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**INDUSTRIAL DEVELOPMENT REVIEW
SERIES**

CHILE

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

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Preface

This series of industrial development reviews on developing countries is prepared within the framework of UNIDO country studies by the Regional and Country Studies Branch of the Division for Industrial Studies.

The reviews provide a survey and brief description of the respective country's industrial sector, as an information service to relevant sections within UNIDO and other international agencies as well as aid agencies in developed countries concerned with technical assistance to industry. It is expected that the reviews will prove a handy, useful information source for policy-makers in the developing countries as well as for industrial entrepreneurs, financiers and economic researchers.

The reviews draw primarily on information provided by the UNIDO data base and material available from national and international statistical publications. Since up-to-date national statistical data usually are not complete, it is evident that the reviews will need to be updated and supplemented periodically. To supplement efforts underway in UNIDO to improve the data base and to monitor industrial progress and changes on a regular basis, it is hoped that the appropriate national authorities and institutions in the respective countries and other readers will provide UNIDO with relevant comments, suggestions and information. Such response will greatly assist UNIDO in improving and updating the reviews.

The present Review was prepared on the basis of information available at UNIDO headquarters in September 1985. It is divided into two rather distinct parts. Chapters 1 and 2 are analytical in character, giving first a brief overview of the country's economy and its manufacturing sector and then a more detailed review of the structure and development of its manufacturing industries. Chapters 3 and 4 contain various kinds of reference material on national plans and policy statements relevant to industrial development, on the more important governmental and other institutions involved in industrial development and on the country's natural, human and financial resources for industrial development. The Review also contains relevant basic indicators and graphical presentations of manufacturing trends as well as statistical and other appendices.

It should be noted that the reviews are not official statements of intention or policy by Governments nor do they represent a comprehensive assessment of the industrial development process in the countries concerned.

CONTENTS

	<u>Page</u>
Basic indicators	v
Executive summary	xi
Resumen para ejecutivos	xiv
1. THE CHILEAN ECONOMY	1
1.1 Recent economic trends	1
1.2 Economic structure	2
1.3 Overview of the manufacturing sector	6
2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR	13
2.1 Growth and structural change	13
2.2 Performance and efficiency	15
2.3 Exports and imports of manufactures	21
2.4 Ownership and investment patterns	24
2.5 Size and geographical distribution of manufacturing enterprises	26
3. INDUSTRIAL DEVELOPMENT STRATEGIES	28
3.1 Goals of industrial policy	28
3.2 Recent changes in industrial policy	29
3.3 Institutional framework for industry	30
4. RESOURCES FOR INDUSTRIAL DEVELOPMENT	32
4.1 Human resources	32
4.2 Raw material resources	33
4.3 Energy reserves	39
4.4 Technical assistance to industry	41
Appendix A. Statistical tables	43
Appendix B. The approved and/or operational technical co-operation projects of UNIDO	59
Appendix C. Major industrial companies in Chile, 1984	60
Selected References	63

<u>LIST OF TABLES</u>		<u>Page</u>
Table 1.	GDP and GDP per capita, 1970-1984	2
Table 2.	Distribution of GDP by sector of origin, 1963-1981	4
Table 3.	Gross output and value added in manufacturing, 1973 and 1980	14
Table 4.	Structural change in Chilean manufacturing, branch share of MVA, 1973, 1979 and 1983	10
Table 5.	Indices of industrial production, 1979-1983	17
Table 6.	Indicators of manufacturing performance, 1970-1980	19
Table 7.	Gross profits by branch of manufacturing, 1973 and 1979	20
Table 8.	Exports of merchandise, 1971-1983	22
Table 9.	Imports of merchandise, 1971-1983	23
Table 10.	Production of selected crops, 1979-1984	33
Table 11.	Exports of forest products, 1981 and 1984	36
Table 12.	Production of main minerals, 1971-1984	38
Table 13.	Commercial primary energy balance, 1982	40

List of Tables in Appendix A

Table A-1	Comparative growth rates by economic sector, 1963-1981	44
Table A-2	Production of selected industrial products, 1979-1984	45
Table A-3	Index of industrial output, 1972-1983	46
Table A-4	Index of industrial sales, 1972-1983	47
Table A-5	Selected industrial indicators, by branch of manufacturing, 1973 and 1980	48
Table A-6	Shares of exports and imports classified according to level of processing 1970 and 1981 and trend growth rates 1970-1975 and 1975-1981	49
Table A-7	Product mix of traded manufactured goods, 1973, 1980 and 1981	50
Table A-8	Origin of imports of manufactures by branch, 1981	52
Table A-9	Destination of exports of manufactures by branch, 1981	54
Table A-10	Import and export quantum and price indexes, 1977-1983	56
Table A-11	Commercial copper production by product, 1970-1983	57
Table A-12	Industrial structural change, 1960-1980	58

EXPLANATORY NOTES

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

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

References to dollars (\$) are to United States dollars, unless otherwise stated.

In tables:

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

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

A blank indicates that the item is not applicable;

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

Totals may not add precisely because of rounding.

The following abbreviations are used in this document:

CORFO	Corporación de Fomento de la Producción (State-owned Financial and Development Corporation)
GDP	gross domestic product
IMF	International Monetary Fund
INTEC	Technological Research Institute
ISIC	International Standard Industrial Classification
MVA	manufacturing value added
ODEPLAN	National Planning Office
SENCE	National Training and Employment Service
SITC	Standard International Trade Classification

THIS REPORT IS BASED ON INFORMATION AVAILABLE AS AT SEPTEMBER 1985.

BASIC INDICATORS 1

The economy

GDP:	\$15.96 billion (1984)
Population:	11.8 million persons (June 1984)
Annual average growth of population:	1.7 per cent (1970-83) 1.4 per cent projected 1980-2000
Density:	15.4 inhabitants per sq. Km.
Labour force:	3.7 million (1984)
Adult literacy:	94.2 per cent (1982)
Life expectancy:	70 years
Infant mortality rate:	40 per 1,000 live births

GNP per capita: \$1870 (1983)

GDP growth rate: (per cent)	<u>1960-70</u>	<u>1970-74</u>	<u>1975</u>	<u>1976-80</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
	4.4	1.06	-12.9	7.5	5.3	-14.5	-2.3	6.3

Sectoral Composition of GDP: (percentage)		<u>1965</u>	<u>1983</u>
	Agriculture	9	10
	Industry	40	36
	Manufacturing	24	20
	Services	52	55

Average annual rate of inflation (per cent)	:	<u>1960-70</u>	<u>1970-82</u>	<u>1983</u>	<u>1984</u>
		33	144.3	23.1	26

Currency exchange rate (Chilean peso equivalents to \$1)	:	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	Dec. <u>1984</u>	March <u>1985</u>
		39	39	50.9	78.8	127.8	134.4

BASIC INDICATORS 2
Resources and transport infrastructure

Resources

Crops:	Fruits, cereals, legumes, oilseeds
Livestock:	3.7 million head of cattle 6 million head of sheep (1982)
Fisheries:	4,200 kilometres of coastline, area of 1.6 million square kilometres for exclusive fishing rights, total catch - 4,168,000 tons (1983)
Forests:	21 million hectares Native forest and plantation 8.4 mn. hectares, natural forest suitable for commercial exploitation 7.6 hectares, artificially planted 0.8 mn. hectares
Mining:	Copper, silver, gold, iron ore, molybdenum, rhenium, lithium, iodine
Energy production, major sources:	Petroleum, coal, hydroelectricity, natural gas

Transport

Roads:	79,000 Km, of which 10,000 paved
Railways:	8,800 Km
Ports:	Valparaíso, San Antonio, Talcahuano, Iquique, Antofagasta, Punta Arenas
Airports:	Santiago, Arica, Antofagasta, Punta Arenas

BASIC INDICATORS 3
Foreign trade and balance of payments

Exports:	Total value:	\$3,650 million (1984)
	Main goods:	Copper, feeding stuff for animals, wood, paper and paperboard, cellulose, molybdenum compounds, iron and steel, fruits
	Main destinations:	USA, Japan, German Federal Republic, UK, Brazil, Italy, France, Argentina
Imports:	Total value:	\$3,357 million (end-1984)
	Main goods:	Consumer goods, machinery and equipment, raw materials of agricultural origin and petroleum
	Main sources:	USA, Japan, Brazil, German Federal Republic, Venezuela, Argentina
Balance of payments (current account):		-\$2,060 million (1984)
External public debt:		\$20.0 billion (Sept. 1985) 96.95 per cent of GNP (1983)
Debt service:		\$2,262 milion (1983) 7 per cent of GDP 59 per cent of total exports
Foreign currency reserves:		\$2,022.7 million (end-1983)

BASIC INDICATORS 4
The manufacturing sector

Manufacturing value added:	\$2,486 million (1981)							
MVA per capita:	\$220 (1981)							
Average annual growth of MVA (per cent):	1960-70	1970-74	1975	1976-80	1981	1982	1983	1984
	5.3	2.2	-25.6	6.5	1.6	-22.0	3.0	10.0
Employment in manufacturing (organized sector):	460,950 (1983)							
as per cent of total labour force:	12.5 per cent							
Structure of production (per cent):	1973	1983						
Mainly consumer goods	42.4	43.7						
Mainly intermediate goods	21.1	18.1						
Mainly capital and durable goods	36.7	38.2						
Trade in manufactures ^{a/}								
Total value	-	Exports:	\$2,687 million (1981)					
	-	Imports:	\$4,927 million (1981)					
Share of manufactures ^{a/}								
- in total exports:	71.7 per cent							
- in total imports:	78.5 per cent							

^{a/} The definition of trade in manufactures covers a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

BASIC INDICATORS 5
Trade in manufactured goods

In 1981

MANUFACTURED EXPORTS ^{a/}		total value: \$288.8 million				
Principal manufactured exports <u>b/</u>	(Per cent of total)	Developing countries	Destination (in per cent)			Centrally planned developed countries
			Developed market countries			
			EEC	USA	Japan	
Non-ferrous metals	(67.7)	20.4	44.0	20.9	5.3	0.44
Feeding stuff for animals	(8.5)	23.1	49.7	4.2	8.8	2.5
Pulp and waste paper	(7.3)	67.5	27.8	0.1	0.7	0.0
Machinery and transport equipment	(3.8)	84.4	5.2	7.4	0.19	0.0
Chemicals	(3.3)	47.7	16.6	27.2	4.7	0.0
Fish preparations, n.e.c.	(1.1)	8.7	15.9	17.4	5.1	0.0
Fruit preserved, preparations	(1.0)	75.5	4.7	11.2	4.7	0.9

MANUFACTURED IMPORTS ^{a/}		total value: \$4,238 million				
Principal manufactured imports <u>c/</u>	(Per cent of total)	Developing countries	Origin (in per cent)			Centrally planned developed countries
			Developed market countries			
			EEC	USA	Japan	
Machinery and transport equipment	(52.8)	54.9	24.4	26.7	24.9	0.30
Chemicals	(12.2)	13.7	29.7	42.4	1.5	0.44
Textile yarn, fabrics, made-up articles	(5.7)	35.1	11.2	21.7	12.4	0.21
Professional and scientific instruments	(2.9)	14.2	24.4	26.7	24.9	0.3

a/ SITC 5-8 less 68.

b/ SITC 032, 053, 081, 251 and 5-8.

c/ SITC 332 and 5-8 (less 68).

