.7	9.21
35.3	Petroleum products	100.0	95.0	99.8	107.2	163.4	219.0	331.9	22.13
35.5	Rubber products	100.0	86.5	120.3	21.6	291.9	195.9	156.8	7.78
35.6	Elastic products	100.0	95.3	108.7	149.5	323.9	468.6	689.5	37.96
36.1	Pottery & earthenware	100.0	82.4	76.5	-105.9	64.7	64.7	129.4	4.39
36.2	Glass and products	100.0	-480.0	1500.0	-1870.0	1150.0	2290.0	4660.0	89.70

continue ..

Table 4 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.9	Non-metallic products	100.0	99.4	84.8	94.4	68.3	75.1	56.3	- 9.13
37.1	Basic metal products	100.0	148.3	45.2	- 72.8	198.8	1969.3	1682.2	60.07
38.1	Fabricated metal products	100.0	29.7	145.1	168.6	235.7	315.3	363.6	24.00
38.2	Non-electrical machinery	100.0	100.0	94.4	1.2	47.7	- 82.6	126.9	4.05
38.3	Electrical machinery and supplies	100.0	14.5	374.6	441.5	607.2	957.4	1194.8	51.20
38.4	Transport equipment	100.0	100.0	100.0	100.0	26.3	95.2	251.1	16.58
39.0	Manufacturing not elsewhere classified	100.0	327.3	218.2	245.5	236.4	-118.2	118.2	2.82

Note

For some major groups index and growth rate figures are not shown for some years. This is because Laspeyres and Paasche yield results with opposite signs.

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 9 - (c)

Index of Profits in manufacturing. Average annual rate of growth, 1970 - 1976.
(Industrial Divisions) (current factor costs)

Industrial Classification	Division	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	87.4	113.9	186.9	156.0	165.3	140.3	5.80
32.	Textiles, Wearing Apparel and Leather	100.0	149.8	248.4	247.3	225.4	221.2	272.2	18.16
33.	Wood and products, including furniture	100.0	129.4	211.3	126.2	306.1	344.3	538.4	32.39
34.	Paper, printing and publishing	100.0	264.6	172.2	230.5	236.6	70.9	443.7	28.19
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	60.1	61.7	66.5	100.4	134.4	203.7	12.59
36.	Non-metallic products	100.0	99.4	85.0	94.3	68.4	75.4	56.5	- 9.08
37.	Basic metal industries	100.0	148.3	45.2	-72.8	198.8	1969.8	1682.2	60.07
38.	Fabricated metal products, machinery and equipment	100.0	99.1	103.5	93.3	54.6	101.3	250.5	16.54
39.	Other manufacturing industries	100.0	327.3	218.2	245.5	236.4	-118.2	118.2	2.82

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 9 - (a)
Laspeyres, Paasche and the Geometric mean indices of Profits in manufacturing sector,
and for main commodity groupings. Average annual rate of growth, 1970 - 1976.
(current factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Manufacturing sector</u>								
Laspeyres	100.0	79.2	75.5	82.5	99.0	126.2	180.0	10.29
Paasche	100.0	72.7	77.2	91.8	107.0	137.3	204.6	12.67
Geometric mean	100.0	71.4	76.4	87.0	102.9	131.6	191.9	11.43
<u>Consumer goods</u>								
Laspeyres	100.0	91.2	123.9	149.9	145.2	148.2	120.4	3.14
Paasche	100.0	119.5	156.5	258.9	203.0	223.6	270.0	18.00
Geometric mean	100.0	104.4	139.3	197.0	171.7	182.0	180.3	10.32
<u>Intermediate goods</u>								
Laspeyres	100.0	59.0	61.6	66.5	100.2	134.2	203.2	12.54
Paasche	100.0	59.6	61.7	66.7	100.6	134.6	204.5	12.66
Geometric mean	100.0	59.3	61.6	66.6	100.4	134.4	203.8	12.60
<u>Capital goods</u>								
Laspeyres	100.0	99.0	91.8	90.4	52.9	73.0	134.5	5.06
Paasche	100.0	99.5	92.5	93.6	62.6	82.8	168.8	9.12
Geometric mean	100.0	99.2	92.1	92.0	57.5	77.7	150.7	7.70

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continue..

Table 9 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Non-durable goods</u>								
Laspeyres	100.0	54.6	72.3	80.9	108.0	136.6	188.8	11.17
Pascho	100.0	67.9	74.7	91.1	108.9	139.5	206.0	12.80
Geometric mean	100.0	66.2	73.5	85.8	108.4	137.0	197.2	12.98
<u>Durable goods</u>								
Laspeyres	100.0	99.0	91.9	90.6	53.1	73.2	135.1	5.14
Pascho	100.0	99.6	94.6	97.2	73.9	102.3	184.2	10.71
Geometric mean	100.0	99.3	93.2	93.8	63.6	86.5	157.7	7.89

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Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 10-(a)

Index of operatives in manufacturing industries. Average annual rate of growth, 1970 - 1976.
(Industries)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	99.0	127.5	129.0	150.6	181.3	193.7	11.65
31.1.3	Canning	100.0	98.8	186.3	210.3	289.3	293.1	286.5	19.17
31.1.4	Dates	100.0	91.1	143.0	167.4	98.7	109.3	52.7	-10.12
31.1.5	Vegetable Oil	100.0	128.4	112.9	148.8	158.9	174.9	178.3	10.12
31.1.6	Grain Milling	100.0	107.4	111.8	108.6	106.0	116.9	104.8	0.78
31.1.7	Bakery	100.0	95.9	100.0	94.1	90.9	97.3	99.8	- 0.04
31.1.7	Macaroni	100.0	85.4	108.3	95.8	120.8	104.2	139.6	5.72
31.1.8	Sugar	100.0	149.5	136.1	144.3	150.0	152.9	176.9	9.97
31.1.9	Confectionary	100.0	108.3	111.4	109.4	117.0	127.8	144.1	6.28
31.2.2	Animal Products	100.0	92.3	96.2	100.0	130.8	126.9	946.2	45.43
31.3.1	Brewing	100.0	110.0	117.1	134.8	158.4	221.2	235.6	15.35
31.3.4	Soft Drinks	100.0	96.3	99.8	93.9	123.6	124.6	128.5	4.27
31.4.0	Cigarettes	100.0	81.4	65.1	71.4	69.4	110.4	63.1	- 7.39
31.4.C	Tobacco Curing	100.0	164.7	268.3	315.3	307.4	127.6	498.6	30.70
32.1.1	Cotton Ginning	100.0	79.3	325.2	263.2	126.9	144.2	115.7	2.46
32.1.1	Wool Washing	100.0	64.7	92.0	12.7	4.0	0.7	0.7	-56.26
32.1.1	Medicated Cotton	100.0	98.1	91.8	81.3	88.5	93.8	85.6	- 2.56
32.1.1	Jute	100.0	135.3	211.5	279.7	299.6	305.6	293.4	19.65
32.1.1	Cotton Textiles	100.0	123.4	141.8	152.1	152.3	152.3	144.2	6.29

continue..

Table 10 (a)(cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Wool Textiles	100.0	90.2	101.1	115.0	121.3	108.9	111.1	1.77
32.1.1	Silk Textiles	100.0	123.0	160.5	158.4	167.2	174.9	178.9	10.18
32.1.3	Hosiery	100.0	103.1	104.9	118.0	110.3	127.6	150.0	6.99
32.1.3	Knitting	100.0	51.5	60.9	88.1	91.9	113.8	142.4	6.07
32.1.4	Carpets	100.0	243.5	612.0	879.4	689.0	730.1	673.7	3.74
32.1.5	Shoe Laces	100.0	91.6	130.2	94.9	124.7	131.2	147.9	6.74
32.1.9	Cotton Waste	100.0	112.1	81.8	112.1	81.8	97.0	90.9	- 1.58
32.2.0	Shirt Making	100.0	111.8	126.5	116.9	110.7	110.0	111.1	1.81
32.2.0	Tailoring	100.0	179.1	186.2	202.8	210.4	213.8	217.4	13.82
32.3.1	Tanning	100.0	103.1	131.2	112.9	150.0	190.2	446.3	28.31
32.3.2	Leather Salting	100.0	230.6	88.9	58.3	55.6	22.2	41.7	-13.56
32.3.3	Other Leather Products	100.0	116.7	122.2	100.0	122.2	127.8	105.6	0.91
32.4.0	Footwear	100.0	101.4	66.9	94.9	109.5	112.2	114.9	2.34
33.1.1	Wood	100.0	108.3	105.0	96.7	105.0	133.3	168.3	9.06
33.2.0	Carpentry	100.0	110.1	108.3	118.2	125.4	111.3	108.7	1.40
34.1.1	Papers & Products	100.0	165.4	259.9	326.2	367.2	378.2	381.1	24.98
34.2.0	Printing	100.0	115.9	114.2	116.8	130.1	161.1	167.3	8.95
35.1.1	Sulfur Refining	100.0	100.0	93.9	92.5	91.9	106.1	109.7	1.55
35.1.2	Fertilizers	100.0	100.0	286.0	341.3	392.0	466.0	469.3	29.39
35.1.3	Plastic Products	100.0	99.7	174.4	172.0	183.5	266.2	294.2	19.70
35.1.3	Crude Plastic	100.0	100.0	100.0	100.0	84.5	116.9	76.1	- 4.45
35.2.1	Paints	100.0	108.6	112.1	116.4	119.0	194.8	210.3	13.19
35.2.2	Drug Packing	100.0	103.1	103.1	106.8	103.7	111.6	142.3	6.06

continue..

Table 10 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	131.7	122.4	154.0	161.7	172.1	173.3	9.60
35.2.3	Cosmetics	100.0	85.2	92.6	96.3	171.6	119.8	122.2	3.40
35.2.5	Matches	100.0	106.2	103.1	118.4	142.6	138.2	123.6	3.59
35.2.9	Synthetic Silk	100.0	131.5	151.6	153.0	147.3	148.6	149.4	6.92
35.2.9	Other Chemicals	100.0	150.0	154.2	162.5	195.8	220.8	266.7	17.76
35.3.0	Petroleum Products	100.0	103.1	112.2	109.8	143.0	156.7	174.0	9.67
35.5.1	Rubber Products	100.0	106.0	200.0	215.5	239.3	247.6	253.6	16.78
36.1.0	Pottery	100.0	66.7	142.3	150.0	175.6	153.8	78.2	- 4.01
36.2.0	Glass & Products	100.0	593.2	1107.0	1045.3	949.6	988.0	1127.4	49.74
36.9.1	Bricks	100.0	109.1	130.5	96.6	95.6	116.1	130.3	4.51
36.9.1	Juss	100.0	88.9	95.5	69.3	65.8	69.8	78.9	- 3.87
36.9.2	Cement	100.0	107.6	116.5	126.4	167.2	166.7	187.1	11.00
36.9.2	Tiles & Mosaic	100.0	98.6	95.0	92.5	74.0	77.3	70.6	- 4.34
36.9.2	Concrete Products	100.0	121.4	135.3	119.3	158.1	153.1	168.9	9.13
36.9.9	Damp Proofing Material	100.0	100.0	95.7	91.3	80.4	80.4	84.8	- 2.71
36.9.9	Asbestos	100.0	126.9	141.3	179.9	250.9	273.4	298.5	19.99
36.9.9	Stones	100.0	123.5	38.5	38.5	40.4	57.7	85.0	- 2.67
37.1.0	Pipes	100.0	100.0	100.0	100.0	168.2	230.3	253.0	16.73
37.2.0	Foundry	100.0	74.9	89.9	96.5	113.1	119.6	130.7	4.56
38.1.1	Aluminium Utensils	100.0	96.9	107.8	98.6	81.0	108.2	102.0	0.33
38.1.2	Metal Furniture	100.0	103.7	97.8	93.2	54.2	56.7	57.5	- 8.81
38.1.3	Smithy	100.0	98.7	100.7	107.4	128.9	149.2	128.6	4.28
38.1.9	Nails & Razor Blades	100.0	130.3	135.2	118.0	117.2	126.2	134.4	5.05

Table 10 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
39.2.1-4	Non-Electrical Machinery	100.0	100.0	143.8	151.1	162.4	159.5	161.3	8.29
38.3.3	Air Coolers and Heaters	100.0	50.9	73.9	84.0	135.3	147.3	157.9	7.91
38.3.2	Radios and Televisions	100.0	802.1	1 425.5	1 383.0	2 261.7	2 327.7	3 163.8	77.84
39.3.9	Batteries	100.0	148.6	190.5	200.8	155.4	219.0	328.0	21.89
38.3.9	Other Electrical Equipment	100.0	135.2	154.4	212.7	264.4	305.1	268.0	17.86
38.4.3	Radiators	100.0	109.9	115.5	105.6	115.5	178.9	173.2	9.59
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	148.3	211.1	247.6	16.31
38.4.4	Bicycles	100.0	205.4	216.2	218.9	227.0	294.6	389.2	25.42
39.0.9	Miscellaneous	100.0	95.7	78.3	81.2	85.5	97.1	105.8	0.91

Source: based on the Annual Industrial Surveys. 1970 - 1976.

Table - 10 - (b)
 Index of Operatives in manufacturing, Average annual rate of growth, 1970 - 1976.
 (Geometric mean) (Major Industrial Groups)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Wood manufacturing	100.0	111.3	127.3	147.3	129.9	146.4	130.6	4.55
31.3	Beverages	100.0	99.0	104.1	103.3	131.0	147.9	164.6	8.66
31.4	Cigarettes	100.0	32.1	67.5	74.7	73.0	110.9	77.0	- 4.26
32.1	Textiles	100.0	118.3	140.2	150.0	152.2	151.6	146.3	6.55
32.2	Wearing Apparel, except footwear	100.0	138.4	153.3	172.1	170.4	181.9	176.3	9.91
32.3	Leather and products	100.0	103.7	130.9	112.6	149.6	109.6	444.7	20.24
32.4	Footwear	100.0	101.4	66.9	94.9	109.5	112.2	114.9	2.34
33.1	Wood except furniture	100.0	108.3	105.0	96.7	105.0	133.3	168.3	9.06
33.2	Furniture and fixtures (except of metal)	100.0	110.1	108.3	118.2	125.4	111.3	108.7	1.40
34.1	Papers and products	100.0	165.4	259.9	326.2	367.2	378.2	301.1	24.98
34.2	Printing and publishing	100.0	115.9	114.2	116.8	130.1	161.1	167.3	8.95
35.1	Industrial chemicals	100.0	100.0	173.6	241.7	232.5	273.1	248.7	16.39
35.2	Chemical products	100.0	127.1	131.2	139.8	137.9	145.4	152.7	7.31
35.3	Petroleum products	100.0	103.1	112.2	109.8	143.0	156.7	174.0	9.67
35.5	Rubber products	100.0	106.0	200.0	215.5	239.3	247.6	253.6	16.78
35.6	Plastic products	100.0	99.7	171.5	169.4	100.6	261.4	200.2	19.29
36.1	Pottery and earthen ware	100.0	66.7	142.3	150.0	175.6	153.0	78.2	- 4.01

continue..

Table 10 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	593.2	1 047.0	1 045.3	949.6	900.0	1 127.4	49.74
36.9	Non-metallic products	100.0	100.7	126.2	106.0	116.0	132.0	140.9	6.06
37.1	Basic metal products	100.0	70.4	91.5	97.0	122.3	152.9	163.9	0.59
38.1	Fabricated metal products	100.0	102.1	101.0	100.2	96.5	117.0	102.9	0.47
38.2	Non-electrical machinery	100.0	100.0	143.0	151.1	162.4	159.5	161.3	0.29
38.3	Electrical machinery and supplies	100.0	102.4	149.9	189.5	263.6	301.0	309.5	20.72
38.4	Transport equipment	100.0	100.2	100.3	100.3	140.7	211.3	247.9	16.33
39.0	Manufacturing not elsewhere classified	100.0	95.7	70.3	81.2	85.5	97.1	105.0	0.94

Source: based on the Annual Industrial Surveys. CSO (Iraq).

