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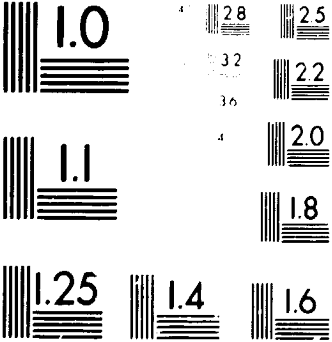

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INDUSTRIAL DEVELOPMENT REVIEW SERIES

PARAGUAY

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

V.84 85170

Preface

This industrial development review of Paraguay has been prepared by the Regional and Country Studies Branch of UNIDO's Division of 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 of Industrial Studies. Industrial development reviews will be updated periodically as new data become available from UNIDO's statistics data base, from national information sources, and from the feedback received from the users of the reviews.

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

Paraguay

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EXPLANATORY NOTE

The structure and organization of information in the report follows the established outline for Industrial Development Reviews. The heading on each page gives the data 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 of the Manufacturing Sector", which is sub-section 2.5.

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:

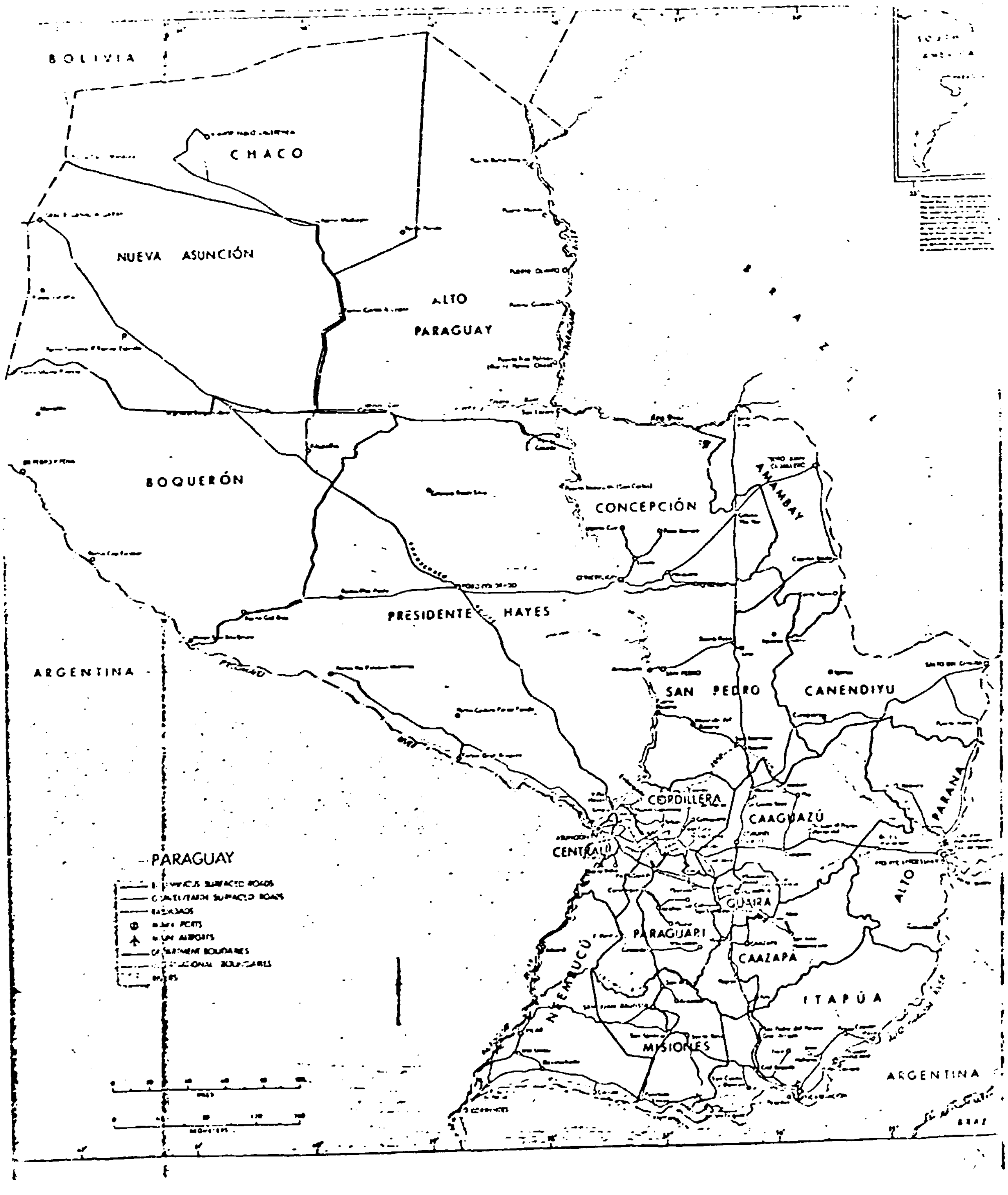
Three dots (...) indicate that data are not available or are not separately reported;

A dash (-) indicates that the amount is not applicable;

A blank indicates that the item is not applicable;

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

MAP OF PARAGUAY



Source: World Bank

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NOTE TO THE READER

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

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1. OVERVIEW OF PARAGUAY

1.1 The country and its people

Two distinct regions can be identified in Paraguay: the area to the east of the Paraguay River which covers 39 per cent of the territory and holds approximately 98 per cent of the population; and the larger area to the west which is virtually uninhabited. The eastern area contains the most fertile soil for agriculture and the more valuable forests. The region enjoys significant hydroelectric energy potential in the Paraná River. The total planned capacity of three hydroelectric projects, Itaipú (with Brazil), Yacyreta and Corpus (with Argentina) has been estimated at 20,000 MW.

BASIC INDICATORS BOX No. 1

Country Data

Area:		406,752 Km^2
Population:	number:	3,026,165 (1982)
	density:	7.4 inhabitants per Km^2
	growth rate:	2.6 per cent 1970-81 2.3 per cent, prospective 1980-2000
	labour force:	1,337,312 (1981)
	adult literacy rate:	84 per cent (1977)
	life expectancy:	65 years (1980)
	infant mortality rate:	46 per 1000 live births (1981)
Independence:		14/15 May 1811
Language:		Guaraní, Spanish
Currency:	Guaraní (₲):	US$ = 126 ₲

Sources: World Bank, World Development Report 1983; National Census, July 1982

The majority of the population of Paraguay live in rural areas. The 1982 census indicated that the 31 per cent of the population is concentrated in the Central Region and Asunción (the main city) and its surroundings. The inhabitants of Paraguay are largely of Indian or Spanish origin. In average the standard of living is similar to, and in some aspects higher than, other Latin American countries. Consumption of calories is 122 per cent higher than the minimum requirements (107 per cent is the average for Latin America), and life expectancy, at 65 years, is the same as in the rest of the continent. On the other hand, infant mortality is relatively higher, 46 per 1000 of live births. Although reliable data are not available, it is generally

BASIC INDICATORS BOX No. 2

Resources and Transport Infrastructure

Resources		
	cash crops:	maize, soybeans, rice, cotton, tobacco and wheat
	livestock:	cattle 5.4 million head (1981)
	forests:	20.3 million hectares 51 per cent of land area
	energy:	significant hydroelectric potential in the Paraná River
Transport		
	roads:	1,000 Km (asphalted), 7,500 Km other
	railways:	480 Km (1981)
	ports:	Asunción, Encarnación, Pilar, Villeta, Concepción and Presidente Franco
	airports:	Asunción (international), Presidente Stroessner

Source: The Economist Intelligence Unit, Quarterly Economic Review of Uruguay and Paraguay, annual supplement 1983.

acknowledged that the distribution of income is very uneven, particularly in rural areas. The persistently poor employment conditions in the country over a number of years have led to a migration of workers, primarily to Argentina.

The vast land area suitable for agriculture is the primary source of employment, export earnings and industrial inputs. Livestock, and meat processing, was formerly the basis of the Paraguayan economy but in recent years soya and cotton have emerged as the principal export crops. At present, about 60 per cent of manufacturing value added and 95 per cent of export earnings come from the agricultural sector. In 1981 the sector provided employment for almost 50 per cent of the labour force. Timber exports of hard and semi-hard wood are also important, and increasing the share of wood products in industrial production is a major government target.

Government investments, aided by World bank lending, in the development of major and rural roads has contributed to the expansion of the agricultural sector. The major railway line is from Encarnación to Asunción. There are additional railways in the Chaco region, primarily privately owned.

Mining is not a major contributor to GNP. Salt and limestone are the only minerals currently extracted although exploration and economic feasibility studies have been undertaken for the known deposits of iron ore, manganese and copper, and exploration for petroleum continues.

The hydroelectric potential of Paraguay's river systems provides the country with a great natural resource. Energy supplied from the recently opened Itaipú dam (joint project with Brazil) is hoped to offset current oil imports and provide export earnings since the eventual total production of hydroelectricity will surpass the country's demand. Economic recession in these neighbouring countries, however, may limit export possibilities.

1.2 The Economy

BASIC INDICATORS BOX No. 3

GNP, GDP, and Structure of the Economy

Gross National Product	per capita:	US $ 1,300 (1980)
Gross Domestic Product	total:	US $ 5,624.5 million (1981)
	growth rate:	9.5 per cent (annual average 1974-1981, in constant 1970 dollars)
Structure of the Economy a/	agriculture:	24.7 per cent
	industry:	16.7 per cent
	construction:	6.6 per cent
	services:	42.2 per cent

a/ In per cent of GDP, measured in current prices, 1981.

Source: Banco Central del Paraguay, Cuentas Nacionales, 1974-81.

Note: The sectoral breakdown in 1981 according to the World Bank, World Development Report 1983 was: Agriculture 28 per cent; Industry 26 per cent, including 17 per cent for Manufacturing; and Services 46 per cent. GNP per capita, calculated according to the World Bank Atlas method, was $1,630 in 1981.

The services and agriculture sectors are by far the two largest contributors to Paraguay's Gross Domestic Product. As illustrated in Figure 1, agriculture's share in GDP has been in decline since 1960 while the contribution of construction has grown, especially since 1975 - stimulated by the large hydroelectric projects.

After a period of economic stagnation lasting several decades, Paraguay experienced a recovery in the 1960s when the growth rate increased at 4.2 per cent per year. This performance was improved further in the 1970s: economic activity increased at a rate of 7 per cent per annum during the first half and then accelerated sharply between 1976 and 1980 at a growth rate of more than 11 per cent per year. This extraordinary accomplishment was the result of a combination of events. Paraguay experienced a vigorous expansion of agricultural output (particularly of crops with a solid external demand, such as soybeans).

The economy was stimulated by the construction of the Itaipú dam, considered to be the biggest hydroelectric undertaking in the world, which began to generate power early in 1983. During the first years of the 1980s, however, Paraguay experienced a deceleration of its growth rate and in 1982 suffered a severe recession.

Since 1973 Paraguay has had a widening deficit in its trade balance due to significant increases in the costs of imports and relatively slower growth in exports. In recent years the gap was financed by inflows of private capital and receipts derived from the construction of Itaipú, which are considered part of the external accounts of the country. However, in 1982 the balance-of-payments profile worsened as the positive net movement of capital flows was significantly reduced. As a result, Paraguay's gross external debt was estimated in that year at US$ 1,350 million, twice as much as in 1979.

Future prospects are strongly related to future energy exports to Brazil from Itaipú, since half of the generating capacity of the dam is allotted to Paraguay and the country is not in a position to make use of most of it. The external sector will be also affected by the investment schedule of the two hydroelectric projects with Argentina and by the economic development of its two largest neighbours.