BASIC INDICATORS 6
Inter-country comparison of selected indicators

	Unit	Bolivia	Chile	Colombia	Ecuador	Peru	Venezuela
I. Demographic indicators							
Population (mid-1983)	millions	6.0	<u>11.7</u>	27.5	8.2	17.9	17.3
Population growth (1973-83)	per cent per annum	2.6	<u>1.7</u>	1.9	2.6	2.4	3.5
Infant mortality (1983)	per 1000	123	<u>40</u>	53	76	98	38
Area (1980)	'000 Km ²	1,099	<u>757</u>	1,139	284	1,285	912
Density (1983)	persons per km ²	6	<u>16</u>	24	29	14	19
II. Economic indicators							
GDP (1983)	\$ billion	3.34	<u>15.96</u> ^{a/}	35.31	10.70	17.63	8.17
GDP growth (1973-83)	per cent per annum	1.5	<u>2.9</u>	3.9	5.2	1.8	2.5
GNP per capita (1983)	US \$	510	<u>1,870</u>	1,430	1,420	1,040	3,840
Agriculture (1983)	per cent of GDP	23	<u>10</u>	20	14	8	7
Industry (1983)	per cent of GDP	26	<u>36</u>	28	40	41	40
Manufacturing (1983)	per cent of GDP	16	<u>20</u>	17	18	26	17
Services (1983)	per cent of GDP	52	<u>55</u>	51	46	51	53
Exports of goods and non-factor services (1983)	per cent of GDP	19	<u>24</u>	10	25	21	26
Gross domestic investment (1983)	per cent of GDP	7	<u>8</u>	19	17	13	12
External public debt (1983)	per cent of GNP	77.7	<u>39.2</u>	18.3	63.0	48.1	19.8
III. Industrial indicators							
MVA (1982)	million \$ at constant 1975 prices	344	<u>1,694</u>	2,686	1,247	3,963	5,709
MVA share of world MVA (1981)	per cent	0.02	<u>0.12</u>	0.18	0.06	0.20	0.26
Share of manufactured exports in total exports (1982) ^{b/}	per cent	2.2 ^{c/}	<u>7.39</u> ^{d/}	24.1	2.9	13.9	12.5
Average annual growth of MVA (1973-83)	per cent	1.7	<u>0.5</u>	1.9	8.9	0.4	3.7

^{a/} 1984.

^{b/} SITC 5-8 less (67 + 68).

^{c/} 1979.

^{d/} 1981.

Executive Summary

Since 1970 economic growth in Chile has been uneven. Real GDP grew by 1 per cent in 1974, following negative growth rates in the previous two years. It fell by 12.9 per cent in 1975 and surged upward in 1976, leading to buoyant recovery and sustained growth until 1981. The Chilean economy once again plunged into negative growth rates during 1982-1983. There was imbalanced recovery in 1984, despite a 6.3 per cent growth in GDP. Forecasts for 1985 vary from negative to 4 per cent growth rates. In recent years the Chilean economy has been vulnerable to changing international environment, particularly to the fall in the price of copper which accounts for over 50 per cent of Chile's total exports.

The period 1982-84 has been particularly difficult for the Chilean economy. During this period employment fell by 25 per cent. Almost half the productive sector and many commercial banks faced the threat of bankruptcy and the total external debt of the country almost equalled its GDP. The Government therefore had to abandon its policy of liberalization and of minimum direct intervention in the affairs of the private sector. It intervened in the management of the private sector's external debt and introduced protectionist measures. In recent years the Chilean Government has been using a combination of devaluation and tariff reduction to boost exports. This led to a revival of financial confidence and attempted to stimulate industrial activity. In 1985 a new agreement was signed with the IMF. Protectionist levels were reduced and a tighter monetary and fiscal policy was instituted. The manufacturing sector which had grown at a rate of 10 per cent in terms of gross output during 1984 is likely to be affected and growth in 1985 is expected to fall.

The manufacturing sector experienced a marked deceleration of growth during the 1970s in comparison to the previous decade. Manufacturing output in 1984 remains about 10 per cent below the 1981 level. The 1984 real GDP per capita was 5 per cent lower than the level achieved in 1970. Chile's share in Latin American manufacturing value added (MVA) is around 7 per cent. In the second half of the 1970s resource-based export-oriented industries grew

rapidly as a result of government encouragement. The maintenance of an over-valued exchange rate and the introduction of protectionist measures in the early 1980s stimulated a recovery in the traditional import substituting branches - such as textiles, leather products and metal working industries.

Industrial development during the 1970s was accompanied by a high concentration of industrial capital. Industrial efficiency - as measured by the value added to gross output ratio - tended to decline although gross profit ratios throughout the Chilean manufacturing sector remained very high by international standards. An important problem was the high rate of labour displacement in Chilean industry. Employment within the sector contracted by 25 per cent in the past decade. The 1982-83 crisis increased the rate of labour displacement as many manufacturing enterprises faced threats of insolvency. Large enterprises had accumulated sizeable foreign debts the servicing of which became very difficult during this period. The Government instituted a series of supportive measures to avert bankruptcy within the financial and industrial sectors.

The coming years are likely to remain difficult for Chilean manufacturing. The anti-inflationary and stabilization measures introduced by the Government in early 1985 - with the approval of the IMF - are unlikely to stimulate domestic demand. Export prospects, on the other hand, largely depend on the movement of prices in the international metal (specially copper) markets and the markets for processed food and wood-based semi-manufactures.

Chile's industry is mainly based on the processing of natural resources. The country's vast mineral resources would seem to offer possibilities for further expansion of mining industries. Agricultural resources are the basis for Chile's food processing industries. With the reorientation towards foreign markets non-traditional activities received fresh impetus for growth. The country has enormous potential for expanding its fish and sea food industry, far beyond what is being exported today. Chile has equal potential for further development of its forest-based industries into a major export industry. Chile's extensive forests also provide potential sources for producing renewable energy. The country has an immense hydroelectric

potential awaiting exploitation. The Chilean Government encourages the inflow of foreign capital and technology. Foreign investors have the same rights and obligations as local investors, in addition to being guaranteed the right to freely remit both capital and profit.

Technical assistance provided by international agencies could facilitate the formulation of a coherent export marketing strategy directed to both developed and developing country markets, including in the Latin American market itself. It could also contribute towards developing an appropriate infrastructure and supportive measures for small- and medium-scale industrial enterprises which could serve as an important vehicle for reducing labour displacement within the manufacturing sector.

Resumen para ejecutivos

El desarrollo económico en Chile ha sido disparado desde 1970. En 1974 el PBI real creció en un 1%, después de dos años consecutivos de crecimiento negativo. La tasa de crecimiento disminuyó en un 12,9% en 1975, pero volvió a aumentar a partir de 1976, llevando a un crecimiento boyante y sostenido hasta 1981. La economía chilena decayó nuevamente en 1982-1983, para luego tener una recuperación desbalanceada en 1984, a pesar de que el PBI creció en un 6,3%. Las proyecciones de crecimiento económico en 1985 varían desde tasas negativas hasta tasas del 4%. En los últimos años la economía chilena ha sido vulnerable al cambiante entorno internacional, especialmente a la caída del precio del cobre, el cual representa más de la mitad de las exportaciones totales de Chile.

El período 1982-1984 fue especialmente difícil para la economía chilena. Durante este período, el empleo disminuyó en un 25%; casi la mitad del sector productivo y muchos bancos comerciales estuvieron a punto de irse a la bancarrota, y la deuda externa total del país era casi igual a su PBI. Por ello, el Gobierno tuvo que abandonar su política de liberalización económica y de mínima intervención directa en las actividades del sector privado. El Gobierno intervino en la administración de la deuda externa del sector privado, e introdujo medidas para proteger la economía. En los últimos años el Gobierno chileno está usando una combinación de devaluaciones y de reducción de tarifas arancelarias para impulsar las exportaciones. Estas medidas han renovado la confianza en el sector financiero y han contribuido a estimular las actividades industriales. En 1985 ha sido firmado un nuevo acuerdo con el FMI, como consecuencia del cual han sido reducidos los niveles de protección arancelaria y se han introducido restricciones en las políticas monetaria y fiscal. El sector industrial manufacturero, que creció en un 10% en 1984, se verá afectado por las nuevas medidas y se espera que su tasa de crecimiento caiga en 1985.