Table - 10 - (c)

Index of Operatives in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Industrial Divisions)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	101.6	108.0	118.2	113.0	135.2	119.7	3.05
32.	Textiles, Wearing Apparel and Leather	100.0	117.0	135.7	146.8	149.9	150.5	147.8	6.73
33.	Wood and products, including furniture	100.0	100.1	108.3	118.1	125.3	111.3	108.9	1.43
34.	Paper, printing and publishing	100.0	122.9	135.2	188.8	213.7	227.4	225.3	14.49
35.	Chemicals, Petroleum, Rubber & Plastic products	100.0	104.5	113.5	111.9	143.5	157.4	174.4	9.71
36.	Non-metallic products	100.0	108.8	127.0	106.5	117.7	133.0	149.4	6.92
37.	Basic metal industries	100.0	78.4	91.5	97.0	122.3	152.9	163.9	8.59
38.	Fabricated metal products, machinery and equipment	100.0	100.3	136.0	146.3	177.1	212.6	205.2	12.73
39.	Other manufacturing industries	100.0	95.7	78.3	81.2	85.5	97.1	105.8	0.94

Source: based on the Annual Industrial Surveys. 1970 - 1976, CSO (Iraq).

Table - 10 - (d)

Laspeyres, Paasche and Geometric mean indices of Operatives in manufacturing sector, and main commodity groupings. Average annual rate of growth, 1970 - 1976.

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Manufacturing sector</u>								
Laspeyres	100.0	108.0	120.2	120.2	131.5	144.2	147.1	6.64
Paasche	100.0	107.6	123.0	121.9	136.2	151.9	165.2	8.73
Geometric mean	100.0	107.8	121.6	121.1	133.8	148.0	155.9	7.68
<u>Consumer goods</u>								
Laspeyres	100.0	110.8	118.2	132.0	130.7	141.9	127.3	4.10
Paasche	100.0	109.2	124.8	132.2	133.0	149.5	144.0	6.35
Geometric mean	100.0	110.0	121.5	132.5	131.8	145.7	135.0	5.23
<u>Intermediate goods</u>								
Laspeyres	100.0	104.0	114.7	112.8	144.8	158.4	176.4	9.92
Paasche	100.0	104.6	114.9	113.4	144.7	157.9	176.8	9.96
Geometric mean	100.0	104.3	114.8	113.1	144.8	158.4	176.6	9.94
<u>Capital goods</u>								
Laspeyres	100.0	107.4	126.8	110.3	122.7	136.6	150.9	7.10
Paasche	100.0	107.6	128.2	110.2	124.4	140.3	161.4	8.51
Geometric mean	100.0	107.5	127.5	110.3	123.6	138.4	156.1	7.70

continue..

Table 10 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth 70-76
<u>Non-Durables</u>								
Laspeyres	100.0	108.3	116.9	125.0	135.8	147.9	145.1	6.40
Pasche	100.0	107.5	120.7	124.6	137.8	152.7	163.6	8.55
Geometric mean	100.0	107.9	118.8	124.8	136.8	150.3	154.2	7.47
<u>Durables</u>								
Laspeyres	100.0	107.5	126.9	110.4	122.8	136.7	151.1	7.12
Pasche	100.0	107.8	129.7	112.5	129.1	148.1	174.0	9.67
Geometric mean	100.0	107.7	128.3	111.5	125.9	142.3	162.1	8.38

Source: based on the Annual Industrial Surveys. CSO (Iraq).

Table - 11 - (a)

Index of non-manual workers in manufacturing industries. Average annual rate of growth, 1970 - 1976.
(Industries)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	162.9	185.9	216.7	272.0	269.4	288.1	19.29
31.1.3	Canning	100.0	116.8	173.1	347.1	424.4	511.8	500.0	30.77
31.1.4	Jates	100.0	117.2	161.2	149.1	175.0	172.4	83.0	- 3.06
31.1.5	Vegetable Oil	100.0	99.4	143.1	104.1	113.1	122.2	124.6	3.73
31.1.6	Grain Milling	100.0	111.4	120.8	117.3	107.0	115.6	103.5	0.57
31.1.7	Bakery	100.0	103.7	93.9	87.1	81.0	87.1	89.6	- 1.81
31.1.7	Macaroni	100.0	80.0	66.7	80.0	66.7	86.7	113.3	2.10
31.1.8	Sugar	100.0	244.7	221.6	242.1	330.5	324.8	375.5	24.67
31.1.9	Confectionary	100.0	111.1	113.6	108.9	117.9	129.4	146.0	6.51
31.2.2	Animal Products	100.0	92.9	107.1	114.3	142.9	107.1	785.7	41.00
31.3.1	Brewing	100.0	82.5	121.4	119.7	150.0	181.6	190.6	11.35
31.3.4	Soft Drinks	100.0	128.6	129.3	112.4	142.7	125.1	129.0	4.33
31.4.0	Cigarettes	100.0	96.3	85.4	82.9	91.5	147.6	84.1	- 2.84
31.4.0	Tobacco Curing	100.0	200.0	220.6	250.0	208.8	294.1	1147.1	50.17
32.1.1	Cotton Ginning	100.0	89.7	169.2	161.5	164.1	143.6	115.4	2.41
32.1.1	Wool Washing	100.0	85.7	100.0	42.9	28.6	7.1	35.7	-15.77
32.1.1	Medicated Cotton	100.0	82.8	82.8	93.1	113.8	120.7	117.2	2.68
32.1.1	Jute	100.0	143.4	169.8	245.3	258.5	275.5	264.2	17.58
32.1.1	Cotton Textiles	100.0	129.1	190.8	208.4	215.4	215.4	203.9	12.61

Table 11 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Wool Textiles	100.0	99.0	85.1	130.0	131.9	134.8	137.4	5.44
32.1.1	Silk Textiles	100.0	118.4	90.1	103.6	106.8	113.0	115.5	2.43
32.1.3	Hosiery	100.0	103.4	121.3	122.5	120.2	130.3	152.8	7.32
32.1.3	Knitting	100.0	48.7	59.2	81.6	97.4	121.1	151.3	7.14
32.1.4	Carpets	100.0	51.8	210.7	289.3	208.9	282.1	260.7	17.31
32.1.5	Shoe Laces	100.0	100.0	150.0	100.0	125.0	100.0	110.7	1.71
32.1.9	Cotton Waste	100.0	137.5	137.5	137.5	150.0	137.5	125.0	3.79
32.2.0	Shirt Making	100.0	102.2	110.8	114.0	111.8	118.3	119.4	3.00
32.2.0	Tailoring	100.0	243.5	301.1	314.1	294.4	353.1	358.8	23.73
32.3.1	Tanning	100.0	104.5	102.6	173.1	142.3	185.3	434.6	27.75
32.3.2	Leather Salting	100.0	216.7	116.7	166.7	100.0	50.0	100.0	0.00
32.3.3	Other Leather Products	100.0	66.7	133.3	66.7	66.7	33.3	33.3	-16.74
32.4.0	Footwear	100.0	86.9	84.8	101.5	114.9	117.0	119.1	2.96
33.1.1	Wood	100.0	104.3	104.3	121.7	104.3	139.1	173.9	9.66
33.2.0	Carpentry	100.0	114.2	104.3	106.4	102.1	99.3	97.2	-0.47
34.1.1	Papers & Products	100.0	112.4	185.8	248.4	268.0	358.7	361.3	23.87
34.2.0	Printing	100.0	119.9	117.1	94.4	125.0	265.3	275.5	18.40
35.1.1	Sulfur Refining	100.0	100.0	96.0	103.0	108.9	138.6	142.6	6.09
35.1.2	Fertilizers	100.0	100.0	291.4	391.4	392.9	415.7	418.6	26.95
35.1.3	Plastic Products	100.0	114.9	136.6	130.7	161.4	203.0	223.8	14.37
35.1.3	Crude Plastic	100.0	100.0	100.0	88.9	77.8	144.4	94.4	-0.95
35.2.1	Paints	100.0	130.0	152.5	162.5	210.0	305.0	327.5	21.86

Table 11 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.2	Drug Packing	100.0	234.6	300.0	296.2	288.5	305.1	389.7	25.44
35.2.3	Soaps	100.0	101.6	139.2	106.4	113.6	118.4	119.2	2.97
35.2.3	Cosmetics	100.0	104.8	104.8	123.8	138.1	171.4	171.4	9.40
35.2.5	Matches	100.0	73.4	45.6	40.5	40.5	32.9	29.1	-18.59
35.2.9	Synthetic Silk	100.0	121.4	177.1	194.3	200.0	211.4	212.1	13.35
35.2.9	Other Chemicals	100.0	126.5	135.3	150.0	152.9	144.1	173.5	9.62
35.3.0	Petroleum Products	100.0	121.3	123.9	128.6	204.6	264.4	293.7	19.67
35.5.1	Rubber Products	100.0	105.0	190.0	215.0	205.0	200.0	205.0	12.71
36.1.0	Pottery	100.0	300.0	350.0	400.0	400.0	450.0	250.0	16.50
36.2.0	Glass & Products	100.0	538.5	1 276.9	1 923.1	2 553.8	2 323.1	2 546.2	72.62
36.9.1	Bricks	100.0	103.7	111.7	105.3	106.6	108.4	121.6	3.31
36.9.1	Juss	100.0	91.3	102.9	79.7	78.3	68.1	76.8	-4.30
36.9.2	Cement	100.0	95.5	103.4	95.6	129.8	136.3	153.0	7.34
36.9.2	Tiles & Mosaic	100.0	101.9	91.4	90.9	78.0	86.6	85.6	-2.56
36.9.2	Concrete Products	100.0	134.4	147.8	152.2	135.6	226.7	250.0	16.50
36.9.3	Damp Proofing Material	100.0	96.3	70.4	74.1	81.5	70.4	70.4	-5.68
36.9.3	Asbestos	100.0	80.7	81.7	102.8	120.2	134.9	146.8	6.61
36.9.3	Stones	100.0	100.0	87.5	83.3	100.0	129.2	187.5	11.04
37.1.0	Pipes	100.0	100.0	100.0	100.0	418.2	581.8	645.5	36.45
37.2.0	Foundry	100.0	65.2	134.8	217.4	226.1	208.7	226.1	14.56
38.1.1	Aluminium Utensils	100.0	105.2	112.1	81.0	91.4	117.2	110.3	1.65
38.1.2	Metal Furniture	100.0	106.2	106.2	87.6	59.7	63.6	64.3	-7.09
38.1.3	Smithy	100.0	108.0	96.8	101.6	123.2	235.2	202.4	12.69

Table 11 (c) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.1.9	Nails and Razor Blades	100.0	118.9	143.2	97.3	105.4	75.7	78.4	- 3.97
38.2.1-4	Non-Electrical Machinery	100.0	100.0	92.9	112.6	103.2	100.4	101.7	0.28
38.3.3	Air Coolers and Heaters	100.0	69.3	69.3	82.7	114.2	115.7	123.6	3.59
38.3.2	Radios & Televisions	100.0	1 133.3	1 666.7	1 683.3	2 533.3	2 716.7	3 700.0	82.54
38.3.9	Batteries	100.0	210.7	250.0	310.7	219.6	428.6	641.1	36.30
38.3.9	Other Electrical Equipment	100.0	127.4	105.7	117.8	147.8	217.8	191.1	11.40
38.4.3	Radiators	100.0	84.2	63.2	78.9	89.5	126.3	121.1	3.24
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	135.0	153.3	178.3	10.12
38.4.4	Bicycles	100.0	152.4	123.8	133.3	161.9	171.4	223.8	14.37
39.0.9	Miscellaneous	100.0	110.0	95.0	120.0	105.0	110.0	120.0	3.08

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Source: based on the Annual Industrial Surveys. 1970 - 1976. CSO (Iraq).

Table - 11 -(b)
 Index of Non-Manuals in manufacturing. Average annual rate of growth, 1970 - 1976.
 (Geometric mean) (Major Industrial Groups)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	124.6	153.6	150.4	167.1	174.3	196.5	11.92
31.3	Beverages	100.0	123.5	128.2	113.3	143.6	132.4	141.5	5.96
31.4	Cigarettes	100.0	97.1	86.3	84.3	92.7	150.1	104.2	0.68
32.1	Textiles	100.0	121.6	153.8	178.1	185.3	185.0	178.7	10.16
32.2	Wearing Apparel	100.0	174.1	224.8	237.1	220.0	263.7	232.4	15.00
32.3	Leather and products	100.0	104.9	102.6	173.0	142.2	184.9	433.7	27.70
32.4	Footwear	100.0	86.9	84.8	101.5	114.9	117.0	119.1	2.96
33.1	Wood except furniture	100.0	104.3	104.3	121.7	104.3	139.1	173.9	9.66
33.2	Furniture and fixtures (except of metal)	100.0	114.2	104.3	106.4	102.1	99.3	97.2	- 0.47
34.1	Papers and products	100.0	112.4	185.8	248.4	268.0	358.7	361.3	23.87
34.2	Printing and publishing	100.0	119.9	117.1	94.4	125.0	265.3	275.5	18.40
35.1	Industrial chemicals	100.0	100.0	192.2	305.8	270.2	296.0	274.1	18.30
35.2	Chemical products	100.0	116.4	159.3	159.9	164.9	173.3	188.4	11.13
35.3	Petroleum products	100.0	121.3	123.9	128.6	204.6	264.4	293.7	19.67
35.5	Rubber products	100.0	105.0	190.0	215.0	205.0	200.0	205.0	12.71
35.6	Plastic products	100.0	114.3	135.4	129.5	159.3	201.4	220.8	14.11
36.1	Pottery and earthen ware	100.0	300.0	350.0	400.0	400.0	450.0	250.0	16.50

continue..

Table 11 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	538.5	276.9	823.1	653.8	323.1	646.2	72.62
36.9	Non-metallic products	100.0	97.5	105.2	98.0	123.5	129.6	146.0	6.51
37.1	Basic metal products	100.0	71.0	127.5	195.2	269.3	343.5	366.3	24.16
38.1	Fabricated metal products	100.0	107.4	103.7	93.8	98.4	172.0	148.3	6.79
38.2	Non-electrical machinery	100.0	100.0	92.9	112.6	103.2	100.4	101.7	0.28
38.3	Electrical machinery and supplies	100.0	115.7	123.8	149.5	193.9	249.8	275.9	18.13
38.4	Transport equipment	100.0	100.2	100.0	100.2	135.2	153.4	178.5	18.14
39.0	Manufacturing not elsewhere classified	100.0	110.0	95.0	120.0	105.0	110.0	120.0	3.08

Source: based on the Annual Industrial Surveys. 1970 - 1976, CSO (Iraq).

Table - 11 - (c)

Index of non-manual workers in manufacturing. Average annual rate of growth, 1970 - 1976.
(Geometric mean) (Industrial Divisions)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	119.8	135.0	124.6	146.5	154.6	169.3	9.17
32.	Textiles, Wearing Apparel and Leather	100.0	119.8	150.2	172.9	178.4	181.3	180.3	10.34
33.	Wood and products, including furniture	100.0	114.1	104.3	106.5	102.1	99.3	97.8	-0.36
34.	Paper, printing and publishing	100.0	117.8	134.9	177.7	203.7	312.9	316.1	21.15
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	120.9	125.7	130.8	203.4	261.8	290.1	19.42
36.	Non-metallic products	100.0	97.6	105.8	98.6	125.3	131.1	146.7	6.60
37.	Basic metal industries	100.0	71.8	127.5	195.2	269.3	343.5	366.3	24.16
38.	Fabricated metal products, machinery and equipment	100.0	101.5	99.0	117.3	122.0	156.2	147.8	6.73
39.	Other manufacturing industries	100.0	110.0	95.0	120.0	105.0	110.0	120.0	3.08

Source: based on the Annual Industrial Surveys, 1970-1976, CSO (Iraq).