BASIC INDICATORS BOX 4

Prices and Exchange Rates

Year	Consumer Prices Index (1980=100)	Official Exchange Rate (end of period rates)	
1970		1 US $ =	126.0 guaranies
1975		"	126.0
1976	52.7	"	126.0
1977	57.6	"	126.0
1978	63.7	"	126.0
1979	81.7	"	126.0
1980	100.0	"	126.0
1981	114.0	"	126.0
1982	121.7	"	126.0
Jan-June 1983	132.47	"	126.0

Sources: IMF, International Financial Statistics, October, 1983; Yearbook 1979.

Since 1960 the government has maintained an exchange rate of 126 Guaranies (₲) to the dollar. However, in July 1982 a second rate of 160 ₲ per dollar was introduced for some transactions, but debt service payments are continued at the old rate. Black market exchanges are two or three times higher.

BASIC INDICATORS BOX No 5

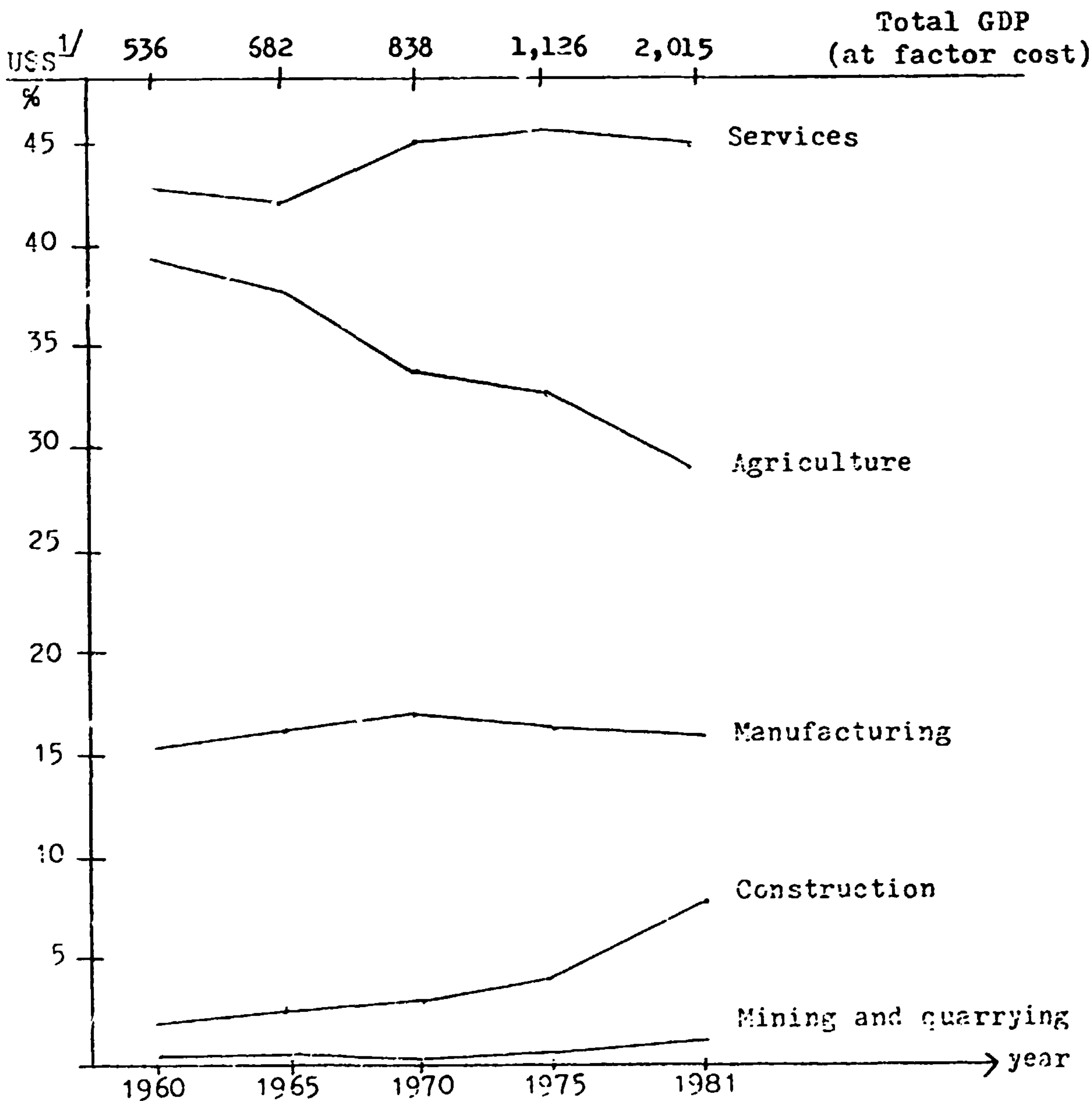
Foreign Trade and the Balance of Payments

In 1981

Exports:	total:	US$ 295.5 million
	main goods:	cotton, soybeans, wood, vegetable oils
	main destinations:	Argentina, Brazil, FRG, Japan, USA.
Imports:	total:	US$ 725.0 million
	main goods:	mineral products, machinery. electrical equipment, transport equipment.
	main origins:	Brazil, Argentina, USA, Japan, FRG.
External Debt:		US$ 948.6 million
Debt service ratio of:		
	GDP:	1.9 per cent
	total exports:	36.9 per cent
Foreign currency reserves:		US$ 781.3 million
Inflation rate:		13.4 per cent annual average 1971-1981.

Source: Banco Central del Paraguay, Boletín Estadístico, March 1983 ; Cuentas Nacionales 1974-1981.

Figure 1: GDP by Economic Sectors 1960-1981



1/ At constant prices in million of US dollars at 1970 prices.

Source: ECLA, United Nations.

1.3 Manufacturing sector

The industrial sector's share of GDP has been relatively stable for the last two decades. In 1960 its contribution was 15.1 per cent, in 1970 it increased slightly to 17.5 per cent and by 1981 had decreased slightly to 16.1 per cent. For the period 1970-80 the average annual growth rate of the manufacturing sector was 7.7 per cent. However, in 1982 the sector is estimated to have contracted by some 4.5 per cent.

The development of the manufacturing sector in Paraguay faces a series of significant constraints. The small size of the internal market and the lack of sufficient infrastructure are among the most limiting factors. At the same time, the strong competition offered by products originating in Argentina and Brazil - not hampered by an adequate protectionist mechanism - is also responsible for the limited development achieved.

The manufacturing sector depends heavily on development of the agricultural sector and, as will be seen, agro-based industries are its most important branches. On the other hand, the growth of the construction sector has also generated strong demand for sertain manufactured products. In the coming years, expanded availability of electricity for the country could greatly influence growth in the manufacturing sector. Energy-intensive industries probably will receive a boost which will have an important impact on the future profile of this sector.

Manufactured exports are directed primarily to Argentina and Brazil, and these countries' economic growth and import policies reverberate strongly in the Paraguayan economy. Main exports are processed agricultural products - primarily oils (tung oil, coconut oil and others), timber and cotton.

BASIC INDICATORS BOX No. 6

The Manufacturing Sector

Manufacturing value added (MVA):	US$ 513.2 million (1981, in constant 1977 prices)
MVA per capita:	US$ 170.5
Employment in industry:	
Number:	207,787 persons (estimate 1981)
% of total labour force:	15.5 per cent
MVA per worker:	US$ 2,470
Export of manufactures:	
value:	US$ 231 million (1980)
main goods:	cotton, processed goods, animal oils
destinations:	Argentina, FRG, Holland, Brazil
Import of manufactures:	
value:	US$ 379 million (1980)
main goods:	petroleum, machinery, transport equipment
origins:	Brazil, Argentina, USA, Japan

Source: Banco Central del Paraguay, UNIDO data base.

2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR

2.1 Growth and structural changes of value added in manufacturing

Total manufacturing value added in 1981 was estimated at US$ 513.2 million (constant 1977 dollars). Nearly 40 per cent of MVA was contributed by just three agro-based branches: food products, beverages and tobacco. Other important branches were petroleum refineries (16 per cent), wood products (14.4 per cent) and textiles (7.4 per cent) (see Table 2). In terms of their final demand, consumer goods accounted for 52 per cent of total value added; intermediate goods for 46 per cent; and capital goods for only 2 per cent.

Development in individual branches of industry varied significantly over the period 1970-81 . Consumer goods' share of manufacturing value added decreased (in current values) from nearly three quarters of the total to about one half. This performance was the result of a relatively slower growth rate (see Table 1), particularly for food products and tobacco. The opposite trend has occurred for intermediate goods. Their share has doubled in the period from less than one quarter to approximately half of total value added. The primary sources of this growth have been i) wood products, whose extraordinary expansion was due in part to the demand originating from the construction of the Itaipú dam, and ii) petroleum refineries, whose share increased from 5.2 per cent in 1970 to 16.3 per cent in 1983 as a result of the significant price increases relative to other manufacturing goods.

The high growth rates in a few branches must be viewed within the context at the overall limited development of Paraguay's industrial sector. For example, the three digit growth rate for glass products in 1978/79 is explained by the entry into operation of a single industrial establishment. Other figures of somewhat unusual significance are also explained by the start-up of new establishments, the enlargement of existing ones or, in the case of negative values, by the slowdown in the output of a couple of industrial undertakings.

In concluding this brief characterization, an important comment on Paraguay's industrial statistics is in order. The last census of the sector was carried out in 1963 and has been used to construct the sample from which the yearly estimates are derived. This means that changes which have occurred in the production methods used by industrial establishments since 1963 and the entrance of new firms are not adequately taken into consideration.

Table 1: Annual Growth Rates of Real Manufacturing Value Added, 1970-1981
(Percentages on the basis of Values in Local Currency at 1977 constant prices)