Durante la década de los 70 el sector manufacturero sufrió una marcada reducción en su tasa de crecimiento, en comparación con aquella que tuvo en la década anterior. La producción industrial en 1984 fue alrededor de un 10% menor que la de 1981. El PBI real per capita en 1984 fue en un 5% menor al valor alcanzado en 1970. La producción industrial chilena representa alrededor del

7% del valor agregado industrial de América Latina. En el segundo quinquenio de los años 70, las industrias de exportación basadas en materias primas nacionales crecieron rápidamente gracias a los incentivos estatales. El mantenimiento de tasas de cambio sobrevaloradas y la introducción de medidas proteccionistas, a principios de los años 80, estimularon la recuperación de las industrias tradicionales de sustitución de importaciones, tales como: textiles, productos del cuero y las industrias metalmeccánicas.

El desarrollo industrial durante los años 70 fue acompañado por una alta concentración del capital industrial. La eficiencia industrial —medida su relación entre el valor agregado sobre la producción bruta— tendió a disminuir, aun cuando los márgenes de utilidades permanecieron muy altos en comparación con niveles internacionales, en toda la industria manufacturera chilena. Un problema importante fue el alto grado de desplazamiento de la mano de obra en la industria chilena. El empleo industrial se contrajo en un 25% en la década pasada. La crisis de 1982-1983 aumentó la tasa de mano de obra desplazada, debido a que muchas empresas se enfrentaban a la insolvencia económica. Las grandes empresas habían acumulado importantes deudas externas, cuyo servicio se hizo muy difícil durante este período. El Gobierno instituyó una serie de medidas de apoyo para evitar la bancarrota dentro de los sectores financiero e industrial.

Es probable que los próximos años sigan siendo difíciles para la industria chilena. Las medidas antiinflacionarias y de estabilización económica tomadas por el Gobierno a principios de 1985, con la aprobación del FMI, son insuficientes para estimular la demanda nacional. Por otro lado, las posibilidades de las exportaciones dependen básicamente del movimiento de precios en los mercados internacionales de los metales (especialmente para el cobre) y los mercados para alimentos procesados y para las semi-manufacturas de la madera.

La industria chilena se basa principalmente en el procesamiento de los recursos naturales. Los vastos recursos minerales del país podrían ofrecer posibilidades adicionales para la expansión de las industrias mineras. Los recursos agrícolas son la base de la agroindustria chilena. Con la reorientación hacia las exportaciones, se han dado nuevos estímulos para el crecimiento de las actividades no tradicionales. El país tiene un vasto potencial para expandir su industria pesquera, mucho más allá de lo que se exporta al momento. Chile tiene

un potencial similar para un mayor desarrollo de sus industrias forestales que podrían convertirse en una importante industria de exportación. Los extensos recursos forestales chilenos son además una fuente potencial para producir energía de fuentes renovables. El país tiene un inmenso potencial hidroeléctrico en espera de ser desarrollado. El Gobierno estimula el influjo de capital y tecnología externa. Los inversionistas extranjeros tienen los mismos derechos y obligaciones que los inversionistas nacionales, además de garantizárseles el derecho de libre remisión del capital y las utilidades.

La asistencia técnica proporcionada por las organizaciones internacionales podría facilitar la formulación de una estrategia coherente para el mercado de las exportaciones, destinadas tanto a los países desarrollados como a los países en desarrollo, incluyendo la América Latina. Asimismo, se podría contribuir al desarrollo de una adecuada infraestructura y medidas de apoyo a la pequeña y mediana industria, la cual serviría de medio para reducir el desplazamiento de trabajadores en el sector manufacturero.

1. THE CHILEAN ECONOMY

1.1 Recent economic trends

Economic growth in Chile has been rather uneven. Having experienced a mild recovery in 1974 after two years of negative growth rates in 1972 and 1973 the Chilean economy suffered a sharp decline in economic growth in 1975. Real GDP grew at an annual average rate of around 7.1 per cent between 1976 and 1981, with the highest growth rate of 9.9 per cent recorded in 1977. Real per capita GDP, which declined by 14.4 per cent in 1975, reattained its 1971 level only in 1980. The favourable performance of the economy during the second half of the 1970s was largely attributable to the realistic policies in the external sector and to a favourable international environment. The external trends turned sour on Chile in 1982, leading to a negative growth rate of 14.5 per cent. The continued decline in the price of copper, which constitutes about 50 per cent of the country's exports, brought about additional strain on the depressed economy.

The recession of 1982-83 had very seriously affected the productive sectors. In 1982 manufacturing production fell by 21.6 per cent. There was a widespread problem of industrial insolvency and a financial crisis of major proportion developed in 1982 and 1983. This led to a temporary shelving of an IMF stabilization programme and large-scale intervention by the Government for the restructuring of financial discipline within the economy. The State took control of insolvent financial institutions, guaranteed the private sector's external debt and introduced wide ranging protectionist measures.

In the second half of 1983 the Chilean economy started to emerge from the crisis of 1982-1983 which had reversed the gains attained in the recovery from the 1975 depression. Owing to declining imports and a rise in copper exports related to a modest increase in prices, trade surplus rose to \$1 billion in 1983, as against \$60 million in 1982. During 1984 the price of copper fell to an average of \$0.63 per pound, compared with \$0.72 per pound in 1983. In 1984 GDP grew by about 6.3 per cent but the current account deficit amounted to \$2 billion and inflation was around 23 per cent. In September 1984 the Chilean peso was devalued by 14 per cent with respect to the US dollar. A new

devaluation took place in February 1985. Many of the problems faced by the Chilean economy in 1975 seem to have reappeared in less severe form and the economy is saddled with obstacles to growth. GDP growth is likely to decelerate in 1985, forecasts range from negative to 4 per cent.

An arrangement has been made with the IMF leading to an IMF loan of \$750 million and a World Bank structural adjustment loan of \$600 million. The agreement concluded with the IMF is in the context of a macro-economic programme which aims at reducing current account deficit, achieving moderate growth rate and curbing inflation. The main objectives of economic programme for 1985-87 are: to reduce the external account deficit to \$1 billion, or 4.5 per cent of GDP in 1987; to accelerate 3 per cent annual growth of real GDP; and to curtail the rate of inflation from 34 per cent to 15 per cent in 1987.

The current account deficit is to be reduced to 3.5 per cent of GDP and growth in money supply is to be restricted to about 15 per cent per annum. The programme envisages a gradual dismantling of the protectionist measures adopted in 1982-84 and emphasizes the need to maintain high real interest rates in order to encourage domestic saving rates and prevent an outflow of capital. Imports are expected to be reduced by 15 per cent in comparison to the 1984 level and foreign borrowing is to be limited to \$20 billion. Complimentary conditions are broadly attached to the World Bank loan which is to be used primarily for export promotion purposes. Measures envisaged in the IMF programmes are clearly deflationary and the IMF itself does not cite a GDP growth target for 1985. Growth prospects have been further reduced due to a severe earthquake which struck central Chile in March 1985. The Government estimated total damage done at \$1.8 billion. The destruction of communication and transportation can have particularly severe repercussions for the export sector.

1.2 Economic structure

The population of Chile was estimated to have risen to 11.87 million at the end of June 1984, with more than 4 million inhabitants living in Santiago. A closed economic system which prevailed in the early 1970s has been reversed to a system generally based on the free market principle.

The Chilean economy grew at a modest annual average rate of 3.7 per cent during 1940-70. Mining and quarrying grew faster than agriculture and manufacturing during 1963-81. The mining sector in Latin America grew at an annual average rate of 0.11 per cent during 1963-1981, compared to 3.83 per cent achieved by the mining sector in Chile during the same period (see Appendix Table 1). In stark contrast, the Chilean manufacturing sector grew at an annual average rate of 1.42 per cent as against 6.9 per cent attained by the manufacturing sector in Latin America between 1963 and 1981. Table 1 shows the real growth rates of GDP and per capita GDP during 1970-84. As mentioned earlier, economic performance in Chile since 1970 has been characterized by extreme variations in annual growth rates. Following the depression of 1975, there was buoyant recovery and economic boom until 1981, but once again the Chilean economy plunged into recession during 1982-83, and there was imbalanced economic recovery in 1984.

Table 1. GDP and GDP per capita, 1970-1984

Year	Real GDP (in billions of 1977 \$) (1)	Rate of growth of real GDP (per cent) (2)	Per capita real GDP (in 1977 \$) (3)	Rate of growth of per capita real GDP (per cent) (4)
1970	13.1	2.1	1,403	0.2
1971	14.3	9.0	1,502	7.1
1972	14.1	- 1.2	1,459	- 2.9
1973	13.4	- 5.6	1,355	- 7.1
1974	13.5	1.0	1,345	- 0.7
1975	11.7	-12.9	1,152	-14.4
1976	12.2	3.5	1,172	1.8
1977	13.4	9.9	1,266	8.0
1978	14.5	8.2	1,347	6.4
1979	15.7	8.3	1,434	6.5
1980	16.8	7.5	1,516	5.7
1981	17.7	5.3	1,568	3.4
1982	15.1	-14.5	1,312	-16.3
1983	15.0 ^{a/}	- 0.7 ^{a/}	1,257	- 3.0
1984	15.96 ^{a/}	6.3 ^{a/}	1,325 ^{b/}	5.4 ^{b/}

Source: Banco Central de Chile.

^{a/} Revised figures published by the Government of Chile.

^{b/} Estimate.

Table 2 provides information on the sectoral composition of GDP, measured at current prices, during 1963-81. Over a 19-year period the slow pace of structural transformation had been characterized by fluctuations in sectoral contributions to GDP. However, the service sector made a steady increase in its contribution to GDP, leading to a strikingly high share in the composition of GDP. According to most recent data, manufacturing contributed 20.6 per cent and mining accounted for 10.1 per cent in 1983.

Mining has been fundamental to Chile's economic development. Chile holds 25 to 30 per cent of the world's reserves of copper, molybdenum and rhenium, as well as significant deposits of iron ore, gold, silver and non-metallic minerals. From the perspective of economic growth, the Chilean economy is vulnerable to international environment, particularly to changes in the price of copper. A contraction in GDP has been invariably the result of a fall in the price of copper and adverse international trends.