Table - 11 -(d)

Laspeyres, Paasche, and Geometric mean indices of non-manual workers in the manufacturing sector, and main commodity groupings. Average annual rate of growth, 1970 - 1976.

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Manufacturing sector</u>								
Laspeyres	100.0	113.3	124.3	124.2	124.2	157.1	179.8	11.07
Paasche	100.0	114.9	128.4	130.9	135.6	211.8	247.8	16.33
Geometric mean	100.0	114.1	126.3	127.5	166.1	195.1	215.7	13.67
<u>Consumer goods</u>								
Laspeyres	100.0	118.6	137.7	135.8	150.9	162.0	152.4	7.27
Paasche	100.0	120.8	143.1	143.2	164.5	172.3	205.3	12.74
Geometric mean	100.0	119.7	140.4	139.5	157.5	167.0	176.9	9.97
<u>Intermediate goods</u>								
Laspeyres	100.0	121.1	125.5	131.5	204.9	263.4	293.3	19.64
Paasche	100.0	121.2	124.0	131.4	204.3	263.6	294.1	19.70
Geometric mean	100.0	121.1	125.2	131.4	204.6	263.5	293.7	19.67
<u>Capital goods</u>								
Laspeyres	100.0	98.2	103.2	100.3	121.1	127.1	140.3	5.81
Paasche	100.0	98.1	104.0	99.9	123.9	134.0	143.3	6.18
Geometric mean	100.0	98.1	103.6	100.1	122.5	130.5	141.8	5.99

continue..

Table 11 (d) (cont'd)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Non-durables</u>								
Laspeyres	100.0	119.5	132.9	134.1	171.9	201.5	207.2	12.91
Paasche	100.0	120.8	135.3	137.9	184.6	223.8	262.9	17.48
Geometric mean	100.0	120.2	134.1	136.0	178.1	212.3	233.4	15.17
<u>Durables</u>								
Laspeyres	100.0	98.3	103.4	100.5	121.3	127.4	140.8	5.07
Paasche	100.0	98.5	105.8	102.5	120.3	142.2	157.4	7.85
Geometric mean	100.0	98.4	104.6	101.5	124.7	134.6	148.9	6.86

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Source: based on the Annual Industrial Surveys, CSO (Iraq).

Table - 12 (a)

Index of labour productivity per employee. Average annual rate of growth, in large establishments,
(Gross value added per employee - Constant factor costs) (1970-1976).

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	94.3	88.5	93.4	82.2	66.5	356.8	23.61
31.1.3	Canning	100.0	285.2	205.5	190.1	80.0	155.3	179.5	10.21
31.1.4	Dates	100.0	108.9	140.8	129.6	208.3	146.3	525.3	31.85
31.1.5	Vegetable Oil	100.0	44.6	75.9	48.5	75.6	68.6	25.3	-20.47
31.1.6	Grain Milling	100.0	108.0	65.7	70.2	83.7	72.9	79.3	- 3.79
31.1.7	Bakery	100.0	98.7	129.9	120.7	92.8	119.0	118.6	2.08
31.1.7	Macaroni	100.0	16.7	23.2	20.0	27.6	19.3	34.9	-16.09
31.1.8	Sugar	100.0	47.2	128.9	203.7	160.1	147.5	174.6	9.73
31.1.9	Confectionary	100.0	105.3	73.2	168.7	95.8	55.2	100.2	0.03
31.2.2	Animal Fodder	100.0	74.7	107.1	294.8	118.2	107.1	25.1	-20.58
31.3.1	Brewing	100.0	99.1	144.9	184.5	167.2	146.2	209.0	13.07
31.3.4	Soft Drinks	100.0	162.3	152.3	291.7	228.6	291.9	158.2	7.94
31.4.0	Cigarettes	100.0	148.5	203.9	352.2	270.8	154.0	144.5	6.33
31.4.0	Tobacco Curing	100.0	47.3	27.0	66.2	90.4	368.6	59.3	- 8.34
32.1.1	Cotton Ginning	100.0	46.0	36.1	181.0	183.5	170.2	38.6	-14.67
32.1.1	Wool Washing	100.0	124.3	40.7	90.4	169.5	282.5	94.3	- 0.97
32.1.1	Medicated Cotton	100.0	88.5	69.9	75.4	68.2	77.0	86.4	- 2.41
32.1.1	Jute	100.0	122.2	141.3	87.6	137.6	109.9	133.0	4.87
32.1.1	Cotton Textiles	100.0	107.1	112.0	106.5	104.5	100.2	113.8	2.18
32.1.1	Wool Textiles	100.0	103.3	91.8	73.0	79.4	82.3	92.0	- 1.38
32.1.1	Silk Textiles	100.0	144.2	173.8	133.9	196.8	130.0	124.4	3.68

Continue..

Table 12 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.3	Hosiery	100.0	125.4	127.3	113.8	159.2	116.7	136.5	5.32
32.1.3	Knitting	100.0	100.7	92.7	80.7	94.8	98.2	85.8	- 2.52
32.1.4	Carpets	100.0	1.2	3.6	13.4	11.6	12.8	11.0	-30.78
32.1.5	Shoe Laces	100.0	102.5	80.2	251.6	89.2	44.4	95.5	- 0.76
32.1.9	Cotton Waste	100.0	46.6	117.9	85.4	66.8	86.6	158.6	7.99
32.2.0	Shirt Making	100.0	79.9	52.8	24.5	34.3	33.0	33.0	-16.87
32.2.0	Tailoring	100.0	59.4	89.0	83.3	73.1	98.6	17.3	-25.35
32.3.1	Tanning	100.0	90.1	116.3	195.0	184.9	124.0	176.2	9.90
32.3.2	Leather Salting	100.0	17.7	100.8	149.9	65.3	16.3	59.6	- 8.26
32.3.3	Other Leather Products	100.0	127.7	115.0	126.0	70.2	139.9	147.0	6.63
32.4.0	Footwear	100.0	75.4	94.1	71.5	72.4	80.0	88.6	- 2.00
33.1.1	Wood	100.0	44.3	72.7	64.4	104.3	7.1	53.3	- 9.96
33.2.0	Carpentry	100.0	92.7	108.1	91.6	89.0	90.0	90.6	- 1.63
34.1.1	Papers & Products	100.0	43.5	14.4	142.2	159.6	79.2	74.6	- 4.77
34.2.0	Printing	100.0	166.4	115.9	93.6	94.5	60.2	75.3	- 4.62
35.1.1	Sulfur Refining	100.0	100.0	583.4	958.6	356.4	137.6	135.3	82.83
35.1.2	Fertilizers	100.0	100.0	8.2	49.3	45.0	39.0	35.7	-15.77
35.1.3	Plastic Products	100.0	110.1	97.6	139.7	249.9	268.2	357.6	23.67
35.1.3	Crude Plastic	100.0	100.0	100.0	102.3	125.7	176.6	170.6	9.31
35.2.1	Paints	100.0	156.8	178.7	158.6	199.5	248.3	356.3	23.59
35.2.2	Drug Packing	100.0	238.4	464.2	692.7	798.0	620.5	551.0	32.90
35.2.3	Soaps	100.0	137.2	76.7	50.9	55.8	51.1	44.6	-12.59
35.2.3	Cosmetics	100.0	80.2	80.5	72.7	56.2	53.9	88.7	- 1.98

continue..

Table 12 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.5	Matches	100.0	108.4	102.0	160.2	99.9	131.8	165.6	8.77
35.2.9	Synthetic Silk	100.0	154.1	78.6	85.5	45.4	52.8	43.5	-12.95
35.2.9	Other Chemicals	100.0	179.8	259.3	217.3	168.5	163.2	205.6	12.76
35.3.0	Petroleum Products	100.0	108.1	122.6	155.0	199.3	219.5	279.2	18.66
35.5.1	Rubber Products	100.0	80.4	63.7	34.3	77.8	55.8	47.1	-11.79
36.1.0	Pottery	100.0	119.8	62.5	58.9	53.7	63.6	130.7	4.56
36.2.0	Glass & Products	100.0	60.1	105.8	57.1	139.4	142.7	43.6	-12.92
36.9.1	Bricks	100.0	95.4	77.4	101.4	111.0	89.9	62.7	-7.40
36.9.1	Juss	100.0	70.7	62.8	68.5	75.5	61.9	42.3	-13.36
36.9.2	Cement	100.0	100.0	86.2	97.7	67.1	74.9	68.7	-6.06
36.9.2	Tiles & Mosaic	100.0	91.3	91.6	79.8	101.5	100.0	84.8	-2.71
36.9.2	Concrete Products	100.0	88.6	78.2	89.4	100.4	79.6	65.3	-6.86
36.9.9	Damp Proofing Material	100.0	84.8	127.7	173.0	111.2	74.5	113.1	2.07
36.9.9	Asbestos	100.0	106.0	131.1	101.0	113.2	111.1	14.8	-27.27
36.9.9	Stones	100.0	97.1	86.4	224.0	100.8	44.7	43.9	-12.82
37.1.0	Pipes	100.0	103.1	106.4	90.0	86.4	306.1	273.6	18.26
37.2.0	Foundry	100.0	135.2	83.8	78.5	89.1	110.9	129.6	4.42
38.1.1	Aluminium Utensils	100.0	46.0	76.2	65.9	124.0	85.4	74.4	-4.81
38.1.2	Metal Furniture	100.0	156.3	157.7	171.7	110.9	54.1	119.9	3.07
38.1.3	Smithy	100.0	65.5	122.1	95.0	76.4	86.9	118.7	2.90
38.1.9	Nails and Razor Blades	100.0	77.5	88.4	77.2	181.5	117.7	104.6	0.75
38.2.1-4	Non-Electrical Machinery	100.0	100.0	78.9	37.5	66.1	23.6	106.1	0.99

Table 12 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.3.3	Air Coolers and Heaters	100.0	123.3	143.5	139.8	111.6	157.9	121.7	3.33
38.3.2	radios and Televisions	100.0	174.9	650.9	1 042.5	1 026.6	1 534.8	1 130.4	49.01
38.3.9	Batteries	100.0	196.8	320.2	296.8	482.0	335.0	563.7	33.40
38.3.9	Other Electrical Equipment	100.0	21.5	103.6	68.2	54.6	79.7	150.5	7.05
38.4.3	radiators	100.0	87.6	92.5	88.2	95.6	108.2	111.9	1.89
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	21.8	50.4	107.3	1.18
38.4.4	Bicycles	100.0	56.0	64.9	94.3	115.2	120.5	160.9	8.25
39.0.9	Miscellaneous	100.0	154.7	135.6	126.7	126.7	61.1	109.6	1.54

Sources: Based on the Annual Industrial Surveys published by CSO. Iraq.

Table - 12- (b)

Productivity per employee in manufacturing. Average annual rate of growth 1970 - 1976.

(Major Groups) (Constant factor costs)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	84.6	89.2	91.7	112.3	97.0	157.6	7.87
31.3	Beverages	100.0	124.0	149.2	247.4	204.1	238.9	235.6	15.35
31.4	Cigarettes	100.0	127.8	144.1	248.4	204.1	178.2	95.2	- 0.81
32.1	Textiles	100.0	109.3	113.2	108.7	101.9	101.4	106.2	1.03
32.2	Wearing Apparel	100.0	68.0	68.8	66.0	67.8	74.1	47.5	-13.67
32.3	Leather and products	100.0	90.0	113.3	187.1	171.9	116.3	166.5	8.87
32.4	Footwear	100.0	75.3	94.1	71.5	72.3	80.0	88.6	2.09
33.1	Wood except furniture	100.0	44.4	72.7	64.3	104.5	7.1	53.3	- 9.97
33.2	Furniture & fixtures	100.0	92.5	107.9	91.6	88.9	90.1	90.5	- 1.66
34.1	Papers and products	100.0	43.6	14.3	142.2	159.5	79.2	74.5	- 4.78
34.2	Printing and publishing	100.0	166.5	115.9	93.6	94.6	60.2	75.4	- 4.60
35.1	Industrial Chemicals	100.0	100.0	47.1	137.0	195.6	170.7	249.6	16.46
35.2	Chemical products	100.0	148.8	112.6	111.9	97.1	99.3	101.3	0.21
35.3	Petroleum products	100.0	108.1	122.6	155.0	199.3	219.3	279.2	18.66
35.5	Rubber products	100.0	80.4	63.6	34.4	77.8	55.8	47.1	-11.80
35.6	Plastic products	100.0	108.2	97.1	134.1	235.2	256.3	340.8	22.68
36.1	Pottery and earthenware	100.0	119.8	62.4	58.9	53.7	63.6	130.8	4.57

continue..

Table 12 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	60.2	106.0	57.1	139.5	142.8	43.6	-12.94
36.9	Non-metallic products	100.0	96.8	82.2	109.3	104.5	97.8	74.0	- 4.89
37.1	Basic metal products	100.0	125.4	91.9	81.6	91.1	222.9	215.7	13.67
38.1	Fabricated metal products	100.0	92.3	120.6	111.1	111.5	91.9	117.7	2.75
38.2	Non-electrical machinery	100.0	100.0	79.0	37.6	66.1	23.7	106.1	0.99
38.3	Electrical machinery and supplies	100.0	69.0	159.6	160.4	172.0	215.1	245.8	16.17
38.4	Transport equipment	100.0	90.3	90.9	91.7	24.5	52.5	109.8	1.57
39.0	Manufacturing not elsewhere classified	100.0	154.5	135.5	126.7	126.7	61.1	109.6	1.54

Source: based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. CSO.

Table - 12 - (c)

Productivity per employee in manufacturing. Average annual rate of growth, 1970 - 1976.
(Industrial Divisions) (Value at constant factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	96.9	103.5	131.0	138.2	128.7	156.0	7.69
32.	Textiles, Wearing Apparel and Leather	100.0	94.8	99.2	95.8	92.6	92.0	93.4	-3.21
33.	Wood and products, including furniture	100.0	90.1	106.1	90.5	89.9	84.2	86.2	-2.44
34.	Paper, printing and publishing	100.0	113.8	61.2	129.2	140.4	73.4	77.4	-4.18
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	112.3	109.1	132.3	184.9	204.0	262.7	17.46
36.	Non-metallic products	100.0	95.2	82.1	104.4	104.3	98.4	71.8	-5.38
37.	Basic metal industries	100.0	125.4	51.9	81.6	91.1	222.9	215.7	13.67
38.	Fabricated metal products, machinery and equipment	100.0	89.0	94.7	81.3	68.9	84.1	149.1	6.88
39.	Other manufacturing industries	100.0	154.5	135.5	126.7	126.7	61.1	109.6	1.54

Source: based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. CSO.

Table - 12 - (d)

Productivity per employee in manufacturing. Average annual rate of growth, 1970 - 1976.
(constant factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
<u>Manufacturing sector</u>	100.0	99.1	97.8	114.4	131.7	136.5	170.3	9.28
Consumer goods	100.0	99.1	102.3	119.2	125.6	120.5	137.7	5.48
Intermediate goods	100.0	106.8	97.1	120.2	171.6	188.3	227.8	14.71
Capital goods	100.0	92.8	85.3	91.1	79.7	84.4	107.2	1.17
Non-durable goods	100.0	101.3	103.9	119.0	145.6	149.9	189.9	11.28
Durable goods	100.0	93.1	89.8	97.8	90.7	98.9	123.0	3.50

Source: based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. CSO.