ISIC	ISIC-DESCRIPTION	70/71 a/	71/72 a/	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81
3110/3120	Food products	10.9	1.4	-3.9	9.1	-7.7	4.4	11.4	-3.1	1.0	5.7	21.3
3130	Beverages	-2.1	3.9	19.5	14.5	7.9	7.3	16.9	36.6	13.6	4.8	9.6
3140	Tobacco	-0.2	15.2	-4.5	21.6	3.9	-5.7	1.0	-25.6	-0.2	-25.3	7.3
3210	Textiles	-13.6	22.3	18.1	9.6	-1.7	1.7	75.4	20.4	-16.3	-1.3	31.0
3220	Wearing apparel , exc footwear	-1.8	-5.6	9.6	0.0	2.1	3.2	4.1	15.8	25	-36.0	1.6
3230	Leather products, exc footwear	2.4	1.7	1.2	16.4	-6.0	4.3	3.0	-4.4	-22.9	-3.6	7.9
3240	Footwear, exc rubber or plastic	1.7	2.9	3.4	2.2	2.1	5.3	2.0	3.0	9.9	17.7	30.0
3310	Wood products, exc furniture	10.1	65 2	22.2	24.2	10.9	-12.0	25.0	20.1	68.7	46.2	-22.1
3320	Furniture, exc metal	3.7	4.8	4.9	4.7	2.2	7.5	2.0	4.5	4.0	10.5	18.4
3410	Paper and products	1.2	-1.0	1.3	33.7	-6.0	3.2	4.1	-0.4	1.8	15.5	17.9
3420	Printing and publishing	31.9	-7.3	0.0	6.6	17.4	-11.7	20.4	4.6	76.8	28.5	-49.7
3510	Industrial chemicals	9.8	-2.1	1.9	-31.7	33.0	13.2	-9.9	21.1	-26.5	38.8	6.8
3520	Other chemicals	3.5	0.9	18.7	-3.9	15.0	29.7	-8.2	-4.9	13.3	-5.5	-14.1
3530	Petroleum refineries	0.2	14.0	18.1	-11.5	1.4	7.1	33.3	21.2	3.1	8.3	5.5
3540	Misc. petroleum and coal	-	-	-	-	-	-	-	-	-	-	-
3550	Rubber products	2.7	2.4	0.0	[illegible].8	2.7	28.4	5.2	10.6	9.6	14.7	14.8
3560	Plastic products	68.6	37.5	253.8	115.4	-19.1	15.0	8.6	12.7	20.0	66.2	70.3
3610	Pottery, china, earthenware	-	-	-	-	-	-	-	-	-	-	-
3620	Glass and products	0.9	98.1	-0.6	39.1	-14.0	106.0	-0.01	-47.1	379.7	50.0	100.0
3690	Other non-metallic mineral products	12.[illegible]	-10.0	4.1	19.9	23.3	14.8	17.6	-8.4	-2.0	21.6	9.6
3710	Iron and steel	52.5	11.9	-26.4	6.5	15.3	23.9	7.5	-29.7	19.7	11.6	30.2
3720	Non ferrous metals	22.6	7.4	56.7	1.7	0.0	2.5	-16.6	-20.7	149.9	68.1	87.6
3810	Fabricated metal products	2.4	-5.5	9.3	3.6	-3.5	-9.7	35.1	-13.1	5.4	-1.9	29.6
3820	Machinery, exc electrical	-0.2	-11.8	3.5	3.4	2.2	5.4	3.0	10.0	5.0	5.0	10.6
3830	Machinery electric	-1.9	-4.0	6.8	7.7	2.3	9.3	6.3	12.7	22.2	26.9	73.6
3840	Transport equipment	-26.6	-6.5	11.7	1.7	24.1	30.5	6.3	12.8	5.7	6.5	25.0
3850	Professional and scientific eqip.	1.9	40.6	6.6	2.5	0.0	15.8	5.2	12.7	3.7	3.6	15.2
3900	Other manufactured products	-1.8	-5.8	3.9	3.8	3.7	16.6	2.0	12.8	31.0	11.8	39.7
3000	TOTAL MANUFACTURING	5.7	7.3	5.3	7.9	0.0	3.6	20.7	7.1	7.7	12.1	7.3
	CRAFTS	5.1	1.2	65.3	1.1	-25.2	38.9	10.6	46.2	7.4	17.1	15.0
	TOTAL	5.6	7.0	8.3	7.4	-0.01	5.5	20.0	9.7	7.6	12.6	8.0

a/ 1970/71 and 1971/72 on the basis of values in 1972 ₲ constant prices

SOURCE: Banco Central del Paraguay "Cuentas Nacionales 1970/1977" No 14 "Cuentas Nacionales 1974/1981 No 18"
"Cuentas Nacionales 1977/1979" No 16

Table 2: Structural Changes of Value Added in Manufacturing, 1970-1981
(Sectoral Shares (Percentages) on the basis of Values in National Currency at Current Prices)

ISIC	ISIC-DESCRIPTION	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
3110/3120	Food products	47.7	50.8	46.7	43.2	42.5	36.6	37.2	34.5	32.8	30.1	29.4	29.3
3130	Beverages	6.7	5.9	5.5	5.6	5.4	6.1	6.4	6.5	7.9	7.5	7.4	7.5
3140	Tobacco	4.1	3.8	4.0	3.3	3.2	3.4	3.4	2.7	2.4	1.5	0.9	1.0
3210	Textiles	6.8	6.1	6.5	7.7	6.8	6.8	7.3	13.1	14.4	9.4	7.7	7.4
3220	Wearing apparel, exc footwear	1.0	0.9	0.8	0.6	0.7	0.7	0.7	0.6	0.6	0.7	0.4	0.4
3230	Leather products, exc footwear	4.9	4.5	6.0	7.0	6.2	4.3	4.6	3.9	3.6	3.5	1.7	3.2
3240	Footwear, exc rubber or plastic	3.6	2.5	2.6	2.6	2.2	2.6	3.2	2.7	2.6	3.2	3.0	3.1
3310	Wood products, exc furniture	4.3	4.5	6.6	7.0	7.7	11.7	8.3	8.3	10.3	14.8	16.5	14.4
3320	Furniture, exc metal	0.9	0.9	0.9	1.0	0.9	1.0	1.1	0.9	0.8	1.2	1.1	1.1
3410	Paper and products	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
3420	Printing and publishing	1.8	2.3	1.9	1.9	1.7	2.0	2.1	2.6	2.1	3.7	4.1	4.1
3510	Industrial chemicals	1.4	1.6	1.4	1.2	0.7	1.0	1.3	0.9	1.0	0.8	0.7	0.8
3520	Other chemicals	3.7	2.2	2.6	3.7	2.6	2.6	3.2	2.6	2.3	2.1	1.8	1.3
3530	Petroleum refineries	5.2	5.6	6.1	6.7	11.4	11.6	11.5	11.7	10.7	13.3	16.3	16.3
3540	Misc. petroleum and coal products	-	-	-	-	-	-	-	-	-	-	-	-
3550	Rubber products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3560	Plastic products	0.1	0.1	0.3	0.4	0.8	0.7	0.6	0.6	0.5	0.7	1.0	1.5
3610	Pottery, china, earthenware	0.0	-	-	-	-	-	-	-	-	-	-	-
3620	Glass and products	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.2
3690	Other non metallic mineral products	3.8	3.4	3.5	3.0	3.2	4.4	4.7	4.5	4.1	3.7	4.4	4.4
3710	Iron and steel	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
3720	Non ferrous metals	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.3
3810	Fabricated metal products	2.5	2.7	2.4	3.2	2.6	2.5	2.2	2.3	2.3	1.8	1.6	1.8
3820	Machinery, exc electrical	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
3830	Machinery electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3840	Transport equipment	1.2	0.8	0.8	0.8	0.4	0.9	1.0	0.9	0.8	1.0	0.9	0.9
3850	Professional and scientific equip.	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
3900	Other manufactured products	0.5	0.5	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.5
3000	TOTAL MANUFACTURING	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	TOTAL MANUF. (in millions of ₲)	11,808	12,978	14,879	18,549	28,091	28,074	31,686	41,987	49,674	63,463	83,862	107,594
	CRAFTS (in millions of ₲)	690	753	814	1,484	2,247	1,685	2,535	3,150	4,805	6,146	8,476	10,875
	TOTALS (in millions of ₲)	12,498	13,731	15,693	20,033	30,338	29,759	34,221	45,137	54,419	69,609	92,338	118,469

SOURCE: Banco Central del Paraguay "Cuentas Nacionales 1970/1977" No 14
"Cuentas Nacionales 1972/1979" No 16
"Cuentas Nacionales 1974/1981" No 18

Table 3: Main Industries by Volume of Output, 1979-1981

	1979	1980	1981
Cotton fabrics (thousand meters)	20,252	16,620	15,940
Wool fabrics (thousand meters)	38	46	100
Cotton fibres (thousand meters)	73,281	74,874	105,869
Bags (thousand meters)	3,557	1,761	905
Tannin (tons)	6,659	15,694	13,207
Mint (tons)	801	583	400
Petit grain (and other essential oils) (tons)	460	596	382
Quicklime (tons)	37,783	49,118	57,100
Cement (tons)	154,542	176,685	161,419
Cigarettes (thousand boxes)	40,395	32,389	37,826
Beverages (thousand litres)	126,234	130,004	158,968
Sugar (tons)	68,477	89,236	76,518
Flour (tons)	82,333	81,837	100,671

Source: Banco Central del Paraguay.

2.2 Geographical distribution of manufacturing enterprises

In the absence of a recent industrial census, other sources of information have been utilized to derive data regarding the regional distribution of manufacturing. Fortunately, an industrial survey was carried out in 1977 and reveals some information on this question. It must be stated, however, that the survey covered only those establishments located in the urban areas of the country. In addition, only a small sample of those undertakings with less than four employees was included.

The survey distinguished between seven geographical zones (see Table 4). The most important zone is Asunción and its metropolitan area. The firms in this region were responsible for 60 per cent of the gross output of all the establishments included in the study. These firms also paid 70 per cent of all the wages and salaries. The East and North-East region has experienced important growth in the last few years due to the construction of the Itaipú dam. Firms devoted primarily to the manufacture of goods for the construction industry have been established in this region. Similarly, the Encarnación area may witness the establishment of new firms in the near future to supply the requirements needed for the construction of the Yacyretá dam.

Table 4: Regional Shares in Manufacturing Gross Output, Wages and Salaries, 1976 (sample only)

	Geographical zones	Gross Output (a)	%	Wages and Salaries (a)	%
1	Asunción and metropolitan area	19,686	60.5	3,181	70.3
2	Industrial basin of Asunción	3,584	11.0	225	5.0
3	Guairá	945	2.9	93	2.0
4	North and East-Central	1,034	3.2	96	2.1
5	East and North-East	3,186	9.8	463	10.2
6	Pilar	1,617	5.0	315	7.0
7	Encarnación	2,489	7.6	152	3.4
	TOTAL	32,541	100.0	4,526	100.0

(a) In millions of guaranies.

Source: "Encuesta Industrial Urbana - 1977", Ministerio de Industria y Comercio - División de Estadística y Censos, Asunción 1980.

2.3 Manufacturing activity by size of enterprises

The survey referred to in the previous section is the only relatively recent source which contains data on size of firms. The survey distinguished only between establishments with 5 to 19 employees and those with 20 or more. According to its information, there were 679 enterprises with between 5 and 19 employees and 219 establishments with more than 20. Thus, 25 per cent of all the enterprises surveyed were in the 19 employees or more category. Establishments with fewer than 5 employees are known to be relatively numerous in Paraguay but no sufficiently accurate estimate is available.

The lack of data on this topic precludes the possibility of recording more subtle trends in the development of Paraguay's manufacturing. In fact, knowledge about the birth and death of industrial establishments - especially of those of small and medium size - would lead to a better understanding of the evolution of this sector.

2.4 Ownership and investment patterns in manufacturing

i) Role of the public sector

The present policy of the government is to limit the role of the public sector in the economy, and to promote the initiative of the private sector, including foreign investments. This approach is particularly strong with regard to industrial activities.

Although the basic infrastructure built over the past decades remains in the hands of government through decentralized entities and public enterprises, e.g. electricity, housing, railways, fluvial transport, airlines, ports, telecommunications, water supplies, etc; the overall participation of the public sector in the economy is moderate by developing countries standards. Public expenditures represent about 12 per cent of GDP and the public sector accounts for about 9 per cent of the total demand. The share of the public sector in gross capital formation is difficult to estimate since official statistics do not include data regarding hydroelectric projects, but a reasonable figure would be 25 per cent.

Descentralized agencies and public enterprises have been decreasing their participation in the investments of the public sector (from 46.9 per cent in 1972 to 36 per cent in 1979 and from 65.2 per cent to 58 per cent in terms of fixed investments). On the other hand, industrial activities accounted for about 2.3 per cent of public expenditures in recent years.

Table 5 provides information about the public enterprises operating in the industrial sector. Until recently there were two others: the National Meat Corporation, which was taken over privately; and the mixed Sugar Commission.

Table 5: LIST OF PUBLIC INDUSTRIAL ENTERPRISES

	Name	Sector	Legal Form	Date of creation	Ownership	Object	Current receipts (1979) - (in millions of guaranies.)	Capital expenditures
1.	Industrial Nacional del Cemento	Cement	Autarchic entity	1969	100% state	Production of Portland cement	2,824	361
2.	Siderurgia Paraguaya (SIDEPAR)	Steel	Descentralized entity	1974	100% state	Production and commercialization of steel	- (+)	93
3.	Acero del Paraguay (ACEPAR)	Steel	Private (S.A.)	1975	60% state 40% Brazilian capital	Production of Steel	- (++)	...
4.	Adminstración Paraguaya de Alcoholes (APAL)	Chemical	Autarchic entity	1975	100% state	Monopoly of Production and sale of certain types of alcohol	2,088	222
5.	Petroleos del Paraguay (PETROPAR)	Oil	Mixed	1981	100% state 40% foreign	Refinery of oil	...	...

