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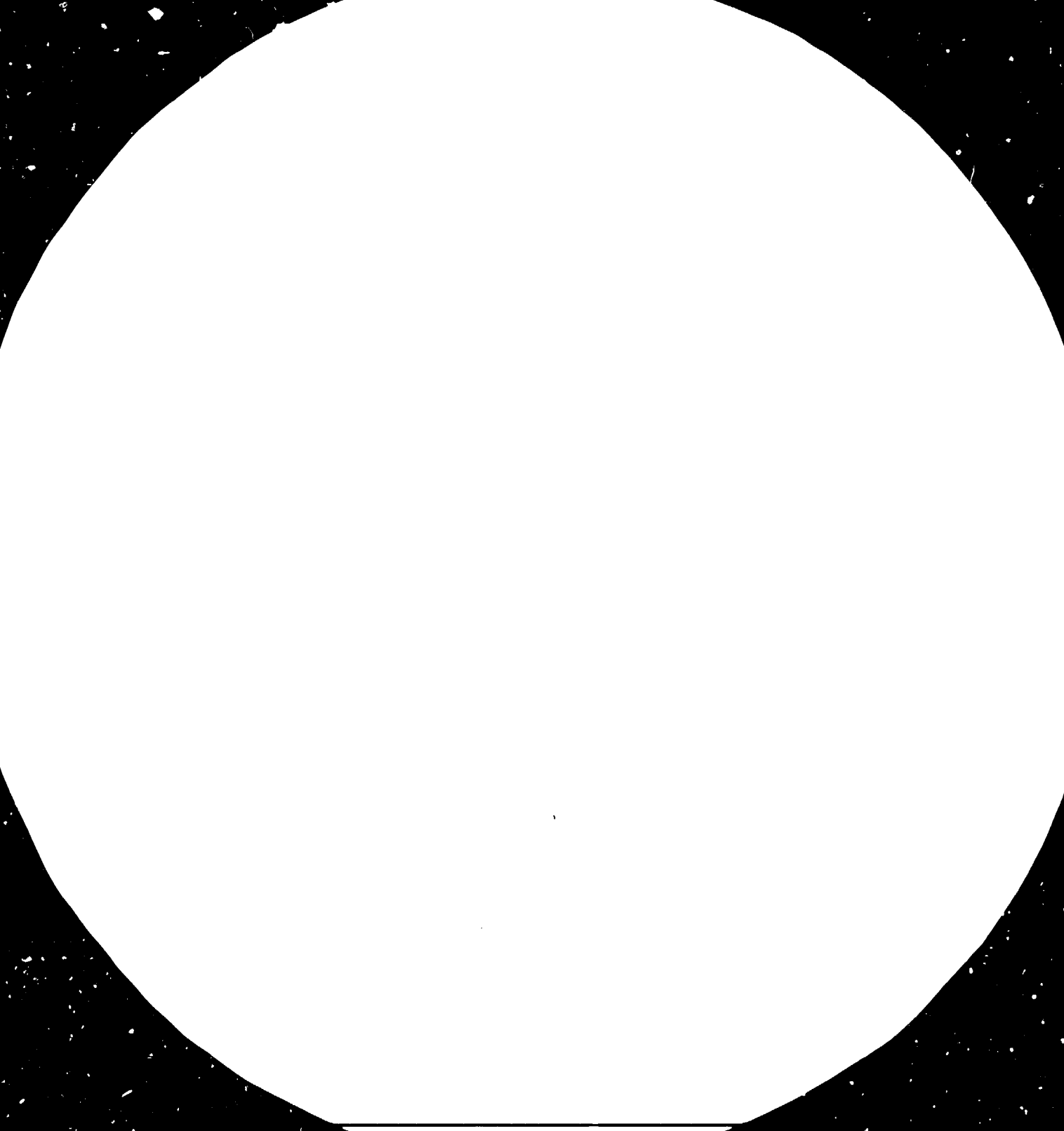
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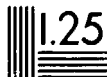
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**INDUSTRIAL DEVELOPMENT REVIEW  
SERIES**

**ARGENTINA**

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

2283

## Preface

This industrial development review of Argentina 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.

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Argentina

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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 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 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.

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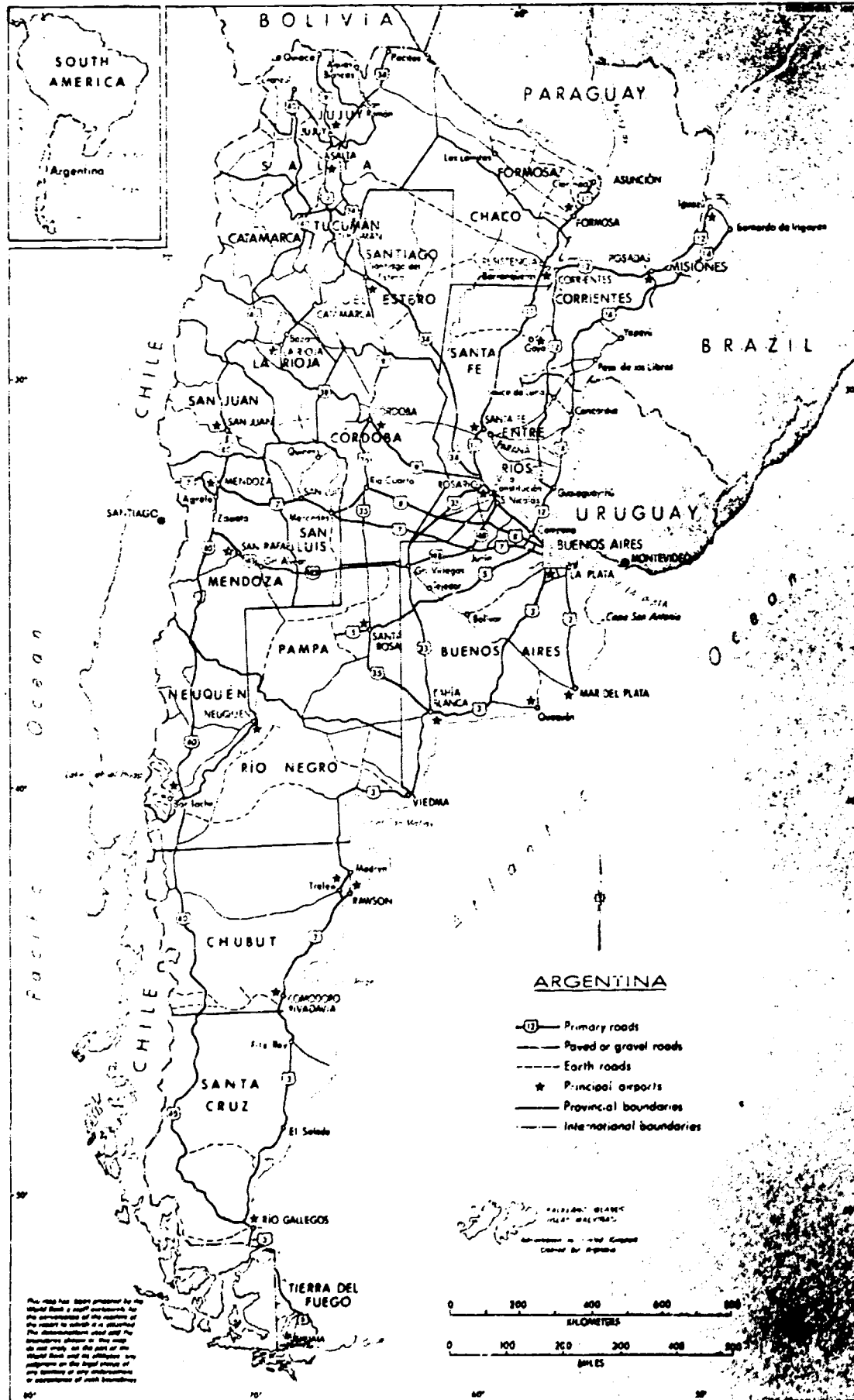
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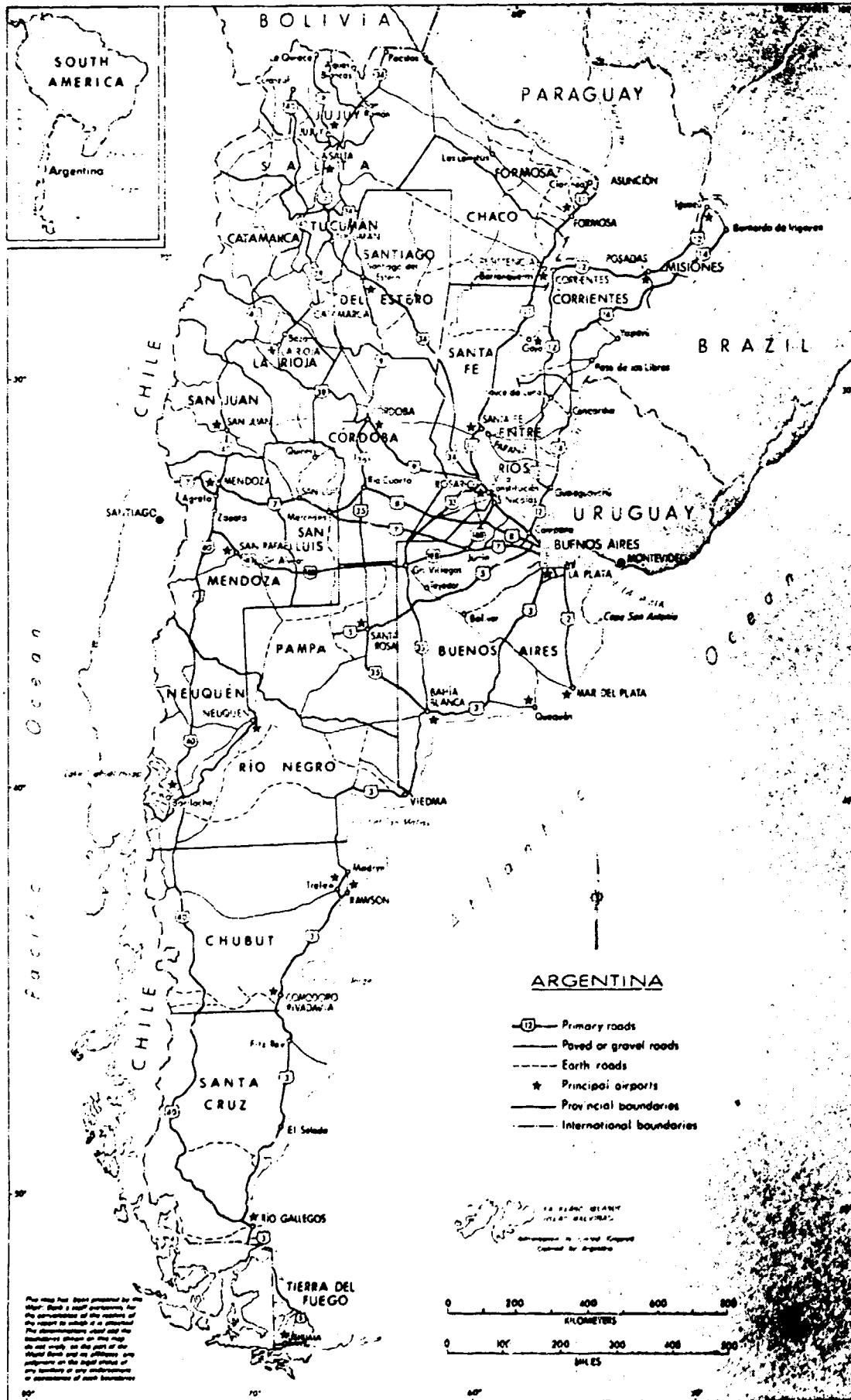
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MAP OF ARGENTINA



MAP OF ARGENTINA



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## Argentina 1.1.1

December 1983

### 1. OVERVIEW OF ARGENTINA

#### 1.1 The Country and its People

Argentina is the second largest country in South America with a total land area of 2.79 million Km<sup>2</sup>. Its vast territory spans tropical, temperate, and even polar zones. The majority of the population and most economic activities are concentrated in the littoral area of the central region of the country.

The population of the city and metropolitan region of Buenos Aires was over 8 million, or almost one third of the total population of 28.2 million in 1981. Some 83 per cent of the population live in urban areas. The population growth rate is one of the lowest in Latin America, 1.6 per cent annual average in the 1970s.

#### BASIC INDICATORS BOX No 1

##### Country Information

Area: (excluding Antartica):	2,791,810 Km <sup>2</sup>
Population	Number: 28.2 million (1981)
	Density: 10 inhabitants per Km <sup>2</sup>
	Growth rate: 1.6 per cent, 1970-81
	1.0 per cent, projected 1980-2000
	Labour force: 10.6 million (1980)
	Adult literacy: 93 per cent (1977)
	Life expectancy: 71 years (1981)
	Infant mortality rate: 44 per 1000 live births (1981)
Language:	Spanish
Currency (July 1983):	1 US \$ = 9.5 pesos argentinos

Sources: Anuario Estadístico de la República Argentina; World Bank, World Development Report 1983, IMF, International Financial Statistics, November 1984.



Argentina 1.1.2

December 1983

The economically active portion of the population was 37.5 per cent in 1981, for a total labour force of some 10.6 million. Approximately 8.7 per cent of the labour force is employed in industry.

The ethnic origins of the population are largely European, primarily Italian and Spanish, and Roman Catholicism is the predominant religion. Argentines enjoy a relatively high average standard of living: GNP per capita was estimated at US\$ 2,560 in 1981 and the adult literacy rate is well over 90 per cent.

A general election was held in November 1983 and a civilian government was installed following eight years of military administrations.

BASIC INDICATORS BOX No 2

Resources and Transport Infrastructure

Resources:

Cash crops (leading products):	wheat, maize, sorghum, soya, linseed, sugarcane, grapes
Livestock total numbers in 1982:	cattle (58 million) sheep (30 million), pigs (4 million)
Fisheries total catch in 1982:	460,000
Forests	63,000 hectares 2.3 per cent of total area
Mining (leading minerals by value):	Petroleum, natural gas, coal, iron ore, uranium

Transport

Roads:	54,600 Km tarmac, 100,000 Km other
Railways:	34,284 Km
Ports:	Buenos Aires, Rosario, Bahia Blanca
Airports:	Buenos Aires, Cordoba, Rosario, Mendoza

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

Argentina 1.1.3

December 1983

Argentina is richly endowed with natural resources. The ample land resources appropriate for agriculture and animal husbandry has provided the country with an international comparative advantage in such goods as wheat, corn, beef, and wool. Most of the export crops are grown in the fertile pampas. Important industrial crops include sugarcane and grape vines.

The country also has relatively important mineral, forest and fish resources, and an extensive transport network. Argentina has the largest railroads network in Latin America, although non-uniform gauges and poor up keep hamper its efficiency.

Argentina 1.2.1

December 1983

1.2 The economy

BASIC INDICATORS BOX No 3

GNP, GDP, and Structure of the Economy

<u>Gross National Product per capita</u>	:	US\$ 2,560 (1981)
<u>Gross Domestic Product total</u>	:	US\$ 153,330 million (1980)
Growth rate <u>1/</u>	:	1.9 per cent (average annual, 1970-1981)
<u>Structure of the Economy (1981)2/</u>	:	Agriculture : 14 per cent
		Mining : 3 per cent
		Manufacturing : 22 per cent
		Construction : 7 per cent
		Services : 54 per cent

1/ Measured in constant 1970 prices.

2/ Per cent of GDP, in constant 1970 prices

Sources: World Bank, World Development Report 1983; and Banco Central de la República Argentina, Boletín Estadístico, November-December 1982.

Argentina is a semi-industrialized developing country. Yet as other countries of the South, a significant proportion of its total exports is composed of primary goods, severe imbalances persist in its regional development, and per capita income is far from being evenly distributed. At the same time, the country has an important manufacturing sector and has reached a level of technological development which places it in a position similar to, and in some respects even higher than, other semi-industrialized countries.

Until the 1930s, the Argentine economy was based on exploitation of its land resources. Exports of agricultural commodities, directed mainly to Europe, operated as an "engine of growth". After 1930, the country underwent a severe economic crisis as the terms of trade deteriorated and agricultural productivity lagged. Imbalances in the country's international payments emerged and became a chronic problem. On the other hand, the difficulties in the traditional production and export sectors prompted the expansion of other economic activities. The manufacturing sector, though already important

## Argentina 1.2.2

December 1983

in its own right, was promoted primarily through protectionist policies, turning the economy inwards. In recent years, various policies have been directed at removing some of the basic obstacles to the country's development - without major success. By the late 1970s the country began to suffer a deep recession coupled with extremely high inflation.