The structure of employment changed, with decreases in the participation of manufacturing and agriculture to levels of 13 per cent and 10 per cent,

Table 2. Distribution of GDP by sector of origin, 1963-1981

Year	Agriculture	Mining & quarrying	Manufacturing	Utilities	Construction	Services	GDP
(P e r c e n t a g e)							(million \$)
at current prices							
1963	9.4	9.0	24.6	1.2	5.3	50.5	4778.9
1964	9.7	8.8	25.3	1.3	5.2	49.7	5421.6
1965	9.5	9.4	24.4	1.5	5.3	49.8	6732.5
1966	8.6	11.0	23.6	1.5	4.9	50.4	6442.3
1967	8.7	10.0	24.6	1.5	4.3	50.9	6688.3
1968	7.1	10.2	26.8	1.5	4.0	50.3	6758.5
1969	6.7	12.3	26.5	1.6	3.9	49.1	7629.5
1970	7.3	10.3	26.9	1.5	3.8	50.2	8208.0
1971	7.6	6.7	25.2	1.3	4.8	54.3	10432.2
1972	7.0	7.8	24.5	1.1	5.0	54.6	12868.0
1973	6.6	9.1	26.1	0.5	3.2	54.6	10928.8
1974	5.6	9.5	23.2	0.9	3.4	57.4	11592.4
1975	5.7	8.4	20.5	1.4	2.4	61.6	8570.7
1976	8.0	8.3	21.6	1.8	2.0	58.3	11233.2
1977	9.5	7.8	21.1	2.2	3.9	55.5	14919.3
1978	7.5	7.4	22.2	2.0	4.1	56.8	15400.3
1979	6.9	9.2	20.1	1.9	4.1	57.8	20733.6
1980	6.9	8.1	20.1	2.0	4.9	57.9	27846.6
1981	6.8	4.9	20.0	2.1	5.8	60.4	32864.9

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the Office of Development Research and Policy Analysis and the UN Statistical Office, with estimates by the UNIDO Secretariat.

respectively, as compared to levels of 17 per cent and 21 per cent in 1970. The total unemployment rate including employment relief programmes reached 29.9 per cent in the second half of 1983, i.e., over 20 percentage points above the 1974 level.

Total exports in 1984 amounted to \$3,650.3 million, while imports totalled \$3,357 million. Copper is the traditional mainstay of Chile's export trade. Mining products accounted for 60.6 per cent of total exports in 1983. Non-traditional export items seem to accelerate Chile's export diversification drive. Nitrates, iodine, some varieties of fruit, frozen crustacea, bulk wine, concentrated fruit juice, pine lumber, newsprint, raw pulp and fishmeal have registered notable export growth in recent years. Exports are destined mainly to the USA, F.R. Germany, Japan, Brazil, the UK, France and Italy. Major imports are fuels, lubricants, intermediate goods, food products, consumer and capital goods. Major import sources are the USA, Venezuela, Argentina, Brazil, F.R. Germany, Japan and Spain.

The rate of increase in prices has fluctuated widely. In 1975 it was 340 per cent but over the period 1975-80 it gradually fell to about 30 per cent annually. It reached its lowest level of 9.3 per cent in 1981 but it was over 20 per cent in 1982 and approximately 23 per cent in both 1983 and 1984.

Chile's foreign debt has increased rapidly in recent years. In 1982 it was \$1,000 per capita, 40 per cent above the Latin American average. Debt service payments which were equivalent to 27 per cent of the value of exports of goods and services in 1970, increased to 88.5 per cent of that amount in 1982. The balance of trade became positive in 1983 as imports were cut to half their 1981 value. In 1984 total foreign debt equalled \$18,400 million. Chile's \$20 billion foreign debt in 1985 translates into the highest per capita load in Latin America. Foreign borrowings had been for some time the main source for financing the current account deficit which reached \$2,060 million in 1984.

Since 1973 the Chilean Government has pursued a liberalization and an economic stabilization policy. Central to the execution of the stabilization policy has been the management of the exchange rate. This was seen as a key

economic policy variable in influencing the domestic inflation rate. Over the period 1976-1979 the Government followed a policy of pre-announcing changes in the exchange rate as a means for reducing the domestic rate of inflation. In June 1979 the pre-announced devaluation system was ended and the Chilean peso was pegged to the US dollar at a rate of 39 pesos per dollar. By May 1985 the exchange rate increased to 150.70 pesos per dollar.

1.3 Overview of the manufacturing sector

Industrial output grew at an annual average rate of 5.5 per cent during 1960-70. Growth averaged 7 per cent per annum during 1976-81. The manufacturing sector provides employment for around half a million persons. Over 20 per cent of the manufacturing output is exported and the domestic market is still the target for many items. Food products, beverages and tobacco meet 91 per cent of local demand and constitute nearly 38 per cent of the gross industrial product, accounting for 36 per cent of manufactured exports - the principal products being fishmeal, frozen and canned fish and shellfish, malted barley and bottled wine. The textiles, garment and shoe industries account for 10 per cent of the gross industrial product. Chile is self-sufficient in the production of wood products and furniture. In general, the manufacturing sector is dominated by consumer goods industries and a few intermediate branches, particularly non-ferrous metals. A growing share of non-traditional items in Chile's exports seems to cope with the export diversification process which is being actively promoted in recent years.

Until 1973 industrial policy had been biased towards import substituting branches protected by relatively high tariff structures. After 1973 emphasis was placed on elimination of protection and the encouragement in non-traditional exports. Changes in trade and exchange rate policies introduced during 1982-84 have favoured a partial recovery of industries such as textiles, iron and steel, and electrical machinery and appliances, which had experienced very strong import competition in the past.

In 1984 industrial production grew at the rate of 10.3 per cent - a rate of growth higher than that of any other sector except fishing. Particularly high growth rates were recorded by durable consumer goods (28.0 per cent),

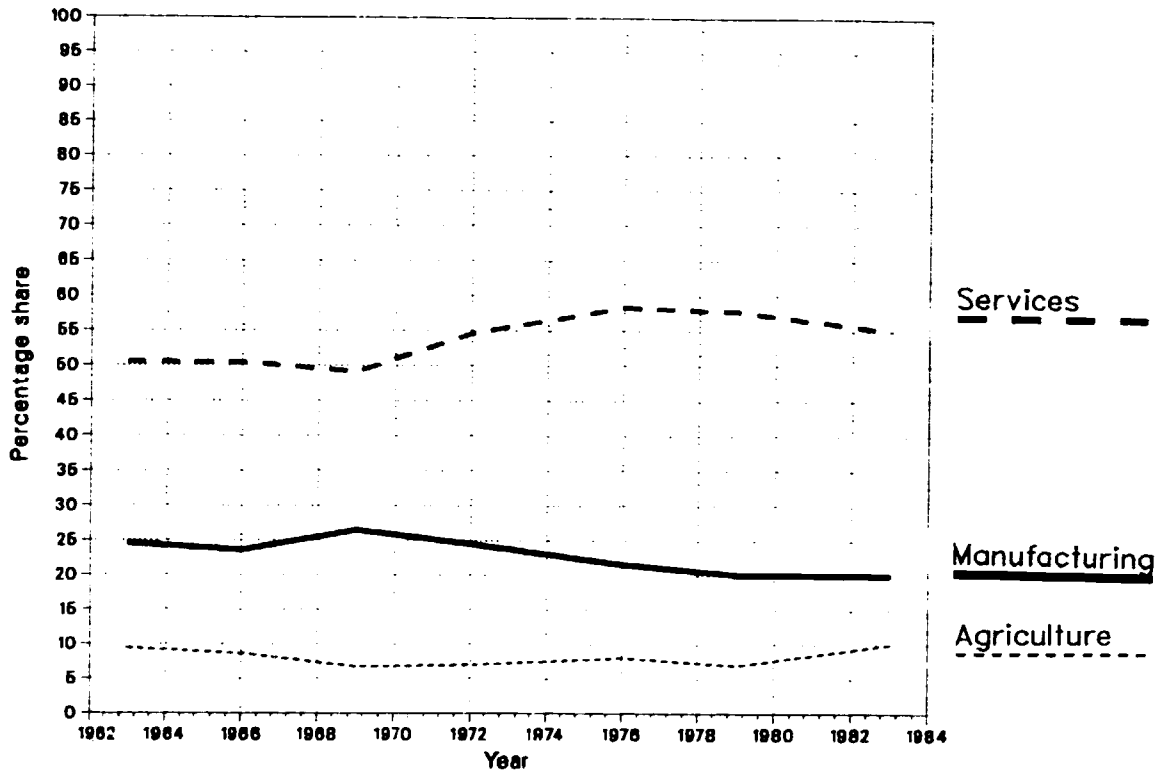
intermediate goods for construction (15.8 per cent) and non-durable consumer goods (9 per cent). The domestic car industry also recovered during 1984. However, growth prospects for 1985 have diminished due to the impact of the recent earthquake, reduction of government supportive policies, particularly those stimulating the import substituting industries and the tight monetary and fiscal policies that are pursued in the context of the three-year stabilization programme agreed with the IMF.

Since early 1985 protectionist measures have once again been modified and emphasis has once again been placed on stimulating the growth of export industries. Resource processing industries, i.e. those based on fish, shell-fish, fruits, wood and minerals, metals and their by-products made the highest contribution to the increase in non-traditional exports in the last decade. Efficient growth of these branches depends upon effective financial reorganization within the industrial sector.