(+) Represents the government in ACEPAR
(++) Not yet in operation.

With the exception of an expansion in the manufacture of cement, the present strategy does not forsee the undertaking of new large-sized industrial projects which would require the direct participation of the State, as was the case for the Steel Complex. On the other hand, the government has explicitly made known its support to the private sector through a variety of mechanisms to stimulate domestic and foreign investments (see section 3.2 below).

ii) Role of foreign investments

Since the early seventies, the combination of a high growth performance and an explicit "open door" policy for foreign investors in the context of a politically stable regime, has given rise to a significant flow of direct investment to the economy of Paraguay. The bulk of such investments has been oriented towards the agricultural sector and banking activities. Within the industrial sector, the vast majority of projects have been in agro-industries (see section 3.2 below).

Table 6 shows the structure of foreign investments in the period 1975-1981, indicating the number of projects and origin of capital. It is interesting to note the significant number of projects with Brazilian and Argentine participation. Most of the projects have been carried out in association with domestic investors.

Table 7 shows the distribution of foreign and domestic capital in "new projects" in the period 1975-1980.

Table 6: Net Direct Investment in Paraguay, 1975-1981.

Country of origin	Number of projects	Volume US $ millions	Percent
Brazil	34	52.5	23.1
FRG	18	51.4	22.6
USA	14	41.0	18.0
Portugal	5	20.4	9.0
Spain	10	14.1	6.2
Argentina	27	13.9	6.1
Japan	5	8.8	3.9
Italy	4	7.2	3.2
France	5	5.5	2.4
Canada	1	1.0	0.5
Other Latin America	10	4.8	2.1
Other Europe	7	4.7	2.1
Other Asia	3	1.8	0.8
TOTAL	143	227.1	100.0

Source: Ministerio de Industria y Comercio.

Table 7: Share of Foreign Investment in New Projects, 1975-1980
(millions of guaranies)

Years	Domestic Capital	Foreign Capital	Total	Foreign Capital (%)
1975	2,295	709	3,004	26.6
1976	4,710	1,616	6,326	25.6
1977	5,237	5,406	10,643	50.8
1978	7,973	2,096	10,096	20.8
1979	13,289	13,199	26,488	49.8
1980	9,778	3,119	12,897	13.8
Total	43,282	26,145	69,427	37.7

Source: Departamento de Promoción de las Inversiones.

2.5 Performance of the manufacturing sector

Data for variables such as number of employees by branch, wages and salaries paid by branch, and number of establishments by branch are not available for the manufacturing sector of Paraguay. An analysis of the performance and efficiency of Paraguay's industrial sector is therefore very limited at present.

The only two sets of data which are available have to do with gross output and value added by branch, displayed in Tables 8 and 9. From this data it is possible to derive the share of value added in gross output for all branches of manufacturing. As shown in Table 10, this ratio increased from 40.7 per cent in 1971 to 44.5 per cent in 1981 - an interesting result since the opposite trend was experienced by developing countries as a whole*.

In considering individual branches, the ratio rose significantly for wood products but remained without important variations for the other main branches such as food products and textiles. For petroleum refineries it actually fell. For some branches, such as food products, the ratio of value added to gross output in 1981 was higher than the average for other developing countries. It was lower in other branches, such as beverages and textiles*.

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* See UNIDO, Handbook of Industrial Statistics, United Nations, New York, 1982.

Table 8: Gross Output and Value Added: Values in Current Prices 1971 and 1981 (In thousand of ₲)

ISIC	ISIC-DESCRIPTION	Gross Output 1971	Gross Output 1981	Value Added 1971	Value Added 1981
3110/3120	Food products	17,305	77,815	6,543	31,507
3130	Beverages	1,664	16,802	768	8,042
3140	Tobacco	767	1,542	494	971
3210	Textiles	2,406	24,201	787	7,986
3220	Wearing apparel, exc footwear	339	1,196	117	395
3230	Leather products	1,056	6,442	589	3,478
3240	Footwear, exc rubber or plastic	900	9,808	326	3,335
3310	Wood products, exc furniture	1,734	34,886	589	15,522
3320	Furniture, exc metal	206	2,376	115	1,212
3410	Paper and products	53	317	16	92
3420	Printing and publishing	348	6,229	290	4,423
3510	Industrial chemicals	468	2,444	202	831
3520	Other chemicals	1,253	4,003	281	1,409
3530	Petroleum refineries	1,321	34,086	731	17,558
3540	Misc. petroleum and coal products	-	-	-	-
3550	Rubber products	9	66	5	36
3560	Plastic products	19	2,960	18	1,599
3610	Pottery, china, earthenware	-	-	-	-
3620	Glass and products	5	423	3	203
3690	Other non met mineral products	927	8,060	438	4,753
3710	Iron and steel	26	189	20	27
3720	Non-ferrous metals	10	617	6	321
3810	Fabricated metal products	568	3,425	351	1,918
3820	Machinery, exc electrical	58	293	34	182
3830	Machinery electric	8	105	5	64
3840	Transport equipment	224	1,656	105	1,027
3850	Professional and scientific equip.	53	323	35	136
3900	Other manufactured products	139	1,349	60	567
3000	TOTAL MANUFACTURING	31,866	241,613	12,978	107,594

Source: Secretaría Técnica de Planificación, for gross output; Banco Central del Paraguay, for value added.

Table 9: Gross Output and Value Added, Branch Shares (In Percent) in Total Manufacturing, 1971 and 1981.

ISIC	ISIC-DESCRIPTION	Gross Output 1971	Gross Output 1981	Value Added 1971	Value Added 1981
3110/3120	Food products	54.3	32.2	50.8	29.3
3130	Beverages	5.2	7.0	5.9	7.5
3140	Tobacco	2.4	0.6	3.8	0.9
3210	Textiles	7.6	10.0	6.1	7.4
3220	Wearing apparel, exc footwear	1.1	0.5	0.9	0.4
3230	Leather products	3.3	2.7	4.5	3.2
3240	Footwear, exc rubber or plastic	2.8	4.1	2.5	3.1
3310	Wood products, exc furniture	5.4	14.4	4.5	14.4
3320	Furniture, exc metal	0.7	1.0	0.9	1.1
3410	Paper and products	0.2	0.1	0.1	0.1
3420	Printing and publishing	1.1	2.6	2.3	4.1
3510	Industrial chemicals	1.5	1.0	1.6	0.8
3520	Other chemicals	3.9	1.7	2.2	1.3
3530	Petroleum refineries	4.1	14.1	5.6	16.3
3540	Misc. petroleum and coal products	-	-	-	-
3550	Rubber products	0.0	0.0	0.0	0.0
3560	Plastic products	0.2	1.2	0.1	1.5
3610	Pottery, china, earthenware	-	-	-	-
3620	Glass and products	0.0	0.2	0.0	0.2
3690	Other non met mineral products	2.9	3.3	3.4	4.4
3710	Iron and steel	0.1	0.1	0.2	0.1
3720	Non-ferrous metals	0.0	0.3	0.0	0.3
3810	Fabricated metal products	1.8	1.4	2.7	1.8
3820	Machinery, exc electrical	0.2	0.1	0.3	0.2
3830	Machinery electric	0.0	0.0	0.0	0.0
3840	Transport equipment	0.7	0.7	0.8	1.0
3850	Professional and scientific equip.	0.2	0.1	0.3	0.2
3900	Other manufactured products	0.4	0.6	0.5	0.5
3000	TOTAL MANUFACTURING	100.0	100.0	100.0	100.0

Source: Secretaría Técnica de Planificación, for gross output;
Banco Central del Paraguay, for value added.

Table 10: Shares of Value Added in Gross Output by Branches, 1971 and 1981.

ISIC	ISIC-DESCRIPTION	Shares of Value Added in Gross Output (in percent)	
		1971	1981
3110/3120	Food products	38.1	40.5
3130	Beverages	46.2	47.9
3140	Tobacco	64.4	62.9
3210	Textiles	32.7	33.0
3220	Wearing apparel, exc footwear	34.5	33.0
3230	Leather products	55.8	54.0
3240	Footwear, exc rubber or plastic	36.2	34.0
3310	Wood products, exc furniture	34.0	44.5
3320	Furniture, exc metal	55.8	51.0
3410	Paper and products	30.2	29.0
3420	Printing and publishing	83.3	71.0
3510	Industrial chemicals	43.2	34.0
3520	Other chemicals	22.4	35.2
3530	Petroleum refineries	55.3	51.5
3540	Misc. petroleum and coal products	-	-
3550	Rubber products	55.6	54.5
3560	Plastic products	94.7	54.0
3610	Pottery, china, earthenware	-	-
3620	Glass and products	60.0	48.0
3690	Other non met mineral products	47.2	60.0
3710	Iron and steel	76.9	14.2
3720	Non-ferrous metals	60.0	52.0
3810	Fabricated metal products	61.8	56.0
3820	Machinery, exc electrical	58.6	62.1
3830	Machinery electric	62.5	60.9
3840	Transport equipment	46.9	62.0
3850	Professional and scientific equipment	66.0	42.1
3900	Other manufactured products	43.2	42.0
3000	TOTAL MANUFACTURING	40.7	44.5

SOURCE: Secretaría Técnica de Planificación, for gross output; Banco Central del Paraguay, for value added.

2.6 Structure and development of exports and imports of manufactured goods

Paraguays' exports of manufactures amounted to nearly US$ 231 million in 1980, equivalent to 74.4 per cent of all exports. This share is slightly higher than those for 1970 and 1975 (see Table 11). A look at the composition of these exports reveals that cotton was by far the most important item (263 SITC) with approximately 46 per cent of the total; followed by worked wood (243 SITC) with nearly 29 per cent. Table 11 also shows that the share for some products varied widely during the decade. Cotton, for example, increased its share five times since 1970, and feeding stuff for animals and processed wood increased about threefold. On the other hand, exports of meat and meat products practically disappeared in 1980 after having contributed 36 per cent of total exports of manufactures in 1970. It is necessary to point out that when limiting the definition of traded manufactures to SITC 5-8 less 68, Paraguay's manufactured exports would comprise only 4.4 per cent of all exports in 1980.

Table 14 shows some particular features that characterise the country's exports. In 1979, nearly 65 per cent of the products exported were "non-processed goods for further processing" and "29 per cent were processed goods for further processing". "Goods for final use" accounted for less than 7 per cent. Regarding the destination of manufactured exports, Table 13 shows that more than half went to developed market economies in 1979 and slightly more than 42 per cent were sent to developing countries.

Out of the approximate US$ 500 million imports in 1980, 77 per cent consisted of manufactured products classified by the broad definition of manufactures. The most important items were petroleum products, electrical machinery and transport equipment. In terms of their final demand, 77.8 per cent of all goods imported into Paraguay in 1977 were classified as "processed goods for final use" and nearly 7 per cent as "non-processed goods for further processing" (see Table 14). With respect to the origin of manufactured imports, the total was split almost evenly between the developed market economies and the developing countries (see Table 12).

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A brief comment on Paraguay's trade statistics is needed in order to interpret the information presented correctly. There is considerable agreement that an important portion of all trade flows to and from the country are not recorded, particularly those with Argentina and Brazil. Official figures have to be considered, then, as only a partial indication of the true structure and volume of Paraguay's external trade.

