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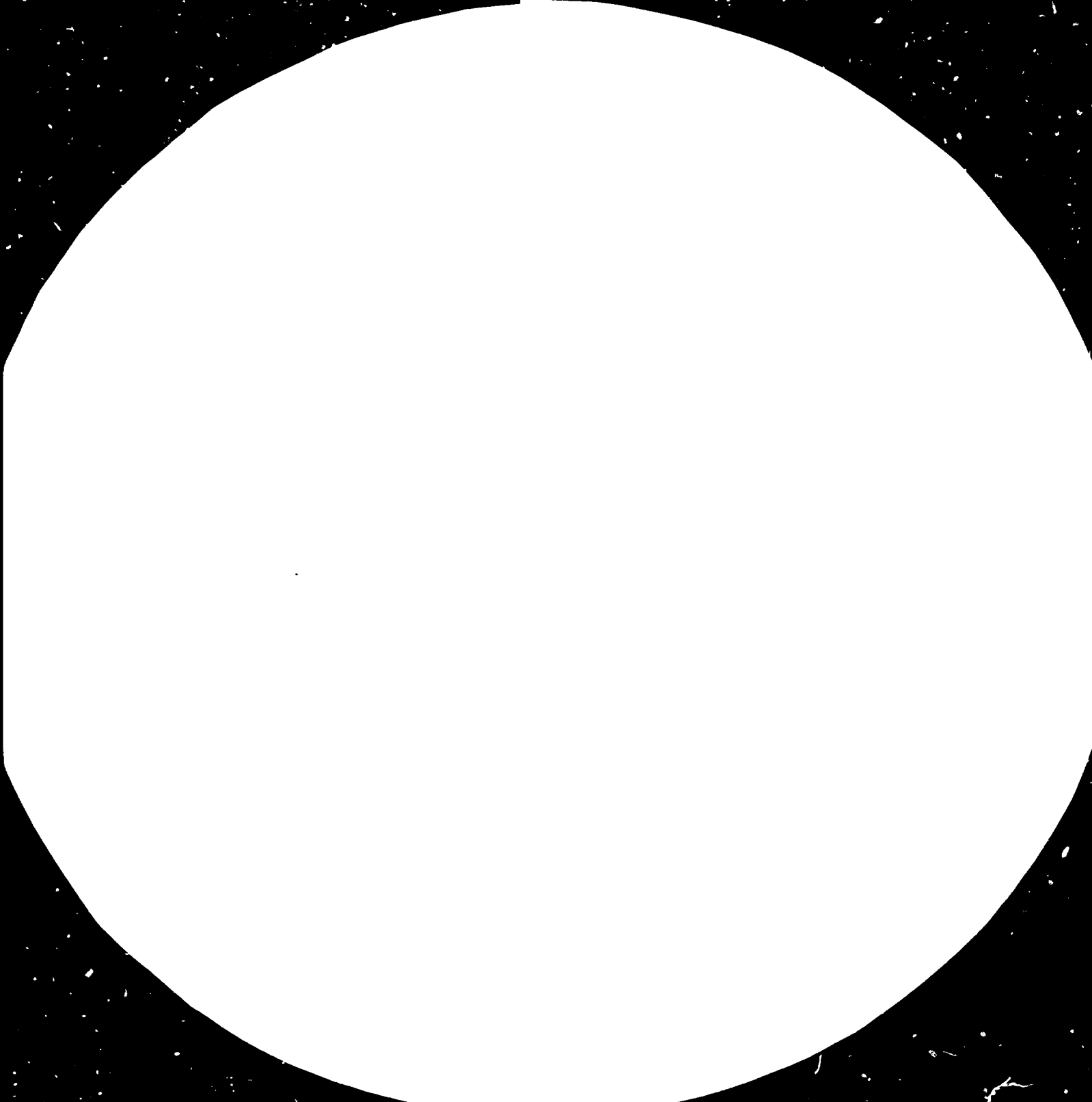
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**INDUSTRIAL DEVELOPMENT REVIEW
SERIES**

INDONESIA

Prepared by the
Regional and Country Studies Branch
Division for Industrial Studies

2282

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**INDUSTRIAL DEVELOPMENT REVIEW
SERIES**

INDONESIA

Preface

This industrial development review of Indonesia has been prepared by the Regional and Country Studies Branch of UNIDO's Division for Industrial Studies. The aims of the review are to present a general picture of the country's economic and industrial development and to provide the readers with additional information to be used in activities relating to technical assistance, industrial redeployment and restructuring, and investment promotion and cooperation.

A considerable portion of the data analyzed in the industrial development review has been provided by the Statistics and Survey Unit of UNIDO's Division for Industrial Studies. Industrial development reviews will be updated periodically as new data become available from UNIDO's statistics data base and national information sources, and in response to comments received from the users of the reviews.

The views and comments contained in this study do not necessarily reflect those of the Government of Indonesia nor do they officially commit the United Nations Industrial Development Organization to any particular course of action.

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1.	<u>OVERVIEW OF INDONESIA</u>	i
	1.1 The country and its people	1
	1.2 The economy	4
	1.3 Manufacturing sector: an overview	9
2.	<u>STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR</u>	12
	2.1 Growth and structural changes of value added in manufacturing	12
	2.2 Geographical distribution of manufacturing industries	17
	2.3 Manufacturing by size of enterprises	19
	2.4 Ownership and investment patterns in manufacturing	21
	2.5 Performance and efficiency of the manufacturing sector	26
	2.6 Structure and development of exports and import of manufactured goods	33
3.	<u>INDUSTRIAL DEVELOPMENT STRATEGIES, POLICIES AND PLANS</u>	42
	3.1 Principles, objectives and targets	42
	3.2 Policy instruments	44
	3.3 Major planned industrial projects	46
4.	<u>INSTITUTIONAL INFRASTRUCTURE FOR INDUSTRY</u>	53
5.	<u>RESOURCES FOR INDUSTRIAL DEVELOPMENT</u>	59
	5.1 Human resources	59
	5.2 Raw material resources	62
	5.3 Energy resources	72
	5.4 Financial resources	75
6.	<u>TECHNICAL ASSISTANCE PROJECTS TO SUPPORT INDUSTRIAL DEVELOPMENT</u>	77
7.	<u>REFERENCES</u>	79

LIST OF TABLES

<u>Table No</u>		<u>Section</u>	<u>Page</u>
1.	Annual growth rates of real manufacturing value, 1970-1980	2.1	13
2.	Structural changes of value added in manufacturing, 1971-1980	2.1	15
3.	Regional distribution of medium and large scale manufacturing enterprises, 1974	2.2	18
4.	Manufacturing sector, by size of enterprise, 1974/5, 1979	2.3	20
5.	Large and medium enterprises, number of establishments, employment, value added and average size of ownership, 1974/75	2.4	23
6.	Implementation of foreign investment by branch of industry, 1967-1981	2.4	25
7.	Number of establishments, employment, wages and salaries, 1970 and 1980	2.5	27
8.	Gross output, value added, gross fixed capital formation, 1970 and 1980	2.5	28
9.	Number of establishments, employment, wages and salaries, branch shares in total manufacturing, 1970 and 1980	2.5	29
10.	Gross output, value added, fixed capital formation, branch shares in total manufacturing, 1970 and 1980	2.5	30
11.	Performance of manufacturing sector by branches, 1970 and 1980	2.5	32
12.	Product mix of traded manufactured goods, 1970, 1975 and 1980	2.6	34
13.	Origin of imports of manufactures by branches, 1980	2.6	37
14.	Destination of exports of manufactures by branches, 1980	2.6	39
15.	Shares of exports and imports classified according to level of processing 1970 and 1980 and trend growth rates, 1970-1975 and 1975-1980	2.6	41

(List of Tables continued)

<u>Table No</u>		<u>Section</u>	<u>Page</u>
16.	Industrial projects cited in 16 August 1982 State Address	3.3	47
17.	Agricultural and food production 1975-1981	5.2	62
18.	Principal crops: production 1967-1981	5.2	63
19.	Livestock and livestock products 1979-1981	5.2	66
20.	Fish catch: 1974-1980	5.2	67
21.	Forestry: roundwood removals 1974-1980	5.2	68
22.	Minerals extraction 1977-1982	5.2	70
23.	Energy supply and demand, 1978-1982	5.3	73
24.	Savings and investment 1971-1982 as percentage of GNP	5.4	76
25.	UNIDO's approved and/or operational technical co-operation projects, in Indonesia, September 1983	6.1	78

LIST OF BASIC INDICATORS BOXES

<u>Number</u>		<u>Section</u>	<u>Page</u>
1.	Country data	1.1	2
2.	Resources and transport infrastructure	1.1	3
3.	GNP, GDP and structure of the economy	1.2	4
4.	Foreign trade and balance of payments	1.2	7
5.	Prices and exchange rates	1.2	8
6.	The manufacturing sector	1.3	9

LIST OF FIGURES

I.	GDP by economic sectors, 1960-1980	1.2	5
II.	Structural change in Indonesian manufacturing value according to end use 1971-1980	2.1	16
III.	Organization chart of the Department of Industry	4.0	53

EXPLANATORY NOTE

The structure and organization of information in the report follow the established outline for Industrial Development Reviews. The heading on each page gives the date on which the information for that section was gathered and analyzed, and the page number within sections or sub-sections. Page 2.5.2 for example, identifies the second page of information on "Performance and efficiency of the manufacturing sector", which is sub-section 2.5.

Unless otherwise indicated the manufacturing sector in the review refers to large- and medium-scale enterprises with more than 20 employees.

Regional classifications, industrial classifications, trade classifications and symbols used in the statistical tables of this report, unless otherwise indicated, follow those adopted in the United Nations Statistical Yearbook.

Dates divided by a slash (1970/71) indicate a crop year or a financial year. Dates divided by a hyphen (1970-71) indicate the full period, including the beginning and end year.

In tables:

Three dots (...) indicate that data are not available or are not separately reported;

A dash (-) indicates that the amount is nil or negligible;

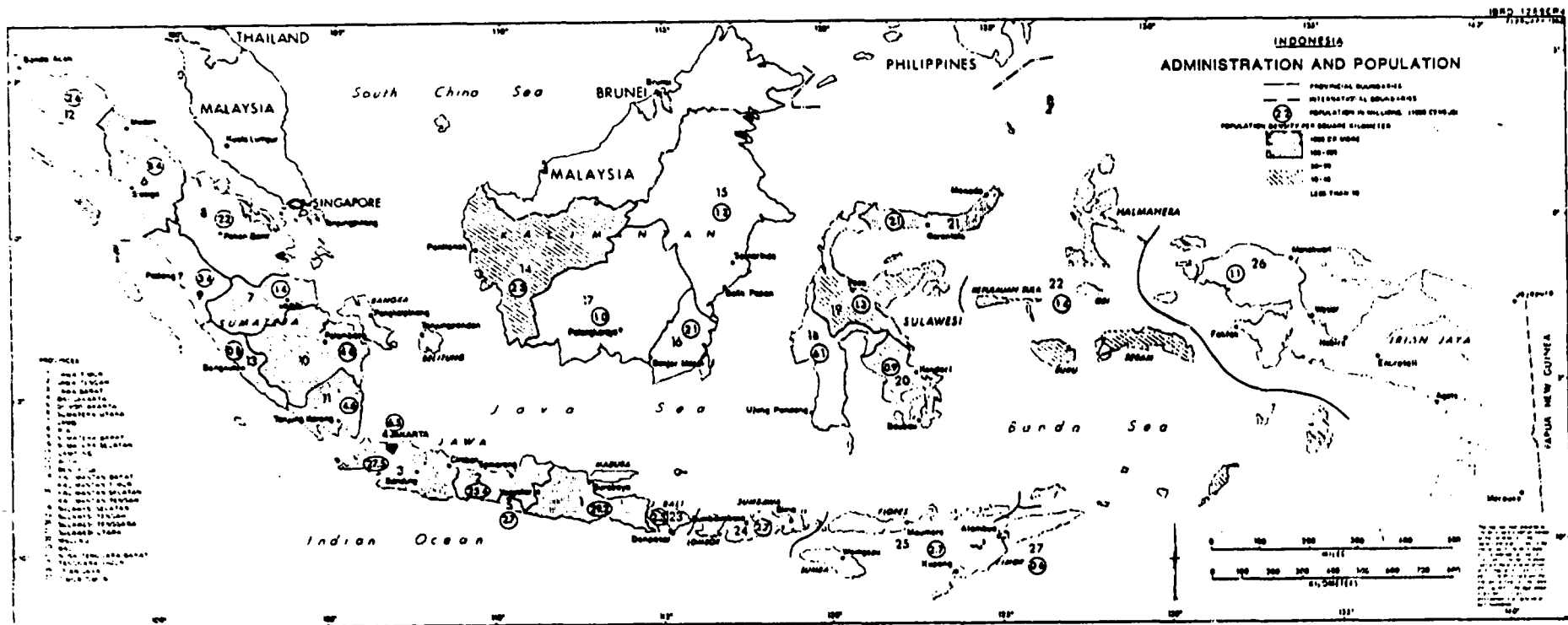
A blank indicates that the item is not applicable;

One dot (.) indicates that there is insufficient data from which to calculate the figure.

ABBREVIATIONS AND ACRONYMS

AIC	-	ASEAN Industrial Complementation Scheme
AJIV	-	ASEAN Industrial Joint Venture Scheme
AIP	-	ASEAN Large-scale Industrial Project
ASEAN	-	Association of South East Asian Nations
ASKRINDO	-	Credit Insurance Agency (For Small Business Loans)
BAKOREN	-	National Energy Co-ordinating Board
BAPINDO	-	State Owned Development Bank (For Industry)
BAPPEDAS	-	Regional Development Offices
BAPPENAS	-	National Development Planning Agency
BIPIK	-	Industrial extension services for small industries
BKPM	-	Investment Co-ordinating Board
BNI	-	Bank Negara Indonesia (Indonesian State Bank)
BRI	-	Bank Rakyat Indonesia (Indonesian People's Bank)
BPD	-	Bank Pembangunan Daerah (Regional development bank)
BPPT	-	Agency for the Assessment and Application of Technology
BPS	-	Central Bureau of Statistics
DSP	-	Priorities Scale Lists (Investment)
EEC	-	European Economic Community
FMO	-	Netherlands Finance Company for Developing Countries
GINS	-	All-Indonesia Importers Association
GPEI	-	Indonesian Association of Exporters
IDFC	-	Indonesian Development Finance Company
IGGI	-	Inter-Governmental Group on Indonesia
KADIN	-	Indonesian Chamber of Commerce and Industry
KIK	-	Government lending fund scheme (for plant and equipment investment)
KMMP	-	Government lending scheme (for working capital)
LIPI	-	Indonesian Institute of Science
NAFED	-	National Agency for Export Development
PTA	-	Preferential Trading Agreement (ASEAN)
PDFCI	-	Private Development Finance Company of Indonesia
PERTAMINA	-	National Oil and Gas Mining Enterprise "Pertamina"
REPELITA	-	Five-year Development Plan
UPPINDO	-	Non-bank financial institution for small-scale enterprises

MAP OF INDONESIA



Source: World Bank.

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NOTE TO THE READER

To aid in the updating or revision of this Industrial Development Review, the staff of UNIDC's Regional and Country Studies Branch solicit the reader's comments and suggestions.

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1. OVERVIEW OF INDONESIA

1.1 The country and its people

The Republic of Indonesia is the third largest developing country in the world with an estimated population of 154.5 million in 1982. The country forms part of the world's largest archipelago, consisting of five main islands - Sumatra, Java, Kalimantan, Sulawesi, and Irian Jaya - and some 13,700 smaller islands, of which only 6000 are believed to be inhabited.

The population is unevenly distributed among the different regions. Around two-thirds live on the island of Java (and Madura) (91.3 mill in 1980) which covers only 7 per cent of the total land area, implying a very high population density of 691 inhabitants per sq. km. Other main population concentrations are on Sumatra (28 mill), Sulawesi (10.4 mill) and Kalimantan (6.7 mill). Other islands are thinly populated. The Government has sought to ease the population pressure on Java through a policy of transmigration aimed at encouraging people to migrate to the outer islands.

Indonesia's population is growing at an annual rate of around 2.2 per cent compared with 2.4 per cent a decade ago. The lower population growth rate reflect the combined effects of a marked decline in the birth rate, a reduction in infant mortality rate and an increase in life expectancy. The literacy rate is improving rapidly; in 1971 61.9 per cent of the population were estimated to be literate, whereas by 1980 the proportion had increased to 72 per cent.

A relatively high proportion - some four-fifths - of the population live in rural areas. There are some 300 ethnic groups, mainly of Malay origin and including some 3-5 million Chinese inhabitants. More than 90 per cent profess Islam as their religion. One in every five Indonesians live in urban areas; Jakarta alone is estimated at 6.5 mill inhabitants in 1980. Administratively Indonesia is composed of the capital and 27 provinces.

Indonesia 1.1.2

November 1983

BASIC INDICATORS BOX NO. 1

Country data

In 1980-1982:

Area:	1,919,000 Sq. km
Population:	
Number:	154.5 mill in 1982 (estimate)
Density:	80.5 inhabitants per sq. km
Growth rate:	2.3 per cent (average annual 1970-81)
Labour force:	54.3 million (1980)
Adult literacy:	62 per cent (1980)
Life expectancy at birth:	54 years (1981)
Infant mortality rate:	105.2 per 1,000 live births (1981)
Independence:	1945
Language:	Bahasa Indonesia
Religion:	Muslim 90 per cent; Christian 9 per cent Hindu and other 1 per cent
Currency:	1 US\$ = 981.4 Rupiahs (Rp), August 1983 1 Rupiah = 100 sen

Sources: World Bank, World Development Report 1983; and "Indonesia Financial Resources and Human Development in the Eighties", 3 May 1982.

Indonesia boasts a wealth of natural resources. It is the worlds largest oil and natural gas producer east of the Gulf. It is richly endowed with mineral deposits of tin, bauxite, nickel, copper and other minerals. Vast areas still remain unexplored for their mineral content. The agricultural resources base include inter alia natural rubber, palm oil, copra, coffee, tea, cocoa, sugar, tobacco, livestock, and rice. With more than two-thirds of total land area covered with forest and woodland the country possesses some of the worlds largest forest resources of tropical hardwood.

Indonesia 1.1.3

November 1983

BASIC INDICATORS BOX 2
Resources and transport infrastructure

<u>Resources</u>	
Cash crops (leading products for industry):	Coconuts, co ² ra, palm oil, sugarcane, coffee, cocoa, tea, tobacco, natural rubber
Livestock total numbers in 1981:	Cattle (6.5mn), goats (7.8mn), sheep (4.2mn), pigs (3.4mn), buffaloes (2.5mn), chickens (132.9mn)
Fisheries total catch in 1981:	1.9 million tons, live weight
Forests	121.8 million hectares 67.2 percent of total area 13,810 million m ³ growing stock
Mining (leading minerals produced):	Crude petroleum, natural gas, nickel ore, bauxite, copper, tin
<u>Transport</u>	
Roads:	62,741 Km tarmac, 91,440 Km other
Railways:	6,877 Km in Java, Sumatra and Madura
Ports:	Jakarta*, Surabaya, Belwan, Semarang
Airports:	Halim (Jakarta), Medan (Sumatra), Denpasar (Bali), Surabaya (Java)

Sources: Indonesia, Central Bureau of Statistics, Statistik Indonesia, 1982.

* Jakarta port houses Indonesia's first container terminal.

1.2 The economy

BASIC INDICATORS BOX NO.3

GNP, GDP and structure of the economy

In 1981

Gross National Product (GNP)	per capita: US\$ 530
Gross Domestic Product (GDP)	Total: US\$ 84,960 million
Growth rate:	7.8 per cent (annual average 1970-1981)
Structure ^{1/} :	agriculture 24 per cent; industry 42 per cent, of which manufacturing 12 per cent; and services 34 per cent

Source: World Bank, World Development Report 1983.^{1/} Sectoral shares weighted by GDP in current prices 1981.

Indonesia belongs to the "lower middle-income" group of developing countries as classified by the World Bank. Her economy expanded rapidly at a rate of 7.8 per cent annually from 1970-81 benefiting greatly from increased revenues of the oil and gas sector, which now contributes half of government revenue budget and three-quarters of all export earnings. In spite of the dramatic fall in oil prices in 1983, oil and gas will continue to dominate the economy at least in the medium term.