Table - 13 - (a)

Index of productivity per operative in manufacturing industries, average annual rate of growth,
1970 - 1976. (74 industries) (constant factor costs).

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	114.1	102.0	114.5	104.3	77.3	414.6	26.75
31.1.3	Canning	100.0	295.5	202.9	214.3	87.3	172.0	205.5	12.75
31.1.4	Dates	100.0	192.4	149.8	129.3	300.9	151.1	543.0	32.58
31.1.5	Vegetable Oil	100.0	42.5	80.3	45.4	70.9	64.1	23.6	-21.39
31.1.6	Grain Milling	100.0	109.1	67.3	71.8	83.9	72.7	79.0	- 3.84
31.1.7	Bakery	100.0	100.2	127.9	118.8	90.4	116.0	115.8	2.48
31.1.7	Macaroni	100.0	16.4	21.1	19.2	24.7	18.5	33.3	-16.74
31.1.8	Sugar	100.0	52.5	143.1	228.0	124.1	176.7	209.1	13.08
31.1.9	Confectionary	100.0	55.7	73.5	168.4	95.9	55.3	100.3	0.04
31.2.2	Animal Products	100.0	74.8	111.4	309.5	122.0	101.3	23.7	-21.36
31.3.1	Brewing	100.0	89.2	147.0	176.2	163.7	135.1	193.1	11.59
31.3.4	Soft Drinks	100.0	194.0	178.5	325.1	249.2	292.7	158.5	7.98
31.4.0	Cigarettes	100.0	151.9	211.7	359.3	281.5	160.4	150.5	7.05
31.4.0	Tobacco Curing	100.0	48.0	26.7	65.2	88.2	404.8	65.1	- 6.91
32.1.1	Cotton Ginning	100.0	46.9	33.8	171.4	191.1	170.2	38.7	-14.65
32.1.1	Wool Washing	100.0	128.0	41.2	108.9	258.6	517.2	517.2	31.51
32.1.1	Medicated Cotton	100.0	86.7	69.0	76.8	70.5	79.7	90.4	- 1.68
32.1.1	Jute	100.0	122.3	139.8	86.9	136.5	109.2	132.2	4.76
32.1.1	Cotton Textiles	100.0	107.7	116.0	110.6	108.9	104.4	118.6	2.88
32.1.1	Wool Textiles	100.0	104.6	89.9	74.4	80.3	84.8	94.8	-0.88

continue..

Table 13 (1) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Silk Textiles	100.0	143.5	166.1	147.2	102.0	124.3	118.9	2.93
32.1.3	Hosiery	100.0	125.4	129.8	114.3	161.0	117.1	136.3	5.36
32.1.3	Knitting	100.0	100.1	92.4	80.1	95.3	98.8	86.3	-2.43
32.1.4	Carpets	100.0	0.9	3.1	11.5	9.9	11.1	9.7	-32.25
32.1.5	Shoe Laces	100.0	103.5	61.5	253.2	89.3	43.2	92.7	-1.25
32.1.9	Cotton Waste	100.0	48.6	133.3	89.2	77.8	93.8	170.0	9.25
32.2.0	Shirt Making	100.0	79.2	52.1	24.6	34.3	33.4	33.4	-16.72
32.2.0	Tailoring	100.0	61.7	95.2	88.4	76.4	105.6	18.5	-24.51
32.3.1	Tanning	100.0	90.3	111.3	215.9	182.8	123.3	175.2	9.80
32.3.2	Leather Salting	100.0	17.5	105.3	189.7	72.8	19.1	71.5	-5.44
32.3.3	Other Leather Products	100.0	120.0	114.5	120.0	65.5	125.2	132.6	4.82
32.4.0	Footwear	100.0	73.7	98.0	72.3	72.8	80.5	89.0	-1.92
33.1.1	Wood	100.0	44.0	72.6	69.0	104.3	7.1	53.7	-9.83
33.2.0	Carpentry	100.0	93.0	107.3	90.2	86.5	88.7	89.1	-1.91
34.1.1	Papers & Products	100.0	39.9	13.2	133.2	148.0	78.1	73.5	-5.00
34.2.0	Printing	100.0	167.3	116.3	91.3	94.2	65.3	81.7	-3.32
35.1.1	Sulfur Refining	100.0	100.0	588.5	985.6	2 459.3	2 181.1	3 992.7	84.87
35.1.2	Fertilizers	100.0	100.0	8.3	51.6	45.0	37.7	34.5	-16.27
35.1.3	Plastic Products	100.0	114.0	92.6	131.9	242.7	253.2	337.4	22.47
35.1.3	Crude Plastic	100.0	100.0	100.0	100.0	123.7	185.0	178.9	10.18
35.2.1	Paints	100.0	164.7	195.1	174.6	238.5	284.2	407.0	26.36
35.2.2	Drug Packing	100.0	272.9	536.6	793.0	914.8	709.1	629.5	35.88
35.2.3	Soaps	100.0	130.0	79.1	47.3	52.0	47.4	41.4	-13.65

continue..

Table 13 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Cosmetics	100.0	84.1	82.7	76.9	54.0	58.8	96.0	- 0.69
35.2.5	Matches	100.0	102.8	164.8	142.3	87.7	114.7	144.2	6.29
35.2.9	Synthetic Silk	100.0	152.4	80.5	88.8	47.7	56.0	46.1	-12.12
35.2.9	Other Chemicals	100.0	168.1	245.9	210.3	153.2	139.6	175.8	9.86
35.3.0	Petroleum Products	100.0	111.6	124.9	159.8	215.0	247.1	314.2	21.03
35.5.1	Rubber Products	100.0	80.2	63.0	34.3	75.6	53.7	45.4	-12.35
36.1.0	Pottery	100.0	130.3	61.7	61.4	55.4	66.7	138.0	5.51
36.2.0	Glass & Products	100.0	59.6	108.3	61.3	164.5	162.1	49.4	-11.08
36.9.1	Bricks	100.0	95.4	76.7	102.0	111.9	89.8	62.7	- 7.48
36.9.1	Juss	100.0	71.3	64.2	71.1	79.2	61.5	42.0	-13.48
36.9.2	Cement	100.0	96.6	83.3	90.5	62.6	70.8	65.0	- 6.94
36.9.2	Tiles & Mosaic	100.0	91.9	91.2	79.8	102.5	102.1	86.4	- 2.41
36.9.2	Concrete Products	100.0	90.2	79.3	93.3	98.2	85.7	70.2	- 5.73
36.9.9	Damp Proofing Material	100.0	83.7	115.2	160.9	111.6	71.0	105.9	0.96
36.9.9	Astestos	100.0	96.5	117.4	90.3	98.6	97.2	13.0	-28.87
36.9.9	Stones	100.0	95.3	97.6	250.5	115.9	50.4	49.2	-11.14
37.1.0	Pipes	100.0	103.3	106.7	90.0	105.0	373.4	334.6	22.30
37.2.0	Foundry	100.0	133.6	88.2	88.8	98.3	119.4	139.7	5.73
38.1.1	Aluminum Utensils	100.0	46.7	76.8	63.9	126.7	06.6	75.5	- 4.57
38.1.2	Metal Furniture	100.0	156.8	159.9	169.8	112.7	55.2	122.0	3.38
38.1.3	Smithy	100.0	66.7	121.3	94.1	75.9	96.3	131.5	4.67
38.1.9	Nails and Razor Blades	100.0	76.0	89.6	74.1	177.2	106.6	94.4	- 0.95

continue..

Table 13 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.2.1-4	Non-Electrical Machinery	100.0	100.0	73.5	35.7	61.4	22.0	98.5	- 0.25
38.3.3	Air Coolers and Heaters	100.0	130.9	142.0	139.5	108.6	152.1	117.2	2.69
38.3.2	Radios and Televisions	100.0	182.5	669.6	1065.6	1037.8	10559.5	11149.4	50.23
38.3.9	Batteries	100.0	207.4	333.3	318.0	507.9	377.0	634.0	36.05
38.3.9	Other Electrical Equipment	100.0	21.3	97.3	62.3	50.1	75.4	142.3	6.06
38.4.3	Radiators	100.0	83.3	03.7	83.4	21.0	101.4	104.7	0.77
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	21.5	40.0	102.3	0.37
38.4.4	Bicycles	100.0	50.8	54.8	80.9	103.2	102.3	138.3	5.84
39.0.9	Miscellaneous	100.0	159.7	142.0	140.3	133.2	62.9	112.9	2.04

Source: Based on the Annual Industrial Surveys 1970 - 1976.

Table - 13 - (b)

Productivity per operative. Average annual rate of growth, 1970 - 1976.

(Major Groups) (Values at constant factor costs)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	88.2	91.5	92.7	121.1	103.5	174.2	9.69
31.3	Beverages	100.0	140.1	168.7	260.9	214.5	225.7	222.1	14.23
31.4	Cigarettes	100.0	129.8	145.0	246.7	204.4	186.8	99.8	- 0.04
32.1	Textiles	100.0	109.5	112.1	108.8	102.4	102.0	106.6	1.07
32.2	Wearing Apparel	100.0	68.6	70.2	66.6	68.2	75.6	48.4	-11.39
32.3	Leather and products	100.0	79.7	108.9	207.6	170.7	116.1	166.4	8.86
32.4	Footwear	100.0	73.7	98.0	72.3	72.8	80.5	89.0	- 1.92
33.1	Wood except furniture	100.0	44.0	72.6	69.0	104.3	7.1	53.7	- 9.83
33.2	Furniture & fixtures	100.0	93.0	107.3	90.2	86.5	88.7	89.1	- 1.91
34.1	Papers and products	100.0	39.9	13.2	133.2	148.0	78.1	73.5	- 5.00
34.2	Printing and publishing	100.0	167.3	116.3	91.3	94.2	65.3	81.7	- 3.32
35.1	Industrial Chemicals	100.0	100.0	49.1	148.5	207.9	178.7	261.1	17.35
35.2	Chemical products	100.0	152.2	117.9	115.3	100.3	103.2	105.7	0.93
35.3	Petroleum products	100.0	111.6	124.9	159.8	215.0	247.1	314.3	21.03
35.5	Rubber products	100.0	80.2	63.0	34.3	75.6	53.7	45.4	-12.35
35.6	Plastic products	100.0	111.4	93.0	127.4	229.6	245.1	325.1	21.72
36.1	Pottery and earthenware	100.0	130.3	64.7	61.4	55.4	66.7	130.0	5.51

continue ...

Table 13 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	59.6	108.3	61.3	164.5	162.1	49.4	-11.08
36.9	Non-metallic products	100.0	95.9	80.7	109.1	105.3	97.8	74.0	- 4.89
37.1	Basic metal products	100.0	124.6	95.4	89.5	104.3	254.3	246.2	16.21
38.1	Fabricated metal products	100.0	93.1	121.5	109.5	112.3	97.1	123.8	3.62
33.2	Non-electrical machinery	100.0	100.0	73.5	35.7	61.4	22.0	98.5	- 0.25
38.3	Electrical machinery and supplies	100.0	70.0	155.5	155.9	164.9	211.6	243.1	15.96
38.4	Transport equipment	100.0	89.7	88.4	90.3	23.9	49.5	103.6	0.59
39.0	Manufacturing not elsewhere classified	100.0	159.7	142.0	140.3	133.2	62.9	112.9	2.04

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Source; based on our estimate of gross value added at constant prices and number of operatives as reported in the Annual Industrial Surveys. CSO.

Table - 13 -(c)

Productivity per operative. Average annual rate of growth, 1970 - 1976.
(Industrial Divisions) (Value at constant factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	101.6	106.5	130.9	148.2	135.7	169.5	9.19
32.	Textiles, Wearing Apparel and Leather	100.0	94.7	98.8	96.3	92.8	92.8	94.7	- 0.93
33.	Wood and products, including furniture	100.0	90.5	105.6	89.5	87.5	83.3	85.6	- 2.55
34.	Paper, printing and publishing	100.0	111.5	60.8	128.5	140.1	78.3	82.6	- 3.14
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	114.9	112.4	136.6	194.6	218.7	282.1	18.87
36.	Non-metallic products	100.0	94.2	80.7	104.7	106.1	99.0	72.2	- 5.27
37.	Basic metal industries	100.0	124.6	95.4	89.5	104.3	254.3	246.2	16.21
38.	Fabricated metal products, machinery and equipment	100.0	89.6	91.4	78.6	65.8	81.8	145.1	6.40
39.	Other manufacturing industries	100.0	159.7	142.0	140.3	133.2	62.9	112.9	2.04

Source based on our estimate of gross value added at constant prices and number of operatives as reported in the Annual Industrial Surveys. CSO.

Table - 13 - (d)

Productivity per operative. Average annual rate of growth, 1970 - 1976.
(constant factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
Manufacturing sector	100.0	100.2	97.8	114.8	134.6	139.9	176.4	9.92
Consumer goods	100.0	101.3	103.7	119.3	129.3	124.4	143.5	6.21
Intermediate goods	100.0	107.7	96.4	121.6	176.6	197.6	240.1	15.72
Capital goods	100.0	92.1	83.4	90.6	79.8	84.4	107.0	1.14
Non-durable goods	100.0	103.3	102.0	119.3	149.8	155.2	198.5	12.11
Durable goods	100.0	92.6	88.0	97.5	91.0	99.3	123.4	3.57

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Source: based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. CSO.

Table - 14 - (a)

Index of Average Value added per Non-Manual in the manufacturing sector. Average annual rate of growth, 1970 - 1976.

(74 industries) (constant factor costs)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	70.0	70.0	68.2	57.8	52.0	278.7	18.63
31.1.3	Canning	100.0	249.9	218.3	129.9	59.5	102.0	117.7	2.76
31.1.4	Dates	100.0	149.6	132.9	145.1	169.6	95.8	344.4	22.89
31.1.5	Vegetable Oil	100.0	54.9	63.4	64.9	99.5	91.7	33.8	-16.55
31.1.6	Grain Milling	100.0	105.2	62.3	66.5	83.0	73.5	80.0	-3.65
31.1.7	Bakery	100.0	92.7	136.3	128.3	101.4	129.5	129.1	4.35
31.1.7	Macaroni	100.0	17.5	34.2	23.0	44.7	22.3	41.0	-13.80
31.1.8	Sugar	100.0	32.1	87.9	135.9	88.1	83.2	98.5	-0.25
31.1.9	Confectionery	100.0	103.0	72.0	169.1	95.2	54.6	99.0	-0.17
31.2.2	Animal Products	100.0	74.4	100.0	270.8	111.7	120.0	28.5	-18.08
31.3.1	Brewing	100.0	119.9	141.8	198.5	172.8	166.8	238.7	15.60
31.3.4	Soft Drinks	100.0	145.4	137.8	271.7	215.9	291.5	157.9	7.92
31.4.0	Cigarettes	100.0	128.2	161.5	309.2	213.7	120.0	112.8	2.03
31.4.0	Tobacco Curing	100.0	39.5	32.4	82.2	129.9	175.6	28.3	-18.98
32.1.1	Cotton Ginning	100.0	41.5	64.9	279.3	147.8	171.0	38.8	-14.61
32.1.1	Wool Washing	100.0	96.6	37.9	32.2	36.2	48.3	9.7	-32.27
32.1.1	Medicated Cotton	100.0	102.8	76.6	57.0	54.8	61.9	65.9	-6.70
32.1.1	Jute	100.0	115.4	174.1	99.1	158.2	121.1	146.8	6.61
32.1.1	Cotton Textiles	100.0	102.9	86.2	80.7	77.0	73.8	83.8	-2.89

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continue..

