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INDUSTRIAL SURVEY OF THE SUDAN
DP/SUD/80/006
REPUBLIC OF THE SUDAN

Sudan.

Technical report: Industrial Survey of the Sudan *

Prepared for the Government of the Sudan
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of Atif A. Kubursi,
consultant in elaboration of
Industrial Surveys

United Nations Industrial Development Organization
Vienna

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Explanatory Notes

Value of local currency = Sudanese Pound
(£ S) at the end of the mission (August 1986)
in United States Dollars (US $): 1 US $ = 4.20 £ S

Abbreviations

AIDO	Arab Industrial Development Organization
EMP	Employee
GDP	Gross Domestic Product
GO	Gross Output
GVA	Gross Value Added
IDCAS	Industrial Development Centre for Arab States
IDRC	Industrial Development Research Centre
ISIC	International Standard Industrial Classification
K	Capital
MVA	Manufacturing Value added
NO	Number of Establishments
W	Wages

INDEXES TO THE INTERNATIONAL STANDARD
Industrial Classification of All Economic Activities

31.	Food, Beverages and Tobacco
32.	Textile, Weaving & Apparel & Leather Products
33.	Wood and Wood Products Including Furniture
34.	Paper, Paper Products Including Furniture
35.	Chemicals & Chem. Prod. Inc. Prod. of Petroleum and Coal
36.	Other Non Metal Min. Exzcluding Petrol. & Coal Products
37.	Basic Metal Industries
38.	Fabricated Metal Products and Machinery
39.	Other Manufacturing Industries
3111.	Slaughtering and Preparation of Meat
3112.	Dairy Products Including Ice Cream
3113.	Canning & Preservation of Fruits & Vegetables
3114.	Canning & Preservation of Fish & Fish Products
3115.	Vegetables & Animal Oils and Fats
3116.	Grain and Mill Products
3117.	Bakery Macaroni & Noodle Products
3118.	Sugar Industry and Refinery
3119.	Sugar Confectionary Cocoa & Chocolate Products
3121.	Food Industries not Elsewhere Classified
3122.	Prepared Animal Food
3131.	Distilled Alcoholic Drinks
3132.	Wine Industries
3133.	Malt Liquors and Malt

3134. Soft and Carbon Drinks

3140. Tobacco, Cigar & Cigarette Industries

3211. Weaving, Spinning, Dying and Preparation

3212. Blankets, Bed Sheets and Towels

3213. Knitting, Needleworks, Socks and Stockings

3214. Carpets and Rugs

3215. Cordage, Rope and Twine

3219. Weaving and Spinning not Elsehwere Classified

3220. Ready Made Apparel Excluding Footwear

3231. Tanning and Preparing of Leather

3233. Leather & Substitute Products Excluding Footwear

3240. Footwear Except Plastic and Rubber

3311. Preparing Wood & Saw Mills, Planning Mills

3319. Wood and Cork Products

3320. Wood Products Including Furniture

3411. Pulp, Paper and Papercard

3412. Containers and Boxes of Paperboard

3420. Printing and Publishing Units

3511. Basic Chemicals Excluding Fertilizers

3512. Fertilizers and Pesticides

3521. Paints, Varnishes and Others

3522. Drugs and Medicines

3523. Soap, Cleaners and Toilet Products (Cosmetics)

3529. Chemical Products Not Elsewhere Classified

3530. Petroleum Refineries

3540. Petroleum and Coal Products

355 Tire and Tube Industries

3559. Rubber Products Not Elsewhere Classified

3560. Plastic Products Not Elsewhere Classified

3610. Pottery, China Ceramic and Earth Products

3620. Glass and Glass Products

3691. Structural Clay Products

3692. Cement, Quicklime and Plaste

3699. Non-metalic Minerals not Elsewhere Classified

3710. Basic Metal Industries

3720. Non-Ferrous Metal Industries

3811. Cutlery, Handtools and Metalic Outfittings

3812. Metalic Furniture and Fixtures

3813. Structural Metal Products

3819. Fabricated Metal Products not Elsewhere Classified

3821. Engines and Turbines

3822. Agricultural Machines

3823. Metal and Wood Working Tools

3833. Household Appliances

3839. Electrical Apparatus not Elsewhere Classified

3842. Railroad Equipments

3843. Motorvehicles

3901. Other Industries not Elsewhere Classified

Abstract

Project DP/SUD/80/006 - Industrial Survey of the Sudan - commenced in September 1983 and will be terminated in October 1986.

The main objective of an Industrial Survey in the Sudan, was to provide the Government Development Agencies and other interrested parties in the country, with suitable data and tools of analysis, to serve as a basis to monitor, promote and plan industrial activities and programmes in order to improve the operational nature of Sudan's industry. The Survey was intended to be part of a continuous and ongoing process of collecting, processing and disseminating industrial data. Other specific objectives included the updating and the completion of the existing Directory of Industrial Enterprises, the training of enumerators, organisers, statisticians and other technicians in the process of planning and implementing the Survey and finaly, to prepare a comprehensive study of the industrial sector as depicted by the results of the Survey.

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Summary and Recommendations

The macroeconomic perspective of the Sudanese manufacturing sector highlights a picture of sluggish growth, capacity underutilization, low labour productivity, low rates of return on fixed capital, high import dependence, and a limited contribution to the economy's output and employment profiles.

This picture is too general and too abstract to be useful as a guide for policy and planning. There is no substitute to a carefully designed industrial survey.

1. Summary

The results of the Industrial Survey undertaken in the Sudan in 1981/82 draw a detailed and thorough picture of the structural and performance difficulties. Below is a brief summary of the most important findings classified by size, type of ownership, region, sector and branch.

First, although the small scale establishments account for about 95 percent of the total number of establishments in the manufacturing sector, they do not account for more than 27.2 percent of total employment, 34.2 percent of gross output, and 49.4 percent of total value added in manufacturing. If anything, manufacturing in the Sudan is bi-modally distributed. Small establishments and very large establishments account for most of the employment, output and value added in manufacturing. Medium scale enterprises (those employing 25-100 workers) contribute only limited proportions to employment, income and output in manufacturing.

Second, in 1981/82 most of the manufacturing activity was in the private sector. The latter controlled over 83.6 percent of the manufacturing establishments and accounted for 41.9 percent of manufacturing employment and 69.7 percent of MVA.

Third, there is a clear and decisive dominance of food, beverages and tobacco; textiles and leather products; fabricated metals and machinery; and chemical products in the private sector. In the public sector, there is a slightly different group of dominant activities. This group includes paper and paper products; and other non-metallilc minerals in addition to food, beverages and tobacco; and textiles and leather products.

Fourth, there is a strong tendency to locate industry in the Khartoum, Central and Eastern regions. These regions boast of MVA shares that are multiples of their population shares. The opposite is true of the outlying regions.

Fifth, the average degree of processing of the manufacturing sector is generally low (0.36), and small establishments appear to invariably produce larger ratios of MVA to gross output than the larger establishments.

Sixth, labour productivity is generally low in the Sudanese manufacturing sector, but it is markedly differential. The average labour productivity for the sector as a whole is about LS 10.6 thousands. The range of this statistic varies, however, between a low of LS 3.7 thousands in the textiles sector to a high of LS 26.1 thousands in the chemicals sector.

Seventh, average labour productivity is positively and highly correlated with size and capital per worker. This relationship is weaker in the small scale sector but tends to be exceptionally strong in the larger enterprises.

Eighth, profitability of activities varies markedly among sectors, regions, different sizes and by type of ownership. Textiles are unprofitable, whereas basic metal industries and particularly those that are large enterprises are highly profitable. Outlying regions show some very high profitability rates because of lack of competition and the existence of natural monopolies.

The pattern of profitability in the private and public sectors is complicated. It is difficult to generalize about which group is more profitable. The public sector is decisively more profitable in the chemical sector, in non-metallic minerals, and in the metal fabricating and machinery sector. On the other hand, the private sector is more profitable in the food, beverages and tobacco operations and basic metals. Both groups were unprofitable in the textiles sector.

Ninth, regions with more capital per worker were also more productive and these were the regions that were able to pay higher wages. The highest degrees of processing were in the Northern, Eastern and Central regions, whereas the Khartoum and Eastern regions show the highest levels of labour productivity.

Tenth, performance indices of activities at the branch level highlighted potentials and problems. The most efficient branches were those of adequate establishment size, with high capital intensities and therefore high labour productivity and managed properly without over-staffing and excessive reliance on imports. Within each sector, it was possible to delineate the most promising activities and to distinguish between performance record and type of ownership.

Eleventh, failure of enterprises was studied in a way that allowed us to separate the causes of shut-downs into those that are inherent to the enterprise and those that are external to the environment.

The major conclusion of the study is that Sudanese manufacturing, despite some very fundamental problems of structure and performance, holds a real promise for development and growth. Invariably traditional economic and technical factors and causes can explain the behaviour and structure of the manufacturing sector and therefore its problems are ascertainable and not insurmountable. With larger and more adequate size, more capital per worker, more efficient management, proper pricing of outputs and inputs, greater linkage and coordination of activities and proper protection and nurturing, manufacturing activity in the Sudan could prosper.

2. Recommendations

On the basis of this study and a short field mission in the Sudan, I would like to tender the following recommendations.

First, the undertaking of industrial surveys to develop and organize a system of industrial statistics with the aim to improve coverage, accuracy and timeliness of the data available should be an on-going and continuous process.

Second, a proper machinery should be entrusted with this task at the Ministry of Industry. The existing set-up need to be improved and strengthened with professionals and machinery, particularly computers to undertake its tasks.

Third, the industrial surveys should not be undertaken in isolation of the needs and requirements of data. It is preferred to set up an Industrial Data Bank that interfaces with other ministries and with AIDO and UNIDO.

Fourth, all efforts should be directed to avail Sudan of all the technical assistance programmes available in this field particularly those extended by AIDO, UNIDO and IDRC of Canada.

Fifth, the accumulation of statistics for their own sake is not a useful exercise. The Ministry of Industry, in cooperation with other ministries but particularly the Ministry of Planning, should envisage to utilize the results of the Survey as inputs into the formulation of plans and strategies.

Sixth, the design, formulation and methodologies of the Survey should be reviewed in order to improve their reliability, accuracy, quality and utility.

Chapter One

Industrial Structure and Performance in the Sudan 1981/82

1.0 Introduction

There has hardly been a case of sustained economic development in any country without a substantial contribution from the industrial sector. Industry transforms habits and attitudes; it instils the work discipline and organization needed for massive mobilization of resources and channelling of the collective effort that are critical for structural change and growth. Besides, industry increases the total value added in the economy thereby increasing income and consumption and creates forward and backward linkages among sectors filling in white spots and empty boxes in the economy's production structure.

Industry in the Sudan is still in its infancy and the potential for developing viable industries is still not yet fully or appropriately exploited. An industrial survey, as part of an organized effort, to develop and systematize the collection and disemination of industrial data is a vital requirement for tackling the task of industrial development in any developing country but particularly in the Sudan, where few data exists and where a documentation of the problems is essential.

1.1 The Industrial Survey and Industrialization in the Sudan

The undertaking of an industrial survey to develop and organize a system of industrial statistics with the aim to improve coverage, accuracy and timeliness of the date available could contribute to the development effort in the Sudan in a number of ways:

<u>First,</u> it provides the basis for continuous evaluation of the achievements and failures of the industrialization effort;

<u>Second,</u> it provides necessary information for the management of industry, commerce and other sectors of the economy;

<u>Third,</u> it can provide an invaluable input into the formulation of realistic and sound strategies for further expansion of the industrial sector;

<u>Fourth,</u> it could provide the necessary base for the drawing of well-based industrial plans in the short, medium and long term;

<u>Fifth,</u> it could be used as a basis for comparing Sudan's industrialization effort with those of other Arab countries being structured along similar grounds and methods used in other Arab countries.

1.2 <u>The Industrial Survey: Some Background Information</u>

The main objective of an industrial survey in the Sudan was to provide the Government development agencies and other interested parties in the country with suitable data and tools of analysis to serve as a basis to monitor, promote, and plan industrial activities and programmes in order to improve the operational nature of Sudan's industry.

The framework chosen was that developed by the Arab Industrial Development Organization (AIDO) to facilitate the comparison of Sudan's industrial experience with that of other Arab countries. The survey was also intended to be part of a continuous and on-going process of collecting, and processing and diseminating industrial data. Other specific objectives included the up-dating and the completion of the existing Directory of Industrial Enterprises, the training of enumerators, organizers, statisticians and other technicians in the process of planning and implementing the survey and finally to prepare a comprehensive study of the industrial sector as depicted by the results of the survey.

1.3 UNIDO's Effort in implementing the Survey

In the area of industrial planning and project development in the Sudan a number of technical assistance projects were carried out by UNIDO during the 1970's, however they were generally of an ad hoc and short term nature. For this reason the Government of Sudan expressed a desire to initiate a major exercise to assess and review the industrial situation and prospects in the form of an overall survey which could be used as a basis for developing long range industrial strategies and planning.

The project envisaged was to incorporate and make use of the results of UNIDO project SI/SUD/77/ 802 - Industrial Survey of Southern Sudan and was to be followed by a project on an industrial strategy for Sudan.

The initial project proposal was approved in principle by the Ministry of Industry in 1979 and UNDP/UNIDO assistance in funding execution was requested. Furthermore, the Industrial Development Centre for Arab States (IDCAS, and AIDO) expressed a deep interest in participating and this resulted in the formulation of a project proposal with a tentative budget of $256,000 ($56,000 UNDP/IPF including one month of Preparatory Assistance; $50,000 AIDO; and $50,000 UNIDO/SIS). The finer details of implementation were to be finalized in the Preparatory Assistance activities.

A Preparatory Assistance mission was undertaken from 7 October to 6 November 1980 which made recommendations concerning the implentation and timing of the survey including a draft project document, proposing February 1981 as the desired date of commencement. The proposed project was to be executed by UNIDO in cooperation with AIDO.

The proposed project subsequently underwent both substantive and financial revision, retaining a UNDP $10,000 component for a preparatory mission in 1982 with an additional $50,000 earmarked for execution of the project in 1983. Delays were due to the complicated economic situation in the Sudan in 1981.

In its final form the UNDP project budget totalled $90,000 $$60,000 direct UNDP/IPF resources plus $30,000 of financial support from project DP/SUD/80/016 - Planning Assistance and Training Project (Phase II), the latter amount being destined to cover the costs of field surveys), while the Sudanese Government contribution was fixed at LS 292,000 (in kind). AIDO funding was not forthcoming, however it was decided to make use of the AIDO questionnaires and methodology. The document was signed in June 1983.

The project activities commenced in September 1983 with a brief mission by the senior industrial economist on the project followed by his return in December when a detailed work plan for the project was presented, followed by a note on the preparation of sub-sectoral reports, before the unforeseen departure of the expert in early February 1984. A replacement was briefed in Khartoum in May and then returned in July for a split assignment, completed in December.

Chapter Two

The Industrial Survey of the Sudan 1981/82

2.0 Introduction

The survey in 1981/82 is perhaps the most comprehensive industrial survey undertaken in the Sudan but by no means the first such survey of industry in the country. In 1968/69, IDCAS in cooperation with the Sudanese Ministry of Industry started the first industrial survey and generated results for 1970/71 covering fully establishments employing 25 and more workers and by sample those employing less tnan 25 workers. This was followed by another survey in 1978/79 carried out by the Department of Statistics in the Ministry of Finance and Planning using the same definitions. The Southern region was not included, however, in this survey for obvious security reasons at the time.

In 1983, the Ministry of Industry in Cooperation with UNIDO and UNDP undertook to survey again the Sudanese industrial sector. The year 1981/82 was chosen to ensure the full availability of data at the establishment level. Besides 1981 represented a ten year difference with the results of the first survey so that a decinnial comparison could be made.

The adopted questionnaire was that of Arab Industrial Development Organization (AIDO) which replaced IDCAS in 1979/80. The choice of this questionnaire was made on the basis of its comparability with earlier surveys and with other Arab data.

2.1 The Structure of the 1981/82 Survey

The survey attempts to cover all licenced establishments in Sudan. As such it covers the organized sector of the economy, but does not venture into the informal sector. The organized sector within the industrial sector is believed, however, to represent the major if not the total activity in this sector.

2.1.1 Population and Sample Sizes

Again the survey attempted to cover fully industrial establishments employing 25 people and more, but had to resort to sampling in the case of establishments employing less than 25 workers.

The planned coverage included the following population numbers.

Establishment	Population Size
Establishments employing 25 workers and more	621
Establishments employing 10-24 workers	700
Establishments employing less than 10 workers	1256
Bakeries and Flour Mills employing less than 10 workers	4760
Total	7347

The sizes of the samples were chosen as follows:

Establishments	Population Size
Establishments employing 25 workers and more	100
Establishments employing between 10-24 workers	20
Establishments employing less than 10 workers	5
Traditional Bakeries and Flour Mills employing less than 10 workers	1

A stratified sampling procedure was adopted to ensure sector in a given region. The sectors and branches were defined according to the International Standard Industrial Classification codes (ISIC).

Upon implementing the survey a number of revisions had to be made on the initial list of establishments employing 25 workers and more.

First, 60 establishments were found to have either no industrial activity or to have been included under a different name elsewhere;

Second, 77 establishments were included but did not exist at the time of the survey;

Third, 57 establishments were added that were unjustified excluded in the original list;

Fourth, one establishment was not covered for security reasons.

This reduced the total to 540 establishments of which only 347 establishments responded. The details of the omissions and non-respondents are presented in Table 2.1.

2.1.2 The Blow-up Ratios

Surveying the population of small establishments is not only difficult and costly, it is not necessary. The design of representative samples and the use of sampling theory allows the researcher to use sample statistics to represent population parameters. The move from sample figures to population aggregates necessitates the identification of blow-up ratios. These are usually determined as the multiples that population numbers are of sample numbers. The details of these multipliers by region and sector are represented in Table 2.2.

The multipliers as represented in Table 2.2 were calculated as follows:

$$r_{ij} = \frac{u_{ij}}{s_{ij}}$$

where u_{ij} is the population size for sector i in region j

s_{ij} is the sample size for sector i in region j

2.2 The Implementation of the Survey

Field teams were organized and dispatched to the various regions with two types of questionnaires -- an extensive one designed for large establishments and a brief questionnaire for small establishments. Each team included two senior members generally university graduates in economics or statistics, a person who is responsible for reviewing the data obtained and checking its completeness and accuracy, and a supervisor who heads the team.

The work teams were first put through rigorous training in each region and then sent to the fields. The following time-table emerged.

Time Schedule of Survey Implementation

Region	Start-up Period	Completion Period
Khartoum	7/1/84	15/3/84
Central	20/3/84	5/5/84
Northern	10/4/84	5/5/84
Eastern	27/3/84	15/5/84
Kordufan	22/3/84	11/4/84
Darfur	5/5/84	6/6/84
Equatoria	21/5/84	5/6/84

Several factors accounted for the differences in the time required to complete the survey in the different regions. There were delays in responses due to refusals of owners and managers to comply, the sudden diseppearace of the director of the project, shortages of fuel, security complications in the south, and several other minor difficulties pertaining to travel arrangements and absenteeism.

The collected data was then reviewed by special committees at the Ministry of Industry. The review concentrated on an examination of the data collected against income statements and balance sheets submitted by the surveyed establishments.

The degree of response among the establishments that were finally surveyed was high indeed. About 93 percent of the returns were accepted. A total of 3.5 percent did not fully cooperate and their questionnaires were found incomplete and therefore rejected. Another 3.5 percent simply refused to fill in the questionnaires.

By July 1984, all questionnaires were coded and entered at the Ministry's computer. By October 15, 1984 the first results were printed. Since then, several attempts have been made to extract and analyze the data in the survey. This attempt is perhaps the most comprehensive yet; but surely not the last. There are enormous batches of data that could engage the efforts of the Ministry of Industry for many months and years.

2.3 <u>An Evaluation of the 1981/82 Survey</u>

A number of criteria can be employed to evaluate the survey. These pertain to coverage, to sampling techniques, to accuracy of results and to the quality and quantity of results.

2.3.1 Coverage

The survey concentrated on the organized industrial sector and that perhaps is the only feasible alternative. But nowhere in the survey, or in the results derived from it, is there any mention of the importance and magnitude of the informal sector. Given Sudan's stage of development, the unorganized sector may have a significant contribution to output and more importantly to employment.

The division of the establishments between small and large and the use of different sampling approaches in the two cases is not fully explained and justified. There is hardly a precise criteria for classifying small scale establishments as those employing less than 25 workers. It can easily be argued that extending the definition to establishments employing less than 50 workers would be just as meaningful.

The choice of surveying every large establishment is in my view appropriate and not expensive given the limited size of the Sudanese manufacturing sector. The adjustment of the survey to fit the facts on the grounds demonstrates the flexibility of the teams and the organizers of the project. I must admit, however, that upon reviewing some of the questionnaires, the extent of response appears to be poor. Respondents should have been pressed for more information. This may also be the outcome of the nature of the questionnaire. By and large, the questionnaire used for large establishments is too long and complex. Few owners and/or managers of establishments could understand what is requested from them.

The questionnaire for small establishments is, however, brief and concise. This perhaps explains the greater degree of response in this sector.

In future surveys, it is hoped, that shorter and more up to the point questionnaires would be designed. Furthermore, given that these questionnaires are those adopted and standardized by AIDO could as such facilitate inter-Arab comparisons. They, nonetheless, abstract from the peculiarities and special conditions of the Sudan that require special attention.

2.3.2 <u>Sampling Techniques</u>

It is here where most of the trouble lies. There is hardly any indication of how representative the sample is. It is presumed to be a stratified random sample. All indications are that its randomness is suspect and its stratification is ad hoc. Besides the sizes of the samples are arbitrarily determined. There are no indication that the size of the sample was chosen on the basis of a deliberate attempt to define tolerable errors and confidence levels. My crude estimates show that the sample sizes were all below those needed for a 95 percent level of confidence and in some cases below the 67 percent level.

Hopefully, in future surveys, a more careful sampling procedure would be adopted and adhered to.

2.3.3 <u>The Quality and Quantity of Results</u>

Statistics in developing countries are generally either unavailable or if available they are often unreliable. Some of these conditions are also pertinent to few developed economies. In the context of Sudan and her stage of development, the results of the survey are a major advance. There is now available, a large set of quantitative measures on a broad spectrum of industrial activity in the country. Actually, there is now available a large number of computer printouts on a detailed set of variables which include regions, size, type of ownership and level of industrial aggregation. The major aspects measured are gross output, value added, wages and salaries, employment, fixed assets, capital invested, machinery, buildings, inventories, operating surplus, etc.

The real problem is in assigning a measure of accuracy and reliability to these results. Errors could result from faulty sampling procedures, particularly when blow-up multipliers are used, or from faulty responses, faulty coding, and faulty reproduction of the results. It is my connsidered judgement that the major sources of error are those pertaining to faulty responses and faulty sampling procedures. Only in very few cases did we find computer errors and when found it was only a simple matter to correct them as the Ministry personnel were always able to produce the original questionnaires on short notice.

2.4. Concluding Remarks

The design and the implementation of the Industrial Survey for Sudan was a major task. It involved substantial expense in time, resources and effort. The outcome has been a large set of data and a pool of trained resources that could easily be tapped for future assignments.

The resources and efforts devoted to this exercise would be more justified if the surveying activity were to become a consistent, cumulative and regular effort. It is only then that the full worth of the survey could be exploited and used.

TABLES

Table 2.1 The Final Size of the Sample of Establishments Employing 25 and More Workers in the Sudan, 1981/82

Region	Original Nos.	Duplicated or a Non-manufacturing Activity (-)	Not existing (-)	New Additions (+)	Updated Group	Est. Surveyed = (+)	Uncooperative Est. (+)	Transferred to Sample (+)	Incompleted (+)	Non-operating (+)
Khartoum	355	34	24	18	315	213	4	46	3	49
Central	105	10	14	8	89	56	6	13	4	10
Eastern	50	4	7	3	42	129	0	6	3	4
Darfur	56	2	21	6	39	10	0	26	1	2
Kordufan	30	2	8	13	33	23	2	2	1	5
Northern	20	4	2	0	14	10	0	0	0	4
Equatoria	4	4	1	9	8	6	1	0	1	0
TOTAL	620	60	77	54	540	347	137	93	93	74

Table 2.2 Sample Blow Up Multipliers

		31			32			33			34			35			36			37			38		
		s	r	u	s	r	u	s	r	u	s	r	u	s	r	u	s	r	u	s	r	u	s	r	u
Khartoum	2	9	3	23	4	1	5	3	4	11	9	2	17	2	3	6	4	4	15	-	-	-	5	4	18
	3	2	5	10	1	2	2	2	15	30	1	20	20	2	1	3	-		24	-	-	-	4	18	70
	4	3	122	366	-	-	-	-		-	-		-	-		-	-		-	-	-	-	-		-
Khartoum North	2	6	4	26	-		3	-		1	2	2	4	6	3	17	4	2	9	1	1	1	2	9	18
	3	3	1	3	-	-	2	1	5	5	-		5	4	2	9	2	1	2	-	-	-	6	4	25
	4	6	66	396	-		-	-		-	-		-												
Omdurman	2	10	8	81	10	3	32	1	11	11	-	-	2	8	2	14	4	3	10	-		-	17	2	34
	3	1	12	12	1	31	31	2	33	66	2	10	20	3	2	6	-		9	-		-	10	19	190
	4	3	94	283	-	-	-	-		-	-		-	-			-			-		-	-	-	-
Elgazera	2	5	9	43	3	2	5	-		10	1	2	2	-		4	2	6	12	-		-	-	-	15
	3	3	3	7	-		-	-		4	-		-	-		-			3	-		-	2	4	7
	4	6	90	540	-		-	-	-	-	-		-	-		-	-			-		-	-	-	-
Blue Nile	2	4	3	12	-	-	1	1	3	3	-		-	-		-	1	1	1	-		-	-	-	4
	3	1	6	6	-	-	-	1	19	19	-		-	-		-	1	4	4	-		-	5	14	75
	4	3	107	322	-	-	-	-	-	-	-		-	-		-	-		-	-		-	-	-	-
White Nile	2	7	3	23	-		1	-	-	-	-		-	1	2	2	-		2	2	1	2	-	-	9
	3	6	28	165	1	1	1	1	14	14	1	2	2	-		-	1	2	2	-		-	2	38	75
	4	4	95	379	-	-	-	-	-	-	-		-	-		-	-		-	-		-	-	-	-
Kassala	2	5	3	14	-	-	-	1	1	1	-		-	1	1	1	1	1	1	-		-	1	11	11
	3	1	7	7	-	-	-	1	14	14	-		5	-		-	-		-	-		-	4	28	95
	4	4	97	389	-	-	-	-	-	-	-		-	-		-	-		-	-		-	-	-	-
South Kordufan	2	4	8	30	-		-			-	1	1	1	1	4	4	1	4	4	-		1	2	5	9
	3	3	4	11	-		-	-		-	1	2	2	-		-	1	1	1	-		-	2	28	55
	4	5	93	461	-		-	-		-	-		-	-		-	-		-	-		-	-	-	-
North Kordufan	2	1	1	1	-		-	-		-	-		-	-		-	-		-	-		-	1	1	1
	3	-		5	-		-	-		7	-		-	-		-	-		-	-		-	-	-	12
	4	3	101	302	-		-	-		-	-		-	-		-	-		-	-		-	-	-	-
North Darfur	2	4	2	6	-		-	-		-	-		-	-		-	-		-	-		-	2	1	2
	3	1	3	3	-		-	-		-	-		-	-		-	-		-	-		-	3	5	16
	4	1	116	116	-		-	-		-	-		-	-		-	-		-	-		-	-		-
South Darfur	2	19	2	29	-		-	-		-	-		-	2	2	4	-		-	-		-	1	16	16
	3	1	2	2	-		-	-		2	2	1	2	-		-	-		-	-		-	3	1	3
	4	2	96	191	-		-	-		-	-		-	-		-	-		-	-		-	-	-	-
Nile	2	4	3	13	-		-	-			-		-	-		-	-	-	-	-		-	1	1	1
	3	1	11	11	-		1	2	6	12	-		2	-		-	1	2	2	-		-	2	18	35
	4	6	92	554	-		-	-		-	-		-	-		-	-		-	-		-	-		-

Northern	2	-		2	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-		-	-		-	-	-	-	-	-	-	-	-	-	-	1	31	31
	4	2	133	265	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
East Equatorial	2	3	1	3	3	1	3	-	-	-	-	-	-	-	-	-	-	3	1	3
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	4
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-

2 - Sample for establishments employing 10-24
3 - Sample for establishments employing less than 10
4 - Traditional bakeries and grain mills
s) - Sample
r) - Raising factor
u) - Population

Chapter Three

3.0 Manufacturing Sector Structure and Performance In the Sudan 1981/82: A Sectoral and Regional Analysis

3.1 The Manufacturing Sector and the Economy: A Macroeconomic Perspective

The industrial sector (manufacturing and mining) does not operate in a vacuum and in isolation of the rest of the economy. On the contrary, industrial activity determines and is determined by the complex interactions it has with the economy at large. The magnitude and nature of this interdependence are governed by the degree of maturity and development of the economy. As a general principle, the more developed and mature an economy is, the more intricate and extensive are the linkages among its respective sectors.

Given Sudan's limited and recent industrial experience, it is expected that the linkages between the macroeconomy at large and the industrial sector are limited. It is small wonder, therefore, to find that the industrial sector's contributions to real GDP was about 8.7 percent, whereas it employed less than 5 percent of the total labour force and contributed less than one percent of total exports (and here only in terms of semi-processed goods) in 1984.

It is worth noting that although the industrial sector's output did not increase substantially in the 1980s, it continued to show positive rates of growth at the time when the growth of real GDP was negative. This is particularly the case in 1982/83 and 1983/84 as is clear from Table 3.1.

Industry in the Sudan is primarily based on processing of agricultural products such as sugar, cotton, wheat, groundnuts, Arabic gum and vegetables. Processing of leather, yarn, and the manufacture of shoes and batteries are also important manufacturing activities. Groundnuts are shelled export, but minerals are generally exported in their unprocessed state.

Serious manufacturing production in the Sudan dates back to the early sixties. Most products are simple consumer goods; a list of the most important subset with their outputs are presented in Table 3.2

Private concerns dominated the sector in its infancy, however, 1962 marks the beginning of public sector involvement. The Industrial Development Corporation was established in 1962 and since then it has managed to dominate a number of industries but particularly those engaged in the production of sugar, leather, and textiles. The private sector, however, still dominates the production of vegetable oil, soap, tyres, soft drinks, flour mills, and knitwear products.

A state of generalized excess demand for products characterizes the Sudan. There is hardly a sector which produces more than is locally demanded. Supply shortages are more characteristic even when rated production capacities theoretically exceed apparent consumption. A few examples may help clarify these claims.

Sugar consumption in the Sudan is estimated to exceed 460,000 MT per year. Local production has almost reached this level with the production of about 420,000 MT. Rehabilitation and restructuring of some of the world's largest sugar production facilities have ultimately started to pay-off.

There are two cement factories in operation recently and one in the construction stage. The 1983/84 output of about 198,000 MT was insufficient to meet the local demand of about 350,000 MT per year. With the modernization of the Maspio cement complex the hope was for a total production capacity of 500,000 tpa. Severe financial and other operational difficulties, however, cut production drastically to almost nil in 1985.

In the shoe industry rated capacity is for 27 million pairs. Actual production flows have stabilized around the 10 million pairs level. There has been a consistent complaint about local hides and skins being exported in raw form denying local tanneries of their products.

3.2 Manufacturing Industries: Structure and Performance

The macroeconomic perspective of the Sudanese manufacturing sector highlights a picture of sluggish growth, capacity underutilization, low productivity, low rates of return, high import dependence, and a limited contribution to the economy at large. The aggregate perspective, however, is not sufficient or very useful in explaining this phenomenon of low performance efficiency. To gain a better perspective of the manufacturing activity, a disaggregative view is needed. This view is provided by the Industrial Survey of 1981/82.

The Industrial Survey of manufacturing activity in the Sudan in 1981/82 provides a detailed and thorough review of this activity at the sectoral and branch level as well as at the regional level. The Survey distinguishes between small and large enterprises as well as between private and public ones.