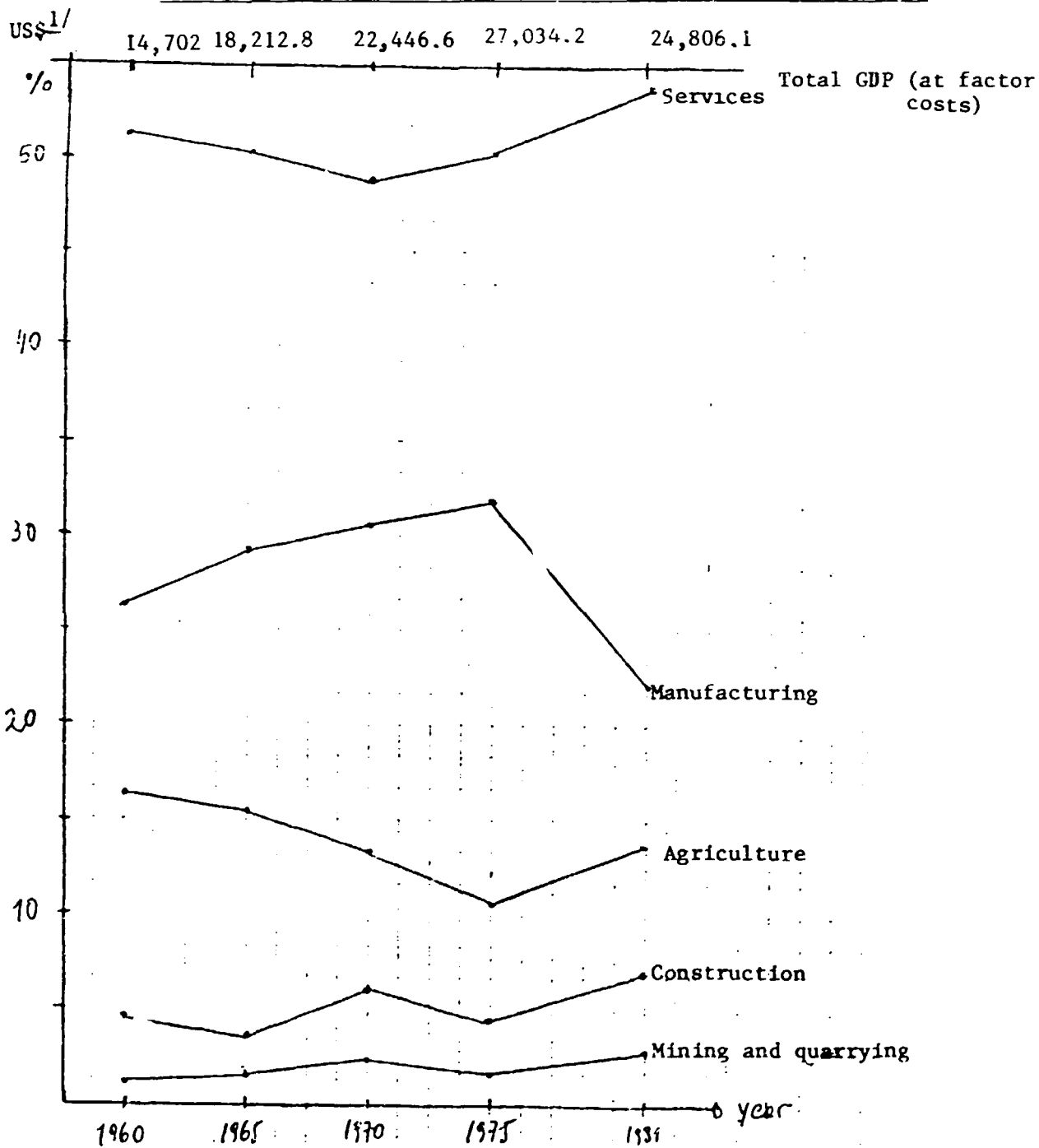
In the 1970s, GDP grew at an average annual rate of 2.2 per cent in constant 1970 prices. Between 1975 and 1981 however, GDP decreased by 8.2 per cent. The share of GDP contributed by the manufacturing sector fell during this period by about 10 percentage points to 22 per cent. The services sector contributes the largest share of GDP, 54 per cent in 1981 (see figure 1).

The primary goals of economic policy from 1976 to 1980 were to reduce inflation, restructure the industrial sector along the lines of the country's comparative advantages, and decrease the public sector's role in the economy. Inflation was reduced from some 400 per cent in 1976 to about 150 per cent in 1978 but then stabilized. The latest annual figures show an inflation rate of nearly 300 per cent in 1982 and 20 per cent monthly increases at the end of 1983.

A main policy objective by 1978 was to increase competitive pressures on producers by reducing import tariffs and appreciating the peso in real terms. The rate of peso devaluations was slower than that of inflation and its appreciation in real terms was continued to the end of 1980. Despite the nominal devaluation from 408 pesos per US dollars in 1977 to 1,837 pesos per dollar in 1980 the real value of the peso appreciated by 45 per cent, according to World Bank estimates. In 1981 the exchange rate policy was replaced by a dual rate system, with separate rates for "commercial" and "financial" transactions. The exchange rate was again unified in late 1982 and is determined in accordance with domestic inflation and differentials with trading partners.

Argentina 1.2.3  
December 1983

Figure 1: GDP by economic sector 1960-1981 in constant prices of 1970.



Source: From 1960-1975, ECLA  
For 1981, Fundación de Investigaciones para el Desarrollo (FIDE),  
with data from Banco Central de la República Argentina

1/ US\$ millions, constant 1970 prices

Argentina 1.2.4

December 1983

BASIC INDICATORS BOX 4  
Prices and Exchange Rates\*

Year	Consumer prices index (1980=100)	Official exchange rate* (annual average)		
		pesos	pesos argentinos	
1970		1 US \$ =	3.8	
1975		"	36.6	
1976	2.52	"	140.0	
1977	6.97	"	407.6	
1978	19.19	"	795.8	
1979	49.81	"	1,317.0	.132
1980	100.00	"	1,837.0	.184
1981	204.48	"	4,403.0	.440
1982	541.40	"	25,923.0	2.592
Jan-June 1983	1,435.43	"	67,786.0	6.779
July 1983		"	94,447.0	9.445

\* Argentina introduced the peso argentino as its currency in mid 1983, worth 10,000 new pesos. The new pesos themselves had been introduced on 1 January 1970, worth 100 old pesos, because of endemic inflation. The new currency is designated \$a. Figures in pesos in sources before June 1983 refer to new pesos.

Sources: The Economist Intelligence Unit, Quarterly Economic Review of Argentina, Annual Supplement 1983; International Monetary Fund, International Financial Statistics, October 1983; Yearbook 1979.

Foreign debt, its rescheduling and services payments remain a major obstacle to stabilization objectives for inflation and growth. In 1978 Argentina's debt service was 3.5 per cent of GDP and 26.8 per cent of total exports. In 1981 these ratios had fallen to 1.3 per cent of GDP and 18.2 per cent of exports. Total debt outstanding in 1981 was US\$ 22,672 million, of which US\$ 10,506 million were in the public sector. By the end of 1983 this figure had increased substantially to over US\$ 40,000 million. A major priority of the new Administration will be to negotiate refinancing and payment schedules.

Argentina 1.2.5

December 1983

BASIC INDICATORS BOX 5

Foreign Trade and Balance of Payments

<u>In 1981</u>		
Exports	total value:	US\$ 7,624 million
	main goods:	wheat, maize, millet, soya, meat, manufactured goods
	main destinations:	Soviet Union, USA, the Netherlands, Brazil
Imports	total value:	US\$ 5,337 million
	main goods:	fuels, machinery, ores and metals
	main origins:	USA, Brazil, FRG, Japan
Balance of Payments		US\$ -3,973 million
External Public Debt:	total:	US\$ 10,506 million
	per cent of GNP:	8.7 per cent
Debt Service:	per cent of GNP:	1.3 per cent
	per cent of total exports:	18.2 per cent
Foreign currency reserves:	total:	US\$ 5,006 million
Inflation rate:	1970-1980:	141.2 per cent average annual
	1981-1982:	291.0 per cent

SOURCES: World Bank, World Development Report 1983, and UNIDO data base.

December 1983

1.3 Manufacturing sector

## BASIC INDICATORS BOX 6

The Manufacturing Sector

Manufacturing Value Added (MVA):	US\$ 15,882 million (1981)
MVA per capita:	US\$ 570
Employment (in industry)	
Number:	918,000 (1981)
Percentage of labour force:	8.7 per cent
MVA per employee:	US\$ 14,180
Exports of Manufactures	
Value:	US\$ 4,904 million (1980)
Main goods:	Meat and meat preparations, machinery, equipment transport, etc.
Destinations:	LAIA countries, EEC
Imports of Manufactures	
Value:	US\$ 9,062 million (1980)
Main goods:	Machinery, chemicals, transport equipment
Origins:	USA, Japan, EEC, Brazil

Sources: World Bank, World Development Report 1983, and UNIDO Data Base.

Argentina's industrial sector has reached a significant level of development, particularly in comparison with other countries of the Latin American region. Manufacturing activities were already important in the country by the 1930s, and from that decade on remained one of the main sources of economic growth.

At first, industrial development was concentrated in consumer goods industries. Meat and leather processing, flour mills, breweries and the like were the main branches of industrial activities by 1930. Later textiles and some light chemical industries surged into prominence. By the mid 1940s metallurgical establishments came to the fore. Finally, by the 1960s, the country had developed an important transport equipment industry and significant production of machinery.



Argentina 1.3.2

December 1983

By 1967 industrial growth based on an import substitution strategy was considered insufficient and economic policies shifted towards promotion of manufactured exports. This strategy was sustained up to 1976 and achieved significant results.

From 1976 onwards a dramatic policy change was adopted (described in greater detail in section 3.1 below) as import tariffs were reduced, interest rates were allowed to rise and the exchange rate was overvalued significantly. Both the type of goods produced and their prices were to be constrained by competition from imports. The success of this strategy was thwarted by the failure to restrain aggregate demand and public deficit and by the lack of response by firms to invest in expansion or modernization of production as interest rates, wages and prices for domestically produced inputs all continued to rise. Manufacturing activities as a whole were seriously affected by foreign competition domestically and found it impossible to compete abroad. Probably the single most revealing indicator of this evolution is the level of employment in manufacturing: of the 1,216,000 blue collar workers engaged in industrial production in the first quarter of 1976, only 745,000 remained by 1982\*.

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\* Fundación de Investigaciones para el Desarrollo (FIDE), Coyuntura y Desarrollo, Anexo Estadístico XIV, April 1983, p. 72.

July 1983

2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR<sup>\*/</sup>

2.1 Growth and structural changes of value added in manufacturing

The manufacturing sector exhibited a very poor performance during the 1970s: its overall annual growth rate was only 1.4 per cent. As Table 1 shows, only a small number of branches experienced relatively high rates of growth during that period: professional and scientific equipment (5.3 per cent annually), rubber products (4.1 per cent) and non ferrous metals (3.4 per cent) were among the exceptions. Another indication of the poor performance is the fact that of the 28 industrial branches, 10 recorded negative growth rates in the decade.

A better understanding of the development of the industrial sector in the period is obtained by distinguishing between the periods 1971-75 and 1976-80. As table 1.A indicates, the manufacturing sector as a whole grew at 3.4 per cent in the first half of the decade and experienced a net reduction in its output during the second half. In the first part of the decade only four branches had negative growth rates: footwear, furniture, petroleum refineries and miscellaneous petroleum products. Most of the branches that fabricate consumer goods had a relatively good performance and the same could be said for those in the capital goods category. In fact, taking into account the past experience of Argentina, some important branches like tobacco (314) or wearing apparel (322) in the first group, and machinery (382) and fabricated metal production (381) in the second, experienced a very dynamic growth. In the 1976-80 period, however, only 12 branches experienced positive growth rates, including petroleum products (353-354) - the performance having been heavily influenced by a policy aimed specifically at promoting this branch; transport equipment (384) - in which the automobile industry played an important role in some years; furniture (332) and non ferrous metals (372) affected by the start up of a new aluminium plant. As will be explained further in section 3.1 below, the poor performance of the 1976-80 period was mainly the result of a set of policies put into affect during those years.

---

\* The source of data concerning value added is the Manufacturing Census of 1973, in which value added is defined as gross output minus consumption.

Argentina 2.1.2

July 1983

The sectoral shares are presented in Table 2. Food products represented the most important single branch in the Argentine industry in 1980, followed by transport equipment, petroleum refineries and fabricated metal products. A glance at the table also shows that textiles and wearing apparel are among the branches that have reduced their share substantially during the decade.

Preliminary estimates for 1981 (see last column of Table 2) indicate an important increase in the respective shares of a few branches, such as food products, other chemicals and petroleum refineries. In contrast, in that year a significant reduction in the absolute level of output occurred in the transport equipment branch.

Table 1: Annual Growth Rates of Real Manufacturing Value Added, 1970-1980  
(Percentages on the basis of values in 1970 pesos, constant prices)

ISIC	ISIC-DESCRIPTION	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1970-80
2110	Food products	- 5.6	6.6	1.3	1.2	3.6	7.2	1.2	- 0.7	0.8	-	2.2
3130	Beverages	2.8	2.2	0.4	23.7	-4.9	-11.9	-11.3	-9.1	17.5	10.2	1.4
3140	Tobacco	2.1	5.8	5.2	13.4	0.5	-2.8	-0.2	-0.1	3.5	-0.5	2.6
3210	Textiles	4.4	-1.3	5.0	9.5	-4.7	-5.5	6.5	-14.0	13.1	-16.6	-0.9
3220	Wearing apparel, exc footwear	6.7	8.5	-3.9	19.6	-6.0	-7.2	-5.7	-22.1	17.2	-10.8	-1.2
3230	Leather products	- 1.5	20.0	-10.4	-7.7	7.3	8.0	9.2	2.2	-12.3	-15.7	-0.7
3240	Footwear, exc. rubber or plastic	4.8	-23.3	4.2	12.3	-12.2	-16.8	-7.4	-13.7	-0.1	-3.1	-7.1
3310	Wood products, exc furniture	11.0	0.9	1.4	11.6	-6.6	-13.5	-1.3	-6.0	4.3	-4.9	-0.6
3320	Furniture, exc metal	-9.7	1.8	-0.7	21.9	-12.7	-30.1	23.3	11.1	25.4	0.4	1.6
3410	Paper and products	5.5	6.3	9.0	8.3	-4.0	-13.3	5.5	3.4	11.3	-17.8	0.9
3420	Printing and publishing	- 0.7	2.5	2.7	4.2	6.1	-11.6	-4.7	3.1	-7.2	5.8	-1.0
3510	Industrial chemicals	16.1	10.7	9.2	2.3	-6.4	-4.6	8.1	-10.2	21.3	-13.7	2.7
3520	Other chemicals	13.1	2.0	12.8	-9.7	20.1	-1.6	-6.7	-12.7	9.7	6.5	2.9
3530	Petroleum refineries	5.2	3.0	1.7	-5.3	-8.8	7.1	5.1	1.1	4.8	5.9	1.9
3540	Misc. petroleum and coal products	-10.7	1.6	2.6	-8.4	-11.4	-1.1	24.1	-18.0	18.4	-0.3	-1.1
3550	Rubber products	12.6	11.6	5.8	-2.5	5.2	9.8	0.3	-15.9	25.2	-5.8	4.1
3560	Plastic products	9.8	28.4	8.1	-8.5	-8.4	-12.3	7.9	-9.7	24.7	0.2	1.9
3510	Pottery, china, earthenware	4.8	5.7	3.7	4.3	-8.5	-0.1	-16.6	-10.7	17.1	-0.7	-0.6
3620	Glass and products	- 2.8	2.5	-9.7	7.5	23.8	-13.4	-7.7	10.2	11.5	-9.0	0.6
3690	Other non met. mineral products	10.8	3.0	-6.4	8.4	-2.1	-0.8	2.8	-0.7	4.7	-2.1	-0.1
3710	Iron and steel	10.2	7.7	5.0	1.8	-1.9	-7.2	15.0	-4.1	13.6	-11.3	2.5
3720	Non-ferrous metals	19.0	5.5	1.9	5.9	-12.0	-19.9	14.4	-12.2	35.4	7.1	3.4
3810	Fabricated metal products	12.6	4.6	-3.1	9.9	3.1	-2.5	13.2	-13.7	10.9	-4.2	2.7
3320	Machinery, exc. electrical	9.2	2.6	22.9	7.1	-10.0	23.5	24.4	-26.5	9.7	-12.2	0.5
3530	Machinery electric	9.4	3.0	2.3	4.9	-0.1	-19.2	15.7	-12.6	6.6	-3.4	-0.6
3840	Transport equipment	12.4	2.3	7.3	3.8	-13.6	-11.0	34.8	-25.3	22.7	3.7	2.4
3350	Professional and Scientific equip	7.8	38.7	10.1	44.8	-13.5	5.9	0.4	3.4	9.9	-32.7	5.3
3900	Other manufactured products											
3000	TOTAL MANUFACTURING	6.1	4.0	4.0	5.9	-2.6	-3.0	7.8	-10.5	10.2	-3.8	1.4.