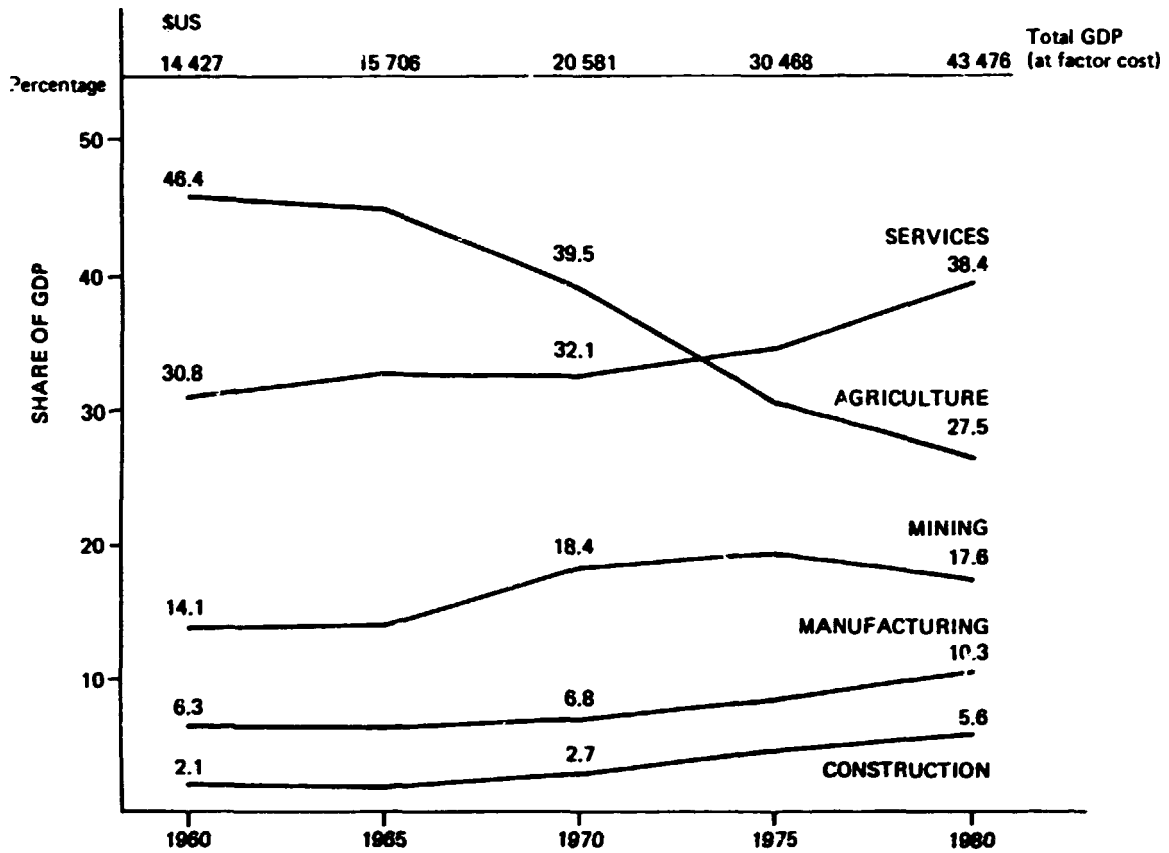
The main sector of the Indonesian economy is the service sector accounting for 38.4 per cent of GDP in 1980 (Figure I). While the agricultural sector expanded rapidly at an annual rate of 7.8 per cent from 1970-1981 its contribution to GDP declined in relative terms to 27.5 per cent. With 55 per cent of the labour force engaged in agriculture, it is however still the largest sector in terms of employment. The manufacturing sector grew significantly during the 1970s; yet its contribution to GDP is still comparatively small, accounting for 10.3 per cent in 1980 (based on constant 1975 prices in US\$).

The recession in the major industrial countries and the world oil glut inflicted an economic crisis upon the Indonesian economy and caused a serious deterioration in Indonesia's external environment. GDP growth, which during

Indonesia 1.2.2

November 1983

Figure I. GDP by economic sectors, 1960-1980^{a/}



Source: Unido Data Base, Information supplied by the United Nations Office with estimates by the UNIDO Secretariat.

^{a/} At constant 1975 prices in million US \$.

Indonesia 1.2.3

November 1983

the 1970s reached 7.8 per cent, fell to 2 - 3 per cent in 1982 and is estimated to have increased only slightly to around 3 per cent in 1983. Real growth of manufacturing value added expanded significantly at an annual rate of 11.8 per cent during the period 1970-80, but declined to 9 per cent in 1981 and to only 1 per cent in 1982.

The balance of payments, after reaching a peak in 1980/81 due to oil windfalls following the second oil price increase, began to deteriorate in 1982 with the turnaround in the world oil market and the international recession. Between 1980/81 and 1982/83 oil exports (net) fell in value by 38 per cent, non-oil exports declined by 30 per cent, while non-oil imports continued to rise. As a result, the current account surplus of \$2 billion in 1980/81 turned into a deficit of nearly \$3 billion in 1981/82 and \$6.7 billion in 1982/83. At the same time the decline in oil sector earnings directly affected the Government's budget by reducing receipts from oil tax.

Most of the current account deficit was financed by government borrowing abroad (\$3.6 billion) and by drawing upon official reserves (\$2.6 billion). As a result, Indonesia's debt service ratio rose sharply during the last two years. At 25 per cent (debt service to net export ^{1/}), it is still well below that of the large debtors (Mexico, Brazil) though above the conventional "safe" level of 20 per cent. However, Indonesia's debt is more manageable since a large part is at concessional rates and at longer maturities.

The Indonesian Government has reacted promptly and incisively by adopting a series of policy measures during 1982 and 1983 to adjust to the deteriorating economic situation. In two successive government budgets, for 1982/83 and 1983/84, the growth of current government spending was severely restrained. Various policies were adopted to promote non-oil exports. However, the OPEC price cut of \$5 per barrel in March 1983 rendered these measures quite inadequate.^{2/}

^{1/} Excluding private debt and debt service for which no estimates are available.

^{2/} Arndt, H.W.: "Survey of Recent Economic Developments", Bulletin of Indonesian Economic Studies, August 1983.

Indonesia 1.2.4

November 1983

BASIC INDICATORS BOX NO. 4

Foreign trade and balance of payments

Exports:	Total value:	US\$ 22,260 million (1981)	
	main goods:	Crude petroleum and LNG; timber; rubber; tin; coffee; shrimps; palm oil; tea	
	main destinations:	Japan, USA, Singapore, Australia, the Philippines, the Netherlands, FRG	
Imports:	Total value:	US\$ 13,272 million (1981)	
	main goods:	machinery; electrical equipment and parts; base metals; mineral products; chemicals; transport equipment; prepared foodstuff, beverages and tobacco; rice	
	main origins:	Japan, USA, Singapore, FRG, United Kingdom, Australia, France, the Philippines, the Netherlands	
Balance of Payments:	Current account deficit:	US\$ 6,721 million (1982)	
Foreign debt:	US\$ 15,529 million (1981), = 19.0 per cent of GDP	US\$ 23,000 million (1982)	
Debt service ratio:	2.4 per cent of GNP (1981)	8.2 per cent of total exports (1981)	25.0 per cent of net exports (1982)
Foreign currency reserves:	US\$ 6,248 million US\$ (1981); or 3 months of import coverage		
Inflation rate:	7.1 per cent (1981)	9.7 per cent (1982)	20.5 per cent (average annual 1970-81)

1/ Sources: World Bank, World Development Report 1983; The Economist Intelligence Unit, Quarterly Report on Indonesia Annual Supplement 1982 and No 2, 1983.

Indonesia 1.2.5

November 1983

On 30 March 1983 the Government devalued the Rupiah by 28 per cent. The devaluation was intended to improve the competitiveness of Indonesia's traded goods, to reverse the outflow of capital and thereby contribute to an improvement of the balance of payments. The net effect of the devaluation was to compensate for the decline in the dollar value of oil tax revenues. Various policy decisions were taken to limit the inevitable inflationary effects including a relatively tight monetary policy aimed partly at reversing the pre-devaluation capital outflow and to keep inflation rates down at 15-18 per cent 1983.

BASIC INDICATORS BOX NO. 5
Prices and exchange rates

Year	Consumer Prices Index (1980=100)	Official Exchange Rate (annual average)
1970		1 US \$ = 365.00 Rupiahs
1975		1 US \$ = 415.00 Rupiahs
1976	57.6	1 US \$ = 415.00 Rupiahs
1977	64.0	1 US \$ = 415.00 Rupiahs
1978	69.2	1 US \$ = 442.05 Rupiahs
1979	84.4	1 US \$ = 623.06 Rupiahs
1980	100.0	1 US \$ = 626.99 Rupiahs
1981	112.2	1 US \$ = 631.76 Rupiahs
1982	122.9	1 US \$ = 661.42 Rupiahs
1983	133.6 January-May	1 US \$ = 870.32 Rupiahs January-August 981.41 Rupiahs August 1983

Source: International Monetary Fund, International Financial Statistics, October 1983, Yearbook 1979.

In response to the balance of payment crisis and in an attempt to close the external gap, the Government decided to shelve four major public sector projects estimated to cost \$5 billion and to review the whole public investment programme in order to reduce imports of capital goods. By the end of 1983, around 50 development projects with an estimated foreign exchange saving of \$10 billion had been cancelled, postponed or rephased.

1.3 Manufacturing sector: an overview

Unless otherwise indicated the manufacturing sector in this review refers to large- and medium-scale enterprises with more than 20 employees.

BASIC INDICATORS BOX No. 6
The manufacturing sector

In 1980:

Manufacturing value added (MVA) ^{a/} :	US\$ 3,371 million
MVA per capita:	US\$ 41 (current prices)
Employment in manufacturing :	
Number:	963,000
as percentage of labour force:	15 percent
MVA per employee:	US\$ 3,500
Export of manufactured goods ^{b/} :	
value:	US\$ 500 million
Share of total exports:	2.3 per cent
main goods:	Petroleum products, non-ferrous metals, vegetable oils, wood products, tea and mate, animal feed, electrical machinery, clothing, chemicals
main destinations:	Other developing countries (65.31%); EEC (15.02%), Japan (8.35%)
Import of manufactured goods ^{b/} :	
value:	US\$ 7,033 million
share of total imports:	6.5 percent
main goods:	machinery (non-electric), transport equipment, electrical machinery, iron and steel, chemicals, rice, petroleum products.
main origins:	Japan (45.10%), EEC (19.37%), other developing countries (10.63%)

Source: UNIDO data base, information supplied by the UN Statistical Office with estimates by the UNIDO secretariat; World Bank, "Indonesia Financial Resources and Human Development in the Eighties", 1982.

a/ Value added in US\$ was calculated using national currency and mid-year exchange rate.

b/ Manufactured goods covers SITC 5 to 8 less 68.

Indonesia 1.3.2

November 1983

The share of manufacturing sector in GDP is comparatively small but has been steadily increasing from 6.8 percent in 1970 to 10.3 percent in 1980 (based upon 1975 constant prices in US\$). These figures refer to large- and medium-scale enterprises. When data for small-scale, household and cottage industry activities is included, the share is higher and increased from 8.8 percent in 1971 to 15.3 percent in 1980.

The structure of the manufacturing sector is heavily oriented towards production of consumer goods for the domestic market. Industrial growth accelerated rapidly during the 1970s, mainly due to import substitution. Indonesia's imports of manufactured goods are substantial, while the role of manufactured exports is very limited and confined to a narrow range of products.

Industrial growth increased quite rapidly at an average per annum rate of 11.8 percent from 1970 to 1980. Particular high growth took place in iron and steel, transport equipment, electric machinery, non-metallic mineral products, rubber, wood and industrial chemicals. This resulted in significant changes in the structure of the manufacturing sector. The importance of some of the traditional industries such as food and tobacco declined while certain industries gained increasing significance such as wood, rubber, non-metallic mineral products, chemicals. Certain capital goods industries are now in an embryonic stage of development.

The main problems and constraints hampering further industrial growth and development are: the limited infrastructure and inadequate transport facilities in areas with substantial raw material potential; the low domestic purchasing power; limited export market capability; insufficient entrepreneurship and skilled labour; and a less-than-efficient operations capability of many existing enterprises.

Indonesia 1.3.3

November 1983

The new Development Plan REPELITA IV (1984/85-1988/89) envisages an average rate of growth of 5 per cent for GDP and 9.5 per cent for manufacturing during the five year period. Substantial emphasis will be given to the engineering goods industries, which are expected to expand at a rate considerably exceeding that envisaged for manufacturing as a whole.

2 STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR

2.1 Growth and structural change of value added in manufacturing

The emergence of a modern industrial sector in Indonesia is of fairly recent origin. In 1980 the contribution of large and medium manufacturing to GDP was 10.3 per cent which is still modest by international standards. The manufacturing sector grew rapidly at 11.8 per cent annually during the 1970s albeit from a low base. In absolute terms of total manufacturing value added however Indonesia now has a manufacturing sector of considerable size, exceeded among Asian developing countries only by the People's Republic of China, India, the Republic of Korea, Iran and the Philippines.

The climate for industrial growth was substantially improved in 1966 by the adoption of new industrial policies which liberalised foreign exchange and trade, encouraged domestic and foreign private investment while the oil booms provided resources for large public sector investment. The new policy environment favourably influenced the manufacturing sector which achieved the highest growth rate, after construction, among the major sectors of the Indonesian economy during the 1970s; a rate exceeded only by few developing countries. However, industrial growth slowed somewhat during the second half of the 1970s, as the early stage of import substitutions gradually came to an end and as the oil booms permitted a strong exchange rate of the Rupiah, which reduced the international competitiveness of non-oil traded goods.

Particular high growth rates occurred in some manufacturing branches which were quite unimportant at the beginning of the 1970s, such as iron and steel, electrical machinery, other non-metallic mineral products, rubber products and fabricated metal products. Many of these fast growing industries were relatively capital-intensive assembly industries. Similarly, medium growth occurred in industrial chemicals, wood products (except furniture), glass products, and paper and paper products. On the other hand some of the traditional and more important industrial branches grew less rapidly, including food products, textiles, beverages, and tobacco, as well as petroleum refineries, transport equipment and other chemicals (Table 1). Most

INDONESIA

TABLE 1. ANNUAL GROWTH RATES OF REAL MANUFACTURING VALUE ADDED, 1970-1980
(PERCENTAGES ON THE BASIS OF VALUES IN 1975 US\$ CONSTANT PRICES)

ISIC	ISIC-DESCRIPTION	70/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	NN/NN
3110	FOOD PRODUCTS	5.8	9.6	0.0	12.9	11.1	48.0	17.6	-0.6	16.2	16.9	14.1
3130	BEVERAGES	26.2	41.5	13.3	11.8	5.3	-6.0	9.6	1.9	12.4	9.3	9.7
3140	TOBACCO	5.0	9.5	11.6	13.0	14.9	4.0	17.3	-0.8	0.0	21.5	9.4
3210	TEXTILES	-4.8	47.5	35.6	12.9	11.1	8.0	-1.9	4.7	4.5	5.2	11.8
3220	WEARING APPAREL, EXCEPT FOOTWEAR	35.8	13.9	11.0	5.5	4.2	...	...	...	...	...	12.6
3230	LEATHER PRODUCTS	87.0	0.0	50.1	41.2	4.2	29.0	...	...	...	...	31.5
3240	FOOTWEAR, EXCEPT RUBBER OR PLASTIC	61.0	12.1	-5.4	21.4	17.6	14.0	0.9	3.5	-5.9	16.1	10.1
3310	WOOD PRODUCTS, EXCEPT FURNITURE	11.0	0.0	-16.0	27.9	14.9	18.0	66.9	10.7	0.9	78.2	17.6
3320	FURNITURE, EXCEPT METAL	6.7	12.5	25.9	41.2	4.2	13.0	...	...	...	...	18.7
3410	PAPER AND PRODUCTS	25.0	30.0	63.5	11.8	5.3	-2.0	9.2	25.2	12.7	1.3	16.1
3420	PRINTING AND PUBLISHING	5.3	12.5	-15.6	142.1	8.7	24.0	...	...	...	...	24.3
3510	INDUSTRIAL CHEMICALS	15.5	7.5	25.0	5.6	5.3	-13.0	64.4	49.0	30.5	33.8	18.9
3520	OTHER CHEMICALS	19.5	-3.3	0.0	5.6	6.4	-2.0	-3.1	9.5	-1.0	19.4	3.2
3530	PETROLEUM REFINERIES	3.0	10.6	17.4	-11.9	-16.0	38.0	35.5	3.7	2.1	3.5	8.0
3550	RUBBER PRODUCTS	0.0	-4.3	13.6	50.0	33.3	37.0	22.6	20.8	11.8	13.2	22.8
3560	PLASTIC PRODUCTS	43.8	43.5	-6.1	90.3	69.5	-28.0	...	...	...	...	33.2
3610	POTTERY, CHINA, EARTHENWARE	7.4	13.7	-18.1	42.6	3.1	29.0	...	...	...	...	10.1
3620	GLASS AND PRODUCTS	7.1	11.1	80.0	5.6	5.3	-6.0	47.9	15.1	6.9	21.6	17.4
3690	OTHER NON-METALLIC MINERAL PRODUCTS	2.6	10.0	13.6	50.0	33.3	25.0	42.4	43.3	23.1	16.9	28.7
3710	IRON AND STEEL	66.7	140.0	30.9	50.0	33.3	37.0	2.9	27.7	146.1	133.4	50.2
3310	FABRICATED METAL PRODUCTS	3.0	17.6	50.0	36.7	22.0	9.0	22.0	15.8	0.0	11.7	20.2
3920	MACHINERY, EXCEPT ELECTRICAL	-3.3	6.9	58.1	69.4	20.5	-8.0	...	...	...	...	27.6
3830	MACHINERY ELECTRIC	11.1	0.0	40.0	78.6	33.3	23.0	40.7	25.4	0.9	43.8	30.8
3840	TRANSPORT EQUIPMENT	11.1	20.0	19.4	8.1	7.5	-9.0	-4.9	15.9	-15.8	55.0	9.6
3950	PROFESSIONAL & SCIENTIFIC EQUIPMENT	16.4	12.9	64.6	-19.0	-21.9	72.0	...	...	...	...	12.0
3900	OTHER MANUFACTURED PRODUCTS	16.4	12.9	64.6	-19.0	-21.9	72.0	...	...	...	...	12.0
3000	TOTAL MANUFACTURING	6.2	12.3	14.5	6.3	4.0	21.9	19.2	8.4	8.2	17.3	11.8

SOURCE: UNIDO DATA BASE; INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

##/ THE INITIAL- AND/OR THE END-YEAR OF THE TREND-GROWTH IS ALWAYS THE FIRST AND/OR THE LATEST YEAR SHOWN IN THE YEAR-TO-YEAR-GROWTH

NOTE: TOTAL MANUFACTURING IS THE SUM OF THE AVAILABLE COMPONENTS AND DOES NOT NECESSARILY CORRESPOND TO ISIC 300

Indonesia 2.1.3.

December 1983

assembly industries producing consumer durables slowed down during the second half of the 1970s due to slowdown in growth of domestic demand and diminishing scope for further import substitution.

The rapid growth of manufacturing value added resulted in significant structural changes in the Indonesian manufacturing sector (Table 2). Some of the traditional branches relying heavily on the agricultural sector - food products, beverages and tobacco - which in 1971 accounted for 63.8 per cent of total manufacturing value added, declined to 31.7 per cent in 1980. The importance of the textile industry, which augmented its share in total value added in the early 1970s, declined to 12.4 per cent - slightly less than its share in 1971. Whereas in 1971 no other industrial branch exceeded 4 per cent of total MVA, by 1980 new branches had gained increasing weight in the industrial structure, such as other chemicals, wood products (excluding furniture), transport equipment, other non-metallic mineral products, electrical machinery and rubber products while fabricated metal products and iron and steel also came close to the 4 per cent level.

A predominant feature of this structural change was the significant shift from single use consumer goods towards consumer durables, capital and intermediate goods (Figure II). Another striking characteristic of Indonesia's industrial development has been its almost exclusive orientation towards the domestic market. Industrial growth has met growing domestic demand and replaced imports, while manufactured exports have remained insignificant.