In what follows we shall present a summary of the major findings of the Survey. In this chapter we shall concentrate on the regional and sectoral distribution of manufacturing activity. In chapter four, our focus will be on the sub-sectoral activities for the Sudan as a whole.

Two types of analysis of the data of the Survey will be conducted here. At one level, only discriptive statistics will be presented. These statistics will include the value and distribution of gross output, value added, wages and salaries, and gross fixed capital. This type of information is useful in delineating the boundaries and structure of the manufacturing activity. On the other hand, these statistics fail to provide any substantive information on the performance and efficiency of the operations of the sector. To analyze these aspects a new set of performance indices were calculated. The most important indices pertain to capital intensity, capital-output ratios, productivity, rates of return on invested capital, average wages and the average cost of production.

3.2.1 <u>The Overall Structure of Manufacturing Activity in the Sudan 1981/82</u>

In 1981/82 there were more than 6759 manufacturing establishments in the Sudan. Most of them were small in size employing less than 25 workers each. In fact, about 6412 establishments or 95 percent of the total were small. The larger establishments accounted for another 347 concerns. These were divided into 131 establishments employing 25-50 workers, 79 establishments employing 51-100 workers and 137 establishments employing more than 101 workers.

The distribution of establishments by size provides an incorrect picture of the distribution of economic activity in the manufacturing sector as is clear from Table 3.3.

Although the small scale establishments account for about 95 percent of the total number of establishments in the manufacturing sector, they do not account for more than 27.2 percent of total employment, 34.2 percent of total gross output, and 49.4 percent of total value added in manufacturing. If anything, manufacturing activity in the Sudan is bi-modally distributed. Small establishments and very large establishments account for most of employment, output and value added in manufacturing. Medium scale enterprises (those employing 25-100 workers) contribute only limited proportions to employment, output and value added in manufacturing.

The distribution of establishments by size differs by sectors. Table 3.4 displays the percentage shares of different sizes by sector. It is clear that most of the small establishments are concentrated in the food, beverages and tobacco sector and in metal fabricating. The latter group includes a large number of garages and service stations. There are some very revealing distribution specifics by size among sectors. These specifics are particularly noticeable in the large establishments where 25 percent of them are in the textile and leather products sector and in the fact that the food, beverages and tobacco sector accounts for almost the same share of establishments in the medium and large size enterprises.

The Survey also reveals a strong concentration of manufacturing activity in the Khartoum and Central regions. The two regi .: together account for 54.8 percent of total establishments in manufacturing, 79 percent of total manufacturing employment, 80.9 percent of total manufacturing wages and salaries, 75.5 percent of total manufacturing gross output, 70.7 percent of total manufacturing value added, and 79.0 percent of total gross fixed capital in the manufacturing sector in 1981/82.

On the other hand, the Equatoria region is almost deprived of any significant manufacturing activity with a percentage share of less than one percent of every manufacturing indicator. (see Table 3.5). Equatoria and Darfur together account for less than 6.4 percent of the total number of manufacturing establishments and even less than 3.0 percent of total manufacturing employment, 2.2 percent of manufacturing gross output, 1.5 percent of manufacturing value added and 1.4 percent of fixed capital in manufacturing.

The Northern and Kordofan regions exhibit very similar shares in manufacturing activity in Table 3.5. They have almost the same share of manufacturing establishments and of wages and salaries. The Kordofan region shows, however, a higher percentage share of manufacturing employment but a lower percentage share of value added than the Northern region.

In 1981/82 most of the manufacturing activity was in the private sector. It controlled over 83.6 percent of the manufacturing establishments and accounted for 41.9 percent of manufacturing employment, 58.4 percent of wages and salaries paid by the sector, 78.6 percent of gross output, and 69.7 percent of value added. These distributions shares, however, pertain only to establishments employing 25 workers and more. If the whole manufacturing sector was considered the shares of the private sector would most certainly rise.

3.2.2 The Sectoral Structure of Manufacturing Output

The structure of manufacturing output in Sudan in 1981/82 was typical of most developing countries in the early stages of industrialization. Light consumer goods dominate other activities. This tendency appears to have been more pronounced and more visible in the Sudan than in other developing countries.

Food, beverages and tobacco production accounts for almost 77 percent of manufacturing value added, 78 percent of the total number of manufacturing establishments and about 62 percent of tota fixed capital in the Sudanese manufacturing sector. This dominance is exhibited in the case of both small and large enterprises, although it is more evident in the small enterpr.ses case than in the large ones. As is clear in Table 3.6, food, beverages and tobacco establishments employing less than 25 workers account for 80 percent of all manufacturing establishments, 67 percent of manufacturing employment and 87 percent of MVA. On the other hand, larger establishments in the same activity account for only 44 percent of large manufacturing establishments, 58 percent of manufacturing employment and 67 percent of MVA of this group.

The fabricated metal and machinery sector shows an unexpected large number of establishments and significant shares in manufacturing employment and MVA. A total of 854 establishments were engaged in this sector in 1981/82 with about 820 of them employing less than 25 workers. These small establishments are primarily service stations and repair shops, nonetheless they account for about 16.4 percent of manufacturing employment in the small scale sector. Their share in MVA, however, is only 6.6 percent. (see Table 3.6) The share of metal fabricating and machinery activity in the large establishments group manufacturing output is, however, not as significant. It accounts for 9.8 percent of the total number of establishments, but its share in manufacturing employment is a modest 4.2 percent and contributes only a 6.6 percent of the MVA of the group.

Invariably, the textile, weaving and apparel and leather products have accounted for the second largest manufacturing activity in the Sudan in 1981/82. Although this activity shows a low share in the total number of establishments (2.0 percent), it explains 19.7 percent of total manufacturing employment and 4.6 percent of MVA. This discrepancy between its shares in the number of establishments and in manufacturing employment is related to the fact that most of the establishments in this activity employ more than 25 workers. Thus, only 1.2 percent of the small scale manufacturing establishments were engaged in the production of textile, weaving and apparel and leather products, whereas 17.6 percent of the larger manufacturing establishments were in this sector. (see Table 3.6).

The results of the Survey also indicate the existence of relatively large set of establishments in the wood and wood products sector. They are mainly small furniture shops with limited impact on the economy.

Most of the remaining manufacturing sectors are comprised of small establishments with limited consequences, but some exceptions remain. In the small scale activity, other non-metallic minerals excluding coal and petroleum explain over 5.2 percent of the employment. Alternatively, in the larger establishments, there appears to be a non-trivial contribution by the chemicals and chemical products sector.

The ownership pattern of industrial enterprises mirrors closely the overall structure of the manufacturing sector. The data in Table 3.7 indicate clearly that the dominance of food, beverages and tobacco and textile, weaving and apparel and leather goods sectors is preserved across the different types of ownership patterns, albeit with some slight variations. In the public sector, the two activities above account for 66 percent of all public manufacturing enterprises, whereas they account for only 60 percent of the privately owned enterprises. This share rises, however, to over 71 percent in the mixed sector. It should be noted here that the pattern of ownership is defined over enterprises employing 25 workers and more and does not, therefore, depict the overall picture in the manufacturing sector.

There are indeed several other distinctive features that are specific to each ownership type. First, the private sector is the largest sector with about 44 thousand employees. This contrasts with about 28 thousand in the public sector and 33 thousand in the mixed sector. When the respective shares of fixed capital and of MVA are considered, a more glaring difference emerges. The private sector explains over LS 477 million of the fixed capital invested in large manufacturing enterprises against a share of the public sector of only LS 130 million and a LS 298 million share for the mixed sector. More interesting perhaps is the substantive difference in the contribution of these groups to MVA. The public sector accounts for a limited LS 28.6 million, whereas the contribution of the private sector is LS 196.2 million. The latter figure is larger than the combined contributions of the mixed and the public sectors. The mixed sector's contribution to MVA did not exceed LS 57 million in 1981/82. (see Table 3.7).

Second, there is a clear and decisive dominance of food, beverages and tobacco, textile and leather products, metal fabricating and machinery and chemical and chemical products activities in the private sector. In the public sector, there is a slightly different group of dominant activities. Although food, beverages and tobacco and textile and leather products top the group of important activities in the public sector too, it is also clear that paper and paper products and other non-metallic mineral products make relatively significant contributions to manufacturing output and employment in the public sector that is not true of the private or the mixed sectors. In the mixed sector, food, beverages and tobacco activity dominates almost exclusively all other activities.

3.2.3 <u>The Size Pattern of Sectoral Output in the Sudanese Manufacturing Activity</u>

Tables 3.8 - 3.13 are presented to depict the pattern and nature of manufacturing activity in the Sudan in 1981/82 by sector and size. Six major attributes are considered — number of establishments, manufacturing employment, wages and salaries in manufacturing, gross output, MVA, and fixed capital in manufacturing.

It is clear from the data displayed in Table 3.8, that in the food, beverages and tobacco sector small enterprises account for 97.1 percent of the total number of establishments in the sector. This dominance of small enterprises is evident in all other sectors but with some slight differences. In the textiles, weaving and apparel and leather goods, the small scale enterprises comprise 55.8 percent, but enterprises employing more than 101 workers account for a substantial 24 percent of the total number of establishments in this sector. The distribution of enterprises inn the textile and leather production exhibits a bi-model distribution -- a large number in the small scale category and another large number in the very large enterprises. Enterprises employing more than 25 workers but less than 101 workers tally together less than 20 percent of the total number of establishments.

In the wood, wood products including furniture, small enterprises make up over 95 percent of the total. There are very few large enterprises and only a small subset of medium scale (employing 25-50 workers) establishments.

The dominance of small scale establishments is also clear in the paper, paper products, printing and publishing. However, there appears to be a significant number (10) of large establishments employing more than 101 workers.

The chemical, chemical products including petroleum and coal sector deviates from the general pattern above. Here, there are fewer small scale enterprises than the other sectors but also a larger proportion of medium-sized establishments.

Small scale enterprises dominate the size pattern in other non-metallic mineral excluding petroleum and coal with an 84 percent share. There are very few enterprises in the basic metals sector and they are generally almost evenly distributed over the four categories of size.

Surprisingly, small scale enterprises dominate the fabricated metals and machinery sector, but this is largely due to the inclusion of service stations and garages in this sector. There is still another fourteen relatively large establishments.

The distribution of establishments by size is generally not a good and unbiased indicator of the significance of the contributions of the respective establishments to manufacturing activity. This is all the more true as we consider the results in Tables 3.9-3.13.

Thus, whereas small enterprises accounted for 97.1 percent of the total number of enterprises in the food and beverages sector (31), they account for only 30 percent of total manufacturing employment, 39 percent of gross output, and 17 percent of capital invested in this sector. Nonetheless, they explained almost 56 percent of total MVA in food, beverages and tobacco. Large enterprises (employing 101 and more workers) in sector (31), however, account for 65 percent of total manufacturing employment, 54 percent of gross manufacturing output, 42 percent of MVA, and 76 percent of total fixed capital in this sector.

In the textile sector (32), the picture is more striking. Small scale enterprises account for less than 3.5 percent of total manufacturing employment, 11.2 percent of gross manufacturing output, 20.1 percent of MVA, and about 4 percent of capital invested in this sector. Most of the output (82%), MVA (71%), employment (92%) and capital (93%) in this sector are produced or explained by the large establishments.

A major contribution to manufacturing employment is, however, made by small scale enterprises in the wood and wood products including furniture sector (33). More than 70 percent of the employment in this sector is generated by small enterprises. The same is true of the contribution of these small enterprises in this sector to output (82%), MVA (86%) and capital invested (91%). Medium and large scale enterprises make only modest contributions in this sector.

In the paper and paper products sector (34) the typical contributions are made by the very large enterprises. It is here where establishments employing more than 101 workers contribute about 72 percent of the total employment in the sector, over 72 percent of gross output, 71 percent of MVA and 47 percent of invested capital. Small scale enterprises make only modest contributions indeed in this sector.

The proportions and the contribution of small scale enterprises in the chemical and chemical products sector (35) are modest. They accounted for 23 percent of employment in the sector, 22 percent of gross output, and as low as 10 percent of MVA. On the other hand, the contributions of medium or large scale enterprises were higher than those of the small scale. But the large scale enterprises tended to dominate the generation of output, value added and employment. Enterprises employing 101 and more workers accounted for 41 percent of employment, 55 percent of gross output and about 69 percent of MVA in this sector.

The distribution of contributions to employment output and value added by size in sector (36) is vividly bi-modal. That is, almost all the contributions to manufacturing output, employment and value added in this sector are made by either small or very large enterprises and in almost equal shares. The medium-sized enterprises account for small shares indeed in this sector.

In basic metals (37), small scale enterprises make very little contributions as one might expect. Most of the contributions are made by medium and large enterprises; but the medium-sized enterprises dominate in most respects. They accounted for 92 percent of value added and 61 percent of gross output in this sector.

Although it is somewhat unusual to find the metal fabricating and machinery sector (38) dominated by small scale enterprises, the inclusion in the Sudan of service stations and garages in this sector explains to a large extent this phenomenon. Therefore, it is not any longer surprising to find that small scale enterprises accounting for almost 60 percent of employment, 38 percent of gross output and about 50 percent of MVA in this sector. The large enterprises are also dominant creating again a bi-modal distribution of the contributions of enterprises by size in this sector. The large enterprises are responsible for 51 percent of gross output, 31 percent of employment, and about 40 percent of MVA.

3.2.4 The Regional Distribution of Manufacturing Activity in the Sudan 1981/82

The prevailing tendency for manufacturing activities to concentrate in the Central and Khartoum regions has already been noted in section 3.2.1. Here we shall concentrate on the structure of production of each region to highlight the special characteristics of manufacturing output in these regions. The analysis is conducted at the aggregative level of sectors. Special consideration will be given to size and type of ownership.

3.2.4.1 The Structure of Manufacturing Output in the Khartoum Region in 1981/82

The supremacy of the Khartoum region over other regions is reflected in the fact that whereas its population share is only 8.8 percent, its share in total MVA was over 28 percent and its share in total manufacturing employment exceeded 34 percent in 1981/82.

There is hardly a sector within manufacturing that is not represented in the Khartoum region. However, three sectors prevail. These are food, beverages and tobacco which comprises 56.5 percent of all manufacturing establishments in the region, 30.9 percent of its manufacturing employment, and 50.9 percent of its MVA. Second in importance is the textile sector which accounts for only 5.3 of the region's manufacturing establishments but explains over 28.4 percent of its employment and about 11 percent of MVA. Metal fabricating and machinery sector vies with textiles for importance given that it comprises over 20 percent of the manufacturing establishments in the region and explains over 14.6 percent of manufacturing employment and 16.7 percent of the region's MVA. (see Table 3.14).

The size distribution of manufacturing activity in the Khartoum region in 1981/82 displayed in Table 3.14 reveals a consistent pattern with that of the country as a whole. The food, beverages and tobacco sector is dominated by small establishments, the textile sector by large ones, the wood and wood products by small enterprises, the paper and paper products by large enterprises, the chemical and chemical products by medium and large scale enterprises, the other non-metallic minerals sector by a continuum of sizes, the basic metal sector by medium and large enterprises, the metal fabricating and mechinery sector is dominated by small garages and service stations.

Table 3.15 is devoted to the presentation of the structure of manufacturing by type of ownership in the Khartoum region in 1981/82. Again, the data on ownership type is restricted to establishments employing 25 workers and more, and as such they do not provide a complete picture of the regional manufacturing sector. Nonetheless, a number of interesting features may be gathered from the data in Table 3.15.

First, the private sector has a physical presence in every activity. The public sector appears to have stayed away from wood products and other non-metallic minerals.

Second, the mixed sector has a concentrated presence in food, beverages and tobacco, textiles and leather products and metal fabric..:ing and machinery.

Third, the public sector structure of output in Khartoum is decidedly dominated by six large paper and paper products enterprises which accounted for 42.4 percent of manufacturing employment in the public sector, 46.9 percent of gross output, and 64.4 percent of MVA.

Fourth, the private sector manufacturing activity in the Khartoum region is heavily concentrated in the food, beverages and tobacco which accounted for over 57.3 percent of the private MVA in the region. Private establishments in the textile sector, however, provided more jobs than the food, beverages and tobacco sector. The former private concerns account for 38.1 percent of total private employment in the manufacturing sector of the Khartoum region.

3.2.4.2 The Structure of Manufacturing Output in the Central Region in 1981/82

The central region shares with the Khartoum region the distinction of attracting a disproportionate share of manufacturing activity that far exceeds its population share. Thus, whereas its population share stood at 19.5 percent, its share in total MVA exceeded 42 percent.

The regional structure of production in the Central region is, however, less diversified than that of the Khartoum region. There is an inordinate concentration of manufacturing activity in the food, beverages and tobacco sector. As is clear from the data in Table 3.16, this sector accounts for 86.1 percent of all manufacturing establishments in the region, 80.3 percent of regional manufacturing employment and as high as 95 percent of regional MVA.

The food, beverages and tobacco sector dominates both small and large enterprises. It is, nonetheless, true that the share of the textile sector in large enterprises is more significant than its share in small enterprises.

In Table 3.17, we present data on the ownership profile of manufacturing enterprises in the Central region. The picture that emerges from this table reflects a differentiated pattern of sectoral production. In the public sector, most of the activities are in the traditional sectors of food, textiles and wood. There is a limited degree of variety in the private sector, but the dominance of food and textiles is preserved. The mixed sector is restricted to three enterprises -- the largest two are in the food, beverages and tobacco sector and one relatively large enterprise in the non-metallic mineral products sector.

3.2.4.3 The Structure of Manufacturing Output in the Eastern Region in 1981/82

The Eastern region is another region in the Sudan fortunate enough to show a share in MVA that is higher than its population share. Thus, whereas its population share was only 10.7 percent, its share of MVA exceeded 21 percent. On the other hand, its share in total manufacturing employment fell short of its population share by about 2 percentage points.

Tables 3.18 and 3.19 depict the structure of manufacturing output in the Eastern region by size and by type of ownership respectively. The results indicate a heavy preponderance of small enterprises in the traditional sectors of food and textiles. These two sectors combined account for about 80 percent of all establishments in the region, over 80 percent of employment in manufacturing, and slightly less than 80 percent of regional MVA.

Two sectors account for most of the activity in small scale manufacturing in the Eastern region, namely, food, beverages and tobacco and metal fabricating and machinery. For establishments employing 25 workers and more, some major activities appear to be undertaken in the chemical sector and in basic metals too.

The information in Table 3.19 show a strong differentiation of manufacturing activity by type of ownership. First, there is no mixed operations. Second, the public sector is primarily in the food, beverages and tobacco sector with two large establishments in textile and metal fabricating respectively. Third, the private sector is primarily in food, beverages and tobacco and in the chemical sector.

3.2.4.4 <u>The Structure of Manufacturing Output in the Northern Region in 1981/82</u>

The Northern region has not shared equally or on a proportionate basis in overall manufacturing activity. Although its population share is about 5.3 percent of the total Sudan population, its share in total MVA is only 3.7 percent and its manufacturing employment share is even lower at 3.4 percent.

The results in Table 3.20 indicate clearly some major gaps in the structure of manufacturing output of the region. There is no activity in paper and paper products sector as well as in the basic metals. When small establishments are considered separately, few new empty economic boxes emerge in textiles and chemicals.

There seems to be a tendency to specialize among enterprises. Thus, large enterprises tend to operate exclusively in the textile and chemical sectors. In the small scale enterprises, food, beverages and tobacco dominate the contribution of other sectors to MVA, employment and gross output.

One large establishment in non-metallic minerals explains much of the manufacturing activity in this region. It employs 868 persons and contributes over 85.4 percent of the MVA of large enterprises in the Northern region. This operation is publically owned and run. The public sector also operates another 4 large enterprises, 3 of them in the food, beverages and tobacco sector. The remaining one is a fairly large textile mill. (see Table 3.21).

The private sector shows also a clear tendency to specialize. It has entered only three sectors with establishments employing 25 or more workers -- food, textiles and chemicals. There are no establishments in the mixed sector.

3.2.4.5 The Structure of Manufacturing Output in the Darfur Region in 1981/82

Darfur's population share was about 8.8 percent in 1981/82, its share in manufacturing value added was considerably lower at 1.3 percent. The region's share in manufacturing employment was higher at 2.3 percent, but this is way below its share in the total population.

The low share of Darfur in manufacturing activity is clearly displayed in tables 3.22 and 3.23. The tables show limited employment and output in manufacturing in the region. Most activities are of the small scale variety and are generally concentrated in the production of food, beverages and tobacco or in service stations. There is little else except in the chemical and textile sectors where seven establishments produce LS 862 million of income and about 363 person-years of employment. Large establishments are only 10 in number, 7 of them in food, 1 in textiles and 2 in chemicals. Together they account for only 17 percent of total manufacturing employment in Darfur.

There was only one public enterprise in the Darfur region producing in the textiles sector and employed 194 persons, but produced very little output and almost no value added. The private sector, on the other hand, comprises 9 enterprises employing 375 persons, but with a substantial contribution to MVA of LS 690 thousands. There were no operations in the mixed sector.

3.2.4.6 <u>The Structure of Manufacturing Output in the Kordofan Region, 1981/82</u>

Population in Kordofan region accounted for 15 percent of the total population of Sudan. This is approximately equal to the share of the Central region. But whereas the Central region accounted for 44.7 percent of manufacturing employment and about 42 percent of MVA, the Kordofan region share in MVA was as little as 3 percent and her share in manufacturing employment about 6 percent.

Discrepancies of this magnitude between population shares and income and employment shares are indicative of both problems and potentials. The problems pertain to inequities in the distribution of resources and activities. On the other hand, low levels of activities suggest that the region in question has not developed to its full potential yet. Given the size of the population, which generally acts as an indicator of sufficient markets for manufactured products, this region has the promise of sustaining a larger volume of manufacturing activity.

The main part of manufacturing output in Kordofan is in the food, beverages and tobacco sector. The results in Table 3.24 show a heavy concentration of activity in the traditional sector with over 87 percent of MVA in the region is produced by sector (31).

Small scale enterprises dominate production activities in the manufacturing sector. However, there are some fairly large establishments in the textile sector.

Most of the large manufacturing concerns in Kordofan are run by the private sector, but the public sector accounts for the major part of manufacturing employment in establishments employing 25 workers and more. Again, value added and gross output are substantially higher in the private sector than in the public sector. This, however, may be a quirk of the statistical system and/or pricing practices of public enterprises.

3.2.4.7 The Structure of Manufacturing Output in Equatoria Region, 1981/82

A distinctive feature of this region is the coupling of a high share in the total population of the Sudan with a very insignificant manufacturing share. Whereas Equatoria has over 18.8 percent of the total population, it did not show more than 0.7 of one percent of manufacturing employment, and even lower shares in MVA and gross output.

It is small wonder, therefore, to find that tables 3.26 and 3.27 are full of empty cells signifying the absence of credible activities in most sectors. There are, of course, some activities, but these are restricted to large enterprises run by the government. The private sector appears to be almost totally absent from the scene.

3.3 The Manufacturing Sector in the Sudan: Efficiency and Performance

There are two aspects to the analysis of manufacturing activity in any economy. First, there are questions about the structure of production; its pattern, distribution among sectors and regions; the linkages across the various components, etc. Most of these aspects are, however, primarily descriptive. To gain a better perspective of the dynamics of the sector and its problems and potentialities a more analytical perspective is needed. This is the second aspect which pertains to a thorough evaluation of performance indices.

In the preceding sections an attempt was made to describe and map the structure of the Sudanese manufacturing structure by sector and region. In what follows we shall attempt to explain why this pattern has emerged and what explains performance or lack of it in the various sectors and regions. The analysis will remain aggregative in nature. Chapter 4 is devoted to a microeconomic analysis of the structure and performance of the branches.

3.3.1 Sectoral Performance Indices

Six indicators were chosen to depict performance. Each highlights a different aspect of efficiency or productivity. First, we calculate the degree of processing ratio. This is the share of manufacturing value added in gross output. The higher this ratio is, the more processing must have been undertaken within the activity. Low ratios are indicative of limited activity within the sector. For example, if raw materials are shipped in their raw form, this ratio would be low. If they were processed and treated locally, this ratio would rise in value.

<u>Second,</u> we calculate labour productivity which is the ratio of gross output to employment. This is indicative of average labour productivity. Surely, not the whole output can be assigned to labour, but this measure becomes useful on a cross-sectional analysis basis.

<u>Third</u>, we alsomeasure the capital intensity in the sector. This reflects the tools and equipment that each worker has at his disposal. The general presumption is that the higher this intensity is the more productive are the workers.

<u>Fourth,</u> the size of the establishment is presumed to play an important role in determining the efficiency of operations. The general presumption is that larger enterprises have a greater chance to exploit economies of scale and other external economies.

<u>Fifth,</u> the average wage is calculated in order to relate it to average productivity. This relationship is indicative of the profitability of the enterprise and the nature of its surplus.

<u>Sixth,</u> an indirect measure of the rate of return on equity is attempted here. Wages and depreciation are subtracted from value added to reach a rough estimate of operating surplus which is in turn divided by fixed capital to get at a measure of the profitability of the enterprise. Surely, it would have been much better to get at a direct valuation of the operating surplus and to divide the latter by equity in the enterprise. Such valuations proved very difficult in the Sudan. Thus, we had to resort to the proxy explained above.

We distinguish between small and large enterprises as well as between private, public and mixed establishments. The data in Table 3.28 reveal some very important features about the efficiency of production in the various manufacturing sectors. Some of these observations are summarized below:

First, the average degree of processing of the manufacturing sector is generally low (0.36). For some sectors, this ratio is as low as 5 percent. The highest ratio is associated with wood and wood products. The chemical and textile sectors shows relatively low coefficients of about (0.25).

Second, small estabalishments appear to invariably produce larger ratios of MVA to gross output. As such, they appear to depend more on local raw materials and local resources than larger establishments within the same sector. There are only two exceptions to this -- these are in the paper and paper products sector and in the chemical sector. Both of these sectors are not particularly suited for small scale operations.

Third, labour productivity is generally low in the manufacturing sector and at the same time it is markedly differential. The average labour productivity for the sector as a whole is about LS 10.6 thousands. The range of this measure varies, however, between a low of LS 3.7 thousands in textiles to a high of LS 26.1 thousands in chemicals.

Again small enterprises were, on average, generally more productive. The average productivity of establishments employing less than 25 workers is higher than that of establishments employing 25 or more workers. This is particularly the case in the food, textiles, and wood sectors. In the other sectors, larger enterprises were more productive. This was particularly the case in the metal fabricating, basic metals, paper and non-metallic minerals sectors. But the latter group comprised a limited subset of establishments to alter the average results above.

Fourth, different sectors show different average sizes. The largest averages were associated with food, beverages and tobacco and basic metals. To evaluate the impact of size on productivity we correlated average size with labour productivity for both small and large establishments. For small establishments, labour productivity is positively associated with size. The correlation coefficient is (0.47). For large establishments, the association is also positive and slightly more significant at 0.50. In the context of Sudan, the larger the size of the establishment, the higher the prospects of raising the general productivity of labour.

Fifth, capital intensity has a positive but limited impact on labour productivity in small enterprises. But this relationship becomes large and more significant in establishments employing 25 or more workers. The correlation coefficient between labour productivity and average establishment size in the small scale enterprises is positive but low at 0.24, whereas the same coefficient in larger enterprises was positive and over 0.60.

Sixth, as might be expected size and capital intensity are positively related in large enterprises but negatively correlated (or uncorrelated) in small enterprises. The correlation coefficient relating average size to capital-labour ratios in small enterprises was negative but insignificant (-0.012). In larger enterprises this correlation coefficient was positive but still low (0.224). This is indicative that size in Sudan is not fully related to capital. In other words, there is some strong tendency to economize on capital and to expand size by increasing employment faster than capital.

Seventh, profitability of enterprises varies markedly among sectors and sizes. Textiles are unprofitable with negative rates of return on fixed capital. This unprofitability is the result of unprofitable large enterprises operating with imported and very expensive raw materials. (see Chapter 5). The most profitable operations are those in basic metals and particularly in large enterprises. These establishments are reaping the rent on natural resources and this profitability is much the result of this rent than from efficiencies in operations.

With the exception of only two sectors, smaller enterprises are more profitable. They appear to be better managed. The two exceptions are the basic metals sector and paper and paper products. Both of these sectors are typically dominated by large enterprises given the nature of their products.

The pattern of profitability in the private and public sectors is complicated. It is difficult to generalize about which group is more profitable. The results in Table 3.29 tend to indicate a differential performance by sector. The public sector is decisively more profitable in the chemical sector, in non-metallic minerals, and in the metal fabricating and machinery sector. On the other hand, the private sector is more profitable in food, beverages and tobacco operations and basic metals. Both groups are unprofitable in the textile business.

The mixed sector operations tend to show average profitability rates in all operations except those in the metal fabricating sector.

Eighth, typically the private sector large enterprises are larger than those in the public sector in the same activity. There are exceptions to this in wood products, paper products and non-metallic minerals. Wages per worker are on average higher in the private sector and so are capital per worker and labour productivity. The latter two indices are inextricably related in a causal chain. On average private sector operations are six times more productive than public sector operations. This is perhaps the result of over-staffing in the public enterprises. The mixed sector gives mixed results.

3.3.2 <u>Regional Performance Indices</u>

In what way or ways do spatial factors influence and modify purely economic or technical factors? This takes us into a thorough consideration of the regional performance indices. We begin first with an aggregative consideration and then consider the regional and sectoral details in each region separately.

3.3.2.1 <u>The Regional Aggregative Performance</u>

The results in Table 3.30 indicate clearly that the regional aspects are less important than the economic and technical factors inherent to manufacturing activity. To establish this presumption consider the following relationships:

<u>First,</u> regions with more capital per worker are also those with higher labour productivity in manufacturing. The correlation coefficient between these two variables across regions is high and significant (0.844).

<u>Second,</u> higher labour productivity in manufacturing across regions correlates very highly with average establishment size (0.754). Thus, regions with larger establishments are those with higher manufacturing per worker.

<u>Third,</u> the degree of processing is positively related to labour productivity (0.583) and to capital intensity (0.448). However, these coefficients are not highly significant. Their implications are, however, clear. More value added (income) is derived per unit of output, the more productive labour is and the more capital is used per worker.

Fourth, there is a strong association across regions between wages per worker and productivity per worker (0.762). Higher wages per worker are produced in regions whose labour is more productive.

Fifth, the strongest relationship among economic variables across regions is that between capital intensity and average establishment size. The correlation coefficient is a high (0.948). It is then the case that regions with larger establishment sizes are more able to provide more capital to their workers. The increase in the latter leads to higher labour productivity and to higher degrees of processing.

Fifth, the highest degrees of processing are in the Northern, Eastern and Central regions. The lowest, as is expected, is in the Equatoria region.

Sixth, the Eastern and Khartoum regions show the highest levels of labour productivity. All other regions show below average labour productivity.

Seventh, the Eastern and Central regions show high ratios of capital to labour. All other regions show below average capital labour ratios.

Eighth, again the Central, Khartoum and Eastern regions display average and above average establishment sizes. The rest of the regions have below average sizes, but Kordofan and Darfur regions stick out with very small average establishment sizes.

Nineth, labour costs vary significantly between regions with average manufacturing yearly wages of LS 464 in Darfur and LS 1485 in Khartoum. Surely, the differences in the cost of living would explain a good part of this difference but not all of it. The other factors mentioned above, particularly capital intensity and average establishment sizes tend to explain this difference.

Tenth, manufacturing activity is a profitable activity across regions. The most lucrative happen to be in the outlying regions where competition is weak.

3.3.2.2 Manufacturing Performance by Region: Khartoum

Two tables are devoted to the presentation of performance indices of the manufacturing sector in the Khartoum region. Table 3.31 differentiates performance of the various sectors by size, whereas Table 3.32 differentiates the large sector by type of ownership.

Several interesting features are revealed by the results in these two tables. Below is a brief summary of the most prominent findings:

First, the average degree of processing in the Khartoum region is relatively low. Small enterprises in the region tend to show a higher ratio of value added to gross output. This is perhaps a reflection of the extent of dependence of large enterprises on imported raw materials. The wood product's sector is credited with the highest degree of processing in the region and much of this is the result of a large ratio of value added per unit of gross output in small establishments in this sector in the Khartoum region.