Table 14 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Wool Textiles	100.0	95.3	106.7	65.8	73.8	68.6	76.7	-4.33
32.1.1	Silk Textiles	100.0	149.3	296.4	225.2	159.9	192.5	184.4	10.74
32.1.3	Hosiery	100.0	125.1	112.1	110.2	147.8	114.7	134.3	5.04
32.1.3	Knitting	100.0	106.0	95.1	86.5	90.0	92.8	81.2	-3.42
32.1.4	Carpets	100.0	4.3	9.1	35.0	32.8	28.7	25.0	-20.65
32.1.5	Shoe Laces	100.0	94.8	70.8	240.2	89.1	56.7	123.8	3.63
32.1.9	Cotton Waste	100.0	39.7	79.3	72.7	42.4	66.1	123.6	3.60
32.2.0	Shirt Making	100.0	86.6	59.5	25.2	33.9	31.1	31.1	-17.67
32.2.0	Tailoring	100.0	45.4	58.8	57.1	54.6	64.0	11.2	-30.55
32.3.1	Tanning	100.0	89.1	142.4	140.8	192.7	126.6	179.9	10.28
32.3.2	Leather Salting	100.0	18.7	80.2	66.4	40.4	8.5	29.8	-18.28
32.3.3	Other Leather Products	100.0	210.0	105.0	180.0	120.0	480.0	420.0	27.02
32.4.0	Footwear	100.0	85.9	77.3	67.5	69.4	77.2	85.8	-2.52
33.1.1	Wood	100.0	45.6	73.0	54.8	105.0	6.8	52.0	-10.32
33.2.0	Carpentry	100.0	89.7	111.5	100.2	106.3	99.4	99.6	-0.06
34.1.1	Papers & Products	100.0	58.6	18.5	174.9	202.8	82.4	77.5	-4.16
34.2.0	Printing	100.0	161.6	113.4	113.0	98.0	39.6	49.6	-11.03
35.1.1	Sulfur Refining	100.0	100.0	575.2	885.2	2 075.7	1 669.9	3 073.5	76.99
35.1.2	Fertilizers	100.0	100.0	8.1	45.0	44.9	42.3	38.6	-14.66
35.1.3	Plastic Products	100.0	99.0	118.2	173.5	276.0	332.0	413.6	28.18
35.1.3	Cellulose Plastic	100.0	100.0	100.0	112.5	134.4	149.7	144.0	6.27
35.2.1	Paints	100.0	137.6	143.4	125.1	135.1	181.5	261.4	17.37

continue..

Table 14 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.2	Drug Packing	100.0	98.9	184.5	286.1	328.9	259.3	229.9	14.88
35.2.3	Soaps	100.0	168.5	69.6	60.5	73.9	68.9	60.3	-8.09
35.2.3	Cosmetics	100.0	68.4	73.1	59.8	67.0	41.0	68.4	-6.13
35.2.5	Matches	100.0	148.7	372.9	416.0	308.8	481.6	612.3	35.26
35.2.9	Synthetic Silk	100.0	165.1	68.9	69.9	35.1	39.4	32.4	-17.11
35.2.9	Other Chemicals	100.0	199.3	280.3	227.8	196.2	213.9	270.1	18.01
35.3.0	Petroleum Products	100.0	94.9	113.1	136.5	150.3	146.4	186.3	10.93
35.5.1	Rubber Products	100.0	81.0	66.3	34.4	88.3	66.5	56.1	-9.19
36.1.0	Pottery	100.0	28.9	26.3	23.0	24.3	22.8	43.2	-13.07
36.2.0	Glass and Products	100.0	65.7	88.8	35.2	58.9	69.0	21.1	-22.87
36.9.1	Bricks	100.0	100.4	89.6	93.6	100.3	96.2	67.2	-6.41
36.9.1	Juss	100.0	69.4	59.5	61.8	66.6	63.1	43.1	-13.09
36.9.2	Cement	100.0	108.9	93.8	119.6	80.6	86.6	79.4	-3.76
36.9.2	Tiles and Mosaic	100.0	88.9	94.8	81.2	97.3	91.0	77.3	-4.20
36.9.2	Concrete Products	100.0	81.4	72.6	73.1	114.5	57.9	47.4	-11.69
36.9.9	Damp Proofing Material	100.0	86.9	156.6	198.4	110.2	81.2	127.6	4.15
36.9.9	Asbestos	100.0	151.8	203.3	158.2	205.9	197.1	26.3	-19.94
36.9.9	Stones	100.0	117.7	43.0	115.7	46.8	22.5	22.3	-22.12
37.1.0	Pipes	100.0	103.3	106.7	90.0	42.2	147.8	131.2	4.63
37.2.0	Foundry	100.0	153.3	58.9	39.4	49.1	68.5	80.7	-3.50
38.1.1	Aluminium Utensils	100.0	43.0	73.9	77.8	112.2	79.9	69.8	-5.81
38.1.2	Metal Furniture	100.0	153.1	147.3	180.7	102.4	49.2	109.0	1.45
38.1.3	Smithy	100.0	61.0	126.3	99.5	79.4	61.1	83.6	-2.95

continue..

Table 14 (r) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.1.9	Nails and Razor Blades	100.0	83.3	84.6	89.9	197.0	177.9	161.9	8.37
38.2.1-4	Non-Electrical Machinery	100.0	100.0	113.8	47.9	96.7	34.9	156.2	7.72
38.3.3	Air Coolers & Heaters	100.0	96.1	151.4	141.7	128.7	193.6	149.7	6.96
38.3.2	Radios & Televisions	100.0	129.1	572.7	875.4	926.6	1 336.2	982.8	46.36
38.3.9	Batteries	100.0	146.3	253.9	205.5	359.4	192.7	324.4	21.67
38.3.9	Other Electrical Equipment	100.0	22.6	142.1	112.5	89.6	105.6	199.6	12.21
38.4.3	Radiators	100.0	108.7	153.0	111.6	117.4	143.6	149.8	6.97
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	23.6	66.2	142.0	6.02
38.4.4	Bicycles	100.0	86.4	95.8	132.9	144.7	175.8	236.8	15.45
39.0.9	Miscellaneous	100.0	138.9	117.0	94.9	108.5	55.6	99.5	-0.08

Source: based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. CSO.

Table - 14 -(b)

Productivity per non-manual. Average annual rate of growth, 1970 - 1976.

(Major Groups) (Constant factor costs)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1	Food manufacturing	100.0	70.0	79.0	86.9	82.0	73.4	106.0	0.98
31.3	Beverages	100.0	113.2	136.3	237.3	196.3	251.1	248.0	16.34
31.4	Cigarettes	100.0	114.3	137.2	262.6	202.0	132.5	70.9	- 5.57
32.1	Textiles	100.0	107.8	121.9	106.9	98.8	97.1	101.7	0.28
32.2	Wearing Apparel	100.0	64.3	60.4	61.3	64.1	64.1	41.3	-13.70
32.3	Leather and products	100.0	81.4	135.3	133.2	176.7	117.4	166.6	8.88
32.4	Footwear	100.0	85.9	77.3	67.5	69.4	77.2	85.8	- 2.52
33.1	Wood except furniture	100.0	45.6	73.0	54.8	105.0	6.8	52.0	-10.32
33.2	Furniture & fixtures	100.0	89.7	111.5	100.2	106.3	99.4	99.6	- 0.06
34.1	Papers and products	100.0	58.6	18.5	174.9	202.8	82.4	77.5	- 4.16
34.2	Printing & publishing	100.0	161.6	113.4	113.0	98.0	39.6	49.6	-11.03
35.1	Industrial Chemicals	100.0	100.0	42.0	111.4	166.5	150.5	220.4	14.08
35.2	Chemical products	100.0	132.8	90.5	96.2	83.1	82.4	82.5	- 3.15
35.3	Petroleum products	100.0	94.9	113.1	136.5	150.3	146.4	186.3	10.93
35.5	Rubber products	100.0	81.0	66.3	34.4	88.3	66.5	56.1	- 9.19
35.6	Plastic products	100.0	98.7	114.3	163.0	256.1	302.5	406.6	26.34
35.1	Pottery and earthenware	100.0	28.9	26.3	23.0	24.3	22.8	43.2	-13.07

continue ..

Table 14 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
36.2	Glass and products	100.0	65.7	88.8	35.2	58.9	69.0	21.1	-22.87
36.9	Non-metallic products	100.0	104.8	95.9	110.6	98.6	97.6	74.1	- 4.88
37.1	Basic metal products	100.0	132.2	71.4	48.5	45.9	113.6	109.7	1.55
38.1	Fabricated metal products	100.0	88.6	116.7	119.4	108.0	73.6	96.0	- 0.67
38.2	Non-electrical machinery	100.0	100.0	113.8	47.9	96.7	34.9	156.2	7.72
38.3	Electrical machinery and supplies	100.0	61.3	183.1	187.0	218.1	234.1	260.1	17.27
38.4	Transport equipment	100.0	92.6	102.3	98.1	27.1	69.4	144.9	6.38
39.0	Manufacturing not elsewhere classified	100.0	138.9	117.0	94.9	108.5	55.6	99.5	- 0.08

Source: based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. CSO.

Table - 14 - (c)
 Productivity per non-manual. Average annual rate of growth, 1970 - 1976.
 (Industrial Divisions) (Constant factor costs)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	100.0	82.5	93.8	131.2	110.6	108.2	120.4	3.15
32.	Textiles, Wearing Apparel and Leather	100.0	94.7	102.0	92.5	93.5	86.7	86.5	- 2.39
33.	Wood and products, including furniture	100.0	88.2	109.4	96.3	106.0	89.6	89.4	- 1.85
34.	Paper, printing and publishing	100.0	125.5	62.9	133.0	142.0	56.5	59.7	- 8.24
35.	Chemicals, Petroleum, Rubber and Plastic products	100.0	102.2	96.3	113.7	150.7	156.2	200.0	12.25
36.	Non-metallic products	100.0	103.0	94.4	102.2	92.5	93.4	68.2	- 6.13
37.	Basic metal industries	100.0	132.2	71.4	48.5	45.9	113.6	109.7	1.55
38.	Fabricated metal products machinery and equipment	100.0	86.7	113.1	96.4	87.2	96.3	170.1	9.26
39.	Other manufacturing industries	100.0	138.9	117.0	94.9	108.5	55.6	99.5	- 0.08

Source based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. CBO.

Table - 14 - (d)

Productivity per non-manual. Average annual rate of growth, 1970 - 1976.
(constant factor costs)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
Manufacturing sector	100.0	93.7	97.7	112.8	118.1	120.6	148.0	6.75
Consumer goods	100.0	90.3	96.3	118.4	111.0	109.0	115.7	2.37
Intermediate goods	100.0	102.6	101.1	113.9	151.2	153.2	182.6	10.56
Capital goods	100.0	97.7	100.5	94.6	78.9	84.7	108.6	1.38
Non-durable goods	100.0	93.0	96.2	117.7	128.2	129.2	157.3	7.84
Durable goods	100.0	96.6	103.7	99.4	88.8	96.3	119.9	3.07

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Source: based on our estimate of gross value added at constant factor costs and employment data reported in the Annual Industrial Surveys. OSO.

Table - 15 - (a)

Index of Input-Output ratios in the manufacturing sector. Average annual rate of growth, 1970 - 1976.
(74 industries) (current factor costs)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.1.2	Dairy	100.0	100.0	98.7	106.2	117.2	119.2	131.5	4.67
31.1.3	Canning	100.0	83.3	93.1	90.9	118.0	109.6	107.3	1.18
31.1.4	Dates	100.0	100.8	76.8	88.7	84.0	92.5	95.2	-0.82
31.1.5	Vegetable Oil	100.0	139.2	117.5	136.1	125.0	125.0	156.5	7.75
31.1.6	Grain Milling	100.0	102.2	104.6	104.5	104.6	106.2	106.5	1.06
31.1.7	Bakery	100.0	98.9	90.3	92.7	100.8	101.1	105.1	0.83
31.1.7	Macaroni	100.0	241.1	252.2	272.8	248.9	278.1	208.9	13.07
31.1.8	Sugar	100.0	121.3	110.6	107.1	107.1	107.1	107.1	1.16
31.1.9	Confectionary	100.0	98.3	106.1	89.4	102.6	114.0	108.8	1.41
31.2.2	Animal Products	100.0	105.9	96.2	75.9	101.8	105.9	96.2	-0.65
31.3.1	Brewing	100.0	100.8	91.2	83.4	100.8	101.5	102.1	0.35
31.3.4	Soft Drinks	100.0	70.6	76.4	53.0	58.2	60.8	83.5	-2.95
31.4.0	Cigarettes	100.0	95.6	94.4	78.0	101.7	103.2	122.5	3.44
31.4.0	Tobacco Curing	100.0	139.9	148.7	131.7	93.9	80.1	121.6	3.31
32.1.1	Cotton Ginning	100.0	102.3	100.9	72.6	88.9	91.3	113.6	2.15
32.1.1	Wool Washing	100.0	101.8	99.7	102.6	28.4	56.7	56.7	-9.02
32.1.1	Medicated Cotton	100.0	97.7	110.0	100.5	102.1	101.9	102.1	0.35
32.1.1	Jute	100.0	100.7	91.8	104.0	78.1	84.0	87.7	-2.17
32.1.1	Cotton Textiles	100.0	97.7	86.8	93.6	105.0	104.7	103.9	0.64

continue..

Table 15 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
32.1.1	Wool Textiles	100.0	92.9	83.3	100.3	112.4	110.6	104.6	0.75
32.1.1	Silk Textiles	100.0	86.6	81.4	86.3	94.3	100.0	107.0	1.13
32.1.3	Hosiery	100.0	89.6	89.1	95.7	94.9	104.8	101.6	0.26
32.1.3	Knitting	100.0	114.6	113.3	117.2	120.2	116.6	120.1	3.11
32.1.4	Carpets	100.0	123.5	101.9	59.8	65.2	73.8	92.2	-1.35
32.1.5	Shoe Laces	100.0	97.1	94.7	56.2	102.3	114.6	106.0	0.98
32.1.9	Cotton Waste	100.0	104.6	88.6	102.0	108.6	100.4	90.0	-1.74
32.2.0	Shirt Making	100.0	95.0	94.6	101.5	94.9	95.4	98.0	-0.34
32.2.0	Tailoring	100.0	118.8	101.8	97.6	108.0	94.1	138.4	5.57
32.3.1	Tanning	100.0	98.8	83.1	70.0	82.3	85.6	82.1	-3.24
32.3.2	Leather Salting	100.0	110.3	99.0	100.4	95.1	113.2	101.4	0.23
32.3.3	Other Leather Products	100.0	90.2	94.7	91.8	109.1	90.2	92.8	-1.24
32.4.0	Footwear	100.0	112.8	112.2	123.4	126.6	121.2	116.1	2.52
33.1.1	Wood	100.0	126.8	108.1	128.9	101.5	153.7	126.3	3.97
33.2.0	Carpentry	100.0	101.6	103.0	106.3	106.4	114.8	111.2	1.78
34.1.1	Papers & Products	100.0	114.0	126.7	84.9	89.6	104.6	94.2	-1.00
34.2.0	Printing	100.0	86.3	95.4	99.6	123.6	131.3	122.7	3.47
35.1.1	Sulfur Refining	100.0	100.0	64.7	60.9	23.7	25.5	37.0	-15.27
35.1.2	Fertilizers	100.0	100.0	172.8	95.4	102.7	117.9	123.4	3.56
35.1.3	Plastic Products	100.0	95.1	85.4	83.0	89.7	93.3	90.7	-1.61
35.1.3	Crude Plastic	100.0	100.0	100.0	98.5	105.9	93.7	100.9	0.15
35.2.1	Paints	100.0	87.4	86.1	89.6	88.2	100.0	97.1	-0.49
35.2.2	Drug Packing	100.0	101.3	76.3	65.1	61.4	67.6	73.2	-5.06

continue..