Source: Banco Central de la República Argentina

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Table 1a. Annual growth rates of real manufacturing value added. 1970-1980: 1970-1975 and 1976-1980 (Percentages on the basis of values in 1970 pesos, constant prices)

ISIC	ISIC-DESCRIPTION	1970-1980	1970-1975	1976-1980
3110	Food Products	2.2	1.3	1.7
3130	Beverages	1.4	4.4	-1.7
3140	Tobacco	2.6	5.3	-
3210	Textiles	-0.9	2.5	-4.0
3220	Wearing apparel, exc footwear	-1.2	4.5	-6.5
3230	Leather Products	-0.7	0.9	-2.3
3240	Footwear, exc. rubber or plastic	-7.1	-5.6	-8.4
3310	Wood products, exc. furniture	-0.6	3.5	-4.5
3320	Furniture, exc. metal	1.6	-0.6	3.8
3410	Paper and products	0.9	4.7	-2.8
3420	Printing and publishing	-1.0	2.9	-3.1
3510	Industrial chemicals	2.7	6.1	-0.6
3520	Other chemicals	2.9	7.2	-1.3
3530	Petroleum refineries	1.9	-1.0	4.8
3540	Misc. Petroleum and coal products	-1.1	-5.3	3.5
3550	Rubber products	4.1	6.3	1.7
3560	Plastic products	3.1	5.0	1.3
3610	Pottery, China, Earthenware	-0.6	1.8	-3.0
3620	Glass and products	0.6	3.7	-2.3
3690	Other non met. mineral products	1.6	2.6	0.7
3710	Iron and Steel	2.5	4.5	0.6
3720	Non-ferrous metals	3.4	3.5	3.1
3810	Fabricated metal products	2.7	5.3	0.2
3820	Machinery, exc. electrical	3.7	5.8	1.7
3830	Machinery electric	-0.6	3.9	-3.4
3840	Transport Equipment	2.4	2.0	2.7
3850	Professional and Scientific equip.	5.3	15.6	-4.0
3900	Other manufactured products			
3000	TOTAL MANUFACTURING	1.4	3.4	-0.2

Source: Banco Central de la República Argentina

Table 2: Structural Changes of Value Added in Manufacturing, 1980-1981  
(Sectoral Share (Percentages) on Basis of Value in 1970 \$ constant Prices)

ISIC	ISIC-DESCRIPTION	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981 <sup>a/</sup>
3110/3120	Food Products	14.98	13.63	13.75	13.39	13.03	13.76	14.76	13.96	15.31	14.23	14.75	17.08
3130	Beverages	4.99	4.83	4.74	4.57	5.37	5.23	4.74	3.92	3.97	4.23	4.82	5.15
3140	Tobacco	3.84	3.69	3.75	3.79	4.08	4.20	4.20	3.91	4.35	4.08	4.20	4.61
3210	Textiles	8.79	8.64	8.19	8.27	8.60	8.40	8.15	8.10	7.75	7.95	6.86	6.63
3220	Wearing apparel, exc foot- wear	2.42	2.43	2.54	2.34	2.66	2.56	2.44	2.15	1.86	1.98	1.83	1.35
3230	Leather products	0.94	0.87	1.00	0.86	0.76	0.83	0.92	0.94	1.07	0.85	0.74	0.84
3240	Footwear, exc rubber or plastic	0.83	0.75	0.55	0.55	0.59	0.53	0.45	0.39	0.37	0.34	0.34	0.36
3310	Wood products, exc furniture	1.36	1.43	1.38	1.34	1.42	1.37	1.21	1.12	1.17	1.10	1.09	1.07
3320	Furniture, exc. metal	0.66	0.56	0.55	0.52	0.61	0.54	0.39	0.45	0.56	0.63	0.66	0.72
3410	Paper and products	2.30	2.29	2.33	2.45	2.51	2.45	2.18	2.15	2.40	2.50	2.12	1.87
3420	Printing and Publishing	2.86	2.67	2.63	2.59	2.57	2.79	2.53	2.25	2.58	2.18	2.38	2.46
3510	Industrial Chemicals	2.65	2.90	3.08	3.23	3.15	3.02	2.95	2.98	2.98	3.28	2.93	3.10
3520	Other Chemicals	5.54	5.90	5.80	6.29	5.40	6.64	6.72	5.85	5.68	5.65	6.23	7.49
3530	Petroleum refineries	8.00	7.92	7.83	7.66	6.89	6.43	7.08	6.94	7.81	7.42	8.12	9.26
3540	Miss. petroleum and coal products	0.51	0.43	0.42	0.41	0.36	0.33	0.33	0.38	0.35	0.37	0.39	0.48
3550	Rubber products	2.24	2.37	2.54	2.59	2.56	2.58	2.91	2.72	2.55	2.89	2.82	2.22
3560	Plastic products	0.99	1.02	1.25	1.30	1.13	1.06	0.96	0.96	0.96	1.09	1.14	1.01
3610	Pottery, china, earthenware	0.55	0.54	0.55	0.55	0.54	0.51	0.52	0.41	0.40	0.43	0.44	0.26
3620	Glass and products	1.10	1.00	0.99	0.86	0.88	1.11	0.99	0.86	1.05	1.06	1.00	0.90
3690	Other non met. mineral products	3.59	3.75	3.71	3.34	3.43	3.44	3.51	3.37	3.72	3.53	3.57	3.69
3710	Iron and steel	4.35	4.52	4.67	4.71	4.55	4.58	4.37	4.68	5.00	5.15	4.72	5.01
3720	Non-ferrous metals	1.08	1.21	1.22	1.19	1.20	1.08	0.89	0.95	0.93	1.14	1.26	1.12
3810	Fabricated metal products	7.22	7.65	7.68	7.16	7.47	7.89	7.91	8.36	8.03	8.07	7.99	7.69
3820	Machinery, exc electrical	5.02	5.16	5.08	6.01	6.11	5.64	7.15	8.30	6.78	6.75	6.13	5.13
3830	Machinery electric	3.82	3.94	3.89	3.83	3.82	3.91	3.25	3.50	3.40	3.30	3.29	3.02
3840	Transport equipment	8.92	9.44	9.27	9.56	9.43	8.34	7.63	9.60	7.97	8.88	9.54	6.94
3850	Professional and scientific equipment	0.45	0.46	0.61	0.64	0.88	0.78	0.86	0.80	0.92	0.92	0.64	0.54
3900	Other manufactured products												
3000	TOTAL MANUFACTURING	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: FIDE, with data from Banco Central de la República Argentina

a/ Estimated

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2.2 Geographical distribution of manufacturing industries

According to the results of the last industrial census, in 1973 some 86 per cent of total manufacturing value added in Argentina was generated in establishments located in the capital city (Buenos Aires) and in the provinces of Buenos Aires, Córdoba and Santa Fe. If the provinces of Mendoza, Tucumán and Jujuy are included the corresponding share goes up to 93 per cent. The data also indicates that the establishments in the province of Buenos Aires were by themselves responsible for approximately half of the total value added of the industrial sector. Similar conclusions can be drawn regarding the geographical distribution of: i) total manufacturing employment and ii) total number of industrial establishments.

A better understanding of the characteristics of the spatial distribution of industry in Argentina can be gained by analysing some simple relationships presented in Table 3. The fourth column shows the ratio of shares in value added to the share in number of establishments in each province. According to these figures, the capital and the provinces of Buenos Aires, Chubut, Jujuy and Tucumán have the highest output per establishments. This is in part the result of the larger size of the establishments located in these areas. In fact, many of the country's larger factories are located in the province or capital city of Buenos Aires. In Jujuy, just two large establishments account for most of the entire industrial activity of the province. In Tucuman, the large average size of the sugar mills also accounts for its higher ratio. The recent incentives to industrial production in Chubut, promoting the construction of modern factories, helps explain the relatively higher ratio of value added by establishment for that province.

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Table 3 also presents some estimates regarding the distribution of manufacturing value added in 1980. A comparison with the data for 1973 reveals that the two most important regions, Buenos Aires and Capital, have reduced their shares, while Mendoza, Córdoba, Santa Fe and Chubut among others, have increased theirs. The relative increase of Mendoza's share is explained by the development of some metal working shops; that of Santa Fe and Córdoba by the growth experienced in their food industries and transport equipment production; that of Chubut by the positive impact of a series of policy incentives aimed at promoting the establishment of manufacturing firms in the province. A similar case has been that of Tierra del Fuego where a special regime was created to promote industrial activities.



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Table 3: Regional Shares in Manufacturing, Value Added, Employment and Establishments  
1973. Regional Manufacturing Value Added, 1980.

REGION	Shares in total manufacturing value added (per cent)		Shares in total manufacturing employment (per cent)		Ratio of shares in value added to shares in No. of establishments
	1973	1980	1973	1980	1973
Buenos Aires	48.90	45.88	44.13	36.87	1.3
Capital	21.20	19.44	21.75	18.86	1.1
Córdoba	6.18	6.50	9.38	10.63	0.6
Corrientes	0.75	0.94	0.63	1.05	0.7
Catamarca	0.06	0.25	0.13	0.41	0.1
Chaco	0.58	0.71	1.03	1.69	0.3
Chubut	0.55	1.19	0.68	0.50	1.1
Entre Ríos	0.83	0.75	1.55	2.49	0.3
Formosa	0.13	0.14	0.27	0.60	0.2
Jujuy	1.05	1.16	0.99	0.56	1.9
La Pampa	0.14	0.12	0.29	0.94	0.1
La Rioja	0.07	0.09	0.12	0.32	0.2
Mendoza	4.22	6.19	2.88	4.22	1.0
Misiones	0.49	0.65	1.07	2.13	0.2
Neuquén	0.25	0.46	0.18	0.31	0.8
Río Negro	0.41	0.66	0.60	0.87	0.5
Salto	0.95	0.66	0.85	1.14	0.8
San Juan	0.80	0.75	0.55	0.81	1.0
San Luis	0.22	0.39	0.31	0.70	0.3
Santa Cruz	0.04	0.05	0.10	0.16	0.3
Santa Fe	0.67	9.90	9.40	11.95	0.8
Santiago del Estero	0.19	0.21	0.45	0.91	0.2
Tucumán	2.29	2.86	2.73	1.83	1.3
Tierra del Fuego	0.03	0.05	0.04	0.05	0.6
<b>TOTAL %</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
<b>values</b>	<b>92,876<sup>a/</sup></b>	<b>164,245,565<sup>a/</sup></b>	<b>1,525,221</b>	<b>126,388</b>	<b>national average 0.7</b>

Sources: For 1983: Instituto Nacional de Estadística y Censo (INDEC) "Censo Nacional Económico, Industria Manufacturera" 1974  
For 1980: Estimates from Consejo Federal de Inversiones

a/ In million pesos, current prices.

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### 2.3 Manufacturing activity by size of enterprises

The distribution by size of industrial enterprises according to a series of indicators is presented in Table 4. About 85 per cent of all establishments employed fewer than 10 persons in 1973. Those enterprises were responsible for approximately 9 per cent of manufacturing value added and 11 per cent of all manufacturing employment. At the other end of the spectrum, only 126 establishments, or 0.1 per cent of the total number, employed more than 1,000 persons yet generated 26.6 per cent of all the country's manufacturing value added and employed around 19 per cent of all persons engaged in manufacturing activities. The last column in Table 4 shows that a positive correlation exists between the size of the firm and the value added per employee. At the same time, the data suggests that on average those establishments with more than 50 employees and fewer than 1,000 have a similar level of labour productivity.

More recent data is not available with respect to the size of enterprises because the surveys conducted since 1973 include only a sample of the total number of establishments. Thus, no conclusion can be reached with regard to the changes that have occurred during the decade, although it is quite probable that the serious crisis that affected manufacturing activities during the second half of the seventies has influenced the above mentioned distributions.

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Table 4: Establishments, Manufacturing Value Added, Employment and Value Added per Employee, by Size of Enterprises, 1973

Size in terms of numbers employed	Percentage of total manufacturing establishments 1973	Percentage of total manufacturing value added 1973	Percentage of total manufacturing employment <sup>1/</sup> 1973	Value added per employee 1973 <sup>2/</sup>
0 - 10	85.64	8.98	10.7	44.5
11 - 50	11.02	14.24	20.6	72.7
51 - 100	1.62	9.60	10.7	102.3
101 - 500	1.47	29.70	28.6	121.8
501 - 1000	0.15	10.86	10.3	123.4
More than 1,000	0.10	26.60	19.1	164.5
<b>TOTAL MANUFACTURING %</b>	100.00	100.00	100.0	
Values:	126,388	92,876 <sup>2/</sup>	1,293,170	71.8 <sup>2/</sup>

Source: INDEC, "Censo Nacional Económico, Industria Manufacturera, 1974, Resultados definitivos", Buenos Aires

1/ Includes only payroll employees

2/ In million pesos

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2.4 Ownership and investment patterns in manufacturing

As in other large semi-industrialized developing countries, the structure of Argentina's manufacturing sector is relatively complex and diversified in terms of the number, nature and origin of the enterprises and investors operating in the market. Three types of enterprises are clearly represented in industrial activities: state-owned corporations, which operate in a number of branches of basic and heavy industries; private firms of domestic capital, which predominate in several medium size and traditional industries; and foreign-owned subsidiaries, whose presence is largest in capital/technology-intensive sectors and dynamic industries.

A list of the 100 largest Argentine companies is presented in the Appendix which shows the source of capital and ranking by sales volume. Only 6 of these companies are state owned, 39 are foreign-owned and 55 are private domestic investments. Foreign subsidiaries occupy 7 positions among the 10 largest firms, 12 among the largest 20, and 21 among the largest 50. There are 23 private domestic firms among the largest 50, but only one among the largest 10.

A. State-owned enterprises

Apart from a number of small minority participations of state entities in private industrial firms, there were 297 public enterprises in 1982, 78 of which operated in the manufacturing sector.\* The magnitude of their participation in the Argentine economy is revealed in Table 5. Although the relative weight of public enterprises in the manufacturing sector is still

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\* Economic Commission for Latin America (ECLA, Buenos Aires Office). "Las empresas públicas en la Argentina: su magnitud y origen", 1983; and Secretaría de Industria y Minería, "Características de las empresas manufactureras estatales", in Boletín Semanal de Economía, No 457, Sept. 1982.

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limited, it has been increasing consistently, from 5.8 per cent in 1974 to 8.4 per cent in 1980. From the mid 1960s, when the first significant industrial investments by the public sector were carried out, through the following 10-year period the share of public enterprises in such activities increased from 1 per cent to 5.5 per cent of total investments.\*

Table 5  
Share of Public Enterprises in the Argentine Economy

Indicator (year)	Public enterprises' share of total (percent)
GDP (1980)	9.6
Gross Domestic Investment (1976-1980)	24.5
- in construction (1979)	16.1
- in equipment (1979)	29.4
Employment (1980)	4.36
Sectoral GDP (1974)	
- Total sectors	11.0
- Mining	55.9
- Manufacturing	5.8 (1980=8.42)
- Electricity, gas, water	90.3
- Trade	1.6
- Transport and communications	29.1

Source: Fundación de Estudios Contemporaneos, cited in Informe Industrial No. 66, 1983, and Secretaria Técnica de Desarrollo Industrial, op cit.

Public industrial enterprises are relevant in the following sectors: (as shown in Table 6):

a) Basic metals: The State accounts for 25 per cent of the total sectoral production. It controls SOMISA, the largest integrated steel plant.

\* See ECLA, op cit, p.21.

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In 1981, public enterprises accounted for 45.5 per cent of the volume of steel produced.

b) Chemicals and petrochemicals: About 64 per cent of the oil refinery production and 45 per cent of the installed capacity of the petrochemical industry (estimated at 2 million tons) are in the hands of a network of public and mixed state and private enterprises. State participation in the chemical sector as a whole is about 26 per cent.

c) Paper: The state participates in two of the four large projects for the production of paper, controlling 24 per cent of the equity capital in one and 88 per cent in the other.

d) Other sectors: State enterprises account for 40 per cent of the wine production. The largest shipbuilder is public; armaments and certain equipment (road machinery, railway wagons, etc) are produced by state enterprises. Iron is produced by the State; oil exploitation is a state monopoly (although private enterprises operate under service agreements) and the state enterprise refines 70 per cent of all oil; one of two big copper mines is state-owned and the production of uranium is controlled by a public corporation. The production of electricity is almost entirely by State enterprises.

During the period 1976-1982, the government tried to sell or liquidate a number of its industrial enterprises or investments following a general policy of "privatization" of production activities. Many equity holdings acquired as "rescue" operations of "sick" companies were eliminated in this manner, including a number of important firms in the manufacturing sector (textiles, meatpacking, sugar, automaking, etc). On the other hand, new industrial firms were created by the State, such as three companies in the atomic energy sector and one submarine-building company.

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Table 6: Structure of State-owned Manufacturing Industries (1981)

Activity	Percent of total no. of companies	Percent of total manufacturing employment	Percent of total value of production
Total manufacturing	0.20	4.36	8.42
Food, beverages, tobacco	0.23	2.01	0.97
Textiles, garments, leather	0.02	0.07	0.09
Wood and furniture	0.14	1.75	0.70
Paper, printing, editorial	0.27	2.98	4.38
Chemicals, rubber, plastics	0.60	8.40	26.29
Non-metallic minerals	0.10	0.43	0.25
Basic metals, machinery and metalworking	0.50	27.91	25.03
Equipment	0.16	3.37	2.79
Other industries	0.00	0.00	0.00

Source: Secretaría Técnica, op cit.

#### B. Foreign investments

According to the United Nations Center on Transnational Corporations, the stock of direct foreign investment in Argentina at end 1978 was an estimated US\$ 3,340 million. Annual average inflows in 1978-1980 amounted to US\$ 637.4 million, equivalent to 1.06 per cent of the GNP and 3 per cent of domestic investment.

By 1973, the share of foreign enterprises in manufacturing industries accounted for 10-12 per cent of employment and 28 per cent of sales in the

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sector (as compared to 18.2 per cent in 1955).<sup>\*</sup> From 1955 to 1973, the growth rate of foreign industrial subsidiaries was 8.8 per cent or twice the 4.3 per cent for national firms. About 56 per cent of total direct foreign investment came from the US, 11 per cent from Italy, 10 per cent from the UK, 10 per cent from the FRG, and 5 per cent from France; two thirds of the total are estimated to be located in the manufacturing sector.

Foreign participation is concentrated in several manufacturing branches characterized by large investments. The breakdown of foreign investment by major industrial sectors shown in Table 7 represents roughly 85 per cent of the total value of foreign investments in Argentina in 1973.

Table 7: Share of Foreign Investment in Major Industrial Sectors, 1973

Industries	Share of Foreign Participation (in percent)
Automotives	96.4
Oil refining	40.7
Cigarettes	99.6
Beverages	86.9
Synthetic fibres	88.2
Engines and turbines	90.7
Food Products	58.1
Alcoholic beverages	72.7
Plastics and synthetic resins	66.1
Autoparts	37.5
Non ferrous metals	33.7
Tires	67.0
Percent of total foreign investment accounted for	85.0

Source: ECLA (Buenos Aires Office), based on data from the 1973 Census.