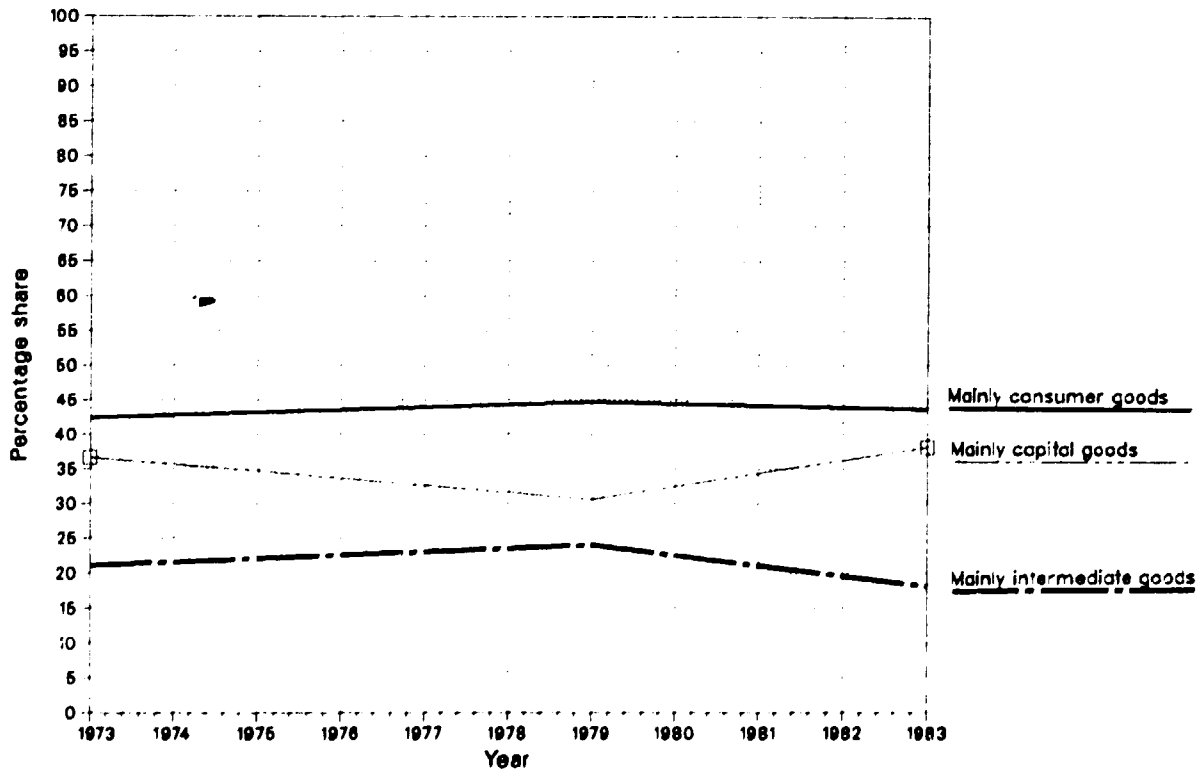
Many industrial firms are currently heavily indebted. By 1982 the private non-financial sector had a direct external debt in excess of \$4.4 billion. As devaluation and depression combined to put extreme pressure on firms, the Central Bank established special credit lines to reschedule firms' debt. It also provided firms with working capital. Industrial firms were the single largest beneficiaries of this programme. It is not clear whether the programme will be further strengthened in view of the tighter monetary policy adopted in the early months of 1985. Financial support is badly needed at the present juncture by a large number of industrial firms which face the threat of bankruptcy.