Table 15 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
35.2.3	Soaps	100.0	94.3	118.9	135.4	138.8	143.8	153.0	7.34
35.2.3	Cosmetics	100.0	110.7	104.4	107.7	99.5	116.5	113.7	2.16
35.2.5	Matches	100.0	86.9	55.5	72.8	117.9	114.8	114.0	2.21
35.2.9	Synthetic Silk	100.0	87.6	125.1	103.5	161.5	161.0	172.2	9.48
35.2.9	Other Chemicals	100.0	67.0	59.2	78.2	79.1	78.6	74.6	-4.78
35.3.0	Petroleum Products	100.0	95.3	96.7	106.8	94.1	88.5	80.3	-3.55
35.5.1	Rubber Products	100.0	110.4	128.1	158.8	129.1	155.5	164.8	8.68
36.1.0	Pottery	100.0	63.6	76.5	307.0	91.8	78.5	103.2	0.53
36.2.0	Glass and Products	100.0	117.2	94.0	132.4	86.1	85.9	152.3	7.27
36.9.1	Bricks	100.0	105.8	106.5	105.5	97.6	107.3	154.9	7.57
36.9.1	Juss	100.0	116.5	113.4	97.8	130.8	131.3	147.2	6.65
36.9.2	Cement	100.0	102.3	110.0	122.3	140.4	147.1	156.9	7.80
36.9.2	Tiles and Mosaic	100.0	107.4	101.2	110.0	111.1	108.8	109.3	1.50
36.9.2	Concrete Products	100.0	98.3	101.3	92.4	84.3	95.9	106.0	0.98
36.9.9	Damp Proofing Material	100.0	116.6	109.2	88.5	122.3	135.5	131.3	4.65
36.9.9	Asbestos	100.0	103.2	96.6	93.4	93.4	110.9	105.4	0.88
36.9.9	Stones	100.0	122.5	160.6	122.3	158.7	177.7	160.6	8.22
37.1.0	Pipes	100.0	100.0	100.0	100.0	134.8	130.6	150.5	7.05
37.2.0	Foundry	100.0	90.3	108.1	88.8	79.4	86.0	84.5	-2.78
38.1.1	Aluminum Utensils	100.0	115.9	103.8	107.4	93.3	106.1	109.9	1.59
38.1.2	Metal Furniture	100.0	90.1	90.3	87.1	93.9	115.7	94.7	-0.90
38.1.3	Smithy	100.0	118.7	109.3	97.7	100.1	96.2	103.7	0.61
38.1.5	Nails and Razor Blades	100.0	100.6	97.7	102.2	90.9	97.0	97.6	-0.40

Table 15 (a) (cont'd)

Industrial Classification	Industries	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
38.2.1-4	Non-Electrical Machinery	100.0	100.0	114.8	113.6	93.9	142.1	110.3	1.65
38.3.3	Air Coolers and Heaters	100.0	100.3	88.8	94.8	95.4	97.3	112.0	1.90
38.3.2	Radics & Televisions	100.0	96.1	73.0	70.7	71.5	68.1	84.5	-2.78
38.3.9	Batteries	100.0	74.4	63.0	69.7	66.7	79.2	77.2	-4.21
38.3.9	Other Electrical Equipment	100.0	155.9	89.6	111.7	115.4	106.6	99.7	-0.05
38.4.3	Radiators	100.0	104.8	100.0	97.6	102.3	101.0	101.1	0.18
38.4.3	Car Assembling	100.0	100.0	100.0	100.0	150.9	124.1	106.2	1.01
38.4.4	Bicycles	100.0	290.3	285.8	238.6	233.7	265.6	241.5	15.83
39.0.9	Miscellaneous	100.0	83.6	103.2	100.5	109.7	120.3	115.5	2.43

Source: based on CSO's Output and Input estimates, published in the Annual Industrial Surveys.

Table - 15 - (b)

Input-Output ratios in manufacturing industries. Average annual rate of growth, 1970-1976.
(Major Industrial Groups) (current factor costs) (Percentages)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of growth
31.1	Food manufacturing	73.1	80.8	75.7	76.6	77.4	79.9	83.5	2.24
31.3	Beverages	71.8	54.8	56.2	42.1	47.5	49.0	60.4	-2.84
31.4	Cigarettes	62.0	62.3	62.8	53.6	62.1	60.8	75.0	3.22
32.1	Textiles	50.6	54.4	52.6	54.2	56.3	60.0	61.8	0.80
32.2	Wearing Apparel	70.8	76.0	69.6	67.4	72.9	68.7	85.0	3.10
32.3	Leather and products	80.8	82.2	69.4	65.8	66.4	69.3	65.8	-3.36
32.4	Footwear	54.7	61.7	61.3	67.5	69.2	66.3	63.5	2.32
33.1	Wood except furniture	61.7	78.2	66.7	79.5	62.6	94.8	77.9	3.96
33.2	Furniture & fixtures (except of metal)	56.8	57.7	58.5	60.4	60.5	65.2	63.1	1.77
34.1	Papers and products	75.8	86.4	96.0	64.4	67.9	79.2	71.4	-0.99
34.2	Printing & publishing	59.6	51.4	56.8	59.4	73.7	76.3	73.1	3.46
35.1	Industrial Chemicals	54.8	54.8	73.7	47.4	37.2	43.4	41.9	-4.37
35.2	Chemical products	57.6	52.2	57.4	56.8	64.3	67.1	68.2	2.85
35.3	Petroleum products	43.7	41.6	42.2	46.4	41.1	38.6	35.2	-3.55
35.5	Rubber products	40.4	44.6	51.8	64.2	52.2	62.8	66.6	6.69
35.6	Plastic products	79.1	76.6	71.3	68.6	73.2	73.0	71.5	-1.67
36.1	Pottery & earthenware	25.5	16.2	19.5	78.3	23.4	20.0	26.3	0.52

continue ..

Table 15 (b) (cont'd)

Industrial Classification	Major Industrial Groups	1970	1971	1972	1973	1974	1975	1976	Rate of growth
36.2	Glass and products	53.0	62.1	49.8	70.2	45.6	45.5	80.7	7.26
36.9	Non-metallic products	43.7	45.3	47.1	49.3	54.0	57.0	62.7	6.20
37.1	Basic metal products	62.9	57.3	66.5	56.5	59.1	61.6	68.8	1.50
38.1	Fabricated metal products	73.9	78.5	75.0	71.3	71.3	75.0	75.5	0.36
38.2	Non-electrical machinery	59.6	59.6	68.4	67.6	56.0	84.7	65.7	1.64
38.3	Electrical machinery and supplies	64.5	73.5	56.4	60.8	61.9	61.5	69.2	1.18
38.4	Transport equipment	53.6	54.5	54.4	54.0	79.2	66.5	57.2	1.09
39.0	Manufacturing not elsewhere classified	73.3	61.3	75.7	73.7	80.4	88.2	84.7	2.44

Source; based on CSO's Output and Input estimates, published in the Annual Industrial Surveys.

Table - 15 - (c)

Input-Output ratios in manufacturing industries. Average annual rate of growth, 1970 - 1976.
(Industrial Divisions) (current factor costs) (Percentages)

Industrial Classification	Divisions	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
31.	Food, Beverages and Tobacco	71.2	75.7	71.7	69.0	71.9	72.6	79.6	1.88
32.	Textiles, Wearing Apparel and Leather	62.4	62.0	57.8	58.9	63.1	63.2	68.3	1.52
33.	Wood and products, including furniture	57.1	58.7	58.9	61.6	60.6	66.3	64.3	2.00
34.	Paper, printing and publishing	67.7	66.2	81.5	63.0	69.7	78.9	72.2	1.08
35.	Chemicals, Petroleum, Rubber and Plastic products	50.0	47.9	50.3	51.1	50.0	50.4	48.3	-0.57
36.	Non-metallic products	43.7	45.7	47.2	50.8	53.5	56.4	63.7	6.48
37.	Basic metal industries	62.9	57.3	66.5	56.5	59.1	61.6	68.8	1.50
38.	Fabricated metal products, machinery and equipment	60.5	63.8	62.2	61.3	66.5	67.7	65.6	1.36
39.	Other manufacturing industries	73.3	61.3	75.7	73.7	80.4	88.2	84.7	2.44

Source: based on CSO's Output and Input estimates, published in the Annual Industrial Surveys.

Table - 15 - (d)

Input-Output ratios in overall manufacturing and major commodity groupings, 1970 - 1976.
(current factor costs) (percentages)

	1970	1971	1972	1973	1974	1975	1976	Rate of Growth
Overall manufacturing sector	61.3	63.1	62.2	61.5	63.8	64.7	67.5	1.62
Consumer goods	67.9	70.5	66.9	65.4	68.6	69.7	75.2	1.72
Intermediate goods	51.5	48.7	52.3	51.	48.4	47.8	46.2	-1.79
Capital goods	52.3	54.2	55.5	55.	60.3	62.9	63.3	3.23
Non-durable goods	64.0	66.1	64.1	62.7	64.6	65.2	68.4	1.11
Durable goods	53.0	55.3	56.0	56.3	60.6	63.2	65.0	3.45

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Source; based on CSO's output and input estimates, published in the Annual Industrial Surveys.

Table 16

Index of Unit Values of Manufactured Goods (1970 - 1976)
 (The Weights are Respective Quantities of the Goods Produced at the Base Year)

	1970	1971	1972	1973	1974	1975	1976
Sulfur extraction	100.0	100.0	100.0	100.0	7.2	12.4	21.4
Dairy	99.4	98.7	98.1	97.5	96.9	99.5	102.5
Canning	99.7	99.4	99.1	98.8	98.5	107.4	118.8
Dates	104.6	109.4	114.4	119.7	125.2	119.7	114.8
Ice and grain milling	97.5	95.0	92.6	90.3	88.0	95.0	102.5
Bakery	102.9	106.0	109.2	112.4	115.8	117.0	118.1
Confectionary	106.0	112.4	119.1	126.3	133.9	136.9	139.9
Sugar	106.0	112.4	119.1	126.3	133.9	136.9	139.9
Vegetable oil	98.0	96.0	94.1	92.2	90.4	97.5	105.5
Macaroni	102.9	106.0	109.2	112.4	115.8	117.0	118.1
Animal food products	100.3	100.8	101.3	101.8	102.0	115	140.4
Alcoholic drinks	88.2	78.0	69.2	61.6	55.1	57.0	63.4
Soft drinks	106.5	113.9	122.2	130.5	139.8	152.8	166.7
Cigarettes	97.3	94.7	92.1	89.6	87.2	119.5	163.8
Tobacco curing	104.9	110.2	115.6	121.4	127.4	138.7	152.1
Cotton ginning	103.6	107.3	111.1	115.1	119.2	123.3	127.9
Wool washing	111.6	124.6	139.2	155.4	173.5	179.0	187.1
Cotton wastes	107.7	116.1	125.1	134.8	145.3	155.3	166.1
Medicated cotton	123.9	153.6	190.3	235.8	292.3	294.0	295.8
Jute	107.6	115.7	124.5	134.0	144.2	152.9	164.0
Cotton textiles	107.7	116.1	125.1	134.8	145.3	155.3	166.1
Wool textiles	111.6	124.6	139.2	155.4	173.5	179.0	187.1
Natural silk textiles	150.0	250.0	350.0	550.0	850.0	1 300.0	2 000.0
Hosiery	106.3	112.5	118.7	125.0	131.3	137.5	143.7
Wool knitting	106.9	114.3	122.1	130.6	139.6	152.1	171.7
Shirt making	140.2	196.6	275.7	386.7	542.3	589.3	641.4
Tailoring	118.9	141.4	168.1	199.9	237.8	272.8	316.5
Shoe laces	107.6	115.7	124.5	134.0	144.2	152.9	164.0
Carpets	103.1	106.2	112.5	115.6	121.9	140.6	162.5
Footwear	110.3	121.6	134.1	147.9	163.2	167.3	171.5
Wood	107.2	117.2	109.7	114.4	172.2	188.2	260.9

(continued)

Table 16 (cont'd)

	1970	1971	1972	1973	1974	1975	1976
Carpentry	107.2	117.2	109.7	114.4	172.2	188.2	260.9
Metal furniture	134.1	130.8	124.9	148.9	234.8	241.9	235.9
Paper products	97.3	94.7	92.2	89.8	87.4	126.8	211.8
Printing	97.3	94.7	92.2	89.8	87.4	126.8	211.8
Tanning	109.2	119.4	130.4	142.5	155.7	150.0	150.0
Leather salting	109.2	119.4	130.4	142.5	155.7	150.0	150.0
Other leather products	109.2	119.4	130.4	142.5	155.7	150.0	150.0
Sulfur refining	100.0	100.0	100.0	100.0	9.5	8.9	
Petroleum products	86.3	74.5	64.3	55.5	47.9	49.3	51.4
Plastic products	91.4	83.5	76.3	69.7	63.7	61.6	60.1
Crude plastic materials	100.0	100.0	100.0	100.0	335.6	407.4	
Rubber	115.0	132.5	150.0	175.0	200.0	225.0	250.0
Dyes	95.6	91.5	87.6	83.9	80.3	76.8	76.8
Medicines and drugs	115.8	134.2	155.5	180.1	208.7	294.6	423.2
Soaps and detergents	95.4	91.0	86.8	82.8	79.0	72.5	66.5
Cosmetics and perfumes	117.6	138.4	162.9	191.6	225.5	196.2	205.6
Matches	100.0	100.0	100.0	100.0	83.3	83.3	83.3
Synthetic silk	108.7	118.1	128.5	139.4	151.5	164.1	180.7
Fertilizers	100.0	100.0	100.0	100.0	55.1	93.7	
Other chemical products	102.9	107.1	112.4	119.8	126.6	135.9	155.3
Glass	98.2	96.8	95.6	94.7	94.0	103.2	151.0
Pottery	100.0	95.0	95.0	95.0	96.1	101.2	101.2
Bricks	104.8	111.9	116.7	123.8	130.9	173.8	230.9
Tiles and mosaics	111.1	123.4	137.1	152.3	169.2	218.9	283.9
Asbestos	86.2	75.0	66.2	57.5	50.0	52.5	775.0
Damp proofing material	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cement	97.3	94.7	92.1	89.6	87.2	87.6	88.1
Concrete products	116.9	136.6	159.7	186.7	218.3	265.3	317.1
Gipson	111.8	124.9	139.6	156.1	174.5	248.3	351.0
Stones	101.4	101.9	102.1	97.3	114.8	247.7	348.4

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Table 16 (cont'd)

	1970	1971	1972	1973	1974	1975	1976
Aluminum utensils	110.9	122.9	136.3	151.1	167.6	212.8	229.3
Smitheries	134.1	130.7	124.9	148.9	234.8	241.9	235.9
Wires, nails and razor blades	110.9	122.9	136.3	151.1	167.6	212.8	229.3
Foundry	134.1	130.7	124.9	148.9	234.8	241.9	235.9
Steel pipes	134.1	130.7	124.9	148.9	234.8	241.9	235.9
Machinery	100.0	100.0	100.0	100.0	1016.4	1096.8	
Coolers and heaters	108.6	118.6	129.2	140.7	153.3	160.0	167.5
Radio and T.V. Assembling	97.7	95.6	93.4	91.3	89.3	91.7	91.4
Other electrical equipment	115.8	134.0	155.2	179.7	208.1	179.3	160.8
Car, spare parts and radiators	110.8	123.4	137.8	153.1	170.3	161.3	161.3
Bicycles	100.7	102.2	102.9	103.7	105.2	122.2	142.2
Miscellaneous	110.7	122.5	135.7	150.2	166.3	170.8	179.7

Source For unit values: Annual industrial survey 1969, 1974, 1975 and 1976.