INDONESIA

Table 2 STRUCTURAL CHANGES OF VALUE ADDED IN MANUFACTURING, 1971-1980
(SECTORAL SHARES (PERCENTAGES) ON THE BASIS OF VALUES IN NATIONAL CURRENCY AT CURRENT PRICES)

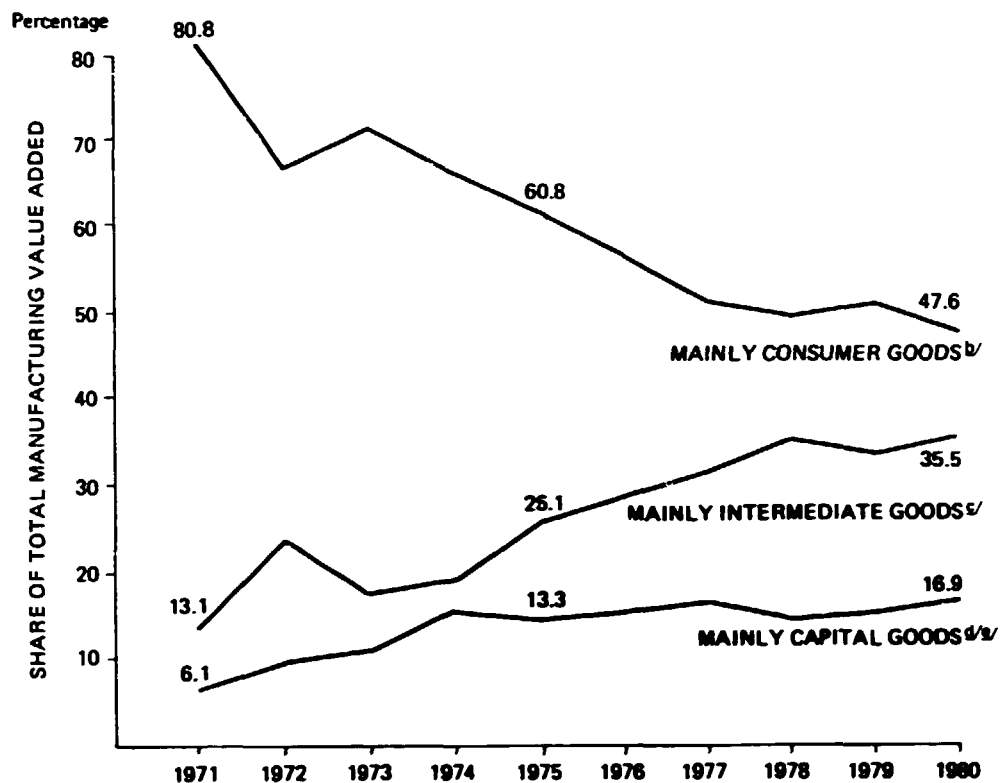
ISIC	ISIC-DESCRIPTION	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
3000	TOTAL MANUFACTURING	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
3110	FOOD PRODUCTS	33.9	31.5	24.5	26.7	21.0	16.8	18.0	16.4	18.1	11.1
3130	BEVERAGES	2.0	1.7	1.8	2.5	2.1	2.0	2.0	1.2	1.6	1.5
3140	TOBACCO	27.9	15.4	17.4	16.9	11.5	18.9	15.3	16.3	13.9	19.1
3210	TEXTILES	13.2	15.5	25.6	17.4	12.5	15.1	12.4	12.7	13.8	12.4
3220	WEARING APPAREL, EXCEPT FOOTWEAR	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4
3230	LEATHER PRODUCTS	0.3	0.3	0.4	0.2	0.2	0.3	0.4	0.2	0.2	0.2
3240	FOOTWEAR, EXCEPT RUBBER OR PLASTIC	0.6	0.0	0.6	0.8	2.1	1.4	1.0	0.7	1.0	0.4
3310	WOOD PRODUCTS, EXCEPT FURNITURE	1.4	3.6	2.7	2.9	2.9	3.3	3.3	4.0	4.4	7.0
3320	FURNITURE, EXCEPT METAL	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
3410	PAPER AND PRODUCTS	2.0	1.8	2.0	1.1	1.4	1.4	1.8	1.8	1.7	1.5
3420	PRINTING AND PUBLISHING	2.0	1.2	0.7	1.6	1.6	1.6	1.5	1.6	1.7	1.5
3510	INDUSTRIAL CHEMICALS	0.8	1.6	1.8	3.4	5.8	7.2	7.2	7.5	6.3	4.3
3520	OTHER CHEMICALS	3.8	9.2	5.3	4.0	4.3	5.2	6.6	5.6	4.6	7.1
3530	PETROLEUM REFINERIES	...	...	...	...	15.0	...	...	...	...	...
3540	MISC. PETROLEUM AND COAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3550	RUBBER PRODUCTS	1.3	1.4	1.3	1.8	1.5	3.4	2.9	5.7	5.4	4.8
3560	PLASTIC PRODUCTS	0.5	0.6	0.4	0.8	0.9	0.7	1.1	1.2	1.1	0.7
3610	POTTERY, CHINA, EARTHENWARE	0.6	0.4	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2
3620	GLASS AND PRODUCTS	0.5	0.5	0.7	0.7	0.5	0.6	1.2	2.0	1.6	1.1
3690	OTHER NON-METALLIC MINERAL PRODUCTS	2.5	4.6	2.5	2.9	3.8	5.0	6.7	7.2	6.9	5.9
3710	IRON AND STEEL	...	...	...	0.2	0.2	0.8	1.2	0.5	1.3	3.1
3720	NON-FERROUS METALS	...	...	...	0.6	0.8	...	...	...	...	0.0
3810	FABRICATED METAL PRODUCTS	2.3	3.2	3.6	3.0	3.0	4.0	3.8	2.9	3.2	3.5
3320	MACHINERY, EXCEPT ELECTRICAL	0.4	1.0	1.2	2.3	1.4	1.0	1.2	1.7	2.0	1.6
3330	MACHINERY ELECTRICAL	2.5	1.6	2.9	4.0	3.2	4.1	5.2	4.8	4.5	5.3
3940	TRANSPORT EQUIPMENT	0.9	4.0	3.4	5.5	3.5	5.9	6.3	5.0	5.3	6.4
3950	PROFESSIONAL & SCIENTIFIC EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
3990	OTHER MANUFACTURED PRODUCTS	0.3	0.6	0.8	0.4	0.2	0.5	0.3	0.2	0.3	0.4
	TOTAL MANUFACTURING IN MILLIONS	135990	205965	309510	381770	572400	648400	774500	1008330	1290400	2130000

SOURCE: UNIDO DATA BASE, INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

FOOTNOTES:

Δ/ 3000-3530

Figure II: Structural change in Indonesia manufacturing^{a/}
value added according to end use 1971-1980
(based on current Rp. prices)



Source: UNIDO Data Base, information supplied by the United Nations Statistical Office, with estimates by the UNIDO Secretariat.

a/ ISIC 3000 less 3530.

b/ ISIC 3110, 3130, 3140, 3210, 3220, 3240, 3320, 3420, 3610, 3900.

c/ ISIC 3230, 3310, 3410, 3510, 3520, 3530, 3540, 3550, 3560, 3620, 3690, 3710, 3720.

d/ ISIC 3810, 3820, 3830, 3840, 3850.

e/ Includes also some consumer durables.

2.2 Geographical distribution of manufacturing enterprises

Industrial activity in Indonesia is heavily concentrated on Java. According to the 1974/75 Census, Java accounted for 85 per cent of all medium- and large-scale enterprises, and 83 per cent of value added. Industrial activity in Sumatra accounted for 12 per cent of value added, leaving only 5 per cent for the rest of the country (Table 3). Organized, modern manufacturing in the "outer" islands is thus extremely limited and confined to a very small number of enterprises with narrow branch coverage.

Even after making allowance for difference in population size, it is evident that Java is much more industrialised than the other regions, owing primarily to the better transport facilities, infrastructure, government and services. In Java, around 7 out of 1000 persons were engaged in manufacturing, while in the "outer" islands the average was less than 2 out of 1000. In spite of efforts to decentralize industrial activity, rapid industrial growth during the 1970s has not significantly reduced this imbalance.

The concentration of Indonesia's natural resources outside Java, however has led to the establishment of some resource-based industries depending upon oil, natural gas, timber and other resources in the "outer" provinces. To accelerate this process the Government has identified regional industrial growth centres and drawn up development plans for five regions comprising Northern Sumatra, Southern Sumatra, South Sulawesi, East Kalimantan as well as Java and Bali.

Industrial estates and processing zones have also been developed in various regions to foster regional industrial growth. Apart from the industrial estate at Pulo Gadung Jakarta, there are at present two others in Java, in Rungkut Surabaya (East Java) and Cilacap (Central Java). Two further industrial estates are at an advanced stage of planning and implementation in Medan (North Sumatra) and Ujung Pandang (South Sulawesi) while a number of others are at the preparatory stage of development or study, including one at Batam island, close to Singapore.

Table 3 Regional Distribution of Medium and Large Scale Manufacturing Enterprises 1974.

Region	Establishments		Persons Engaged Employees		Average Size	Value Added		Gross Output		Popu-lation	Persons Engaged	
	Number	Per-centage Share	(000)	Per-centage Share	Empl. per Estab.	Rp. Bill.	Per-centage Share	Rp. Bill.	Per-centage Share	Mill.	Per (000) Pop.	No. of Estab. per Mill. Pop.
Sumatra	562	7.9	54.9	8.3	98	57.8	12.1	173.4	13.4	23.3	2.35	24
Java Total	6,034	85.1	572.2	86.4	94	395.2	82.9	842.2	65.1	32.7	6.92	73
Jakarta	878	12.4	27.9	13.3	100	92.9	19.5	288.0	22.3	5.6	15.70	157
Java, West	1,598	22.5	116.6	17.6	73	90.6	19.0	205.2	15.9	23.3	5.01	68
Java, Central	1,584	22.3	147.9	22.3	93	73.0	15.3	24.2	1.9	23.6	6.26	67
Yogjakarta	155	2.2	13.8	2.1	89	6.4	1.3	20.2	1.6	2.7	5.11	57
Java, East	1,814	25.7	206.0	31.1	113	132.3	27.7	304.7	23.5	27.5	7.49	66
Kalmantan	162	2.3	14.6	2.2	90	13.0	2.7	37.6	2.9	5.7	2.57	28
Sulawesi	167	2.4	9.3	1.3	50	9.2	1.9	25.2	1.9	9.4	0.88	18
Others	166	2.3	11.7	1.8	120	3.3	0.7	15.4	1.2	9.5	1.50	17
Total	7,091	100.0	661.7	100.0	93	478.5	100.0	1,093.8	100.0	130.6		

Source: BPS 1974-1975 Industrial Census.

Indonesia 2.2.2
November 1983

2.3 Manufacturing by size of enterprises^{1/}

The 1974/75 Industrial Census classified industrial activities into large (more than 100 employees), medium (between 20 and 99 employees), small (between 5 and 19 employees) and household-cottage industries (less than 5 workers). According to the Census there were 7,100 large and medium enterprises, 48,200 small-scale enterprises and 1,234,500 household and cottage industries in 1974/75. By 1981 the number of large- and medium-scale enterprises had increased to 7,900 while that of small scale enterprises more than doubled by 1979 to 113,000 enterprises.(Table 4).

The modern industrial sector, consisting of large and medium enterprises, is the most important - accounting for nearly four-fifths of total manufacturing value added in 1979. However, the large and diffuse traditional sector of small-scale, household and cottage industries which accounts for little more than one-fifth of value added, is overwhelmingly more important in terms of employment. According to official statistics presented in Table 4, small-scale and household and cottage industries accounted for 87 per cent of manufacturing employment in 1974/75 and for 80 per cent in 1979. However as pointed out in the footnote to Table 4, these statistics merely serve as indicators of broad relative magnitudes and should be interpreted cautiously .

The small-scale and household-cottage sector is thus an important aspect of industrial policy. In fact "the extreme heterogeneity of the Indonesian manufacturing sector ... poses a dilemma for Indonesian planners. Employment and anti-poverty objectives suggest that considerable resources should be devoted to helping the "submerged" cottage sector about which so little is known, while growth objectives are more likely to be served by concentrating on assisting large firms".^{2/}

^{1/} In this section the manufacturing sector refers to large and medium enterprises as well as small-scale, household and cottage industries.

^{2/} P. McCawley: "Industrialisation in Indonesia". Occasional Paper No. 13, Development Studies Centre, Australian National University, Canberra, 1975, pp. 15 f.

Table 4 Manufacturing Sector, by Size of Enterprise, 1974/5, 1979

	1974/5				1979				1980	1981
	LM	S	HC	Total	LM	S	HC	Total	LM	LM
1. Number of enterprises ('000)	7	48	1,235	1,290	8	113	1,418	1,539	8	8
2. Persons engaged ('000)	662	343	3,900	4,895	640	827	2,795	4,492	977	1,012
3. Value added (Rp. billion)	476	53	83	613	1,660	107	291	2,139	2,149	2,782
4. Gross output (Rp. billion)	1,294	158	201	1,653					6,904	8,299

Source: BPS, Census of Manufacturing Industries 1974/5
BPS, Small-Scale Industries 1979

- a. Several weaknesses in the data should be noted. Firstly, large and medium firm data are for 1974. Data for small firms are for 1975. Data for cottage firms are for August 1974 to July 1975. The data for value added, however, has been deflated to 1974 prices by deflating data for small firms by 20 per cent and for cottage firms by 10 per cent. Secondly, BPS officials suspect that coverage of the small and cottage firms, especially, may have been rather poor and that the estimates (particularly the value added estimates) for these two groups may be substantially understated. Thirdly, while all large, medium and small manufacturing establishments throughout Indonesia were intended to be included in the Industrial Census, cottage firms in rural areas in the following provinces were not covered: Nusa Tenggara Timur, Kalimantan, Timur, Kalimantan Tengah, Sulawesi Tengah, Sulawesi Tenggara, Maluku, Irian Jaya, and the island areas of Riau. It was felt 'that this would not seriously affect the results at the national level'
- b. The increase in the number of enterprises, employment and value added for SE's between 1974/75 and 1980 reflects an improvement in coverage of this type of enterprises rather than a genuine expansion.
- c. The 1979 survey of household and cottage industries was based on a household survey and was carried out in the general framework of the national social economic survey programme. It is uncertain to what extent its results can be compared with the household and cottage industry data generated by the 1975 industry census. For example, in terms of workers this survey definition was limited, including only regular workers. It therefore, probably excluded many of the part-time workers which were included in the 1975 census.

2.4 Ownership and investment patterns in manufacturing

The Indonesian manufacturing sector is dominated by private domestic enterprises, but government-owned enterprises and foreign firms also play an important role, as do enterprises jointly owned by foreign and domestic firms.

While private industry is expected to play a leading role in industrial development, the government has in recent years been involved in large-scale import substitution industries and in joint ventures with foreign enterprises, mainly in resource based industries particularly in steel, LNG, fertilizers, chemicals, cement and paper.

In the 1974/75 Industrial Census, private domestic enterprises consisted of 6,230 medium and large enterprises which produced 47.0 per cent of manufacturing value added and 56.8 per cent of output, engaged 68.7 per cent of employment and contributed 39.5 per cent to fixed capital formation. (Table 5).

The second most important ownership form was the 481 government owned enterprises. These were mainly large-scale enterprises which contributed 25.0 per cent of value added, 19.3 per cent of output, 19.3 per cent of employment and 13.7 per cent of fixed capital formation.

The third major ownership form - consisting of 101 foreign enterprises - contributed 10.8 per cent of value added, 8.2 per cent of output, and 7.1 per cent of fixed capital formation.

The fourth significant ownership form consisted of 84 enterprises jointly owned by foreign and domestic private groups which made a substantial contribution to fixed capital formation, 36.5 per cent, but less so in regard to value added 13.3 per cent and output 12.5 per cent and employment 7.3 per cent. Other ownership forms such as joint government - private enterprises as well as joint government - foreign enterprises played a minor role in the ownership structure in 1974/75.

November 1983

Manufacturing enterprises are mainly classified into three major legal forms: individually owned firms "perseorangan" which are relatively small in size; limited liability companies which are relatively large-scale enterprises; and "perusahaan negara" which are firms registered as state enterprises. The only other significant legal enterprise form consists of limited partnership firms.

Analysis of the particular branches of industry in which different ownership forms predominate reveals that private domestic enterprises operate in all manufacturing branches. They produced more than half of sectoral value added in inter alia iron and steel, pottery and china, wearing apparel, furnitures, plastic wares, clay products, basic chemicals, wood and wood products, printing and publishing, fabricated metal products, other non-metallic mineral products, tobacco, textiles, rubber, and other chemical products. Government-owned firms are engaged in most manufacturing branches and dominate in a few industries such as cement, machinery, food manufacturing and paper and paper products. Foreign enterprises are also operating in most, though not all, manufacturing branches and are predominant in non-ferrous metals, glass and glass products, electrical machinery, beverages, and leather and footwear.

Table 5: Large and medium enterprises, number of establishments, employment value added and average size by ownership, 1974/5

	Establishment		Employment		Value added	Output	Fixed capital formation	Average size
	Number	Percentage share	(000)	Percentage share	Percentage share	Percentage share	Percentage share	Number of employed persons per establishment
Government	481	6.8	126.8	19.3	25.0	19.3	13.7	264
Domestic private	6,230	87.9	450.2	68.7	47.0	56.8	39.5	72
Foreign	101	1.4	16.9	2.6	10.8	8.2	7.1	167
Government and domestic private	84	1.2	8.2	1.2	1.5	1.3	1.1	98
Government and foreign	14	0.2	4.5	0.7	2.1	1.7	1.3	320
Foreign and domestic private	177	2.4	47.8	7.3	13.3	12.5	36.5	270
Others	4	0.1	1.4	0.2	0.3	0.2	0.8	345
Total	7,091	100.0	655.8	100.0	100.0	100.0	100.0	93

Source: BPS 1974/75 Industrial Census, Jakarta, 1978.

Indonesia 2.4.3
November 1983

Indonesia 2.4.4

November 1983

Since the foreign investment law was adopted by the Government in 1967 substantial foreign investment has been approved and implemented in the manufacturing sector. From 1967-1980 around two-thirds of all approved and implemented foreign investment was channelled into the manufacturing sector, mainly textiles and leather, metal products, chemical and rubber, non-metallic minerals, ferrous metals, food and also, though to a lesser extent, paper products, wood products and others (Table 6). Foreign investment has tended to concentrate on capital-intensive branches of the manufacturing sector. The implementation rate was low in some branches, particularly in basic metals (12 per cent) which suggests that ambitious investment plans did not come into fruition.

In regard to domestic investment slightly more than two-thirds of total approved domestic investment was channelled into the manufacturing sector since 1967, mainly in the textile and chemical industry sectors.

Indonesia 2.4.5

November 1983

Table 6: Implementation of foreign investment by branch of industry, 1967-1981
(millionions of US\$)

Sector	1967-74	1975	1976	1977	1978	1979	1980	1981	Total		Imple- men tation rate ^{b/}
									Value	Project ^{a/}	
Manufac- turing Total	<u>1,033.0</u>	<u>392.4</u>	<u>301.2</u>	<u>186.2</u>	<u>267.0</u>	<u>192.0</u>	<u>235.4</u>	<u>243.5</u>	<u>2,850.7</u>	<u>386</u>	<u>40.1</u>
-food	111.7	13.9	10.8	11.9	14.9	7.1	7.4	15.8	193.5	40	58.6
-textiles + leather	443.3	181.9	91.8	27.9	31.4	41.7	78.7	102.5	999.1	60	69.9
-wood + wood prod.	5.5	10.6	4.6	1.4	0.4	0.1	3.3	2.2	28.1	8	15.2
-paper + paper prod.	13.9	0.7	3.3	9.6	11.8	1.4	6.1	2.5	49.3	10	29.2
-chemicals + rubber	146.3	45.9	45.7	28.0	71.7	44.8	32.0	44.5	458.9	117	34.1
-Non-metallic minerals	85.3	54.2	71.3	42.9	9.0	3.2	30.0	30.9	326.8	23	37.7
-Basic metal	37.8	43.3	30.7	27.8	37.8	47.5	23.9	7.9	256.7	19	12.5
-Metal prod.	179.9	41.1	42.4	35.4	89.9	36.0	52.0	35.3	512.0	102	72.0
-Others	9.3	0.9	0.6	1.3	0.1	10.2	2.0	1.9	26.3	7	196.3

Sources: BKPM and Bea Cukai (Import) and Monthly Bulletin of Foreign Exchange Banks (cash in flows).

a/ through September 1981.

b/ Percentage of implemented to approved foreign investment (value).

2.5 Performance and efficiency of the manufacturing sector

While value added in large- and medium-scale manufacturing grew during the 1970s at an average annual rate of about 12 per cent (Table 1), employment rose by only 7 per cent, from 487,000 to 963,000 (Tables 7). The difference reflects a significant growth in average labour productivity. But it also indicates the failure of the manufacturing sector to have a significant direct affect on Indonesia's employment problems, though undoubtedly substantial indirect employment opportunities have been created. However, the increase in employment in large and medium manufacturing of 0.5 million represents only one-fifth of the average annual increase in Indonesia's labour force during the period.

A large part of the increase in employment (more than 80 per cent) was created in the following major branches of industries, ranked in descending order of their contribution to employment creation: textiles, food products, wood products, electric machinery, rubber products, fabricated metal products, tobacco, transport equipment, other non-metallic mineral products, and other chemicals. While some industries, such as food and tobacco have been declining in relative terms, their absolute contribution to employment, value added and fixed capital formation, remained quite significant. Other industries like wood, rubber, fabricated metal products, transport equipment, other non-metallic mineral product and other chemicals increased both their absolute and relative contribution to employment, value added and gross fixed capital formation (Table 9 and 10).