MANUFACTURING TRENDS

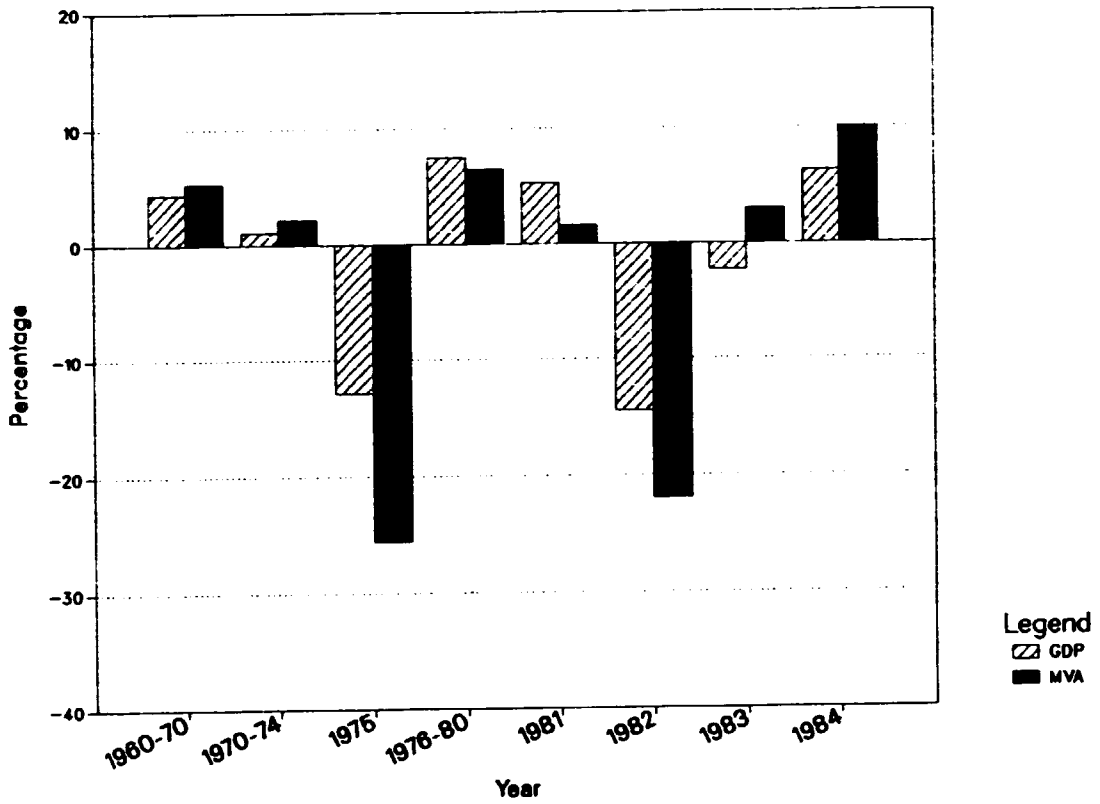
COMPOSITION OF GDP BY SECTOR OF ORIGIN, 1963-1983



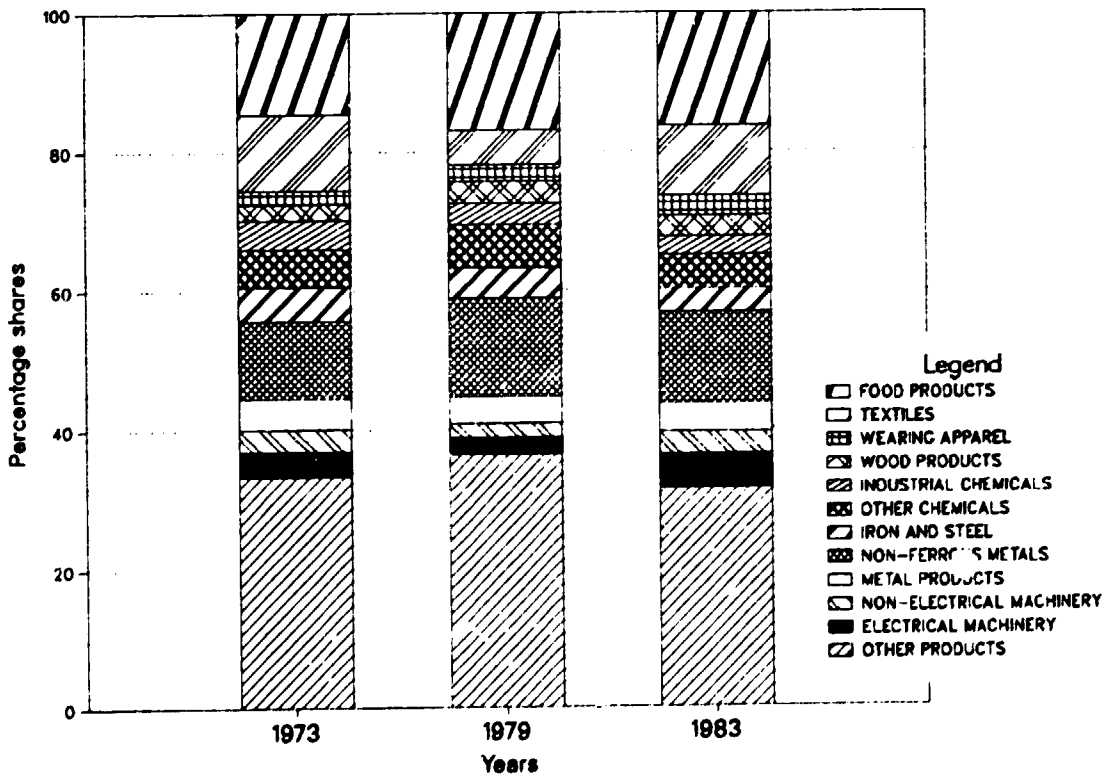
COMPOSITION OF MANUFACTURING VALUE ADDED, 1973-1983



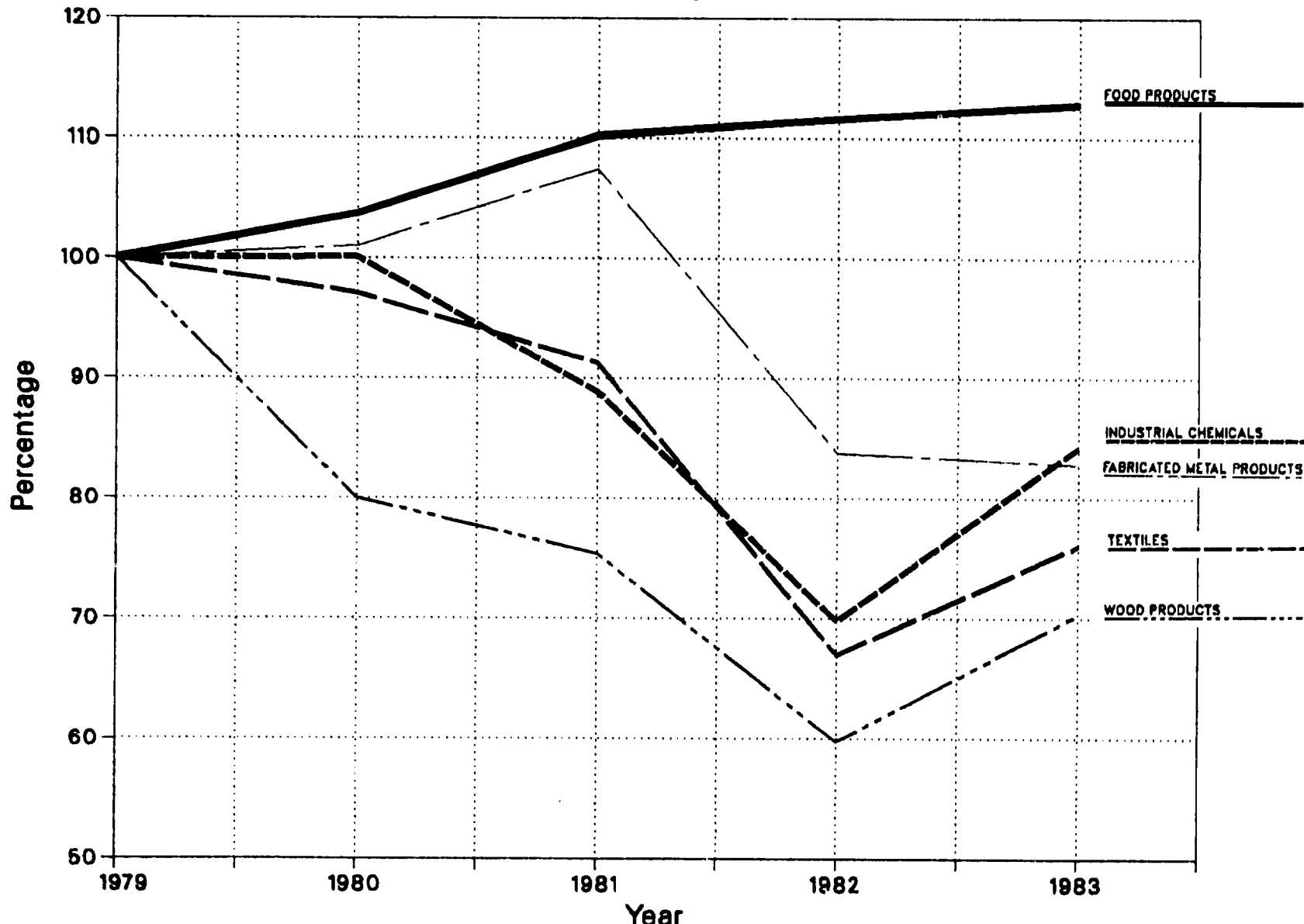
ANNUAL GROWTH RATES OF GDP AND MVA, 1960-1984



COMPOSITION OF MVA BY MAIN BRANCHES, 1973, 1979 AND 1983

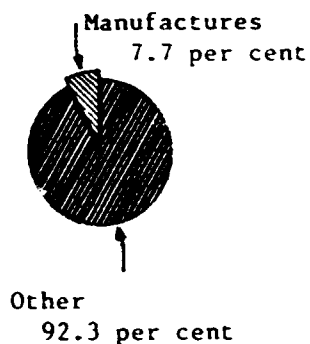


INDICES OF INDUSTRIAL PRODUCTION, SELECTED PRODUCTS, 1979-83 (1979=100)

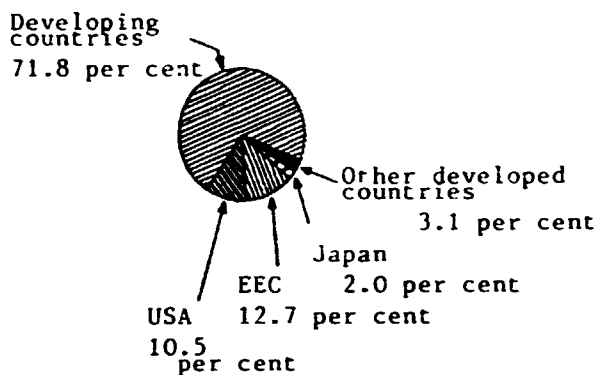


MANUFACTURED EXPORTS AND IMPORTS IN 1981 (SITC 5-8 less 68)

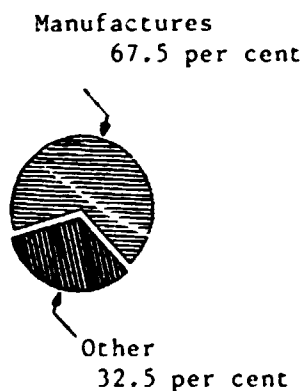
SHARE OF MANUFACTURES
IN TOTAL EXPORTS



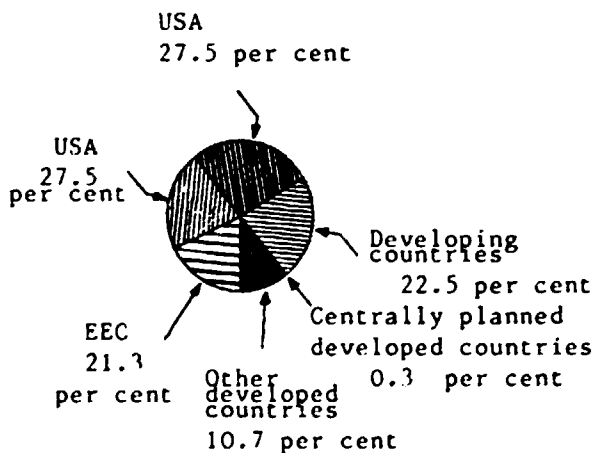
DESTINATION OF MANUFACTURED
EXPORTS



SHARE OF MANUFACTURES
IN TOTAL IMPORTS

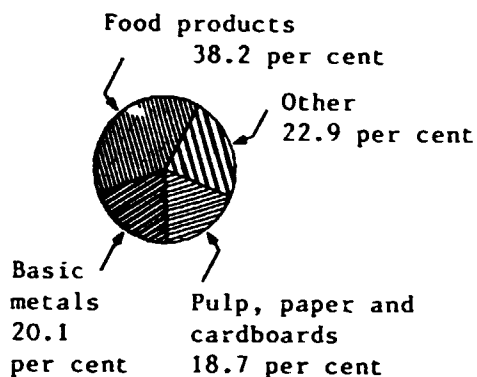


ORIGIN OF MANUFACTURED
IMPORTS

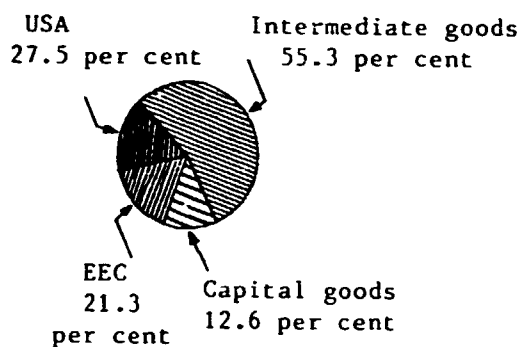


COMPOSITION OF EXPORTS AND IMPORTS IN 1983 (all manufactures)

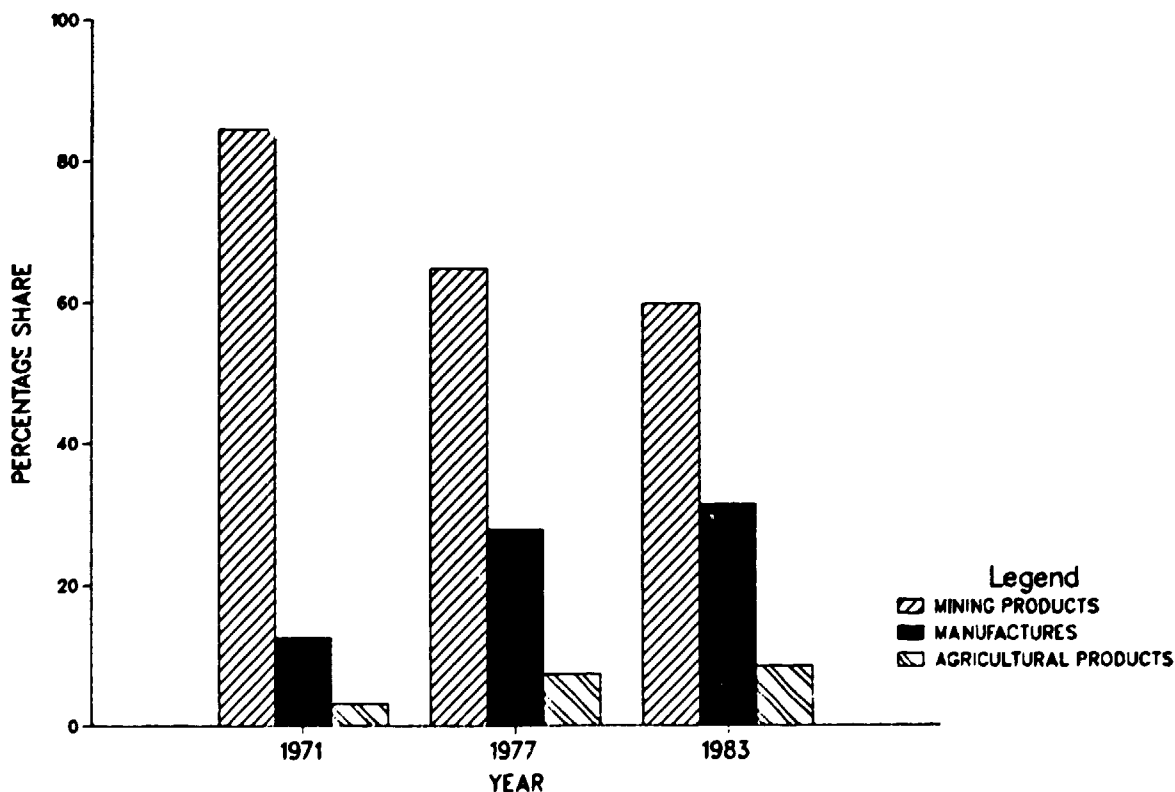
MANUFACTURED EXPORTS



MANUFACTURED IMPORTS



CHILE'S CHANGING EXPORT STRUCTURE, 1971, 1977 AND 1983



2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR

2.1 Growth and structural change

Since 1970 the manufacturing sector has been passing through several phases of growth, decline, recovery and further decline combined with some structural change. Manufacturing value added (MVA) registered an average annual growth rate of minus 4.6 per cent during 1973-1980 (Table 3). MVA declined by 22 per cent in 1982, rose by 3 per cent in 1983 and rose again by over 10 per cent in 1984. The critical moments of the 1970-1984 period were the years 1975 and 1982, in which the sector suffered a 25.5 per cent and 21.6 per cent contraction respectively. The years 1976-1981 showed signs of recovery and sustained growth from the depressed 1975 level. At the ISIC major branch level, the highest rates of growth for 1970-81 were for non-ferrous metals (5.9 per cent), paper and paper products (4.58 per cent), "other" chemical products (4.43 per cent) and beverages (3.38 per cent), while leather products, textiles and printing and publishing declined at rates of 8.2, 6.4 and 7.1 per cent respectively.