Second, food, beverages and tobacco, chemical products, and basic metals exhibit high labour productivity coefficients in Khartoum. This, one might believe is a reflection of the size, capitalization and scale of operations of these sectors, particularly the chemical and the basic metal's sectors. But the data in Table 3.31 shows that in the chemical sector the highest productivity coefficients are in the small enterprises. The same is true in the basic metals sector.

Third, capital per worker in the manufacturing sub-sectors in the Khartoum region are relatively low. More surprising is the fact that this ratic is higher in the small enterprises than what it is in the larger enterprises. The highest intensity of capital per worker in Khartoum is associated with the wood and wood products sector and particularly in establishments employing less than 25 workers.

Fourth, the profitability of manufacturing in the region is adequate and it divides equally between small and large enterprises. The variation of profitability rates between the sectors and their respective sizes is rather high. In food, beverages and tobacco sector the profitability rate is high particularly in the large enterprises. Textiles are profitable in small scale enterprises but unprofitable in the larger ones. The production of wood results in relatively low rates of return on fixed capital in both small and large establishments but more so in the large ones than in the smaller concerns. Paper production is unprofitable at the small scale level but adequately profitable in large establishments. Chemical production is profitable at both levels, but more so in large establishments. Non-metallic minerals are produced at a loss in large establishments but are highly profitable in small concerns. Basic metal production is unprofitable in both types of establishments, whereas metal fabrication is alternatively profitable in both of them.

Fifth, there are several distinctive features that separate private and public production in manufacturing in the Khartoum region. The degree of processing is generally higher in public enterprises than in the private ones, whereas productivity is significantly higher in the private establishments as the private sector generally tends to utilize more capital per worker than in the public sector. There are little differnces between the two types of ownership with respect to the size of establishments. The establishments in the mixed sector are, however, larger than in either the private or the public sector. Surprisingly profitability of public enterprises is, on average, higher than that of private enterprises, but there exists some significant variations in these rates across sectors. (see Table 3.32).

3.3.2.3 Manufacturing Performance By Region: The Central Region

The Central region boasts of a relatively well diversified and adequate manufacturing sector. The performance indices explain this advantage of the Central region over other regions.

First, the degree of processing coefficients of the region are generally high with an average of 0.42. Most of the sectors within the region contribute to this high average. Smaller enterprises, however, as in the Khartoum region, tend to produce larger value added magnitudes per unit of gross output.

Second, labour productivity is solidly high in this region, but particularly in small scale enterprises in the food, beverages and tobacco sector.

Third, capital per worker in the manufacturing establishments in this region are adequate; they tend to be higher in the larger establishments, especially in the metal fabricating and machinery sector.

Fourth, most enterprises in the region tend to have relatively adequate sizes. Even the small enterprises tend to produce a significant magnitude of value added per establishment.

Fifth, wages and salaries per worker are relatively low in the region; a fact which perhaps have acted as an incentive to locate establishments in the region.

Sixth, the food, beverages and tobacco sector is highly profitable particularly in the small scale sector. There are, however, a number of sectors that appear to be unprofitable in the small scale operations. Among them could be included the chemical sector, textiles and wood products.

Seventh, the public sector in the region is generally unprofitable with negative rates of return on capital in food, beverages and tobacco and textiles. On the other hand, public concerns in wood and wood products are highly profitable. Profitability of public enterprises is not a valid indicator given the nature of pricing policies of public outputs. Other indicators, however, reveal a complicated picture. Labour productivity in public enterprises in this region is relatively low, and so are the capital intensity coefficients and the degree of processing.

On the other hand, private establishments are highly efficient, well capitalized and of adequate size. It is small wonder that they are highly profitable.

3.3.2.4 Manufacturing Performance By Region: The Eastern Region

The manufacturing structure of the Eastern region was found to be relatively diversified and has entitled her to a greater share in MVA than its population share. This augurs for an adequate performance.

The results in tables 3.35 and 3.36 indicate that the expectations above are generally valid. Small enterprises in the Eastern region generate substantial value added per unit of gross output. Besides, they appear to be productive despite low capital labour ratios. With the exception of enterprises in the wood and wood products and paper and paper products, small enterprises are generally profitable.

The large establishments in the Eastern region generate substantial value added into the regional economy and are generally very efficient with hgih labour productivity ratios which exceed LS 50,000 per employee in at least two sectors -- basic metals and metal fabricating. Capital per employee is relatively high particularly in the chemical and textile sectors and most establishments appear to have an adequate size.

Public enterprises are particularly proficient in the generation of value added, but tend to be over staffed and inadequately tooled. As a result they tend to exhibit relatively low labour productivity and low capital intensities. The very profitable public concerns in the metal fabricating sector push the average profitability rate in this group to very high levels.

On the other hand, the private concerns in most sectors are very efficient with high labour productivity coefficients and even higher capital intensities. With the exception of the poor performance in the textile sector, private concerns proved to be very profitable in this region.

3.3.2.5 <u>Manufacturing Performance By Region: The Northern Region</u>

The Northern region exhibits a specialized pattern of manufacturing production. As is clear from tables 3.37 and 3.38, small scale operations dominate in wood and wood products and in metal fabricating, whereas larger enterprises dominate the production of chemicals and textiles.

Small scale enterprises show a high degree of processing in every sector in which they participate in production. For every 1 LS of gross output, these establishments generate LS 0.67 in value added. This figure drops to LS 0.28 for larger enterprises. Small enterprises in the Northern region are local and specific and they generally tend to rely on local resources. Large enterprises are often national and they depend heavily on imported resources and technology.

There appears to be little difference in the capital intensities within small and large enterprises. Both appear to devote little capital to their workers. There is, therefore, little grounds to believe that output per worker will differ significantly between these two types of establishment size. In fact, both generate almost the same labour productivity coefficients. Small enterprises may have compensated for size by better management.

Profitability is relatively high in the private sector. This is not a reflection of efficiency, it is perhaps more a reflection of lack of competition. The Sudan has a very poor transportation network. Markets are often isolated and enterprises in different locations enjoy monopoly powers.

Larger enterprises pay larger wages than smaller ones, but enjoy almost the same levels of productivity and capital per worker. It is not surprising, therefore, to find their profitability, although adequate by any standard, fall far short of the rates achieved by small enterprises.

Public enterprises are generally over-staffed and committed to use local resources. In the Northern region these facts have resulted in higher degrees of processing in the public sector than in the private sector. The latter sector is, however, highly productive with labour productivity coefficients at least 3 times as high as those of the public sector.

3.3.2.6 Manufacturing Performance By Region: the Darfur Region

The manufacturing structure of the Darfur region is not only deficient, its performance is also lagging. Very little value added is generated by small or large enterprises, privately or publically owned. Capital-labour ratios in the small scale sector are low and barely adequat in the large establishments. The average size of establishments is low providing little or no chance for reaping economies of scale.

Tables 3.39 and 3.40 reveal a large number of empty cells signalling the weak structure of the manufacturing sector in the Darfur region. Wages in the manufacturing sector are low and way below average productivity. This should have resulted in higher profitability ratios but didn't. This must be the result of several technical and economic difficulties that manufacturing enterprises face in the region as will become evident in Chapter 5.

Public enterprises are concentrated in the textile sector and are unprofitable and unproductive. Private enterprises in the chemical sector are very profitable and productive.

3.3.2.7 <u>Manufacturing Performance By Region: the Kordofan Region</u>

Manufacturing activity in Kordofan suffers from two deficiencies -- one of structure and one of performance. Small scale enterprises are less of a problem than large enterprises, and in the large enterprises category private concerns perform better than those that are publically owned.

Most of the small scale establishments, irrespective of sector, produce a significant ratio of value added per unit of gross output. Labour productivity in this activity is adequate despite inadequate average establishment size and low capital per worker. Average wages are very low and so is profitability. Generally these two variables tend to move in opposite directions. It must be the case that capital and raw material costs are high in this region.

3.3.2.8 Manufacturing Performance By Region: The Equatoria Region

There are not much manufacturing activity in the Equatoria region to report on. What exists is generally unprofitable with low capital intensity, low wages and low labour productivity.

The food, beverages and tobacco sector is relatively efficient, the textile sector is primarily public and shows a high rate of losses.

3.4 Concluding Remarks

Sudanese manufacturing despite fundamental problems of structure and despite performance difficulties holds some real promise for development. Invariably economic and technical factors appear to hold as expected in the Sudan. With larger and adequate size, more capital per worker, efficient management, proper pricing of products and inputs, and proper protection and nurturing manufacturing could grow and develop.

There are some real and significant problems that need careful attention. There is a strong concentration of activities in few regions to the neglect of others. Traditional activities and sectors are still dominant. The large enterprises are overly dependent on imports. Public enterprises are generally overstaffed and inadequately managed. Linkages among sectors and activities appear limited.

The analysis here is not saufficient to ascertain most of the claims above. It is only when a more detailed analysis is made of the smaller components of sectors that the true picture of the sector is expected to emerge. This is the subject of the following chapter.

Tables

Table 3.1 Gross Domestic Product at Factor Cost at Constant 1981/82 Prices

(LS . Millions)

Sector	Actual 1978/79	79/80	80/81	revised 81/82	revised 82/83	revised 83/84
Agriculture	2095	2028	2133	2062	2785	2697
Commerce	1085	1220	1314	1349	1350	1330
Manufacturing & Mining	395	438	456	470	482	499
Transport & Communication	652	547	587	647	580	565
Construction	237	245	260	280	300	320
Electricity	86	105	111	117	123	129
Government Services	543	652	619	610	620	617
Other Services	476	492	510	528	545	573
GDP	5569	5727	5990	6063	5785	5730
% Change in GDP	-4.6	+2.8	+4.6	+1.2	-4.6	-1.0

Source: *General Administration for Economic Research, Ministry of Finance and Economic Planning, Economic Survey 1982/83 and Prospects, Programmes and Policies in Economic Development II, 1985/84 - 1985/80.

Table 3.2 Industrial Production in the Sudan 1978/79 - 1983/84

Commodity	Unit	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Sugar	T.M.T.	119.6	129.8	207.6	238.9	360.0	418.5
Yarn	T.M.T.	10.9	11.2	9.3	10.7	10.5	9.7
Textiles	MN.Yards	92.5	86.5	62.7	66.2	68.5	57.3
Cement	T.M.T.	185.0	173.3	149.8	169.4	231.5	198.4
Flour	T.M.T.	269.7	243.3	256.5	255.0	276.3	266.3
Vegetable Oils	T.M.T.	72.8	82.5	69.2	76.8	73.8	70.4
Soap	T.M.T.	45.7	55.1	56.3	52.4	56.3	57.3
Cigarettes	T. Kilos	1,115.0	1,065.1	1,100.9	758.6	1,153.9	1,364.2
Shoes	MN. pairs	13.6	9.6	8.9	9.7	10.2	8.1
Dry Cell Batteries	MN.	38.6	90.2	81.2	60.5	42.2	65.8
Tyres & Tubes	T. Units	-	-	395.4	361.8	515.8	473.7
Mineral Water	MN. dozens	7.6	8.5	12.3	10.8	11.4	12.8

Source: Custom Department T = Thousand: MN = Million
TMT = Thousand metric tonnes

Table 3.3 Manufacturing Activity in the Sudan By Size, 1981/82

Size	Number of Establishments		Employment		Gross Output		Value Added	
	Number	%	Number	%	Value Million LS	%	Value Million LS	%
Less than 25	6,412	94.9	39,335	27.2	525.1	34.2	275.6	49.4
25-50	131	1.9	4,679	3.2	66.1	4.3	12.3	2.2
51-100	79	1.2	5,432	3.8	82.7	5.4	20.7	3.7
100 and above	137	2.0	95,057	65.8	862.2	56.1	248.7	44.7
Total	6,759	100.0	144,503	100.0	1,536.1	100.0	557.3	100.0

Source: Government of Sudan, The Industrial Survey 1981/82.

Table 3.4 Percentage Distribution of Categories of Activities According to Size of Units in the Sudan 1981/82
(percentages)

Size of Units	Food, Beverages & Tobacco 31	Textile Apparel & Leather & Products 32	Wood & Wood Products Furniture 33	Paper Printing & Publishing 34	Chemical, Petro Coal & Products 35	Non Metal Minerals 36	Basic Metal 37	Fabrication Metal & Products 38
Less than 25	79.9	1.2	2.7	1.2	1.1	1.1	0.1	12.8
25 - 50	44.3	14.5	4.6	6.1	16,8	2,3	3,1	8,3
51 - 100	44.3	11.4	1.3	2,5	21,5	5,1	2,5	11,4
101 & above	43.3	25.0	1.5	7.2	7,2	4.3	1.3	10.2

Source: Government of Sudan. Industrial Survey 1981/82.

Table 3.5: Regional and Ownership Distribution of Manufacturing Activity in the Sudan, 1981/82

	NO. of est.		NO. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
Khartoum	1,922	28.4	49,576	34.3	73,601	47.7	602,864	39.2	159,482	28.6	307,775	28.6
Central	1,782	26.4	64,572	44.7	51,198	33.2	558,266	36.3	234,344	42.1	541.712	50.4
Eastern	777	11.5	12,807	8.9	16,409	10.6	241,745	15.7	117,697	21.1	174,288	16.2
Northern	933	13.8	4,879	3.4	5,215	3.4	41,147	2.7	20,511	3.7	10,665	1.0
Darfur	411	6.1	3,367	2.3	1,562	1.0	27,404	1.8	7,013	1.3	10,323	1.0
Kordofan	915	13.5	8,261	5.7	5,308	3.4	59,073	3.8	16,886	3.0	25,977	2.4
Equatoria	19	0.3	1,041	0.7	996	0.6	5,586	0.4	1,163	0.2	4,746	0.4
TOTAL	6,759	100.0	144,503	100.0	154,327	100.0	1,536,085	100.0	557,096	100.0	1,075,486	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Manufacturing Activity in the Sudan by Type of Ownership, 1981/82

Public	50	14.4	27,724	26.4	29,498	25.0	92,784	9.2	28,593	10.2	129,671	14.3
Private	290	83.6	44,020	41.9	68,825	58.4	794,279	78.6	196,177	69.7	477,527	52.7
Mixed	7	2.0	33,424	31.7	19,543	16.6	123,935	12.2	56.678	20.1	298,360	33.0
TOTAL	347	100.0	105,168	100.0	117,866	100.0	1,010,998	100.0	281,449	100.0	905,558	100.0

Source: The Government of Sudan. The Industrial Survey, 1981/82

Table 3.6: The Structure of the Manufacturing Sector in the Sudan, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
All establishments												
31	5,275	78.0	87,739	60.7	75,149	48.7	1,105,973	72.0	428,030	76.8	661,544	61.5
32	138	2.0	28,409	19.7	35,957	23.3	105,879	6.9	25,809	4.6	188,614	17.5
33	182	2.7	2,091	1.5	2,720	1.8	10,217	0.7	5,411	1.0	14,944	1.4
34	97	1.4	4,225	2.9	6,370	4.1	32,057	2.1	8,917	1.6	14,636	1.4
35	118	1.7	5,336	3.7	11,722	7.6	139,012	9.0	34,231	6.1	114,116	10.6
36	81	1.2	4,741	3.3	4,305	2.8	28,128	1.8	10,199	1.8	30,866	2.9
37	12	0.2	777	0.5	1,471	1.0	17,372	1.1	7,223	1.3	2,749	0.3
38	854	12.6	10,803	7.5	16,043	10.4	90,601	5.9	36,940	6.6	45,851	4.3
39	2	0.0	382	0.3	551	0.4	6,846	0.4	337	0.1	2,165	0.2
TOTAL	6,759	100.0	144,503	100.0	154,288	100.0	1,536,085	100.0	557,097	100.0	1,075,485	100.0
Small establishments (< 25 empl.)												
31	5,124	79.9	26,032	66.9	22,382	61.5	428,971	81.7	239,365	86.8	111,794	65.8
32	77	1.2	984	2.5	785	2.2	11,864	2.3	5,266	1.9	7,321	4.3
33	173	2.7	1,467	3.7	2,177	6.0	8,369	1.6	4,638	1.6	13,5271	8.0
34	77	1.2	796	2.0	908	2.5	3,244	0.6	814	0.3	4,835	2.8
35	69	1.1	1,232	3.1	1,160	3.2	30,376	5.8	3,499	1.3	8,766	5.2
36	68	1.1	2,059	5.2	765	2.1	7,909	1.5	3,697	1.3	6,818	4.0
37	4	0.1	64	0.2	49	0.1	159	0.0	70	0.0	347	0.2
38	820	12.8	[illegible]	16.4	8,198	22.5	34,196	6.5	18,299	6.6	16,526	9.7
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	6,412	100.0	39,335	100.0	36,424	100.0	525,088	100.0	275,648	100.0	169,928	100.0
Large establishments (≥ 25 empl.)												
31	151	43.5	61,437	58.4	52,767	44.8	677,002	67.0	188,665	67.0	549,750	60.7
32	61	17.6	27,425	26.1	35,172	29.8	9,405	9.3	20,543	7.3	181,293	20.0
33	9	2.6	624	0.6	543	0.5	1,848	0.2	773	0.3	1,423	0.2
34	20	5.8	3,429	3.3	5,462	4.6	28,813	2.9	8,103	2.9	9,801	1.1
35	49	14.1	4,104	3.9	16,562	9.0	108,636	10.8	30,732	110.9	105,350	11.6
36	13	3.8	2,682	2.6	3,540	3.0	20,219	2.0	6,502	2.3	24,048	2.7
37	8	2.3	713	0.7	1,422	1.2	17,213	1.7	7,153	2.5	2,402	0.3
38	34	9.8	4,372	4.2	7,845	6.7	56,405	5.6	18,641	6.6	29,325	3.2
39	2	0.6	382	0.4	551	0.5	6,846	0.7	337	0.1	2,165	0.2
TOTAL	347	100.0	105,168	100.0	117,864	100.0	1,010,997	100.0	281,449	100.0	905,557	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.7: The Structure of the Manufacturing Sector by Type of Ownership, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
Public												
31	15	30.0	14,347	51.8	14,983	50.8	43,159	46.5	11,066	38.7	70,391	54.3
32	18	36.0	9,319	33.6	7,934	26.9	18,743	20.2	4,126	14.4	53,542	41.3
33	5	10.0	449	1.6	368	1.3	888	1.0	513	1.8	699	0.5
34	6	12.0	2,100	7.6	3,189	10.8	12,507	13.5	6,306	22.0	2,527	1.9
35	1	2.0	85	0.3	82	0.3	539	0.6	253	0.9	5	0.0
36	1	2.0	868	3.1	1,865	6.3	10,811	11.7	4,487	15.7	1,247	1.0
37	1	2.0	221	0.8	344	1.2	250	0.3	89	0.3	195	0.2
38	2	4.0	135	0.5	398	1.4	5,784	6.2	2,m085	7.2	340	0.3
39	1	2.0	200	0.7	333	1.1	104	0.1	-322	-1.1	725	0.6
TOTAL	50	100.0	27,724	100.0	29,498	100.0	92,784	100.0	28,593	100.0	129,671	100.0
Private												
31	133	45.9	15,738	35.8	21,879	31.8	526,582	66.3	126,120	64.3	190,123	39.8
32	41	14.1	16,797	38.2	24,542	35.7	63,879	8.0	12,460	6.4	126,091	26.4
33	4	1.4	175	0.4	175	0.3	960	0.1	261	0.1	724	0.2
34	14	4.8	1,329	3.0	2,273	3.3	16,307	2.1	1,797	0.9	7,274	1.5
35	48	16.6	4,019	9.1	10,480	15.2	108,097	13.6	30,478	15.5	105,345	22.1
36	11	3.8	1,248	2.8	1,178	1.7	3,219	0.7	1,063	0.5	17,381	3.6
37	7	2.4	492	1.1	1,078	1.6	16,963	2.1	7,064	3.6	2,206	0.5
38	31	10.7	4,040	9.2	7,003	10.2	49,529	6.2	16,266	8.3	26,944	5.6
39	1	0.3	182	0.4	218	0.3	6,743	0.9	669	0.3	1,440	0.3
TOTAL	290	100.0	44,020	100.0	68,825	100.0	794,279	100.0	196,177	100.0	477,527	100.0
Mixed												
31	3	42.9	31,352	93.8	15,905	81.4	107,261	86.6	51,479	90.8	289,236	96.9
32	2	28.6	1,309	3.9	2,696	13.8	11,393	9.2	3,957	7.0	1,660	0.5
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	1	14.3	566	1.7	497	2.5	4,189	3.3	952	1.7	5,420	1.8
37	-	-	-	-	-	-	-	-	-	-	-	-
38	1	14.3	197	0.6	444	2.3	1,092	0.9	290	0.5	2,042	0.7
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	7	100.0	33,424	100.0	19,543	100.0	123,935	100.0	56,678	100.0	298,360	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.8 No. of Establishments in Manufacturing by Size and Sector in 1981

Size	31	as%of total	32	as%of total	33	as%of total	34	as%of total	35	as%of total	36	as%of total	37	as%of total	38	as%of total	39	as%of total	Total	%
<25	5124	97.7	77	55.8	173	95.0	77	79.4	69	58.5	[illegible]	84.0	4	33.3	820	96.0			6412	94.9
25-50	58	1.1	19	13.8	6	3.3	8	8.2	22	18.6	3	3.7	4	33.3	11	1.3			131	1.4
51-100	35	0.7	9	6.5	1	0.5	2	2.1	17	14.4	4	4.9	2	16.7	9	1.1			79	1.2
>101	58	1.1	33	24.0	2	1.1	10	10.3	10	8.5	6	7.4	2	16.7	14	1.6	2	100.0	737	2.0
TOTAL	5275	100.0	138	100.0	182	100.0	97	100.0	118	100.0	81	100.0	12	100.0	854	100.0	2	100.0	6759	100.0

Table 3.9 Employment in Manufacturing by Size and Sector 1981/82

(persons)

Size	31	as%of total	32	as%of total	33	as%of total	34	as%of total	35	as%of total	36	as%of total	37	as%of total	38	as%of total	39	as%of total	Total	%
<25	26302	30.0	984	3.5	1467	70.2	796	18.8	1232	23.1	2059	43.4	64	8.2	6431	59.5			39335	27.2
25-50	2016	2.3	707	2.5	208	9.9	276	6.5	806	15.7	120	2.5	756	20.1	390	3.6			4679	3.2
51-100	2419	2.8	665	2.3	64	3.7	137	3.2	1135	27.3	264	5.6	740	18.0	608	5.6			5432	3.8
>101	57002	65.0	26053	97.7	352	16.8	3016	71.4	2763	40.5	2298	48.5	417	53.7	3374	37.2	382	100.0	95057	65.8
TOTAL	87739	100.0	28409	100.0	2097	100.0	4225	100.0	5336	100.0	4741	100.0	777	100.0	10803	100.0	382	100.0	144503	100.0

Table 3.10 Wages in Manufacturing by Size and Sector in 1981/82

(L_s 000's)

Size	31	as%of total	32	as%of total	33	as%of total	34	as%of total	35	as%of total	36	as%of total	37	as%of total	38	as%of total	39	as%of total	Total	%
<25	22382	29.8	785	2.2	2177	80.0	908	14.2	1160	9.9	765	17.8	49	3.3	8198	57.7			36424	23.6
25-50	2025	2.7	539	1.5	794	7.1	457	7.1	1008	8.6	109	2.5	500	34.0	576	3.6			5410	3.5
51-100	2019	2.7	636	1.8	90	3.3	436	6.8	2011	17.2	257	6.0	70	4.8	877	5.5			6396	4.1
>101	48723	64.9	33998	94.5	259	9.5	4569	71.7	7543	64.3	3174	73.7	852	57.9	6392	39.8	551	100.0	106060	68.7
TOTAL	75149	100.0	35958	100.0	2710	100.0	6370	100.0	11722	100.0	4305	100.0	1471	100.0	16043	100.0	551	100.0	754290	100.0

Table 3.11 Gross Output in Manufacturing by Size and Sector in 1981/82

Size	31	as%of total	32	as%of total	33	as%of total	34	as%of total	35	as%of total	36	as%of total	37	as%of total	38	as%of total	39	as%of total	Total	%
<25	428971	38.8	11864	11.2	8369	81.9	3244	10.1	30376	21.9	7909	28.7	759	0.9	34196	37.7			525089	34.2
25-50	37514	3.4	3361	3.2	801	7.8	3861	12.0	11603	8.3	858	3.1	3725	18.0	4937	5.4			66060	4.3
51-100	40997	3.7	4366	4.1	256	2.5	1748	5.5	20309	14.6	2373	8.4	7447	42.8	5260	5.8			82748	5.4
>101	598492	54.1	86289	81.5	797	7.7	23205	72.4	76724	55.2	16988	60.4	6647	38.3	46208	51.0	6846	100.0	862189	56.7
TOTAL	1105974	100.0	105880	100.0	10217	100.0	32058	100.0	139012	100.0	28128	100.0	17372	100.0	90607	100.0	6846	100.0	1536086	100.0

Table 3.12 Gross Value Added in Manufacturing by Size and Sector in 1981/82

Size	31	as% of total	32	as% of total	33	as% of total	34	as% of total	35	as% of total	36	as% of total	37	as% of total	38	as% of total	39	as% of total	Total	%
[illegible]	239365	55.9	5266	20.7	4638	85.7	814	9.1	3499	10.2	3697	36.3	70	1.0	18299	49.5			275648	49.4
[illegible]5-50	4056	0.9	1007	3.9	201	3.7	1028	11.5	2636	7.7	21[illegible]	2.7	332	4.6	2819	7.6			12236	2.2
51-100	5832	1.4	1342	5.1	729	2.4	705	7.9	4632	13.5	495	4.9	6330	87.6	1193	3.2			20664	3.7
[illegible]	178777	47.8	18439	70.5	443	8.2	6369	71.4	23463	68.5	5789	56.8	492	6.8	14624	39.6	337	100.0	24873[illegible]	44.7
[illegible]	428030	100.0	26154	100.0	5411	100.0	8916	100.0	34230	100.0	10198	100.0	7224	100.0	36940	100.0	337	100.0	557340	100.0

Table 3.13 Total Capital in Manufacturing by Size and Sector in 1981/82

(L_s 000's)

Size	31	as%of total	32	as%of total	33	as%of total	34	as%of total	35	as%of total	36	as%of total	37	as%of total	38	as%of total	39	as%of total	Total	%
<25	111794	16.9	7321	3.9	13527	90.5	4835	33.0	8766	7.7	6818	21.8	347	12.6	16526	36.0			169929	15.8
25-50	28[illegible]	4.3	3275	1.7	273	1.8	2049	14.0	6236	5.5	397	1.3	859	37.2	3420	7.5			45284	4.2
51-100	[illegible]	3.0	2890	1.5	487	3.2	899	6.1	7978	7.0	973	3.1	860	31.3	2929	6.4			36687	3.4
>101	[illegible]	[illegible].8	175957	92.9	670	4.5	6852	46.8	91137	79.9	23139	73.9	683	24.8	22976	50.1	2165	100.0	824874	76.6
TOTAL	661540	100.0	189443	100.0	14345	100.0	14635	100.0	114117	100.0	31327	100.0	1749	100.0	45851	100.0	2165	100.0	1076774	100.0

Table 3.14: The Structure of the Manufacturing Sector in the Khartoum Region, 1981/82

Sectors	No. of est. No.	No. of est. %	No. of empl. No.	No. of empl. %	Wages/salaries Value	Wages/salaries %	Gross output Value	Gross output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
All establishments												
31	1,085	56.5	15,295	30.9	20,360	27.7	314,902	52.2	81,142	50.9	111,088	36.1
32	101	5.3	14,060	28.4	21,340	29.0	56,277	9.3	17,526	11.0	76,482	24.8
33	113	5.9	1,143	2.3	1,898	2.6	8,080	1.3	4,409	2.8	13,621	4.4
34	82	4.3	4,059	8.2	6,187	8.4	31,444	5.2	8,609	5.4	13,939	4.5
35	97	5.0	4,234	8.5	7,698	10.5	99,825	16.6	16,782	10.5	27,788	9.0
36	47	2.4	2,764	5.6	1,676	2.3	10,928	1.8	3,758	2.4	23,274	7.6
37	6	0.3	578	1.2	1,140	1.5	9,083	1.5	904	0.6	1,734	0.6
38	390	20.3	7,243	14.6	12,969	17.6	72,219	12.0	26,684	16.7	39,124	12.7
39	1	0.1	200	0.4	333	0.4	104	0.0	-332	-0.2	725	0.2
TOTAL	1,922	100.0	49,576	100.0	73,601	100.0	602,862	100.0	159,482	100.0	307,775	100.0
Small establishments (< 25 empl.)												
31	1,017	59.5	6,032	42.2	8,498	45.3	83,874	52.5	22,754	47.4	51,624	51.8
32	67	3.9	856	6.0	698	3.7	11,105	7.0	4,984	10.4	6,698	6.7
33	109	6.4	968	6.8	1,723	9.2	7,120	4.5	4,148	8.7	12,897	12.9
34	62	3.6	630	4.4	725	3.9	2,631	1.7	506	1.1	4,138	4.2
35	56	3.3	1,041	7.3	875	4.7	26,811	16.8	2,315	4.8	7,133	7.2
36	38	2.2	1,670	11.7	634	3.4	6,312	4.0	3,005	6.3	5,987	6.0
37	1	0.1	14	0.1	11	0.1	38	0.0	5	0.0	250	0.3
38	359	21.0	3,079	21.6	5,581	29.8	21,972	13.7	10,255	21.4	10,869	10.9
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1,709	100.0	14,290	100.0	18,745	100.0	159,863	100.0	47,972	100.0	99,596	100.0
Large establishments (> 25 empl.)												
31	68	31.9	9,263	26.3	11,862	21.6	231,028	52.[illegible]	58,388	52.4	59,464	28.6
32	34	16.0	1[illegible]04	37.4	20,642	37.6	45,172	10.2	12,542	11.2	69,784	33.5
33	4	1.9	175	0.5	175	0.3	960	0.2	261	0.2	724	0.3
34	20	9.4	3,429	9.7	5,462	10.0	28,813	6.5	8,103	7.3	9,801	4.7
35	41	19.3	3,193	9.1	6,823	12.4	73,014	165	14,467	12.9	20,655	9.9
36	9	4.2	1,094	3.1	1,042	1.9	4,616	1.0	753	0.7	17,287	8.3
37	5	2.4	564	1.6	1,129	2.1	9,045	2.0	899	0.8	1,484	0.7
38	31	14.6	4,164	11.8	7,388	13.5	50,247	11.3	16,429	14.7	28,255	13.6
39	1	0.5	200	0.6	333	0.6	104	0.0	-332	-0.3	725	0.3
TOTAL	213	100.0	35,286	100.0	54,856	100.0	442,999	100.0	111,510	100.0	208,179	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.15: The Structure of the Manufacturing Output by Type of Ownership in the Khartoum Region, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
Public												
31	5	27.8	1,349	27.2	1,72		9,534	35.7	2,320	23.7	974	13.8
32	3	16.7	975	19.7	1,39		3,618	13.6	1,090	11.1	2,624	37.1
33	-	-	-	-	-		-	-	-	-	-	-
34	6	33.3	2,100	42.4	3,189		2,507	46.9	6,306	64.4	2,527	35.7
35	1	5.6	85	1.7	82		539	2.0	253	2.6	5	0.1
36	-	-	-	-	-		-	-	-	-	-	-
37	1	5.6	221	4.5	344	4.8	250	0.9	89	0.9	195	2.8
38	1	5.6	29	0.6	66	0.9	141	0.5	73	0.7	27	0.4
39	1	5.6	200	4.0	333	4.7	104	0.4	-332	-3.4	725	10.2
TOTAL	18	100.0	4,959	100.0	7,134	100.0	26,692	100.0	9,799	100.0	7,077	100.0
Private												
31	62	32.5	7,761	27.1	9,799	22.2	219,780	54.7	55,569	57.3	58,261	29.5
32	29	15.2	10,920	38.1	16,555	37.4	30,161	7.5	7,494	7.7	65,498	33.2
33	4	2.1	175	0.6	175	0.4	960	0.2	261	0.3	724	0.4
34	14	7.3	1,329	4.6	2,273	5.1	16,307	4.1	1,797	1.9	7,274	3.7
35	40	20.9	3,108	10.8	6,740	15.2	72,475	18.0	14,214	14.7	20,649	10.5
36	9	4.7	1,094	3.8	1,042	2.4	4,616	1.2	753	0.8	17,287	8.8
37	4	2.1	343	1.2	785	1.8	8,795	2.2	810	0.8	1,287	0.7
38	29	15.2	3,938	13.7	6,879	15.6	49,014	12.2	16,066	16.6	26,187	13.3
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	191	100.0	28,668	100.0	44,248	100.0	402,108	100.0	96,964	100.0	197,167	100.0
Mixed												
31	1	25.0	153	9.2	334	9.6	1,714	12.1	499	10.5	230	5.8
32	2	50.0	1,309	78.9	2,696	77.6	11,393	80.2	3,957	83.3	1,660	42.2
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	1	25.0	197	11.9	444	12.8	1,092	7.7	290	6.1	2,042	51.9
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	4	100.0	1,659	100.0	3,474	100.0	14,199	100.0	4,746	100.0	3,932	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.16: The Structure of the Manufacturing Sector in the Central Region, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
All establishments												
31	1,534	86.1	51,849	80.3	38,400	75.0	498,217	89.2	222,158	94.8	463,805	85.6
32	21	1.2	9,900	15.3	10,158	19.8	39,424	7.1	6,600	2.8	64,920	12.0
33	40	2.2	628	1.0	453	0.9	1,529	0.3	622	0.3	1,001	0.2
34	4	0.2	30	0.0	20	0.0	195	0.0	66	0.0	209	0.0
35	4	0.2	117	0.2	382	0.7	1,697	0.3	-74	0.0	728	0.1
36	21	1.2	879	1.4	641	1.3	5,669	1.0	1,566	0.7	5,814	1.1
37	2	0.1	30	0.0	22	0.0	97	0.0	49	0.0	81	0.0
38	155	8.7	957	1.5	904	1.8	4,697	0.8	2,688	1.1	3,714	0.7
39	1	0.1	182	0.3	218	0.4	6,743	1.2	669	0.3	1,440	0.3
TOTAL	1,782	100.0	64,572	100.0	51,198	100.0	558,266	100.0	558,266	100.0	541,712	100.0
Small establishments (< 25 empl.)												
31	1,502	87.0	7,906	84.1	7,580	85.8	192,088	96.7	115,738	97.7	27,946	85.1
32	7	0.4	63	0.7	53	0.6	138	0.1	38	0.0	507	1.5
33	36	2.1	209	2.2	140	1.6	650	0.3	114	0.1	302	0.9
34	4	0.2	30	0.3	20	0.2	195	0.1	66	0.1	209	0.6
35	2	0.1	30	0.3	180	2.0	113	0.1	-460	-0.4	450	1.4
36	19	1.1	244	2.6	43	0.3	1,052	0.5	425	0.4	394	1.2
37	2	0.1	30	0.3	22	0.3	97	0.1	49	0.0	81	0.3
38	154	8.9	890	9.5	801	9.1	4,225	2.1	2,522	2.1	2,757	9.0
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1,726	100.0	9,402	100.0	8,838	100.0	198,558	100.0	118,492	100.0	32,846	100.0
Large establishments (> 25 empl.)												
31	32	57.1	43,943	79.7	30,820	72.8	306,129	85.1	106,420	91.1	435,859	85.7
32	14	25.0	9,837	17.8	10,105	23.9	39,286	10.9	6,562	5.7	64,413	12.7
33	4	7.1	419	0.8	313	0.7	879	0.2	508	0.4	699	0.1
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	3.6	87	0.2	202	0.5	1,584	0.4	386	0.3	27[illegible]	0.1
36	2	3.6	635	1.2	598	1.4	4,617	1.3	1,141	1.0	5,420	1.1
37	-	-	-	-	-	-	-	-	-	-	-	-
38	1	1.8	67	0.1	103	0.2	472	0.1	166	0.1	757	0.1
39	1	1.8	182	0.3	218	0.5	6,743	1.9	569	0.6	1,440	0.3
TOTAL	56	100.0	55,170	100.0	42,360	100.0	359,708	100.0	115,852	100.0	508,866	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.17: The Structure of the Manufacturing Output by Type of Ownership in the Central Region, 1981/82