INDONESIA

Table 7 NUMBER OF ESTABLISHMENTS, EMPLOYMENT, WAGES AND SALARIES 1970 - 1980
MONEY VALUES IN NATIONAL CURRENCY (AT CURRENT PRICES)

ISIC	ISIC-DESCRIPTION	NUMBER OF ESTABLISHMENTS		EMPLOYMENT		WAGES AND SALARIES	
		ESTABLISHM.	ESTABLISHM.	EMPLOYEES	EMPLOYEES	(MILLIONS)	
		1970	1980	1970	1980	1970	1980
3000	TOTAL MANUFACTURING	5049 A/	8054 A/	486650 A/	963000 A/	25045 A/	448792 A/
3110	FOOD PRODUCTS	1045	1674	92000	153500	7450	71370
3130	BEVERAGES	50	100	3900	7200	330	8321
3140	TOBACCO	870	715	132000	158700	3730	33563
3210	TEXTILES	1640	1957	142500	229900	5710	77249
3220	WEARING APPAREL, EXCEPT FOOTWEAR	80	134	3000	15500	35	4881
3230	LEATHER PRODUCTS	28	40	1600	3100	80	1137
3240	FOOTWEAR, EXCEPT RUBBER OR PLASTIC	23	57	3300	7500	250	3294
3310	WOOD PRODUCTS, EXCEPT FURNITURE	107	483	7000	58900	360	31220
3320	FURNITURE, EXCEPT METAL	43	137	1700	5700	90	2370
3410	PAPER AND PRODUCTS	40	84	4450	11900	245	7467
3420	PRINTING AND PUBLISHING	196	275	12200	19900	645	12149
3510	INDUSTRIAL CHEMICALS	43	97	5000	13900	440	17067
3520	OTHER CHEMICALS	187	297	20250	40800	1570	34080
3530	PETROLEUM REFINERIES	...	...	...	...	...	...
3540	MISC. PETROLEUM AND COAL PRODUCTS	0	0	0	0	0	0
3550	RUBBER PRODUCTS	56	222	5650	36900	750	20588
3560	PLASTIC PRODUCTS	80	221	5500	17700	270	6043
3510	POTTERY, CHINA, EARTHENWARE	6	21	600	6800	70	2530
3620	GLASS AND PRODUCTS	26	49	3150	8400	140	5668
3690	OTHER NON-METALLIC MINERAL PRODUCTS	205	570	8750	30700	880	17342
3710	IRON AND STEEL	...	23	...	8800	...	8932
3720	NON-FERROUS METALS	...	0	...	0	...	0
3310	FABRICATED METAL PRODUCTS	150	363	13700	40800	870	21297
3820	MACHINERY, EXCEPT ELECTRICAL	47	132	4400	11900	280	8101
3830	MACHINERY ELECTRIC	19	113	3400	37400	200	24318
3840	TRANSPORT EQUIPMENT	39	178	6450	29900	420	27475
3850	PROFESSIONAL & SCIENTIFIC EQUIPMENT	0	25	0	1000	0	368
3900	OTHER MANUFACTURED PRODUCTS	69	83	6150	5700	180	1962

SOURCE: UNIDO DATA BASE, INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

FOOTNOTES:

A/ 3000-3530

INDONESIA

Table 8 GROSS OUTPUT, VALUE ADDED, GROSS FIXED CAPITAL FORMATION 1970 - 1980
MONEY VALUES IN NATIONAL CURRENCY (AT CURRENT PRICES)

ISIC ISIC-DESCRIPTION	GROSS OUTPUT		VALUE ADDED		GROSS FIXED CAPITAL FORMATION	
	AT PRODUCERS' VALUES (MILLIONS)		AT PRODUCERS' VALUES (MILLIONS)		(MILLIONS)	
	1970	1980	1970	1980	1970	1980
3000 TOTAL MANUFACTURING	300420 Δ/	6818400 Δ/	91210 Δ/	2130000 Δ/	37400	452840
3110 FOOD PRODUCTS	104970	1013600	32520	235900	15120	40790
3130 BEVERAGES	3760	78800	1725	32100	70	4580
3140 TOBACCO	93410	1204000	26240	406700	1320	13660
3210 TEXTILES	38945	841300	10780	263400	10200	107380
3220 WEARING APPAREL, EXCEPT FOOTWEAR	775	28700	655	9100	0	3690
3230 LEATHER PRODUCTS	620	18400	170	3300	170	1390
3240 FOOTWEAR, EXCEPT RUBBER OR PLASTIC	2530	31300	1550	16400	120	2240
3310 WOOD PRODUCTS, EXCEPT FURNITURE	2250	376800	785	149800	100	43730
3320 FURNITURE, EXCEPT METAL	360	8800	170	3600	0	1140
3410 PAPER AND PRODUCTS	765	102500	240	31900	10	7700
3420 PRINTING AND PUBLISHING	2525	89300	785	31900	290	8140
3510 INDUSTRIAL CHEMICALS	3060	316000	1265	90800	730	21290
3520 OTHER CHEMICALS	16100	369400	4315	151300	1030	22210
3530 PETROLEUM REFINERIES	...	...	...	...	0	0
3540 MISC. PETROLEUM AND COAL PRODUCTS	0	0	0	0	0	0
3550 RUBBER PRODUCTS	8735	540400	1240	102600	4620	13290
3560 PLASTIC PRODUCTS	1315	71200	280	15500	300	7910
3610 POTTERY, CHINA, EARTHENWARE	215	12400	45	5100	0	7690
3620 GLASS AND PRODUCTS	795	48100	160	22500	10	7210
3690 OTHER NON-METALLIC MINERAL PRODUCTS	5490	245600	2865	125100	280	68430
3710 IRON AND STEEL	...	237700	...	67000	0	8130
3720 NON-FERROUS METALS	...	0	...	0	0	0
3810 FABRICATED METAL PRODUCTS	7540	285300	3040	74200	1130	20340
3820 MACHINERY, EXCEPT ELECTRICAL	1170	81300	415	33400	80	3540
3830 MACHINERY ELECTRIC	1190	387200	375	112600	330	16020
3840 TRANSPORT EQUIPMENT	2980	402800	845	136100	1460	20340
3850 PROFESSIONAL & SCIENTIFIC EQUIPMENT	0	2800	0	1400	0	120
3900 OTHER MANUFACTURED PRODUCTS	920	24700	745	8300	30	1940

SOURCE: UNIDO DATA BASE, INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

FOOTNOTES:

Δ/ 3000, 3530

INDONESIA

Table 9 NUMBER OF ESTABLISHMENTS, EMPLOYMENT, WAGES AND SALARIES 1970 - 1980
BRANCH SHARES (IN PERCENT) IN TOTAL MANUFACTURING

ISIC	ISIC-DESCRIPTION	NUMBER OF ESTABLISHMENTS		EMPLOYMENT		WAGES AND SALARIES	
		ESTABLISHM. (PERCENT)	ESTABLISHM. 1980	EMPLOYEES (PERCENT)	EMPLOYEES 1980	(PERCENT)	1980
3000	TOTAL MANUFACTURING	100.00	100.00	100.00	100.00	100.00	100.00
3110	FOOD PRODUCTS	20.70	20.78	18.90	15.94	29.75	15.90
3130	BEVERAGES	0.99	1.24	0.80	0.75	1.32	1.85
3140	TOBACCO	17.23	0.88	27.12	16.48	14.89	7.48
3210	TEXTILES	32.48	24.30	29.28	23.87	22.80	17.21
3220	WEARING APPAREL, EXCEPT FOOTWEAR	1.50	1.66	0.62	1.61	0.14	1.09
3230	LEATHER PRODUCTS	0.55	0.50	0.33	0.32	0.32	0.25
3240	FOOTWEAR, EXCEPT RUBBER OR PLASTIC	0.46	0.71	0.68	0.78	1.00	0.73
3310	WOOD PRODUCTS, EXCEPT FURNITURE	2.12	6.00	1.44	6.12	1.44	6.94
3320	FURNITURE, EXCEPT METAL	0.85	1.70	0.35	0.59	0.36	0.53
3410	PAPER AND PRODUCTS	0.79	1.04	0.91	1.24	0.98	1.66
3420	PRINTING AND PUBLISHING	3.80	3.46	2.51	2.07	2.78	2.71
3510	INDUSTRIAL CHEMICALS	0.85	1.20	1.03	1.44	1.76	3.80
3520	OTHER CHEMICALS	3.70	3.69	4.16	4.24	6.27	7.59
3530	PETROLEUM REFINERIES	...	...	...	...	...	...
3540	MISC. PETROLEUM AND COAL PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00
3550	RUBBER PRODUCTS	1.11	2.76	1.16	3.83	2.99	4.59
3560	PLASTIC PRODUCTS	1.50	2.74	1.13	1.84	1.08	1.35
3610	POTTERY, CHINA, EARTHENWARE	0.12	0.26	0.12	0.71	0.28	0.56
3620	GLASS AND PRODUCTS	0.51	0.61	0.65	0.92	0.56	1.24
3690	OTHER NON-METALLIC MINERAL PRODUCTS	4.06	7.08	1.80	3.19	3.51	3.86
3710	IRON AND STEEL	...	0.29	...	0.91	...	1.99
3720	NON-FERROUS METALS	...	0.00	...	0.00	...	0.00
3810	FABRICATED METAL PRODUCTS	2.97	4.51	2.82	4.24	3.47	4.75
3820	MACHINERY, EXCEPT ELECTRICAL	0.93	1.64	0.90	1.24	1.12	1.81
3830	MACHINERY ELECTRIC	0.38	1.40	0.70	3.88	0.80	5.42
3840	TRANSPORT EQUIPMENT	0.77	2.21	1.33	3.10	1.68	6.12
3850	PROFESSIONAL & SCIENTIFIC EQUIPMENT	0.00	0.31	0.00	0.10	0.00	0.08
3900	OTHER MANUFACTURED PRODUCTS	1.37	1.03	1.26	0.59	0.72	0.44

SOURCE: UNIDO DATA BASE, INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

FOOTNOTES:

A/ 3000-3530

INDONESIA

Table 10 GROSS OUTPUT, VALUE ADDED, GROSS FIXED CAPITAL FORMATION, 1970 - 1980
BRANCH SHARES (IN PERCENT) IN TOTAL MANUFACTURING

ISIC ISIC-DESCRIPTION	GROSS OUTPUT AT PRODUCERS' VALUES (PERCENT)		VALUE ADDED AT PRODUCERS' VALUES (PERCENT)		GROSS FIXED CAPITAL FORMATION (PERCENT)	
	1970	1980	1970	1980	1970	1980
			FACTOR	FACTOR		
3000 TOTAL MANUFACTURING	100.00 Δ/	100.00 Δ/	100.00 Δ/	100.00 Δ/	100.00	100.00
3110 FOOD PRODUCTS	34.94	14.87	35.65	11.08	40.43	9.01
3130 BEVERAGES	1.25	1.16	1.89	1.51	0.19	1.01
3140 TOBACCO	31.09	17.66	28.77	19.09	3.53	3.02
3210 TEXTILES	12.96	12.34	11.82	12.37	27.27	23.71
3220 WEARING APPAREL, EXCEPT FOOTWEAR	0.26	0.42	0.72	0.43	0.00	0.01
3230 LEATHER PRODUCTS	0.21	0.27	0.19	0.15	0.45	0.30
3240 FOOTWEAR, EXCEPT RUBBER OR PLASTIC	0.84	0.46	1.70	0.77	0.32	0.49
3310 WOOD PRODUCTS, EXCEPT FURNITURE	0.75	5.53	0.86	7.03	0.27	9.66
3320 FURNITURE, EXCEPT METAL	0.12	0.13	0.19	0.17	0.00	0.25
3410 PAPER AND PRODUCTS	0.25	1.50	0.26	1.50	0.03	1.70
3420 PRINTING AND PUBLISHING	0.84	1.31	0.86	1.50	0.78	1.00
3510 INDUSTRIAL CHEMICALS	1.02	4.63	1.39	4.26	1.95	4.70
3520 OTHER CHEMICALS	5.36	5.42	4.73	7.10	2.75	4.90
3530 PETROLEUM REFINERIES	...	...	...	...	0.00	0.00
3540 MISC. PETROLEUM AND COAL PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00
3550 RUBBER PRODUCTS	2.91	7.93	1.36	4.82	12.35	2.93
3560 PLASTIC PRODUCTS	0.44	1.04	0.31	0.73	0.80	1.75
3610 POTTERY, CHINA, EARTHENWARE	0.07	0.18	0.05	0.24	0.00	1.70
3620 GLASS AND PRODUCTS	0.26	0.71	0.18	1.06	0.03	1.59
3690 OTHER NON-METALLIC MINERAL PRODUCTS	1.83	3.60	3.14	5.87	0.75	15.11
3710 IRON AND STEEL	...	3.49	...	3.15	0.00	1.00
3720 NON-FERROUS METALS	...	0.00	...	0.00	0.00	0.00
3810 FABRICATED METAL PRODUCTS	2.51	4.18	3.33	3.48	3.02	4.49
3820 MACHINERY, EXCEPT ELECTRICAL	0.39	1.19	0.45	1.57	0.21	0.78
3830 MACHINERY ELECTRIC	0.40	5.68	0.41	5.29	0.88	3.54
3840 TRANSPORT EQUIPMENT	0.99	5.91	0.93	6.39	3.90	4.49
3850 PROFESSIONAL & SCIENTIFIC EQUIPMENT	0.00	0.04	0.00	0.07	0.00	0.01
3900 OTHER MANUFACTURED PRODUCTS	0.31	0.36	0.82	0.39	0.08	0.43

SOURCE: UNIDO DATA BASE, INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

FOOTNOTES:

Δ/ 3000-3530

Indonesia 2.5.6

November 1983

Data on annual growth rates of real value added (11.8 per cent) and employment (7.1 per cent) during the 1970s imply an average annual growth rate in labour productivity of 4.7 per cent. The rate of growth in labour productivity was very high in some of the capital-intensive branches such as non-metallic minerals, non-electrical machinery, fabricated metals, and industrial chemicals and also food processing and textiles. It should however be observed that these data are in some respects incomplete and subject to cautious interpretation.

The level of labour productivity by industrial branches as measured by value added per employee (Table 11) shows that the average labour productivity for the large and medium manufacturing sector was US \$ 3,500 in 1980. As was to be expected very high levels of labour productivity are found in iron and steel, industrial chemicals, transport equipment, cement and other chemicals; but also for beverages and to some extent paper, glass, and electrical machinery. The lowest levels of labour productivity are in garments, pottery and furniture industries.

In general it may be said that Indonesian manufacturing sector has become more capital intensive since 1970 as reflected in the decline in the share of wages and salaries in value added from 27.5 per cent in 1970 to 21.1 per cent in 1980 (Table 11). During the same period the share of value added in gross output remained largely unchanged around 30 per cent.

INDONESIA

Table 11 PERFORMANCE OF MANUFACTURING SECTOR BY BRANCHES 1970 and 1980

ISIC	ISIC-DESCRIPTION	VALUE ADDED PER EMPLOYEE		VALUE ADDED PER ESTABLISHMENT		SHARE OF WAGES & SALARIES IN VALUE ADDED PERCENT		SHARE OF GFCF IN VALUE ADDED PERCENT		SHARE OF VALUE ADDED IN GROSS OUTPUT PERCENT	
		(THOUSAND US\$) 1970	1980	(THOUSAND US\$) 1970	1980	1970	1980	1970	1980	1970	1980
3000	TOTAL MANUFACTURING	0.5A/	3.5A/	49A/	423A/	27.5A/	21.1A/	...	...	30.4A/	31.2A/
3110	FOOD PRODUCTS	1.0	2.5	85	225	22.9	30.3	46.5	17.3	31.0	27.5
3130	BEVERAGES	1.2	7.1	95	514	19.1	25.9	4.1	14.3	45.9	40.7
3140	TOBACCO	0.5	4.1	83	910	14.2	8.3	5.0	3.4	28.1	33.8
3210	TEXTILES	0.2	1.8	18	215	53.0	29.3	94.6	40.8	27.7	31.3
3220	WEARING APPAREL, EXCEPT FOOTWEAR	0.6	0.9	22	109	5.3	53.6	...	40.5	84.5	31.7
3230	LEATHER PRODUCTS	0.3	1.7	17	132	47.1	34.5	100.0	41.2	27.4	17.9
3240	FOOTWEAR, EXCEPT RUBBER OR PLASTIC	1.3	3.5	185	460	16.1	20.1	7.7	13.7	61.3	52.4
3310	WOOD PRODUCTS, EXCEPT FURNITURE	0.3	4.1	20	496	45.9	20.8	12.7	29.2	34.9	30.8
3320	FURNITURE, EXCEPT METAL	0.3	1.0	11	42	52.9	65.8	...	31.7	47.2	40.9
3410	PAPER AND PRODUCTS	0.1	4.3	16	608	102.1	23.4	4.2	24.1	31.4	31.1
3420	PRINTING AND PUBLISHING	0.2	2.6	11	183	88.5	38.1	36.9	25.5	31.1	35.7
3510	INDUSTRIAL CHEMICALS	0.7	10.5	81	1498	34.8	18.8	57.7	23.4	41.3	28.7
3520	OTHER CHEMICALS	0.6	5.9	63	815	36.4	22.5	23.9	14.7	26.8	41.0
3530	PETROLEUM REFINERIES	...	...	...	...	...	...	...	...	...	...
3540	MISC. PETROLEUM AND COAL PRODUCTS	...	...	...	...	...	...	...	...	...	...
3550	RUBBER PRODUCTS	0.6	4.4	61	739	60.5	20.1	372.6	12.9	14.2	19.0
3560	PLASTIC PRODUCTS	0.1	1.4	10	112	96.4	39.0	107.1	51.0	21.3	21.8
3610	POTTERY, CHINA, EARTHENWARE	0.2	1.2	21	389	155.6	49.6	...	150.6	20.9	41.1
3620	GLASS AND PRODUCTS	0.1	4.0	17	735	87.5	25.2	6.3	32.0	20.1	46.8
3690	OTHER NON-METALLIC MINERAL PRODUCTS	0.9	6.5	38	351	30.7	13.9	9.8	54.7	52.2	50.9
3710	IRON AND STEEL	...	12.2	...	4661	...	13.3	...	12.1	...	28.2
3720	NON-FERROUS METALS	...	...	...	...	...	...	...	...	...	...
3710	FABRICATED METAL PRODUCTS	0.6	2.9	56	327	28.6	28.7	37.2	27.4	40.3	26.0
3820	MACHINERY, EXCEPT ELECTRICAL	0.3	4.5	24	405	67.5	24.7	19.3	10.6	35.5	41.1
3830	MACHINERY ELECTRIC	0.3	4.8	54	1594	53.3	21.6	88.0	14.2	31.5	29.1
3840	TRANSPORT EQUIPMENT	0.4	7.3	59	1223	49.7	20.2	172.8	14.9	28.4	33.8
3990	PROFESSIONAL & SCIENTIFIC EQUIPMENT	...	2.2	...	90	...	26.3	...	8.6	...	50.0
3900	OTHER MANUFACTURED PRODUCTS	0.3	2.3	30	160	24.2	23.6	4.0	23.4	81.0	33.6

SOURCE: UNIDO DATA BASE, INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

A/ VALUE ADDED (IN US \$) WAS CALCULATED USING VALUE ADDED IN NATIONAL CURRENCY AND MID-YEAR EXCHANGE RATES

FOOTNOTES:

A/ 3000-3530

November 1983

2.6 Structure and development of exports and imports of manufactured goods

One pervasive feature of the Indonesian manufacturing sector is the low share of manufactures in total exports and the predominance of manufactures in total imports which resulted in a trade deficit in manufactured goods. This trade deficit in manufactures increased from US\$ 3.6 billion in 1975 to 6.4 - 6.5 billion in 1980. The deficit was quite significant when compared with total manufactured imports of US\$ 9.3 billion and 7.0 billion in 1980 according to the "broad" and "narrow" definitions of manufactured trade respectively (Table 12).

According to the definition of trade in manufactures covering items recognized as exclusively manufactured goods, i.e. those with a high degree of manufactured content (narrow definition), the share of exported manufactures in total exports amounted to only 2.3 per cent in 1980. Taking manufactures as comprising a wider range of processing stages (broad definition), their share in total trade amounted to considerably more, 13.4 per cent. Irrespective of the definition used, the share of manufactures in total exports increased only marginally during the 1970s.

The most important manufactured export items in 1980 were petroleum products (40.4 per cent according to "broad" definition); non-ferrous metal (14.5 per cent); animal vegetable oils (9.7 per cent); wood products (8.6 per cent); tea and mate (3.8 per cent); animal feed (3.6 per cent); clothing (3.3 per cent); and electrical machinery (3.3 per cent).

Indonesia is highly dependant upon manufactured imports. The import dependence of manufactured goods however declined significantly from 77.3 per cent of total imports in 1975 to 64.9 per cent in 1980, covering manufactures with a high processing level (narrow definition) while the corresponding share of manufactures covering the extended list (broad definition) fell from 94.4 per cent to 86.2 per cent.

The reduced import dependence of manufactured goods is the result of the import substitution strategy pursued by the Government. The most important

INDONESIA

Table 12 PRODUCT MIX OF TRADED MANUFACTURED GOODS, 1970, 1975, 1980

SITC DESCRIPTION OF TRADE GOODS	EXPORTS				IMPORTS			
	1970	1975	1980	1980	1970	1975	1980	1980
	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)
01 MEAT AND MEAT PREPARATIONS	...	0.317	0.183	4779	...	0.048	0.060	5581
02 DAIRY PRODUCTS AND EGGS	...	0.041	0.021	603	...	0.605	0.857	80080
032 FISH N.E.S. AND FISH PREPARATIONS	0.557	0.001	0.017	502	...	0.044	0.030	2815
0422 RICE, GLAZED OR POLISHED NOT OTHERWISE WORKED	...	0.016	0.103	3043	...	7.221	7.391	690424
045 MEAL AND FLOUR OF WHEAT OR OF MESLIN	...	0.036	...	...	...	0.056	0.061	5714
047 MEAL AND FLOUR OF CEREALS, EXCEPT ABOVE	...	0.009	...	...	...	0.006	0.001	52
040 CEREALS PREPARAT. & STARCH OF FRUITS & VEGETAB.	...	0.068	0.136	4001	...	0.115	0.071	6644
052 DRIED FRUIT	0.026	0.001	0.002	67	...	0.008	0.017	1544
053 FRUIT, PRESERVED AND FRUIT PREPARATIONS	0.014	0.094	0.142	4183	...	0.035	0.051	4793
055 VEGETABLES, ROOTS & TUBERS, PRESERVED OR PREPARED	6.100	0.013	0.127	3735	...	0.087	0.161	15063
06 SUGAR, SUGAR PREPARATIONS AND HONEY	1.832	1.078	0.781	22976	...	0.759	1.749	163348
0713 COFFEE EXTRACTS, ESSENCES, CONCENTRATES & SIMILAR	0.001	...	0.079	2324	...	0.001	0.002	198
0722 COCOA POWDER, UNSWEETENED	...	0.035	0.615	18077	...	0.002	0.018	1661
0723 COCOA BUTTER AND COCOA PASTE	0.000	0.117	0.054	1584	...	0.001	0.000	9
073 CHOCOLATE AND RELATED FOOD PREPARATIONS	...	...	...	...	...	0.009	0.005	508
074 TEA AND MATE	13.607	5.845	3.832	112669	...	0.001	0.002	162
081 FEEDING-STUFF FOR ANIMALS	4.852	4.929	3.547	104312	...	0.012	0.410	38313
09 MISCELLANEOUS FOOD PREPARATIONS	0.222	0.129	0.086	2541	...	0.066	0.088	8174
11 BEVERAGES	0.066	0.019	0.012	359	...	0.075	0.109	10145
122 TOBACCO MANUFACTURES	0.625	1.514	0.049	1450	...	0.156	0.057	4297
2219 FLOUR AND MEAL OF OIL SEEDS, NUTS, KERNELS	...	0.004	...	...	...	0.006	0.002	219
231 CRUDE RUBBER, SYNTH. & RECLAIMED (EXCL. SITC 2311)	0.000	0.000	0.000	0	...	0.035	0.209	19558
243 WOOD, SHAPED OR SIMPLY WORKED	1.694	3.575	8.611	253202	...	0.003	0.000	22
251 PULP AND WASTE PAPER	0.000	0.000	...	...	...	0.112	0.672	62766
2626 WOOL SHODDY	...	...	...	...	...	0.000	0.000	6
2627 WOOL OR OTHER ANIMAL HAIR, CARDED OR COMBED	0.012	...	...	...	...	0.000	...	...
2628 WOOL TOPS	...	...	...	...	...	...	0.014	1311
2629 WASTE OF WOOL AND OTHER ANIMAL HAIR N.E.S.	...	...	...	...	...	...	0.000	2
263 COTTON	...	...	0.000	4	...	1.368	2.043	190886
265 SYNTHETIC AND REGENERATED (ARTIFICIAL) FIBRES	...	...	0.002	46	...	0.717	1.020	95252
267 WASTE MATERIALS FROM TEXTILE FABRICS (INCL. RAGS)	...	0.002	0.002	58	...	0.031	0.025	2381
332 PETROLEUM PRODUCTS	28.144	44.819	40.383	1187458	...	4.408	7.410	692224
4 ANIMAL AND VEGETABLE OILS AND FATS	27.176	18.144	9.686	284805	...	0.060	0.095	8848
411 ANIMAL OILS AND FATS	...	0.001	0.005	132	...	0.011	0.008	748
421 FIXED VEGETABLE OILS, SOFT (INCL. SITC 422)	27.047	18.142	9.518	279871	...	0.018	0.009	859
431 ANIMAL AND VEGETABLE OILS AND FATS PROCESSED	0.128	0.000	0.163	4801	...	0.031	0.078	7241