Table 11: Product Mix of Traded Manufactured Goods, 1970, 1975, 1980, in values in 1980 */ **/

SITC		EXPORTS 1970 %	EXPORTS 1975 %	EXPORTS 1980 %	EXPORTS 1980 US $	IMPORTS 1970 %	IMPORTS 1975 %	IMPORTS 1980 %	IMPORTS 1980 US $
01	Meat and meat preparation	36.16	25.66	0.45	1,054	0.009	0.006		–
02	Milk and cream					1.017	0.230		
032	Fish preparation					0.060	0.042		
0422	Rice, glazed and polished	0.01	0.05						
046	Meal and flour of wheat or of meslin					0.131	0.854		
047	Meal and flour of cereals except above					0.132	0.000		
048	Cereal preparation and starch					0.844	0.791		
052	Dried fruit					0.012	0.004		
053	Fruit, preserved and fruit preparations	1.32	1.22			0.071	0.011		
055	Vegetables, roots and tubers, preserved or prepared					0.078	0.030		
06	Sugar, sugar preparations and honey	0.02	6.22	1.3	3,112	0.154	0.053		
06	Coffee extracts, essences and similar						0.005		
0722	Cocoa powder, unsweetened					0.002	0.005		
0723	Cocoa butter and cocoa past								
073	Chocolate and related food preparations					0.066	0.091		
074	Tea and maté	1.14	0.22	0.8	1,930	0.088	0.031		
081	Feeding stuff for animals	3.53	4.24	9.5	21.984		0.062		
09	Miscellaneous food preparations	9.23	3.29			0.402	0.499	0.1	345
11	Beverages	0.05	0.13			5.37	9.743	6.7	25,392
122	Tobacco manufactures					6.990	3.348	3.8	14,245
0219	Flour and meal of oil seeds, nuts and kernels								
032	Crude rubber (including synthetic and reclaimed								
2311	Natural rubber and similar natural gums					0.003	0.000		
243	Wood, shaped or simply worked	10.82	18.76	28.7	66.329		0.000		
251	Pulp and waste paper								
2626	Wood shoddy					0.059	0.024		
2627	Wool or other animal hair, carded or combed					0.001			
2628	Wool tops								
2629	Waste of wool and other animal hair						0.064		
263	Cotton	9.10	16.52	45.8	105,833		0.001		
266	Synthetic and regenerated fibres					0.036	0.029		
267	Waste materials from textile fabrics						0.012		
332	Petroleum products					5.052	5.218	19.2	72,898
400	Animal and vegetable oils and fats	15.74	8.73	7.4	17,117	0.229	0.036		
411	Animal oils and fats	0.04	6.002			0.000	0.003		
421, 422	Fixed vegetable oils and fats	15.70	8.73			0.208	0.006		
432	Animal and vegetable oils and fats processed	0.001				0.20	0.27		
50	Chemicals	9.02	8.70	6.7	15,536	12.13	9.25	8.4	31,719
51	Chemical elements and components	0.002				989	1.98		
52	Mineral tar and crude chemicals from coal, petroleum and natural gas					0.10	0.00		
53	Dyeing, tanning and colouring materials	4.40	0.48	1.9	4,388	0.56	0.49		

Table 11 Contd

SITC		EXPORTS 1970 %	EXPORTS 1975 %	EXPORTS 1980 %	EXPORTS 1980 US $	IMPORTS 1970 %	IMPORTS 1975 %	IMPORTS 1980 %	IMPORTS 1980 US $
54	Medicinal and pharmaceutical products		0.11			5.72	2.08		
55	Essential oils and perfume materials; bilet, polishing and cleansing preparations	4.62	8.11	3.9	9,093	1.22	0.54		
56	Fertilizers, manufactured					1.83	0.52		
57	Explosives and pyrotechnic products					0.32	0.56		
58	Plastic materials, regenerated cellulose and artifical resins					0.49	1.20		
59	Chemical materials and products n.e.s.					1.00	1.69		
60	Manufactured goods classified chiefly by material less 667 (pearl and semi-precious stones)	3.43	5.59	0.02	52	21.25	20.19	15.6	59,122
61	Leather, leather manufactured, n.e.s. and dressed furskins	0.008	0.60			0.02	0.007		
62	Rubber, manufactures, n.e.s.					1.62	1.29		
63	Food and cork manufactures (excluding furniture)	2.66	4.02			0.05	0.21		
64	Paper, paper board and manufactures thereof					3.42	3.28	2.7	10,386
65	Textiles yarn, fabrics, made-up articles and related products	0.014	0.44	0.02	52	5.47	2.56	2.6	9,816
66	Non-metallic mineral manufactures, n.e.s.	0.73	0.53			1.66	2.087	3.7	13,922
67	Iron and steel					4.44	6.15	3.7	13,942
68	Non-ferrous metals					0.64	0.317	1.1	4,131
69	Manufactures of metal n.e.s.	0.01				3.927	4.295	0.7	2,823
70	Machinery and transport equipment					39.561	45.31	45.2	171,204
71	Machinery, other than electric					18.879	19.64	19.1	72,237
72	Electrical machinery apparatus and appliances					6.829	8.265	5.9	22,494
73	Transport equipment					13.852	17.405	16.6	70,423
80	Miscellaneous manufactured articles	0.428	0.668			6.238	3.814	1.0	3,920
81	Sanitary, plumbing, heating and lighting fixtures and fittings					0.371	0.469		
82	Furniture	0.024	0.004			0.206	2.191		
83	Travel goods, handbags and similar articles		0.001			0.006	0.009		
84	Clothing	0.265	0.609			0.797	0.129		
85	Footwear	0.017							
86	Professional, scientific and controlling instruments; photographic and optical goods, watches and clocks					1.965	1.005	0.5	2,006
89	Miscellaneous manufactured articles, n.e.s.	0.122	0.055			2.647	1.90	0.5	1,914
	TOTAL MANUFACTURES %			100				100	
	values	44,530	121,554		230,947	60,991	159,777		378,903
	TOTAL 5 + 8 less 68 values	5,733	18,182		13,588	47,905	132,839		261,894
	TOTAL traded goods values	64,045	174,069		310,230	75,242	211,980		494,312
	Total Manufactures / Total Trade %	69.52	69.83	74.4		81.06	80.09	76.6	
	Total 5 + 8 less 68 / Total trade %	8.95	10.45	4.4		63.67	62.66	53.0	

*/ This table is based on the definition of trade in manufacturing covering a list of 145 specically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

**/ Export and import expressed in current US dollars (thousands)

0.0 indicating trade with a share of less than one decimal
0 indicating no trade
– indicating no data

SOURCE: For 1970 and 1975: UNIDO data base. For 1980: United Nations, Yearbook of International Trade Statistics 1980, NY,1982

TABLE 12. ORIGIN OF IMPORTS OF MANUFACTURES BY BRANCHES, 1979 a/

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES TOTAL (PERCENT)	DEVELOPED MARKET ECONOMIES USA (PERCENT)	DEVELOPED MARKET ECONOMIES EEC (PERCENT)	DEVELOPED MARKET ECONOMIES JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
01	Meat and meat preparations	18	70.10	29.90	27.56	1.94	0.00	0.00
02	Dairy products and eggs	290	1.34	98.66	41.80	30.51	0.00	0.00
032	Fish n.e.s. and fish preparations	252	39.30	60.70	0.35	29.40	4.61	0.00
0422	Rice,glazed or polished not otherwise worked	152	100.00	0.00	0.00	0.00	0.00	0.00
046	Meal and flour of wheat or of meslin	110	7.78	92.22	92.22	0.00	0.00	0.00
047	Meal and flour of cereals,except above	12	0.00	100.00	100.00	0.00	0.00	0.00
048	Cereals preparat. & starch of fruits & vegetab.	2182	98.06	1.94	0.35	1.23	0.01	0.00
052	Dried fruit	18	61.88	38.12	1.50	0.00	12.15	0.00
053	Fruit,preserved and fruit preparations	36	16.32	83.68	59.70	17.01	0.00	0.00
055	Vegetables,roots & tubers,preserved or prepared	81	64.26	35.74	4.38	10.04	1.10	0.00
06	Sugar,sugar preparations and honey	406	12.96	85.90	2.03	71.41	0.85	0.00
0722	Cocoa powder,unsweetened	18	0.00	100.00	0.00	100.00	0.00	0.00
0723	Cocoa butter and cocoa paste	4	0.00	100.00	0.00	100.00	0.00	0.00
073	Chocolate and related food preparations	282	2.15	97.85	0.57	32.05	0.00	0.00
074	Tea and mate	251	14.09	83.65	0.00	83.57	0.12	0.00
081	Feeding-stuff for animals	321	10.65	89.35	21.98	61.31	0.00	0.00
09	Miscellaneous food preparations	4230	82.16	17.84	14.54	3.03	0.22	0.00
11	Beverages	28876	3.25	95.89	0.34	94.38	0.08	0.85
122	Tobacco manufactures	19448	2.47	97.53	91.16	6.38	0.00	0.00
231	Crude rubber,synth. & reclaimed(excl.SITC 2311)	59	72.88	25.42	21.81	3.61	0.00	1.70
2626	Wool shoddy	64	100.00	0.00	0.00	0.00	0.00	0.00
2625	Waste of wool and other animal hair n.e.s.	52	100.00	0.00	0.00	0.00	0.00	0.00
266	Synthetic and regenerated(artificial) fibres	242	37.36	62.64	20.15	42.49	0.00	0.00
267	Waste materials from textile fabrics(incl.rags)	846	17.84	81.98	20.89	39.70	11.85	0.00
332	Petroleum products	50259	96.64	3.36	2.41	0.79	0.08	0.00
4	Animal and vegetable oils and fats	729	80.73	19.27	0.76	16.63	0.65	0.00
411	Animal oils and fats	1	0.00	100.00	0.00	100.00	0.00	0.00
421	Fixed vegetable oils,soft(incl.SITC 422)	573	96.32	3.68	0.57	0.32	0.88	0.00
431	Animal and vegetable oils and fats processed	154	23.29	76.71	0.00	76.71	0.00	0.00