<sup>\*</sup> See UNCTC, "Transnational Corporations in World Development", 1983. See also A.E.Calcagno, "Informe sobre las inversiones directas extranjeras en América Latina", Cuadernos de la CEPAL (ECLA), 1980.



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Foreign penetration in Argentine industry started to increase in the early 1960s. A number of de-nationalizations took place in the latter part of the decade, such as in the cigarettes industry. During the early 1970s, control-oriented legislation and other factors affected the inflow of foreign capital. The regime that took power in 1976 initiated an open-door policy for foreign investments. Yet with the exception of operations in the oil sector and modernization investments in the automotive industry, foreign capital was not attracted to the Argentine manufacturing sector. In fact, there were even cases of divestment in the automotive, chemicals and other sectors.

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## 2.5 Performance of the manufacturing sector

According to data derived from the 1973 census<sup>\*</sup>, value added per employee in the manufacturing sector overall in that year was US\$ 6,100 (see Table 10). Significant differences existed in this respect between branches. The figure was US\$ 57,600 for petroleum refineries while the lowest overall labour productivity was registered in furniture, US\$ 2,500. In general, those industries with a high capital/labour ratio, particularly those producing intermediate goods, had a higher value added per employee than either the capital goods or the consumer goods industries. Some branches are made up of a small number of mostly large-sized establishments. This is the case for petroleum refineries which by 1983 had only 40 production units. It is not surprising then to find that the ratio of value added per establishment in such branches is much higher than the average. The ratio is in fact low for those branches in which small- and medium-sized firms predominate (e.g. metal products or furniture).

Table 10 also pin points the differences that exist between branches with respect to the share of wages and salaries in value added. Consistent with the data already presented, petroleum refineries have the lowest share while transport equipment has the highest. Some labour-intensive branches, such as furniture, leather products or some capital goods, have a higher-than-average ratio. Over all, however, the data suggest a relatively small variation in the respective shares between branches.

The data in Table 11 presents a more complete picture of the performance of the country's manufacturing sector, revealing the changes in total industrial employment for the 1971-81 period. The information is based on a special survey conducted by the Statistical Office.

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\* Value added is defined as gross output minus consumption in this Census.

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The significance of the country's industrial crisis since 1976 is particularly evident from the data in Table 11. The index of employment increased from 1970 to 1975 by 19 points but fell to just 77 in 1981. By 1981, some branches like textiles and non-electrical machinery had reduced their total labour force by more than half of the 1970 figure. Only a few branches, most of them of relatively less importance (e.g. plastic products, beverages) experienced an increase in their absolute level of employment by 1981.

Table 8: Manufacturing sector in pesos: gross output, value added, wages and salaries, employment and employees  
(1973 - in million pesos)

ISIC	ISIC-DESCRIPTION	Gross Output 1973	Value Added 1973	Wages and Salaries 1973	Employment 1973	No of Establishments 1973	Employees a/	
							1973	1981
3110/3120	Food products	44,575	13,851	3,603	260,676	19,636	216,856	178,993
3130	Beverages	12,246	4,541	745	50,897	7,741	37,061	37,094
3140	Tobacco	3,972	633	191	8,781	95	8,644	7,028
3210	Textiles	20,440	7,485	2,142	134,191	6,125	122,697	57,263
3220	Wearing apparel exc. footwear	5,629	2,268	574	64,130	7,897	50,520	26,265
3230	Leather products	1,384	531	166	15,258	1,595	12,290	8,738
3240	Footwear, exc. rubber or plastic	2,096	979	321	32,139	2,733	26,595	14,965
3310	Wood products, exc. furniture	3,060	1,537	431	53,954	11,790	35,260	27,633
3320	Furniture, exc. metal	1,741	825	309	33,667	7,898	20,842	14,291
3410	Paper and products	5,174	2,130	551	29,446	1,071	27,408	22,187
3420	Printing and publishing	3,655	2,186	725	42,753	4,373	34,657	26,727
3510	Industrial chemicals	7,204	3,840	761	29,206	815	28,016	21,236
3520	Other chemicals	9,566	5,309	1,339	59,367	2,112	55,611	41,931
3530	Petroleum refineries	12,672	5,800	364	10,086	40	10,040	8,765
3540	Misc. petroleum and coal products	636	219	34	2,181	127	1,960	1,749
3550	Rubber products	4,075	2,171	433	21,646	998	19,882	17,379
3560	Plastic products	2,412	1,250	315	25,417	2,125	21,427	15,089
3510	Pottery, china, earthenware	749	541	190	9,980	411	9,216	5,252
3620	Glass and products	1,453	890	290	16,481	550	15,275	10,529
3690	Other non met. mineral products	4,751	2,859	845	77,293	13,245	52,314	43,436
3710	Iron and steel	16,055	7,162	1,641	65,004	731	63,543	51,241
3720	Non-ferrous metals	2,759	999	287	15,825	767	14,385	12,462
3810	Fabricated metal products	10,812	5,425	1,643	123,416	17,634	94,039	64,548
3420	Machinery, exc. electrical	10,028	4,467	1,611	90,255	4,773	60,014	36,574
3430	Machinery electric	6,813	3,649	1,167	59,217	7,028	53,947	30,243
3840	Transport equipment	23,963	9,881	3,760	171,641	4,357	163,246	121,080
3850	Professional and scientific equip.	736	451	149	8,442	538	7,472	5,251
3900	Other manufactured products	873	497	137	15,312	2,993	9,953	10,062
3000	TOTAL MANUFACTURING	219,329	92,876	24,744	1,525,221	126,388	1,293,170	918,021

Source: INDEC: "Censo Nacional Económico, Año 1974  
For 1981, estimates from Consejo Federal de Inversiones

a/ Including only payroll employees.

Table 9: Manufacturing Sector by Branch Shares: Gross Output, Value Added, Wages and Salaries, Employment, Establishments and Employees  
(Percent of total manufacturing, 1973)

ISIC	ISIC-DESCRIPTION	Gross Output 1973	Value Added 1973	Wages and Salaries 1973	Employment 1973	No of Establishments 1973	Employees	
							1973	1981
3110/3120	Food products	20.23	14.9	14.56	17.09	15.54	16.77	19.50
3130	Beverages	5.58	4.9	3.01	3.34	6.12	2.86	4.04
3140	Tobacco	1.81	0.7	0.77	0.58	0.07	0.67	0.77
3210	Textiles	9.32	8.1	8.66	8.80	4.35	9.49	6.24
3220	Wearing apparel, exc footwear	2.57	2.4	2.32	4.20	6.24	3.91	2.86
3230	Leather products	6.63	0.6	0.67	1.00	1.26	0.95	0.95
3240	Footwear, exc rubber or plastic	0.95	1.1	1.30	2.11	2.14	2.06	1.63
3310	Wood products, exc furniture	1.40	1.7	1.74	3.54	9.33	2.73	3.01
3320	Furniture, exc. metal	0.79	0.9	1.25	2.21	6.25	1.61	1.56
3410	Paper and products	2.36	2.3	2.23	1.93	0.85	2.12	2.42
3420	Printing and publishing	1.67	2.3	2.93	2.80	3.46	2.68	2.91
3510	Industrial chemicals	3.23	4.1	3.08	1.91	0.64	2.17	2.31
3520	Other chemicals	4.36	5.7	5.41	3.89	1.67	4.30	4.57
3530	Petroleum refineries	5.78	6.2	1.47	0.66	0.03	0.78	0.96
3540	Misc. petroleum and coal products	0.29	0.2	0.14	0.14	0.10	0.15	0.19
3550	Rubber products	1.86	2.3	1.75	1.42	0.79	1.54	1.89
3560	Plastic products	1.10	1.4	1.27	1.67	1.58	1.66	1.64
3610	Pottery, china, earthenware	0.34	0.6	0.77	0.66	0.33	0.71	0.57
3620	Glass and products	0.66	1.0	1.17	1.08	0.44	1.18	1.15
3690	Other non met. mineral products	2.17	3.1	3.41	5.07	10.48	4.04	4.73
3710	Iron and steel	7.32	7.7	6.63	4.26	0.58	4.91	5.58
3720	Non-ferrous metals	1.26	1.1	1.16	1.04	0.51	1.11	1.36
3810	Fabricated metal products	4.93	5.9	6.64	8.09	14.13	7.27	7.03
3820	Machinery, exc. electrical	4.57	5.4	6.51	5.83	3.71	6.19	3.98
3830	Machinery electric	3.11	3.9	4.80	3.88	2.19	4.17	3.29
3840	Transport equipment	10.92	10.6	15.20	11.25	3.45		13.19
3850	Professional and scientific equip	0.34	0.5	0.60	0.55	0.42	0.58	0.57
3900	Other manufactured products	0.40	0.5	0.55	1.00	2.37	0.77	1.10
3990	TOTAL MANUFACTURING	100.00	100.0	100.00	100.00	100.00	100.00	100.00

Source: INDEC: "Censo Nacional Económico, Año 1974"  
For 1981, estimates from Consejo Federal de Inversiones a/ Including only payroll employees  
Note: For the National Survey, value added was defined as gross output minus consumption.

Table 10: Performance of Manufacturing Sector by Branches, 1973.

ISIC	ISIC-DESCRIPTION	Value Added <sup>a</sup> /per	Value Added per <sup>a</sup> /	Share of Wages and	Share of Value Added	Value Added <sup>a</sup> /per
		employee <sup>a</sup>	establishment <sup>a</sup>	salaries in value	in gross output <sup>b</sup>	paid worker <sup>a</sup>
		1973	1973	1973	1973	1973
3110/3120	Food products	5.3	70.6	26.0	31.2	11.0
3150	Beverages	8.9	58.8	16.4	37.1	12.3
3140	Tobacco	7.2	745.5	30.2	15.9	7.3
3210	Textiles	5.6	122.2	28.6	36.6	6.1
3220	Wearing apparel, exc. footwear	3.5	28.8	25.3	40.3	4.5
3230	Leather products	3.5	33.4	31.3	38.4	4.3
3240	Footwear, exc. rubber or plastic	3.1	36.3	32.8	46.7	3.7
3310	Wood products, exc. furniture	2.9	13.0	28.0	50.2	4.4
3320	Furniture, exc. metal	2.5	10.4	37.5	47.4	4.0
3410	Paper and products	7.2	199.3	25.9	41.2	7.8
3420	Printing and publishing	5.1	50.0	33.2	59.8	6.3
3510	Industrial chemicals	13.2	471.9	19.8	53.3	13.7
3520	Other chemicals	9.0	251.5	25.2	55.5	9.6
3530	Petroleum refineries	57.6	14,529.0	6.3	45.8	57.9
3540	Misc. petroleum and coal products	10.0	172.3	15.5	34.4	11.1
3550	Rubber products	10.0	217.9	19.9	53.3	10.9
3560	Plastic products	4.9	58.9	25.2	51.8	5.8
3610	Pottery, china, earthenware	5.4	131.8	35.1	72.2	5.9
3620	Glass and products	5.4	159.2	32.6	61.3	5.8
3690	Other non. met. mineral products	5.7	21.5	29.0	60.2	5.5
3710	Iron and steel	11.0	981.0	22.9	44.6	11.3
3720	Non-ferrous metals	6.3	130.3	28.7	36.2	7.0
3410	Fabricated metal products	4.4	30.1	30.3	30.2	3.8
3820	Machinery, exc. electrical	5.6	104.2	32.4	49.5	6.2
3330	Machinery electric	6.2	120.7	32.5	53.6	6.8
3840	Transport equipment	5.8	226.5	38.1	41.2	6.1
3650	Professional and Scientific equip.	5.3	84.0	33.0	61.2	6.0
3900	Other manufactured products	3.3	16.6	27.6	56.9	5.0
3000	TOTAL MANUFACTURING	6.1	73.6	26.6	42.3	7.2

Source: INDEC "Censo Nacional Económico. Año 1974"  
For 1981, estimates from Consejo Federal de Inversiones

NOTE: Exchange rate 9,980 pesos per dollar

FOOTNOTES: <sup>a</sup>/ In thousand dollars      <sup>b</sup>/ In per cent

Table 11: Index of employment in manufacturing 1971-1981 (1970=100)

ISIC	ISIC-DESCRIPTION	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
3110/3120	Food products	106.2	108.1	113.4	122.2	120.2	123.2	117.7	105.0	104.7	99.4	93.6
3130	Beverages	100.3	106.1	108.3	117.8	126.5	121.0	119.1	111.1	114.6	116.9	108.4
3140	Tobacco	97.5	101.9	100.0	102.8	112.6	117.6	97.8	92.7	94.4	90.8	81.3
3210	Textiles	100.5	98.2	97.7	105.6	109.2	105.3	96.9	84.8	75.8	60.4	45.6
3220	Wearing apparel, exc. footwear	104.8	107.4	110.4	118.0	119.1	111.9	99.2	87.9	82.7	65.0	57.4
3240	Leather products	109.6	123.3	139.8	154.3	149.2	152.2	159.8	161.9	146.3	118.1	99.4
3240	Footwear, exc. rubber or plastic	97.8	88.4	91.7	94.1	90.8	83.1	69.3	58.7	60.3	53.7	51.6
3310	Wood products, exc. furniture	103.6	105.4	106.8	113.8	139.3	136.3	130.2	114.3	103.6	93.0	83.7
3320	Furniture, exc. metal	91.7	93.3	94.8	94.3	89.1	71.9	61.8	58.1	57.9	64.0	65.0
3410	Paper and products	103.9	108.3	116.0	117.3	122.0	121.1	115.9	119.0	117.1	100.8	93.9
3420	Printing and publishing	98.9	94.6	94.4	97.3	97.7	85.4	74.4	70.6	69.3	75.0	72.8
3510	Industrial chemicals	99.9	106.7	109.5	113.4	121.3	124.6	115.2	106.6	102.2	95.9	83.0
3520	Other chemicals	107.0	107.5	106.1	106.2	114.3	111.6	106.1	95.5	91.4	88.6	80.0
3530	Petroleum refineries	101.6	113.3	117.6	126.2	137.4	161.1	145.3	136.1	120.6	108.7	102.9
3540	Misc. petroleum and coal products	91.7	91.5	87.5	90.2	96.1	98.6	96.7	87.5	84.3	81.1	78.1
3550	Rubber products	106.7	116.1	121.5	131.6	141.5	141.8	140.7	125.7	134.3	125.2	106.2
3560	Plastic products	99.5	110.7	190.3	200.7	207.2	179.5	154.9	136.5	144.2	149.2	134.0
3610	Pottery, china, earthenware	106.5	110.7	112.3	114.0	113.7	115.5	100.1	87.0	96.3	95.4	64.0
3620	Glass and products	95.9	105.1	103.3	104.9	113.6	103.8	108.6	109.0	99.6	89.1	71.2
3690	Other non. met mineral products	101.7	100.2	96.5	103.6	107.-	102.9	95.2	91.9	51.2	85.6	80.1
3710	Iron and steel	107.8	111.0	121.4	120.5	134.2	129.1	126.0	117.5	117.3	112.6	97.9
3720	Non-ferrous metals	123.3	134.4	137.6	137.3	147.0	140.6	137.1	127.2	128.4	126.2	119.2
3310	Fabricated metal products	104.2	107.7	112.9	118.2	119.0	111.1	105.7	97.8	89.9	91.6	77.5
3820	Machinery, exc. electrical	99.4	102.6	107.-	114.9	116.5	109.4	106.3	55.6	89.2	71.5	49.0
3830	Machinery electric	102.3	103.2	101.5	101.4	99.4	91.8	88.5	81.3	78.6	71.7	56.9
3840	Transport equipment	103.5	110.5	117.3	121.7	137.6	131.8	118.8	101.7	104.3	101.8	87.0
3350	Professional and scientific equipment	101.0	105.8	122.8	144.1	163.4	158.0	145.4	143.1	131.5	95.9	79.0
3900	Other manufactured products											
3000	TOTAL MANUFACTURING	103.0	105.3	108.6	114.8	119.2	115.3	108.2	97.7	85.6	88.2	77.1

Source: INDEC: "Evolución de la Industria Manufacturera 1970-1981".

Note: The sample used in this survey is not the same as that employed by the Central Bank.

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2.6 Structure and development of exports and imports of manufactured goods

Manufactured goods accounted for more than half of Argentina's total exports during the 1970-80 period. As shown in Table 12, this trend has been relatively stable throughout the 1970s. Manufactures have traditionally comprised an even bigger share of imports, averaging over four-fifths of total imports during the 1970s. The country has had a persistently negative balance in its trade of industrial products. If a more restrictive definition of manufactures is used (SITC 5-8 less 68) the imbalance between exports and imports is even more pronounced. In 1980, for instance, manufactured exports accounted for US\$ 1,856 million while manufactured imports totalled US\$ 8,150 million.

Meat and meat products represent the most important single item in Argentina's exports of manufactures, although its relative importance has diminished steadily throughout the 1970s (see Table 12). Other important exports are machinery and transport equipment, vegetable oils, feeding-stuff for animals and chemical products. The data indicate that certain items such as chemicals, leather goods, and non-ferrous metals increased their share of total exports during the 1970s. Others, such as non-electrical machinery and transport equipment experienced a significant expansion in the first half of the decade but lost their momentum in the second half. As will be referred to in Section 3, this performance has been a consequence of a set of policies implemented during the latter half of the decade.

With regard to imports, the most important items are machinery, chemicals, transport equipment and iron and steel. The data in Table 12 shows a significant increase in the shares of transport equipment and electrical machinery and appliances in total imports. Given the fact that total imports of manufactures trebled between 1975 and 1980 this growth in relative shares clearly underscores the dynamism that trade in those sectors acquired.