INDONESIA
Table 12 PRODUCT MIX OF TRADED MANUFACTURED GOODS, 1970, 1975, 1980 2/

SITC DESCRIPTION OF TRADE GOODS	EXPORTS				IMPORTS			
	1970	1975	1980	1980	1970	1975	1980	1980
	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	PERCENT (1000 US \$)	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	PERCENT (1000 US \$)
5 CHEMICALS	4.018	2.754	2.850	83005	...	17.929	13.435	1255020
51 CHEMICALS ELEMENTS AND COMPOUNDS	...	0.214	0.419	12322	...	2.655	5.523	515953
52 TAN AND CHEMICALS FROM COAL/PETROLEUM, NAT. GAS	...	0.000	0.057	1679	...	0.012	0.009	837
53 DYEING, TANNING AND COLOURING MATERIALS	0.215	0.019	0.052	1540	...	1.267	1.043	97439
54 MEDICINAL AND PHARMACEUTICAL PRODUCTS	2.029	1.409	0.397	11668	...	0.725	0.855	79871
55 ESSENTIAL OILS AND PERFUME MATERIALS	1.570	1.090	0.734	21571	...	0.339	0.436	40740
56 FERTILIZERS, MANUFACTURED	0.001	0.020	1.187	34892	...	8.908	0.770	71915
57 EXPLOSIVES AND PYROTECHNIC PRODUCTS	...	...	...	...	...	0.082	0.098	9120
58 PLASTIC MATERIALS, REGENERATED CELLUL. & RESINS	...	0.001	0.001	29	...	2.020	3.269	305400
59 CHEMICAL MATERIALS AND PRODUCTS N.E.S.	0.204	0.009	0.004	105	...	1.921	1.432	133744
6 MANUFACTURED GOODS CLASSIFIED BY MATERIAL	8.166	10.433	20.905	614700	...	23.850	21.981	2053326
61 LEATHER MANUFACTURED N.E.S. & DRESSED FUR SKINS	0.298	0.066	0.235	6909	...	0.012	0.014	1313
62 RUBBER MANUFACTURES N.E.S.	0.014	0.021	0.015	432	...	0.657	0.606	56614
63 WOOD AND CORK MANUFACTURES (EXCL. FURNITURE)	0.084	0.123	2.500	73519	...	0.078	0.036	3378
64 PAPER, PAPER BOARD AND MANUFACTURES THEREOF	0.000	0.039	0.161	4734	...	1.339	1.840	171886
65 TEXTILE YARN, FABRICS, MADE-UP ARTICLES	1.365	0.222	1.559	45828	...	3.426	2.323	216975
66 NON-METALLIC MINERAL MANUFACTURES, N.E.S.	0.005	0.039	1.085	31901	...	2.203	1.353	126362
67 IRON AND STEEL	...	0.041	0.639	18776	...	10.837	10.349	966700
68 NON-FERROUS METALS	6.036	9.518	14.524	427072	...	1.472	2.077	194025
69 MANUFACTURES OF METAL, N.E.S.	0.364	0.369	0.188	5528	...	3.827	3.384	316075
7 MACHINERY AND TRANSPORT EQUIPMENT	2.664	3.639	3.706	108962	...	39.357	38.900	3433821
71 MACHINERY, OTHER THAN ELECTRIC	2.664	1.674	0.139	4095	...	18.298	19.858	1055004
72 ELECTRICAL MACHINERY, APPARATUS AND APPLIANCES	...	1.468	3.304	97143	...	8.783	8.014	748641
73 TRANSPORT EQUIPMENT	...	0.493	0.263	7724	...	12.275	11.028	1030176
8 MISCELLANEOUS MANUFACTURED ARTICLES	0.223	2.374	4.089	120242	...	2.213	3.053	245192
81 SANITARY, PLUMBING, HEATING & LIGHTNING FIXTURES	...	0.019	0.009	250	...	0.206	0.139	13007
82 FURNITURE	...	0.025	0.106	3111	...	0.125	0.092	8581
83 TRAVEL GOODS, HANDBAGS AND SIMILAR ARTICLES	...	0.000	0.019	550	...	0.021	0.014	1517
84 CLOTHING	0.001	0.276	3.342	98274	...	0.107	0.033	3095
85 FOOTWEAR	0.009	0.029	0.049	1450	...	0.044	0.025	2376
86 PROFESSIONAL, SCIENT. & CONTROLL. INSTRUMENTS	...	0.858	0.128	3766	...	0.948	1.416	132299
89 MISCELLANEOUS MANUFACTURED ARTICLES, N.E.S.	0.213	1.177	0.437	12841	...	0.764	1.331	124317
TOTAL MANUFACTURES	134535	881067	2940488	...	4504732	9341385	...	
TOTAL: SITC 5-8 LESS 68 2/	12155	85390	500636	...	3688363	7033374	...	
TOTAL TRADED GOODS: SITC 0-9	1055090	7130200	21908890	...	4769717	10834394	...	

NOTE: DATA AND SITC DESCRIPTIONS REFER TO SITC REVISION 1

2/ THIS TABLE IS BASED ON THE DEFINITION OF TRADE IN MANUFACTURES COVERING A LIST OF 148 SPECIFICALLY IDENTIFIED SITC 3-DIGIT OR 4-DIGIT CODES COMPRISING A WIDE RANGE OF PROCESSING STAGES OF MANUFACTURED GOODS.

3/ DEFINITION OF TRADE IN MANUFACTURES SITC 5-8 LESS 68 IS ONE OF THE MOST OFTEN FOUND.

IT COVERS ONLY ITEMS RECOGNIZED AS EXCLUSIVELY MANUFACTURED GOODS, I.E. WITH A HIGH LEVEL OF MANUFACTURING CONTENT.

SOURCE: UNIDO DATA BASE; INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE.

manufactured imports were in the capital goods category, mainly machinery and transport equipment (38.9 per cent of total imports in 1980) as well as some intermediate goods including iron and steel (10.4 per cent), petroleum products (7.4 per cent), chemicals (5.5 per cent) and processed rice (7.4 per cent).

The main countries of origin of manufactured imports to Indonesia were the developed market economies, particularly the EEC and Japan, which provided 72.3 per cent of all Indonesia's imports according to the "broad" and 84.7 per cent according to the "narrow" definitions of manufactured trade. The corresponding import shares from other developing countries were 22.5 per cent and 10.6 per cent respectively (Table 13).

The main trading partners of Indonesia's manufactured exports covering items with high processing content (narrow definition) were other developing countries (65.3 per cent) followed by the EEC (15.0 per cent) and Japan (8.4 per cent). This trade pattern is different however when manufactures comprising a wider range of items are considered. There the main countries of destination were the developed market economies (70.7 per cent) in particular Japan (38.8 per cent) and the EEC (22.2 per cent) while exports to other developing countries accounted for 27.8 per cent (Table 14).

An examination of exports and imports according to the stage of processing reveals some potential linkages between trade and industrialization (Table 15). On the export side the high, though declining, share of non-processed goods for further processing of 72.13 per cent in 1980 seems to point towards further potential for stimulating resource-based industrialization. In fact, there was a slight increase in the relatively small level of exports of processed goods for final use from 4.7 per cent to 7.5 per cent, but a slight decline in processed goods for further processing from 6.6 per cent to 5.3 per cent, from 1970 to 1980. As far as imports are concerned, the high share of processed goods for final use of 69.3 per cent would seem to indicate the possibility of further import-substitution induced growth. The data reaffirm the potential of trade in fostering industrial growth both in regard to export substitution and import replacement.

INDONESIA

Table 13 ORIGIN OF IMPORTS OF MANUFACTURES BY BRANCHES, 1980 2/

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
5 CHEMICALS	1255020	12.68	82.36	21.65	25.19	28.41	1.28
51 CHEMICALS ELEMENTS AND COMPOUNDS	515953	14.26	80.98	17.90	22.56	34.55	1.48
52 TAR AND CHEMICALS FROM COAL, PETROLEUM, NAT. GAS	837	26.42	72.04	18.82	39.62	12.25	0.00
53 DYING, TANNING AND COLOURING MATERIALS	97439	10.45	85.67	2.72	39.31	25.93	2.06
54 MEDICINAL AND PHARMACEUTICAL PRODUCTS	79871	12.15	86.08	21.48	43.22	9.17	1.03
55 ESSENTIAL OILS AND PERFUME MATERIALS	40740	15.30	81.40	13.59	34.90	26.52	0.10
56 FERTILIZERS, MANUFACTURED	71915	24.28	71.39	12.40	40.05	7.61	3.16
57 EXPLOSIVES AND PYROTECHNIC PRODUCTS	9120	1.80	91.89	8.32	59.28	22.01	0.00
58 PLASTIC MATERIALS, REGENERATED CELLUL. & RESINS	305400	8.27	84.34	33.56	13.39	33.38	1.01
59 CHEMICAL MATERIALS AND PRODUCTS N.E.S.	133744	12.18	84.11	31.22	27.41	18.99	0.13
6 MANUFACTURED GOODS CLASSIFIED BY MATERIAL	2053326	18.45	76.11	7.59	10.22	47.16	1.02
61 LEATHER MANUFACTURED N.E.S. & DRESSED FUR SKINS	1313	19.24	54.22	9.70	21.67	18.91	1.35
62 RUBBER MANUFACTURES N.E.S.	56614	18.59	76.26	14.74	20.27	36.64	0.01
63 WOOD AND CORK MANUFACTURES (EXCL. FURNITURE)	3378	37.50	58.62	26.58	4.54	20.40	1.09
64 PAPER, PAPER BOARD AND MANUFACTURES THEREOF	171886	12.42	85.13	10.29	19.72	15.63	0.50
65 TEXTILE YARN, FABRICS, MADE-UP ARTICLES	216975	37.43	44.63	4.75	2.78	36.67	0.02
66 NON-METALLIC MINERAL MANUFACTURES, N.E.S.	126362	20.62	72.35	6.91	19.84	34.89	2.10
67 IRON AND STEEL	966700	17.45	78.97	6.64	5.59	60.82	1.01
68 NON-FERROUS METALS	194025	14.09	81.09	4.85	8.35	31.11	1.72
69 MANUFACTURES OF METAL, N.E.S.	316075	13.31	82.78	11.43	20.10	46.76	1.34
7 MACHINERY AND TRANSPORT EQUIPMENT	3633021	5.45	90.65	13.51	21.95	49.63	0.78
71 MACHINERY, OTHER THAN ELECTRIC	1055004	6.74	89.29	18.38	21.24	41.24	0.34
72 ELECTRICAL MACHINERY, APPARATUS AND APPLIANCES	748641	5.42	88.29	11.56	29.99	43.12	0.40
73 TRANSPORT EQUIPMENT	1030176	3.14	94.82	6.16	17.38	69.47	0.42
8 MISCELLANEOUS MANUFACTURED ARTICLES	285192	13.76	77.31	17.69	19.39	36.56	0.20
81 SANITARY, PLUMBING, HEATING & LIGHTNING FIXTURES	13007	23.33	69.63	10.40	34.44	21.59	0.36
82 FURNITURE	8581	44.24	39.67	9.54	13.08	13.20	0.27
83 TRAVEL GOODS, HANDBAGS AND SIMILAR ARTICLES	1517	29.37	10.28	3.10	2.70	3.64	0.00
84 CLOTHING	3095	26.95	61.47	24.49	5.23	15.56	0.12
85 FOOTWEAR	2376	19.18	65.40	16.76	19.04	12.58	0.42
86 PROFESSIONAL, SCIENT. & CONTROLL. INSTRUMENTS	132299	6.73	89.58	23.30	24.84	37.30	0.22
89 MISCELLANEOUS MANUFACTURED ARTICLES, N.E.S.	124317	17.51	69.09	13.06	13.02	40.34	0.17
TOTAL MANUFACTURES	9341385	22.45	72.26	13.46	15.28	36.37	0.73
TOTAL: SITC 5-8 LESS 68 A/	7033334	10.63	84.65	0.73	19.37	45.10	0.80
TOTAL TRADED GOODS: SITC 0-9	10834394	30.25	65.02	13.01	13.33	31.50	0.63

NOTE: DATA AND SITC DESCRIPTIONS REFER TO SITC REVISION 1

2/ THIS TABLE IS BASED ON THE DEFINITION OF TRADE IN MANUFACTURES COVERING A LIST OF 148 SPECIFICALLY IDENTIFIED SITC 3-DIGIT OR 4-DIGIT CODES COMPRISING A WIDE RANGE OF PROCESSING STAGES OF MANUFACTURED GOODS.

A/ DEFINITION OF TRADE IN MANUFACTURES SITC 5-8 LESS 68 IS ONE OF THE MOST OFTEN FOUND.

IT COVERS ONLY ITEMS RECOGNIZED AS EXCLUSIVELY MANUFACTURED GOODS, I.E. WITH A HIGH LEVEL OF MANUFACTURING CONTENT.

SOURCE: UNIDO DATA BASE; INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE.

INDONESIA

Table 13 ORIGIN OF IMPORTS OF MANUFACTURES BY BRANCHES, 1980

SITC DESCRIPTION OF TRADE GOODS	WORLD	DEVELOPING	DEVELOPED MARKET ECONOMIES				CENTRALLY
	TOTAL (1000 US\$)	COUNTRIES (PERCENT)	TOTAL (PERCENT)	USA (PERCENT)	EFC (PERCENT)	JAPAN (PERCENT)	PLANNED DEVELOPED COUNTRIES (PERCENT)
01 MEAT AND MEAT PREPARATIONS	5581	48.70	51.03	16.19	4.27	1.09	0.04
02 DAIRY PRODUCTS AND EGGS	80080	0.93	97.46	3.50	16.10	0.38	1.61
032 FISH N.E.S. AND FISH PREPARATIONS	2815	15.29	84.69	6.18	0.36	55.14	0.00
0422 RICE, GLAZED OR POLISHED NOT OTHERWISE WORKED	690424	62.03	25.84	17.27	0.00	11.27	0.00
046 MEAL AND FLOUR OF WHEAT OR OF MESLIN	5714	0.12	99.88	99.85	0.00	0.00	0.00
047 MEAL AND FLOUR OF CEREALS, EXCEPT ABOVE	52	54.83	45.17	15.15	25.47	0.00	0.00
048 CEREALS PREPARAT. & STARCH OF FRUITS & VEGETAB.	6644	19.69	80.09	5.54	9.87	0.90	0.01
052 DRIED FRUIT	1549	85.70	14.26	7.74	0.01	0.00	0.00
053 FRUIT, PRESERVED AND FRUIT PREPARATIONS	4793	30.51	47.48	37.10	3.58	2.25	0.08
055 VEGETABLES, ROOTS & TUBERS, PRESERVED OR PREPARED	15063	47.57	4.47	2.50	0.51	0.56	0.00
06 SUGAR, SUGAR PREPARATIONS AND HONEY	163368	88.14	4.84	0.18	1.24	3.15	0.01
0713 COFFEE EXTRACTS, ESSENCES, CONCENTRATES & SIMILAR	198	8.97	91.03	58.63	4.66	27.59	0.00
0722 COCOA POWDER, UNSWEETENED	1661	61.64	38.36	0.68	37.56	0.00	0.00
0723 COCOA BUTTER AND COCOA PASTE	9	4.88	95.12	22.64	2.40	34.36	0.00
073 CHOCOLATE AND RELATED FOOD PREPARATIONS	508	16.34	83.23	24.80	43.10	3.28	0.43
074 TEA AND MATE	162	82.06	17.94	9.31	5.46	2.45	0.00
081 FEEDING-STUFF FOR ANIMALS	38313	93.12	6.78	4.65	0.74	1.08	0.00
09 MISCELLANEOUS FOOD PREPARATIONS	8174	19.71	79.96	26.85	31.73	5.92	0.05
11 BEVERAGES	10145	31.67	68.07	7.65	54.80	1.40	0.14
122 TOBACCO MANUFACTURES	5297	0.90	99.10	21.03	74.47	1.70	0.00
2219 FLOUR AND MEAL OF OIL SEEDS; NUTS; KERNELS	219	16.77	33.96	0.92	32.41	0.50	0.00
231 CRUDE RUBBER, SYNTH. & RECLAIMED (EXCL. SITC 2311)	19558	1.46	92.24	11.51	6.90	73.74	0.25
243 WOOD, SHAPED OR SIMPLY WORKED	22	99.71	0.29	0.29	0.00	0.00	0.00
251 PULP AND WASTE PAPER	62766	11.02	63.08	19.04	1.36	3.81	0.07
2626 WOOL SHUDDY	6	0.00	100.00	0.00	65.45	0.00	0.00
2628 WOOL TOPS	1311	0.00	100.00	0.00	0.00	0.00	0.00
2629 WASTE OF WOOL AND OTHER ANIMAL HAIR N.E.S.	2	100.00	0.00	0.00	0.00	0.00	0.00
263 COTTON	190886	17.22	73.95	69.65	0.54	0.12	8.04
266 SYNTHETIC AND REGENERATED (ARTIFICIAL) FIBRES	95252	12.48	75.37	10.52	4.66	50.66	0.06
267 WASTE MATERIALS FROM TEXTILE FABRICS (INCL. RAGS)	2301	13.49	84.97	45.31	13.65	19.52	0.19
332 PETROLEUM PRODUCTS	692224	92.30	7.35	3.88	1.30	1.50	0.00
4 ANIMAL AND VEGETABLE OILS AND FATS	8848	13.83	84.76	4.41	30.35	32.82	0.00
411 ANIMAL OILS AND FATS	748	17.58	81.61	12.45	32.65	1.36	0.00
421 FIXED VEGETABLE OILS, SOFT (INCL. SITC 422)	859	35.17	64.80	28.44	23.39	2.59	0.00
431 ANIMAL AND VEGETABLE OILS AND FATS PROCESSED	7241	10.91	87.46	0.73	30.94	39.66	0.00

Indonesia 2.6.6
November 1983

INDONESIA

Table 14 DESTINATION OF EXPORTS OF MANUFACTURES BY BRANCHES, 1980 ^{a/}

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EFC (PERCENT)	JAPAN (PERCENT)	
5 CHEMICALS	83005	57.34	42.03	14.55	15.67	8.81	0.00
51 CHEMICALS ELEMENTS AND COMPOUNDS	12322	27.16	70.83	2.70	9.37	55.73	0.00
52 TAR AND CHEMICALS FROM COAL, PETROLEUM, NAT. GAS	1679	100.00	0.00	0.00	0.00	0.00	0.00
53 DYEING, TANNING AND COLOURING MATERIALS	1540	58.76	41.24	0.83	35.82	2.94	0.00
54 MEDICINAL AND PHARMACEUTICAL PRODUCTS	11668	47.03	52.17	14.80	32.29	0.00	0.00
55 ESSENTIAL OILS AND PERFUME MATERIALS	21571	9.91	89.00	46.93	35.52	2.06	0.00
56 FERTILIZERS, MANUFACTURED	34892	98.43	1.57	0.00	0.00	0.00	0.00
53 PLASTIC MATERIALS, REGENERATED CELLUL. & RESINS	29	14.62	0.08	0.00	0.00	0.00	0.00
59 CHEMICAL MATERIALS AND PRODUCTS N.E.S.	105	54.34	29.04	0.00	0.03	29.01	0.00
6 MANUFACTURED GOODS CLASSIFIED BY MATERIAL	614700	42.86	54.36	1.88	33.83	18.09	1.76
61 LEATHER MANUFACTURED N.E.S. & DRESSED FUR SKINS	6909	23.96	75.05	2.44	7.24	64.09	0.10
62 RUBBER MANUFACTURES N.E.S.	432	53.04	46.96	0.00	0.00	0.05	0.00
63 WOOD AND CORK MANUFACTURES (EXCL. FURNITURE)	73519	59.66	38.25	13.03	11.60	13.29	0.04
64 PAPER, PAPER BOARD AND MANUFACTURES THEREOF	4734	95.61	4.39	0.00	0.06	0.00	0.00
65 TEXTILE YARN, FABRICS, MADE-UP ARTICLES	45828	62.53	36.30	2.86	11.24	17.36	0.02
66 NON-METALLIC MINERAL MANUFACTURES, N.E.S.	31901	88.01	11.99	0.00	0.00	10.40	0.00
67 IRON AND STEEL	18776	70.09	21.48	0.00	0.00	21.48	0.00
68 NON-FERROUS METALS	427072	32.00	64.60	0.11	45.36	19.13	2.52
69 MANUFACTURES OF METAL, N.E.S.	5528	51.55	0.64	0.02	0.46	0.15	0.00
7 MACHINERY AND TRANSPORT EQUIPMENT	108962	95.32	4.61	0.09	3.47	0.86	0.04
71 MACHINERY, OTHER THAN ELECTRIC	4095	94.71	4.23	0.24	1.15	2.19	1.06
72 ELECTRICAL MACHINERY, APPARATUS AND APPLIANCES	97143	98.61	1.39	0.08	0.53	0.76	0.00
73 TRANSPORT EQUIPMENT	7724	54.32	45.26	0.20	41.74	1.40	0.00
8 MISCELLANEOUS MANUFACTURED ARTICLES	120242	43.29	56.41	7.46	36.65	3.29	0.00
81 SANITARY, PLUMBING, HEATING & LIGHTNING FIXTURES	250	98.31	1.69	1.56	0.05	0.00	0.00
82 FURNITURE	3111	8.38	91.62	1.56	18.70	32.16	0.00
83 TRAVEL GOODS, HANDBAGS AND SIMILAR ARTICLES	550	7.67	92.28	0.41	74.96	11.06	0.00
84 CLOTHING	98274	45.67	54.31	7.56	37.86	0.72	0.00
85 FOOTWEAR	1450	32.80	67.11	16.04	4.93	17.93	0.00
86 PROFESSIONAL, SCIENT. & CONTROLL. INSTRUMENTS	3766	79.56	20.42	0.03	0.09	19.83	0.00
89 MISCELLANEOUS MANUFACTURED ARTICLES, N.E.S.	12841	24.54	72.80	9.82	45.06	9.17	0.00
TOTAL MANUFACTURES	2940488	27.80	70.67	7.61	22.24	38.82	0.43
TOTAL: SITC 5-8 LESS 68 ^{a/}	500636	65.31	33.22	1.79	15.02	8.35	0.00
TOTAL TRADED GOODS: SITC 0-9	21908890	19.92	77.75	19.64	6.33	49.26	0.65

NOTE: DATA AND SITC DESCRIPTIONS REFER TO SITC REVISION 1

^{a/} THIS TABLE IS BASED ON THE DEFINITION OF TRADE IN MANUFACTURES COVERING A LIST OF 148 SPECIFICALLY IDENTIFIED SITC 3-DIGIT OR 4-DIGIT CODES COMPRISING A WIDE RANGE OF PROCESSING STAGES OF MANUFACTURED GOODS.^{b/} DEFINITION OF TRADE IN MANUFACTURES SITC 5-8 LESS 68 IS ONE OF THE MOST OFTEN FOUND.