Sectors	No. of est. No.	No. of est. %	No. of empl. No.	No. of empl. %	Wages/salaries Value	Wages/salaries %	Gross output Value	Gross output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
Public												
31	4	26.7	8,677	61.1	7,758	66.2	22,759	63.1	3,084	47.5	66,253	64.3
32	7	46.7	5,114	36.0	3,651	31.2	12,436	34.5	2,896	44.6	36,158	35.1
33	4	26.7	419	3.0	313	2.1	879	2.4	508	7.8	699	0.7
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	15	100.0	14,210	100.0	11,722	100.0	36,074	100.0	6,488	100.0	103,110	100.0
Private												
31	26	66.4	4,067	44.2	7,491	51.4	177,823	83.1	52,356	91.2	80,598	72.4
32	7	18.4	4,723	51.4	6,454	44.3	26,850	12.6	3,666	6.4	28,254	25.4
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	5.3	87	1.0	202	1.4	1,584	0.7	386	0.7	278	0.3
36	1	2.6	69	0.8	101	0.7	428	0.2	189	0.3	n.a.	n.a.
37	-	-	-	-	-	-	-	-	-	-	-	-
38	1	2.6	63	0.7	103	0.7	472	0.2	166	0.3	757	0.7
39	1	2.6	182	2.0	218	1.5	6,743	3.2	669	1.2	1,440	1.3
TOTAL	38	100.0	9,195	100.0	14,569	100.0	213,899	100.0	57,432	100.0	111,327	100.0
Mixed												
31	2	66.7	31,195	98.2	15,571	96.9	105,547	96.2	50,980	98.2	289,007	98.2
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	1	33.3	566	1.8	497	3.1	4,187	3.8	952	1.8	5,420	1.8
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	3	100.0	31,765	100.0	16,068	100.0	109,735	100.0	51,933	100.0	294,427	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.18: The Structure of the Manufacturing Sector in the Eastern Region, 1981/82

Sectors	No. of est. No.	No. of est. %	No. of empl. No.	No. of empl. %	Wages/salaries Value	Wages/salaries %	Gross output Value	Gross output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
All establishments												
31	607	78.1	8,812	68.8	9,242	56.3	187,674	77.6	90,477	76.9	53,440	30.7
32	4	0.5	1,441	11.3	1,615	9.8	6,729	2.8	1,248	1.1	33,506	19.2
33	16	2.1	242	1.9	236	1.4	275	0.1	226	0.2	80	0.0
34	6	0.8	87	0.7	132	0.8	199	0.1	120	0.1	168	0.1
35	5	0.6	668	5.2	3,397	20.7	30,876	12.8	15,473	13.1	84,504	48.5
36	5	0.6	140	1.1	74	0.5	322	0.1	199	0.2	402	0.2
37	4	0.5	169	1.3	308	1.9	8,192	3.4	6,270	5.3	935	0.5
38	130	16.7	1,244	9.7	1,403	8.6	7,479	3.1	3,635	3.1	1,253	0.7
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	777	100.0	12,807	100.0	16,409	100.0	241,745	100.0	117,697	100.0	174,288	100.0
Small establishments (< 25 empl.)												
31	589	78.7	2,777	63.7	1,118	42.4	80,160	96.4	70,963	96.9	9,006	80.6
32	-	-	-	-	-	-	-	-	-	-	-	-
33	16	2.1	242	5.6	236	9.0	275	0.3	226	0.3	80	0.7
34	6	0.8	87	2.0	132	5.0	199	0.2	120	0.2	168	1.5
35	3	0.4	37	0.9	27	1.0	528	0.6	178	0.2	658	5.9
36	4	0.5	59	1.4	38	1.4	147	0.2	78	0.1	308	2.8
37	1	0.1	20	0.5	15	0.6	24	0.0	16	0.0	17	0.2
38	129	17.3	1,138	26.1	1,073	40.7	1,836	2.2	1,623	2.2	941	8.4
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	748	100.0	4,360	100.0	2,639	100.0	83,169	100.0	73,203	100.0	11,178	100.0
Large establishments (> 25 empl.)												
31	18	62.1	6,035	71.5	8,124	59.0	107,514	67.8	19,514	43.9	44,434	27.2
32	4	13.8	1,441	17.1	1,615	11.7	6,729	4.2	1,298	2.9	33,506	20.5
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	6.9	631	7.5	3,370	24.5	30,348	19.1	15,295	34.4	83,846	51.4
36	1	3.5	85	1.0	36	0.3	175	0.1	121	0.3	94	0.7
37	3	10.3	145	1.8	293	2.1	8,168	5.2	6,254	14.1	918	0.6
38	1	3.5	106	1.3	333	2.4	5,643	3.36	2,012	4.5	312	0.2
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	2[illegible]	100.0	8,447	100.0	13,770	100.0	158,576	100.0	44,494	100.0	163,110	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.19: The Structure of the Manufacturing Output by Type of Ownership in the Eastern Region, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
Public												
31	2	50.0	3,507	88.7	4,672	90.8	9,751	62.5	5,251	71.4	2,352	58.5
32	1	25.0	343	8.7	140	2.7	212	1.4	87	1.2	1,357	33.7
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	1	25.0	106	2.7	333	6.5	5,643	36.2	2,012	27.4	312	7.8
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	4	100.0	3,956	100.0	5,145	100.0	15,606	100.0	7,351	100.0	4,021	100.0
Private												
31	16	64.0	2,528	56.3	3,452	40.0	97,762	68.4	14,263	38.4	42,082	26.5
32	3	12.0	1,098	24.4	1,475	17.1	6,517	4.6	1,211	3.3	32,199	20.2
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	8.0	631	14.1	3,370	19.1	30,348	21.2	15,295	41.2	83,846	52.7
36	1	4.0	85	1.9	36	0.4	175	0.1	121	0.3	94	0.1
37	3	12.0	149	3.3	293	3.4	8,168	5.7	6,254	16.8	918	0.6
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	25	100.0	4,491	100.0	8,625	100.0	142,970	100.0	37,143	100.0	159,089	100.0
Mixed												
31	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.20: The Structure of the Manufacturing Sector in the Northern Region, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
All establishments												
31	845	90.6	3,168	64.9	2,588	49.6	34,639	59.9	13,928	67.9	5,338	50.1
32	3	0.3	431	8.8	363	7.0	1,249	3.0	237	1.2	3,207	30.1
33	12	1.3	48	1.0	78	1.5	324	0.8	150	0.7	243	2.2
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	0.2	104	2.1	131	2.5	2,335	5.7	310	1.5	412	3.9
36	3	0.3	886	18.2	1,887	36.2	10,860	26.4	4,515	22.0	1,258	11.8
37	-	-	-	-	-	-	-	-	-	-	-	-
38	68	7.3	242	5.0	168	3.2	1,740	4.3	1,371	6.7	207	1.9
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	933	100.0	4,879	100.0	5,215	100.0	41,147	100.0	20,511	100.0	10,665	100.0
Small establishments (< 25 empl.)												
31	841	91.1	2,477	88.9	1,892	87.6	20,560	90.7	13,708	89.8	3,860	89.3
32	-	-	-	-	-	-	-	-	-	-	-	-
33	12	1.3	48	1.7	78	3.6	324	1.4	150	1.0	243	5.6
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	2	0.2	16	0.7	22	1.0	49	2.2	28	0.2	11	0.3
37	-	-	-	-	-	-	-	-	-	-	-	-
38	68	7.4	242	8.7	168	7.8	1,740	7.7	1,371	9.0	207	4.8
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	923	100.0	2,785	100.0	2,160	100.0	22,673	100.0	15,257	100.0	4,321	100.0
Large establishments (≥ 25 empl.)												
31	4	40.0	691	33.0	696	22.8	4,079	22.1	200	4.2	1,478	23.3
32	3	30.0	431	20.6	363	11.9	12,419	6.8	237	4.5	3,207	50.6
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	20.0	104	5.0	131	4.3	2,335	12.6	310	5.9	412	6.5
36	1	10.0	868	41.5	1,865	51.1	10,811	58.5	4,487	85.4	1,247	19.7
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	10	100.0	2,094	100.0	3,055	100.0	18,474	100.0	5,254	100.0	6,349	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.21: The Structure of the Manufacturing Output by Type of Ownership in the Northern Region, 1981/82

Sectors	No. of est. No.	No. of est. %	No. of empl. No.	No. of empl. %	Wages/salaries Value	Wages/salaries %	Gross output Value	Gross output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
Public												
31	3	60.0	580	31.8	605	21.8	655	5.3	98	2.1	811	16.0
32	1	20.0	375	20.6	305	11.0	899	7.3	149	3.1	3,018	59.5
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	1	20.0	868	47.6	1,865	67.2	10,811	87.4	4,487	94.8	1,247	24.5
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	5	100.0	1,823	100.0	2,775	100.0	12,365	100.0	4,733	100.0	5,076	100.0
Private												
31	1	20.0	111	41.0	92	32.7	3,424	56.1	122	23.4	667	52.6
32	2	40.0	56	20.7	58	20.6	351	5.7	89	17.1	188	14.8
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	40.0	104	38.3	131	46.7	2,335	38.2	310	59.5	412	32.5
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	5	100.0	271	100.0	280	100.0	6,109	100.0	520	100.0	1,267	100.0
Mixed												
31	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.22: The Structure of the Manufacturing Sector in Darfur Region, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
All establishments												
31	366	89.1	2.521	74.9	1,074	68.8	22,240	81.2	4,409	62.9	5,730	55.5
32	1	0.2	194	5.8	181	11.6	110	0.4	13	0.2	3,264	31.6
33	-	-	-	-	-	-	-	-	-	-	-	-
34	2	0.5	14	0.4	9	0.6	25	0.1	6	0.1	25	0.2
35	6	1.5	169	5.0	85	5.4	2,685	9.8	849	12.1	412	4.0
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	36	8.8	46.9	13.9	213	13.6	2,344	8.6	1,736	24.8	892	8.6
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	411	100.0	3,367	100.0	1,562	100.0	27,404	100.0	7,013	100.0	10,323	100.0
Small establishments (< 25 empl.)												
31	359	89.5	2,235	79.9	963	78.1	19,753	84.2	3,994	63.3	3,781	76.4
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	2	0.5	14	0.5	9	0.7	25	0.1	6	0.1	25	0.5
35	4	1.0	80	2.9	48	3.9	1,329	5.7	575	9.7	253	5.1
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	36	9.0	469	16.8	213	17.3	2,344	10.0	1,736	27.5	892	18.0
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	401	100.0	2,798	100.0	1,233	100.0	23,451	100.0	6,311	100.0	4,951	100.0
Large establishments (≥ 25 empl.)												
31	7	70.0	286	50.3	111	33.6	2,487	62.9	415	59.2	1,949	36.3
32	1	10.0	194	34.1	181	55.0	110	2.8	13	1.8	3,264	60.8
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	20.0	89	15.6	37	11.4	1,356	34.3	274	39.0	159	3.0
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	10	100.0	569	100.0	329	100.0	3,953	100.0	702	100.0	5,372	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.23: The Structure of the Manufacturing Output by Type of Ownership in the Darfur Region, 1981/82

Sector	No. of est. No.	No. of est. %	No. of empl. No.	No. of empl. %	Wages/salaries Value	Wages/salaries %	Gross output Value	Gross output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
Public												
31	-	-	-	-	-	-	-	-	-	-	-	-
32	1	100.0	194	100.0	181	100.0	110	100.0	13	100.0	3,264	100.0
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	100.0	194	100.0	181	100.0	110	100.0	13	100.0	3,264	100.0
Private												
31	7	77.8	286	76.3	111	74.7	2,487	64.7	415	60.3	1,949	92.5
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	2	22.2	89	23.7	37	25.3	1,356	35.3	274	39.7	159	7.5
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	9	100.0	375	100.0	148	100.0	3,843	100.0	690	100.0	2,108	100.0
Mixed												
31	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.24: The Structure of the Manufacturing Sector in Kordofan Region, 1981/82

Sectors	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
All establishments												
31	833	91.0	5,827	70.5	3,107	85.5	53,879	91.2	14,852	87.9	21,128	81.3
32	2	0.2	1,714	20.7	1,810	34.1	1,062	1.8	93	0.6	3,634	14.0
33	-	-	-	-	-	-	-	-	-	-	-	-
34	3	0.3	35	0.4	23	0.4	193	0.3	116	0.7	294	1.1
35	4	0.4	44	0.5	30	0.6	1,595	2.7	891	5.3	271	1.0
36	5	0.5	68	0.8	30	0.6	348	0.6	161	0.9	116	0.4
37	-	-	-	-	-	-	-	-	-	-	-	-
38	68	7.4	593	6.9	308	5.8	1,996	3.4	773	4.6	534	2.1
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	915	100.0	8,251	100.0	5,308	100.0	59,073	100.0	16,886	100.0	25,977	100.0
Small establishments (< 25 empl.)												
31	813	91.1	4,822	87.6	2,307	86.1	32,406	88.8	12,182	86.5	15,470	92.7
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	3	0.3	35	0.6	23	0.9	193	0.5	116	0.8	294	1.8
35	4	0.5	44	0.8	30	1.1	1,595	4.4	891	6.3	271	1.6
36	5	0.6	68	1.2	30	1.1	348	1.0	161	1.1	116	0.7
37	-	-	-	-	-	-	-	-	-	-	-	-
38	67	7.5	538	9.8	288	10.8	1,953	5.4	740	5.2	534	3.2
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	892	100.0	5,507	100.0	2,678	100.0	36,495	100.0	14,070	100.0	16,685	100.0
Large establishments (≥ 25 empl.)												
31	20	[illegible]	[illegible]	36.5	[illegible]	30.4	21,473	95.1	2,670	95.5	5,658	60.9
32	2	8.7	[illegible]	[illegible]	[illegible]	66.8	1,062	4.7	93	3.3	3,634	39.1
33	-	-	-			-	-	-	-	-	-	-
34	-	-	-		-		-	-	-	-	-	-
35	-	-	-	-			-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	1	4.3	35	1.3	20	0.8	43	0.2	33	1.2	n.a.	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	23	100.0	2,754	100.0	2,630	100.0	22,578	100.0	2,796	100.0	9,292	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.25: The Structure of the Manufacturing Output by Type of Ownership in Kordofan, 1981/82

	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
Sectors	**No.**	**%**	**No.**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**
Public												
31	1	33.3	234	12.0	220	10.8	460	30.2	312	77.2	n.a.	n.a.
32	2	66.7	1,714	88.0	1,810	89.2	1,062	69.8	93	22.9	3,634	100.0
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	3	100.0	1,948	100.0	2,030	100.0	1,522	100.0	1,522	100.0	3,634	100.0
Private												
31	19	95.0	771	95.7	580	96.6	21,013	99.8	2,358	98.6	5,658	100.0
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	1	5.0	35	4.3	20	3.4	43	0.2	33	1.4	n.a.	n.a.
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	20	100.0	806	100.0	601	100.0	21,056	100.0	2,391	100.0	5,658	100.0
Mixed												
31	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.26 The Structure of the Manufacturing Sector in Equatoria in 1981/82

Sectors	No. of est. No.	No. of est. %	No. of empl. No.	No. of empl. %	Wages/salaries Value	Wages/salaries %	Gross output Value	Gross output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
All establishments												
31	5	26.3	267	25.6	377	37.9	4,424	79.2	1,064	91.5	1,016	21.4
32	6	31.6	669	64.3	489	49.1	1,026	18.3	42	3.6	3,602	75.9
33	1	5.3	30	2.9	55	5.5	9	0.2	5	0.4	n.a.	n.a.
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	7	36.8	75	7.2	74	7.4	126	2.3	52	4.5	128	2.7
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	19	100.0	1,041	100.0	995	100.0	5,586	100.0	1,163	100.0	4,746	100.0
Small establishments (< 25 empl.)												
31	3	23.1	53	27.5	22	17.3	131	14.9	26	8.1	106	30.3
32	3	23.1	65	33.7	33	25.8	620	70.6	244	75.9	116	33.1
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	7	53.8	75	38.9	74	56.9	126	14.4	52	16.1	128	36.6
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	13	100.0	193	100.0	129	100.0	878	100.0	322	100.0	350	100.0
Large establishments (≥ 25 empl.)												
31	2	33.3	214	25.2	355	41.0	4,293	91.2	1,038	123.4	910	20.7
32	3	50.0	604	71.2	456	52.7	406	8.6	-202	-24.0	3,486	79.3
33	1	16.7	30	3.5	55	6.3	9	0.2	5	0.6	n.a.	n.a.
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	6	100.0	848	100.0	866	100.0	4,708	100.0	841	100.0	4,396	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.27: The Structure of the Manufacturing Output by Type of Ownership in Equatoria, 1981/82

Sector	No. of est.		No. of empl.		Wages/salaries		Gross output		Gross value add.		Capital	
	No.	%	No.	%	Value	%	Value	%	Value	%	Value	%
Public												
31	-	-	-	-	-	-	-	-	-	-	-	-
32	3	75.0	604	95.3	456	89.2	406	97.8	-202	102.5	3,486	100.0
33	1	25.0	30	4.7	55	10.8	9	2.2	5	-2.5	n.a.	n.a.
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	4	100.0	634	100.0	511	100.0	415	100.0	-197	100.0	3,486	100.0
Private												
31	2	100.0	214	100.0	355	100.0	4,293	100.0	1,038	100.0	910	100.0
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-		-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	2	100.0	214	100.0	355	100.0	4,293	100.0	1,038	100.0	910	100.0
Mixed												
31	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 3.28: Performance Indices in the Manufacturing Sector of Sudan by Size, 1981/82

Sector	Small establishments (≤ 25 emp.)						Large establishments (≥ 25 emp.)						Total					
	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.558	16.309	4.250	46.714	0.851	1.941	0.28	11.019	8.948	1249.4	0.859	2.490	0.39	12.605	7.540	81.100	0.857	0.532
32	0.444	12.057	7.440	70.213	0.798	0.612	0.219	3.428	5.610	336.770	1.282	0.081	0.244	3.726	6.639	187.014	1.266	-0.054
33	0.55	5.70	9.22	26.81	1.48	0.18	0.42	3.96	2.28	85.89	0.89	0.160	0.52	4.89	7.15	29.41	1.30	0.18
34	0.25	4.08	6.07	10.57	1.14	-0.02	0.28	8.40	2.86	405.15	1.59	0.27	0.28	7.59	3.46	91.93	1.51	0.17
35	0.12	24.656	7.112	50.71	0.942	0.267	0.28	26.471	25.670	627.18	2.574	0.191	0.25	26.052	21.386	290.102	2.197	0.197
36	0.526	4.199	3.311	66.941	0.380	0.553	0.320	7.54	8.97	500.15	1.32	0.12	0.38	6.087	6.510	136.46	0.912	0.218
37	0.44	2.43	5.42	17.50	0.77	0.06	0.42	24.14	3.37	894.13	1.99	2.38	0.42	22.36	3.54	601.92	1.89	2.09
38	0.54	5.32	2.57	22.316	1.274	0.611	0.330	12.901	6.707	548.264	1.794	0.368	0.408	8.387	4.244	43.255	1.485	0.456
39	-	-	-	-	-	-	0.049	17.924	5.668	168.500	1.442	-0.099	0.049	17.924	5.668	168.500	1.442	-0.099
TOTAL	0.525	13.349	4.320	42.989	0.926	1.407	0.278	9.613	8.611	811.092	1.121	0.181	0.362	10.630	7.443	82.423	1.068	0.375

Source: Calculations Based on the Industrial Survey, 1981/82

Table 3.29: Performance Indices in the Manufacturing of Sudan by Type of Ownership, 1981/82

Sector	Public						Private						Mixed					
	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	X/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.27	3.001	4.906	737.70	1.044	-0.056	0.24	33.459	12.080	848.30	1.390	0.548	0.48	3.421	9.225	17159.7	0.507	0.122
32	0.220	2.011	5.745	229.22	0.851	-0.070	0.195	3.840	7.509	303.902	1.461	-0.095	0.347	8.704	1.268	1978.500	2.095	0.759
33	0.58	1.98	1.56	102.66	0.82	0.210	0.27	5.49	4.14	6[illegible].25	1.00	0.12	-	-	-	-	-	-
34	0.50	5.96	1.20	1051.00	1.52	1.23	0.11	12.29	5.470	128.360	1.71	-1.99	-	-	-	-	-	-
35	0.47	6.34	0.06	2.98	0.96	34.20	0.28	26.896	26.212	634.958	2.608	0.190	-	-	-	-	-	-
36	0.42	12.46	1.44	2243.50	2.15	2.10	0.20	4.18	11.79	96.64	0.94	-0.01	0.23	7.40	9.58	952.00	0.88	0.08
37	0.356	1.131	0.882	89.00	1.559	-1.308	0.416	34.478	4.484	1009.142	2.191	2.714	-	-	-	-	-	-
38	0.36	42.844	2.519	1042.50	2.948	4.962	0.328	12.260	6.669	574.710	1.733	0.344	0.266	5.543	10.365	290.00	2.254	-0.075
39	3.192	0.520	3.625	332.00	1.665	-0.917	0.099	37.049	7.912	669.00	1.198	0.313	-	-	-	-	-	-
TOTAL	0.308	3.346	4.677	571.86	1.064	-0.007	0.247	18.044	10.848	676.472	1.563	0.267	0.457	3.708	8.927	8096.857	0.585	0.124

Source: Calculations Based on the Industrial Survey 1981/82.

Table 3.30: Manufacturing Performance: A Regional Perspective 1981/82

	GVA/GO	GO/EMP.	K/EMP.	GVA/NO	W/EMP.	(GVA-W)/K
Khartoum	0.265	12.160	6.208	82.977	1.485	0.279
Central	0.420	8.646	8.389	131.506	0.793	0.338
Eastern	0.487	18.876	13.609	151.476	1.281	0.581
Northern	0.498	8.433	2.186	21.984	1.069	1.434
Darfur	0.256	8.139	3.066	17.063	0.464	0.528
Kordofan	0.286	7.151	3.145	18.455	0.643	0.446
Equatoria	0.208	5.366	4.559	61.211	0.957	0.035
SUDAN TOTAL	0.363	10.630	7.443	82.423	1.068	0.374

Source: Based on Calculations using data in the Industrial Survey, 1981/82

Table 3.31: Performance Indices in the Manufacturing Sector by Size in Khartoum Region, 1981/82

Size	Small establishments (< 25 emp.)						Large establishments (≥ 25 emp.)						Total					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.27	13.904	8.558	22.4	1.408	0.276	0.25	24.927	6.419	858.6	1.190	0.782	0.258	20.589	7.263	74.785	1.331	0.547
32	0.45	12.973	7.824	74.4	0.815	0.639	0.278	5.485	5.285	368.882	1.563	(0.116)	0.311	4.003	54.396	173.524	1.517	(0.059)
33	0.58	7.355	13.324	38.1	1.779	0.188	0.27	8.402	4.137	65.3	1.000	0.118	0.55	7.038	11.917	37.4	1.660	0.184
34	0.19	4.176	6.568	8.2	1.150	(0.005)	0.28	22.866	2.858	405.2	1.592	0.269	0.27	7.746	3.434	104.987	1.524	0.174
35	0.09	25.755	6.853	41.3	0.840	0.201	0.20	4.219	6.468	352.9	2.136	0.370	0.168	23.576	6.563	173.010	1.818	0.327
36	0.48	3.779	3.585	79.1	0.379	0.396	0.16	16.037	15.801	83.7	0.952	(0.016)	(0.34)	3.953	8.420	80.0	0.606	0.089
37	0.13	2.714	17.857	5.0	0.785	(0.024)	0.10	4.219	2.631	179.8	2.001	(0.154)	(0.100)	15.715	3.000	150.7	1.172	(136)
38	0.47	7.136	3.530	28.6	1.812	0.430	0.33	12.067	5.785	520.0	1.774	0.319	0.37	5.970	5.401	68.4	1.790	0.350
39	-	-	-	-	-	-	(3.22)	0.520	3.675	(332)	1.665	(0.904)	(3.19)	0.52	3.625	(332)	1.665	(0.917)
W.A.	0.30	11.187	6.969	28.1	1.311	0.293	0.252	12.554	5.889	523.52	1.554	0.276	0.272	12.150	6.208	82.977	1.484	0.279

Source: Based on Calculations Using Data from the Industrial Survey, 1981/82

Table 3.32: Performance Indices for th. Manufacturing Sector by Ownership in Khartoum Province, 1980/81

	Public						Private						Mixed					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.24	7.067	0.772	464.0	1.281	0.606	0.25	28.318	7.506	896.3	1.262	0.735	0.29	11.202	1.503	499.0	2.183	0.717
32	0.30	3.710	2.691	363.3	1.426	(.144)	0.25	2.761	5.990	258.4	1.518	(.138)	0.347	8.703	1.268	1978.5	2.059	0.759
33	-	-	-	-	-	-	0.27	5.485	4.137	65.3	1.000	0.118	-	-	-	-	-	-
34	0.50	5.956	1.203	1051.0	1.518	1.233	0.11	12.270	5.473	128.4	1.710	(0.065)	-	-	-	-	-	-
35	0.47	6.341	0.058	25.3	0.964	34.2	0.20	23.318	6.643	355.4	2.168	0.361	-	-	-	-	-	-
36	-	-	-	-	-	-	0.16	4.219	15.801	83.7	0.952	(0.016)	-	-	-	-	-	-
37	0.36	1.131	0.881	89	1.556	(1.307)	0.09	26.641	3.752	202.5	2.288	0.019	-	-	-	-	-	-
38	0.52	4.862	0.931	73	2.275	0.259	0.33	12.446	6.649	554.0	1.746	0.350	0.27	5.543	10.365	290.0	2.253	0.075
39	(3.22)	0.520	3.625	(332)	1.665	(0.001)	-	-	-	-	-	-	-	-	-	-	-	-
W.A.	0.39	5.382	1.427	579.4	1.438	0.459	0.24	14.026	6.877	507.7	1.543	0.267	0.334	8.558	2.370	1186.500	2.094	0.323

Source: Based on Calculations using Data from the Industrial Survey 1981/82.

Table 3.33: Performance Indices for the Manufacturing Sector in Central Region, 1981/82

Sector	Small establishments (≤ 25 emp.)						Large establishments (≥ 25 emp.)						Total					
	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.603	24.296	3.535	77.056	0.959	5.302	0.348	6.967	9.919	3325.625	0.701	0.173	0.446	9.609	8.945	144.823	0.741	0.396
32	0.275	2.190	8.048	5.429	0.841	(0.03)	0.167	3.994	6.548	968.714	1.027	(0.055)	1.67	3.982	6.558	314.286	1.026	(0.055)
33	0.175	3.110	1.445	3.167	0.670	(0.086)	0.578	2.098	1.668	127.00	0.747	0.279	0.407	2.435	1.594	15.550	0.721	0.169
34	0.338	6.500	6.967	16.500	0.667	0.220	-	-	-	-	-	-	0.338	6.500	6.967	16.500	0.667	0.220
35	4.071	3.767	15.000	(2.30)	6.000	(1.422)	0.244	18.207	3.195	193.000	2.322	0.662	(0.044)	14.504	6.222	(18.500)	3.265	(0.626)
36	0.404	4.311	1.615	22.368	0.176	0.970	0.247	7.271	-	570.500	0.942	-	0.276	6.449	6.614	74.571	0.729	(0.000)
37	0.505	3.233	2.700	24.500	0.733	0.333	-	-	-	-	-	-	0.505	3.233	2.700	24.500	0.733	0.333
38	0.597	4.747	3.322	16.377	0.900	0.582	0.352	7.045	11.299	166.000	1.537	0.083	0.572	4.908	3.881	17.342	0.945	0.480
39	-	-	-	-	-	-	0.099	3.676	7.912	669.00	1.198	0.313	0.099	3.676	7.912	669.00	1.198	0.313
W.A.	0.597	21.119	3.499	68.652	0.940	3.338	0.322	2.100	9.224	2068.80	0.768	0.144	0.420	8.646	8.389	131.506	0.793	0.338

Source: Based on Calculations using Data from the Industrial Survey 1981/82.