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Manufactured exports find an important market in other developing countries, particularly for the restricted classification of manufactured goods (see Table 14). On the other hand, the origin of most imports of manufactured products is the developed countries (Table 13). This means that Argentina usually has a positive trade balance in manufactures with less developed nations, and particularly with other countries of Latin America, but a deficit with developed nations.

The data in Table 15 underscore the downswing of Argentina's economic activity in the second half of the 1970s: on the import side, goods for further processing (classes A and B) recorded declining shares, whereas the share of products for final use (classes C and D) increased. On the other hand, the dramatic increase of the share of processed goods in the export basket implies that manufacturing activities in the export sector benefitted from the export promotion policies in this period.

In addition to its trade in manufactures, Argentina also participates in the "technology trade" as over the past twenty years or so the country has become an exporter of technology. Industrial firms established in the country have sold turn-key plants, manufacturing licenses or other technical knowledge abroad for a variety of manufacturing activities, especially to the Latin American region. A recent survey estimated that between 1973 and 1980 Argentine firms were involved in 61 industrial projects abroad, with total exports of technology amounting to US\$ 160 million\*.

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\* See Interamerican Development Bank, Economic and Social Progress in Latin America, The External Sector, 1982, Washington.

TABLE 12 PRODUCT MIX OF TRADED MANUFACTURED GOODS ,1970,1975,1980 %/

SITC DESCRIPTION OF TRADE GOODS	E X P O R T S				I M P O R T S			
	1970	1975	1980	1980	1970	1975	1980	1980
	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	( 1000 US \$ )	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	PERCENT IN TOTAL MANUFACTURES	( 1000 US \$ )
01 Meat and meat preparations	43.527	18.270	19.654	965925	0.000	0.000	0.561	50826
02 Dairy products and eggs	0.188	1.355	0.430	21100	0.421	0.053	0.512	46409
032 Fish n.e.s. and fish preparations	0.033	0.085	0.056	2901	0.021	0.000	0.098	8902
0422 Rice,glazed or polished not otherwise worked	0.653	1.065	0.404	19801	...	...	0.016	1424
046 Meal and flour of wheat or of meslin	0.636	1.465	0.171	8397	0.000	...	0.000	33
047 Meal and flour of cereals,except above	...	...	0.000	6	0.000	...	...	...
048 Cereals preparat. & starch of fruits & vegetab.	0.322	1.015	0.348	16932	0.005	0.001	0.143	12929
052 Dried fruit	0.366	0.308	0.256	14520	0.044	0.000	0.025	2272
053 Fruit,preserved and fruit preparations	0.569	0.732	1.066	51932	0.132	0.161	0.164	14863
055 Vegetables,roots & tubers,preserved or prepared	0.498	0.766	0.441	21636	0.024	0.003	0.213	15334
06 Sugar,sugar preparations and honey	1.737	8.402	6.919	339385	0.028	0.025	0.163	14793
0713 Coffee extracts,essences,concentrates & similar	...	...	...	...	0.000	...	0.018	1594
0722 Cocoa powder,unsweetened	...	...	0.000	13	0.000	...	0.007	605
0723 Cocoa butter and cocoa paste	...	0.000	...	...	0.154	0.210	0.390	35369
073 Chocolate and related food preparations	0.010	0.017	0.010	472	0.005	0.001	0.109	5860
074 Tea and mate	1.007	1.045	0.764	37468	0.049	0.001	0.023	2050
081 Feeding-stuff for animals	11.247	8.982	8.418	412721	0.125	0.012	0.044	3896
09 Miscellaneous food preparations	0.489	0.322	0.513	25172	0.192	0.074	0.175	15830
11 Beverages	0.078	0.300	0.310	15208	0.411	0.328	0.195	44821
122 Tobacco manufactures	0.022	0.044	0.005	253	0.042	0.007	0.103	9365
2219 Flour and meal of oil seeds,nuts,kernels	...	...	...	...	0.008	0.000	...	...
231 Crude rubber, synth. & reclaimed(excl.SITC 2311)	0.362	0.175	0.052	4816	0.608	0.533	0.337	30519
243 Wood,shaped or simply worked	0.001	0.001	0.003	150	4.029	2.714	1.579	143104
251 Pulp and waste paper	0.006	0.001	...	...	2.224	2.337	0.771	65838
2626 Wool shoddy	0.005	0.007	0.003	140	...	...	...	...
2627 Wool or other animal hair,carded or combed	0.229	...	...	...	0.004	0.003	0.000	35
2628 Wool tops	0.389	0.705	0.720	35253	...	...	...	...
2629 Waste of wool and other animal hair n.e.s.	0.163	0.166	0.070	3427	...	...	...	...
263 Cotton	2.437	2.569	2.566	126791	0.472	0.731	0.223	20164
266 Synthetic and regenerated(artificial) fibres	0.027	0.001	0.026	1217	0.247	0.238	0.324	29365
267 Waste materials from textile fabrics(incl.rags)	0.011	0.001	0.001	32	0.000	0.000	0.006	571
332 Petroleum products	0.717	0.771	5.655	277341	1.662	2.494	1.607	152862
4 Animal and vegetable oils and fats	9.823	5.633	10.319	506127	0.150	0.150	0.093	8458
411 Animal oils and fats	2.108	0.003	0.586	28897	0.007	0.005	0.006	580
421 Fixed vegetable oils,soft(incl.SITC 422)	7.279	5.572	9.621	471820	0.067	0.150	0.048	4353
431 Animal and vegetable oils and fats processed	0.436	0.058	0.109	5344	0.056	0.036	0.039	3525

(Contd)

TABLE 12 PRODUCT MIX OF TRADED MANUFACTURED GOODS, 1970, 1975, 1980 <sup>a/</sup>

SITC DESCRIPTION OF TRADE GOODS	E X P O R T S				I M P O R T S			
	1970	1975	1980	1980	1970	1975	1980	1980
	PERCENT IN TOTAL MANUFACTURES	PERCENT	PERCENT	(1000 US \$)	PERCENT IN TOTAL MANUFACTURES	PERCENT	PERCENT	(1000 US \$)
5 Chemicals	5.437	7.443	8.060	295349	15.283	23.561	14.332	1298739
51 Chemicals elements and compounds	1.215	2.780	3.053	190932	7.399	12.587	6.255	570404
52 Tar and chemicals from coal, petroleum, nat. gas	0.002	0.002	0.046	2377	0.111	0.266	0.098	8861
53 Dyeing, tanning and colouring materials	1.584	1.683	0.957	48081	0.057	1.075	0.672	60873
54 Medicinal and pharmaceutical products	1.469	1.523	0.750	36775	1.850	2.022	1.435	130011
55 Essential oils and perfume materials	0.230	0.305	0.730	35812	0.438	0.671	0.588	53288
56 Fertilizers, manufactured	0.024	0.006	0.012	589	0.354	0.513	0.425	38532
57 Explosives and pyrotechnic products	0.005	0.002	0.031	1536	0.065	0.032	0.209	18962
58 Plastic materials, regenerated cellul. & resins	0.237	0.180	0.224	10979	1.563	3.487	2.658	244535
59 Chemical materials and products n.e.s.	0.661	0.883	1.376	67469	2.643	2.904	1.912	173266
6 Manufactured goods classified by material	8.743	8.961	16.408	804761	33.257	36.600	19.140	1734494
61 Leather manufactured n.e.s. & dressed fur skins	3.551	4.206	7.678	376601	0.015	0.000	0.107	5707
62 Rubber manufactures n.e.s.	0.405	0.182	0.161	7879	0.353	0.524	0.804	72463
63 Wood and cork manufactures (excl. furniture)	0.006	0.011	0.004	215	0.074	0.195	0.351	31771
64 Paper, paper board and manufactures thereof	0.179	0.269	0.355	17416	4.453	3.487	2.574	233236
65 Textile yarn, fabrics, made-up articles	0.459	0.151	0.726	36087	1.725	0.948	2.537	225661
66 Non-metallic mineral manufactures, n.e.s.	0.236	0.363	0.570	27538	1.855	1.231	2.007	181911
67 Iron and steel	2.767	1.410	2.935	143939	16.371	23.748	6.565	594902
68 Non-ferrous metals	0.195	0.039	2.837	139127	5.786	5.159	1.782	161521
69 Manufactures of metal, n.e.s.	0.905	2.330	1.133	55579	2.555	1.271	2.414	218721
7 Machinery and transport equipment	6.582	25.307	10.655	524590	34.923	25.768	46.750	4240046
71 Machinery, other than electric	4.749	13.613	5.570	292613	23.228	16.357	21.645	1961439
72 Electrical machinery, apparatus and appliances	0.808	2.357	1.489	73027	6.528	5.112	13.822	1252560
73 Transport equipment	1.004	9.257	3.237	158750	5.166	4.260	11.323	1026057
8 Miscellaneous manufactured articles	3.707	4.671	5.523	270879	5.274	3.924	11.459	1038427
81 Sanitary, plumbing, heating & lightning fixtures	0.016	0.096	0.020	998	0.047	0.020	0.241	21759
82 Furniture	0.012	0.055	0.101	4931	0.016	0.002	0.158	14286
83 Travel goods, handbags and similar articles	0.018	0.065	0.250	12254	0.014	0.001	0.087	7878
84 Clothing	1.547	1.004	2.869	140720	0.159	0.020	1.726	156386
85 Footwear	0.030	0.273	0.041	2009	0.004	0.002	0.402	36450
86 Professional, scient. & controll. instruments	0.445	0.732	0.844	41402	3.029	2.607	3.866	350337
89 Miscellaneous manufactured articles, n.e.s.	1.239	1.766	1.358	68565	2.007	1.260	4.520	451269
TOTAL MANUFACTURES	1070	1975	1980	1560	1970	1975	1980	1980
TOTAL: SITC 5-8 LESS 68 <sup>a/</sup>	1013880	1578111	4904776	1487211	3141769	5061905		
TOTAL TRADED GOODS: SITC 0-5	245054	721861	1856471	1233646	2659869	4150184		
	1773172	2961264	6021402	1686666	3945306	10539232		

Note: Data and SITC descriptions refer to SITC revision

<sup>a/</sup> 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.

<sup>b/</sup> 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 ORIGIN OF IMPORTS OF MANUFACTURES BY BRANCHES, 1960

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)
01 Meat and meat preparations	50826
02 Dairy products and eggs	46409
032 Fish n.e.s. and fish preparations	8902
0422 Rice, glazed or polished not otherwise worked	1424
046 Meal and flour of wheat or of meslin	33
045 Cereals preparat. & starch of fruits & vegetab.	12529
052 Dried fruit	2372
053 Fruit, preserved and fruit preparations	14063
055 Vegetables, roots & tubers, preserved or prepared	19334
06 Sugar, sugar preparations and honey	14753
0713 Coffee extracts, essences, concentrates & similar	1554
0722 Cocoa powder, unsweetened	605
0723 Cocoa butter and cocoa paste	35369
073 Chocolate and related food preparations	9865
074 Tea and mate	2053
081 Feeding-stuff for animals	3956
09 Miscellaneous food preparations	15030
11 Beverages	44821
122 Tobacco manufactures	9365
231 Crude rubber, synth. & reclaimed (excl. SITC 2311)	30519
242 Wood, shaped or simply worked	143104
251 Pulp and waste paper	69838
2627 Wool or other animal hair, carded or combed	35
263 Cotton	20164
266 Synthetic and regenerated (artificial) fibres	29365
267 Waste materials from textile fabrics (incl. rags)	571
332 Petroleum products	152862
41 Animal and vegetable oils and fats	8458
411 Animal oils and fats	580
421 Fixed vegetable oils, soft (incl. SITC 422)	4353
431 Animal and vegetable oils and fats processed	3525

DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
	TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
43.87	52.73	12.13	38.61	0.00	3.39
21.67	75.95	8.04	25.34	0.00	2.35
63.66	21.32	0.63	2.33	0.12	0.00
95.98	0.02	0.00	0.00	0.00	0.00
0.00	100.00	0.00	0.00	20.80	0.00
5.68	94.27	1.82	88.53	0.07	0.00
49.56	50.44	30.80	1.25	0.00	0.00
64.56	25.32	9.45	6.99	0.00	0.01
27.64	70.47	5.59	26.82	0.01	0.32
16.18	75.89	25.28	24.14	0.51	0.50
96.44	7.56	0.00	3.56	0.00	0.00
82.73	17.27	17.27	0.00	0.00	0.00
99.87	0.13	0.02	0.11	0.00	0.00
38.04	61.96	16.39	38.32	1.68	0.00
66.88	33.12	0.29	32.55	0.23	0.00
54.84	44.99	27.23	10.92	0.66	0.24
61.39	38.56	3.49	18.63	0.85	0.00
14.73	84.96	3.05	72.42	1.52	0.31
2.42	57.82	64.28	42.00	0.00	0.00
2.88	97.03	57.71	27.25	8.42	0.02
53.45	6.55	3.82	0.04	0.00	0.00
75.45	24.51	11.60	0.03	0.00	0.00
44.60	55.20	0.00	37.03	0.00	0.00
91.48	6.52	8.42	0.10	0.01	0.00
24.08	75.92	47.44	12.89	3.54	0.00
2.04	56.47	72.96	13.05	10.38	0.00
61.57	36.43	18.45	11.45	0.21	0.00
58.75	41.25	11.68	24.80	0.39	0.00
1.74	58.26	23.21	33.04	3.20	0.00
90.86	5.14	3.38	3.13	0.00	0.00
28.48	71.52	20.04	50.20	0.41	0.00

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TABLE 13 ORIGIN OF IMPORTS OF MANUFACTURES BY BRANCHES, 1960 #/

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EC (PERCENT)	JAPAN (PERCENT)	
5 Chemicals	1298739	13.34	64.31	22.76	34.88	2.48	2.18
51 Chemicals elements and compounds	570404	9.57	85.95	26.43	35.36	2.67	4.41
52 Tar and chemicals from coal, petroleum, nat. gas	3361	0.96	55.04	87.72	6.55	0.43	0.00
53 Dyeing, tanning and colouring materials	80873	10.23	65.26	17.60	45.24	7.17	0.29
54 Medicinal and pharmaceutical products	136011	8.16	50.77	21.88	46.95	2.44	0.93
55 Essential oils and perfume materials	43288	10.52	61.42	36.85	38.27	0.65	0.04
56 Fertilizers, manufactured	38538	15.27	62.49	74.91	4.21	0.10	2.24
57 Explosives and pyrotechnic products	18962	78.50	15.35	8.67	7.31	0.02	1.59
58 Plastic materials, regenerated cellul. & resins	244535	20.89	75.48	35.27	35.30	1.85	0.14
59 Chemical materials and products n.e.s.	173266	11.57	86.17	51.32	28.72	2.41	0.12
6 Manufactured goods classified by material	1734454	28.07	70.72	14.43	28.65	12.48	0.33
61 Leather manufactured n.e.s. & dressed fur skins	9707	7.60	51.76	5.15	62.99	1.55	0.23
62 Rubber manufactures n.e.s.	72863	27.60	70.58	22.78	32.08	4.25	0.43
63 Wood and cork manufactures (excl. furniture)	31771	52.91	44.59	3.48	6.75	0.29	0.03
64 Paper, paper board and manufactures thereof	233236	25.92	73.86	13.06	12.28	0.91	0.13
65 Textile yarn, fabrics, made-up articles	229861	32.23	66.03	27.36	20.38	13.22	0.45
66 Non-metallic mineral manufactures, n.e.s.	181911	33.95	64.65	14.60	36.70	2.39	0.30
67 Iron and steel	594902	16.89	82.91	6.75	38.82	26.56	0.16
68 Non-ferrous metals	161521	71.78	26.19	8.28	14.91	1.01	0.00
69 Manufactures of metal, n.e.s.	210721	16.60	78.42	27.46	30.25	6.52	1.13
7 Machinery and transport equipment	4240045	11.16	66.91	29.25	32.81	13.52	1.14
71 Machinery, other than electric	1961439	10.58	67.35	32.02	37.46	6.54	1.23
72 Electrical machinery, apparatus and appliances	1252550	13.89	83.20	22.91	33.33	18.84	0.82
73 Transport equipment	1026037	8.95	50.60	31.71	23.30	20.40	0.24
6 Miscellaneous manufactured articles	1038427	25.52	65.74	24.55	19.44	14.23	0.48
81 Sanitary, plumbing, heating & lightning fixtures	21759	49.59	48.55	8.98	27.67	1.23	0.04
82 Furniture	14266	22.70	71.46	19.58	38.23	6.97	2.15
83 Travel goods, handbags and similar articles	7878	33.84	45.72	31.60	8.93	3.03	0.18
84 Clothing	156386	35.04	60.25	33.67	19.17	2.84	0.05
85 Footwear	36450	35.32	41.15	27.53	7.80	4.40	0.05
86 Professional, scient. & controll. instruments	350337	21.55	76.88	24.58	20.70	21.07	0.87
89 Miscellaneous manufactured articles, n.e.s.	451289	23.30	71.19	22.41	16.68	14.54	0.33
TOTAL manufactures	5061905	20.20	77.72	25.17	29.51	10.77	1.00
TOTAL: SITC 5-8 LESS 68 #/	8150184	15.74	62.03	26.55	30.91	11.29	1.07
TOTAL traded goods: SITC 0-5	10539232	29.21	66.96	22.67	25.27	9.27	0.50

Note: Data and SITC descriptions refer to SITC revision 1

#/ 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.