Contd

TABLE 12: ORIGIN OF IMPORTS OF MANUFACTURES BY BRANCHES, 1979 a/

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
5	Chemicals	40985	43.99	52.92	10.45	33.51	0.82	2.99
51	Chemicals elements and compounds	5102	19.75	57.76	11.14	39.07	0.33	22.27
52	Tar and chemicals from coal,petroleum,nat. gas	1	37.31	62.68	62.68	0.00	0.00	0.00
53	Dyeing,tanning and colouring materials	2077	28.01	71.90	17.48	44.70	1.88	0.03
54	Medicinal and pharmaceutical products	12556	47.86	51.58	7.32	36.16	0.67	0.45
55	Essential oils and perfume materials	2055	8.66	91.26	12.43	66.96	0.41	0.00
56	Fertilizers,manufactured	2468	82.99	16.29	3.65	11.32	0.00	0.72
57	Explosives and pyrotechnic products	130	67.95	22.92	11.15	11.71	0.00	6.17
58	Plastic materials,regenerated cellul. & resins	6748	21.07	78.93	14.99	45.21	0.76	0.00
59	Chemical materials and products n.e.s.	9408	68.91	30.96	10.93	14.79	1.40	0.04
6	Manufactured goods classified by material	79435	58.16	26.66	10.44	15.12	7.79	1.25
61	Leather manufactured n.e.s. & dressed fur skins	14	24.79	75.21	45.93	21.60	2.77	0.00
62	Rubber manufactures n.e.s.	4964	33.00	53.39	22.90	16.58	11.59	4.41
63	Wood and cork manufactures(excl.furniture)	143	28.52	69.82	5.98	12.74	0.24	0.29
64	Paper,paper board and manufactures thereof	9288	80.75	18.99	2.92	7.00	0.38	0.08
65	Textile yarn,fabrics,made-up articles	10128	16.60	79.63	39.47	6.25	32.29	1.84
66	Non-metallic mineral manufactures,n.e.s.	11836	81.42	17.88	1.71	11.78	2.30	0.14
67	Iron and steel	14391	80.88	18.70	0.98	9.11	7.88	0.42
68	Non-ferrous metals	1397	72.98	21.51	4.74	12.73	0.00	0.00
69	Manufactures of metal,n.e.s.	27275	46.89	47.71	9.03	25.66	3.30	1.85
7	Machinery and transport equipment	185477	45.21	53.42	11.64	16.08	20.93	0.28
71	Machinery,other than electric	77758	55.03	44.12	17.03	15.12	4.93	0.15
72	Electrical machinery,apparatus and appliances	30061	32.16	62.61	14.88	34.81	9.61	1.21
73	Transport equipment	77658	40.43	59.19	4.98	5.79	41.32	0.05
8	Miscellaneous manufactured articles	15511	29.37	56.28	19.46	20.88	11.34	1.82
81	Sanitary,plumbing,heating & lightning fixtures	1919	76.07	7.65	0.34	5.33	1.98	0.49
82	Furniture	776	20.72	79.15	72.11	3.75	0.71	0.04
83	Travel goods,handbags and similar articles	49	37.70	51.78	24.53	15.95	11.26	0.00
84	Clothing	435	20.13	71.36	35.11	22.47	4.81	1.09
85	Footwear	785	7.75	7.44	0.12	2.80	4.53	8.07
86	Professional,scient. & controll. instruments	4050	25.79	68.59	29.88	23.39	10.11	1.24
89	Miscellaneous manufactured articles,n.e.s.	7494	22.99	63.97	14.34	27.11	16.60	2.06
	TOTAL manufactures	430646	48.69	49.26	13.34	20.76	10.98	0.76
	TOTAL: SITC 5-8 LESS 68 a/	320011	47.38	45.97	11.60	18.32	14.72	0.94
	TOTAL traded goods: SITC 0-9	520667	57.36	40.94	11.14	17.21	5.11	0.63

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.

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.

TABLE 13: DESTINATION OF EXPORTS OF MANUFACTURES BY BRANCHES, 1979 a/

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES TOTAL (PERCENT)	DEVELOPED MARKET ECONOMIES USA (PERCENT)	DEVELOPED MARKET ECONOMIES EEC (PERCENT)	DEVELOPED MARKET ECONOMIES JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
01	Meat and meat preparations	5487	47.37	52.63	0.00	46.30	0.49	0.00
0422	Rice,glazed or polished not otherwise worked	24	100.00	0.00	0.00	0.00	0.00	0.00
053	Fruit,preserved and fruit preparations	654	100.00	0.00	0.00	0.00	0.00	0.00
06	Sugar,sugar preparations and honey	52	54.33	45.67	0.00	0.00	45.67	0.00
074	Tea and mate	1132	98.38	1.62	0.00	0.12	0.00	0.00
081	Feeding-stuff for animals	14143	10.53	89.47	0.00	82.71	0.00	0.00
09	Miscellaneous food preparations	1772	99.50	0.50	0.00	0.50	0.00	0.00
122	Tobacco manufactures	16	100.00	0.00	0.00	0.00	0.00	0.00
243	Wood,shaped or simply worked	28635	96.94	3.06	0.71	1.82	0.17	0.00
251	Pulp and waste paper	13	100.00	0.00	0.00	0.00	0.00	0.00
263	Cotton	58596	23.57	72.70	8.30	28.40	14.62	3.69
4	Animal and vegetable oils and fats	19111	44.36	55.64	16.30	25.59	0.00	0.00
421	Fixed vegetable oils,soft (incl.SITC 422)	18991	44.01	55.99	16.40	25.76	0.00	0.00
431	Animal and vegetable oils and fats processed	120	100.00	0.00	0.00	0.00	0.00	0.00
5	Chemicals	13844	52.35	47.51	31.16	15.02	0.72	0.00
51	Chemicals elements and compounds	4	100.00	0.00	0.00	0.00	0.00	0.00
53	Dyeing,tanning and colouring materials	3742	21.57	78.43	78.43	0.00	0.00	0.00
54	Medicinal and pharmaceutical products	194	100.00	0.00	0.00	0.00	0.00	0.00
55	Essential oils and perfume materials	9854	62.85	36.96	14.00	21.11	1.01	0.00
58	Plastic materials,regenerated cellul. & resins	48	100.00	0.00	0.00	0.00	0.00	0.00
59	Chemical materials and products n.e.s.	1	100.00	0.00	0.00	0.00	0.00	0.00
6	Manufactured goods classified by material	20380	62.09	37.90	3.70	22.65	0.80	0.00
61	Leather manufactured n.e.s. & dressed fur skins	6548	3.59	96.39	0.00	63.90	2.50	0.00
63	Wood and cork manufactures(excl.furniture)	13590	90.26	9.74	5.55	2.52	0.00	0.00
64	Paper,paper board and manufactures thereof	4	100.00	0.00	0.00	0.00	0.00	0.00
65	Textile yarn,fabrics,made-up articles	193	77.54	22.46	0.00	22.46	0.00	0.00
66	Non-metallic mineral manufactures,n.e.s.	46	0.23	99.77	0.00	99.77	0.00	0.00
7	Machinery and transport equipment	32	14.31	85.65	85.69	0.00	0.00	0.00
71	Machinery,other than electric	2	100.00	0.00	0.00	0.00	0.00	0.00
73	Transport equipment	30	9.20	90.80	90.80	0.00	0.00	0.00
8	Miscellaneous manufactured articles	229	86.13	13.87	0.00	11.60	2.27	0.00
82	Furniture	2	0.00	100.00	0.00	100.00	0.00	0.00
83	Travel goods,handbags and similar articles	11	10.12	89.88	0.00	89.88	0.00	0.00
84	Clothing	87	77.47	22.53	0.00	16.58	5.95	0.00
85	Footwear	2	100.00	0.00	0.00	0.00	0.00	0.00
89	Miscellaneous manufactured articles,n.e.s.	127	99.93	0.07	0.00	0.07	0.00	0.00
	TOTAL manufactures	204159	42.77	55.42	8.13	26.64	7.24	1.78
	TOTAL: SITC 5-8 LESS 68 b/	34465	58.30	41.64	14.78	19.49	0.78	0.00
	TOTAL traded goods: SITC 0-9	305176	35.43	63.35	5.87	35.98	5.28	1.19

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.

Table 14: Exports and Imports Classified by Level of Processing, 1970 and 1979, and Trend Growth Rates; 1970-1975 and 1975-1979

CLASSES	EXPORTS				IMPORTS			
	CLASS SHARE OF TOTAL (PERCENTAGE)		CLASS GROWTH RATE (PERCENTAGE)		CLASS SHARE OF TOTAL (PERCENTAGE)		CLASS GROWTH RATE (PERCENTAGE)	
	1970	1979	1970-1975	1975-1979	1970	1979	1970-1975	1975-1979
A : Non-processed goods for further processing	36.32	63.92	31.09	20.69	17.20	16.65	30.42	20.90
B : Processed goods for further processing	24.18	29.20	32.77	13.92	8.11	4.95	26.86	12.16
C : Non-processed goods for final use	10.23	2.99	14.33	-0.97	0.21	0.55	60.64	32.28
D : Processed goods for final use	29.27	3.89	20.78	-23.10	74.48	77.85	24.62	29.07
	1970		1979		1970		1979	
Sum of classes: A+B+C+D in 1000 current US$	64045		305176		75242		520887	
Total trade SITC 0-9 in 1000 current US$	64045		305176		75242		520887	

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 countrys" trade reporting in general, but especially at the 3-,4- and 5-digit SITC level.

3. INDUSTRIAL DEVELOPMENT STRATEGY, POLICIES AND PLANS

3.1 Principles and objectives

Although the first attempts at development planning in Paraguay were made in the early forties, with the adoption of a short-term plan followed by a five-year plan for 1943-1948 and the creation of a Planning Commission in 1952; it was only after the creation of the Technical Secretariat of Planning (TSP) in 1962 that a professional organization was set up to formulate and coordinate economic development strategies and policies*. TSP has prepared four national development plans: The first (1965-1966) established the general objectives and strategies which have prevailed up to the present time. The second (1967-1968) clarified with more precision the short-term objectives and policy instruments. The third plan (1971-1975) determined the adoption of certain important instruments, such as the law of investment promotion. The last plan covers the period 1977-1981. It is in principle a framework for the public sector and only "indicative" for the private sector. General development objectives include the acceleration of income and employment levels; development of national capital and promotion of foreign investments; rational exploitation of natural resources; environmental protection; consolidation of territorial integration, and participation in Latin American integration; consolidation of the basic social capital of the country through well-defined policies of public investments; maintenance of financial equilibrium; improvement in the efficiency of public administration; expansion of savings for the promotion of productive sectors; improvement of educational and health infrastructures; and strengthening the planning system.

The strategy for the manufacturing sector anticipates a larger and more dynamic role for the sector within the overall development. For the latter part of the seventies, an annual growth rate of 9.7 per cent was expected, in comparison with 6.7 per cent in the previous period. As a result,

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* See these antecedents in "Secretaría Técnica de Planificación, 20 años de planificación indicativa en el Paraguay", Asunción del Paraguay, 1982.

manufacturing's share in gross value added should have grown from 19 per cent to 21.9 per cent by 1981, in comparison with a decrease from 34.5 per cent to 31.4 per cent in the primary sector. However, as indicated above (see Figure 1 above), the share of industry remained stable, agriculture suffered a significant decrease, and the main positive change occurred in the construction sector.

Main targets

The basic concept of the planning strategy is that the private sector should make most of the investment and production decisions, while the public sector takes care of the indirect instruments of industrial policy - tax and credit incentives, administrative mechanisms, provision of basic infrastructure*.

The plan gives priority to those industrial activities which enjoy "comparative advantages", and especially to export-oriented agro-industries and the production of manufacturing inputs based on local raw materials. No large technically complex industries, such as petrochemicals and aluminium, are to be promoted in the short term, although their feasibility is to be analysed.

The plan also assigns importance to: a) improvement of productivity of the labour force, through enlightened technology choices and adequate training programmes; b) the regional de-centralization of industrial development; c) the gradual substitution of imports in those industrial branches with dynamic prospects, including the possibility of access to neighbouring markets; d) the adaptation and absorption of technologies, joining domestic research efforts with the contributions of foreign enterprises.

The sectoral targets of the plan anticipated a high growth rate in the wood industry although the food sector was expected to continue dominating the industrial spectrum, with a share of 38.3 per cent of industrial production. The actual performance (see Table 2) confirmed the target for the wood sector but failed to anticipate the fall in the share of food industries.

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* See Plan Nacional de Desarrollo Económico y Social, 1977-1981, Vol. II, p. 77.

3.2 Policy instruments

The main policy instrument for industrial development is Law 550 on the Promotion of Investments for Economic and Social Development, adopted in December 1975. Investments are classified in two categories: a) "necessary" (production or processing of raw materials and export oriented); and b) "convenient" (substituting imports and permitting a larger utilization of domestic resources). The law provides the following incentives.

a) Taxes: Complete exemption from customs duties on imported capital goods and foreign exchange charges; 50 per cent income tax reduction for 5 years in the case of necessary investments and 30 per cent for 5 years in the case of convenient investments; 75 per cent exemption of custom duties on imports of raw materials for the first 2 years; complete exemption from charges on exports, taxes on the constitution of companies, etc.

b) Financial: The National Development Bank extends loans according to guidelines established by the Central Bank. Law 550 provides for special development loans for investments in preferred areas of the country.

c) Tariff: Drawback and temporary admission of imports for the production of items to be exported.

d) Special incentives for preferred areas: Industries within the departments of Alto Paraguay, Nueva Asunción, Chaco and Boquerón are entitled to a 2-year tax exemption; a 5-year exemption from real estate taxes; tax reduction in proportion to percentage of net profits reinvested; reduced fares for public services, etc.

e) Buy national: Government agencies are required to procure supplies with national products if available and if foreign products do not offer significant price and quality advantages.