IT COVERS ONLY ITEMS RECOGNIZED AS EXCLUSIVELY MANUFACTURED GOODS, I.E. WITH A HIGH LEVEL OF MANUFACTURING CONTENT.

SOURCE: UNIDO DATA BASE; INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE.

INDONESIA
 Table 14 DESTINATION OF EXPORTS OF MANUFACTURES BY BRANCHES, 1980 ^{2/}

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)
01 MEAT AND MEAT PREPARATIONS	4779	4.46
02 DAIRY PRODUCTS AND EGGS	603	99.14
032 FISH N.E.S. AND FISH PREPARATIONS	502	1.39
0422 RICE, GLAZED OR POLISHED NOT OTHERWISE WORKED	3043	99.91
048 CEREALS PREPARAT. & STARCH OF FRUITS & VEGETAB.	4001	12.41
052 DRIED FRUIT	67	95.02
053 FRUIT, PRESERVED AND FRUIT PREPARATIONS	4183	73.85
055 VEGETABLES, ROOTS & TUBERS, PRESERVED OR PREPARED	3735	12.50
06 SUGAR, SUGAR PREPARATIONS AND HONEY	22976	42.78
0713 COFFEE EXTRACTS, ESSENCES, CONCENTRATES & SIMILAR	2324	15.85
0722 COCOA POWDER, UNSWEETENED	18077	99.74
0723 COCOA BUTTER AND COCOA PASTE	1584	100.00
074 TEA AND MATE	112669	45.72
091 FEEDING-STUFF FOR ANIMALS	104312	18.44
09 MISCELLANEOUS FOOD PREPARATIONS	2541	39.22
11 BEVERAGES	359	7.43
122 TOBACCO MANUFACTURES	1450	62.39
231 CRUDE RUBBER, SYNTH. & RECLAIMED (EXCL. SITC 2311)	0	0.00
243 WOOD, SHAPED OR SIMPLY WORKED	253202	36.98
263 COTTON	4	0.00
264 SYNTHETIC AND REGENERATED (ARTIFICIAL) FIBRES	46	0.00
267 WASTE MATERIALS FROM TEXTILE FABRICS (INCL. RAGS)	58	3.55
332 PETROLEUM PRODUCTS	1187458	4.33
4 ANIMAL AND VEGETABLE OILS AND FATS	284805	33.20
411 ANIMAL OILS AND FATS	132	48.88
421 FIXED VEGETABLE OILS, SOFT (INCL. SITC 422)	279871	32.63
431 ANIMAL AND VEGETABLE OILS AND FATS PROCESSED	4801	66.18

107

DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES
TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	(PERCENT)
95.54	0.00	95.54	0.00	0.00
0.86	0.01	0.69	0.00	0.00
98.61	0.00	20.51	78.10	0.00
0.09	0.00	0.09	0.00	0.00
87.59	0.13	39.12	47.99	0.00
4.98	0.00	4.98	0.00	0.00
26.15	0.01	23.30	1.30	0.00
65.81	0.00	0.79	65.03	0.00
44.53	0.00	0.00	44.53	0.00
84.15	0.00	0.00	84.15	0.00
0.26	0.00	0.00	0.26	0.00
0.00	0.00	0.00	0.00	0.00
54.28	18.08	17.29	0.24	0.00
79.66	0.00	72.14	6.58	1.39
58.76	11.31	40.98	0.01	0.00
85.35	28.98	50.76	5.61	0.00
37.61	30.06	0.18	0.00	0.00
0.00	0.00	0.00	0.00	0.00
56.94	1.20	42.71	10.17	0.09
100.00	0.00	0.00	100.00	0.00
100.00	0.00	0.00	100.00	0.00
96.65	0.00	0.00	96.65	0.00
95.30	12.35	1.49	80.89	0.00
66.32	7.08	54.71	2.62	0.00
51.12	0.00	0.06	51.06	0.00
67.37	7.20	55.65	2.57	0.00
5.70	0.00	1.59	4.11	0.00

Indonesia 2.6.8
 November 1983

INDONESIA

Table 15. SHARES OF EXPORTS AND IMPORTS CLASSIFIED ACCORDING TO LEVEL OF PROCESSING 1970 AND 1980 AND TREND GROWTH RATES 1970-1975 AND 1975-1980

CLASSES	E X P O R T S				I M P O R T S			
	CLASS SHARE OF TOTAL		CLASS GROWTH RATE		CLASS SHARE OF TOTAL		CLASS GROWTH RATE	
	(PERCENTAGE) 1970	(PERCENTAGE) 1980	(PERCENTAGE) 1970-1975	(PERCENTAGE) 1975-1980	(PERCENTAGE) 1970	(PERCENTAGE) 1980	(PERCENTAGE) 1970-1975	(PERCENTAGE) 1975-1980
A : NON-PROCESSED GOODS FOR FURTHER PROCESSING	85.58	72.13	56.74	19.01	0.00	13.81	66.57	45.21
B : PROCESSED GOODS FOR FURTHER PROCESSING	6.59	5.32	45.66	34.28	0.00	16.08	40.37	24.48
C : NON-PROCESSED GOODS FOR FINAL USE	3.18	15.04	36.62	83.39	0.00	0.82	11.15	5.57
D : PROCESSED GOODS FOR FINAL USE	4.65	7.52	74.51	27.30	0.00	69.28	49.18	10.69
SUM OF CLASSES: A+B+C+D IN 1000 CURRENT US\$		1970 1054739		1980 21908890		1970 0		1980 10834394
TOTAL TRADE SITC 0-9 IN 1000 CURRENT US\$		1055090		21908890		0		10834394

SOURCE: UNIDO DATA BASE; INFORMATION SUPPLIED BY THE UNITED NATIONS STATISTICAL OFFICE, WITH ESTIMATES BY THE UNIDO SECRETARIAT.

NOTE: CALCULATIONS ARE BASED ON CURRENT US DOLLAR PRICES.
SUM OF CLASSES AND TOTAL TRADE FIGURES SHOULD BE IDENTICAL. DISCREPANCIES OR ZERO VALUES ARE DUE TO LACK OF COUNTRIES' TRADE REPORTING IN GENERAL, BUT ESPECIALLY AT THE 3-, 4- AND 5-DIGIT SITC LEVEL.

3. INDUSTRIAL DEVELOPMENT STRATEGIES, POLICIES AND PLANS

3.1 Principles, objectives and targets

Since 1969, the Government of Indonesia has included objectives for industrial development in its Five Year plans. These objectives have undergone substantial shifts in emphasis. In REPELITA I (1969/70-1973/74) priority was assigned to industries ancillary to food production and agriculture generally, such as fertilizer, as well as rehabilitation and development of older import-substitution industries, such as textiles. In REPELITA II (1974/75-1978/79) priorities shifted, with a greater emphasis on social objectives, especially employment creation and protection of pribumi entrepreneurs. REPELITA III (1979/80-1983/84) with the financial resources provided by the oil boom at hand, widened objectives to include broad-based industrial development on the basis of domestic oil, mineral, timber and other natural resources and the promotion of labour-intensive manufactured exports.

The formulation of targets for industrialization under REPELITA IV (1984/85-1988/89) is still under way, though the broad outlines have been indicated in various high level official statements. In general, it is proposed that manufacturing should take the place of the oil sector as the main engine of growth. Oil and agriculture will of course remain important, but manufacturing is expected to contribute an increasing proportion of value added, net foreign earnings and employment.

As regards the composition of manufacturing output, promotion of export industries is to receive high priority in order to help fill the gap left by declining oil earnings. Current plans, however, also include further import substitution, especially in the processing of raw materials into intermediate products needed by downstream manufacturers. The development of such industries should also help correct the regional imbalance of manufacturing industries, since most of the raw materials will come from the outer islands.

The specific objectives of REPELITA III provide for programs of government support through the introduction of a more clearly defined incentives system coupled with straightforward licensing procedures, financial assistance through the government banking system and technical extension services for

December 1983

marketing management and production planning. The Plan calls for an improved climate of industrial development, through simplification of procedures for licensing and investment. Government procurement will be mainly limited to domestic industrial output. The Plan calls for increased efforts in the promotion of government support services to improve management through provision of training facilities. Priority is given to ensuring more widespread use of labour-intensive technology. To encourage regional industrial development, industrial estates will be developed in various locations. The Plan also emphasizes policies and programmes to promote and support small-scale industries, including inter alia encouraging large industries to use the output of small industries. The improvement of productivity without reducing labour intensity is a major objective of the Plan. The Plan stipulates that public resources will be used to assist the implementation of programmes emphasizing equity objectives covering industries which are labour intensive and which fulfill basic human needs, while programmes emphasizing growth objectives, being mainly capital intensive, will rely mainly on private domestic and foreign resources. For this purpose state enterprises are encouraged to form joint-ventures with foreign partners.

The specific objectives of industrial development in REPELITA IV are: to generate employment opportunities, equal opportunity for business and export promotion; to increase and save foreign exchange reserves; and to support regional development through utilisation of local natural, energy and human resources. The main emphasis of industrial development is: to promote the engineering industry; to manufacture raw materials utilizing new technology in support of agricultural development; to accelerate co-operatives of handicrafts and small industry development; to improve productivity; and to standardise product quality. Industrial development is to be launched by establishing industrial growth centers in the regions with natural and human resources potentials with emphasis on creating linkages between small, medium and large industries. More attention is to be given to the national private sector by providing equal business opportunity.

The planned growth rates of REPELITA IV are 5 per cent for GDP, 3 per cent for agriculture and 9.5 per cent for manufacturing including small and cottage industries. In REPELITA IV great emphasis is placed on the establishment of engineering industries both with regard to heavy and light machinery and equipment.

3.2 Policy instruments

The main policy instruments applied by the Government to promote industrial development include incentives and tariffs, regulatory and administrative controls, financial and foreign investment policies.

The system of incentives consists of numerous price and non-price interventions that influence production, imports and exports. The average level of tariff protection is relatively moderate (about 30 per cent for all tradeable goods in 1975), but considerable variations exist between various industries ranging from +4,315 per cent for tyre and tube industry to -35 per cent for the Batik industry. These large variations seem to have emerged in response to ad hoc requests from private firms and manufacturers associations. There is some evidence that the trade policy is biased towards production for the domestic market and against exports which has resulted in resources being allocated to capital-intensive sectors. The two devaluations of the Rupiah in 1978 and 1983 and the introduction of an export rebate scheme combined with reduced import tariffs and sales taxes for intermediate goods have partly mitigated the import substitution bias, but effective protection appears to be increasing due to domestic pressures.

The private sector is controlled through an extensive system of regulations and administrative controls which are aimed at meeting various industrial development objectives such as: employment creation; income distribution; development of indigenous entrepreneurs; control of non-indigenous business class; "orderly" industrialisation; development of a strong industrial base; and regional dispersal of industry. A wide range of licences and permits are used to achieve these objectives such as investment licences, trading licences, and labour safety licences. The impact of these upon industrial investment and entrepreneurship however remains to be demonstrated.

Investment licences are issued by the Investment Co-ordinating Board (BKPM) involving detailed evaluation of investment proposals. The major instrument used by the BKPM is the annual investment priority list (DSP), which is a promotional and control system upon which import tariff rebates for

December 1983

capital equipment and raw materials are based. The list specifies a large number of sub-sectors which are subject to licences and differentiated tax and investment allowances.

The foreign investment policy adopted by the government before 1974 was primarily an "open door" policy. After 1974 the foreign investment policy became increasingly restrictive, involving greater specification of foreign investment by sector and location, increased local ownership of foreign firms, requirements for more rapid promotion of Indonesians to managerial positions, and restrictions on foreign firms engaging in distribution and marketing activities and credit restrictions for joint ventures in the domestic market.

A wide range of incentives are offered to foreign investment in priority areas including exemption from import duties, tax holidays, dividend taxes, investment allowances, accumulated depreciation, carry forward of losses and others. Foreign investors are also granted certain rights for foreign exchange transfers. Further, Indonesia has concluded investment guarantee agreements with a number of developed countries and has ratified the Convention on the Settlement of Investment Disputes between States and nationals of other States.

Financial policies are designed to play a promotional role in industrial development. The major objectives of these policies are: to use increased resources for overall development while maintaining price stability; to allocate credit to priority industrial sectors; to promote economic activities and strengthen weak entrepreneurs; and to create an institutional environment conducive to augmenting the available range of financial services. The major policy instruments used to achieve these objectives have been the government budget, credit ceilings, the interest rate structure, the rediscount rate, the proportion of loans rediscounted and various regulations.

3.3 Major planned industrial projects

As part of the long-range industrial strategy a list of major planned industrial projects was issued by the Government in August 1982, comprising 52 industrial projects with estimated investment requirement of around US\$ 11,793 million, including 27 projects in the basic chemical industrial sector (investment US\$ 9,198 million), 18 projects in the basic metal industries sector (investment US\$ 2,226 million) and 7 projects in the multi-farious industrial sub-sector (investment US\$ 369 million). These investment projects were expected to be implemented by public, private domestic and foreign enterprises during REPELITA III and REPELITA IV.

Originally it was envisaged that most projects would commence 1980/81 and be completed by 1986. However, in response to the balance of payments crisis which developed in 1982/83 and in an attempt to close the external resource gap, the government decided in 1983 to shelve four major public sector projects and to review the priorities of the whole investment programme. The four projects that have been rescheduled are the US\$ 1.5 billion Musi oil refinery, the US\$ 0.6 billion Bintang aluminium project, the US\$ 1.5 billion aromatic plant in Plaju and the US\$ 1.6 billion Olefin complex in Aceh.

The 1982 investment list comprised the following 52 projects, some of which have been implemented while others are being negotiated or rescheduled (Table 16).

Table 16: Industrial Projects Cited in 16 August 1982 State Address

No.	Category/project/factory	Location	Status	Products	Capacity	Target completion date	Est. cost (\$m)	Remarks
I. <u>BASIC CHEMICALS</u> : 27 projects, total investment \$9,198 m.								
1.	Fertilizer distribution	Multiple	New	Fertilizer marketing	-	n.a.	357	Capital cost involves purchase of bulk carriers and railway rolling stock, construction of packaging plants and warehouses. Project underway.
2.	Kaltim Fertilizer I	E. Kal	New	Urea Amonia	570,000 tons/yr 165,000 tons/yr	1982	367	Trial operation has commenced.
3.	ASEAN Fertilizer	Aceh	New	Urea	570,000 tons/yr	1983	313	Under construction.
4.	Iskandar Muda Fertilizer	Aceh	New	Urea Amonia	1,725 tons/day 1,000 tons/day	1984	385	Site being prepared.
5.	PT Petrokimia	Gresik	Exp.	TSP	500,000 tons/yr	1983	117	(Includes harbour and water purification plant.
6.	PT Petrokimia	Gresik	Exp.	Phosphoric and sulf. acid, gypsum	1.5m. tons/yr	n.a.	256	(Both plants under construction.
7.	Kaltim Fertilizer II	E. Kal.	New	Urea Amonia	570,000 tons/yr 165,000 tons/yr	1984	375	Represents first phase expansion of Kaltim I. Now under construction.
8.	PN Leces Pulp and Paper	E.Java	Exp.	Writing/ printing paper	260 tons/day	1984	220	(Represents 3rd and 4th phase expansion of Leces. Raw material: bagasse. Phase III already under construction.
9.	PN Leces Pulp and Paper	E.Java	Exp.	Newsprint	90,000 tons/yr	1985	220	(

Table 16 continued

No.	Category/project/factory	Location	Status	Products	Capacity	Target completion date	Est. cost (\$m)	Remarks
10.	Cilacap Pulp and Paper	W.Java	New	Kraft paper/ cement bags	90,000 tons/yr	1985	200	
11.	Integrated forest-based industry	E.Kal.	New	Plywood/timber Pulp	203,500m ³ /yr 165,000 tons/yr	1985	650	
12.	Olefin Centre ^{a/}	Aceh	New	Ethane Ethylene Caustic soda Other	450,000 tons/yr 340,000 tons/yr 251,000 tons/yr 540,000 tons/yr	1988	2,800	Exxon has tentatively agreed to major equity investment in ethane extraction-phase (est. \$300 m.) Japanese and local partners envisaged for VCM, caustic soda, and EDC phase. Preliminary studies still in course.
13.	Aromatics Centre	S.Sum.	New	Benzene PTA Cyclohexane Other	256,000 tons/yr 225,000 tons/yr 180,000 tons/yr 66,000 tons/yr	1986	1,785	Main constructors: Thyssen/Pullman Kellog; design work underway.
14.	PT Semen Padang	W.Sum	Exp.	Cement	600,000 tons/yr	1983	138	Unit IIIA under construction.
15.	PT Semen Padang	W.Sum	Exp.	Cement	600,000 tons/yr	1984	132	Unit IIIB under construction.
16.	PT Semen Tonasa	S.Sul	Exp.	Cement	590,000 tons/yr	1984	144	Under construction.
17.	PT Semen Cibinong	W.Java	Exp.	Cement	800,000 tons/yr	1984	120	Site being prepared.
18.	Kupang Cement	NTT	New	Cement	120,000 tons/yr	1984	35	Described as 'mini' plant; under construction.
19.	Madura Cement	Madura	New	Cement	2m. tons/yr	n.a.	438	
20.	PT Semen Baturaja	S.Sum	Exp.	Cement	500,000 tons/yr	n.a.	130	

Table 16 continued

No.	Category/project/factory	Location	Status	Products	Capacity	Target completion date	Est. cost (\$m)	Remarks
21.	Industrial Rubber	Cilegon	New	Industrial rubber products, heavy duty tyres	n.a.	n.a.	160	License issued.
22.	Soda ash project	Gresik	New	Soda ash	200,000 tons/yr	n.a.	120	
23.	Industrial salt proj.	NTT	New	Industrial salt	n.a.	n.a.	90	
24.	Polyester Factory ^{a/}	Gresik	New	Polyester	n.a.	n.a.	(	Under construction.
25.	Polyester Factory ^{a/}	Cilegon	New	Polyester	n.a.	n.a.	(
26.	Ammonium nitrate factory	W.Java	New	Amm. nitrate for explosives	n.a.	n.a.	56	
27.	Dissolving pulp proj.	S.Sum	New	Rayon fibre	n.a.	n.a.	400	
II. <u>BASIC METALS</u> : 18 projects, total investment \$2,226m.								
28.	Pellet factory ^{b/}	Cilegon	n.a.	Iron pellets	3m. tons/yr	1984	130	Under construction ^{b/} .
29.	Slab factory and Hot Strip Mill ^{b/}	Cilegon	n.a.	Slab and hot strip	n.a.		n.a.	Project completed ^{b/} .
30.	Cold Sheet Mill	Cilegon	n.a.	Cold rolled sheet	500,000 tons/yr	1983	490	
31.	Tin plate factory	Cilegon	n.a.	Tin plate	60-100,000 tons/yr	1985	57	
32.	Seamless pipe factory	n.a.	new	Seamless pipe	150,000 tons/yr	1985	186	
33.	Diesel/gasoline engine factory	Java	New	Diesel/gasoline engines	200,000 units	1984	448	License issued.
34.	Shipyards	Jkt/S'baya UP/Palbg	New	(New ships (Repairs	21,000 BRT 540,000 BRT	1984	50	Construction underway.