There were interbranch variations in MVA growth during 1981-83. 1982 and 1983 were years of contraction for many industrial branches. For most branches the level of MVA achieved in 1983 was significantly below the 1977 level. MVA in 1983 fell by more than 50 per cent in comparison to the 1981 level in the furniture, porcelain and ceramics and the clothing subsectors.

The growth performance of the manufacturing sector has been adversely affected by the decision to peg the exchange rate. The ensuing over-valuation of the peso made imports relatively cheaper in 1980-81. The share of imports in manufacturing output doubled (from 18 per cent to 36 per cent) over 1979-81. Despite the fall in export revenue, import demand was maintained during 1980 and 1981 - financed by foreign commercial and concessional financial inflows. This permitted industrial growth to remain high until 1981. In 1982 the foreign exchange crisis led to a rapid contraction in MVA for both import competing branches and for branches producing for the construction industry. These branches have recovered to some extent during 1984, but production and MVA remain below the 1981 level.

Table 3. Gross output and value added in manufacturing, 1973 and 1980
(at current prices)

Description (ISIC)	Gross output				Value added			
	(thousand pesos)		Share in total (percentage)		(thousand pesos)		Share in total (percentage)	
	1973	1980	1973	1980	1973	1980	1973	1980
TOTAL MANUFACTURING(300)	486090	537586	100.0	100.0	346180	248527	100.0	100.0
Food products(311)	85070	97167	17.5	18.1	50440	41404	14.6	16.7
Beverages(313)	13700	24114	2.8	4.5	9820	14466	2.8	5.8
Tobacco(314)	10990	13211	2.3	2.5	10340	10700	3.0	4.3
Textiles(321)	52230	21882	10.7	4.1	37930	11695	11.0	4.7
Wearing apparel,except footwear(322)	10530	11926	2.2	2.2	7070	5573	2.0	2.2
Leather products(323)	8370	2916	1.7	0.5	4800	1125	1.4	0.5
Footwear,except rubber or plastic(324)	12410	6503	2.6	1.2	6390	3853	1.8	1.6
Wood products,except furniture(331)	11120	13321	2.3	2.5	7790	7671	2.3	3.1
Furniture,except metal(332)	1580	2988	0.3	0.6	1270	1850	0.4	0.7
Paper and products(341)	15510	23860	3.2	4.4	10670	14058	3.1	5.7
Printing and publishing(342)	11200	13757	2.3	2.6	8400	9117	2.4	3.7
Industrial chemicals(351)	17720	7290	3.6	1.4	14650	2738	4.2	1.1
Other chemicals(352)	23930	26576	4.9	4.9	18570	16226	5.4	6.5
Petroleum refineries(353)	20160	67359	4.1	12.5	9600	9199	2.8	3.7
Misc. petroleum and coal products(354)	2280	708	0.5	0.1	500	331	0.1	0.1
Rubber products(355)	10750	6047	2.2	1.1	5410	2983	1.6	1.2
Plastic products(356)	7520	4950	1.5	0.9	5750	2489	1.7	1.0
Pottery, china, earthenware(361)	2750	771	0.6	0.1	2310	509	0.7	0.2
Glass and products(362)	4850	2953	1.0	0.5	3270	1907	0.9	0.6
Other non-metallic mineral prod.(369)	6970	12175	1.4	2.3	4400	7315	1.3	2.9
Iron and steel(371)	19030	25274	3.9	4.7	16850	9395	4.9	3.8
Non-ferrous metals(372)	45990	94236	9.5	17.5	38490	48272	11.1	19.4
Fabricated metal products(381)	21430	16979	4.4	3.2	15100	9056	4.4	3.6
Machinery,except electrical(382)	15500	9937	3.2	1.8	11000	4814	3.2	1.9
Machinery electric(383)	16800	10033	3.5	1.9	12380	4514	3.6	1.8
Transport equipment(384)	35090	19135	7.2	3.6	31060	6364	9.0	2.6
Professional & scientific equipm.(385)	750	495	0.2	0.1	510	237	0.1	0.1
Other manufactured products(390)	1870	1023	0.4	0.2	1430	666	0.4	0.3

Source: Statistics and Survey Unit, UNIDJ. Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

Table 4 presents evidence on the internal branch distribution of MVA over the period 1973-83. Structural change has been relatively modest. Spearman's rank correlation coefficient is as high as 0.80 for the 1973 and 1983 rankings. Consumer goods industries such as food products, beverages, tobacco, textiles, clothing, leather, footwear, furniture and "other" chemical products^{1/} accounted for 42.4 per cent of MVA in 1973. This share increased to 43.2 per cent by 1983. The economic crisis of 1982 and 1983 has seriously hampered the growth of intermediate branches which relied heavily on imported inputs. It has indirectly stimulated the substitution of domestically produced industrial inputs. Industrial branches which have suffered a significant decline in terms of intra branch shares include paper, oil refining products and chemical products. Branches recording substantial gains during the period include non-electrical machinery, electrical machinery, transport equipment and other manufactures. The share of these branches commonly designated as capital goods producing branches - increased from 8.1 per cent of MVA in 1979 to 17.4 per cent in 1983. Thus despite the relatively high level of import dependence the capital goods branches were not seriously affected by the foreign exchange crisis.

2.2 Performance and efficiency

The economic crisis has also had an adverse effect on the performance of the manufacturing sector. The share of MVA in GDP fell by almost 2 percentage points from 1977 to 1983. Total manufacturing employment declined from 264,290 in 1973 to 218,300 in 1979, a fall of 17.4 per cent. This trend is likely to have accelerated during the crisis years of 1982 and 1983.

The highest losses of employment during the period 1973-1979 were in ISIC 351 (chemicals) with a reduction of 65 per cent; and in tobacco, glass and electric machinery, as well as in textiles, which accounted in 1973 for 15 per cent of manufacturing employment. Employment within the textile industry fell

^{1/} This classification is taken from the World Bank, Report No. 5099-CH, 1983, p. 140.

Table 4. Structural change in Chilean manufacturing,
branch share of MVA, 1973, 1979 and 1983

	1973	1979	1983
<u>MAINLY CONSUMER GOODS</u>	42.4	44.7	43.7
Food products	14.6	16.9	16.3
Beverages	2.8	5.2	5.1
Tobacco	3.0	4.3	...
Textiles	11.0	5.0	10.2
Wearing apparel	2.0	2.4	2.9
Leather products	1.4	0.6	1.1
Footwear	1.8	1.6	1.8
Wood products	2.3	3.2	3.0
Furniture	0.4	0.6	1.0
Paper	3.1	4.9	2.1
<u>MAINLY INTERMEDIATE GOODS</u>	21.1	24.0	18.1
Printing	2.4	3.6	2.7
Industrial chemicals	4.2	3.1	2.7
Other chemical products	5.4	6.2	4.8
Petroleum refineries	2.8	4.5	1.6
Misc. petroleum products	0.1	0.2	0.2
Rubber products	1.6	1.3	1.6
Plastic products	1.7	1.4	1.3
Pottery	0.7	0.5	0.5
Glass	0.9	0.9	0.8
Other non-metallic products	1.3	2.3	1.9
<u>MAINLY CAPITAL GOODS</u>	36.7	30.6	38.2
Iron and steel	4.9	4.4	3.4
Non-ferrous metals	11.1	14.1	13.1
Metal products	4.4	3.9	4.1
Non-electrical machinery	3.2	2.0	3.2
Electrical machinery	3.6	2.4	4.8
Transport equipment	9.0	3.4	6.2
Scientific equipment	0.1	0.1	0.2
Other manufactures	0.4	0.3	3.2

Source: National Planning Office.

by 28.6 per cent. On the other hand, the food production branches increased their share of total manufacturing employment from 14 per cent to almost 20 per cent. Other data on rates of growth in employment between 1970 and 1981 show some increases in beverages, paper products, pottery, earthenware and

porcelain, while the average annual rate of decline in employment for manufacturing as a whole was 1.83 during this period.