In addition to the Law 550 incentives, there is a 50 per cent exemption of taxes on all imported inputs for industry not produced in the country.

Regarding financial incentives, the Central Bank has required commercial banks to channel 25 per cent of their credit to the industrial sector.

Several activities are subject to special regulations and advantages: forestry; mining; oil refineries; sugar mills; meatpacking; tourism.

In the period 1970-1981, a total of 1823 projects amounting to almost US $1 billion were approved and granted benefits under the promotion regimes. (see Table 15). Agro-industries, food processing and wood projects were the most favoured (see Table 16).

Foreign investment policy

There are no legal restrictions on foreign investments, which enjoy the same incentive benefits as do domestic investors. Registration and evaluation of foreign investment projects is necessary only for those seeking benefits. Capital can be repatriated after three years of investment, under an annual quota of up to 20 per cent of the total. There are no ceilings on profit remittances. There are a few legal restrictions for foreign investments in public services, hydrocarbons or alcohol commercialization.

Table 15: Investments Approved Under Industrial Promotion Laws: By No. of Projects, Employees and Investment (1970 - 1981).

Year	No. of projects	Employees	Investments (Thousands of US$)
1970	45	1,150	7,405
1971	35	777	1,405
1972	64	5,185	11,802
1973	91	2,725	13,627
1974	174	7,510	67,635
1975	122	2,963	35,317
1976	162	4,775	68,230
1977	166	5,338	103,413
1978	205	4,904	115,349
1979	301	8,739	250,992
1980	247	5,516	133,825
1981	211	4,492	133,254
TOTAL	1,823	54,074	942,254

Source: Ministerio de Industria y Comercio, "Panorama Económico del Paraguay", p 27.

Table 16: Paraguay - Investments Approved Under Industrial Promotion Law 216/550 by Branches 1971-1979

	1971-1979			
	No of Projects	%	Investments (millions ₲)	%
Food	226	17.0	7,705.9	9.2
Beverages	32	2.4	3,019.0	3.6
Tobacco	22	1.7	494.4	0.6
Textiles	27	2.0	1,451.6	1.7
Cotton gins	24	1.8	3,320.9	3.9
Clothing	33	2.5	220.6	0.3
Leather	21	1.6	817.0	1.0
Footwear (1)	7	0.5	78.2	0.1
Wood products	243	18.3	8,499.3	10.1
Furniture	27	2.0	400.7	0.5
Paper and cardboard	22	1.6	7,014.0	8.3
Printing and publishing	62	4.7	781.6	0.9
Chemical products	103	7.7	8,274.9	9.8
Plastic products	26	2.0	997.7	1.2
Glass manufacture	3	0.2	685.5	0.8
Construction materials (2)	109	8.2	3,845.3	4.6
Metal products	38	2.9	2,490.9	3.0
Transport equipment	6	0.5	116.2	0.1
Other manufacturing (3)	83	6.2	1,688.8	2.0
Agro-industries	52	3.9	14,501.4	17.2
SUB-TOTAL	1,166	87.7	66,403.9	78.9
Engineering firms	24	1.8	2,799.2	3.3
Silos	36	2.7	8,418.8	10.0
Tourism (Hotels)	20	1.5	785.6	0.9
Banks	7	0.5	1,243.0	1.6
Transport	42	3.2	2,754.9	3.3
Others	35	2.6	1,706.0	2.0
TOTAL	1,330	100.0	84,111.4	100.0

(1) For Years 1971-1975: Footwear and Clothing
(2) For years 1971-1975: Non-metallic minerals
(3) For 1975: Includes manufacturing of electrical materials and agricultural tools

Source: Ministerio de Industria y Comercio.

3.3 Planned industrial projects

The Technical Secretariat of Planning has prepared the following list of industrial projects, identified on the criteria basis of import substitution, utilization of domestic resources and supply to major public works. Several studies have been made recently on the potential uses of electricity for energy-intensive industries, with the cooperation of the World Bank and the Gesellschaft für technische Zusammenarbeit (GTZ) of the Federal Republic of Germany. Table 17 presents the list of existing industrial projects.

Table 17(a): Planned Industrial Projects, Industrial Projects of Possible Undertaking Before 1985

ISIC	Project	Quantity to be produced per annum*	Investments (Thousands US$)	Employment	Market
3112	Diary products	15,000 l/day	1,000	40	domestic
3113	Canned vegetables	10,000 t/year	1,200	10-30	domestic
3113	Canned vegetables	2,400 t/year	500	30	domestic
3113	Canned fruits	50 t fruits/day	1,200	15-25	dom. and foreign
3113	Fruit marmalades	160 k/hour	1,000	5	domestic
3115	Vegetable oils and fats	40 t/day	13,500	50	foreign
3119	Sweets	500 t/year	800	12-15	domestic
3121	Red-pepper	400 t/year	160	5-10	domestic
3122	Animal feeds	20,000 t/year	110	10	foreign and dom.
31	Sub-total		19,470		
3513	Plastic tubes	500 t/year	200	15-20	domestic
3610	Electrical supplies	1,000 t/year	1,600	130-150	domestic
3691	Sanitary tiles and other ceramic	2,000 t/year	130	45	domestic
3691	Ceramic for construction	10,000 t/year	15,000	40-50	domestic
3692	Lime	15,000-20,000 t/year	4,000	50	domestic
3699	Concrete products	not available	not available		
36	Sub-total		20,730		
3813	Steel constructions	not available	not available		
3822	Agricultural equipment		60	15-20	domestic
38	Sub-total		60		
	TOTAL		40,460		

* l=liter; t=ton; k=kilos

Secretaría Técnica de Planificación, 1982

Table 17(b): Other Identified Industrial Projects.

ISIC	Project	Quantity to be produced per annum	Investments (Thousands US$)	Employment	Market
1210	Charcoal burning (traditional)	1,000 t/year/unit	10,000	2-4 unit	domestic
1210	Charcoal burning (semi-industry)	10,000 t/year	not available		domestic
12	Sub-total		10,000		
3111	Animal fats	1,900 t/fat/year	300	2-3	domestic
3112	Powder milk	500 k/powder/year	4,800	10-15	domestic
3121	Starch	12 t/day	3,600	40-50	dom. and foreign
3121	Yeast coffee	1,000 t/day	5,000	15-20	domestic
3121	Instant coffee	500 t/day	1,400	35	domestic
3121	Processed tea	1 million saq/year	550	5-6	dom. and foreign
3121	Bones flour	1,300 t/year	1,000	2-4	foreign and dom.
31	Sub-total		16,650		
3311	Wood products	10,000 t/year	7,200	60-100	dom. and foreign
3311	Wood wool	200-300 k/hour	160	5-10	dom. and foreign
3320	Furniture	15,000 units/year	not available	12	foreign
33	Sub-total		7,360		
3411	Paper	20,000-25,000 t/year	95,000	160	domestic
3411	Cellulose	20,000-25,000 t/year	100,000	100	domestic
34	Sub-total		195,000		

Table 17b (contd)

ISIC	Project	Quantity to be produced per annum	Investments (Thousands US$)	Employment	Market
3511	Industrial alcohol	10,000 l/day (24 h)	3,600	50	domestic
3511	Fats, acids	not available			
3511	Caustic soda	11,000 t/year	11,000	50	domestic
3511	Methanol	100,000 t/year	90,000	25	dom. and foreign
3512	Super-phosphate	75,000 t/year	4,000	20-30	dom. and foreign
3521	Paints	2,000 t/day	1,000	20-25	domestic
35	Sub-total		109,600		
3620	Glass bottle	34 millions bottle/year	3,500	50-60	foreign and dom.
3710	Ferrous magnesium	50,000 t/year	18,000	90	foreign
3710	Ferrous silicon	40,000 t/year	18,000	50	foreign
37	Sub-total		36,000		
3811	Wire nails	900 t/year	60	5-10	domestic
3811	Screws	300 t/year	500	8-10	domestic
3811	Hand tools	not available			
3819	Galvanized metal products	not available		3	domestic
3839	Electrical machinery	25,000 units/year	100	10	domestic
38	Sub-total		660		
	TOTAL		378,770		

4. INSTITUTIONAL FRAMEWORK FOR INDUSTRY

The following is a list of the main entities dealing with different aspects of industrial development in Paraguay.

i) Regulation and Promotion

- Ministry of Industry and Trade - overall responsibility for the regulation and promotion of industry; an Investment Council within the Ministry deals with the evaluation of investment projects; approves investment projects, supervises imports, registers industrial firms.

- National Council for Economic Coordination - oversees and supervises the economic policies of the government; composed of the Cabinet of Ministers, the President of the Central Bank, the President of the National Development Bank, the Executive Secretary of the Technical Secretariat of Planning; approves larger investment projects.

- Technical Secretariat of Planning - responsible directly to the Presidency, elaborates development plans - in general and for sectors and regions; recommends economic policy measures; analyses the evolution and trends of the economy and supervises the execution of plans.

- National Bureau of Projects - within the Secretariat of Planning, coordinates the identification and promotion of investment projects.

- Pre-investment Fund - administered by an Executive Committee appointed by the President, finances pre-investment studies.

- Finance Ministry - supervises the fiscal implications of the Promotion Regime and registers the incentive benefits granted to favoured investments.

- Advisory Council of Industry and Trade - created by the Minsterial Resolution, it is composed of representatives of several private sector chambers and organizations; the Ministry may require its advice.

- Direction of Military Industries - controls activities related to the manufacture of armaments and ammunition.

- Central Bank of Paraguay - the Division of Capital Registration registers foreign investments and approves external loans.

- Center for the Promotion of Exports (CEPEX) - assists exporters of industrial products, including providing services for the adaption of products to foreign markets, packaging, training, organization of fairs and exhibitions and missions.

ii) Finance

- National Development Bank - extends loans for Industrial Projects under conditions established annually by the National Council of Economic Coordination; wholly owned by the State.

- Development Bank of Paraguay (COMDESA) - 100 per cent owned by ADELA and local commercial banks, it extends financial assistance to various sectors, including industry; loans for fixed capital are granted on medium- and long-term bases, with periods of grace up to two years.

iii) Technology

- National Institute of Technology and Technical Standards - within the Ministry of Industry, provides technical assistance to industry and oversees quality control of raw materials and finished products.

- Direction of Industrial Property - within the Ministry of Industry and Trade, deals with the patent and trademark legislation and registers these titles.

iv) Institutions for International and Regional Cooperation

Paraguay is a member of the following regional cooperation organizations in Latin America:

- Latin American Integration Association (LAIA) - Paraguay enjoys "relatively less developed country" status, which entitles the country to receive special treatment from the other members of LAIA, primarily through non-extensive trade preferences.

- <u>River Plate Basin Commission</u> - a regional cooperation scheme for the identification and promotion of hydroelectrical, infrastructure and production projects between Argentina, Brazil, Bolivia, Paraguay and Uruguay; Paraguay borrowed US$ 7,675,000 by 1981 from its lending facility.

- <u>URUPABOL</u> - a subregional grouping joining Uruguay, Paraguay and Bolivia with the objective of coordinating positions before international financial institutions, intensifying reciprocal trade, and improving the physical inter-connections between the three countries.

- <u>The Latin American Economic System (SELA)</u> - a regional organization of consultation, coordination and cooperation among most Latin American and Caribbean Countries.

v) <u>Business organizations</u>

- Industrial Union of Paraguay. (UIP)

- Federation of Production, Industry and Consumption (FEPRINCO).