#/ 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 DESTINATION OF EXPORTS OF MANUFACTURES BY BRANCHES, 198

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)
01	Meat and meat preparations	565925
02	Dairy products and eggs	21100
032	Fish n.e.s. and fish preparations	2901
1422	Rice, glazed or polished not otherwise worked	19801
46	Meal and flour of wheat or of meslin	8357
47	Meal and flour of cereals, except above	6
48	Cereals preparat. & starch of fruits & vegetab.	16932
522	Dried fruit	14520
53	Fruit, preserved and fruit preparations	51932
055	Vegetables, roots & tubers, preserved or prepared	21636
06	Sugar, sugar preparations and honey	335385
0722	Cocoa powder, unsweetened	13
073	Chocolate and related food preparations	472
074	Tea and mate	37468
081	Feeding-stuff for animals	412721
15	Miscellaneous food preparations	25172
11	Beverages	15208
122	Tobacco manufactures	253
231	Crude rubber, synth. & reclaimed(excl.SITC 2311)	4816
243	Wood, shaped or simply worked	150
2626	Wool shoddy	140
2628	Wool tops	35293
2625	Waste of wool and other animal hair n.e.s.	3427
263	Cotton	126751
266	Synthetic and regenerated(artificial) fibres	1217
267	Waste materials from textile fabrics(incl.rags)	32
332	Petroleum products	277341
4	Animal and vegetable oils and fats	506127
411	Animal oils and fats	28857
421	Fixed vegetable oils, soft (incl.SITC 422)	471886
431	Animal and vegetable oils and fats processed	6344

DEVELOPING COUNTRIES (PERCENT)	TOTAL (PERCENT)	DEVELOPED MARKET USA (PERCENT)	EEC COUNTRIES (PERCENT)	JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
11.81	70.06	14.42	41.18	2.71	18.14
68.61	31.39	20.73	1.36	0.00	0.00
44.60	55.40	37.46	0.61	13.40	0.00
93.03	6.97	0.00	6.22	0.00	0.00
100.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	0.00	0.00	0.00
58.39	1.61	1.42	0.02	0.00	0.00
87.36	12.64	0.74	11.22	0.00	0.00
12.91	67.09	54.31	26.42	2.30	0.00
99.36	0.64	0.64	0.00	0.00	0.00
33.74	52.27	46.60	4.27	0.61	13.99
46.88	52.12	0.00	0.00	0.00	0.00
93.29	6.71	4.41	0.00	0.00	0.00
56.42	42.50	25.67	13.56	0.02	0.06
9.41	65.66	0.02	78.26	3.89	4.91
88.46	11.54	4.08	4.27	0.25	0.00
73.36	26.24	10.87	5.13	7.52	0.40
59.76	0.25	0.00	0.25	0.00	0.00
92.83	7.17	0.00	7.17	0.00	0.00
59.27	0.73	0.73	0.00	0.00	0.00
87.56	12.44	12.44	0.00	0.00	0.00
29.97	57.97	0.00	42.22	5.70	10.69
11.02	76.27	35.62	25.66	10.62	12.72
27.47	67.95	0.27	15.03	35.47	0.00
89.50	10.50	0.00	10.50	0.00	0.00
50.45	45.55	45.40	0.15	0.00	0.00
34.68	65.32	4.90	58.88	1.45	0.00
40.62	33.88	0.62	30.46	0.06	25.50
87.58	12.42	0.00	6.28	0.00	0.00
37.74	34.91	0.67	31.80	0.06	27.35
40.86	59.12	0.00	27.32	0.66	0.00

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TABLE 14 DESTINATION OF EXPORTS OF MANUFACTURES BY BRANCHES, 1980 <sup>a/</sup>

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPING MARKET ECONOMIES				CENTRALLY PLANNED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
5 Chemicals	355345	43.07	54.44	31.66	15.72	4.57	2.48
51 Chemicals elements and compounds	190932	40.14	48.96	32.29	16.24	9.45	0.90
52 Tar and chemicals from coal, petroleum, nat. gas	2377	38.14	41.86	13.25	48.60	0.00	0.00
53 Dyeing, tanning and colouring materials	48221	49.07	34.31	9.35	16.34	1.12	16.54
54 Medicinal and pharmaceutical products	36775	57.96	42.04	24.73	13.50	1.44	0.00
55 Essential oils and perfume materials	35812	41.87	58.06	44.68	10.30	0.00	0.00
56 Fertilizers, manufactured	589	100.00	0.00	0.00	0.00	0.00	0.00
57 Explosives and pyrotechnic products	1536	100.00	0.00	0.00	0.00	0.00	0.00
58 Plastic materials, regenerated cellul. & resins	10979	73.06	26.92	2.36	23.77	0.07	0.00
59 Chemical materials and products n.e.s.	67469	33.02	66.98	49.29	15.92	0.73	0.00
6 Manufactured goods classified by material	804721	34.50	44.13	12.63	25.27	6.20	11.20
61 Leather manufactured n.e.s. & dressed fur skins	376601	10.82	66.53	18.09	31.66	0.30	22.31
62 Rubber manufactures n.e.s.	7879	97.02	2.98	0.03	0.30	0.00	0.00
63 Wood and cork manufactures (excl. furniture)	216	52.07	47.93	21.26	26.58	0.00	0.00
64 Paper, paper board and manufactures thereof	17416	78.55	21.45	9.48	11.27	0.02	0.00
65 Textile yarn, fabrics, made-up articles	36087	33.45	60.82	2.41	37.03	0.00	5.72
66 Non-metallic mineral manufactures, n.e.s.	27538	96.36	3.64	0.63	1.29	0.90	0.00
67 Iron and steel	143939	79.86	17.29	9.68	6.05	0.04	2.85
69 Non-ferrous metals	139127	18.74	61.26	2.47	43.88	34.82	0.00
7 Manufactures of metal, n.e.s.	55579	63.81	36.19	24.06	5.86	0.02	0.00
71 Machinery and transport equipment	524590	77.62	21.94	6.86	9.45	2.73	0.12
72 Electrical machinery, apparatus and appliances	292813	72.98	26.24	9.23	7.84	4.82	0.21
73 Transport equipment	73027	88.46	11.54	5.69	6.48	0.06	0.00
8 Miscellaneous manufactured articles	158750	81.21	14.78	3.67	14.26	0.01	0.01
81 Sanitary, plumbing, heating & lightning fixtures	270879	47.85	51.97	16.86	24.27	0.17	0.18
82 Furniture	558	88.84	11.16	11.00	0.13	0.00	0.00
83 Travel goods, handbags and similar articles	4931	73.82	26.18	18.44	6.68	1.01	0.00
84 Clothing	12254	45.83	50.17	44.38	5.05	0.12	0.00
85 Footwear	140720	23.81	75.86	18.29	43.11	0.12	0.34
86 Professional, scient. & controll. instruments	2009	47.40	22.60	31.76	18.68	0.00	0.00
89 Miscellaneous manufactured articles, n.e.s.	41402	91.09	8.91	1.62	6.22	0.07	0.00
69	68225	68.28	31.71	16.69	1.70	6.27	0.01
TOTAL manufactures	4904776	33.50	44.05	13.67	30.64	3.77	9.73
TOTAL: SITC 5-8 LESS 69 <sup>a/</sup>	1856471	51.64	42.75	16.43	17.48	1.93	5.45
TOTAL traded goods: SITC C-9	8021402	32.39	45.02	8.95	27.08	2.63	22.36

Note: Data and SITC descriptions refer to SITC revision 1

<sup>a/</sup> 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.

<sup>b/</sup> Definition of trade in manufactures SITC 5-8 less 69 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.

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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)		(PERCENTAGE)		(PERCENTAGE)		(PERCENTAGE)	
	1970	1980	1970-1975	1975-1980	1970	1980	1970-1975	1975-1980
A : Non-processed goods for further processing	42.25	36.06	18.32	18.36	5.42	6.75	35.10	8.50
B : Processed goods for further processing	14.52	22.64	18.10	33.60	25.59	17.73	25.27	10.04
C : Non-processed goods for final use	21.86	14.83	1.98	27.71	2.81	5.87	41.25	18.84
D : Processed goods for final use	21.37	26.47	26.20	19.81	58.18	67.65	12.05	33.32
Sum of classes: A+B+C+D in 1000 current US\$		<sup>1970</sup> 1773173		<sup>1980</sup> 8021402		<sup>1970</sup> 1688566		<sup>1980</sup> 10524762
Total trade SITC 0-9 in 1000 current US\$		1773173		8021402		1688566		10525232

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.

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3. INDUSTRIAL DEVELOPMENT STRATEGY, POLICIES AND PLANS

3.1 Principles, objectives and targets

The economic program of the military administration which took office in 1976 aimed at resolving the immediate problems of rampant inflation (800 per cent by the first quarter of 1976) and balance-of-payments crises. In addition, it sought to bring about a long-term restructuring of the economy in accordance with comparative advantages, promoting basic industries and industrial efficiency and encouraging new investments by the private sector. Although national fiscal, monetary and labour policies were focussed on these objectives, measures to open the economy to the competitive pressures of international trade were increasingly relied upon as the primary policy instruments.\*

By late 1978 the exchange rate policy was the government's principal anti-inflation tool. The peso was appreciated in real terms through a preannounced schedule of a gradually declining rate of (nominal) depreciation. The appreciated exchange rate, combined with the removal of duties and licensing restrictions on imports, was intended to force domestic manufacturers to compete with imports thus inhibiting the rate of price increases of tradeable goods. This deflationary pressure was counted on to spread to the non-tradeables sector through the goods and factors markets.

The difficulties facing manufacturers in undertaking the resulting necessary investments varied. The government removed restrictions on interest rates and capital movements in 1977, allowing interest rates to become positive in real terms for the first time in nearly 20 years. The increase in the real cost of money and shrinking profits led entrepreneurs to perceive that the rate of return from financial assets would be higher than that from industrial assets, and as a result investment decisions in manufacturing activities were often postponed.

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\* For further discussion of the Administration's objectives, see Adolfo Canitrot, "Discipline as the Central Objective of Economic Policy: An essay on the Economic Programme of the Argentine Government since 1976", World Development, vol. 8, pp. 913-928, 1980.

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As restrictions on foreign capital flows were lifted, foreign currency denominated loans became cheaper than credit in pesos. The expansion of foreign loans resulted in a huge external indebtedness: Private external debt doubled between 1978 and 1980, to US\$ 6,593 million, then doubled again in 1981 to US\$ 12,166 million\*. Industrial firms that had access to foreign credit, especially subsidiaries of international companies or larger Argentine enterprises, were in a more favourable financial position. Import restrictions and duties were lifted for machinery and equipment, benefiting firms willing and able to expand or modernize their capital stock.

Tax and credit incentives were strengthened for non-traditional exports in an attempt to counteract the disfavoured effects of the appreciated exchange rate. High domestic interest rates were maintained to attract foreign financial flows and encourage investment. Efforts were made by the government to reduce domestic absorption, through monetary and wage policies, to avoid current account deficits.

The economic program was structured under the assumption that the import substitution policies followed previously were largely responsible for the inefficiency of Argentine industry. Permitting increased competition from imported goods was intended to lead to a more rational allocation of resources and thus to the abandonment of certain overly-protected industrial activities. At the same time, a more efficient specialization by local firms was expected to contribute to increased manufactured exports.

The impact of these policies on manufacturing varied enormously, both over time (brief recoveries in early 1977 and 1979 cut short by high real interest rates) and between types of industries. Producers of tradeable goods had to adjust to import competition in the domestic market and high prices for their goods in the export market because of the low exchange rate. Their labour costs remained high, increasing by 30 per cent in 1979, even though employment in manufacturing actually decreased because of strong labour demand in other sectors, particularly services, and rigidities in wage levels.

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\* World Bank, World Debt Tables, February 1983.

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Furthermore, the uneven application of tariff reductions sustained high prices for some imports and the rising prices of non-traded goods, constituting over 30 per cent of industry, remained undeterred by the hoped for spill-over effect of lower-priced tradeables. Prices in those industries not threatened by external competition continued to rise and producers were thus able to cope with higher interest rates and labour costs, as well as take advantage of lower priced machinery and equipment imports. In general then, the prices of non-tradeables rose relative to tradeable goods - whose rate of price increases had slowed and was approaching Government targets, presenting their manufacturers with more rapid cost increases for inputs than could be passed along in higher prices. On the other hand, firms with high import content manufacturing saw their relative costs diminish as they benefited from the low peso/dollar exchange rate.

The problems created by the relatively greater success of the Administration in increasing imports than stimulating exports and the failure to hold down spending (including wage hikes in the public sector and increased defense expenditures in 1982); the contraction of production and lay off of workers by firms unable to compete successfully; and the large number of bankruptcies weakening the country's financial system were inherited by the new economic team that took office in 1981. In an initial major policy shift, a series of significant devaluations were implemented, totalling 90 per cent in three separate devaluations between April and July 1982. The resolve to open the economy, however, and develop a structurally stronger industrial sector was maintained and tariff reductions on imports were continued.

By 1982 the country was experiencing a deep recession with reduced imports and greater external debt servicing burdens. The cause of the continuing industrial recession was considered primarily to be high financial costs and the burden of short loan maturities. During the transition to a civilian Administration the Government was limiting itself to managing the pervasive economic crisis, leaving it up to the new Government in 1984 to take any major decisions regarding policies for the industrial sector.

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### 3.2 Policy instruments

One of the major objectives of the economic strategy in effect since 1976 has been the profound restructuring of the industrial sector, to be achieved by opening up the domestic economy to international market forces and by a drastic reduction of State intervention. The emphasis on de-regulation was expressed in the liberalization of the financial system and the program of tariffs reduction, as well as in the greater flexibility of the foreign investment law and the virtual elimination of technology transfer controls. Other important instruments, however, such as the "Buy-National" policy which has regulated procurement by State entities since 1963, were maintained, as was the industrial promotion system, but in a significantly revised form, better adapted to the new basic strategy. A brief summary of the main instruments of direct industrial promotion is presented below:

a) Industrial Promotion Law 21.608 of July 1977

The new industrial promotion regime can be characterized by: a) the inclusion of foreign-owned enterprises among those eligible for the industrial promotion benefits; b) emphasis on improved industrial efficiency, compliance with international quality standards, and profitability and cost structure of the production to be promoted; c) the relative de-emphasis of other objectives, such as the promotion of small- and medium-sized enterprises and technological development; d) the elimination of financial incentives; e) the introduction of an annual fiscal quota as incentives. The promotions included tax and tariff exemptions, deferments and reductions for a 10-year period and accelerated depreciation schedule on capital goods. Protective duties and restrictions on competing imports were granted but on a temporary and decreasing basis. Incentives were provided on a sectoral and regional basis. Sectors subject to special regulations included petrochemicals, steel, pulp and paper and motor engines. The regional scheme is comprised of two zones including provinces at different levels of development.

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Additional complementary incentive measures include policies governing the temporary import of goods for further manufacture and re-export, other fiscal benefits to exports (drawbacks, tax refunds) and tax reimbursement for investments in equipment. According to the Secretary of Industrial Development, 616 projects were approved in the period January 1974 to June 1983, representing planned investments for US\$ 5,800 million and a total employment of 48,171. Sectors with the most projects approved have been textiles and garments (183) and food, beverages and tobacco (100); while the largest investments have been in chemicals, non-metallic minerals and paper industry (see Table 16a). The information in Table 16b shows an erratic trend in terms of the number of projects approved over the 10-year period, which includes periods of very different economic circumstances. On the other hand,

Table 16a: Projects Approved for Industrial Promot. n Benefits - by Sector  
(1974-1983)

SECTOR	Number of Projects	Investments (US\$ thousands)	Employment
1 - Food, beverages, tobacco	100	395,463	7,716
2 - Textiles, garments	183	758,506	13,929
3 - Wood	44	265,160	3,466
4 - Paper	17	1,073,591	2,223
5 - Chemicals	79	1,496,303	5,280
6 - Non-metallic minerals	64	1,152,240	5,076
7 - Basic metals	21	365,508	3,344
8 - Machinery and equipment	97	289,580	6,723
9 - Other Industries	11	15,261	414
<b>Total</b>	<b>616</b>	<b>5,811,612</b>	<b>48,171</b>

Source: Secretaria de Desarrollo Industrial.

Table 16b: Projects Approved for Industrial Promotion Benefits by Year,  
1974-1983

Year	Number of Projects	Volume of investments (US\$ thousands)
1974	5	6,348
1975	59	515,835
1976	51	1,130,085
1977	148	578,340
1978	56	249,404
1979	82	879,990
1980	58	339,227
1981	112	1,720,698
1982	6	58,596
1983 (June)	39	333,089

Source: Secretaria de Desarrollo Industrial.

no complete data are available about the effective execution of the approved projects, except for the period 1974-July 1979 which covers the application of the former industrial promotion law and the first two years of the new regime introduced in 1977. According to this information, the percentage of approved projects actually undertaken (4.8 per cent) was much lower than under the previous law (30.18 per cent).\*

b) Buy National Regime

Decree 5340 of 1963 and Law 18875 of 1970 established a system requiring government entities to procure goods and services in the local market, with the exception of certain conditions permitting comparison with international prices and qualities. The system, conceived as a mechanism to make use of

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\* See J. Zalduendo, "El sistema argentino de promoción industrial en la década de los años 70, in Revista del Derecho Industrial No 6, 1980.



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the important purchasing power of the public sector to promote industrial development, has survived several attempts to reduce its application - in light of efficiency imperatives at the beginning of the "opening" and at various times since 1975.

c) Foreign investment and technology transfer legislation.

In 1976 a new foreign investment law was adopted. Previous control-oriented measures such as prohibition of takeovers of local firms, limits on profit remittances and access to local credit were eliminated or relaxed. The law, however, maintained authorization and registration requirements, except for small investments and re-investments. In 1977 the government passed a new transfer of technology law which instilled greater flexibility into the previous system controlling licensing contracts. In 1981, the new law was replaced by a system which virtually abolished state intervention in this field. Contracts between independent firms no longer require state approval, while those between parent and subsidiary companies are only subject to control in regard to royalty levels.