Table 3.34: **Performance Indices for the Manufacturing Sector by Ownership in Central Region, 1980/81**

	Public						Private						Mixed					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	(GVA-W)/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	(GVA-W)/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	(GVA-W)/K
31	0.136	2.523	7.635	771.00	0.894	(0.071)	0.294	43.723	19.818	2013.692	1.842	0.557	0.483	3.383	9.268	25490.0	0.499	0.123
32	0.233	2.432	7.070	413.714	0.714	(0.021)	0.137	5.685	5.982	523.714	1.367	(0.099)	-	-	-	-	-	-
33	0.578	2.098	1.666	127.00	0.747	0.279	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	0.244	18.206	3.195	193.00	2.322	0.662	-	-	-	-	-	-
36	-	-	-	-	-	-	0.442	6.203	-	189.00	1.464	-	0.227	7.401	9.578	952.00	0.878	0.084
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	0.351	7.045	11.299	166.00	1.537	0.083	-	-	-	-	-	-
39	-	-	-	-	-	-	0.099	37.050	7.912	669.00	1.198	0.313	-	-	-	-	-	-
W.A.	0.180	2.539	7.256	432.533	0.825	(0.051)	0.269	23.262	12.108	1511.368	1.584	0.382	0.473	3.455	9.269	17311.00	0.506	0.122

Source: Based on Calculations using Data from the Industrial Survey 1981/82.

Table 3.35: Performance Indices for the Manufacturing Sector in the Eastern Region, 1981/82

Size	Small establishments (< 25 emp.)						Large establishments (≥ 25 emp.)						Total					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.88	18.87	3.24	120.48	0.40	7.76	0.18	17.82	7.36	1084.11	1.35	0.26	0.48	21.30	6.06	149.06	1.05	1.52
32	-	-	-	-	-	-	0.19	4.67	23.25	324.5	1.12	(0.01)	0.19	4.67	23.25	324.5	1.12	(0.01)
33	0.82	1.14	0.33	14.13	0.98	(0.13)	-	-	-	-	-	-	0.82	1.14	0.33	4.13	0.98	(0.13)
34	0.60	2.28	1.93	20.00	1.52	(0.07)	-	-	-	-	-	-	0.60	2.28	1.93	20.00	1.52	(0.07)
35	0.34	19.27	17.78	59.33	0.73	0.23	0.50	48.10	132.88	7647.5	5.34	0.14	0.50	46.22	126.50	3094.6	5.09	0.14
36	0.53	2.49	5.15	19.5	0.64	0.13	0.69	2.06	1.11	121.00	0.42	0.90	0.62	2.3	2.87	39.8	0.53	0.31
37	1.60	1.20	0.85	16.00	0.75	0.06	0.77	56.33	6.33	2084.66	2.02	6.49	0.77	48.47	5.53	1567.5	1.82	6.38
38	1.71	1.61	0.83	12.58	0.94	0.58	0.36	53.24	7.94	2012.00	3.14	5.38	0.49	6.01	1.01	27.96	1.13	1.78
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.A.	0.88	6.05	2.56	97.86	0.61	6.31	0.28	18.77	17.67	1534.28	1.63	0.21	0.49	18.88	13.609	151.45	1.28	0.581

Source: Based on Calculations Using Data from the Industrial Survey, 1981/82

Table 3.36: Performance Indices for the Manufacturing Sector by Ownership in the Eastern Region 1980/81

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/WMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.54	2.78	0.67	2625.50	1.33	0.25	0.15	38.67	16.65	891.44	1.37	0.26	-	-	-	-	-	-
32	0.41	0.62	3.96	87.00	0.41	(0.04)	0.19	5.94	29.28	403.67	1.43	(0.01)	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	0.50	48.10	132.88	7647.50	5.34	0.14	-	-	-	-	-	-
36	-	-	-	-	-	-	0.69	2.06	1.11	121.00	0.42	0.90	-	-	-	-	-	-
37	-	-	-	-	-	-	0.77	56.33	6.33	2084.66	2.02	6.49	-	-	-	-	-	-
38	0.36	53.24	2.94	2012.00	3.14	5.38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	0.47	3.94	1.02	1837.75	1.30	0.55	0.26	31.83	35.42	1485.72	1.92	0.18	-	-	-	-	-	-

Source: Based of Calculations Using Data from the Industrial Survey, 1981/82.

Table 3.37: Performance Indices in the Manufacturing Sector by Size in the Northern Region, 1981/82

Size	Small establishments (< 25 emp.)						Large establishments (≥ 25 emp.)						Total					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.667	8.300	1.558	16.300	0.764	3.061	0.054	5.903	2.139	55.000	1.007	(0.322)	0.565	7.777	1.685	16.483	0.817	2.124
32	-	-	-	-	-	-	0.190	2.898	7.441	79.000	0.842	(0.039)	0.190	2.898	7.441	79.00	0.842	(0.039)
33	0.463	6.750	5.063	12.500	1.625	0.296	-	-	-	-	-	-	0.463	6.750	5.063	12.500	1.625	0.296
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	0.132	22.452	3.962	155.000	1.260	0.434	0.132	22.452	3.962	155.000	1.260	0.434
36	0.571	2.722	0.611	14.000	1.222	0.545	0.415	12.455	1.436	4487.00	2.149	2.103	0.416	12.257	1.420	1505.00	2.130	2.089
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	0.788	7.190	0.855	20.162	0.694	5.812	-	-	-	-	-	-	0.788	7.190	0.855	20.162	0.694	5.812
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.A.	0.673	8.141	1.551	16.531	0.776	3.033	0.284	8.822	3.030	525.40	1.459	0.347	0.498	8.434	2.186	21.985	1.069	1.434

Source: Based on Calculations Using Data from the Industrial Survey, 1981/82

Table 3.38: Performance Indices for the Manufacturing Industry by Ownership in the Northern Region, 1980/81

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.150	1.129	1.398	32.667	1.043	(0.625)	0.036	30.846	6.009	122.000	0.829	0.045	-	-	-	-	-	-
32	0.166	2.397	8.048	149.000	0.813	(0.075)	0.253	6.268	3.357	44.500	1.036	0.165	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	0.132	22.452	3.962	155.000	1.260	0.434	-	-	-	-	-	-
36	0.415	12.455	1.437	4487.000	2.149	2.902	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	0.382	6.783	2.785	946.600	1.522	0.306	0.085	22.542	4.679	104.000	1.033	1.189	-	-	-	-	-	-

Source: Based on Calculations Using Data from the Industrial Survey, 1981/82.

Table 3.39: Performance Indices in the Manufacturing Sector by Size in Darfur Region, 1981/82

Sector	Small establishments (≤ 25emp.)						Large establishments (≥ 25 emp.)						Total					
	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.202	8.838	1.692	11.125	0.431	0.802	0.167	8.696	6.815	59.286	0.388	0.156	0.198	8.822	2.273	12.046	0.426	0.582
32	-	-	-	-	-	-	0.118	0.567	16.825	3264.000	0.933	(0.051)	0.118	0.567	16.825	3264.00	0.933	(0.051)
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	0.240	1.786	1.786	3.000	0.643	(0.120)	-	-	-	-	-	-	0.240	7.786	1.786	3.000	0.643	(0.120)
35	0.433	16.613	3.163	145.750	0.600	2.083	0.202	15.23	1.787	79.500	0.416	1.491	0.316	15.888	2.438	141.50	0.503	1.854
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	0.741	4.998	1.902	48.222	0.454	1.707	-	-	-	-	-	-	0.741	4.998	1.902	48.222	0.454	1.707
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.A.	0.269	8.381	1.769	15.738	0.441	1.025	0.178	6.947	9.441	537.20	0.578	0.069	0.256	8.138	3.066	17.063	0.464	0.528

Source: Based on Calculations using Data from the Industrial Survey 1981/82.

Table 3.40: Performance Indices for the Manufacturing Sector by Ownership in Darfur, 1980/81

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	-	-	-	-	-	-	0.167	8.696	6.815	59.286	0.388	0.156	-	-	-	-	-	-
32	0.118	0.567	16.825	13.00	0.933	(0.051)	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	0.202	15.230	1.787	79.500	0.41[illegible]	1.491	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	0.118	0.567	16.825	13.00	0.933	(0.051)	0.180	10.248	5.621	76.667	0.395	0.257	-	-	-	-	-	-

Source: Based on Calculations Using Data from the Industrial Survey, 1981/82.

Table 3.41: Performance Indices for the Manufacturing Sector in Kordofan, 1981/82

Size	Small establishments (< 25 emp.)						Large establishments (≥ 25 emp.)						Total					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.376	6.720	2.275	14.984	0.478	0.900	0.124	21.366	5.629	133.5	0.796	0.331	0.276	9.246	3.626	17.829	0.533	0.556
32	-	-	-	-	-	-	0.088	0.619	2.120	46.5	1.056	(0.472)	0.088	6.619	2.120	46.5	1.056	(0.472)
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	0.601	5.514	8.4	38.666	0.657	0.316	-	-	-	-	-	-	0.005	5.514	8.4	38.666	0.657	0.316
35	0.559	36.25	6.159	222.75	0.681	3.177	-	-	-	-	-	-	0.559	36.250	6.159	222.75	0.682	3.117
36	0.463	5.118	1.705	32.2	0.441	1.129	-	-	-	-	-	-	0.463	5.118	1.706	32.2	0.441	1.129
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	0.379	3.630	0.993	11.045	0.535	0.840	0.767	1.228	-	33	0.571	-	0.387	3.483	0.932	11.368	0.538	0.871
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.A.	0.386	6.627	3.029	15.795	0.486	0.684	0.123	8.198	3.373	121.565	6.955	0.017	0.286	7.151	3.144	18.455	0.543	0.446

Source: Based on Calculations Using Data from the Industrial Survey, 1981/82

Table 3.42: Performance Indices for the Manufacturing Sector by Ownership in Kordofan, 1980/81

	Public						Private						Mixed					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	/A/NO	W/EMP	GVA-W/K
31	0.678	1.966	-	312	0.940	-	0.12	27.154	1.339	124.105	0.752	0.314	-	-	-	-	-	-
32	0.088	0.619	2.120	46.5	1.056	(0.472)	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	0.767	1.229	-	33	0.571	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.A.	0.266	0.781	2.120	168	1.042	(0.472)	0.114	26.124	7.339	119.55	0.746	0.314	-	-	-	-	-	-

Source: Based on Calculations using Data from the Industrial Survey 1981/82.

Table 3.43: Performance Indices in the Manufacturing Sector by Size in Equatoria Region, 1981/82

Size	Small establishments (< 25 emp.)						Large establishments (≥ 25 emp.)						Total					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
31	0.20	2.47	2.00	8.67	0.42	0.04	0.24	20.06	4.25	519.00	1.66	0.75	0.24	16.57	3.81	212.80	1.41	0.68
32	0.39	9.54	1.78	81.33	0.51	1.82	(0.497)	0.67	5.77	(67.33)	0.75	(0.189)	0.04	1.53	5.38	7.000	0.73	(0.124)
33	-	-	-	-	-	-	0.56	0.30	-	5.00	1.83	-	0.56	0.30	-	5.00	1.83	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	0.41	1.68	1.71	7.43	0.99	(0.172)	-	-	-	-	-	-	0.41	1.68	1.71	7.43	0.99	(0.172)
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.A.	0.37	4.55	1.81	24.69	0.67	0.55	0.18	5.55	5.18	140.17	1.02	(0.01)	0.208	5.37	4.56	61.211	0.96	0.035

Source: Based on Calculations Using Data from the Industrial Survey, 1981/82

Table 3.44: Performance Indices in the Manufacturing Sector by Ownership in Equatoria, 1981/82

Sector	Public						Private						Mixed					
	$\frac{GVA}{GO}$	$\frac{GO}{EMP}$	$\frac{K}{EMP}$	$\frac{GVA}{NO}$	$\frac{W}{EMP}$	$\frac{GVA-W}{K}$	$\frac{GVA}{GO}$	$\frac{GO}{EMP}$	$\frac{K}{EMP}$	$\frac{GVA}{NO}$	$\frac{W}{EMP}$	$\frac{GVA-W}{K}$	$\frac{GVA}{GO}$	$\frac{GO}{EMP}$	$\frac{K}{EMP}$	$\frac{GVA}{NO}$	$\frac{W}{EMP}$	$\frac{GVA-W}{K}$
31	-	-	-	-	-	-	0.24	20.06	4.25	519.00	1.66	0.75	-	-	-	-	-	-
32	-	0.67	5.77	-	1.32	-	-	-	-	-	-	-	-	-	-	-	-	-
33	0.56	0.30	-	5.00	1.83	(0.20)	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	(0.47)	0.65	5.50	(49.25)	0.81	(0.20)	0.24	20.06	4.25	519.00	1.66	0.75						

Source: Based on Calculations using Data from the Industrial Survey 1981/82.

Chapter Four

The Sudanese Manufacturing Sector, Structure and Performance: A Microeconomic Perspective

4.0 Introduction

The manufacturing activity may be studied from a number of vantage points, each with its own justifications and usefulness. We have so far examined the operations, structure, pattern, and performace of this activity within a macroeconomic perspective and within an aggregative and regional perspective. Manufacturing activity was broken into the major divisions of sectors which were compared and analyzed. But each sector entails a broad spectrum of branches that are fundamentally different from each other with respect to technology, size, scale, and operations. Some of these differences within the sector may be more important than differences between sectors.

The finer the level of disaggregation is the more homogeneous will be the component parts. It is at this level of disaggregation that generalizations about structure and performance are perhaps more precise and meaningful.

In what follows, an attempt is made to study the structure and performance of manufacturing activity in the Sudan in 1981/82 using the Survey results at the branch level within each sector. Only the Sudanese perspective is presented here. A more detailed analysis by branch in each region is being undertaken by the Ministry of Industry staff.

4.1 The Structure and Performance of the Food, Beverages and Tobacco Sector in 1981/82

The food, beverages and tobacco sector is the core sector of Sudanese manufacturing; it dominates all other sectors in almost every technical or economic indicator. More importantly, it is linked directly to the agricultural sector; the mainstay of the Sudanese economy.

4.1.1 Structure

Small scale establishments represent over 97 percent of all establishments in this sector, but contribute less than 30 percent of its total employment, but about 56 percent of its MVA.

Four branches account for most of the activity within the sector. These are: vegetables and animal oils and fats, grain and mill products, bakery, macaroni and noodle products and sugar production and refining.

The sugar industry alone supports about 50 percent of the total employment in the sector, but because of technical problems it did not account but for 13.8 percent of its total MVA. Sugar production is undertaken in five large establishments. The Kewana project is the largest in the world with a rated capacity 300 thousand tpa. Production last year was expected to exceed the rated capacity now that the technical problems that plagues its operations in the past have been resolved. It is to be noted, however, that Sudan is still a net importer of sugar and four out of the five establishments in the sugar industry are publically owned.

Production of vegetable and animal oils and fats is well spread with over 112 establishments, most of them (70) employ 25 or more workers. The large establishments employ over 90 percent of the labour force in this branch and account for about the same percentage share of its MVA.

The overall importance of this branch within the sector as a whole is rather modest. As is clear from Table 4.1, it represents 2.1 percent of the total number of establishments, 8.8 percent of total employment and 13.4 percent of MVA. Most of the establishments are privately owned (see Table 4.2).

Grain and mill products account for 47.5 percent of all establishments in the food, beverages and tobacco sector, but account for less than 15 percent of its employment. This branch, however, is very efficient in generating value added as it transforms local raw materials. Its share in the sector's MVA exceeded 33.6 percent inn 1981/82.

Characteristically, most of the operations within the grain and mill products are small scale. The smaller establishments generate the bulk of the employment within the sector with a share of about 79 percent in 1981/82. Its share in the total MVA of the branch exceeded 69 percent in the same year. The operations in this branch are exclusively private except for one establishment owned jointly by the private and the public sector.

Bakery, macaroni and noodle products are produced primarily in small establishments. The total branch accounts for 44.2 percent of the total number of establishments within the sector, but explains only 16.4 percent of its total employment. Its share in the sectoral MVA is, however, 28.5 percent.

The small scale establishments within this branch account for almost 99.4 percent of its establishments and about 92 percent of its employment. Again this sector is exclusively privately owned.

Tobacco, cigar and cigarette industry contributes about 4.6 percent of the sectoral MVA, but employs few workers with a share of about one percent. All other branches show weak and limited impact on the manufacturing sector and the economy.

4.1.2 Performance

Structure impinges on performance, but it is the latter that determines the success or failure of an activity.

The performance indices of the food, beverages and tobacco branches are presented in Tables 4.3 and 4.4. The first table presents these indices for small. large and total establishments, whereas Table 4.4 is restricted to large establishments and presents performance indices distinguished by type of ownership.

A large number of conclusions and remarks are drawn from these tables. Below is a brief account of the most important of these:

First, the various branches within this sector generate significant value added per unit of gross output but in varying proportions. The highest degrees of processing are noted in the grain and mill products, tobacco, cigar and cigarettes, and food industries not elsewhere classified. The lowest degrees of processing are associated with dairy products, vegetable and animal oils and fats, and distilled alcholic drinks. Invariably, small establishments tend to generate more local value added per unit of output than larger enterprises with only minor exceptions. This is the result of the greater dependence of larger establishments on foreign machinery, technology and raw materials than the small ones. It is also generally the case, that public enterprises in this sector tend to have higher coefficients of the degree of processing.

Second, smaller establishments tend to be more efficient and productive than larger establishments in some branches including canning, bakery, sugar confectionary, food industries n.e.c., and prepared animal food. But the larger establishments dominate clearly in vegetable and animal oils and fats, and in grain and mill products.

Third, most operations within this sector are profitable, particularly small scale enterprises in the production of grain and mill products and in bakery, macaroni and noodle production. Public enterprises, because of pricing policies, appear generally unprofitable.

Fourth, capital per worker ratios within the branches vary unsystematically. On average, however, larger enterprises are more adequately tooled.

Fifth, the degree of processing is positively correlated with labour productivity, capital per worker, size of establishment, wages per worker and profitability. The highest positive correlation is 0.638 and this is with profitability. Thus, a greater ratio of value added per unit of output could be expected in this sector, the more profitable its branches, the more wages they pay and the larger they are.

Sixth, labour productivity depends significantly on capital per worker and branch profitability. The higher the ratio of capital per worker, the higher is labour productivity within this sector. The correlation coefficient is a positive (0.458).

Seventh, capital per worker does not correlate highly (0.03) with size in this sector. This is why we claimed that this ratio varies unsystematically within the sector.

Eighth, profitability varies with size. The larger the enterprise within the sector, the higher is the rate of return on fixed assets. This is indicative of monopoly profits within the sector.

Nineth, private enterprises are more productive and efficient than public enterprises in the large establishments within the sector.

4.2 The Structrure and Performance of Textiles, Weaving and Apparel and Leather Products Sector

The textile and leather products sector is another traditional manufacturing sector that plays a major role in the overall manufacturing activity in the Sudan. Therefore, its performance or lack of it would impinge severely and directly on economic activity in the Sudan.

4.2.1 Structure

There are a total of 138 establishments in this sector and they are almost evenly divided between small and large establishments. The number of establishments is, however, a poor indicator of the relative importance of the small versus large establishments. The large establishments account for almost 97 percent of total employment and fixed capital in the sector, but only about 80 percent of MVA.

The most prominent branch is weaving, spinning, dying and reparation. This branch alone generated 81.5 percent of the total employment in the sector as well as 52 percent of MVA. The largest part of these contributions were made by large establishments operating in this branch.

Four other branches account together for almost 15 percent of sectoral employment and the remaining 48 percent of MVA. These branches are -- ready made apparel, excluding footwear, tanning and repairing of leather, leather and substitute products excluding footwear, footwear except plastic and rubber. The last branch is the most prominent of the four in terms of employment and MVA.

There are several branches within this sector that are not represented in the textile and leather sector in the Sudan. Most conspicuous absence is that of carpets and rugs.

The private sector is more prominent than the public sector in the production of textiles and leather sector. But the public sector still plays a relatively important role in this activity. The most visible public involvement is in weaving, spinnning and dying as well as in tanning of leather. In the private sector, weaving, spinning and dying strongly dominates all other branches and activities. (see Table 4.6). There were two only establishments in the ixed sector.

4.2.2 Performance

There are some evident performance difficulties in this sector across branches. The larger establishments appear, however, to face more operational problems than the small enterprises.

The data in Table 4.7 presents performance indices by size in the textile and leather sector. It is clear that small enterprises are more productive and profitable. In particular, leather and substitute products excluding footwear are highly profitable. Labour productivity in the small establishments is almost 4 times larger, on average, than that of larger establishments. The most productive coefficients in small establishments are in leather and substitute products and in footwear production. It is also surprising to find that capital per worker is higher in small establishments than in larger establishments in most branches, but particularly in leather and in footwear production.

The degree of processing within the textile sector is highly correlated (0.875) with labour productivity and with capital per worker (0.812). The more capital per worker, there is in an establishment, the higher the productivity per worker. The correlation between these two variables in the textile sector by branch is as high as (0.922). It is also true that profitable concerns are generally those with high degrees of processing. That is, the more local raw materials are processed within the branch the more profitable will be its concerns. The correlation coefficient here is (0.886).

The highest correlation coefficient is associated with profitability and labour productivity (0.971). The highest rates of return on fixed capital within the textile and leather sector are in branches that utilize efficiently their labour. It is also true that the more capital per worker there is in a branch the higher is its profitability rate (0.867).

Size is very critical in this sector. The larger the average size of an establishment is within a branch, the more likely it is to manage efficiently its labour (0.758), the more capital per worker it can manage to afford (0.749), and the higher the ratio of value added to gross output (0.876).

Establishments that tend to pay high wages per worker, tend to be unprofitable and often unproductive.

The private and public enterprises in the weaving, spinning, dying and repairing are both unprofitable. This should be a cause of concern. Given, the results above a very thorough microeconomic study must be conducted in this branch to highlight and diagnose the problems. Labour productivity in the public sector is generally low and it is not much higher in the private sector. The average size of establishments in both the privatre and public sector seem to be adequate, but capital intensities are rather low. (see Table 4.8).

4.3 The Structure and Performance of the Wood, Wood Products Including Furniture Sector 1981/82

Wood, wood products including furniture production is rather limited in the Sudan. This is surprising given Sudan's forest endowment and the historic handicrafts and furniture industries. There are to be sure severe structure and performance problems.

4.3.1 Structure

Two tables are constructed to reveal the structure of the wood, wood products including furniture in the Sudan in 1981/82. Table 4.9 is devoted to reveal structure by size and Table 4.10 reveals structure by type of ownership.

Most of the activity in this sector is generated by small scale enterprises. These represent over 70 percent of the employment in the sector and over 86 percent of its MVA.

Wood products including furniture is the dominant branch with 70.1 percent of the employment in the sector and 86.8 percent of MVA. These shares jump to 85.9 percent and 95.7 percent when only small establishments are considered.

The public sector dominates the sawmills whereas, the private sector dominates the operation of wood products and furniture (see Table 4.10). In the large establishments, the public sector is larger and generates more jobs and MVA than the private sector.

4.3.2 Performance

Performance indices divide rather strikingly between branches and sizes. The degree of processing in wood products and furniture is decisively higher than in the sawmills in the small establishments, whereas the same coefficients reverse magnitudes in the larger establishments.

Labour productivity, however, is higher in the smaller establishments for both branches and not surprisingly, and perhaps, because of the higher capital-labour ratios in the small establishments. The samll establishments are marginally more profitable than the large establishments on average. However, large sawmills are substantially more profitable than small ones, whereas small wood products and furniture establishments are substantially more productive than the larger establishments in this branch.

Public enterprises generate substantial value added per unit of output and are generally more profitable than private concerns (see Table 4.12).

4.4 The Structure and Performance of Paper, Paper Products, Printing and Publishing Sector in 1981/82

The production of paper, paper products, printing and publishing is generally a capital intensive and size-sensitive activity. The forest endowment of the Sudan, as in the case of wood and wood products, entitles the Sudan to a substantive share in this industry. This so far has not happened. This activity is operating way below its potential.

There are only few operations within this sector in the Sudan and what exists is rudimentary and suffers from structural and performance difficulties.

4.4.1 Structure

There is a heavy preponderance of activity in the printing and publishing branch. This branch accounts alone for 97.9 plercent of all establishments in the sector, 86.5 percent of its employment complement, and given the negative value added in the pulp and paper branch, it produces all the positive MVA of the sector.

Small scale production is concentrated in the printing and publishing branch, as is clearly displayed in Table 4.13. Large establishments, however, characterize the production of pulp and paper. There was no production of containers and boxes of paper board in the Sudan in 1981/82 and there is still no production today of these products.

Public enterprises in this sector are in the printing and publishing, whereas private enterprises are also in pulp and paper production. Most of the employment and MVA generated in this sector in large establishments are in the public sector. (see Table 4.14).

4.4.2 Performance

The importation of machinery and even raw materials by the branches in this sector result in low degrees of processing. For small and large enterprises the coefficients are relatively low, 0.25 and 0.28 respectively. Labour productivity ratios are low in the small establishments and although they are significantly higher in larger establishments they are still relatively modest. Profitability is also low and even negative in small and some large establishments. In the public sector, printing and publishing, however, appears to be highly profitable. In the private sector, the unprofitable operations in pulp and paper override the profitability of printing and publishing and end up with an overall losses for the sector.

4.5 The Structure and Performance of Chemicals, Chemical Products and Products of Coal and Petroleum Sector in 1981/82

The chemicals and coal and petroleum sector is a significant sector in overall manufacturing in the Sudan. Although, the number of establishments in this sector is not large, their contributions to employment and particularly income are significant.

4.5.1 Structure

Most of the production in this sector takes place in large establishments. The latter contributed over 76 percent of sectoral employment and about 90 percent of its MVA.

A large set of products are produced within this sector, but the dominant branches in 1981/82 were in soap, cleaners and toilet products, tire and tube industries and in plastic products n.e.c.

Soap, cleaners and toilet products represent 55.1 percent of total establishments within the sector, produce over 43.1 percent of the sector's total employment, but produce a disproportionately lower share of about 20 percent of MVA. This latter fact is due to the large proportion of imported expensive raw materials.

Tire and tube products are produced in one large establishment in Khartoum and this single establishment was credited with generating 8 percent of the total sectoral employment and a high 29.7 percent of its MVA.

Plastic products n.e.c., are produced in small and large establishments and have accounted for 23.7 of the total number of establishments in the chemicals sector, 17.3 percent of its employment complement but only 8.9 percent of its MVA.

Basic chemicals produce a significant share of MVA but does not generate much employment, whereas chemical products n.e.c., generates more employment than it generates value added.

Most of the large branches in this sector are privately controlled with the exception of one public enterprise in plastic production. But this enterprise is relatively limited in size and operations (see Table 4.18).

4.5.2 <u>Performance</u>

The chemicals sector is typically import dependent in the Sudan and this results in low value added per one unit of gross output coefficients. This is true of both small and large establishments, although it applies more strictly to the small enterprises.

On the other hand, it is also characteristic of this sector to exhibit high capital intensities and therefore high labour productivity coefficients.

Profitability ratios are particularly high in basic chemicals and in drugs and medicines. But the overall profitability of most branches is rather modest.

Large enterprises tend to pay inordinately high average wages by Sudanese standards, but this is perhaps more due to the highly skilled labour requirements of the sector than to any other reason.

The correlation matrix of the various variables within the sector reveal several interesting relationships.

First, the degree of processing is positively related to capital per worker (0.763) and size of establishment (0.645).

Second, labour productivity is highly and equally correlated with capital per worker and the size of establishment (0.791).

Third, the highest correlation is that of size of establishment with capital per worker (0.957).

Fourth, profitability in the sector is poorly and even negatively correlated with most variables. This is perhaps due to the fact that no adjustment was made for depreciation for a highly capital-intensive sector.

The public sector with one establishment does not provide a significant background to make any useful generalizations.

4.6 The Structure and Performance of the Other Non-Metallic Mineral Products Sector in 1981/82

Cement production dominates the activities of this sector and as such it is inextricably linked to construction. The cyclical pattern of construction inpute a high degree of variability to the operations of this sector and therefore diminishes in turn the relevance of typical and general tendencies ascribed to its pattern and structure of its output and to its performance indices.

4.6.1 Structure

A total of 4741 jobs were sustained by this sector in 1981/82, the bulk of these jobs were in large establishments which accounted for over 81 percent of the total sectoral employment.

There were little or no production of pottery, ceramics or other earth products in the Sudan in 1981/82. There was only one large establishment with 500 employees producing glass. Alone it accounted for 10.5 percent of sectoral employment, and 4.8 percent of MVA. The largest contributions within this sector were made by cement, quicklime and plaste. This branch represented over 87 percent of the total number of establishments, 78.8 percent of total employment, and as high as 95.5 percent of MVA.

Production of cement, quicklime and plaste takes place in both small and large establishments. The smaller establishments account for more jobs than the larger ones, and the reverse is true in the case of MVA.

Non-metallic minerals n.e.c. contribute about 10.7 percent of employment, but show a negative value added signifying that losses exceeded the sum of other factor payments and depreciation in this branch. (see Table 4.21).

In the large enterprises, the private and mixed sectors prevail over the public sector. The results in Table 4.22 show a large cement factory in the mixed sector with 566 employees and with over LS 0.9 million in MVA. There were also another cement establishments wholly owned by the public sector with 868 employees, but with LS 4.5 million MVA. The private sector fielded operations in cement, glassware and other non-metallic minerals n.e.c.; the majority of its operations, however, were in cement production.

4.6.2 <u>Performance</u>

Small scale establishments generate a high ratio of value added per unit of gross output, particularly in the cement, quicklime and plaste production. They are generally profitable in this branch to the tune of 0.62 on every LS in fixed assets. Non-metallic minerals n.e.c. production is not as viable; the degree of processing coefficient in this branch is low and profitability is barely positive.

Large establishments in g.. ss and glass products appear with low labour productivity coefficients, low capital-labour ratios and generate losses not profits. The situation is totally different in cement production. There labour productivity is relatively high, capital-labour ratio is limited but perhaps adequate for this sector, average establishment size is relatively adequate and the profitability rate is relatively high. (see Table 4.23).

The performance indices associated with the operations of the public sector supercede those of the private or the mixed sectors. The degree of processing is high, labour productivity is also high, the average establishments size is very large, and profitability is specifically high. (see Table 4.24). The private sector performance is mixed. In the cement production, it is productive and profitable, whereas in all other branches it suffers from operational difficulties and therefore losses.

4.7 The Structure and Performance of the Basic Metals Sector in 1981/82

The Sudanese basic metals sector is a small sector that is still in its infancy. Given, its modest beginnings and the great expanse of the country, there are ample opportunities to develop this sector into a major activity. Its current structure and performance are, therefore, poor indicators of what is to be expected of this sector in the future.

4.7.1 Structure

Two characteristics describe the pattern of production in this sector in the Sudan in 1981/82. First, most of the production takes place in large establishments. The small scale operations are only trivial. Second, the private sector is more prominent than the public sector in the operations of this sector.

These are only two activities in the Sudan that are associated with basic metals.

First, the basic metal industries branch accounts for 41.7 percent of the total number of establishments in this sector, about 42.7 percent of employment, but as low as 7.5 percent of MVA. On the other hand, non-ferrous metal industries account for the rest of the contributions in this sector.

Second, in the small scale enterprises, the basic metals industries dominate the non-ferrous metals industries, whereas in the larger establishments non-ferrous metals prevail decisively over basic metals industries.

4.7.2 Performance

There is a perfect assignment of performance proficiency between branches and sizes. The basic metals industries are profitable and efficient in small scale enterprises but not in the larger establishments, whereas the non-ferrous metal industries are only and singularly efficient and profitable in large establishments but not in the smaller ones.

Whether in small or large establishments, however, the basic metals sector generates a fair ratio of value added per unit of gross output, but the perfect assignment above holds in this case too.

When labour productivity is considered, the larger establishments in both branches show much more significant and larger coefficients. (see Table 4.27).

The public sector enterprise in the basic metals appears lacking in size, capital and management. It is small wonder that it shows a large has rate. On the other hand, the private sector is very profitable particularly in the production of non-ferrous metals. (see Table 4.28.

4.8 The Structure and Performance of the Metal Fabricating and Machinery Sector, 1981/82

The importance of this sector in Sudanese manufacturing is exaggerated by the inclusion of garages and service stations which give the impression that some significant and complicated manufacturing of machinery and equipment are taking place within this sector. The consideration of branches and their activities dispels any doubt in this regard.