Table 16 continued

No.	Category/project/factory	Location	Status	Products	Capacity	Target completion date	Est. cost (\$m)	Remarks
35.	Casting prods. factory	Cilegon	n.a.	Casting products	48,000 tons/yr	1984	91	
36.	Forging prods. factory	Cilegon	n.a.	Parts, chassis, transmissions	31,000 tons/yr	1984	75	
37.	Machine tool factory	Cilegon	n.a.	Lathes	650 units	1984	4	License issued.
38.	Heavy equipment fact. ^{a/}	Java	New	Wheel loaders Crawler tractors Excavators	2,980 units 700 units 100 units	n.a.	(147 (
39.	Railway carriage fact.	Madun	New	Freight cars Passenger cars	200 units 42 units	1984	96	Under construction.
40.	Power train factory	Jkt. or Sby.	New	Suspension/ steering systems for motor vehicles	150,000 units	1985	38	
41.	Motorcycle engine factory	Jkt. or Sby.	New	Motorcycle engines	200,000 units	1985	17	
42.	General Machinery	Jkt. or Sby.	New	Sugar, palmoil mill and crumb rubber	465,000 tons/yr	1985	235	
43.	Copper cathode fact.	O.I.	New	Copper cathodes	40,000 tons/yr	1985	130	
44.	Heavy elect. machinery	Jkt. or Sby	New	Heavy elect. eqpt.	n.a.	1985	28	
45.	Die and Mould factory	n.a.	New	Dies and moulds	n.a.	1985	5	

Indonesia 3.3.5
December 1983

Table 16 continued

No.	Category/project/factory	Location	Status	Production	Capacity	Target completion date	Est. cost (\$m)	Remarks
III. <u>LIGHT MANUFACTURING</u> : 7 projects, total investment \$369m.								
46.	PT Sandang I	W. Java	Exp.	(Weaving yarn (and improve-	n.a.	1983	74	Expansion to 90,000 spindles.
47.	PT Sandang II	E. Java	Exp.	(ment in (quality	n.a.	1983	99	Expansion to 120,000 spindles.
48.	PT Primissima	Yogya	Exp.	(	n.a.	1982	50	Expansion to 60,000 spindles.
49.	Pinda Sandang	C. Java	Exp.	(	n.a.	1983	25	Expansion to 30,000 spindles.
50.	PN Garam	Madura	Exp.	Salt	300,000 tons/yr	1986	25	Rehabilitation (production includes present output). Contract signed.
51.	Science-based Indust. Park	Jkt./Bdg.	New	Electronics	n.a.	1985	19	
52.	Electronic Component Plt.	Bdg.	New	Electronics components	n.a.	1985	75	
IV. <u>PERTAMINA REFINERY AND PETROCHEMICAL PLANNED PROJECTS NOT INCLUDED ABOVE</u> : 6 projects \$6,387m.								
1.	Cilacap Refinery	Cilacap	Exp.	Refinery products	215 MBSD	1983	1,178	Pertamina share \$223m, main contractor Fluor Eastern Inc. Construction 31% completed.
2.	Balikpapan Refinery	E. Kal	Exp.	Refinery products	228 MBSD	1983	1,509	Pertamina share \$385m, main contractor Bechtel Internatl. Construction 13% completed.
3.	Dunai Hydrocracker	Riau	New	Refinery products	82 MBSD	1983	1,521	Pertamina share \$370m, main contractor Tecnicas-Reunidas/Centurion. Construction 7% completed.

Indonesia 3.3.6
December 1983

Table 16 continued

No.	Category/project/factory	Location	Status	Products	Capacity	Target completion date	Est. cost (\$m)	Remarks
4.	Methanol Project	E.Kal	New	Methanol	330,000 tons/yr	1985	341	Land clearing almost completed.
5.	Arun LNG Refinery	Aceh	Exp.	LNG	3.3m. tons/yr	1984	842	Main contractor Choyoda Chem. Eng. Construction 2% completed.
6.	Badak LNG Refinery	E.Kal	Exp.	LNG	3.3m. tons/yr	1983	996	Main contractor Bechtel Internatl. Construction 28% completed.

Source: Ministry of Industry, 'Long Range Development Plan of Indonesia', Jakarta, 14 October 1982; and Pertamina.

Notes: a/ Planned as joint venture.

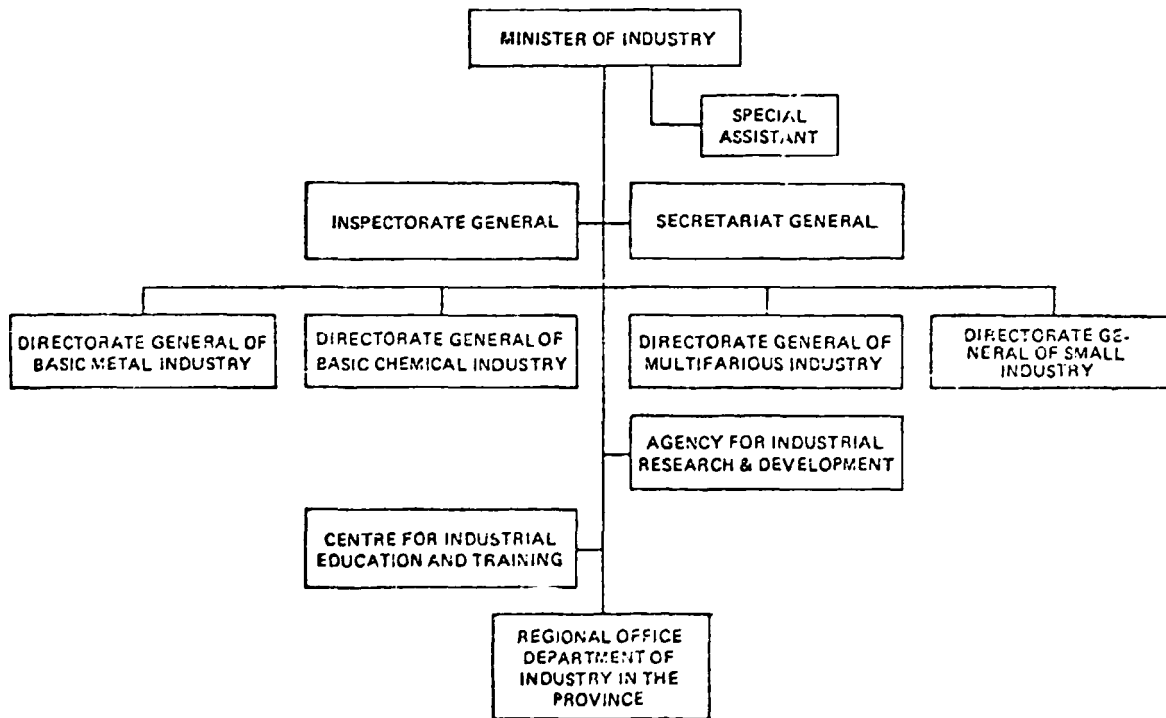
b/ Not clear whether these and other projects in Cilegon are to be regarded as extensions of PT Krakatau Steel.

4. INSTITUTIONAL INFRASTRUCTURE FOR INDUSTRY

The National Development Planning Agency (BAPPENAS) is responsible for the preparation of Indonesia's five-year development plan - REPELITA - which incorporates an industrial sector plan. BAPPENAS plays the central planning and co-ordinating role vis-a-vis the individual ministerial departments, including the Department of Industry.

The Department of Industry is headed by a Minister of Industry assisted by four Directorate Generals in the fields of Basic Metal Industry, Basic Chemical Industry, Multifarious Industry and Small Industry, as well as an Agency for Industrial Research and Development and a Centre for Industrial Education and Training. The Department of Industry has regional representation in 27 provinces to provide information and guidance to public and private enterprises and for supervision of their activities.

ORGANIZATION CHART OF THE DEPARTMENT OF INDUSTRY.



November 1983

The Government places emphasis on building up a planning machinery at the regional level within Indonesia. Regional development offices - BAPPEDAS - have been established in each province and the regional development unit at BAPPENAS strengthened. The Government has financed an institution known as the Regional Agency for Investment Co-ordination to encourage investment in the Outer Islands. Its role is mainly informative, providing information on investment opportunities in the regions concerned, while final investment approval remain in the hands of the Central Government.

The Department of Industry controls and finances nine major Industrial Research Institutes in the fields of batik and handicraft, ceramics, chemicals, leather, rubber and plastics, metal and machinery industries, cellulose, wood industries, agriculture, and textiles. The Department of Industry also controls and finances nine small Regional Industrial Research Institutes, primarily concerned with testing, quality control and advisory services. In addition, the Minister of State for Research is assisted by Deputy Assistants in the fields of industry and technology; standardisation; instrumentation and metrology; research and scientific information and cross-sectoral research.

The increased importance attached to technology for national economic growth led to the establishment of the Agency for the Assessment and Application of Technology (BPPT) in 1982. The BPPT is a non-departmental government agency directly under and responsible to the President of Indonesia. The organisational structures of BPPT consists of a Chairman, a Vice Chairman, six deputy chairmen for Basic and Applied Sciences, Technology Development, Industrial Analyses, National Resources, System Analyses and Administration as well as a Technical Operations Unit. The basic responsibilities of BPPT are:

- a. to formulate general policies for consideration by the President regarding programmes for the assessment and application of technology for national development;
- b. to provide overall and integrated coordination of the execution

- of programmes for the assessment and application of technology;
- c. to provide services to both government and private organisations in the assessment and application of technology for national development;
 - d. to conduct activities in technology assessment and application which support government policy on the application of technology for development;

The Indonesian Institute of Science (LIPI) is one of the more important scientific and technological research institutes in Indonesia. LIPI co-ordinates, integrates and synchronizes activities in the field of science and technology both at the national and regional levels. Consideration is being given to the strengthening of LIPI's research establishments by merging them into a multidisciplinary National Technological Research Institute.

The Investment Coordinating Board (BKPM) prepares and publishes an investment priority list for foreign and domestic investment. The investment priority list is reviewed annually by BKPM in consultation with various Ministries and Departments responsible for overall economic and sectoral development. The list is based upon the general policy framework established under the Five Year Plan and divides domestic and foreign investment into two categories: i) priority investments entitled to complete corporate tax holiday incentives and ii) fields in which investors are entitled to investment allowances. The investment priority list, sets out certain conditions for investment such as location of projects, production targets, exports and requirements for local participation. For the purpose of streamlining approval procedures for incentives, the Government introduced a "one-stop" investment service for investment applications in 1977. According to this procedure, all formalities are channelled through the Investment Co-ordinating Board (BKPM) - the only body with which prospective investors need to deal.

The major trade association in Indonesia is the Indonesian Chamber of Commerce and Industry (KADIN) whose membership includes representatives from private industry, co-operatives, utilities, public corporations and state-owned enterprises. Indonesian consulting firms have formed the

November 1983

Association of Indonesian Consultants whose members perform a wide range of research and consulting services. Associations of importers and exporters are organized within the All-Indonesia Importers Association (GINS) and the Indonesian Association of Exporters (GPEI).

The Indonesian financial system has expanded rapidly over the last decade both in sophistication and complexity. It now consists of the following banks and institutions: Bank of Indonesia (The Central Bank); 5 state Commercial Banks; 70 Private National Commercial Banks; 10 Foreign Commercial Banks and 1 Joint Venture Bank; 27 Regional Development Banks; 1 State Owned Development Bank, BAPINDO; 3 Development Finance Institutions; 9 Investment Finance Companies; 2 other Finance Companies; 1 State Savings Bank; 2 Private Savings Banks; 83 Insurance Companies; 207 Pension Funds; A Capital Market; A Credit Insurance Agency ASKRINDO; Secondary Financing Institutions such as rural, village and paddy banks; and the informal financial system.

The following development banks now specialise in extending term financing to industry:

- i) Bank Negara Indonesia, BNI, 1946, is a state commercial bank which specialises in providing credit to industry.
- ii) BAPINDO is the principal domestic source of medium- and long-term capital for the private industry sector. BAPINDO finances large-, medium- and small-scale industrial projects in the public and private sectors.
- iii) The Indonesian Development Finance Company (IDFC) is a joint venture between the Bank Indonesia and the Netherlands Finance Company for Developing Countries (FMO) which concentrates on the financing of relatively small industrial projects. IDFC participates in equity financing, and provides some technical assistance to industrial enterprises.

November 1983

- iv) The P.T. Private Development Finance Company of Indonesia (PDFCI), a privately owned development finance company established in 1973, provides medium- and long-term loans and equity investment, and also plays a role in the identification of new projects and in the promotion of new enterprises.
- v) The P.T. BAHANA, a development bank established by the Government in 1973, provides equity financing and managerial assistance to financially weak enterprises and also engages in lending operations on a limited scale mainly for the small-scale industry sector.
- vi) Some of the regional development banks have in the past few years taken an active interest on long-term lending, both for small-scale and medium-scale industry.

The Government has introduced various additional institutional facilities for the financing of small-scale industry and for assisting small-scale entrepreneurs. Loan opportunities are available to small and medium-scale enterprises under the short and medium-term lending schemes of Bank Rakyat Indonesia (BRI), Bank Negara Indonesia 1946 (BNI 1946) and BPD, comprising schemes for lending funds for plant and equipment investment (KIK) and for working capital (KMKP). In addition, there is also a small-scale credit scheme handled by the State Banks and selected Rural Development Banks on the basis of re-financing by the Central Bank, which have provided a large number of small entrepreneurs with much needed long-term funds. In 1971, the Government established the P.T. Asuransi Kredit Indonesia (ASKRINDO) to insure bank loans made available to small entrepreneurs covering up to 75 per cent of the total risks. This insurance scheme was established with a view to inducing banks to pursue more vigorously their term lending to small- and medium-scale enterprises. Further, a non-bank financial institution, UPPINDO founded in 1972, provides funds and assistance to small-scale enterprises.

Assistance in production technology and management to small- and medium-scale industries is carried out mainly by the Department of Industry of the Central Government and by the Offices of Industry of the provisional

November 1983

governments. Measures for development and promotion of small-scale industries are consolidated under a scheme entitled "Industrial Extension Services for Small Industries", BIPIK. This scheme provides assistance to small- and medium-scale industries in the following fields: i) extension services and guidance activities; ii) training in management and technology; iii) marketing assistance; iv) materials procurement support; v) mechanization assistance; vi) quality control and standardization; and vii) surveys and research.

The National Agency for Export Development (NAFED), was created in 1971 under the Ministry of Trade i) to provide information and guidance to the business community about the possibilities of marketing Indonesian products abroad ii) to supply importers and consumers abroad with information about Indonesian export commodities iii) to assist the Government in promoting and achieving export trade targets and iv) to upgrade the practical abilities of businessmen and exporters with emphasis on international trade.

In regard to regional co-operation Indonesia is a member of the Association of South East Asian Nations (ASEAN) comprising also Malaysia, the Philippines, Singapore and Thailand which co-operate in the fields of trade, industry and finance. A tangible result of this cooperation is the ASEAN Large-scale Industrial Project (AIP), the urea plant for Indonesia in Aceh which is expected to become operational in 1984/85. Other means of industrial cooperation is the ASEAN Industrial Completion Scheme (AIC) and the new ASEAN Industrial Joint Venture Scheme (AIJV). These schemes are supported by the ASEAN Preferential Trading Agreement (PTA) under which preferential access to the market of member countries can be granted.

5. RESOURCES FOR INDUSTRIAL DEVELOPMENT

5.1 Human resources

The labour force^{1/} is estimated at 54.3 million in 1980 and projected to 62.9 million in 1985 and 73.2 million in 1990. This corresponds to an annual rate of growth of 3.01 and 3.07 per cent, and labour force participation ratios of 52.6, 53.3 and 54.8 per cent respectively. The overall unemployment rate is increasing and estimated at 4.1 per cent in 1980. Open unemployment threatens to become a problem in Indonesia particularly in urban areas.

Employment in Manufacturing^{2/} grew from 2.95 million in 1971 to 4.68 million in 1980. About half of the increase in manufacturing employment came from household and cottage industries. The small industry sector contributed significantly to employment creation. Employment in the medium- and large-scale industry sector almost doubled from 486,650 in 1970 to 963,000 in 1980.

Projections for employment in industry^{1/} covering manufacturing and construction indicate an increase from 6.6 million in 1980 to 8.4 million in 1985 and 10.6 million in 1990. This corresponds to a share of industry and construction in total employment of 12.7, 14.2 and 15.7 percent respectively.

The Government attaches high priority to human resource development. The employment policies of the government as outlined in REPELITA III encourage general, regional, sectoral and special policies. The general policies which include investment, technology, education, training, and labour management policies, are intended to create a favourable climate for the viability of labour-intensive growth in production and consumption.

^{1/} Source: World Bank, "Indonesia: Financial Resources and Human Development in the Eighties", 3 May 1982.

^{2/} In this chapter manufacturing includes also small-scale industry, household and cottage industry.

November 1983

Training and educational policies in REPELITA III are aimed at overcoming manpower shortages. Senior vocational high schools will be expanded to meet the needs of various sectors for skilled manpower. Vocational training centers will be expanded and non-formal education will be increased to cater for the needs of the illiterate or semi-illiterate portions of the labour force. Curriculum of high schools and universities will be improved to emphasize technology development. Business and private organizations will be provided with incentives and guidance to conduct their own training programmes.

Regional employment and manpower policies are intended to increase the transfer of labour from densely populated to sparsely populated areas. The government's transmigration programme is aimed at transferring close to a million labourers from Java, Bali and Lombok to other islands mainly Sumatra, Sulawesi, Kalimantan and Irian Jaya. Further, an inter-regional labour mobility programme will transfer close to a quarter million workers. Other aspects of the regional employment policy involves reduction in the migration of manpower (educated) from sparsely populated to heavily populated areas and expansion of employment opportunities in rural areas.

Sectoral employment policies are aimed at increasing labour intensity through influencing the choice of products and production technology. The objective is to increase the quantity and upgrade the quality of industrial employment. Towards this end investment policies will be made more balanced and the choice of products and methods of production as labour intensive as possible. Investment in small-scale and home industry will be increased so that the productivity of workers, family labour, and other categories of manpower can be improved. Linkages between large-scale modern industry and small industry will be strengthened. Another aspect of industrial policy is to induce industrial enterprises to adopt multiple shifts in order to maximize the employment-creating effect of existing plant capacity.

Indonesia 5.1.3

November 1983

Educational opportunities were to expand rapidly during REPELITA III. In the field of manpower training a total of at least 300,000 workers were to be trained in government-owned vocational training centers. The construction of 107 new vocational training centers was envisaged. At present there are 15 vocational training centers operational while another 17 centers are scheduled to begin soon. All vocational training centers are located in urban areas throughout the country. The government is presently establishing 120 regional centers to provide training for rural residents. Mobile training units for village residents are also used. Government training programs are provided in such areas as metal and wood working, construction trades, basic and advanced welding, electrical trades and administration.

Indonesia has one of the lowest wage rates in Asia. However, significant differences exist between minimum wages of different industries and regions. A statutory minimum wage in the private sector is determined by the Ministry of Manpower. Wages tend to be lowest in Central Java, Yogyakarta and Bali. Wages are higher in urban areas in Java, particularly Jakarta. However wages are highest in the less populated, but resource-rich islands of Sumatra, Sulawesi, Irian Jaya and Kalimantan, particularly in areas where new investment projects create a strong demand for labour. In general the wage level ranges from around Rp 1,000 (1 US\$) per day for a labourer to Rp 250,000 (243 US\$) per month for trained clerks and secretaries. Well qualified Indonesians, especially those trained abroad command higher salaries, but wages in excess of 400,000 Rp per month (about 388 US\$) are exceptional. In 1980 the average wage per worker (irrespective of skill) in medium- and large-scale enterprises amounted to US\$ 740 per year. In clothing, textiles, furniture and leather annual wages averaged US\$ 500-600.

November 1983

5.2 Raw materials resourcesI Agricultural resources:

Indonesia is estimated to possess about 14.2 million ha arable land, some 6 million ha of which are in Java and Madura. It has been estimated that around 40 million ha of land outside Java could be developed for cash crop cultivation. At present there are 6.6 million ha of plantations.

Agricultural production and food output increased steadily during the 1970s both in absolute terms and relative to population as indicated in Table 17.

Table 17: Agricultural and food production 1975-1981 (1969-71=100)

	1975	1976	1977	1978	1979	1980	1981
Food production - Total	119	119	127	131	134	144	151
Agricultural production	119	119	124	129	132	140	147
Food Production per capita	108	105	111	112	112	119	123
Agricultural production per capita	107	105	108	110	111	116	120

Source: FAO, Production Yearbook 1981, vol. 35, Rome 1982.

A: Cash crops

The agricultural sector is composed of three principal divisions: estate agriculture, which is primarily export oriented and owned by the State; smallholder subsistence farming; and smallholder cash crops. The principal crops for industrial use include rubber, palm oil, copra, coffee, tea, sugar, tobacco, rice and other crops, as indicated in Table 18.