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3.3 Major planned industrial projects.

The present Government took an explicit position against industrial development planning, in order to allow the sector to be governed more efficiently by the free initiative of investors following market signals. The Ministry of the Economy has prepared a Catalog of Large Investment Programs and Projects of the public sector which includes several industrial operations, all of which are in the petrochemical sector. The projects included are those with investments of more than US\$ 5 million. They are listed in the following table.

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Table 17: Main Industrial Investment Projects of the Public Sector (1981).

OBJECTIVE	Fixed investments (US\$ millions)(1)	Implementation period (years)	Year Initiated
1 Expansion of ethilene and propilene plant	44.60	4	1977
2 Production of chlorine, caustic soda and sodium carbonate	142.70	3	1980
3 Production of Poliethilene	56.30	3	1980
4 Production of vinile chlorine	82.30	3	1980
5 Production of Poliethilene	91.80	3	1979
6 Oil refinery and production of several petro-chemical imports	966.30	4	Before 1985
7 Capralactam	100.00	3	To be determined
8 Oil derivatives	137.47	3	2nd sem 1980
9 Light hydrocarbons	92.82	3	2nd sem 1980
10 Light hydrocarbons	97.06	4	1981
11 Vinile resins	50.09	3	1980
12 Vinile Polichloride	97.30	3	1980

(1) Based on million pesos of 1980 (one dollar = 1,850 pesos)

Source: Ministerio de Economía, "Grandes Proyectos y Programas de Inversión", 1981.

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4. INSTITUTIONAL FRAMEWORK FOR INDUSTRY

I. General regulation and promotion

The Ministry of the Economy combines under its authority most of the centralized and de-centralized government organizations with responsibilities for industrial activities. The main entities or departments are:

a) Secretary of Industry and Mining is responsible for formulation and coordination of industrial policy. The under-secretary of Industrial Development is in charge of the application of the Industrial Promotion Law and a number of other sectoral norms. It controls the National Institute of Industrial Technology (described below) and the National Directorate of Industrial Property.

b) Secretary of Commerce is responsible for domestic and foreign trade activities; the National Bureau of Price Analysis which controls prices of domestic products; the National Commission on Defense of Competition, the antimonopoly body; and the application of import and export regulations and incentives.

c) Undersecretary of Economy controls the Foreign Investment Register and drafts legislation proposals on economic affairs.

d) Finance Secretary is responsible for the National Budget, and decides the level of subsidies and incentives to be granted to industrial promotion projects.

e) Dirección General de Fabricaciones Militares (National Directorate of Military Manufactures) is a large state holding operating 13 dependent companies and participating in a number of other ventures. Under its charter it has authority to enter any field that will promote national development.

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f) Apart from the Industrial Promotion system of the Central Government, several Provinces have their own Industrial Promotion Incentives Programmes, including financial benefits and industrial parks (15 currently in operation).

## II. Finance (see also section 5.4 below)

a) National Development Bank (BANADE) grants medium- and long-term loans to industrial and mining projects, but in recent years has been required to apply market interest rates and to compete with private banks.

b) Private Investment Banks: Banco Argentino de Inversión, Banco Unido de Inversión.

c) The main stock market is in the capital city, Buenos Aires; others operate in a number of provinces. Despite occasional booms they do not constitute a major source of long-term finance for industry. Government bonds have predominated their activities in recent years.

## III. Technology

According to some estimates, Argentina dedicates about 0.7 per cent of its GDP to Research and Development activities. Nearly 90 per cent of this is financed by the public sector. About 30 per cent of the Annual Budget goes to science and technology activities, allocated to various entities and centers as shown in Table 18.

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Table 18: Distribution of Science and Technology Expenditures  
(Annual Budget 1981)

<u>Entities</u>	<u>Percentage</u>
National Universities (13)	8.3
National Commission of Atomic Energy	23.2
National Council of Science and Technology	28.7
Under-Secretary of Science and Technology	3.2
National Institute of Industrial Technology	0.1
Armed Forces Center for Technological Research	1.5
Others	35.0

The institutions listed above are very important to manufacturing industries; although, with the exception of the National Institute of Industrial Technology, they are only partially related to the industrial sector.

a) Undersecretary of Science and Technology (SUBCYT) is a small department of the Planning Secretary in charge of policymaking and coordination of basic and applied research. It manages a number of National Programmes of research in cooperation with universities and the private sector (food, electronics, energy, petrochemicals).

b) National Council of Science and Technology (CONICET) is an autonomous entity created in 1958 and operating in the sphere of the Ministry of Education. Its main programmes include financing researchers and research assistants, providing scholarships, and financing a decentralized network of Research Centers in several provinces, some of which are of relevance to industry (petrochemicals, biochemistry, chemical engineering).

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c) National Institute of Industrial Technology (INTI) is within the Secretary of Industry and Mining. It has a "Technology Park" with various Centers working in applied research; a program of short courses for industry personnel and provides technical assistance to manufacturing industry, including quality control services. INTI is also in charge of the Register of Technology contracts. Until recently it was in charge of a regime for the promotion of technology development projects.

d) Public enterprises. Several State-owned corporations have important R and D programs. By far the most important is carried out by the Atomic Energy Commission (CNEA) which receives more than 20 per cent of the total budget dedicated to science and technology. Other relevant programs are the development of State oil fields (the petroleum company); LANTEL (the research lab of the Telecommunications Company); Agua y Energía (The Electricity Company).

c) Other institutions. Other relevant entities include the National Institute of Fishing Development; the National Institute of Hydrological Science and Technology; the Science Research Center of the Province of Buenos Aires; the Armed Force Center of Technological Research.

#### IV. Institutions for regional and international cooperation.

The Undersecretary of International Economic Relations of the Ministry of Foreign Affairs, the Undersecretary of International Negotiations of the Secretary of Commerce and the Direction of International Cooperation of the Secretary of Planning are the main bodies specialized in international economic relations. Argentina is a member of the following organizations related to industry:

a) Latin American Integration Association (LAIA). The country participates actively in this trade liberalization system among 11 Latin American countries. The LAIA market has accounted for about 50 per cent of the total export of manufactures from Argentina in recent years. Argentina participates

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in a number of industrial complementation agreements with other member countries and in bilateral agreements for accelerated trade liberalization with Uruguay and Chile.

b) River Plate Basin Commission is a regional cooperation scheme for the identification and promotion of hydroelectrical, infrastructure and production projects between Argentina, Bolivia, Brazil, Paraguay and Uruguay.

c) The Latin American Economic System (SELA), a regional organization of 25 Latin American countries is concerned with consultation, coordination and cooperation projects among Latin American and Caribbean Countries. Argentina participates in the Action Committee on food products.

d) Technical and Business cooperation organizations. Argentina participates in several regional organizations of technical and business cooperation, including ARPEL (oil companies), ILAFA (Steel companies), CIER (electricity), ALIFAR (pharmaceuticals), FELAC (consulting), ALICA (food), petrochemicals (IPLA).



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## 5. RESOURCES FOR INDUSTRIAL DEVELOPMENT.

### 5.1 Human resources

According to the last National Census (1980) total population in Argentina was 27,863,000. The growth rate was 1.65 per cent annually during 1960-1980. Of the total population, 83 per cent are located in urban areas (72.0 per cent in 1960). The labour force was estimated at 38.8 per cent of the total population.

The official unemployment rate in the city of Buenos Aires was estimated at 5 per cent at mid-1981. In other important production centers the rate was higher: 6.7 per cent in Rosario, 9.2 per cent in Tucumán, 8 per cent in Mendoza. The rates of under-employment\* were in general higher. The public sector employed 1,638,938 persons in 1981 (1,772,298 in 1977).

By 1980, only 16 per cent of the labour force was engaged in the industrial sector (20 per cent in 1970). Industrial employment declined sharply (by more than 30 per cent) from 1,650,000 in 1975 to 1,120,000 in 1981. It seems that the reduction of employment in the industrial sector was partially compensated for by a rise in the share of "self-employed" in the total working population, including some small entrepreneurs or independent workers.

The fairly high educational base of the Argentine population is the result of early social investments by the government and free and compulsory education adopted at the end of the last century. Vast flows of European immigrants in the last part of the nineteenth and early decades of the twentieth centuries were also an important channel for the development of human resources. Already by 1947, the adult literacy rate was 86.4 per cent and the share had increased to 92.6 per cent by 1970. By 1975, 96 per cent of the population between 6 and 13 years of age was attending school (about 40 per cent of 13-19 year olds in 1975-1980). About 15.2 per cent of secondary students were in industrial-oriented disciplines and 27.8 per cent in commercial courses,

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\* Persons working less than 35 hours a week and looking for additional work.

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against 41.4 per cent in general education. In University programmes, the respective share of the 18-24 year old population was estimated at 12 per cent in 1980, but graduate students were a small proportion (8.1 per cent in 1975 or 33,321 out of 536,959 students). Moreover, it is estimated that 90 per cent of professional graduates are working in the service sector, despite the fact that students in disciplines oriented towards the production areas increased significantly in the last few years. By the early 1970s, the share of uneducated persons in the non-agricultural labour force was 3.2 per cent of the total, and the share with secondary educations was 21.8 per cent.

Technical education in Argentina is offered by the National Council of Technical Education (CONET), a government entity created in 1959.\* Its objective is to improve the training, specialization and professional development of middle-level technicians and workers. Industrial technicians attend a 6-year course in the National Schools of Technical Education, graduating in some 26 specializations which provide access to the labour market and the University. The "professional formation" level of CONET offers courses for workers, trainers and supervisors, some in special agreements with enterprises, which consist of programs of two years or shorter durations in courses with a technical orientation.

Participants in Technical Education Schools are 10 times more numerous than those in Professional Formation Programs. In 1978, middle level technicians accounted for 12 per cent of all graduates in the education system and 27 per cent of the matriculation in secondary education. In contrast, the enrollment in professional formation programs is very low: 10,000 workers, out of 3,000,000 surveyed in 1978.

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\* The following information is based on "La oferta de educación técnica", Coyuntura y Desarrollo No. 30, 1981.

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Enrollment in technical training programmes amounted to 352,000 students in 1977, of which about 30 per cent were in mechanical programs, followed by construction, electromechanics and electricity.

In terms of the levels of human resource training, the most dynamic branches of industry are chemicals, oil, metalworking, electronics and automotives. The metalworking industry has the largest training programmes in the manufacturing sector.

Table 19: Enrollment in the Upper-Level Cycle of Technical Schools, Classified by Specialization: 1974-1978 (in percent)

SPECIALIZATION	1974	1978
Management	2.8	5.3
Automotives	5.2	4.3
Aircrafts	0.7	1.0
Construction	15.1	18.1
Electricity	9.0	7.0
Electromechanics	19.7	20.3
Electronics and tele- communications	6.8	7.3
Mechanics	29.4	25.4
Metalworking	0.7	0.6
Mining and Oil	0.4	0.5
Optical	0.5	1.4
Chemicals	7.9	6.8
Others	<u>1.8</u>	<u>2.0</u>
Total upper cycle 100.0 per cent	100.0 per cent	
Number of graduates	46,740	56,501

Source: Ministerio de Educación, Departamento de Estadísticas.

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The development of managerial skills is the responsibility of the Business Administration Schools in various universities and private entities, such as the Institute for the Development of Executives (IDEA).

The National Council of Sciences and Technology (see Section 4 above) plays an important role in the development of advanced training, through its support of Researchers (1300 in 1981, about 10 per cent of whom were involved in technical disciplines) and Research Assistants, and a program of scholarships (879 devoted to technical studies in 1981). The research and technical assistance activities of other centers also contribute to the training and development of skills for productive activities.

The number of scientists and technologists has been estimated at 530,000 in 1980, or 19 out of every 1,000 inhabitants. About 22,000 are dedicated to Research and Development activities. Yet less than 6 per cent of the total number of scientists and engineers seem to be involved in production activities. However, during the last decade many scientists and professionals left the country as a result of the unfavourable economic situation, the lack of support for high-skilled activities and political circumstances.

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5.2 Raw material resources

Agricultural resources

One of the main resources of the country is its vast and very fertile land. More than 50 per cent of Argentina's territory is located in the Pampa region. Harvested areas cover about 29,800 hectares. Areas of natural and artificial fields, partially suited for agriculture, cover some 137,000 hectares. There are four broad types of crops: 1) cereals and oilseeds; 2) industrial crops; 3) fruits; 4) vegetable crops.

a) Cereal and oil crops account for three fourths of the total planted area and more than one third of the value of total exports, as Argentina is one of the main exporters of these products in the world. Six crops comprised 85 per cent of the planted area and 95 per cent of production in 1981/82 and 1982/83. Wheat covered 31 per cent of the planted area; its production in 1981/82 amounted to 8.3 million tons, or 1.8 per cent of the world production; and exports totalled 4.4 million tons, representing 4.3 per cent of the volume of world exports. The corn harvest was 9.6 million tons in 1981/82 (2.2 per cent of world production) and exports were 8.2 million (1.6 per cent of world exports). The third crop in importance was grain sorghum: Argentina accounted for 11.6 per cent of world production and 35.4 per cent of world exports. Other cereals and oilseeds relevant in terms of world production and exports are soybeans, sunflower, barley and linseed.

b) Industrial crops. Most important is sugar-cane (15 million tons in 1981/82, planted area of 350,000 hectares), followed by grapes (3.5 million tons - Argentina is the world's 5th largest producer of wine), tea, tobacco, yerba mate, etc.

c) Fruits. Crop year 1980/81 yielded 2.9 million tons: Apples (0.8 million tons) and Oranges (0.68 million tons) are the most important. Others include lemon, peach, mandarin, oranges and pears.

Table 20: Main Crops: Planted and Harvested Hectares, Yield and Production (1981/82-1982/83)

CROPS	1981/82						1982/83					
	Area			Yield (Kg/ hect. Har- vested)	Production (thousand tons)		Area			Yield (Kg/ hect. Har- vested)	Production (thousand tons)	
	Planted	%	Har- vested				Planted	%	Har- vested			
	(Thousand Hectares)					(Thousand Hectares)						
WHEAT .....	6,566	31	5,926	1,400	8,300	24	7,410	32	7,320	2,067	15,130	37
CORN .....	3,695	17	3,170	3,028	9,600	28	3,440	15	2,970	2,976	8,840	22
GRAIN SORGHUM .....	2,712	13	2,510	3,187	8,000	24	2,627	12	2,491	3,262	8,125	20
SOYBEAN .....	2,040	9	1,986	2,090	4,150	12	2,200	10	2,115	1,810	3,650	9
SUNFLOWER .....	1,733	8	1,673	1,184	1,980	6	1,954	8	1,901	1,210	2,300	6
BARLEY .....	1,615	7	299	1,136	339	1	1,793	8	375	1,398	524	1
Sub-Total .....	18,361	85	15,564		32,369	95	19,424	85	17,172		38,769	95
OTHERS .....	3,183	15	1,569		1,709	5	3,389	15	1,723		1,867	5
TOTAL .....	21,544	100	17,133		34,078	100	22,813	100	18,895		40,656	100

Source: Ministerio Economía, Hacienda y Finanzas: Informe Económico 1978-81  
 FIDE: "Coyuntura y Desarrollo" No. 49, Sept. 1982

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d) Vegetable crops. Production in 1980/81 amounted to 4.3 million tons and in 1981/82 to 3.3 million tons, including 1.8 million tons of potato, 0.57 million tons of tomato, and significant volumes of sweet potato, dry beans and onion.

#### Livestock

According to the 1977 Census, livestock included cattle (61 million), sheep (34.5 million), horses (3 million), and pigs (3.5 million). More than 80 per cent of the cattle and porcines are raised in the Pampean Region, while about half the porcines are in the Southern area.

By mid-1982, the stock of cattle was estimated at 52.7 million. The decline is explained by an increased utilization of land for other agricultural pursuits. Further, since the early 1970s the restrictive measures introduced by the EEC and other traditional export markets have affected the livestock sector and its industries. Meatpacking has been in a critical situation for some years. In 1980, 14 million cattle were slaughtered, but only 13 per cent of the meat products were exported. The slaughter of sheep was 6.9 millions, and the export share was 16 per cent. Wool production has averaged 145-150,000 tons in recent years. The slaughter of pigs amounted to 3 million in 1980, with almost negligible exports.

#### Fisheries

The extensive marine coast of Argentina offers significant fishing possibilities which only recently have begun to be exploited on a large-scale basis. Production in 1982 was 460,000 tons, 50 per cent of which was exported.

#### Forestry

Forests and natural woods occupy an area of 63,300 hectares. Total forestry production in 1978 amounted to 4.9 million tons, of which timber logs accounted for 70 per cent. Other products include firewood (15.5 per cent) and charcoal (6.6 per cent). Forestry exports are not significant.

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Mining

The mining sector contributed 2.3 per cent of the GDP in 1981, including oil and gas production. Total mining production (excluding oil and gas) amounted to about 68,000 thousand tons. Metallic minerals accounted for 1.6 per cent, non-metallic for 8.7 per cent and various rocks (sand, granite, marble) for 89.7 per cent. Total mining exports amounted to US\$ 35 million in 1979, while imports reached US\$ 700 million.

Mining production covers the needs of the construction industry but is clearly insufficient with regard to most minerals, particularly metallic minerals. Yet the mineral potential of the country has not been adequately explored.

Table 21: Mining Production, 1981  
(thousands of tons)

<u>Metallic</u>	<u>Production</u>
	<u>1,060.7</u>
Lead.....	52.5
Zinc.....	69.7
Iron.....	494.5
Tin.....	5.7
Uranium.....	472.0
Others.....	6.3
<u>Non metallic</u>	<u>5,831.0</u>
Salt.....	1,093.1
Borates.....	167.4
Clay.....	1,980.1
Gypsum.....	678.4
Others.....	1,912.0

Source: Anuario de Estadística y Censos, 1981.