5. RESOURCES FOR INDUSTRIAL DEVELOPMENT

5.1 Human resources

Paraguay is one of the smaller populated countries of Latin America. According to the last National Census (July 1982) total population was 3,026,165 persons, 42.3 per cent of whom live in urban centers. The annual population growth rate in the period 1972-1982 was 2.5 per cent. The labour force accounted for 32.8 per cent of the population in 1981, out of which only 15.5 per cent were employed in industry - a share which has remained unchanged over the last 30 years. The small domestic market and the land-locked position of Paraguay, coupled with economic policies which have only recently begun to foster certain industrial activities, like agro-industries and construction, help explain the low labour absorption capacity of the sector. Changing with the flux of economic conditions in Argentina, rural populations have tended to emigrate to the richer neighbouring country, and particularly to its capital city, Buenos Aires, which offers more employment opportunities than Asunción and the few other production centers of Paraguay.

The proliferation of very small industrial establishments, the very low level of technology in most manufacturing firms, the inadequacy of technical learning institutions and the low employment level of their graduates are also important factors for the under-development of human resources for industry. Existing learning institutions are considered insufficient and inadequate for the technical training of the workforce. Only a few university fields are directly related to the needs of manufacturing industry (engineering, chemistry, economics) in the University of Asunción and a few others in the Catholic University. The following tables reflect the performance of University and training centres in terms of industry requirements.

One of the few notable examples in the area of training is the National Vocational Training Services, established in 1971 and receiving support from the World Bank. Although focussed on rural areas, it is providing vocational training in a variety of programmes including trades and industry. There is also a Program of "Educación Técnica Básica" providing basic technical training in intermediate skills*.

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* Ministerio de Educación y Culto, Programa de Educación Técnica y Capacitación Professional.

Table 18: Technical Training: Number of Enrolled and Graduated Students, Classified by Discipline (1981).

	Enrolled	Graduated
Total (all disciplines)	4,604	2,021
Total related with industry	3,159	1,356
Administration	35	30
Agromechanics	70	47
Gunsmith	7	7
Graphic arts	44	18
Automechanics	69	69
Communication	164	51
Industrial Technic	186	40
Electronics	191	47
Management	514	514
Carpentry	22	12
Computation	164	28
Civil construction	96	18
Technical design	129	24
Carpentry	43	15
Electricity	306	86
Agro-industry	12	----
Industrial chemistry	134	21
Machinists	65	16
Mechanics (various)	700	264
Refrigeration	123	34
Transmissions	85	15

Source: Ministerio de Hacienda, Dirección General de Estadística y Censos, "Anuario Estadístico del Paraguay" Año 1981, -- pág. 57.

Table 19: University Institutions: Number of Enrolled and Graduated Students in Industry-related Disciplines (1981).

	Enrolled	Graduated
Total (all disciplines)	27,041	1,621
Total related with industry	8,462	744
Civil Engeneering	1,700	45
Industrial Engeneering	37	---
Topography	593	---
Electromecanics	62	2
Electronics	305	16
Accounting and Administration	2,833	375
Economics	137	65
Chemistry and Pharmacy	1,482	141
Forest Engineering	16	---
Science and Technology	700	39
Computation	280	23
Others directly related with industry	317	38

Source: Ministerio de Hacienda, Dirección General de Estadística y Censos, "Anuario Estadístico del Paraguay" Año 1981 pág. 53-54.

5.2 Raw material resources

Agriculture

One of the main natural resources of Paraguay is its vast land area suitable for agriculture. The Eastern Region comprises 39 per cent of the national territory and enjoys excellent natural irrigation (1,500 mm/year of rainfall). About 98 per cent of the country's cultivated land is contained in the Eastern Region. According to a recent report, 30 per cent of this region's soils are suitable for intensive agriculture, 20 per cent for moderate agriculture and livestock use, 40 per cent for mainly livestock and the remaining 10 per cent for forestry. Some 180,000 agricultural units are engaged in producing about 50 temporary and permanent crops. The main crops are cotton, sugarcane, soybeans, wheat and tobacco.

Table 20: Main Crops by Harvested Area and Production Volumes, 1975-1979*

		1975	1976	1977	1978	1979
Cotton	area	100,000	109,900	200,200	284,900	312,500
	prod	99,615	107,492	227,394	283,763	234,663
Sugarcane	area	20,621	20,772	21,036	22,143	22,270
	prod	764,155	774,052	789,699	890,280	890,140
Soybeans	area	150,200	173,400	228,800	272,200	360,300
	prod	220,086	283,547	376,859	333,130	549,213
Wheat	area	25,200	24,200	28,500	31,500	52,300
	prod	17,987	29,251	28,261	37,801	58,853
Tobacco	area	20,600	27,800	29,800	21,500	20,500
	prod	28,305	38,578	41,424	26,918	25,900

* Harvested area shown in hectares, production volume shown in tons.

Source: Dirección General de Estadísticas y Censos.

Government investments in roads, distribution of public lands and colonization programmes contributed to the expansion of the agricultural sector during the last decade, coupled with the growth of external demand which led to the rapid development of some export crops. About 60 per cent of the value added in industry at the present is derived from processing agricultural products, and 95 per cent of export earnings come from the sector. In the last few years, however, the stagnation of prices of major export crops and the increase in domestic production costs have eroded the expansion of the sector.

Livestock

According to the latest livestock census, in 1980 there were 5,854,400 bovines and 995,500 porcines. Domestic fowl in 1979 were estimated at 13,022,900. Until the mid-seventies, livestock was an important source of foreign exchange for Paraguay. Exports of meat and derivative products fell abruptly after the EEC and other important markets adopted import restrictions. Several meatpackers and other industrial establishments, such as producers of leather products, were seriously affected by such measures. In recent years, domestic fowl producers have developed some processing industries.

Forests

About 60 per cent of the territory of Paraguay is covered by forests of hard and semi-hard wood, highly valued in the international market and suitable for a variety of industrial applications. Despite the creation of the Department of Forestry Development in 1976 for the protection of this natural resource and the promotion of its rational exploitation, de-forestation has continued during the last few years at a rate of 60,000 to 150,000 hectares per year.

The share of wood products has increased significantly in industrial production. Exports of wood have also expanded and now include products with much higher value added than in the past.

Mining

Paraguay does not appear to be endowed with important mineral resources, with the exception of quarry deposits which account for only 0.7 per cent of GDP. However, there are several proposals and recommendations to undertake an evaluation of the mining potential of the country.

5.3 Energy resources

Together with agriculture, the vast hydroelectric potential of its rivers provide the major natural resources of Paraguay. Other natural sources of energy derive from the large forestry resources. Today wood is still an important source of fuel for the population. Regarding oil, some 36 wells have been drilled with little success, although large areas of the country remain to be explored. In the meantime, the country is a net oil importer.

Thus the main feature of the energy scenario in Paraguay is the series of hydroelectric projects, which can be classified in three groups according to their location in a) the Paraná River; b) the Paraná River affluents; c) the Paraguay River affluents.

The Paraná River projects

The Paraná River is one of the world's largest reserves of hydropower. Currently three binational undertakings are at different levels of implementation. These are:

a) The Itaipú dam, built jointly with Brazil, it is the largest project of this kind in the world. It consists of 18 turbines with a total generating capacity of 12,600,000 kwh annually, capable of being expanded to 20 turbines.

The cost of this project is US$ 14.5 billion. In 1983, three generators will start to operate, and three more will be ready in each of the following years. The work is expected to be completed before 1990. The construction of Itaipú has had a significant impact on Paraguayan activities involved in the construction and complementary infrastructure of the dam, and in producing construction materials.

b) Yacyretá, in conjunction with Argentina, will have 20 turbines with a capacity to generate 2,700,000 kw which will produce 17,550 GWH annually. The approximate cost of this work was estimated at US$ 6.0 billion. However, considerable delays have affected the start of construction, due to problems in the negotiations between the two governments, despite the completion of all preliminary works. Present economic problems in Argentina, which is undertaking the bulk of the financing, are further postponing the initiation of the works.

c) Corpus, another project with Argentina, is still at the pre-feasibility stage and the main characteristics of the dam have not yet been defined. The project would have a power capacity of 3,500,000 kw and a production level of 15,000 GWH/annually. The work should start by 1985 and the production of energy begin in 1991.

Another identified project, also with Argentina, is the Itacorá, with 2,000,000 kw of power and a capacity to produce 8,500 GWH annually.

The affluents of the Paraná River

The start up of the Acaray dam in 1968, with a capacity of 45,000 kw, initiated the exploitation of the hydropower resources of Paraguay. In 1970 the addition of a second turbine doubled its power output. By 1977, the second stage of Acaray was completed, and the power installed in this complex now amounts to 184,000 kw, with an estimated expansion of up to 240,000 kw and an annual production of 1,060,000 kwh. Moreover, the Paraná affluents could be better exploited, utilizing the excess waters of the Itaipú dam. The estimated potential of the area is of about 1 million kw.

The affluents of the Paraguay River

Most of the affluents of the Paraguay River are located in the North of the Eastern Region. Waterfalls and rapids abound, but so far, no studies have been undertaken of the energy potential of this area, whose reserves are estimated to be several times greater than local needs.

5.4 Financial resources

The high growth performance of the economy during the second half of the seventies led to an increasing availability of financial resources originating in the inflow of foreign exchange for the Itaipú project and the upsurge of private investments (see Section 2.4). In 1981, the net inflow of capital and external credits to Paraguay amounted to US$ 608 million, slightly less than the previous year.

Table 21: Capital Movements, 1980 and 1981
(millions OF US$)

	1980		1981	
	Inflows	Outflows	Inflows	Outflows
Public sector	100.9	12.7	53.0	20.6
Private sector	240.7	78.9	175.0	70.0
Hydroelectrical projects				
Itaipú	276.6	10.0	319.6	-
Yacyretá	128.5	-	151.0	-
	746.7	101.6	698.6	90.6
Net inflows	645.1		608.0	

Source: Banco Central del Paraguay.

Since 1980, however, a combination of adverse factors - lower prices for exports, reduced tourism, decreasing demand from the Itaipú projects, delays in the construction of Yacyretá, and the rising international interest rates - contributed to the restriction of the availability of finance for new investments. On the other hand, several government measures (including the increase of interest rates and a reduction of foreign borrowing) affected the availability of credit to the public and private sectors. The growth of non-bank financial intermediaries, permitted to pay higher interest rates and free of mandatory sectoral credit allocations, encouraged increasing flows of financial assets to non-productive activities.

The National Development Bank is in most cases the major source of industrial credit, although its industrial operations represent a small fraction of its total credit operations. In 1981, industry received 16.8 per cent of a total of 22.2 billion guaranies channeled through the Bank. The other source is the private development Bank COMDESA (see section 4). There are in addition 22 banks and 24 non-bank financial entities.

6: LIST OF TECHNICAL ASSISTANCE PROJECTS TO SUPPORT INDUSTRIAL DEVELOPMENT

UNIDO's Approved and/or Operational Technical Co-operation Projects as at September 1983

Approval Date	Estimated Completion Date	Project Number =Registry File=	Project Title
10/82	1983	DP/PAR/82/006	Entrenamiento en promoción de inversiones
7/82	1983	RP/PAR/82/001	Training in advisory services to medium-size and small-scale industries
11/82	1983	RP/PAR/82/002	Training in leather and footwear technology
6/83	1983	UC/PAR/83/154	Assistance in the development of the leather industry
4/82	1984	DP/PAR/82/004*	Technological strengthening of the metallurgical industry

* Large-scale project (= total allotment $150,000 or above)

** Total allotment $1 million or above

Source: Information provided by Division of Industrial Operations, UNIDO.

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