Indonesia 5.2.2

November 1983

Table 18: Principal crops: production ('000 metric tons), 1967-1981

	1967-71 (average)	1979	1980	1981
Rice	19,136	26,283	29,774	33,000
Maize	2,575	3,606	4,012	3,991
Potatoes	99	204	219 ^{a/}	234 ^{a/}
Sweet Potatoes	2,215	2,194	2,193	2,079
Cassava (Manioc)	10,695	13,751	13,532	13,726
Pulses	251	310 ^{a/}	312 ^{a/}	320 ^{a/}
Soybeans	468	680	642	653
Groundnuts (in shell)	462	709	793	855
Coconuts	7,333	10,700 ^{b/}	10,900 ^{b/}	10,800 ^{b/}
Copra	801	1,169	1,301	1,254 ^{b/}
Palm kernels	48.9	113.4	121.1	131
Palm oil	217.9	605.8	676.8	722
Vegetables	2,684	1,985	2,053 ^{a/}	2,131 ^{a/}
Bananas	1,556	1,622	1,622 ^{a/}	1,622 ^{a/}
Other fruit	-	1,383	1,461 ^{a/}	1,490 ^{a/}
Sugarcane	10,322	15,995 ^{a/}	17,085 ^{a/}	17,560 ^{a/}
Coffee (green)	173	253	240	265 ^{b/}
Tea (made)	65	89	95	95
Tobacco (leaves)	73	84	84	85
Natural rubber	838	947	919	937

Source: FAO, Production Yearbook 1981, vol. 35, Rome, 1982

a/ FAO estimate

b/ Unofficial figures

Indonesia is the second largest producer of natural rubber in the world. Production has declined since 1957 and increased only spasmodically after 1963. There is great need for further rehabilitation and replanting. Most rubber is exported without further processing. Efforts are being

Indonesia 5.2.3

November 1983

made to increase the degree of processing and value added through the establishment of crumb rubber factories. Production of natural rubber reached 937,000 tons in 1981, which compares with 838,000 tons in 1969-71.

Indonesia is the world's second largest producer of palm oil. Production is mainly based upon plantation agriculture and increased rapidly during the 1970s, reaching 722,000 tons in 1981 compared with 217,900 tons in 1969-71. Until 1980 a large proportion was exported (73 per cent in 1980) but exports have since declined due to the increased domestic use of palm oil instead of coconut oil for cooking purposes.

Production of copra increased from 801,000 tons in 1969-71 to 1,254,000 tons in 1981. However, most of the trees are old and low yielding. Rehabilitation is slowly making progress and is beginning to make an impact upon output. Indonesia was earlier a substantial exporter of copra but has since become a net importer. However, increased domestic use of palm oil instead of coconut oil for cooking made exports of 19,200 tons possible in 1980.

Indonesia is a major producer of coffee. Production increased from 173,000 tons in 1969-71 to 265,000 tons in 1981, mainly from smallholdings. The major share of domestic production is exported. Coffee is one of Indonesia's main non-oil foreign exchange earners.

Indonesia is the world's fifth largest producer of tea which is mainly grown in the estate sector. Output of tea increased from 65,000 tons in 1969-71 to 95,000 tons in 1981, 85 per cent of which was exported. The country's largest concentration of tea plantations is in West Java (84,000 ha).

Output of tobacco has stagnated in recent years at a level of around 85,000 tons in 1981 which compares with 73,000 tons in 1969-71. Tobacco is mainly grown in the smallholder sector and the main part, around three quarters, is consumed domestically. Production of cloves (cigarettes)

Indonesia 5.2.4

November 1983

are entirely for domestic consumption and has been increasing substantially in recent years.

Indonesia is the third largest producer of rice in the world. It is the most important crop covering 9 million ha harvested area. Rice production, which in 1969-71 amounted to 19 million tons increased to 26.3 million tons in 1979, 29.8 million tons in 1980 and 33.0 million tons in 1981. These production improvements reflect the combined result of improved irrigation, the use of a new variety of rice (IR 36) and increased use of fertilizers. However, in 1982, adverse weather conditions (drought) led to a decline of production unofficially estimated at 23.2 million tons, which necessitated large imports estimated at 900,000 tons for the 1983-84 fiscal year.

Sugarcane is being revived as a plantation crop. The output amounted to 17.6 million tons in 1981 compared with 10.3 million tons in 1969-71. Production of soyabeans and groundnuts reached 653,000 tons and 855,000 tons in 1981. Apart from rice, cassava, sweet potato and maize are mainly used as staples. The production of maize, which has a potential as industrial raw material, amounted to 3.9 million tons in 1981.

B. Animal husbandry

Livestock is important in Indonesia especially in Java, Madura and part of East Indonesia. Table 19 provides the number of livestock and main livestock products:

Indonesia 5.2.5

November 1983

Table 19: Livestock and livestock products 1979-1981

	1979	1980	1981 ^{a/}
<u>Livestock</u> ('000 head, year ending September)			
Cattle	6,365	6,435	6,435
Sheep	4,072	4,196	4,196
Goats	7,569	7,906	7,925
Pigs	2,959	3,296	3,296
Horses	596	616	617
Buffaloes	2,432	2,506	2,506
Chickens ^{b/}	103,341	107,655	111,969
Ducks ^{b/}	15,439	16,558	17,676
<u>Livestock products</u> ('000 metric tons)			
Beef and veal ^{b/}	130	131	131
Buffalo meat ^{b/}	34	35	36
Mutton and lamb ^{b/}	21	22	23
Goats' meat ^{b/}	37	38	40
Pig meat ^{b/}	84	90	96
Poultry meat ^{b/}	102	105	110
Cows	69	69	70
Hen eggs ^{b/}	87	90	96
Other poultry eggs ^{b/}	84	85	89
Cattle and buffalo hides	26.5	26.8	27.1

Source: FAO, Production Yearbook 1981, Vol. 35, Rome 1982.

Note: Figures for meat refer to inspected production only, i.e., from animals slaughtered under government supervision.

^{a/} Provisional^{b/} FAO estimates.

November 1983

C. Fisheries

Fish provide an important part of national diet. Fishery catch however, has not been keeping up with demand. The government is endeavoring to rehabilitate the fishing industry, inter alia by stimulating expansion of fresh water fishery and fishponds. The fish catch 1974-80 is shown in Table 20.

Table 20: Fish Catch, 1974-1980
('000 metric tons, live weight)

	1974	1975	1976	1977	1978	1979	1980
Inland Waters	387.7	393.2	401.4	414.2	420.3	430.5	439.1
Indian Ocean	71.8	72.8	109.2	131.8	116.3	113.8	137.7
Pacific Ocean	873.8	915.6	968.6	1,021.8	1,105.5	1,221.9	1,276.4
Total Catch	1,333.3	1,381.6	1,479.2	1,567.8	1,642.0	1,766.2	1,853.2

Source: FAO, Yearbook of Fishery Statistics 1981, Rome 1982.

D: Forestry

Indonesia is rich in forest resources which represent an important potential contribution to resource-based industrialization. Exports of logs have so far provided, after oil, the second most important source of foreign exchange earnings. Forest and woodland cover 121.8 million ha, or two thirds of total land area. Roundwood removals consisting mainly of logs have fluctuated heavily and amounted to 24.2 million cu.m. in 1980, of which 21.2 million cu.m. were logs (Table 21). Substantial foreign investment has been undertaken in the forestry sector since 1967, but indiscriminate logging and reforestation led the government to ban foreign investment, even on a joint venture basis. Much of the timber output was exported as raw logs, especially to Japan. However, the Government has banned log exports from 1985 onwards. At the same time the Government is actively encouraging the expansion of domestic wood processing, which is still at low levels. Production of sawn timber grew from 4.8 million cu.m. in 1980 to 6.3 million cu.m. in 1981, while output of plywood increased from 1.0 million cu.m. to 1.5 million cu.m. during the same period.

Table 21: Forestry: roundwood removals, 1974-1980
('000 cubic metres, excluding bark)

	1974	1975	1976	1977	1978	1979	1980
Sawlogs, veneer logs and logs for sleepers:							
Coniferous	90	400	500	550 ^{a/}	550 ^{a/}	600 ^{a/}	600 ^{a/}
Non-coniferous	23,190	16,296	23,300	26,080	25,000	21,200	21,200
Pitprops (mine timber)	20	20	20 ^{a/}	20 ^{a/}	20 ^{a/}	20 ^{a/}	20 ^{a/}
Pulpwood	30	20	20 ^{a/}	20 ^{a/}	20 ^{a/}	20 ^{a/}	20 ^{a/}
Other industrial wood	1,988 ^{b/}	2,04 ^{b/}	2,095 ^{b/}	2,150 ^{b/}	2,206 ^{b/}	2,200 ^{b/}	2,316 ^{b/}
TOTAL INDUSTRIAL WOOD	25,318	18,777	25,935	28,820	27,796	24,104	24,156
Fuel Wood ^{d/}	115,059	117,873	120,714	123,580	126,476	129,414	132,398
TOTAL	140,377	136,650	146,649	152,400	154,272	153,518	156,554

Source: FAO, Yearbook of Forest Products, 1980.

^{a/} FAO estimate
^{b/} UN official estimate.

Indonesia 5.2.7
November 1983

November 1983

II Mineral resources

Indonesia is richly endowed with hard mineral resources with significant known deposits of tin, nickel, bauxite, copper, iron sand concentration, gold, silver, iron ore, kaolin, granite, limestone phosphate, uranium asphalt, mangants and molybden. Mineral prospecting however has only covered a small part of the country. Most minerals are exported in unprocessed form. However, the Government is actively encouraging increased domestic processing. Table 22 below summarizes the mining output of the principal minerals.

Output of bauxite stagnated for several years up to 1981 due to the lack of domestic processing facilities and declining export demand from Japan. However, production increased significantly in 1982 to 1.6 million tons. In the wake of recent discovery of extensive deposits in West Kalimantan, output is expected to grow substantially in the future, with the completion of construction of the new aluminum industry in 1984, based on the Asahan hydroelectric project in North Sumatra.

Indonesia possesses an estimated 15 per cent of the world's nickel resources. Production of nickel stagnated from 1979 to 1980 and declined slightly to 1.46 million tons in 1981. Two nickel plants are in operation in Sulawesi and a third is planned for Irian Jaya.

Production of copper stagnated in recent years and amounted to 189,240 tons in 1981. A copper mine constructed in 1973 is located in Irian Jaya. Almost all production of copper is exported.

Indonesia is the second largest producer of tin in the world and - a member of the International Tin Council. Production increased steadily in recent years, reaching 34.5 million tons in 1981, most of which was exported.

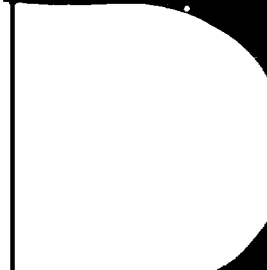


Table 22: Mineral extraction, 1977-1982

		1977	1978	1979	1980	1981 ^{c/}	1982 ^{c/}
Bauxite	'000 metric tons	1,301.4	1,007.7	1,057.9	1,249	1,200	1,641
Nickel ore (gross weight) ^{a/}	metric tons	1,302,512	1,256,450	1,551,872	1,537,000	1,461,000	
Copper (gross weight) ^{b/}	metric tons	189,103	180,933	188,769	186,000	189,240	
Tin	metric tons	25,926	27,409	29,436	30,460	34,500	
Gold	Kilogrammes	255.9	254.0	170.0	248	179	
Silver	Kilogrammes	2,832.0	2,506.4	1,644.6	2,196	1,932	
Iron sand concentrate	Tons	311,519	218,439	79,877	62,914	85,816	

Source: Ministry of Mines and Energy

a/ The nickel content (in metric tons) was 31,260 in 1977, 28,960 in 1978, 37,240 in 1979.

b/ The copper content (in '000 metric tons) was 56.4 in 1977, 54.3 in 1978, 56.6 in 1979

c/ Provisional

Indonesia 5.2.9
November 1983

Indonesia 5.2.10

November 1983

Indonesia's iron ore deposits are located at Cilacap in Central Java. Production declined substantially from 1978 on, because exports to Japan, Indonesia's only market, ceased. Iron ore is now used as raw material for the cement industry. Production reached 85.8 million tons in 1981 as compared with 311.5 million tons in 1977.

Indonesia also produces small quantities of other hard minerals such as gold, silver, diamonds, manganese, phosphate rock, kaolin, asphalt and sulphur. Production of both gold and silver declined in recent years.

5.3 Energy resources^{1/}

The Indonesian economy is highly dependant upon its energy sector, mainly oil and gas, revenues from which contributed about half of the 1983/84 Government Budget and about three-quarters of exports earnings. Despite the 1983 decline in world oil prices, oil and gas will continue to dominate the economy at least in the medium term.

To co-ordinate the country's energy policy a National Energy Coordinating Board (BAKOREN) was established in 1980, which aims at conserving crude oil as an energy source and as a main export commodity. Priority is being given to reducing the share of domestic oil use to 77.7 per cent by 1984, increasing the share of fuel oil to 17.6 per cent, coal to 2.5 per cent and hydroelectric power to 2.2 per cent. The energy supply and demand situation is shown in the table below.

Extensive exploration of oil is being carried out; however, only limited areas have been explored to date. Substantial oil reserves exist, estimated at 9.5 billion to 15.7 billion barrels. Output of crude oil accelerated sharply in 1976 and 1977 but declined the following three years. A slight increase occurred in 1981, but the dramatic change in the oil market in 1982 forced production down and OPEC announced that Indonesia would have to cut its oil production. As a result crude oil output fell 16.5 per cent in 1982 to 65.9 million tons and is expected to be further reduced in 1983 (Table 23).

Oil refining is substantial in Indonesia, and mainly carried out by PERTAMINA, which owns and operates seven major refineries. While refining capacity in overall terms exceeds domestic demand, the product composition is less suited to the Indonesian market, necessitating imports of kerosene and other products while oil refinery residuals are being exported. The overall

^{1/} Based on the Economist Intelligence Unit, Quarterly Economic Review of Indonesia, Annual Supplement 1983.

Indonesia 5.3.2

November 1983

Table 23: Energy supply and demand, 1978-1982

	1978	1979	1980	1981	1982
<u>Production</u>					
Crude oil ('000 tons)	80,417	78,229	77,722	78,913	65,932
Oil products ('000 tons) ^{b/}	21,010	24,514	24,986	25,377	17,156 ^{d/}
Natural gas ^{b/} (Million cu. ft.)	820,130	998,446	1,045,739	1,123,700	1,111,928
Coal ('000 tons)	264	279	304	350	481
Electricity (Million kWh)	5,449	6,652	7,882	9,731	...
<u>Imports</u>					
Oil products ('000 tons)	4,369	5,564	7,527	5,771	5,177 ^{d/}
Coal ('000 tons)	19	33	...	...	...
<u>Exports</u>					
Crude oil ('000 tons)	69,560	60,418	50,887	50,130	56,070
Oil products ('000 barrels) ^{b/}	4,557	5,594	5,638	5,280	2,801
Natural gas ^{b/} (Million cu. m.)	5,012	8,977	11,964	11,898	6,118 ^{d/}
Coal ('000 tons)	31	58	108	1,697	2,180
<u>Consumption</u>					
Oil ('000 tons)	17,349	16,919	18,800	...	...
Natural gas (Million cu. m.)	5,299	7,147	6,603	...	...
Coal ('000 tons)	204	278	...	...	...

Source: The Economist Intelligence Unit, Quarterly Economic Review of Indonesia, Annual Supplement 1983.

a/ Converted from barrels at 7.42 b/t.

b/ Commercial sales

c/ January-June

d/ January-September

Indonesia 5.3.3

November 1983

refinery capacity is expected to increase to 700,000 barrels/day by 1983/84, which will make Indonesia self-sufficient in oil products.

New estimates of natural gas deposits indicate the existence of vast deposits of 73 trillion cu m of natural gas in addition to proven reserves estimated at 665 billion cu m. Yet there are still extensive unexplored areas. There has been a sharp rise in output of natural gas since 1976, reaching 1,111 billion cu ft in 1982, equivalent to double the level of 1977. However output is not expected to increase until 1984-85 when new production capacity will enable a doubling of production.

Output of coal increased rapidly from 264,000 tons in 1978 to 481,000 tons in 1982. There are wide variations in current estimates of Indonesia's coal reserves. One estimate assesses Indonesia's coal reserves at 14 million tons of hard coal plus 19 billion tons of lignite.

Electric power production increased from 5,449 million kwh in 1978 to 9,731 million kwh in 1981. Electricity is mainly generated by the state company Perusahaan Umum Listrik Negara (PLN), which had a total generating capacity of 2,821 mw in 1981.

Indonesia also possesses masive hydro power potential estimated at 31,000 mw (or 15.5 million kwh) and vast reserves of geothermal power estimated at 900 mw (proven reserves), as well as uranium reserves. Various plants have been established or are under construction or planned for hydroelectric power generation, including the Asahan Plant (600 mw) supporting the planned aluminium smelting plant, as well as various geothermal power plants.

5.4 Financial resources

Overall investment requirements were expected to increase by more than 9.7 per cent per annum during the REPELITA III period. The share of gross investment in GDP was projected to increase from 21.2 per cent in 1978/79 to around 24.6 per cent in 1983/84. The average share of investment in GDP during REPELITA III amounts to 24 per cent, of which 79 per cent would be mobilized domestically and 21 per cent provided in the form of foreign capital inflow. Central government investment through the development budget was expected to account for about 51 per cent of total investment in REPELITA III as compared to 54 per cent during REPELITA II.

To finance the country's investment requirements, REPELITA III envisaged that total savings would also increase from 21.2 per cent of GDP in 1978/79 to 24.6 per cent in 1983/84, or Rp. 42,835 billion (current prices) during the five-year period. Government savings were expected to account for 29.4 per cent of total savings while 49.6 per cent would be provided from other domestic sources, mainly household savings and corporate savings. Foreign savings were expected to play a supplementary role and account for 21 per cent of total savings in the form of official aid, official loans and private capital inflow.

The Government's domestic revenues were projected at Rp 34,273 billion during REPELITA III. A major proportion, 57.7 per cent, was expected to come from direct taxes of oil and LNG.

The government's development budget during REPELITA III was estimated at Rp 21,849 billion of which 5.4 per cent was to be allocated to the industrial sector.

The actual performance of the economy shows that domestic savings have grown rapidly from 11.5 per cent of GNP in 1971 to a peak of around 26 per cent in 1980 (Table 24). Subsequently the ratio fell to 20 per cent in 1981 and is estimated to have fallen further to 14.8 per cent in 1982. Due to the decline in oil revenues, the excess of investment over savings in 1982 was financed by a large balance of payment deficit.

Table 24: Savings and investment as percentage of GNP, 1971-1982

	<u>1971</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>	<u>1982a/</u>
Gross Domestic Investment	16.1	21.3	21.8	21.4	23.9
Gross National Savings	11.5	17.4	25.9	20.1	14.8

Source: World Bank, "Indonesia: Policies for Growth with lower oil prices", 12 May 1983.

a/ Estimate

Private foreign investment continued to be promoted in the form of joint-ventures with domestic enterprises, particularly to finance productive projects with large capital requirements and sophisticated technology; export oriented industries; and import-substitution industries. The main thrust of the foreign investment policy is to create employment opportunities, save foreign exchange and stimulate the transfer of technology and know-how. The implementation of foreign investment by sector from 1967 to 1981 is shown above in Table 6. The largest proportion of all foreign investment, 58.4 per cent, was channelled into the manufacturing sector, particularly in the fields of textiles and leather, metal products, chemicals and rubber, non-metallic minerals as well as basic metals.

The amount of approved domestic investment projects by sectors since the introduction of the new domestic and foreign investment law in 1967 shows that the total domestic investment approved by the Investment Co-ordinating Board (BPKM) for the manufacturing sector amounted to 5,065 billion Rp. or 65.9 per cent of total approved domestic investment.

November 1983

6. TECHNICAL ASSISTANCE PROJECTS TO SUPPORT INDUSTRIAL DEVELOPMENT

Financial assistance and aid for Indonesia is provided through the Inter-Governmental Group on Indonesia (IGGI), consisting of donor countries and multilateral organizations and institutions. At the 26th meeting of the IGGI, held in June 1983, pledges were announced for 1983-84, which included inter alia multilateral assistance from international agencies as follows: World Bank US \$1.2 billion, Asian Development Bank US \$400 million, UN Development System US \$51.5 million and the EEC US \$16 million.

The 1983/84 government budget includes development expenditures for industry and mining in the magnitude of Rp. 683.6 billion, the equivalent of 7.4 per cent of total government development expenditure. In regard to project aid, which includes commercial credits for development programmes and projects, the amount allocated to industry and mining in the 1983/84 budget is more substantial, Rp. 1,065.9 billion, corresponding to 38.9 per cent of total project aid.

In regard to UNDP assistance the indicative share of industry in the Second UNDP Country Programme for the extended period 1979-1984 is between 14 per cent and 16 per cent. Measured against total commitments for the period 1982-1986 of US \$47.0 million, industry's share of US \$11.2 million is much higher- accounting for 24 per cent of the total UNDP programme.

As of 30 September 1982 there were 11 approved and operational UNDP projects related to industry for implementation by UNIDO (10 projects) and UNESCO (1 project). The UNDP contribution to these projects was US \$16.9 million while the government counterpart contribution was estimated at US \$5.2 million. Table 25 depicts UNIDO's approved and/or operational projects as of end September 1983.

Table 25: UNIDO's approved and/or operational technical co-operation projects in the Republic of Indonesia (September 1983)

Approval Date	Estimated Completion Date	Project Number =Registry File=	Project Title
9/78	1984	DP/INS/78/003** =INS126=	Comprehensive investment profiles for selected regions
12/80	1984	DP/INS/78/078** =INS123=	Assistance to the development of small industries
9/78	1985	DP/INS/78/002** =INS125=	Assistance in identification and development of industrial projects in selected regions
1982		TF/INS/82/002	Associate expert
1982		TF/INS/82/003	Associate expert in marketing
1982		TF/INS/82/004	Associate expert
3/83	1983	UC/INS/83/017	Assistance to the Institute for Research and Development of Leather and Allied Industries
4/75	1983	DP/INS/74/034** =INS101=	Industrial development of building materials manufacture
1981		TF/INS/81/001	Support project for building material industries project in Indonesia
9/82	1986	DP/INS/81/006**	Assistance in the development of building materials and supplies industry for low-cost housing
1983		TF/INS/83/003	Associate expert in industrial promotion of local building materials
25/82	1983/1984	US/INS/82/106	Industry sector study mission

** Total allotment US \$1 million or more.

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Indonesia 7.0.2

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