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In 1979, a Mining Promotion law was adopted offering wide incentives to the sector. A number of projects for the production of copper, molibdene, sodium, sulphur, silver and others are waiting implementation. So far the main efforts have been carried out by the State holding Fabricaciones Militares, which owns the only integrated steel complex.

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5.3 Energy resources

Argentina is richly endowed with energy resources. Yet thus far they have not been exploited adequately, despite their size and diversity. Per capita consumption is relatively low (1981: 14.4 kilograms petroleum equivalent per capita); self-sufficiency has not been attained; there is still an excessive dependence on hydrocarbons, as well a general under-utilization of existing potential. There is also a serious imbalance between the structures of consumption and supply as can be seen in Table 22.

Table 22: Main Sources of Supply and Demand of Energy, 1981

	Supply	Demand
Oil.....	12 per cent	56 per cent
Gas.....	20 per cent	25 per cent
Hydro.....	50 per cent	10 per cent
Coal..... )	6 per cent	2 per cent
Veget. combustibles... )		5 per cent
Uranium.....	12 per cent	2 per cent

Source: Boletín Semana de Economía, October 1982.

i) Oil and gas. In 1981 the production of oil was 28 million cubic metres (about 0.8 per cent of world production) and of gas was 13 million cubic meters (also 0.8 per cent of world production). Imports amounted to US\$ 660.6 million and exports to US\$ 471.4 million. Established reserves are 400 million cubic meters for oil and 150 billion cubic meters for gas. Oil reserves have decreased over the last 10 years, while those of gas have increased three-fold. The extent of the sedimentary basin of Argentina is about 1 million Km<sup>2</sup>, yet only 6,700 drills are in operation, producing 77,000 m<sup>3</sup> daily. The share of oil in total energy consumption has been decreasing constantly since 1960, especially after the 1973 oil crisis. However, it still accounts for about 56 per cent of total consumption. In contrast, the use of natural gas has increased significantly: from 6.1 per cent of the total in 1960 to 24.6 per cent in 1981. Part of this increase is due to the imports of gas from Bolivia and Chile.

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ii) Coal reserves are estimated at 450 million tons (of which, 250 million tons are of commercial use); production in 1980 was 7 million tons (0.02 per cent of world production). This important energy resource has been underutilized and its contribution to total consumption has decreased from 5.4 per cent in 1960 to 2.2 per cent in 1981.

iii) The Hydroelectrical potential of Argentina is significant: hydroelectrical reserves (estimated at 45,000 MW), account for 50 per cent of total energy supplies but only 10 per cent of it is utilized. By 1980 its share in consumption was estimated at 14 per cent and in electricity generation at over 50 per cent. The role of hydroelectricity has increased remarkably since 1972, due to the availability of new power-generating projects, such as el Chocón (1,650 MW) in the southern area, and Salto Grande, the big binational complex with Uruguay (1,890 MW). Argentina has advanced projects for the construction of new dams, two of them with neighbouring countries: Yacretá, with Paraguay, will have an initial capacity of 2,700 MW, but its construction has been delayed since 1974; a second one with Brazil (GARABI) will have a capacity of 2,200 MW.

iv) Nuclear energy. The local reserves of uranium are estimated to cover the needs of the 9 nuclear plants planned by the National Commission of Atomic Energy. Nuclear energy generation began with the start-up of the first plant in 1974; in 1983 a second plant was added. Four new plants are expected to be added by 1997. By the end of 1982, nuclear energy was supplying 2.9 per cent of total energy demand, and with the third plant now in construction it could supply 8.3 per cent of energy needs in the next few years.

In sum, during the last two decades coal and vegetal combustibles have gradually been replaced by natural gas. In more recent years, oil too has gradually been replaced by natural gas, hydroelectricity and more recently by nuclear generated electricity.

Argentina 5.3.3  
July 1983

Table 23: Energy Consumption (1960-1980)  
(in thousands of tons petroleum equivalent)

Year	Oil	%	Gas	%	Coal	%	Vegetal	%	Nuclear	%	Hydro	%	Total	%
1960	13,414	75.6	1,020	5.8	955	5.4	2,099	11.8	-	-	252	1.4	17,740	100
1965	16,854	70.7	3,613	15.2	791	3.3	2,239	9.4	-	-	335	1.4	23,832	100
1970	21,324	71.0	5,335	17.8	869	2.9	2,077	6.9	-	-	433	1.4	30,038	100
1975	22,028	62.2	7,911	22.3	1,215	3.4	2,071	5.8	730	2.1	1,485	4.2	35,440	100
1980	23,675	57.0	9,907	23.9	970	2.3	1,939	4.7	679	1.6	4,376	10.5	41,546	100

Source: Coyuntura y Desarrollo N° 49, Sept. '82.

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July 1983

Energy consumption by the industrial sector accounted for about 40 per cent of total supply until the mid 1970s, but fell significantly in the last years of economic recession.

Energy planning is embodied primarily in two instruments: The National Plan for Equipment for Generation and Transmission Systems 1979-2000 and the Energy Plan 1980-2000. The plans provide for a continuous emphasis on the substitution of traditional sources of energy as seen in Table 24.

Table 24: Electricity Generation Capacity (end 1981)  
(in per cent)

	Existing		Under construction	
	MW	%	MW	%
Hydro.....	4150	38	2626	45
Thermal.....	6600	59	1808	31
Nuclear.....	370	3	1389	24
	<u>11,120</u>	<u>100</u>	<u>5,823</u>	<u>100</u>

Source: Subsecretaría de Energía Hidroeléctrica y Térmica.

## Argentina 5.4.1

July 1983

### 5.4 Financial resources

The economic policies of 1976 put a central emphasis on the free operation of the capital market, which experienced a spectacular growth in the following years and made the financial sector the most dynamic part of the economy\*. A number of huge financial conglomerates emerged and in a short time the industrial sector as a whole found itself dependent on a small number of increasingly powerful financial institutions. About 209 financial institutions were in operation at end-1980 and behaved in an oligopolistic manner. The 13 largest entities accounted for 50 per cent of total credit using very high spreads to determine interest rates and limiting financing to short-term operations. The only long-term lending institution was the state-owned Banco Nacional de Desarrollo, specializing in lending to industry and mining.

In effect, the financial reform introduced in 1976 freed interest rates, which rose to high levels in real terms: e.g. 12.4 per cent for the first quarter of 1981. The liberalization policies were, however, unable to stimulate the supply of long-term funds.

The transfer of financial resources to the industrial sector declined after the Financial Reform. The debt of the private industrial sector increased by 44 per cent in real terms between mid 1977 and early 1980, due in part to a strongly inelastic demand for credit, caused by falling industrial profits, and the full government guarantee on domestic deposits. But the increase in real debt was used mainly to finance higher interest charges, working capital, stock accumulation and the purchase of consumer durables. This led to a serious deterioration of the debt-equity ratio in the industrial sector,

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\* This section is based on World Bank Report No 4513-AR "Argentina 1983 Economic Memorandum"; ECLA, "Política económica y proceso de desarrollo, la experiencia argentina 1976-1981", Buenos Aires 1983; A. Canitrot, "Teoría y práctica del liberalismo", in Desarrollo Económico No. 82, September 1981.

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July 1983

which increased from 68 per cent in 1976 to 106 per cent in 1980; in 1981 reaching 154 per cent for food products, 248 per cent for machinery, and 165 per cent for paper products. This situation in a context of pervasive economic recession and declining profits caused a large number of bankruptcies in the industrial sector, which accounted for 84 per cent of the economy-wide bankruptcies in 1981. The subsequent crisis was faced by the government with a number of policy changes, including re-financing schemes which brought some temporary relief to firms, and other changes in the financial system. By mid-1983, with monthly inflation rates above 10 per cent and unrelenting recession, interest rates were still very high and the government still unsuccessfully was pursuing monetary stabilization efforts.

Investment in new equipment was generally made with external credit, the access to which was concentrated on enterprises with international links and "low-risk" firms, mainly foreign subsidiaries. The distorted conditions of industrial financing in Argentina are reflected in the decaying volumes of investment in the sector during the last few years.

Table 25: Net Investment in the Industrial Sector  
(millions of pesos at 1970 values)

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1975.....	1,808
1976.....	2,716
1977.....	4,961
1978.....	1,603
1979.....	1,660
1980.....	939
1981.....	- 938

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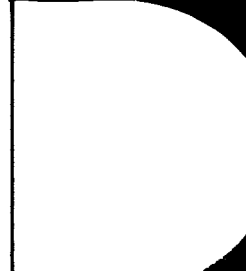
Source: World Bank, based on Central Bank, FIDE and World Bank estimates.

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Since 1976, development credit for industry has been limited to the role of the Banco Nacional de Desarrollo (BANADE), a state-owned Bank created in 1944 with the objective of financing productive investments. In principle, BANADE promotes and participates in the financing of the initiation, expansion and modernization of industrial and mining projects with particular emphasis on basic industries and preference to small and medium enterprises located in de-centralized areas. In 1977, however the Statutes of BANADE were revised, introducing traditional banking criteria. Since that time the Bank has not subsidized interest rates (with the exception of projects located in border areas) and competes with other institutions in attracting domestic and external funds. The only special condition of the Bank loans are their long terms, up to 7 years, and large volume, up to 70 per cent of the value of the project - on a case by case basis.

During the period 1978-1981, BANADE provided US\$ 850 million in loans and an equivalent amount in guarantees to 33 manufacturing projects in the chemical (13 projects), metalworking (4), paper (2), food (2), textiles (5), cement (3), shipbuilding (1), and a few other sectors.





Argentina 5.4.4  
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Table 26: Loans by the Banco Nacional de Desarrollo (BANADE)\* 1977-1981 millions of pesos at December 1981)

LOANS	1977	%	1878	%	1979	%	1980	%	1981	%
NATIONAL CURRENCY	7,665	86	9,801	69	11,312	61	13,447	52	11,164	35
FOREIGN CURRENCY	1,203	14	4,402	31	7,181	39	12,433	48	20,360	65
T O T A L	8,868	100	14,203	100	18,493	100	25,880	100	31,524	100

\* National Development Bank

Source: BANADE, Memoria Anual, 1982.

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6. List of Technical Assistance Projects to Support Industrial Development

UNIDO's approval and/or Operational Technical Co-operation Projects

Approval Date	Estimated Completion Date	Project Number =Registry File=	Project Title
4/82	1984	DP/ARG/81/004*	Small and medium industry in the Province of Santa Fé
3/82	1984	SI/ARG/82/801	Assessment of the reconstruction needs of the Argentinian textile industry
11/82	1984	GD/ARG/81/015*	Contribución a la generación de tecnología en el área de alimentos del Instituto Nacional de Tecnología Industrial (INTI)
11/82	1986	DP/ARG/81/010**	Apoyo integral al desarrollo tecnológico de la siderurgia Argentina
1/83	1983	inca UC/ARG/83/027	Development of uses for natural gas in the Province of Neuquen
6/82	1984	DP/ARG/81/033**	Tecnología y desarrollo para el complejo petroquímico de Bahía Blanca

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

\*\* Total allotment \$1 million or above

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

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Revista Informe Industrial  
Revista Mercado  
Revista Prensa Económica

APPENDIX: 100 largest industrial companies by sales volume (1980, 1981)

COMPANIES	SOURCE OF CAPITAL 1/	SECTOR	RANKING BY SALES VOL.	
			1981	1980
YPF .....	P	Oil .....	1	1
ESSO .....	F	Oil .....	2	3
NOBLEZA-PICCARDO ..	F	Tobacco .....	3	4
FORD .....	F	Auto .....	4	2
MASSALIN-PARTICULA- RES.....	F	Tobacco .....	5	13
RENAULT .....	F	Auto .....	6	7
SHELL .....	F	Oil .....	7	5
SOMISA .....	P	Steel .....	8	6
DALMINE .....	F	Steel .....	9	15
MOLINOS RIO DE LA PLATA .....	N	Food .....	10	10
ACINDAR .....	N	Steel .....	11	9
MASTELLONE .....	N	Food .....	12	16
IBM .....	F	Equip.....	13	21
SEVEL .....	F	Auto .....	14	S/D
APNE .....	P	Shipbuilding .....	15	30
LOMA NEGRA.....	N	Cement .....	16	14
MERCEDES BENZ .....	F	Auto .....	17	S/D
ALPARGATAS .....	N	Textiles.....	18	19
PROPULSORA .....	F	Steel .....	19	18
ALUAR .....	N	Aluminium .....	20	22
SANCOR .....	N	Food .....	21	17
VOLKSWAGEN .....	P	Auto .....	22	12
LEDESMA .....	N	Sugar .....	23	23
FABRICACIONES MILI- TARES .....	P	Industrial holding (steel, petrochemi- cals, etcétera)....	24	20
REFINERIA DE MAIZ..	F	Food .....	25	35
PEREZ COMPANC .....	N	Oil .....	26	35
RIO COLORADO .....	N	Oil .....	27	---
LEVER .....	N	Chemical .....	28	2
TERRABUSI .....	N	Food .....	29	28
BAGLEY .....	N	Food .....	30	41

COMPANIES	SOURCE OF CAPITAL 1/	SECTOR	RANKING BY SALES VOL.	
			1981	1980
CLARIN-AGEA .....	N	Printing .....	31	24
NESTLE .....	F	Food .....	32	26
PHILLIPS .....	P	Electric .....	33	31
PIRELLI .....	F	Conductores .....	34	33
SWIFT-ARMOUR .....	F	Food .....	35	42
BRIDAS .....	N	Oil .....	36	29
CELULOSA .....	N	Paper .....	37	27
DUCILO .....	P	Textiles .....	38	40
SIAM .....	P	Mechanic .....	39	77
COCA-COLA .....	F	Beverages .....	40	50
EQUITEL .....	N	Telecommunication	41	51
ALBA .....	N	Paints .....	42	43
FATE .....	N	Tires .....	43	52
GOOD YEAR .....	F	Tires .....	44	46
AZUCARERA CONCEPCION	N	Sugar .....	45	65
ASTRA .....	N	Oil .....	46	55
PETROQUIMICA GRAL MOSCONI .....	P	Petrochemical ...	47	57
ARCOR .....	N	Food .....	48	49
MOLINOS CONCEPCION.	N	Food .....	49	45
LA ISAURA .....	N	Oil .....	50	48
BAYER .....	F	Chemicals .....	51	61
GRAFANOR .....	N	Textiles .....	52	97
CIA. ARG. DE CEMENTO PORTLAND .....	F	Cement .....	53	56
CORCEMAR .....	N	Cement .....	54	54
INGENIO S.M. TABACAL	N	Sugar .....	55	66
CIBA-GEIGY .....	P	Chemicals .....	56	70
STANDARD ELECTRIC .	F	Telecommunication	57	60
ROCHF. ....	F	Chemicals .....	58	73
CIA QUIMICA .....	N	Chemicals .....	59	63
CANALE .....	N	Food .....	60	75
TRANSAX .....	F	Autoparts .....	61	S/D
UNION CARBIDE .....	F	Chemicals .....	62	82
JOHNSON Y JOHNSON..	F	Chemicals .....	63	S/D
KODAK .....	F	Photo .....	64	79
JUAN MINETTI .....	N	Cement .....	65	91

COMPANIES	SOURCE OF CAPITAL 1/	SECTOR	RANKING BY SALES VOL	
			1981	1980
BAGO .....	N	Chemicals .....	66	86
CALERA AVELLANEDA..	N	Cement .....	67	84
PASA .....	F	Petrochemicals ...	68	47
COLORIN .....	N	Paints .....	69	114
ASTILLEROS ALIANZA.	N	Shipbuilding .....	70	109
PAPEL PRENSA .....	N	Paper .....	71	124
ING.LA ESPERANZA ..	N	Sugar .....	72	93
EDITORIAL CREA .....	N	Printing .....	73	99
AZUCARERA ARGENTINA	N	Sugar .....	74	113
EDIT. ATLANTIDA ...	N	Printing .....	75	80
CIA.GRAL.DE COMBUS- TIBLES .....	F	Oil .....	76	103
SAFRA .....	N	Meat .....	77	92
FERRUM .....	F	Ceramics .....	78	90
PEPSI-COLA .....	F	Beverages .....	79	89
RIGOLLEAU .....	F	Glass .....	80	88
SIEMENS .....	F	Electrical prod...	81	72
MOLINOS FENIX .....	N	Food .....	82	136
KICSA .....	N	Aluminium .....	83	68
ASTARSA .....	N	Shipbuilding .....	84	120
CAMEA .....	F	Aluminium .....	85	67
ATANOR .....	F	Chemicals .....	86	116
GIOL .....	N	Beverages .....	87	36
LA VASCONGADA .....	N	Food .....	88	115
PFIZER .....	P	Chemicals .....	89	152
MASSUH .....	N	Paper .....	90	151
VASA .....	N	Glass .....	91	117
FIAT MATERFER .....	F	Mechanics .....	92	S/D
CENTENERA .....	N	Packaging .....	93	95
PESCARMONA .....	N	Metalworking .....	94	119
NOEL .....	N	Food .....	95	121
FEDERAL .....	N	Chemicals .....	96	102
GILLETE .....	F	Cosmetics .....	97	108
LA OXIGENA .....	F	Chemicals .....	98	98
MINETTI Y CIA .....	N	Food .....	99	S/D
CAFE LA VIRGINIA ..	N	Food .....	100	145

1/ P: Public (state owned)  
F: Foreign owned  
N: Domestic, private capital

Source: Prensa Económica, August 1982.