4.8.1 Structure

Four basic branches stand out as major contributors to output and employment. The largest contributor to employment is fabricated metals n.e.c. with a share of almost 25 percent of the total sectoral employment. However, this branch contributed only 18.1 percent of MVA. The most prominent contributor to MVA is the metallic fixtures and furniture branch with a 23.6 percent share; its contribution to employment is almost identical to its contribution to MVA with a 23.9 percent share.

Motor vehicles servicing and repair generates almost 18.2 percent of the total sectoral employment and about 22 percent of MVA, making this branch a very important component of the sector and defining the part played by garage and services stations.

Cutlery, handtools and metallic outfittings contribute significantly to employment but marginally to MVA, whereas electrical apparatus n.e.c., contributes substantially to MVA but much less proportionately to employment.

Output and income tend to be evenly split between the small scale establishments and the larger ones, however, the former appear to have generated more employment within the sector than the latter. Only agricultural machines are produced within the larger enterprises exclusively, otherwise both the small scale and the larger establishment co-produce in every other branch. The structure of production is very similar in both types of establishments with minor differences. In the small scale activity, the most prominent branch is metallic furniture and fixtures. In the larger enterprises dominance is observed in electrical apparatus and in fabricated metals n.e.c..

The fabricated metals and machinery sector does not seem to have attracted significant public involvement in production. Only two establishments are publically owned, both are relatively small -- one is in the production of agricultural implements and the other motor vehicles servicing. There is also one large establishment in the mixed sector in the motor vehicles servicing. Otherwise, the private sector opeiates exclusively. (See Table 4.30).

4.8.2 Performance

Typically this sector in developing countries is very efficient at the large scale level but only profitable at the small scale level. The results in Table 4.31 seem to substantiate this proposition. It is also typical to see small scale establishments generating large ratios of value added per unit of gross output. In the production of metallic fixtures, household appliances and motor vehicles, the degree of processing coefficients are rather very high. This is not true, however, of production in the larger enterprises with the exception of structural metal products.

Labour productivity coefficients are relatively high in most of the branches in large establishments. The only two deviations here are those coefficients associated with structural metal products and agricultural machines. These two branches suffer from very low capital per worker coefficients and inadequate size.

There are three branches which show losses in large enterprises -- cutlery and handtools, structural metal, and agricultural machines. In the first branch, the problem appears to be related to pricing. In the remaining two it is the result of poor productivity, management and inadequate size.

The performance indices in this sector support four general assertions. First, labour productivity rises as more tools are made available per worker. The correlation coefficient of labour productivity coefficients and those of capital intensities is as high as (0.906) in this sector. Second, capital intensities rise with the average size of the establishment. The larger are the establishments, the more they provide their labour with capital (0.917). Third, larger establishments pay higher wages than smaller ones. Fourth, the degree of processing coefficients tend to decrease with the increase in size and in capital per worker. This is the result of the fact that most of the capital used in the sector is imported.

The public sector is in two activities and in both of them but particularly in the motor vehicles activities it shows a very high rate of profitability and productivity. The mixed sector enterprise appears to be losing money.

4.9 Concluding Remarks

Some very interesting and useful results emerged from the consideration of the structure and performance of branches within sectors. The finer details highlighted some very important aspects of structural difficulties and performance deficiences.

The overall structure of sectors in the Sudan reveals heavy dependence on foreign spare parts, raw materials and machinery particularly in large establishments. Linkages among branches and sectors is not evident. Markets tend to be segmented geographically and monopolistic powers are rampant. Public enterprises are not necessarily inherently less profitable or efficient than private enterprises. Most performance difficulties tend to result from inadequate size, low capital-labour ratios and therefore low labour productivity and as such not insurmountable.

TABLES

Table 4.1: The Structure of the Food, Beverages and Tobacco Sector By Size, 1981/82

	No of Est		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
All Establishments												
3111	1	0.0	299	0.3	433	0.6	4370	0.4	1964	0.5	2952	0.5
3112	141	2.7	817	0.9	506	0.7	14214	1.3	605	0.1	2368	0.4
3113	18	0.3	2312	2.6	1780	2.4	9120	0.8	2537	0.6	3476	0.5
3114	1	0.0	110	0.1	216	0.3	422	0.0	201	0.0	-	-
3115	112	2.1	7690	8.8	10584	14.0	355359	32.1	57497	13.4	142575	21.6
3116	2507	47.5	12453	14.2	9973	13.3	235683	21.3	143599	33.6	57756	8.7
3117	2329	44.2	14375	16.4	14821	19.7	248420	22.5	122005	28.5	52215	7.9
3118	5	0.1	43166	49.2	27865	37.1	136841	12.4	59090	13.8	356423	53.9
3119	57	1.1	2217	2.5	2486	3.3	31546	2.9	7478	1.8	8158	1.2
3121	51	1.0	1105	1.3	1337	1.8	10926	1.0	7017	1.6	14408	2.2
3122	5	0.1	116	0.1	259	0.3	5601	0.5	1292	0.3	4943	0.7
3131	2	0.0	271	0.3	610	0.8	3076	0.3	614	0.1	613	0.1
3132	-	-	-	-	-	-	-	-	-	-	-	-
3133	-	-	-	-	-	-	-	-	-	-	-	-
3134	43	0.8	1816	2.1	1963	2.6	16600	1.5	4335	1.0	12407	1.9
3140	3	0.1	992	1.1	2353	3.1	33795	3.1	19796	4.6	3250	0.5
TOTAL	5275	100.0	87739	100.0	75150	100.0	1105973	100.0	428030	100.0	661544	100.0
Small Establishments (< 25 empl)												
3111	-	-	-	-	-	-	-	-	-	-	-	-
3112	140	2.7	756	2.9	417	1.9	12969	3.0	357	0.2	2070	1.9
3113	8	0.2	152	0.6	106	0.5	778	0.2	690	0.3	41	0.0
3114	-	-	-	-	-	-	-	-	-	-	-	-
3115	42	0.8	759	2.9	458	2.1	23171	5.4	5986	2.5	6627	5.9
3116	2493	48.7	9747	37.1	6077	27.2	129335	30.2	100006	41.8	34385	30.8
3117	2316	45.2	13195	50.2	13775	61.6	235212	54.8	120507	50.3	48816	43.7
3118	-	-	-	-	-	-	-	-	-	-	-	-
3119	42	0.8	639	2.4	560	2.5	12668	3.0	3919	1.6	3874	3.5
3121	44	0.9	571	2.2	534	2.4	6537	1.5	5252	2.2	7506	6.7
3122	4	0.1	84	0.3	181	0.8	5336	1.2	1163	0.5	4683	4.2
3131	-	-	-	-	-	-	-	-	-	-	-	-
3132	-	-	-	-	-	-	-	-	-	-	-	-
3133	-	-	-	-	-	-	-	-	-	-	-	-
3134	35	0.7	399	1.5	275	1.2	2965	0.7	7486	0.6	3792	3.2
3140	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	5124	100.0	26302	100.0	22383	100.0	428971	100.0	239365	100.0	111794	100.0

Table 4.1 Con't

Large Establishments (> 25 empl)	No of Est		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
3111	1	0.7	299	0.5	433	0.8	4370	0.7	1964	1.0	2952	0.5
3112	1	0.7	61	0.1	89	0.2	1245	0.2	248	0.1	298	0.1
3113	10	6.6	2160	3.5	1674	3.2	8342	1.2	1847	1.0	3435	0.6
3114	1	0.7	110	0.2	216	0.4	422	0.1	201	0.1	-	-
3115	70	46.4	6931	11.3	10090	19.1	332188	49.1	51511	27.3	135948	24.7
3116	14	9.3	2706	4.4	3896	7.4	106348	15.7	43593	23.1	23371	4.3
3117	13	8.6	1180	1.9	1046	2.0	13208	2.0	1498	0.8	3399	0.6
3118	5	3.3	43166	70.3	27865	52.8	136841	20.2	59090	31.3	356423	64.8
3119	15	9.9	1578	2.6	1926	3.7	18878	2.8	3559	1.9	4284	0.8
3121	7	4.6	534	0.9	803	1.5	4389	0.7	1765	0.9	6902	1.3
3122	1	0.7	32	0.1	78	0.2	265	0.0	129	0.1	260	0.0
3131	2	1.3	271	0.4	610	1.2	3076	0.5	614	0.3	613	0.1
3132	-	-	-	-	-	-	-	-	-	-	-	-
3133	-	-	-	-	-	-	-	-	-	-	-	-
3134	8	5.3	1417	2.3	1688	3.2	13635	2.0	2849	1.5	8615	1.6
3140	3	2.0	922	1.6	2353	4.5	33795	5.0	19796	10.5	3250	0.6
TOTAL	151	100.0	61437	100.0	52767	100.0	677002	100.0	188665	100.0	549750	100.0

Source: Government of Sudan. The Industrial Survey,1981/82.

Table 4.2: The Structure of the Food, Beverages and Tobacco Sector By Type of Ownerships, 1981/82 (25 Employees)

	No of Est.		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public												
3111	-	-	-	-	-	-	-	-	-	-	-	-
3112	-	-	-	-	-	-	-	-	-	-	-	-
3113	3	20.0	704	4.9	609	4.1	693	1.6	210	1.9	811	1.2
3114	1	6.7	110	0.8	216	1.4	422	1.0	201	1.8	-	-
3115	2	13.3	908	6.3	1054	7.0	7411	17.2	2103	19.0	311	0.4
3116	-	-	-	-	-	-	-	-	-	-	-	-
3117	-	-	-	-	-	-	-	-	-	-	-	-
3118	4	26.7	12102	84.4	12361	82.5	32250	74.7	8297	75.0	68344	97.1
3119	2	13.3	323	2.2	399	2.7	762	1.8	102	0.9	278	0.4
3121	-	-	-	-	-	-	-	-	-	-	-	-
3122	-	-	-	-	-	-	-	-	-	-	-	-
3131	1	6.7	118	0.8	276	1.8	1361	3.2	115	1.0	383	0.5
3132	-	-	-	-	-	-	-	-	-	-	-	-
3133	-	-	-	-	-	-	-	-	-	-	-	-
3134	2	13.3	82	0.6	69	0.5	260	0.6	39	0.4	261	0.4
3140	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	15	100.0	14347	100.0	14983	100.0	43159	100.0	11066	100.0	70391	100.0
Private												
3111	1	0.8	299	1.9	433	2.0	4370	0.8	1964	1.6	2952	1.6
3112	1	0.8	61	0.4	89	0.4	1245	0.2	248	0.2	298	0.2
3113	7	5.3	1456	9.3	1065	4.9	7649	1.5	1638	1.3	2625	1.4
3114	-	-	-	-	-	-	-	-	-	-	-	-
3115	68	51.1	6023	38.3	9036	41.3	324777	61.7	49407	39.2	135636	71.3
3116	13	9.8	2571	16.3	3828	17.5	105392	20.0	43405	34.4	22444	11.8
3117	13	9.8	1180	7.5	1046	4.8	13208	2.5	1498	1.2	3399	1.8
3118	-	-	-	-	-	-	-	-	-	-	-	-
3119	13	9.8	1255	8.0	1527	7.0	18116	3.4	3457	2.7	4005	2.1
3121	7	5.3	534	3.7	803	3.7	4389	0.8	1765	1.4	6902	3.6
3122	1	0.8	32	0.4	78	0.4	265	0.1	129	0.1	260	0.1
3131	-	-	-	-	-	-	-	-	-	-	-	-
3132	-	-	-	-	-	-	-	-	-	-	-	-
3133	-	-	-	-	-	-	-	-	-	-	-	-
3134	6	4.5	1335	8.5	1619	7.4	13375	2.5	2811	2.2	8354	4.4
3140	3	2.3	992	6.3	2353	10.8	33795	6.4	19796	15.7	3250	1.7
TOTAL	133	100.0	15738	100.0	21879	100.0	526582	100.0	126120	100.0	190123	100.0

Table 4.2 Con't

Mixed	No of Est. No	No of Est. %	No of Empl. No	No of Empl. %	Wages/Salaries Value	Wages/Salaries %	Gross output Value	Gross output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
3111	-	-	-	-	-	-	-	-	-	-	-	-
3112	-	-	-	-	-	-	-	-	-	-	-	-
3113	-	-	-	-	-	-	-	-	-	-	-	-
3114	-	-	-	-	-	-	-	-	-	-	-	-
3115	-	-	-	-	-	-	-	-	-	-	-	-
3116	1	33.3	135	0.4	67	0.4	956	0.9	187	0.4	928	0.3
3117	-	-	-	-	-	-	-	-	-	-	-	-
3118	1	33.3	31064	99.1	15504	97.5	104591	97.5	50793	98.7	288079	99.6
3119	-	-	-	-	-	-	-	-	-	-	-	-
3121	-	-	-	-	-	-	-	-	-	-	-	-
3122	-	-	-	-	-	-	-	-	-	-	-	-
3131	1	33.3	153	0.5	334	2.1	1714	1.6	499	1.0	230	0.1
3132	-	-	-	-	-	-	-	-	-	-	-	-
3133	-	-	-	-	-	-	-	-	-	-	-	-
3134	-	-	-	-	-	-	-	-	-	-	-	-
3140	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	3	100.0	31352	100.0	15905	100.0	107261	100.0	51479	100.0	289237	100.0

Source: Government of Sudan. The Industrial Survey 1981/82.

Table 4.3: Performance Indices in the Food, Beverages and Tobacco Sector

SIZE	SMALL ESTABLISIMENTS (< 25 EMP)						LARGE ESTABLISIMENTS (>25 EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3111	-	-	-	-	-	-	0.45	14.814	12.548	1964.0	1.448	0.519	0.45	14.814	12.548	1964.0	1.448	0.519
3112	0.028	17.155	2.738	2.550	0.552	(0.029)	0.20	20.410	4.885	248.0	1.459	0.533	0.04	17.400	2.891	4.3	0.619	0.042
3113	0.887	5.118	5.125	86.250	0.684	14.244	0.22	3.862	1.590	184.7	0.775	0.050	0.28	3.940	1.503	140.9	0.770	0.218
3114	-	-	-	-	-	-	0.47	3.836	-	201.0	1.964	-	0.47	3.836	-	201.0	1.964	-
3115	0.258	30.528	8.731	142.523	0.603	0.843	0.16	47.928	19.641	735.9	1.456	0.305	0.16	46.210	18.540	513.4	1.372	0.329
3116	0.773	13.269	3.528	40.115	0.623	2.732	0.41	39.301	8.637	3113.8	1.440	1.700	0.61	18.930	4.639	57.3	0.801	2.314
3117	0.513	17.826	3.700	52.032	1.044	2.469	0.11	11.193	2.881	115.2	0.886	0.133	0.49	4.910	3.632	52.4	1.031	2.053
3118	-	-	-	-	-	-	0.43	3.170	8.257	11818.0	1.203	0.887	0.43	3.170	8.257	11818.0	1.203	0.887
3119	0.309	19.847	6.063	93.300	0.876	0.867	0.19	11.963	2.715	237.3	1.221	0.381	0.24	14.220	3.680	131.2	1.121	0.612
3121	0.803	11.448	13.145	119.363	0.935	0.629	0.40	8.212	12.925	252.1	1.504	0.139	0.64	9.890	13.039	137.6	1.210	0.394
3122	0.218	63.524	55.750	290.750	2.155	0.270	0.49	8.281	8.125	129.0	2.438	0.434	0.23	48.280	42.612	256.4	2.230	0.210
3131	-	-	-	-	-	-	0.20	11.351	2.262	307.0	2.251	0.083	0.20	11.351	2.262	307.0	2.251	0.083
3134	0.501	7.431	9.504	42.457	0.689	0.319	0.09	9.622	6.080	356.1	1.191	0.134	0.26	9.140	6.832	100.8	1.081	0.191
3140	-	-	-	-		-	0.59	34.068	3.276	6598.7	2.372	5.367	0.59	34.068	3.276	6598.7	2.372	5.367
Average	0.558	16.309	4.250	46.714	0.851	1.941	0.28	11.019	8.948	1249.4	0.859	2.490	0.39	12.605	7.540	81.1	0.857	0.532

Table 4.4:
Performance Indices In the Food, Beverages and Tobacco Sector By Type of Ownership, 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3111	-	-	-	-	-	-	0.45	14.615	9.873	1964.0	1.448	0.518	-	-	-	-	-	-
3112	-	-	-	-	-	-	0.20	20.410	4.885	248.0	1.459	0.533	-	-	-	-	-	-
3113	0.34	0.9[illegible]4	1.152	70.0	0.865	(0.492)	0.21	5.253	1.803	234.0	0.731	0.218	-	-	-	-	-	-
3114	0.48	3.836	-	201.0	1.964	-	-	-	-	-	-	-	-	-	-	-	-	-
3115	0.28	8.168	0.343	1051.5	1.161	3.375	0.15	53.922	24.180	726.6	1.500	0.297	-	-	-	-	-	-
3116	-	-	-	-	-	-	0.41	40.993	8.730	3338.8	1.488	1.763	0.20	7.081	6.881	187.0	0.496	0.129
3117	-	-	-	-	-	-	0.11	11.193	2.881	115.2	0.885	0.132	-	-	-	-	-	-
3118	0.26	2.665	5.647	2074.3	1.021	(0.059)	-	-	-	-	-	-	0.49	3.366	9.273	50793.0	0.499	0.122
3119	0.13	2.359	0.861	51.0	1.235	(0.853)	0.19	14.789	3.191	189.0	1.216	0.481	-	-	-	-	-	-
3121	-	-	-	-	-	-	0.40	8.219	12.925	252.1	1.503	0.139	-	-	-	-	-	-
3122	-	-	-	-	-	-	0.49	8.281	8.125	129.0	2.437	0.196	-	-	-	-	-	-
3131	0.08	11.534	3.246	115.0	2.339	(0.420)	-	-	-	-	-	-	0.29	11.202	1.503	499.0	2.183	0.717
3134	0.15	3.170	3.183	19.5	0.841	(0.115)	0.21	10.018	8.125	468.5	1.212	0.136	-	-	-	-	-	-
3140	-	-	-	-	-	-	0.59	34.068	3.275	6598.7	2.371	5.367	-	-	-	-	-	-
Average	0.27	3.001	4.906	737.7	1.004	(0.056)	0.24	33.459	12.050	848.3	1.390	0.548	0.48	3.421	9.225	17159.7	0.507	0.122

Table 4.5: The Structure of the Textile, Weaving and Apparel and Leather Products By size, 1981/82

All Establishments	No of Est No	No of Est %	No of Empl. No	No of Empl. %	Wages/Salaries Value	Wages/Salaries %	Gross Output Value	Gross Output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
3211	76	55.1	23140	81.5	29016	80.7	69224	65.4	13383	51.9	171675	91.0
3212	3	2.2	312	1.1	346	1.0	1993	1.9	377	1.5	534	0.3
3213	4	2.9	463	1.6	504	1.4	1800	1.7	664	2.6	882	0.5
3214	-	-	-	-	-	-	-	-	-	-	-	-
3215	4	2.9	145	0.5	114	0.3	687	0.6	175	0.7	251	0.1
3219	6	4.3	96	0.3	79	0.2	357	0.3	-1386	-5.4	-	-
3220	20	14.5	847	3.0	697	1.9	3698	3.5	679	2.6	2185	1.2
3231	4	2.9	1558	5.5	1822	5.1	5250	5.0	1940	7.5	5446	2.9
3233	7	5.1	182	0.6	118	0.3	7020	6.6	4858	18.8	3718	2.0
3240	14	10.1	1666	5.9	3259	9.1	15850	15.0	5118	19.8	3923	2.1
TOTAL	138	100.0	28409	100.0	35955	100.0	105879	100.0	25808	100.0	188614	100.0

Small Establishments (< 25 empl.)	No of Est No	No of Est %	No of Empl. No	No of Empl. %	Wages/Salaries Value	Wages/Salaries %	Gross Output Value	Gross Output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
3211	45	58.4	472	48.0	335	42.7	2341	19.7	1081	20.5	2211	30.2
3212	-	-	-	-	-	-	-	-	-	-	-	-
3213	-	-	-	-	-	-	-	-	-	-	-	-
3214	-	-	-	-	-	-	-	-	-	-	-	-
3215	-	-	-	-	-	-	-	-	-	-	-	-
3219	6	7.8	96	9.8	79	10.1	357	3.0	-1386	-26.3	-	-
3220	10	13.0	138	14.0	90	11.5	1079	9.3	260	4.9	542	7.4
3231	-	-	-	-	-	-	-	-	-	-	-	-
3233	7	9.1	182	18.5	118	15.1	7020	59.2	4858	92.3	3718	50.8
3240	9	11.7	96	9.8	161	20.6	1049	8.8	452	8.6	850	11.6
TOTAL	77	100.0	984	100.0	783	100.0	11864	100.0	5265	100.0	7321	100.0

Large Establishments (> 25 empl.)	No of Est No	No of Est %	No of Empl. No	No of Empl. %	Wages/Salaries Value	Wages/Salaries %	Gross Output Value	Gross Output %	Gross value add. Value	Gross value add. %	Capital Value	Capital %
3211	31	50.8	22668	82.7	28681	81.5	66883	71.1	12302	59.9	169464	93.5
3212	3	4.9	312	1.1	346	1.0	1993	2.1	377	1.8	534	0.3
3213	4	6.6	463	1.7	504	1.4	1800	1.9	664	3.2	882	0.5
3214	-	-	-	-	-	-	-	-	-	-	-	-
3215	4	6.6	145	0.5	114	0.3	687	0.7	175	0.9	251	0.1
3219	-	-	-	-	-	-	-	-	-	-	-	-
3220	10	16.4	709	2.6	607	1.7	2601	2.8	419	2.0	1643	0.9
3231	4	6.6	1558	5.7	1822	5.2	5250	5.6	1940	9.4	5446	3.0
3233	-	-	-	-	-	-	-	-	-	-	-	-
3240	5	8.2	1570	5.7	3098	8.8	14801	15.7	4666	22.7	3073	1.7
TOTAL	61	100.0	27425	100.0	35172	100.0	94015	100.0	20543	100.0	181293	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.6: The Structure of the Textile, Weaving and Apparel and Leather Products By Type of Ownership, 1981/82

	No of Est.		No of empl.		Wages/Salaries		Gross Output		Gross value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public												
3211	14	77.8	7738	83.0	6010	75.8	13354	71.3	2035	49.3	48151	89.9
3212	-	-	-	-	-	-	-	-	-	-	-	-
3213	1	5.6	70	0.8	136	1.7	396	2.1	212	5.2	112	0.2
3214	-	-	-	-	-	-	-	-	-	-	-	-
3215	-	-	-	-	-	-	-	-	-	-	-	-
3219	-	-	-	-	-	-	-	-	-	-	-	-
3220	-	-	-	-	-	-	-	-	-	-	-	-
3231	3	16.6	1511	16.2	1788	22.5	4992	26.6	1879	11.1	5279	9.9
3233	-	-	-	-	-	-	-	-	-	-	-	-
3240	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	18	100.0	9319	100.0	7934	100.0	18743	100.0	4126	100.0	53542	100.0
Private												
3211	17	41.5	14930	88.9	22671	92.4	53529	83.8	10267	82.4	121312	96.2
3212	2	4.9	261	1.6	299	1.2	1722	2.7	350	2.5	390	0.3
3213	3	7.3	393	2.3	368	1.5	1403	2.2	452	3.6	770	0.6
3214	-	-	-	-	-	-	-	-	-	-	-	-
3215	4	9.8	145	0.9	114	0.5	687	1.1	175	1.4	251	0.2
3217	-	-	-	-	-	-	-	-	-	-	-	-
3220	10	24.4	709	4.2	607	2.5	2601	4.1	419	3.4	1643	1.3
3231	1	2.4	47	0.3	34	0.1	258	0.4	61	0.5	167	0.1
3233	-	-	-	-	-	-	-	-	-	-	-	-
3240	4	9.8	312	1.9	449	1.8	3679	5.8	736	5.9	1558	1.2
TOTAL	41	100.0	16797	100.0	24542	100.0	63879	100.0	12460	100.0	126091	100.0
Mixed												
3211	-	-	-	-	-	-	-	-	-	-	-	-
3212	1	50.0	51	3.9	47	1.8	272	2.4	27	0.7	145	8.7
3213	-	-	-	-	-	-	-	-	-	-	-	-
3214	-	-	-	-	-	-	-	-	-	-	-	-
3215	-	-	-	-	-	-	-	-	-	-	-	-
3219	-	-	-	-	-	-	-	-	-	-	-	-
3220	-	-	-	-	-	-	-	-	-	-	-	-
3231	-	-	-	-	-	-	-	-	-	-	-	-
3233	-	-	-	-	-	-	-	-	-	-	-	-
3240	1	50.0	1258	96.1	2649	98.2	11122	97.6	3930	99.3	1516	91.3
TOTAL	2	100.0	1309	100.0	2696	100.0	11393	100.0	3957	100.0	1661	100.0

Source: Government of Sudan. The Industrial Survey 1981/82

Table 4.7: Performance Indices in Textile, Weaving and Apparel and Leather Products By Size 1981/82

SIZE	SMALL ESTABLISHMENTS (<25 EMP)						LARGE ESTABLISHMENTS (>25 EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3211	0.461	4.959	4.684	24.022	0.709	0.337	0.180	2.950	7.475	396.838	1.265	(0.097)	0.139	2.992	7.419	176.092	1.254	0.060
3212	-	-	-	-	-	-	0.189	6.387	1.711	125.667	1.109	0.058	0.189	6.387	1.711	125.667	1.109	0.058
3213	-	-	-	-	-	-	0.370	3.887	1.904	166.000	1.089	0.181	0.370	3.887	1.904	166.000	1.089	0.181
3215	-	-	-	-	-	-	0.250	4.737	1.731	43.750	0.786	0.243	0.250	4.737	1.731	43.750	0.786	0.243
3219	(3.882)	3.719	-	(231.000)	0.823	-	-	-	-	-	-	-	(3.882)	3.719	-	(231.000)	0.823	-
3220	0.237	7.949	3.927	26.000	0.652	0.314	0.150	3.689	2.317	41.900	0.856	(0.114)	0.184	4.366	2.579	33.950	0.823	0.038
3233	0.692	38.571	20.923	694.000	0.648	1.275	-	-	-	-	-	-	0.692	38.571	20.923	694.000	0.648	1.275
3231	-	-	-	-	-	-	0.370	3.369	3.495	485.000	1.169	0.022	0.370	3.369	3.495	485.000	1.169	0.022
3240	0.433	10.885	8.854	50.222	1.677	0.342	0.320	8.457	1.957	933.200	1.973	0.510	0.323	9.514	2.355	365.571	1.956	0.471
Average	0.444	12.057	7.440	70.213	0.798	0.612	0.219	3.428	5.610	336.770	1.282	(0.081)	0.244	3.726	6.639	187.014	1.266	(0.059)

Table 4.8: Performance Indices in the Textile, Weaving and Apparel and Leather Products By Type of Ownership, 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3211	0.152	1.726	6.223	145.357	0.777	(0.083)	0.192	3.585	8.125	603.941	1.518	(0.102)	-	-	-	-	-	-
3212	-	-	-	-	-	-	0.203	6.598	1.493	175.000	1.145	0.131	0.099	5.333	1.843	27.000	0.922	-0.137
3213	0.535	5.657	1.600	212.000	1.943	0.679	0.322	3.569	1.959	150.667	0.936	0.109	-	-	-	-	-	-
3215	-	-	-	-	-	-	0.255	4.738	1.731	43.750	0.786	0.243	-	-	-	-	-	-
3220	-	-	-	-	-	-	0.161	3.669	2.317	41.900	0.856	(0.114)	-	-	-	-	-	-
3231	0.375	0.326	3.494	626.333	1.183	0.017	0.236	5.489	3.553	61.000	0.723	0.016	-	-	-	-	-	-
3240	-	-	-	-	-	-	0.200	11.792	4.994	184.000	1.439	0.184	0.353	8.841	1.205	3930.000	2.106	0.845
Average	0.220	2.011	5.745	229.220	0.851	(0.070)	0.195	3.840	7.509	303.902	1.461	(0.095)	0.347	8.704	1.268	1978.500	2.095	0.759

Table 4.9: The Structure of the Wood, Wood Products Inculding Furniture Sector By Size, 1981/82

	No of Est		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
All Establishments												
3311	35	19.2	626	29.9	478	17.8	1730	16.9	706	13.2	1220	8.2
3319	-	-	-	-	-	-	-	-	-	-	-	-
3320	147	80.8	1465	70.1	2242	82.2	8488	83.1	4646	86.8	13723	91.8
TOTAL	182	100.0	2091	100.0	2720	100.0	10218	100.0	5352	100.0	14943	100.0
Small Establishments (< 25 empl.)												
3311	31	17.9	207	14.1	165	7.6	851	10.2	198	4.3	521	3.9
3319	-	-	-	-	-	-	-	-	-	-	-	-
3320	142	82.1	1260	85.9	2012	92.4	7519	89.8	4440	95.7	12999	96.1
TOTAL	173	100.0	1467	100.0	2177	100.0	8370	100.0	4638	100.0	13520	100.0
Large Establishments (> 25 empl.)												
3311	4	44.4	419	67.2	313	57.7	879	47.6	508	65.7	699	49.1
3319	-	-	-	-	-	-	-	-	-	-	-	-
3320	5	55.6	205	32.8	230	42.3	969	52.4	206	34.3	724	50.9
TOTAL	9	100.0	624	100.0	543	100.0	1848	100.0	773	100.0	1423	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.10: The Structure of the Wood, Wood Products Including Furniture By Type of Ownership 1981/82

		No of Est.		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
		No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public													
	3311	4	80.0	419	93.3	313	85.1	879	99.0	508	99.1	699	100.0
	3319	-	-	-	-	-	-	-	-	-	-	-	-
	3320	1	20.0	30	6.7	55	14.9	9	1.0	5	0.9	-	-
	TOTAL	5	100.0	449	100.0	368	100.0	888	100.0	513	100.0	699	100.0
Private													
	3311	-	-	-	-	-	-	-	-	-	-	-	-
	3319	-	-	-	-	-	-	-	-	-	-	-	-
	3320	4	100.0	175	100.0	175	100.0	960	100.0	261	100.0	724	100.0
	TOTAL	4	100.0	175	100.0	175	100.0	960	100.0	261	100.0	724	100.0
Mixed	3311	-	-	-	-	-	-	-	-	-	-	-	-
	3319	-	-	-	-	-	-	-	-	-	-	-	-
	3320	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey 1981/82

Tabl 4.11: Performance Indices in Wood, Wood Products and Including Furniture By Size, 1981/82

SIZE	SMALL ESTABLISHMENTS (< 25EMP)						LARGE ESTABLISHMENTS (> 25EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3311	0.23	4.11	2.52	6.39	0.80	0.06	0.58	2.10	1.67	127.00	0.75	0.28	0.41	2.76	1.95	20.170	0.76	0.19
3320	0.59	5.97	10.32	31.27	1.60	0.19	1.27	4.73	3.53	53.20	1.12	0.05	0.55	5.76	9.30	31.605	1.52	0.17
Average	0.55	5.70	9.22	26.81	1.48	0.18	0.42	3.96	2.28	85.89	0.87	0.16	0.52	4.89	7.15	29.410	1.30	0.18

Table 4.12:
Performance Indices in the Wood, Wood Products and Furniture, By Type of Ownership, 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3311	0.58	2.10	1.67	127.00	0.75	0.28	-	-	-	-	-	-	-	-	-	-	-	-
3320	0.56	0.30	-	5.00	1.83	-	0.27	5.49	4.14	65.25	1.00	0.12	-	-	-	-	-	-
Average	0.58	1.98	1.56	102.60	0.82	0.21	0.27	5.49	4.14	65.25	1.00	0.12	-	-	-	-	-	-

Table 4.13: The Structure of Paper, Paper Products, Printing and Publishing Sector By Size, 1981/82