Table - 17 -

Value of gross output at current factor costs and indices, in small manufacturing industries.
Average annual rate of growth, 1969 - 1976.

(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Value of Gross Output					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	28 296.0	26 649.1	27 054.9	60 987.1	64 946.9	100.0	94.2	95.6	243.8	229.5	12.60
Beverages and Cigarettes	375.6	492.5	748.0	820.5	401.8	100.0	131.1	199.1	210.5	107.0	0.97
Textiles	310.8	2 822.6	3 532.4	13 571.6	20 913.2	100.0	85.3	106.7	409.9	631.7	30.12
Apparel	10 352.4	11 538.5	12 347.5	48 728.4	46 450.0	100.0	111.5	119.3	470.7	448.7	23.92
Leather Products	4 052.4	6 096.7	7 570.8	12 699.5	10 810.3	100.0	150.4	186.8	313.4	266.8	15.05
Wood & Furniture	5 000.4	7 823.3	8 991.2	32 341.6	20 896.9	100.0	156.5	179.8	646.8	417.9	22.67
Paper Products	826.8	827.9	1 084.5	3 467.4	3 912.4	100.0	100.1	131.2	419.4	476.8	25.00
Chemical Products	343.2	944.2	796.8	3 581.3	4 338.1	100.0	275.1	232.2	1 043.5	1 264.0	43.68
Non-metallic Products	1 090.8	1 932.1	2 477.3	8 308.9	14 274.4	100.0	177.1	227.1	769.1	1 125.3	44.39
Aluminum Products and Utensils	64.8	n.a.	n.a.	1 102.9	904.0	100.0	-	-	1 702.0	11395.1	45.72
Foundry	9.6	18.7	21.4	52.4	150.0	100.0	194.8	222.9	545.8	1 562.5	48.10
Metal Furniture	9.6	6.8	7.2	0.0	36.4	100.0	70.8	75.0	-	379.2	20.98
Smithy	4 098.0	4 987.5	5 532.7	28 461.1	19 263.2	100.0	121.7	135.0	694.6	470.1	24.74
Nails and Other Metallic Products	132.0	70.3	59.2	734.0	1 275.7	100.0	53.3	44.8	556.1	966.4	39.27
Machinery (not including repairs)	468.0	n.a.	n.a.	221.5	620.3	100.0	-	-	47.3	132.5	4.10

continue..

Table 17 (cont'd)

Industries	Value of Gross Output					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	260.8	329.4	457.9	1 751.5	2 378.8	100.0	122.5	170.3	651.6	885.0	36.54
Other Miscellaneous Industries	7 062.0	9 146.7	9 346.5	26 687.0	20 341.4	100.0	129.5	132.3	377.9	280.0	16.31
Industrial Services (including machinery repairs)	4 713.6	11 483.2	12 750.1	24 567.5	27 463.9	100.0	243.6	270.5	521.0	582.7	28.63
Total	70 465.2	85 169.5	92 770.4	275 560.1	262 711.9						
OVERALL INDUSTRY											
Laspeyres' index						100.0	113.9	120.7	326.0	318.0	
Paasche's index						100.0	101.7	105.8	296.7	281.6	
Geometric mean						100.0	107.6	113.0	311.0	299.2	

Table - 18 -

Value of Gross Output at constant factor costs, and indices, in small manufacturing industries. Average annual rate of growth 1969 - 1976.

(Major industrial groups and overall manufacturing industries) (Values in ID. 000's)

Industries	Gross Value of Output					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	28 296.0	27 127.3	27 920.4	69 333.8	63 362.8	100.0	95.9	98.7	245.0	223.9	12.20
Beverages and Cigarettes	363.5	490.5	744.3	669.1	330.5	100.0	134.9	204.8	104.1	93.1	-1.01
Textiles	3 310.9	1 816.3	2 036.0	7 581.9	11 177.5	100.0	54.9	61.5	229.0	337.6	18.98
Apparel	10 352.4	5 772.1	5 192.4	17 062.3	14 676.1	100.0	55.8	50.2	172.5	141.0	5.11
Leather Products	4 052.4	4 259.4	4 862.4	8 466.3	7 206.9	100.0	105.1	120.0	200.9	177.0	8.57
Wood & Furniture	5 000.4	6 038.5	5 174.9	17 184.6	8 009.5	100.0	136.8	103.5	343.7	160.2	6.96
Paper Products	826.0	921.9	1 240.8	2 734.5	1 061.4	100.0	111.5	150.1	330.7	225.1	12.24
Chemical Products	343.2	1 200.7	1 008.6	4 939.7	6 523.5	100.0	349.9	293.9	1 439.3	1 900.0	52.30
Non-metallic Products	1 090.8	1 715.9	1 650.4	4 415.2	6 316.1	100.0	157.3	151.3	404.0	579.0	28.52
Aluminum Products and Utensils	64.0	236.0*	326.0*	450.3	303.2	100.0	364.2	503.1	694.9	591.4	20.90
Foundry	511.2	236.9	176.0	569.2	654.5	100.0	46.3	34.4	111.3	120.0	3.59
Metal Furniture	337.2	211.8	169.8	543.2	1 556.0	100.0	62.8	50.4	161.1	461.4	24.41
Smelting	4 098.0	3 349.8	2 356.3	11 622.7	8 165.8	100.0	81.7	57.5	283.6	199.3	10.35
Rolls and Other Metallic Products	11.0	46.5	35.3	344.9	556.3	100.0	422.7	320.9	3 135.9	5 057.3	75.15
Machinery (not including repairs)	468.0	156.4*	118.9*	90.4	262.9	100.0	33.4	25.4	19.3	56.2	-7.90

continue..

Table 18 (cont'd)

Industries	Gross Value of Output					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	269.0	221.2	142.0	715.2	1 000.4	100.0	82.3	53.1	266.1	375.1	20.79
Other Miscellaneous Industries	7 122.0	6 009.7	5 620.3	15 625.1	11 313.6	100.0	85.5	78.9	219.4	150.9	6.04
Industrial Services (including machinery repairs)	4 719.6	9 625.5	9 068.5	17 374.5	17 537.6	100.0	203.9	209.1	350.1	371.6	20.62
Total	66 517.4	60 454.0	50 775.6	164 327.6	143 370.7						

OVERALL INDUSTRIES

Laspeyres' index	100.0	87.0	86.9	232.5	203.4
Pasche's index	100.0	93.5	97.2	242.6	215.0
Geometric mean	100.0	90.6	91.9	237.5	209.1

For these years there were no data. The figures reported here are interpolation based on the average annual rate of growth in the industry between 1969 - 1975.

Table - 19 -

Value of Inputs at current prices and indices, in small manufacturing industries. Average annual rate of growth, 1969 - 1976.

(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Value of Inputs					Indices					Average rate of growth (1969 - 1976)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food industries	22 800	19 782.1	20 450.4	46 196.3	46 733.0	100.0	86.8	89.7	202.6	250.0	10.80
Beverages and Cigarettes	225.6	351.7	546.8	607.5	243.7	100.0	155.9	242.4	269.3	108.0	1.11
Textiles	2 566.8	1 967.4	2 419.5	9 787.6	13 998.6	100.0	76.6	94.3	381.3	545.4	27.42
Apparel	6 024.0	7 138.3	7 452.1	29 109.5	22 662.2	100.0	118.5	123.7	483.2	376.2	20.84
Leather Products	2 595.6	3 629.6	4 780.2	8 427.1	7 064.2	100.0	139.8	184.2	324.7	272.2	15.38
Wood & Furniture	3 260.4	5 407.3	5 974.5	21 132.8	11 499.9	100.0	165.8	103.2	648.2	352.7	19.73
Paper Products	552.0	568.4	665.9	2 621.3	2 664.9	100.0	103.0	120.6	474.9	482.8	25.22
Chemical Products	235.2	600.8	591.0	2 670.7	3 049.6	100.0	289.5	251.3	1 133.5	1 296.6	44.22
Non-metallic Products	595.2	1 191.7	1 458.9	5 739.3	8 206.2	100.0	200.2	245.1	964.3	1 378.7	45.47
Aluminum Products and Utensils	33.6	n.a.	n.a.	556.8	637.5	100.0	-	-	1 657.1	1 897.3	52.26
Foundry	349.2	229.9	265.1	845.6	825.7	100.0	65.8	75.9	242.2	236.5	13.09
Metal Furniture	253.2	234.5	298.9	1 022.4	2 271.5	100.0	92.6	118.0	403.8	897.1	36.83
Smithy	2 647.2	3 281.1	3 675.8	17 659.3	10 890.3	100.0	123.9	138.9	667.1	411.4	22.39
Nails and Other Metallic Products	94.8	54.3	46.4	417.8	780.9	100.0	57.3	48.9	440.7	823.7	35.15
Machinery (net including repairs)	87.6	n.a.	n.a.	130.2	360.0	100.0	-	-	148.6	411.0	22.37

continues..

Table 19 (cont'd)

Industries	Value of Inputs					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport equipment	188.4	229.3	335.4	1 297.0	1 477.0	100.0	121.71	176.0	688.4	781.0	34.24
Other miscellaneous industries	5 031.6	7 583.5	7 404.6	22 215.9	16 242.8	100.0	150.7	147.2	441.5	322.8	18.22
Industrial Services (including machinery repairs)	901.2	3 565.4	4 089.9	6 590.7	7 192.2	100.0	395.6	453.8	731.3	798.1	34.55
Total	48 441.6	52 282.3	56 402.6	170 001.2	151 682.3						
OVERALL INDUSTRY											
Laspyre's index						100.0	105.6	111.6		266.6	
Paasche's index						100.0	95.5	86.6		242.8	
Geometric mean						100.0	100.4	98.3		254.6	

Table - 20 -

Gross value added at current factor costs, and indices, in small manufacturing industries. Average annual rate of growth, 1969-1976.
(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Gross Value Added					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	5 496.0	6 867.0	6 604.5	22 790.8	18 213.9	100.0	124.9	120.2	414.7	331.4	10.67
Beverages & Cigarettes	137.9	140.8	201.2	213.0	158.1	100.0	102.1	145.9	154.5	114.6	1.97
Textiles	744.0	855.2	1 112.9	3 784.0	6 914.6	100.0	111.9	149.6	508.6	929.4	37.50
Apparel	4 283.4	4 400.2	4 895.4	19 618.9	23 787.8	100.0	102.7	114.3	458.0	555.3	27.75
Leather Products	1 456.8	2 467.1	2 790.6	4 272.4	3 746.1	100.0	169.4	191.6	293.3	257.1	14.45
Wood and Furniture	1 740.0	2 416.0	3 016.7	11 208.8	9 397.0	100.0	138.9	173.4	644.2	540.1	27.24
Paper Products	274.8	259.5	418.6	845.1	1 277.5	100.0	94.4	152.3	307.9	464.9	24.55
Chemical Products	108.0	313.4	205.8	910.6	1 288.5	100.0	290.2	190.6	843.1	1 193.1	42.50
Non-metallic Products	495.6	740.4	1 018.4	2 649.6	6 068.2	100.0	149.4	205.5	534.6	1 224.4	43.03
Aluminum Products and Utensils	31.2	210.35*	338.9*	546.1	266.5	100.0	674.0	1 086.2	1 750.3	854.2	35.85
Joinery	162.0	122.9	148.2	548.4	718.4	100.0	75.9	91.5	338.5	443.5	23.71
Metal Furniture	84.0	80.9	99.9	307.9	1 399.1	100.0	96.3	118.9	366.5	1 665.6	49.45
Smithy	2 647.2	1 769.8	1 856.9	10 804.8	8 372.9	100.0	66.9	70.1	408.2	316.3	17.88
Tools and Other Metallic Products	37.2	16.0	12.0	316.2	494.8	100.0	43.0	34.4	850.0	1 330.1	44.73
Machinery (not including repairs)	380.4	146.9*	115.8*	91.3	260.3	100.0	38.6	30.4	24.0	68.4	5.27

continue..

Table 20 (cont'd)

Industries	Gross Value Added					Indices					Rate of Growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	80.4	100.1	122.5	154.5	201.0	100.0	124.5	152.4	185.3	221.6	41.25
Other Miscellaneous Industries	2 030.4	1 563.2	1 941.9	4 471.7	4 098.6	100.0	77.0	95.6	220.2	201.9	10.55
Industrial Services (including machinery repairs)	3 812.4	3 917.8	8 660.2	17 976.8	20 271.7	100.0	102.8	227.2	471.5	531.7	26.25
Total	23 046.7	26 397.5	33 561.2	101 670.9	157 635.8						

OVERALL INDUSTRIES

Laspeyres's index	100.0	116.9	119.5	132.7	377.3
Paasche's index	100.0	123.1	124.7	132.7	374.7
Geometric mean	100.0	120.0	122.1	120.7	376.2

* For these years there were no data. The figures reported here are interpolation based on the average annual rate of growth in the industry between 1969 - 1975.

Table - 21 -

Gross Value added at constant factor costs and indices, in small manufacturing industries. Average annual rate of growth, 1969 - 1976.

(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Gross Value Added					Indices					Average rate of growth (1969 - 1976)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food industries	5 496.0	7 043.1	6 815.8	22 904.5	17 769.7	100.0	128.1	124.0	416.7	323.3	18.25
Beverages & Cigarettes	137.9	140.2	200.2	196.7	133.2	100.0	101.7	145.2	142.8	96.6	-0.49
Textiles	744.0	550.3	641.4	2 113.9	3 695.7	100.0	74.0	86.2	284.1	496.7	25.73
Apparel	4 328.4	2 201.2	2 058.6	7 191.7	7 515.9	100.0	50.9	47.5	166.2	173.6	8.20
Leather and products	1 456.8	1 731.3	1 792.3	2 848.3	2 497.4	100.0	118.8	123.0	195.5	171.4	8.00
Wood and Furniture	740.0	2 111.9	1 751.8	5 995.8	3 601.8	100.0	285.4	236.7	810.2	486.7	5.37
Paper and Products	274.8	289.0	478.9	667.3	603.1	100.0	105.2	174.3	242.8	219.5	11.88
Chemical Products	108.0	378.5	260.5	1 256.0	1 937.6	100.0	350.5	241.2	1 163.0	1 794.1	51.05
Non-metallic Products	495.6	657.5	678.5	1 394.5	2 586.0	100.0	132.7	136.9	281.4	521.8	26.62
Aluminum Products and Utensils	31.2	115.8*	160.7*	223.0	113.0	100.0	371.2	515.1	714.7	362.2	20.18
Foundry	162.0	82.5	63.1	223.9	304.5	100.0	50.9	39.0	138.2	188.0	9.43
Metal Furniture	84.0	54.3	42.5	125.7	593.1	100.0	64.6	50.6	149.6	706.1	32.21
Smithy	2 647.2	1 180.6	790.5	4 411.9	3 549.3	100.0	44.9	29.9	166.7	131.1	4.28
Nails and Other Metallic Products	37.2	10.6	7.6	148.6	215.8	100.0	28.5	20.4	399.5	580.1	28.55
Machinery (not including repairs)	380.4	80.8*	54.9*	37.3	110.3	100.0	21.2	14.4	9.8	29.0	-16.21

continue.

Table 21 (cont'd)

Industries	Gross Value Added					Indices					Average rate of growth (1969 - 1976)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	80.4	67.2	52.2	185.6	302.3	100.0	83.6	64.9	230.8	475.5	24.95
Other Miscellaneous Industries	2 030.4	1 040.7	1 167.7	2 618.1	2 280.8	100.0	51.3	57.5	120.9	112.3	1.67
Industrial Services (including machinery repairs)	3 812.4	6 636.9	6 950.3	12 713.4	12 944.9	100.0	174.1	182.5	333.5	339.5	19.08
Total	23 046.7	24 380.4	23 975.5	85 673.6	60 834.4						
OVERALL INDUSTRY											
Laspeyres's index						100.0	106.8	102.7	339.4	274.8	
Paasche's index						100.0	114.1	111.2	354.1	290.4	
Geometric mean						100.0	110.4	106.9	346.7	282.5	

* For these years there were no data. The figures reported here are; interpolation based on the average annual rate of growth in the industry between 1969 - 1975.

Table - 22 -

Wages at current factor prices, and indices, in small manufacturing industries. Average annual rate of growth, 1969 - 1976.

(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Wages					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	1 903.6	2 052.4	2 023.0	0 950.9	5 944.6	100.0	103.5	102.0	451.2	259.7	17.36
Beverages and Cigarettes	16.0	15.4	12.0	12.9	17.9	100.0	91.7	76.2	76.0	106.5	0.91
Textiles	145.2	219.9	218.6	702.1	024.0	100.0	150.6	150.6	530.6	567.5	28.15
Apparel	477.6	564.3	514.6	4 026.3	2 120.0	100.0	118.2	107.7	1 010.5	445.6	23.79
Leather Products	260.0	306.4	322.4	1 679.2	051.6	100.0	113.3	119.9	624.7	316.0	17.90
Wood & Furniture	435.6	339.9	339.4	2 341.5	1 604.0	100.0	78.0	77.9	537.5	368.4	20.40
Paper Products	98.4	94.9	105.6	306.4	296.4	100.0	96.4	107.5	311.4	301.2	17.04
Chemical Products	20.0	57.0	51.1	212.2	252.6	100.0	197.9	177.4	736.0	877.1	36.37
Non-metallic Products	1 199.2	315.9	377.5	1 009.0	2 050.4	100.0	150.6	199.5	546.7	1 029.3	39.52
Aluminum Products and Utensils	4.0	n.a.	n.a.	154.2	50.6	100.0	-	-	3 212.5	1 220.0	22.97
Laundry	33.6	37.5	42.1	140.9	139.0	100.0	111.6	125.3	419.3	416.1	22.59
Metal Furniture	21.6	40.1	30.4	139.4	240.9	100.0	187.0	177.0	645.4	1 115.3	41.71
Smithy	314.4	365.0	396.0	2 502.3	1 327.2	100.0	116.1	126.0	795.9	422.1	22.06
Nails and Other Metallic Products	0.4	4.1	4.3	62.0	40.1	100.0	40.0	51.2	747.6	572.6	20.31
Machinery (not including repairs)	90.0	n.a.	n.a.	13.7	58.7	100.0	-	-	15.2	65.2	-5.92

continue..

Table 22 (cont'd)

Industries	Wages					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	19.2	27.1	27.0	63.3	139.6	100.0	141.1	140.6	329.7	727.1	32.76
Other Miscellaneous Industries	92.4	126.0	111.7	224.6	162.0	100.0	137.2	120.9	243.1	175.3	0.35
Industrial Services (including machinery repairs)	636.0	956.3	909.0	3 132.0	3 044.5	100.0	150.4	155.5	492.5	470.7	25.07
Total	4 070.0	5 524.6	5 576.2	26 627.0	16 271.5						
OVERALL INDUSTRIES											
Laspeyres' index						100.0	106.3	104.5	560.6	334.5	
Fasche's index						100.0	104.4	103.3	511.5	329.9	
Geometric mean						100.0	105.4	103.9	535.5	332.2	

Table - 23 -

Total employment, and indices, in small manufacturing industries. Average annual rate of growth, 1969 - 1976.

(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Total Employment					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	13 176	13 211	13 069	21 402	15 393	100.0	100.3	99.2	162.4	116.0	2.24
Beverages and Cigarettes	623	412	373	329	255	100.0	66.1	59.9	52.7	40.9	-11.90
Textiles	2 350	1 942	1 911	4 080	4 053	100.0	82.6	81.3	174.0	172.5	0.09
Apparel	8 069	8 362	7 984	8 253	11 606	100.0	103.6	98.9	102.3	143.0	5.33
Leather Products	3 500	2 802	2 779	4 206	2 975	100.0	78.3	77.6	117.5	83.1	-2.61
Wood & Furniture	5 306	4 932	4 811	10 886	7 861	100.0	91.6	89.3	202.1	146.0	5.55
Paper Products	657	507	590	878	874	100.0	89.3	89.8	133.6	133.0	4.16
Chemical Products	100	212	208	661	812	100.0	117.8	115.6	367.2	451.1	24.01
Non-metallic Products	1 553	2 367	2 322	2 591	4 916	100.0	152.4	149.5	166.8	316.5	17.09
Aluminum Products and Utensils	33	n.a.	n.a.	413	217	100.0	-	-	1 251.5	657.6	30.07
Foundry	479	310	310	629	606	100.0	66.4	66.4	131.3	143.2	5.26
Metal Furniture	167	159	156	316	759	100.0	95.2	93.4	109.2	454.5	24.14
Smithy	3 927	3 523	3 514	9 849	5 783	100.0	89.7	89.5	250.8	147.3	5.68
Nails and Metallic Products	115	13	12	274	155	100.0	11.3	10.4	230.3	134.8	4.35
Machinery (not including repairs)	993	n.a.	n.a.	60	163	100.0	-	-	6.0	16.4	-22.75

continue..

Table 23 (cont'd)

Industries	Total Employment					Indices					Rate of growth (1969-1976)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	200	271	265	201	669	100.0	130.3	127.4	96.6	321.6	10.16
Other Miscellaneous Industries	2 029	2 077	2 002	3 234	2 530	100.0	101.7	99.0	114.3	89.7	-1.53
Industrial Services (including machinery repairs)	14 206	17 910	17 643	23 772	25 475	100.0	126.1	124.2	167.3	179.3	8.70
Total	50 531	59 906	50 757	91 950	35 191						

OVERALL INDUSTRIES

Laspeyres' index	100.0	106.5	104.5	150.8	141.4
Paasche's index	100.0	90.9	97.3	159.2	126.9
Geometric mean	100.0	102.6	100.8	154.9	133.9

Table - 24 -

Factor intensity and productivity, in small manufacturing industries. Average annual rate of growth, 1969 - 1976.
(Gross value added at current factor cost per employee) (Iraqi Dinars)

Industries	Factor Intensity and Productivity					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	417.1	519.8	505.4	1 064.9	1 183.3	100.0	124.6	121.2	255.3	283.7	16.06
Beverages & Cigarettes	221.3	341.7	539.4	647.4	620.0	100.0	154.4	243.7	292.5	200.2	15.06
Textiles	316.6	440.4	502.4	925.6	1 706.0	100.0	139.1	184.0	292.4	530.9	27.20
Apparel	530.8	526.2	613.2	2 377.2	2 049.6	100.0	99.1	115.5	447.9	306.1	21.29
Leather Products	406.9	800.5	1 004.2	1 015.8	1 259.2	100.0	216.4	246.8	249.6	309.5	17.51
Wood & Furniture	323.1	489.9	627.0	1 029.7	1 195.4	100.0	151.6	194.1	318.7	370.0	20.55
Paper Products	410.3	442.1	709.5	963.7	1 461.7	100.0	105.7	169.6	230.4	349.4	19.57
Chemical Products	600.0	1 470.3	989.4	1 377.6	1 506.8	100.0	246.4	164.9	229.6	264.5	14.91
Non-metallic Products	319.1	312.8	438.6	1 022.6	1 234.4	100.0	98.0	137.4	320.5	306.0	21.32
Aluminum Products and Utensils	945.5	-	-	1 322.3	1 228.1	100.0	-	-	139.9	129.9	7.01
Foundry	338.2	306.5	466.0	871.9	1 047.2	100.0	114.3	137.0	257.0	309.6	17.52
Metal Furniture	503.0	508.0	640.4	974.4	1 843.3	100.0	101.2	127.3	193.7	366.5	20.39
Smithy	674.1	502.4	528.4	1 097.0	1 447.8	100.0	74.5	78.4	162.7	214.8	11.54
Nails and Other Metallic Products	323.5	1 230.8	1 066.7	1 154.0	3 192.3	100.0	300.5	329.7	356.7	905.8	38.69
Machinery (not including repairs)	383.1	-	-	1 521.7	1 596.9	100.0	-	-	307.2	416.0	22.62

continue..

Table 24 (cont'd)

Industries	Factor Intensity and Productivity					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	306.5	369.4	462.3	2 261.2	1 340.0	100.0	95.6	119.6	505.0	340.0	19.34
Other Miscellaneous Industries	717.7	543.3	693.0	1 302.7	1 614.3	100.0	75.7	96.6	192.7	224.9	12.27
Industrial Services (including machinery repairs)	268.4	218.7	490.9	756.2	795.7	100.0	81.5	182.9	281.7	296.5	16.80
OVERALL INDUSTRIES											
Laspeyre's index						100.0	108.5	121.2	200.3	302.0	
Pasche's index						100.0	121.2	141.7	277.1	317.0	
Geometric mean						100.0	114.7	131.0	278.7	309.4	

Table - 25 -

Profits at current factor prices, and indices, in small manufacturing industries. Average annual rate of growth, 1969 - 1976.

(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Profits					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	3 512.4	4 815.0	4 581.5	13 839.9	12 269.3	100.0	137.1	130.4	394.0	349.3	19.56
Beverages & Cigarettes	121.1	125.4	180.4	200.1	140.2	100.0	103.6	155.6	165.2	115.0	2.11
Textiles	598.8	636.3	894.3	3 001.9	6 090.6	100.0	106.3	149.3	501.3	1 017.1	39.29
Apparel	3 850.4	3 835.9	4 380.8	14 792.6	21 659.8	100.0	99.6	113.8	384.2	562.5	27.99
Leather Products	1 138.0	2 160.7	2 468.2	2 593.2	2 094.5	100.0	181.9	207.8	218.3	243.6	13.56
Wood & Furniture	1 304.4	2 076.1	2 677.3	8 867.3	7 792.2	100.0	159.2	205.3	679.8	597.4	29.09
Paper Products	176.4	164.6	313.0	539.7	901.1	100.0	93.3	177.4	306.0	556.2	27.82
Theatrical Products	79.2	256.4	154.7	698.4	1 035.9	100.0	323.7	195.3	801.8	1 308.0	44.30
Non-metallic Products	296.4	424.5	640.9	1 560.6	4 017.8	100.0	143.2	216.2	526.5	1 355.5	45.12
Aluminum Products and Utensils	26.4	85.0*	115.3*	391.9	207.9	100.0	325.0	436.7	1 484.5	787.5	34.30
Foundry	188.4	85.4	106.1	407.5	570.6	100.0	66.5	82.6	317.4	450.6	24.06
Metal Furniture	62.4	40.5	61.5	168.5	1 150.2	100.0	64.9	98.6	270.0	1 056.1	51.92
Smithy	993.6	1 404.8	1 460.9	8 302.5	7 045.7	100.0	141.4	147.0	835.6	709.1	32.29
Nails and Other Metallic Products	28.8	11.9	0.5	253.4	446.7	100.0	41.3	29.5	879.9	1 551.0	47.94
Machinery (not including repairs)	290.4	239.0*	227.7*	77.6	206.6	100.0	82.3	78.4	26.7	71.1	-4.76

continue..

Table 25 (cont'd)

Industries	Profits					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	61.2	73.0	95.5	391.2	762.2	100.0	119.3	156.0	639.2	1 245.4	43.37
Other Miscellaneous Industries	1 930.0	1 436.4	1 830.2	4 247.1	3 936.6	100.0	74.1	71.2	219.1	203.1	10.65
Industrial Services (including machinery repairs)	3 176.4	6 961.0	7 670.4	14 044.0	17 227.2	100.0	219.1	241.5	467.3	542.3	27.32
Total	17 032.7	23 542.7	27 425.2	75 594.3	88 451.1						

SMALL INDUSTRIES

Lanpeyre's index	100.0	121.2	129.5	400.6	419.2
Ponsche's index	100.0	130.0	134.5	333.4	441.2
Geometric mean	100.0	125.5	132.0	365.5	445.2

* For these years there were no data. The figures reported here are; interpolation based on the average annual rate of growth in the industry between 1969 - 1975.

Table - 26 -

Number of establishments, and indices, in small manufacturing industries. Average annual rate of growth, 1969-1976.
(Major industrial groups and overall manufacturing) (Values in ID. 000's)

Industries	Number of Establishments					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Food Industries	3 370	3 469	3 401	4 633	4 160	100.0	102.9	103.3	137.5	123.4	3.05
Beverages & Cigarettes	41.3	201	201	190	170	100.0	406.7	406.7	460.0	411.6	22.40
Textiles	1 205	1 042	1 042	1 045	1 769	100.0	01.1	01.1	143.6	137.7	4.67
Apparel	4 377	4 006	4 009	7 290	6 424	100.0	03.8	03.8	149.5	131.7	4.01
Leather Products	1 978	1 099	1 099	1 502	1 219	100.0	55.6	55.5	75.9	61.6	-6.60
Wood & Furniture	2 916	2 530	2 630	4 917	4 139	100.0	90.5	90.5	168.6	141.9	5.13
Paper Products	172	100	100	166	234	100.0	104.7	104.7	96.5	136.0	4.49
Chemical Products	48	51	51	113	101	100.0	106.3	106.3	235.4	377.1	20.00
Non-metallic Products	332	469	469	491	1 031	100.0	141.3	141.3	147.9	310.5	17.57
Aluminum Products and Utensils	0	n.a.	n.a.	100	73	100.0	-	-	2250.0	912.5	37.44
Foundry	217	146	146	187	200	100.0	67.3	67.3	86.2	129.0	3.71
Metal Furniture	46	64	64	69	172	100.0	139.1	139.1	150.0	373.9	20.73
Smithy	1 606	1 453	1 453	3 211	2 250	100.0	86.2	86.2	190.5	133.5	4.20
Nails and Other Metallic Products	71	3	3	74	31	100.0	4.2	4.2	104.2	47.9	-9.90
Machinery (not including repairs)	362	n.a.	n.a.	15	41	100.0	-	-	4.1	11.3	-26.74

continue..

Table 26 (cont'd)

Industries	Number of Establishments					Indices					Rate of growth (1969-76)
	1969	1973	1974	1975	1976	1969	1973	1974	1975	1976	
Transport Equipment	81	124	124	56	276	100.0	153.1	153.1	69.1	340.7	19.14
Other Miscellaneous Industries	1 931	1 922	1 922	1 998	1 900	100.0	99.5	99.5	103.0	98.4	-0.23
Industrial Services (including machinery repairs)	7 400	9 366	9 366	12 204	13 276	100.0	126.6	126.6	166.0	179.4	8.71
Total	26 821.3	26 313	26 320	39 166	37 269						

OVERALL INDUSTRIES

Laspeyres's index	100.0	102.5	102.6	141.7	142.7
Pasche's index	100.0	92.9	93.2	143.2	126.6
Geometric mean	100.0	97.6	97.0	142.4	134.4



81-08-20