	No of Est		No of Empl		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Vlaue	%
All Establishments												
3411	2	2.1	569	13.5	902	14.2	8057	25.1	-487	-5.4	3812	26.0
3412	-	-	-	-	-	-	-	-	-	-	-	-
3420	95	97.9	3656	86.5	5469	85.8	24000	74.9	9401	105.5	10824	74.0
TOTAL	97	100.0	4225	100.0	6371	100.0	32057	100.0	8917	100.0	14636	100.0
Small Establishments (< 25 empl.)												
3411	-	-	-	-	-	-	-	-	-	-	-	-
3412	-	-	-	-	-	-	-	-	-	-	-	-
3420	77	100.0	796	100.0	908	100.0	3244	100.0	814	100.0	4835	100.0
TOTAL	77	100.0	796	100.0	908	100.0	3244	100.0	814	100.0	4835	100.0
Large Establishments (> 25 empl.)												
3411	2	10.0	569	16.6	902	16.5	8057	28.0	-484	-6.0	3812	38.9
3412	-	-	-	-	-	-	-	-	-	-	-	-
3420	18	90.0	2860	83.4	4561	83.5	20756	72.0	8587	106.0	5989	61.1
TOTAL	20	100.0	3429	100.0	5462	100.0	28813	100.0	8103	100.0	9801	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.14: The Structure of the Paper, Paper Products, Printing and Publishing Sector By Type of Ownership 1981/82

	No of Est.		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public												
3411	-	-	-	-	-	-	-	-	-	-	-	-
3412	-	-	-	-	-	-	-	-	-	-	-	-
3420	6	100.0	2100	100.0	3189	100.0	12507	100.0	6306	100.0	2527	100.0
TOTAL	6	100.0	2100	100.0	3189	100.0	12507	100.0	6306	100.0	2527	100.0
Private												
3411	2	14.3	567	42.8	902	39.7	8057	49.4	-484	-26.9	3812	52.4
3412	-	-	-	-	-	-	-	-	-	-	-	-
3420	12	85.7	760	57.2	1372	60.3	8250	50.6	2281	126.9	3461	47.6
TOTAL	14	100.0	1329	100.0	2273	100.0	16307	100.0	1796	100.0	7273	100.0
Mixed												
3411	-	-	-	-	-	-	-	-	-	-	-	-
3412	-	-	-	-	-	-	-	-	-	-	-	-
3420	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 4.15: Performance Indices in the Paper, Paper Products, Printing and Publishing Sector by Size, 1981/82

SIZE	SMALL ESTABLISHMENTS (<25 EMP)						LARGE ESTABLISHMENTS (>25 EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3411	-	-	-	-	-	-	(0.06)	14.16	6.70	(242.00)	1.60	(0.36)	(0.06)	14.16	6.70	(242.00)	1.59	(0.36)
3420	0.25	4.08	6.07	10.57	1.14	(0.02)	0.41	7.26	2.09	477.06	1.59	0.67	0.39	6.56	2.96	98.96	1.56	0.36
Average	0.25	4.08	6.07	10.57	1.14	(0.02)	0.28	8.40	2.86	405.15	1.59	0.27	0.28	7.59	3.46	91.93	1.51	0.17

Table 4.16: Performance Indices in the Paper, Paper Products, Printing and Publishing By Type of Ownership, 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3411	-	-	-	-	-	-	(0.06)	14.16	6.70	(242.00)	1.59	(0.36)	-	-	-	-	-	-
3420	0.50	5.96	1.20	1051.00	1.52	1.23	0.28	10.86	4.55	190.08	1.81	0.24	-	-	-	-	-	-
Average	0.50	5.96	1.20	1051.00	1.52	1.23	0.11	12.27	5.47	128.36	1.71	(1.99)	-	-	-	-	-	-

Table 4.17: The Structure of Chemicals, Chemical Products and Products of Coal and Petroleum Sector By Size, 1981/82

	No of Est		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
All Establishments												
3511	7	5.9	214	4.0	445	3.8	6381	4.6	4239	12.4	1834	1.6
3512	-	-	-	-	-	-	-	-	-	-	-	-
3521	2	1.7	413	7.7	1069	9.1	16261	11.7	1281	3.7	1365	1.2
3522	5	4.2	412	7.7	914	7.8	7459	5.4	2070	6.0	2297	2.0
3523	65	55.1	2239	43.1	4072	34.7	61078	43.9	6863	20.0	16008	14.0
3529	9	7.6	443	8.3	802	6.8	6281	4.5	1422	4.2	1836	1.6
3530	1	0.8	206	3.9	1941	16.6	9037	6.5	5126	15.0	42292	21.5
3540	-	-	-	-	-	-	-	-	-	-	-	-
3551	1	0.8	425	8.0	1428	12.2	21311	15.3	10169	29.7	59356	52.0
3559	-	-	-	-	-	-	-	-	-	-	-	-
3560	28	23.7	924	17.3	1052	9.0	11203	8.1	3062	8.9	6930	6.1
TOTAL	118	100.0	5336	100.0	11723	100.0	139011	100.0	34232	100.0	114118	100.0
Small Establishments (< 25 empl.)												
3511	3	4.4	44	3.6	51	4.4	3556	11.7	3046	87.0	820	9.4
3512	-	-	-	-	-	-	-	-	-	-	-	-
3521	-	-	-	-	-	-	-	-	-	-	-	-
3522	-	-	-	-	-	-	-	-	-	-	-	-
3523	39	56.5	763	61.9	855	73.7	18394	60.6	-1334	-38.1	3852	43.9
3529	7	10.1	94	7.6	19	1.6	3994	13.2	750	21.4	757	8.6
3530	-	-	-	-	-	-	-	-	-	-	-	-
3540	-	-	-	-	-	-	-	-	-	-	-	-
3551	-	-	-	-	-	-	-	-	-	-	-	-
3559	-	-	-	-	-	-	-	-	-	-	-	-
3560	20	29.0	331	26.9	236	20.3	4432	14.6	1038	29.7	3337	38.1
TOTAL	69	100.0	1232	100.0	1161	100.0	30376	100.0	3500	100.0	8766	100.0
Large Establishments (> 25 empl.)												
3551	4	8.2	170	4.1	394	3.7	2825	2.6	1193	3.9	1014	1.0
3512	-	-	-	-	-	-	-	-	-	-	-	-
3521	2	4.1	413	10.1	1069	10.1	16261	15.0	1281	4.7	1365	1.3
3522	5	10.2	412	10.0	914	8.7	7459	6.9	2070	6.7	2297	2.2
3523	26	53.1	1536	37.4	3217	30.5	42684	39.3	8197	26.7	12156	11.5
3529	2	4.1	349	8.5	783	7.4	2287	2.1	672	2.2	1079	1.0
3530	1	2.0	206	5.0	1941	18.4	9037	8.3	5126	16.7	24492	23.2
3540	-	-	-	-	-	-	-	-	-	-	-	-
3551	1	2.0	425	10.4	1428	13.5	21311	19.6	10169	33.1	59356	56.3
3559	-	-	-	-	-	-	-	-	-	-	-	-
3560	8	16.3	593	14.5	816	7.7	6771	6.2	2024	6.6	3593	3.4
TOTAL	49	100.0	4104	100.0	10562	100.0	108635	100.0	30732	100.0	105352	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.18: The Structure of Chemicals, Chemical Products and Products of Coal and Petroleum Sector By Type of Ownership, 1981/82

	No of Est.		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public												
3511	-	-	-	-	-	-	-	-	-	-	-	-
3512	-	-	-	-	-	-	-	-	-	-	-	-
3521	-	-	-	-	-	-	-	-	-	-	-	-
3522	-	-	-	-	-	-	-	-	-	-	-	-
3523	-	-	-	-	-	-	-	-	-	-	-	-
3529	-	-	-	-	-	-	-	-	-	-	-	-
3530	-	-	-	-	-	-	-	-	-	-	-	-
3540	-	-	-	-	-	-	-	-	-	-	-	-
3551	-	-	-	-	-	-	-	-	-	-	-	-
3559	-	-	-	-	-	-	-	-	-	-	-	-
3560	1	100.0	85	100.0	82	100.0	539	100.0	253	100.0	5	100.0
TOTAL	1	100.0	85	100.0	82	100.0	539	100.0	253	100.0	5	100.0
Private												
3511	4	8.3	170	4.2	394	3.8	2825	2.6	1193	3.9	1014	1.0
3512	-	-	-	-	-	-	-	-	-	-	-	-
3521	2	4.2	413	10.3	1069	10.2	16261	15.0	1281	4.2	1365	1.3
3522	5	10.4	412	10.3	914	8.7	7459	6.9	2070	6.8	2297	2.2
3523	26	54.2	1536	38.2	3217	30.7	42684	39.5	8197	26.9	12156	11.5
3529	2	4.2	349	8.7	783	7.5	2287	2.1	672	2.2	1079	1.0
3530	1	2.1	206	5.1	1941	18.5	9037	8.4	5126	16.8	24492	23.2
3540	-	-	-	-	-	-	-	-	-	-	-	-
3551	1	2.1	425	10.6	1428	13.6	21311	19.7	10169	33.4	59356	56.3
3559	-	-	-	-	-	-	-	-	-	-	-	-
3560	7	14.6	508	12.6	734	7.0	6232	5.8	1770	5.8	3588	3.3
TOTAL	48	100.0	4019	100.0	10480	100.0	108097	100.0	30478	100.0	105345	100.0
Mixed												
3511	-	-	-	-	-	-	-	-	-	-	-	-
3512	-	-	-	-	-	-	-	-	-	-	-	-
3521	-	-	-	-	-	-	-	-	-	-	-	-
3522	-	-	-	-	-	-	-	-	-	-	-	-
3523	-	-	-	-	-	-	-	-	-	-	-	-
3529	-	-	-	-	-	-	-	-	-	-	-	-
3530	-	-	-	-	-	-	-	-	-	-	-	-
3540	-	-	-	-	-	-	-	-	-	-	-	-
3551	-	-	-	-	-	-	-	-	-	-	-	-
3559	-	-	-	-	-	-	-	-	-	-	-	-
3560	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.19: Performance Indices in the Chemicals and Chemical Products Including Products of Coal and Petroleum By Size, 1981/82

SIZE	SMALL ESTABLISHMENTS (<25EMP)						LARGE ESTABLISHMENTS (>25EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-K/K
3511	0.86	80.818	18.636	1015.33	1.159	3.652	0.42	16.618	5.965	298.25	2.318	0.788	0.66	29.818	8.570	605.570	2.079	2.068
3521	-	-	-	-	-	-	0.08	39.373	3.305	640.50	2.588	0.155	0.08	39.373	3.305	640.500	2.588	0.155
3522	-	-	-	-	-	-	0.28	18.104	5.575	434.00	2.212	0.503	0.28	18.104	5.575	414.000	2.212	0.503
3523	(0.07)	27.107	5.048	(34.21)	1.121	(0.590)	0.19	27.789	7.914	315.27	2.094	0.409	0.11	26.567	6.963	105.580	1.771	0.174
3529	0.19	42.489	8.053	107.14	0.202	0.966	0.29	6.553	3.092	336.00	2.244	(0.103)	0.23	14.178	4.144	158.000	1.610	0.337
3530	-	-	-	-	-	-	0.57	43.869	118.893	5126.00	9.422	0.130	0.57	43.869	112.893	5126.000	9.422	0.130
3551	-	-	-	-	-	-	0.48	50.144	139.661	10169.00	3.360	0.147	0.48	50.144	139.661	10169.000	3.360	0.147
3560	0.23	13.390	10.082	51.90	0.712	0.240	0.30	11.418	6.059	253.00	1.376	0.336	0.27	12.124	7.500	109.360	1.138	0.290
Average	0.12	24.656	7.112	50.71	0.942	0.267	0.28	26.471	25.670	627.18	2.574	0.191	0.25	26.052	21.386	290.102	2.197	0.197

Table 4.20: Performance Indices In the Chemicals and Chemical Products and Products of Coal and Petroleum Sector By Type of Ownership 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3511	-	-	-	-	-	-	0.42	16.618	5.965	298.25	2.318	0.788	-	-	-	-	-	-
3521	-	-	-	-	-	-	0.08	39.372	3.305	640.50	2.588	0.155	-	-	-	-	-	-
3522	-	-	-	-	-	-	0.28	18.104	5.572	414.00	2.218	0.503	-	-	-	-	-	-
3523	-	-	-	-	-	-	0.19	27.790	7.914	315.269	2.094	0.410	-	-	-	-	-	-
3529	-	-	-	-	-	-	0.29	6.553	3.092	336.00	2.244	(0.103)	-	-	-	-	-	-
3530	-	-	-	-	-	-	0.57	43.869	118.892	5126.00	9.422	0.130	-	-	-	-	-	-
3551	-	-	-	-	-	-	0.48	50.144	139.661	10169.00	3.36	0.147	-	-	-	-	-	-
3559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3560	0.47	6.34	0.06	2.98	.096	34.2	0.28	12.268	7.063	252.857	1.445	0.289	-	-	-	-	-	-
Average	0.47	6.34	0.06	2.98	.096	34.2	0.28	26.896	26.212	634.958	2.608	0.190	-	-	-	-	-	-

Table 4.21: The Structure of the Other Non-Metallic Minerals Products Sector By Size, 1981/82

	No of Est		No of Empl.		Wages/Salaries		Gross output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
All Establishments												
3610	-	-	-	-	-	-	-	-	-	-	-	-
3620	1	1.2	500	10.5	580	13.4	1010	3.4	526	4.8	2665	8.6
3691	-	-	-	-	-	-	-	-	-	-	-	-
3692	71	87.7	3736	78.8	3419	79.1	25173	87.2	10554	95.5	13136	42.6
3699	9	11.1	505	10.7	323	7.5	2680	9.3	-26	-0.2	15065	48.8
TOTAL	81	100.0	4741	100.0	4322	100.0	28863	100.0	11054	100.0	30866	100.0
Small Establishments (< 25 empl.)												
3610	-	-	-	-	-	-	-	-	-	-	-	-
3620	-	-	-	-	-	-	-	-	-	-	-	-
3691	-	-	-	-	-	-	-	-	-	-	-	-
3692	64	94.1	1999	97.1	750	95.9	8220	95.1	4501	98.9	6018	88.3
3699	4	5.9	60	2.9	32	4.1	425	4.9	51	2.1	800	11.7
TOTAL	68	100.0	2059	100.0	782	100.0	8645	100.0	4552	100.0	6818	100.0
Large Establishments (> 25 empl.)												
3610	-	-	-	-	-	-	-	-	-	-	-	-
3620	1	7.7	500	18.6	580	16.4	1010	5.0	526	8.1	2665	11.1
3691	-	-	-	-	-	-	-	-	-	-	-	-
3692	7	53.9	1737	64.8	2669	75.4	16953	83.9	6053	93.1	7118	29.6
3699	5	38.5	445	16.6	291	8.2	2255	11.2	-77	-1.2	14265	59.3
TOTAL	13	100.0	2682	100.0	3540	100.0	20219	100.0	6502[a]	100.0	24048	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.22: The Structure of the Other Non-Metallic Minerial Products Sector by Type of Ownership, 1981/82

	No of Est.		No Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public												
3610	-	-	-	-	-	-	-	-	-	-	-	-
3620	-	-	-	-	-	-	-	-	-	-	-	-
3691	-	-	-	-	-	-	-	-	-	-	-	-
3692	1	100.0	868	100.0	1865	100.0	10811	100.0	4487	100.0	1247	100.0
3699	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	100.0	868	100.0	1865	100.0	10811	100.0	4487	100.0	1247	100.0
Private												
3610	-	-	-	-	-	-	-	-	-	-	-	-
3620	1	9.1	500	40.1	580	49.2	1010	19.4	526	49.5	2665	15.3
3691	-	-	-	-	-	-	-	-	-	-	-	-
3692	5	45.5	303	24.3	307	26.1	1954	37.4	613	57.7	450	2.6
3699	5	45.5	445	35.7	291	24.7	2255	43.2	-76	-7.2	14265	82.1
TOTAL	11	100.0	1248	100.0	1178	100.0	5219	100.0	1063	100.0	17380	100.0
Mixed												
3610	-	-	-	-	-	-	-	-	-	-	-	-
3620	-	-	-	-	-	-	-	-	-	-	-	-
3691	-	-	-	-	-	-	-	-	-	-	-	-
3692	1	100.0	566	100.0	497	100.0	4189	100.0	952	100.0	5420	100.0
3699	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	100.0	566	100.0	497	100.0	4189	100.0	952	100.0	5420	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82

Table 4.23: Performance Indices in Other Non-Metallic Mineral Products Sector By Size, 1981/82

SIZE	SMALL ESTABLISHMENTS (<25EMP)						LARGE ESTABLISHMENTS (>25EMP)							TOTAL				
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3620	-	-	-	-	-	-	0.52	2.02	5.33	526.00	1.16	(0.02)	0.52	2.200	5.330	526.000	1.160	(0.020)
3692	0.550	4.110	3.010	70.32	0.375	0.623	0.37	9.76	4.10	864.71	1.54	0.40	0.42	6.740	3.520	148.050	0.915	0.543
3699	0.120	7.080	3.330	12.750	0.532	0.024	(0.03)	5.07	32.06	(15.40)	0.62	(0.03)	(0.01)	5.310	29.851	(-2.889)	0.639	(0.030)
Average	0.526	4.199	3.311	66.941	0.380	0.553	0.320	7.54	8.97	500.15	1.32	0.12	0.38	6.087	6.510	136.46	0.912	0.218

Table 4.24: Performance Indices In The Non-Metallic Minerals Sector By Type of Ownership, 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3620	-	-	-	-	-	-	0.52	2.02	5.33	526.00	1.16	-	-	-	-	-	-	-
3692	0.42	12.46	1.44	2243.50	2.15	2.10	0.31	6.45	1.49	122.60	1.01	0.68	0.23	7.40	9.58	952.00	0.88	0.08
3699	-	-	-	-	-	-	(0.03)	5.07	32.06	(15.20)	0.65	(0.03)	-	-	-	-	-	-
Average	0.42	12.46	1.44	2243.50	2.15	2.10	0.20	4.18	11.79	96.64	0.94	(0.01)	0.23	7.40	9.58	952.00	0.88	0.08

Table 4.25: The Structure of the Basic Metals Sector By Size, 1981/82

	No of Est		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Vlaue	%	Viaue	%
All Establishments												
3710	5	41.7	332	42.7	595	40.4	2621	15.1	543	7.5	697	25.4
3720	7	58.3	445	57.3	876	59.6	14752	84.9	6679	92.5	2052	74.6
TOTAL	12	100.0	[illegible]	100.0	1471	100.0	17372	100.0	7222	100.0	2749	100.0
Small Establishments (< 25 Empl.)												
3710	2	50.0	30	6.9	22	45.2	97	60.7	49	70.7	81	23.3
3720	2	50.0	34	53.1	27	54.8	63	39.3	20	29.3	267	76.7
TOTAL	4	100.0	64	100.0	49	100.0	159	100.0	69	100.0	348	100.0
Large Establishments (> 25 Empl.)												
3710	3	37.5	302	42.4	573	40.3	2254	14.7	494	6.9	616	25.7
3720	5	62.5	411	57.6	849	59.7	14689	83.3	6659	93.1	1785	74.3
TOTAL	8	100.0	71[illegible]	100.0	1422	100.0	17213	100.0	7153	100.0	2401	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.26: The Structure of the Basic Metals Sector by Type of Ownership, 1981/82

	No of Est.		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public												
3710	1	100.0	221	100.0	344	100.0	250	100.0	469	100.0	195	100.0
3720	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	100.0	221	100.0	344	100.0	250	100.0	469	100.0	195	100.0
Private												
3710	2	28.6	81	16.5	230	21.3	2274	13.4	405	5.7	421	19.1
3720	5	71.4	411	83.5	849	78.7	14685	86.6	6659	94.3	1785	80.9
TOTAL	7	100.0	492	100.0	1078	100.0	16963	100.0	7064	100.0	2206	100.0
Mixed												
3710	-	-	-	-	-	-	-	-	-	-	-	-
3720	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.27: Performance Indices in the Basic Metals Sector By Size, 1981/82

SIZE	SMALL ESTABLISHMENTS (<25EMP)						LARGE ESTABLISHMENTS (>25EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3710	0.51	3.23	2.70	25.00	0.73	0.33	0.20	8.36	2.04	164.67	1.90	(0.128)	0.21	7.89	2.10	108.60	1.79	(0.07)
3720	0.32	1.85	7.85	10.00	0.79	(0.03)	0.45	33.31	4.34	1331.80	2.07	3.25	0.45	33.15	4.61	954.14	1.97	2.83
Average	0.44	2.48	5.42	17.5	0.77	0.06	0.42	24.14	3.37	894.13	1.99	2.38	0.42	22.36	3.54	601.92	1.89	2.09

Table 4.28: Performance Indices In the Basic Metals Sector By Type of Ownership, 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3710	0.356	1.131	0.882	89.00	1.557	(1.308)	0.178	18.074	5.198	202.50	2.840	0.416	-	-	-	-	-	-
3720	-	-	-	-	-	-	0.453	35.740	4.343	1331.80	2.066	3.254	-	-	-	-	-	-
Average	0.356	1.131	0.882	89.00	1.557	(1.308)	0.416	34.478	4.484	1009.142	2.191	2.714	-	-	-	-	-	-

Table 4.29: The Structure of the Metal Fabricating and Machinery Sector By Size, 1981/82

	No of Est		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
All Establishments												
3811	160	18.7	1451	13.4	1023	6.4	6514	7.2	2152	5.8	2920	6.4
3812	295	34.5	2577	23.9	2430	15.1	16395	18.1	3709	23.6	7229	15.8
3813	11	1.3	340	3.1	353	2.2	2293	2.5	766	2.1	2576	5.6
3819	167	19.6	2676	24.8	3677	22.9	15107	16.7	6688	18.1	4962	10.8
3821	-	-	-	-	-	-	-	-	-	-	-	-
3822	2	0.2	94	0.9	128	0.8	176	0.2	90	0.2	306	0.7
3823	-	-	-	-	-	-	-	-	-	-	-	-
3833	24	2.8	755	7.0	4113	25.6	8479	9.4	2087	5.6	2998	6.5
3839	29	3.4	945	8.7	1977	12.3	25457	28.1	8401	22.7	15444	33.7
3842	-	-	-	-	-	-	-	-	-	-	-	-
3843	166	19.4	1965	18.2	2342	14.6	16180	17.9	8048	21.8	9417	20.5
TOTAL	854	100.0	10803	100.0	16043	100.0	90601	100.0	36940	100.0	45852	100.0
Small Establishments (< 25 Empl.)												
3811	156	19.0	1183	18.4	824	10.1	3583	10.5	1971	10.8	832	5.0
3812	286	34.9	1936	30.1	1321	16.1	9748	28.5	6010	32.8	4329	26.2
3813	9	1.1	207	3.2	149	1.8	2250	6.6	733	4.0	2229	13.5
3819	161	19.6	1165	18.1	1405	17.1	6864	20.1	3555	19.4	2167	13.1
3821	-	-	-	-	-	-	-	-	-	-	-	-
3822	-	-	-	-	-	-	-	-	-	-	-	-
3823	-	-	-	-	-	-	-	-	-	-	-	-
3833	19	2.3	171	2.7	2736	33.4	97	0.3	95	0.5	6	0.0
3839	26	3.2	220	3.4	348	4.3	2606	7.6	357	2.0	142	0.9
3842	-	-	-	-	-	-	-	-	-	-	-	-
3843	163	19.9	1549	24.1	1415	17.3	9048	26.5	5579	30.5	6821	41.3
TOTAL	820	100.0	6431	100.0	8198	100.0	34196	100.0	18299	100.0	16526	100.0
Large Establishments (> 25 Empl.)												
3811	4	11.8	268	6.1	199	2.5	2931	5.2	181	1.0	2088	7.1
3812	9	26.5	641	14.7	1109	14.1	6647	11.8	2699	14.5	2900	9.9
3813	2	5.9	133	3.0	204.	2.6	43	0.1	33	0.2	347	1.2
3819	6	17.7	1511	34.6	2272	29.0	8243	14.6	3133	16.8	2795	9.5
3821	-	-	-	-	-	-	-	-	-	-	-	-
3822	2	5.9	94	2.2	128	1.6	176	0.3	90	0.5	306	1.0
3823	-	-	-	-	-	-	-	-	-	-	-	-
3833	5	14.7	584	13.4	1377	17.6	8382	18.9	1992	10.7	2992	10.2
3839	3	8.8	725	16.6	1629	20.8	22851	40.5	8044	43.2	15302	52.2
3842	-	-	-	-	-	-	-	-	-	-	-	-
3843	3	8.8	416	9.5	927	11.8	7132	12.6	2469	13.2	2596	8.9
TOTAL	34	100.0	4372	100.0	7845	100.0	56405	100.0	18641	100.0	29326	100.0

Source: Government of Sudan. The Indusrtial Survey, 1981/82.

Table 4.30: The Structure of the Metal Fabricating and Machinery Sector by Type of Ownership 1981/82

	No of Est.		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
Public												
3811	-	-	-	-	-	-	-	-	-	-	-	-
3812	-	-	-	-	-	-	-	-	-	-	-	-
3813	-	-	-	-	-	-	-	-	-	-	-	-
3819	-	-	-	-	-	-	-	-	-	-	-	-
3821	-	-	-	-	-	-	-	-	-	-	-	-
3822	1	50.0	29	21.5	66	16.5	141	2.4	73	3.5	27	8.0
3823	-	-	-	-	-	-	-	-	-	-	-	-
3833	-	-	-	-	-	-	-	-	-	-	-	-
3839	-	-	-	-	-	-	-	-	-	-	-	-
3842	-	-	-	-	-	-	-	-	-	-	-	-
3843	1	50.0	106	78.5	333	83.5	5643	97.6	2012	96.5	312	92.0
TOTAL	2	100.0	135	100.0	399	100.0	5784	100.0	2085	100.0	339	100.0
Private												
3811	4	12.9	268	6.6	199	2.8	2931	5.9	181	1.1	2088	7.7
3812	9	29.0	641	15.9	1109	15.8	6647	13.4	2699	16.6	2900	10.8
3813	2	6.5	133	3.3	204	2.9	43	0.1	33	0.2	347	1.3
3819	6	19.4	1511	37.4	2278	32.4	8243	16.6	3133	19.3	2795	10.4
3821	-	-	-	-	-	-	-	-	-	-	-	-
3822	1	3.2	65	1.6	62	0.9	34	0.1	17	0.1	279	1.0
3823	-	-	-	-	-	-	-	-	-	-	-	-
3833	5	16.1	584	14.5	1377	19.7	8382	16.9	1992	12.3	2992	11.1
3839	3	9.7	725	18.0	1629	23.3	22851	46.1	8044	49.5	15302	56.8
3842	-	-	-	-	-	-	-	-	-	-	-	-
3843	1	3.2	113	2.8	151	2.2	397	0.8	167	1.0	241	0.9
TOTAL	31	100.0	4040	100.0	7003	100.0	49529	100.0	16266	100.0	26944	100.0
Mixed												
3811	-	-	-	-	-	-	-	-	-	-	-	-
3812	-	-	-	-	-	-	-	-	-	-	-	-
3813	-	-	-	-	-	-	-	-	-	-	-	-
3819	-	-	-	-	-	-	-	-	-	-	-	-
3821	-	-	-	-	-	-	-	-	-	-	-	-
3822	-	-	-	-	-	-	-	-	-	-	-	-
3823	-	-	-	-	-	-	-	-	-	-	-	-
3833	-	-	-	-	-	-	-	-	-	-	-	-
3839	-	-	-	-	-	-	-	-	-	-	-	-
3842	-	-	-	-	-	-	-	-	-	-	-	-
3843	1	100.0	197	100.0	444	100.0	1092	100.0	290	100.0	2042	100.0
TOTAL	1	100.0	197	100.0	444	100.0	1092	100.0	290	100.0	2042	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.31: Performance Indices In the Metal Fabricating and Machinery Sector By Size, 1981/82

SIZE	SMALL ESTABLISHMENTS (<25EMP)						LARGE ESTABLISHMENTS (>25 EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3811	0.55	3.03	0.70	12.635	0.697	1.379	0.062	10.937	7.791	45.250	0.743	(0.090)	0.330	4.489	2.012	14.450	0.705	0.387
3812	0.62	5.04	2.24	21.014	0.682	1.083	0.406	10.370	4.524	299.890	1.730	0.548	0.531	6.362	2.805	29.522	0.943	0.868
3813	0.33	10.87	0.77	81.444	0.720	0.262	0.767	0.323	2.609	16.500	1.534	(0.492)	0.334	6.744	7.576	69.636	1.038	0.160
3819	0.52	5.89	1.86	22.081	1.206	0.992	0.380	5.455	1.850	522.167	1.504	0.308	0.443	5.645	1.854	40.045	1.374	0.607
3822	-	-	-	-	-	-	0.511	1.872	3.255	45.000	1.362	(0.124)	0.511	1.872	3.255	45.000	1.362	(0.124)
3833	0.98	0.57	0.04	5.000	(?)	(?)	0.238	14.352	5.123	398.400	2.358	0.206	0.246	11.230	3.971	86.958	(?)	(0.675)
3839	0.14	11.85	0.65	13.731	1.582	0.063	0.352	31.519	21.106	2681.333	2.247	0.419	0.330	26.939	16.343	289.689	2.092	0.416
3843	0.62	5.84	4.40	34.227	0.913	0.610	0.346	17.144	6.240	823.000	2.228	0.594	0.497	8.234	4.792	48.482	1.192	0.606
Average	0.54	5.32	2.57	22.316	1.274	0.611	0.330	12.901	6.707	548.264	1.794	0.368	0.408	8.387	4.244	43.255	1.485	0.456

Table 4.32: Performance Indices In the Metal Fabricating and Manufacturing Sector By Type of Ownership 1981/82

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3811	-	-	-	-	-	-	0.062	10.937	7.791	45.250	0.743	(0.009)	-	-	-	-	-	-
3812	-	-	-	-	-	-	0.406	10.370	4.524	299.890	1.730	0.548	-	-	-	-	-	-
3813	-	-	-	-	-	-	0.767	0.323	2.609	16.500	1.534	(0.493)	-	-	-	-	-	-
3819	-	-	-	-	-	-	0.380	5.455	1.850	522.167	1.504	0.308	-	-	-	-	-	-
3822	0.518	4.862	0.931	73.000	2.276	0.259	0.500	0.523	4.292	17.000	0.954	(0.161)	-	-	-	-	-	-
3833	-	-	-	-	-	-	0.238	14.352	5.123	398.400	2.358	0.206	-	-	-	-	-	-
3839	-	-	-	-	-	-	0.352	31.513	21.106	2681.330	2.247	0.419	-	-	-	-	-	-
3843	0.357	53.236	2.943	2012.000	3.142	5.381	0.421	3.513	2.132	167.000	1.336	0.066	0.266	5.543	10.365	290.00	2.254	(0.075)
Average	0.360	42.844	2.519	1042.500	2.948	4.962	0.328	12.260	6.669	524.710	1.733	0.344	0.266	5.543	10.365	290.00	2.254	(0.075)

Table 4.33: The Structure of Other Manufacturing Industries By Size, 1981/82

Others	No of Est		No of Empl.		Wages/Salaries		Gross Output		Gross value add.		Capital	
	No	%	No	%	Value	%	Value	%	Value	%	Value	%
All Establishments												
3901	2	100.0	382	100.0	551	100.0	6846	100.0	967	100.0	2165	100.0
TOTAL	2	100.0	382	100.0	551	100.0	6846	100.0	967	100.0	2165	100.0
Small Establishments (< 25 empl.)												
3901	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-
Large Establishment (> 25 empl.)												
3901	2	100.0	382	100.0	551	100.0	6846	100.0	967	100.0	2165	100.0
TOTAL	2	100.0	382	100.0	551	100.0	6846	100.0	967	100.0	2165	100.0

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.34: The Structure of Other Manufacturing Industries by Type of Ownership, 1981/82

	No of Est.		No of Empl.		Wages/Salaries		Gross Output		Gross Value add.		Capital	
Public	No	%	No	%	Value	%	Value	%	Vlaue	%	Value	%
3901	1	100.0	200	100.0	333	100.0	104	100.0	-332	100.0	725	100.0
TOTAL	1	100.0	200	100.0	333	100.0	104	100.0	-332	100.0	725	100.0
Private												
3901	1	100.0	182	100.0	218	100.0	6743	100.0	669	100.0	1440	100.0
TOTAL	1	100.0	182	100.0	218	100.0	6743	100.0	669	100.0	1440	100.0
Mixed.												
3901	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-

Source: Government of Sudan. The Industrial Survey, 1981/82.

Table 4.35: Performance Indices of Other Industries Not Elsewhere Classified

SIZE	SMALL ESTABLISHMENTS (< 25 EMP)						LARGE ESTABLISHMENTS (> 25 EMP)						TOTAL					
SECTOR	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3901	-	-	-	-	-	-	0.049	17.924	5.668	168.500	1.442	(0.099)	0.049	17.924	5.668	168.500	1.442	(0.099)
Average	-	-	-	-	-	-	0.049	17.924	5.668	168.500	1.442	(0.099)	0.049	17.924	5.668	168.500	1.442	(0.099)

Table 4.36 Performance Indices for Other Manufacturing Industries

OWNERSHIP	PUBLIC						PRIVATE						MIXED					
Sector	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GO/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K
3901	(3.192)	0.520	3.625	(332.0)	1.665	(0.917)	0.099	37.049	7.912	669.00	1.198	0.313	-	-	-	-	-	-
Average	(3.192)	0.520	3.625	(332.0)	1.665	(0.917)	0.099	37.049	7.912	669.00	1.198	0.313	-	-	-	-	-	-

Chapter Five

Non-Operating Establishments: Anatomy of Failure

5.0 Introduction

It is in the nature of things that in any economy some sectors boom and prosper and others fail and disappear. It is this process that Schumpter calls "Creative Destruction", which propels the system forward and sustains growth and development in a market or capitalist economy. Failure in this system is of the inefficient and therefore the undesirable. The "Sun-Rise" industries are the "fit" industries those that are efficient and, therefore, needed and desirable. But does this framework apply to the development process in typically non-market or partly capitalist economies such as the one in existence in Sudan today?

With shortages of raw materials and spare parts, interruption of energy supplies, migration of skilled labour, disputes among owners and processing bottlenecks as the main explanatory reasons of failure in Sudan, it is unreasonable to ascribe failure and success to a creative process of the market. If anything these factors are beyond the ability of the entrepreneur to contend with and are as such external constraints imposed on him by the system at large. Only in the absence of these obstacles would the entrepreneur be held accountable for his fate and failure. Nevertheless, it is instructive to wonder why should some firms buckle under these external obstacles, whereas other entrepreneurs facing these same difficulties are able to continue to prosper. This takes us into a detailed study of the failures hoping to pin-point the major reasons that forced their shut-down and to separate problems inherent to the environment from those of inefficiencies internal to the firm.

5.1 Failure: A Macro-Perspective

A total of 74 establishments were found to have ceased operation in 1981/82. All of these are in the large establishment category; i.e., they employ more than 25 workers each. This represents a 17.5 percent of the total establishments in this category. In other words, more than 1 out of 6 establishments have failed (shut-down) in 1981/82. This is a rather high percentage of large establishments. Indeed, small establishments appear and disappear more regularly and at high frequencies in most countries whether developed or developing. But their impact on the economy at large is usually insignificant to create a major concern. But when "large" establishments disappear, their impact is usually felt and recognized. This is all the more disturbing when the failures are for reasons beyond or different from the normal business or commercial risks.

The highest percentage of failure is in the Northern region where 23 percent of the total establishments (operating and non-operating) have failed. The lowest ratio of failure is in the Eastern region where only 1 in 8 appear to have shut-down in 1981/82.

At the sectoral level, the largest percentage of failures were in other non-metallic minerals excluding petroleum and coal products (sector 36). The failure rate in this sector exceeded 27.7 percent. The lowest failure rate is 10.5 percent in the fabricated metal and machinery sector.

The failure rates by sector and region are presented in Table 5.1. It is clear from these results that failure rates differ between regions and sectors. There are a few failure rates that represent 50 percent. This is particularly the case in the textile and leather products sector in the Northern region and the paper and paper products in the Eastern region. Indeed, whereas only few sectors have failed in the outlyiing regions, there is a concentration of failures in the Khartoum and Central regions. This is, of course, partly because of the concentration of industry in these two regions. More than 2/3 of the failures are in the Khartoum region, and Khartoum and the Central regions together account for 79.7 percent of the total failures (see Table 5.2). The first two sectors (food, beverages and tobacco, and textile, weaving, apparel and leather products) being the largest two sectors in Sudan account together for almost 70 percent of the failures.

5.2 Failure: A Micro-Perspective

The aggregate picture (the forest perspective) helpful and necessary to gain an overall view, is not, however, sufficient to understand the nature and mechanisms of failure. To gain such a perspective we need to focus on the branch level (the tree perspective). It is at this level that we gain familiarity with the nature, causes and consequences of non-operation.

Two tables are presented to capture the details of this phenomenon, the first is Table 5.3 which displays failure rates by branch and region. The second table, is Table 5.4 which presents the number of failures and their share of total by branch and region.

5.2.1 <u>The Food, Beverages and Tobacco Sector:</u>

Here we find that one of two sectors in the pasteurized milk production in Khartoum have failed; and the only operating tea factory in 1981/82 in Khartoum was shut down.

On the other hand, five out of 29 factories in vegetable and animal oils and fats were put out of action in the Khartoum region, whereas 7 out of 23 in the Central region, 2 out of 5 in the Eastern region, 4 out of 19 in Kordofan and finally 1 out of 6 in Darfur.

Of the total failures in the Khartoum region 29.4 percent were in this branch, whereas it accounted for 100 percent of failures in sector 31 in the Central region, 66.7 percent in the Eastern region, 100 percent in Kordofan and 50 percent in Darfur. Of the total failures in sector 31, this branch represented the largfest share of 57.6 percent. This is not surprising given that this branch represents 46.4 percent of the total number of establishments in the food, beverages and tobacco sector.

In the Bakery, macaroni and noodle products there were only four failures, three of them in the Khartoum region, the failure rate in this branch in Khartoum was 18.8 percent, whereas the one failure in Darfur was one out of two factories there. Of the total failures in this sector in Khartoum, this branch represented 17.6 percent, whereas it represented again 50 percent of total failures in sector 31 in Darfur. There were no other failures in this branch in any other region.

An exceptionally high failure rate is shown for chocolate and cocoa and other food industries (...-3140) in the Khartoum region where 7 out of 8 failed (87.5 percent). Another failure is registered in the Eastern region which represented a failure rate of 50 percent.

5.2.2 The Textile, Weaving and Apparel and Leather Products:

Failures in this sector are exceptionally concentrated into two branches - ready made apparel excluding footwear (3220) and leather shoes (3240).

In the Khartoum region the same failure rate is shown for both of these two branches (almost 44.4 percent), whereas a failure rate of 100 percent is revealed for bo these branches in the other regions. In particular, for ready made apparel except shoes there is a total closure of all the then existing establishments in the Central, Kordofan and Northern regions. For leather shoes, there is a 100 percent failure rate in the Northern region. There is no other failures in all the other sub-branches of sector - 32 - across all regions.

The concentration of failure rates and failure shares in these two branches is symptomatic of some very peculiar reasons pertaining primarily to failures to compete with imported products and other operational and environmental difficulties.

Although the failure rates across regions and branches in this sector appear to be uniform, it is, nonetheless, the case that most of the failures (72.2 percent) are in the ready made apparels branch.

5.2.3 Wood and Wood Products Including Furniture

There are few failures in this sector, but this is a reflection also of the limited activity in Sudan in the production of wood and furniture. The failure rates are, however, significant.

In the Khartoum region one out of five establishments involved in the production of wood products including furniture failed to operate in 1981/82. Another establishment in the same branch had a similar fate in the Central region. But there it was the only establishment.

There were no failures in the other sub-branches in this sector.

5.2.4 Paper, Paper Products, Printing and Publishing

There used to be one major producer of paper products in the Khartoum region but closed down in 1981/82 representing a failure rate of 100 percent. There were no other failures in this branch in any ion simply because there were none to begin with.

the other sub-branch where there were failures is printing publishing (3420). In the Khartoum the failure rate was a meager 5.2 percent, but was 100 percent in the Eastern region.

5.2.5 Chemicals and Chemical Products Industry Including Petroleum and Coal:

There has been a number of shutdowns in this sector and only in the Khartoum region where most of the establishments used to operate.

In rubber products, n.e.c., (3559) the failure rate was 100 percent. It drops to 50 percent in chemicals n.e.c. (3529), to 27.2 percent for plastic products (3560) and to as low as 12.5 percent for perfuming and cleaning materials (3523). For the whole sector, the Khartoum region failure rate is 18 percent.

The failures in this sector are divided almost evenly within the branches with 33.3 percent share for plastics and for cleaning and perfuming materials, whereas the shares of chemicals n.e.c., was 22.2 percent and that of rubber products 11.1 percent.

5.2.6 Other Non-Metallic Minerals Excluding Petroleum and Coal:

Failures are concentrated in the non-metallic minerals not elsewhere classified (3699) which includes primarily the production of cement blocks and sheets.

A total of five establishments were non-operative in 1981/82; four of which in Khartoum representing a failure rate of 50 percent and another in the Central region which was the only such establishment there. The failure rate in this sector is slightly over 30 percent in Khartoum and 33 percent in the Central region.

5.2.7 Basic Metal Industries:

There were no failures in the basic metal industries in the Sudan. Eight establishments were operating in 1981/82 and all remained in operation thereafter.

5.2.8 Fabricated Metal Products and Machinery

This sector includes a large set of activities but primarily those in cutlery and hand-tools, agricultural tools and appliances. The failures were concentrated, however, in the metallic furnitures and fixtures (3812) where 4 out of 12 were non-operating representing a failure rate of 30.7 percent. All the non-operating establishments were in the Khartoum region. The non-operating establishments represented 10.5 percent failure rate for the whole sector.

What emerges from this descriptive typology of failures is a number of interesting characteristics. These include:--

First, the failure rates are generally high and are of two types. Those pertaining to external factors and those that result from firm-specific problems.

Second, they are both regionally and sectorally differential. Failure rates are concentrated in the Khartoum region with few scattered in the Central and other regions. Two sectors (31 and 32) together account for about 70 percent of non-operating establishments.

Third, when the sectoral and regional failures are normalized by the respective sectoral and regional shares in manufacturing establishments, it is clear that the failure rates in sectors 31 and 32 are slightly higher than their proportions in manufacturing establishments which in 1981/82 stood (for establishments employing more than 25 workers) at 43.5 and 17.6 percent respectively. The failure shares, however, were 45 and 24.3 percent. At the regional level, failures in the Khartoum region represented 66.2 percent of total failures whereas this region had a total share of the corresponding types of manufacturing establishments of about 56.9 percent. Thus at the sectoral and regional levels failure rates exceed their corresponding proportional shares.

5.3 Anatomy of Failure: The Analytical Perspective:

The distribution of non-operating establishments over regions and sectors provides a background but only limited insight into the causes and nature of failure. Nonetheless, the distribution over sectors, branches and regions could provide important reference groups for the failure. These become extremely important when failure is total or where failure is only a small fraction of the other operating establishments. In the first case, the surrounding environment may have precluded the operation of any establishment. In the latter situation it is instructive to wonder why did some establishments fail, whereas other perhaps "similar" establishments, or at least facing similar obstacles did not?

5.3.1 Causes of Failure and Their Frequency

When the manager/owners of non-operating establishments were asked about the reasons for halting operations they came up with a finite number of causes some of which were more frequent than others. These factors and their frequencies are presented in Table 5.5, whereas the individual factors are reported by branch in Table 5.6.

Incompetitiveness and marketing problems represented a rather small percentage of the total (17.3%). The major factor, which is typical of developing countries with foreign exchange shortages and heavy dependance on imports, is the shortages of raw materials. This factor alone represented about 27 percent of all frequencies. An allied problem, but one that is rather surprising given that Sudan is an Arab country and practically a neighbour of Saudi Arabia and Libya is the shortage of fuel and energy. This alone represented 18.8 percent. The two factors together tally for over 45 percent. To this, shortages of spare parts could be added for a total of 47 percent. Emigration of labour, particularly of skilled labour to the Gulf and/or other Arab oil producing states became a major obstacle in most non-oil producing Arab States and even Sudan with a very small skilled labour pool was drained of these prized resources. About 7 percent of the causes mentioned were in this area.

Few general reasons were raised but these reflect cultural problems or institutional weaknesses. All combined they represent about 16 percent.

5.3.2 Performance Indices

The analysis here will focus on those cases (by branch and region) where non-operating establishments are only a small fraction of the total establishments in the branch and region. Only here would it be possible to reason that failure is perhaps more an establishment specific factor than environment specific. Otherwise, why should some establishments continue to operate and how did they overcome the difficulties of the environment of production? Performance indices in the Khartoum region are presented in Table 5.7 and used as background to the analysis below.

In the case of pasteurized milk in the Khartoum region (3112), it is clear that the remaining firm is efficient. The rate of return on fixed capital is about 33 percent, productivity per worker (value added per worker) far exceeds the average wage and workers appear to have sufficient capital to work with. Besides the size is relatively small but appears to be adequate. The cause of failure mentioned is in the institutional category as one might have predicted (see Table 5.6).

The failures in the vegetable oil branch reflect a different problem. Here, there is sufficient ground to believe that operational problems may be involved. Those firms still in operation show low profitability (6 percent rate of return on fixed capital). This is due largely to an over capitalized structure. Machinery and plant per worker are relatively high (twice the average in this sector), whereas size is relatively small (below the average in the sector).

The respondents mentioned all sorts of problems, but their excessive capitalization made them vulnerable to shortages of spare parts and raw materials, interruption of power supply, and shortages of fuel. In many respects failures here could easily be also attributed to over saturation of the market and to low profitability.

In the bakery, macaroni and noodle production it is abundantly clear that profitability is the basic problem. In the operating establishments profitability is a meagre 3.3 percent (in the Khartoum region). Labour productivity barely covers wages per worker. The firms are inadequately capitalized and are generally small in size and face stiff competition from imports. Small wonder, all the failures represent establishments changing activities.

Alcoholic beverages production was costly and unprofitable even before the introduction of the Islamic laws in September 1983. Even in the soft drinks branch profitability was low.

Failures in the ready made apparels excluding footwear (3220) are primarily the reflection of lack of competitiveness. Production costs and inefficiencies make their products non-competitive with imports from South East Asia. Actually, even existing establishments in this branch show 13 percent losses on fixed capital and labour productivity is lower than wages paid per worker. The average size of these establishments is less than 1/8 of the average in the sector and capital per worker is relatively small.

The situation is markedly different in the production of shoes. The operating establishments are profitable with an average rate of return on fixed capital of 41 percent. The size is adequate at LS933 thousands per establishment and labaour productivity is significantly above average wages despite the fact that the latter are comparataively high by Sudanese standards. The major reasons advanced for failure in this branch are the shortages in fuel and raw materials. These were not apparently insurmountable by the efficient establishments.

In the wood products including furniture branch profitability is again the main culprit. On the whole, rates of return averaged about 2.1 percent in this activity by operating establishments. By comparison smaller units in this same branch (employing less than 25 workers) showed positive rates of return (9.1 percent) high capital per worker ratios and significant productivity gains. Operating "large" establishments, on the other hand, were under capitalized (less tools per worker), of inadequate size, and low productivity.

Few establishments were non-operating in the printing and publishing branch. All the performance indices point to efficient operations in this branch. Rates of return on fixed capital are about 57.0 percent, productivity is generally high and the usual size is adequate. There is little capital per worker, but then this is a generally labour intensive activity. Non-operating establishments were those that aged out of the activity because of worn out machines and little foreign exchange to replace them.

In the cosmetics branch 3 establishments out of 24 were non-operating and all of them in the Khartoum region. All other operating establishments were healthy and operating efficiently and with profits. Stoppages in this activity appear to be unrelated to efficiency. The reported reasons had much to do, however, with shortages in packing materials.

The rise in the price of petrochemicals in the wake of the second OPEC price adjustment is responsible for the demise of activities in the chemicals not elsewhere classified (3529). The same is also true of the demise of the plastic industries as the prices of LDPE, HDPE and PVC increased substantially over a short period at a time when the Sudan had less and less foreign exchange to allocate to industry.

Finally, non-operating establishments in the metallic furnitures and fixtures represent inefficient firms that faced financial problems in an imperfect capital (financial) market. Profitability and other efficiency criteria of operating establishments in this activity are adequate and proper. Troubles in this sector is of the normal commercial risk category.

5.4 Concluding Remarks

The main contribution of this chapter lies in its attempt to separate the explanatory factors of non-operation of industrial establishments in the Sudan in 1981/82. Two groups were created; in the first we included all those establishments whose shut down represented the entire activity. In the second group we included only those establishments where the failure rate was below 50 percent. The first group failure rate was ascribed primarily, if not solely, to the external factors that impose intolerable constraints and obstacles on the operation of enterprises. The second group failures were studies in more details as to profitability, productivity, factor intensities and size. Some clear cut conclusions were reached as to the causes of failure.

The closure of industrial factories in developing countries is a hard felt episode, the consequences are generally dire on employment, income, investment and foreign exchange. However, no country can afford to sustain, for a long period, inefficient industries that cost the consumer and society inordinate costs. The cleansing of the system of lagging establishments may very well be the minimum cost of restructuring and rationalizing the economy.

Care, however, must be exercised and efforts should not be spared to improve the external environment of production and investment. The cleansing process is only meaningful if no obstacles in the external environment are binding enough to cause the failure.

TABLES

TABLE 5.1: THE FAILURE RATE OF MANUFACTURING ESTABLISHMENTS BY SECTOR AND REGION, 1981/82

(%)

REGION SECTOR	KHARTOUM	CENTRAL	EASTERN	KORDUFAN	DARFUR	NORTHERN	EQUATORIAL	TOTAL
31	20.0	17.9	14.2	16.6	22.2	--	--	17.9
32	26.0	6.6	--	33.3	--	50.5	25.0	22.7
33	20.0	20.0	--	--	--	--	--	18.1
34	9.0	--	50.0	--	--	--	--	13.0
35	18.0	--	--	--	--	--	--	15.5
36	30.7	33.3	--	--	--	--	--	27.7
37	--	--	--	--	--	--	--	--
38	11.4	--	--	--	--	--	--	10.5
39	--	--	--	--	--	--	--	--
TOTAL	18.7	15.2	12.1	17.9	16.7	23.0	14.3	17.5

Source: Government of Sudan: The Industrial Survey, 1981/82

TABLE 5.2: ACTIVITY AND REGIONAL ANALYSIS

Region	Khartoum		Central		Eastern		Kordofan		Darfur		Northern		Equatorial		Total		
Sector	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	
31	17	51.5	7	21.2	3	9.1	4	12.1	2	6.1	--	--	--	--	33	45	10
32	12	66.7	1	5.5	--	--	1	5.5	--	--	3	16.7	1	5.6	18	24.3	10
33	1	50	1	50	--	--	--	--	--	--	--	--	--	--	2	2.7	10
34	2	66.7	--	--	1	33.3	--	--	--	--	--	--	--	--	3	4.1	10
35	9	100	--	--	--	--	--	--	--	--	--	--	--	--	9	12.2	10
36	4	80	1	20	--	--	--	--	--	--	--	--	--	--	5	6.8	10
38	4	100	--	--	--	--	--	--	--	--	--	--	--	--	4	5.4	10
Total	49	66.2	10	13.5	4	5.4	5	6.8	2	2.7	3	4.1	1	1.3	74	100	

Source: Government of Sudan: The Industrial Survey 1981/82

TABLE 5.3: BASIC DATA ON EXISTING NON-OPERATING ESTABLISHMENTS

ACTIVITY	CODE	REGIONS: KHARTOUM		CENTRAL		EASTERN		KORDUFAN		DARFUR		NORTHERN		EQUATORIA	
		NO	%	NO	%	NO	%	NO	%	NO	%	NO	%	NO	%
Pastured Milk	3112	1/2	50.0	--	--	--	--	--	--	--	--	--	--	--	--
Fruits, Tea	3114	1/1	100.0	--	--	--	--	--	--	--	--	--	--	--	--
Veg. Animal Oils and Fats	3115	5/29	17.2	7/23	30.4	2/5	40.0	4/19	21.0	1/6	16.7	--	--	--	--
Bakery, Macaroni, Noodle Prod.	3117	3/16	18.8	--	--	--	--	--	--	1/1	100.0	--	--	--	--
Tobacco, Cigar, Cigarettes, and others,	3118-3140	7/8	87.5	--	--	1/2	50.0	--	--	--	--	--	--	--	--
TOTAL OF SECTOR		17/85	20.0	7/39	17.9	3/7	42.9	4/19	21.0	2/7	28.6				
Ready made Apparel Exc. Footwear	3220	8/13	44.4	1/1	100.0	--	--	1/1	100.0	--	--	2/2	100.0	1/1	100.0
Leather Shoes	3240	4/9	44.4	--	--	--	--	--	--	--	--	1/1	100.0	--	--
TOTAL OF SECTOR		12/46	26.0	1/15	6.6	--	--	1/1	100.0	--	--	3/3	100.0	--	--
Wood Prod. Including Furniture	3320	1/5	20.0	1/1	100.0	--	--	--	--	--	--	--	--	--	--
TOTAL OF SECTOR		1/5	20.0	1/5	20.0	--	--	--	--	--	--	--	--	--	--
Paper and Paper Products	3149	1/1	100.0	--	--	--	--	--	--	--	--	--	--	--	--
Printing and Publishing	3420	1/19	5.2	--	--	1/1	100.0	--	--	--	--	--	--	--	--
TOTAL OF SECTOR		2/22	9.0	--	--	1/1	100.0	--	--	--	--	--	--	--	--
Chemicals Not classified	3529	2/4	50.0	--	--	--	--	--	--	--	--	--	--	--	--
Plastic Product	3560	3/11	27.2	--	--	--	--	--	--	--	--	--	--	--	--
Cleaning, Perfuming Materials	3523	3/24	12.5	--	--	--	--	--	--	--	--	--	--	--	--
Rubber Prod. Not classified	3559	1/1	100.0	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL OF SECTOR		9/50	18.0	--	--	--	--	--	--	--	--	--	--	--	--
Non Metallic Product	3699	4/8	50.0	1/1	100.0	--	--	--	--	--	--	--	--	--	--
TOTAL OF SECTOR		4/13	30.7	1/2	33.3	--	--	--	--	--	--	--	--	--	--
Metallic Furniture, Fixtures	3812	4/13	30.7	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL OF SECTOR		4/38	10.5	--	--	--	--	--	--	--	--	--	--	--	--

Source: Government of Sudan: The Industrial Survey.

TABLE 5.4: INDUSTRIAL SURVEY OF THE SUDAN 1981/82 BASIC DATA ON EXISTING NON-OPERATING ESTABLISHMENTS REGIONAL ANALYSIS

APP. NO. 1

ACTIVITY	CODE NO.	Khartoum		Middle		Eastern		Korsofan		Darfur		Northern		Equat.		Total		cause of Stoppage
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No	%	
Meat Canning and	3111	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pasterised Milk	3112	1	5.9	--	--	--	--	--	--	--	--	--	--	--	--	1	3	--
Vegetable Canning	3113	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fruits, Tea	3114	1	5.9	--	--	--	--	--	--	--	--	--	--	--	--	1	3	Partners problems Marketing problems.
	3115	5	29.4	7	100	2	66.7	4	100	1	50	--	--	--	--	19	57.6	
Bakery	3116	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Products	3117	3	17.6	--	--	--	--	--	--	1	50	--	--	--	--	4	12.1	--
Sugar, Cocao,	3118)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molasses, Non-	3119)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alcoholic Beverage	3121)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
and Farming	3122)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Products	3131)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3132)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3134)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3140)	7	41.2	--	--	1	33.3	--	--	--	--	--	--	--	--	8	24.2	--
32																		Shortage in raw material
Textile	3211	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Marketing Problems
Weaving	3212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Electricity prob.
Ready Made	3213	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Migration of
Clothes	3215	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	labour
	3219	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Machine's Depre-
	3220	8	66.7	1	100	--	--	1	100	--	--	2	66.7	1	100	13	72.2	ciation Failing in compitition the imported products.
Leather	3231	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Shortage in fuel
&	3233	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	& raw material
Shoes of Leather	3240	4	33.3	--	--	--	--	--	--	--	--	1	33.3	--	--	5	27.8	and electricity problems.
Total of units (Number)		29	200	8	200	3	100	5	200	2	100	3	100	1	100	51	200	

TABLE 5.4 Con't

APP. NO. 1

ACTIVITY	CODE No.	REGIONAL ANALYSIS Khartoum No.	%	Middle No.	%	Eastern No.	%	Kordofan No.	%	Darfur No.	%	Northern No.	%	Equat. No	%	Total No	%	cause of Stoppage
33																		
Wood and	3311	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Machine's
Furniture	3320	1	100	1	100	--	--	--	--	--	--	--	--	--	--	2	100	Depreciation lack of hard currency.
Total of Units (Number)		1	100	1	100	--	--	--	--	--	--	--	--	--	--	2	100	
34																		
Paper &	3411	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Products	3412	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3419	1	50	--	--	--	--	--	--	--	--	--	--	--	--	1	33.3	--
Printing & Publication	3420	1	50	--	--	1	100	--	--	--	--	--	--	--	--	2	66.7	Machine's Depreciation
Total of Units (Number)		2	100	--	--	1	100	--	--	--	--	--	--	--	--	3	100	
35																		
Basic chemicals	3511	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acids, liquids		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cement and	3512	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pesticides		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Painting materials	3521	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Drugs	3522	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemicals not Classified	3529	2	22.2	--	--	--	--	--	--	--	--	--	--	--	--	2	22.2	Prices of raw materials are dearer.

TABLE 5.4: Con't

ACTIVITY	CODE No.	Khartoum No	Khartoum %	Middle No	Middle %	Eastern No	Eastern %	Kordofan No	Kordofan %	Darfur No	Darfur %	Northern No	Northern %	Equat. No	Equat. %	Total No	Total %	cause of stoppage
Raw Material of Plastics	3513	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Plastic Products not Classified	3560	3	33.3	--	--	--	--	--	--	--	--	--	--	--	--	3	33.3	Shortage in raw Material and
Cleaning, Parfuming materials	3523	3	33.3	--	--	--	--	--	--	--	--	--	--	--	--	3	33.3	Shortage in packing materials Pressure on lines of prod.
	3559	1	11.1	--	--	--	--	--	--	--	--	--	--	--	--	1	11.1	Marketing problems
Total of Units (Number)		9	100	--	--	--	--	--	--	--	--	--	--	--	--	9	100	
36																		
Mining rather than Mineral (excluding petroleum & coal products)		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Shortage of raw materials
Building and construction	3692	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Non Material Products	3699	4	100	1	100	--	--	--	--	--	--	--	--	--	--	5	100	
Total of Units (Number)		4	100	1	100	--	--	--	--	--	--	--	--	--	--	5	100	
38																		
Mineral Products Machines and Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Finance Problems shortage of spare parts.
Mineral furniture and installation	3812	4	100	--	--	--	--	--	--	--	--	--	--	--	--	4	100	
Total of Units		49	100	10	100	4	100	5	100	2	100	4	100	1	100	74	100	

Source: Government of Sudan: The Industrial Survey 1981/82.

TABLE 5.5: FREQUENCY ANALYSIS OF CAUSES ON NON-OPERATION

CAUSES			FREQUENCY	
SERIAL	DESCRIPTION		NO	%
1	Difficulties of Raw Materials		53	26.9
2	Marketing problems and Incompetitiveness		34	17.3
3	Power and fuel problems		37	18.8
4	Owners disputes		24	12.2
5	Depreciation of Machines		17	8.6
6	Emigration of Labour		13	6.6
7	Financial Problems		7	3.6
8	Shortage of spare parts		4	2.0
9	Changing to another activity		4	2.0
10	Processing bottle necks		1	0.5
11	Other causes		3	1.5
11/1	-Transfer of Property	1		
11/2	-Fire damage	1		
11/3	-Activity forbidden	1		
Total			197	100

Source: Government of Sudan. The Industrial Survey 1981/82

TABLE 5.6: ANATOMY OF FAILURE: CAUSES BY BRANCH

Activity &Code No.	Non-Operating establishment No.	Non-Operating establishment %	Transfer of Prop. 11/1	Raw mat. prob. 1	Marketing problems 2	Owners disput 4	Power & fuel 3	Shortage of spar parts 8	Changing of activ. 9	Activity forbidden 11/2	Financial problems 7	Emigration of labour 6	Deor. of machin. 5	Fire damage 11/3	Process bottlenecks 10	Total Est	Total cause
31- Food and Beverages																	
3111-3112	1	--	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1
3113-3114	1	--	-	1	1	1	-	-	-	-	-	-	-	-	-	1	3
3115	19	--	-	19	19	19	19	-	-	-	-	-	-	-	-	19	76
3116-3117	4	--	-	-	-	-	-	-	4	-	-	-	-	-	-	4	4
3118-3140	7	--	-	7	-	-	-	-	-	-	-	-	-	-	-	7	7
	1	--	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1
Frequency	33	--	1	27	20	20	19	-	4	1	-	-	-	-	-	33	92
32- Textiles & Leather																	
3211-3220	13	--	-	13	13	-	13	-	-	-	-	13	13	-	-	13	65
3231-3240	5	--	-	-	-	-	5	-	-	-	-	-	-	-	-	5	5
Frequency	18	--	-	13	13	-	18	-	-	-	-	13	13	-	-	18	70
33- Wood																	
3311&3320	2	--	-	-	-	-	-	-	-	-	2	-	2	-	-	2	4
Frequency	2	--	-	-	-	-	-	-	-	-	2	-	2	-	-	2	4
34- Paper																	
3411-3420	1	--	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1
	2	--	-	-	-	-	-	-	-	-	-	-	2	-	-	2	2
Frequency	3	--	-	-	-	-	-	-	-	-	-	-	2	1	-	3	[illegible]
35- Chemicals																	
Coal & Petroleum Products	9	--	-	8	1	-	-	-	-	-	1	-	-	-	1	9	11
Frequency	9	--	-	8	1	-	-	-	-	-	1	-	-	-	1	9	11
36- 3692-3699	5	--	-	5	-	-	-	-	-	-	-	-	-	-	-	5	5
Frequency	5	--	-	5	-	-	-	-	-	-	-	-	-	-	-	5	5
38- 3812	4	--	-	-	-	4	-	4	-	-	4	-	-	-	-	4	12
Frequency	4	--	-	-	-	4	-	4	-	-	4	-	-	-	-	4	12
Grand Total	74	--	1	53	34	24	37	4	4	1	7	13	17	1	1	74	19

Source: Government of Sudan. The Industrial Survey 1981/82.

TABLE 5.7: PERFORMANCE INDICES: BRANCHES IN KHARTOUM REGION 1981/82

SIZE: SMALL ESTABLISHMENTS ('25) LARGE ESTABLISHMENTS (25 EMP)

SECTOR	GVA/GO	GVA/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO	GVA/EMP	K/EMP	GVA/NO	W/EMP	GVA-W/K	GVA/GO
3112	--	--	--	--	--	--	0.20	4.1	4.9	248.0	1.3	0.43	
3115	--	--	--	--	--	--	0.12	3.9	11.3	544.4	0.9	0.16	
3117	0.28	0.49	9.8	43.4	1.8	0.22	0.11	1.3	2.9	115.2	0.9	0.33	
3220	(0.08)	0.87	4.8	(7)	0.6	(0.41)	0.16	0.6	2.3	41.9	0.6	(0.13)	
3240	0.43	4.7	8.9	56.0	1.7	0.27	0.32	3.0	2.0	933.2	2.0	0.41	
3320	0.59	4.6	14.1	40.4	1.9	0.09	0.27	1.5	4.1	65.3	1.0	0.02	
3420	0.19	0.8	6.6	8.2	1.2	(0.15)	0.41	3.0	2.1	476.6	1.6	0.57	
3529	0.19	7.9	8.1	107.1	0.66	0.82	0.28	1.9	3.2	335.0	2.2	(0.21)	
3560	0.22	2.9	10.6	47.3	0.7	.08	0.28	3.4	6.1	253.0	1.4	0.24	
3523	(0.16)	4.0	3.8	(88.1)	1.0	(1.43)	0.20	5.8	8.8	360.7	2.3	0.29	
3699	0.50	0.85	11.8	12.8	0.53	(0.079)	(0.09)	(0.55)	39.4	(49.5)	0.71	(0.13)	
3812	--	--	--	--	--	--	0.41	4.4	3.7	316.0	1.7	0.61	

Source: Government of Sudan. The Industrial Survey 1981/82

Notes: Empty spaces reflect non-existing branches and brackets represent negative numbers.