Table 5 presents estimates of industrial production over the period 1979-83. Aggregate manufacturing production fell by 5.5 per cent over this

Table 5. Indices of industrial production,^{1/} 1979-1983
(1979 = 100)

	1979	1980	1981	1982*	1983
311-12 Foodstuff	100.0	103.7	110.2	111.6	112.8
313 Beverages	100.0	96.8	105.0	89.8	93.3
314 Tobacco	100.0	105.3	92.1	76.8	76.9
321 Textiles	100.0	97.1	91.3	67.0	76.0
322 Wearing apparel, exc. footwear	100.0	123.1	145.3	79.3	81.5
323 Leather products	100.0	108.7	120.7	90.6	89.8
324 Footwear except leather and plastic	100.0	69.3	71.9	59.9	71.2
331 Wood products except furn.	100.0	80.0	75.4	59.8	70.3
332 Furniture except metal	100.0	114.4	108.3	67.0	56.3
341 Paper and products	100.0	90.7	98.8	82.5	94.8
342 Printing and publishing	100.0	185.0	185.5	168.1	163.5
351 Industrial chemicals	100.0	100.1	88.9	69.8	84.2
352 Other chemicals	100.0	103.5	114.5	104.8	95.3
353 Petroleum refineries	100.0	95.2	90.5	70.0	80.4
354 Misc. petrol. and coal prod.	100.0	35.1	67.4	84.1	78.1
355 Rubber products	100.0	123.9	112.9	76.4	110.3
356 Plastic products	100.0	100.5	117.9	108.0	115.6
361 Pottery, china, earthenware	100.0	254.7	164.7	31.2	152.3
362 Glass and products	100.0	94.5	88.1	47.1	78.8
369 Other non-metallic minerals	100.0	116.9	134.2	74.2	96.6
371 Iron & Steel	100.0	115.5	103.5	68.4	87.4
372 Non-ferrous metals	100.0	97.5	96.2	105.5	106.2
381 Fabricated metal products	100.0	101.0	107.4	83.8	82.8
382 Machinery, except electrical	100.0	134.1	130.8	58.6	50.2
383 Machinery electric	100.0	113.8	108.8	59.5	70.4
384 Transport equipment	100.0	117.1	107.7	63.2	42.9
385 Professional & Scientific equip.	100.0	92.5	96.2	66.7	73.5
390 Other manufact. prod.	100.0	110.6	167.3	77.0	79.2
GENERAL	100.0	106.5	107.4	90.1	94.5

Source: Banco Central de Chile: Boletín Mensual.

^{1/} Corresponds to a new physical production index, based on data proceeding from the Fifth National Census of Manufactured Products (1979). Replaces the former Index (Base: 1968 = 100).

period. The manufacturing production index rose by 7 per cent up to 1981, and then declined by 12 per cent in comparison to 1981. The only branches which recorded positive growth rates during 1981-83 were food products, miscellaneous petroleum and coal products and non-ferrous metals. The production of miscellaneous petroleum products had however declined very sharply during 1979-1981. Taking the period 1979-83, only six branches - printing, pottery, plastics, food manufactures, rubber products and non-ferrous metals recorded positive growth rates.

Statistics on the growth of labour productivity are not available for the period up to 1983. During 1970-79 value added per employee grew at an annual average rate of 1.05 per cent for the Chilean manufacturing sector. In general this was the result of rapidly declining employment level. The only branches which registered positive productivity, employment and MVA growth during the period were beverages, paper products and other chemicals. The annual average fall in manufacturing employment was substantially in excess of the annual average growth of MVA which was only 0.35 per cent. This would indicate that substantial improvements in economic efficiency were not recorded within this period. Substantiating evidence on this point is also provided in Table 6 which shows that while the share of gross profits in value added remained extraordinarily high by international standards the share of gross profits in output has continued to decline since 1974. This declining trend is also evidenced by the gross profit to gross fixed capital formation since 1977 - movements in which, however, have been significantly more erratic. The value added to gross output ratio has also declined significantly over the period 1973-80. Thus it is apparent that despite stagnant real wages the rate of return on industrial investment has declined and industrial costs have increased significantly.

Evidence on the inter-branch dispersion of the gross output to value added and the gross profit to value added ratio is given in Table 7. Branches with the highest gross profit rates included: tobacco, oil refineries, non-ferrous metals and chemicals. Four of these branches - non-ferrous metals, refineries, industrial chemicals and other chemicals - experienced a very substantial reduction in the value added to gross output ratio from 1973 to 1979, indicating a rapid growth in industrial costs. It is therefore

Table 6. Indicators of manufacturing performance, 1970-1980
(in thousands of national currency)

	Gross Output	Value Added	Wages	Gross profit	Gross fixed capital formation	Ratio of gross profit to gross output (per cent)	Ratio of gross profit to value added (per cent)	Ratio of gross profit to gross fixed capital formation (per cent)	Ratio of VA to gross output (per cent)
1970	46,810	27,950	5,180	22,770	1,470	48.64	81.46	15.48	0
1971	61,270	36,180	8,240	27,940	1,620	45.60	77.22	17.24	59.05
1972	95,770	56,830	16,860	39,970	2,880	41.73	70.33	13.87	59.34
1973	480,090	346,180	55,950	290,230	32,330	59.71	83.83	8.97	71.21
1974	5,137,000	3,366,000	409,000	2,957,000	64,000	57.56	87.84	46.20	65.52
1975	24,196,000	15,112,000	1,774,000	13,338,000	934,000	55.12	88.26	14.28	62.45
1976	25,149,000	41,704,000	6,980,000	35,666,000	1,708,000	47.46	85.40	20.88	55.57
1977	143,919,000	74,182,000	12,964,000	61,218,000	2,745,000	42.53	82.52	22.30	51.54
1978	245,577,000	117,706,000	21,124,000	96,582,000	6,994,000	39.33	82.05	13.80	47.93
1979	405,365,000	179,949,000	32,260,000	147,689,000	12,887,000	36.43	82.10	11.46	44.39
1980	537,586,000	248,527,000	45,908,000	202,619,000	21,113,000	37.69	81.53	9.59	46.23
Mean						46.52	82.04	17.64	50.63
Standard deviation						8.03	4.97	10.34	8.41

Source: UNIDO data base.

Table 7. Gross profits by branch of manufacturing, 1973 and 1979
(at current prices)

Description (ISIC)	Share of value added in gross output (percentage)		Share of gross profit in value added (percentage)	
	1973	1979	1973	1979
TOTAL MANUFACTURING (300)	71.2	44.4		
Food products (311)	59.3	41.3	75.5	80.7
Beverages (313)	71.1	56.4	75.8	85.3
Tobacco (314)	94.1	80.5	95.1	95.6
Textiles (321)	72.6	51.1	77.5	69.1
Wearing apparel, except footwear (322)	67.1	49.4	79.5	72.7
Leather products (323)	57.3	37.1	86.9	80.5
Footwear, except rubber or plastic (324)	51.5	56.7	74.6	79.9
Wood products, except furniture (331)	70.1	60.5	79.3	76.4
Furniture, except metal (332)	80.4	60.8	72.8	76.4
Paper and products (341)	68.6	63.5	84.5	87.5
Printing and publishing (342)	75.0	68.6	79.3	77.2
Industrial chemicals (351)	82.7	55.5	88.7	90.3
Other chemicals (352)	77.6	61.1	83.1	89.0
Petroleum refineries (353)	47.6	15.1	94.4	93.4
Misc. petroleum and coal products (354)	21.9	64.3	84.0	80.1
Rubber products (355)	50.3	50.7	79.2	74.1
Plastic products (356)	76.5	47.2	85.6	73.6
Pottery, china, earthenware (361)	84.0	74.6	75.6	73.7
Glass and products (362)	67.4	61.4	78.0	76.4
Other non-metallic mineral prod. (369)	63.1	58.3	69.0	79.3
Iron and steel (371)	88.5	32.5	80.5	78.9
Non-ferrous metals (372)	83.7	42.0	95.6	92.6
Fabricated metal products (381)	70.5	50.3	75.4	72.7
Machinery, except electrical (382)	71.0	50.8	72.6	83.1
Machinery, electric (383)	73.7	45.3	82.0	70.6
Transport equipment (384)	88.5	44.5	87.5	82.0
Professional & scientific equipm. (385)	68.0	59.6	79.4	73.7
Other manufactured products (390)	76.5	65.7	81.8	73.7

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

Note: Total manufacturing is the sum of the reported ISICs and does not necessarily correspond to ISIC 300 total.

evident that gains in industrial efficiency remained low in the manufacturing sector in general throughout the 1970s, with a few exceptions.

2.3 Exports and imports of manufactures

Chile's manufactured exports increased from \$119.6 million in 1971 to \$1,211.4 million in 1983. The commodity composition of exports has changed as a result of the trade liberalization policy followed by the Government since 1973. The share of mineral exports has fallen from 84.5 per cent in 1971 to 60.6 per cent in 1983 and that of manufactured exports has increased. However, the growth of manufactured exports has slowed somewhat during 1980-83 due to a fall in external demand.

Main manufactured exports can be categorized as semi-manufactures and other manufactures such as wood products, pulp and paper, fishmeal, shellfish and base metal. Semi-manufactures account for 50 per cent of total manufacturing exports. The growth of semi-manufactured exports has been consciously encouraged by Chile's liberal trade policy. Fruit exports have represented the most dynamic subsector. They have increased in value terms at an annual average rate of 29 per cent over the period 1977-82. In 1983 manufactured exports totalled \$1,211.4 million, of which food products accounted for 38.2 per cent followed by basic metals (20.1 per cent), pulp, paper, cardboards, etc. (18.7 per cent) and lumber (10.4 per cent). It is important to note that fishmeal constituted 72.5 per cent of food exports in 1983. Falling international prices have adversely affected fruit exports in 1983 and 1984 but prospects are expected to improve in the near future.

Manufactured imports currently account for over 70 percent of Chile's total import bill. The composition of Chilean imports has changed significantly in response to shifts in macroeconomic policy. Imports of consumer goods increased rapidly in the 1970s, while imports of intermediate goods and capital goods declined during this period. However, the share of imports in gross fixed investment in machinery and equipment rose from about 50 per cent in the late 1960s to over 90 percent in 1981.

During 1981-1983 imports of consumer goods fell by 72.8 per cent, of capital goods by 73.4 per cent and of intermediate goods by 40.6 per cent. In

Table 8. Exports of merchandise, 1971-1983
(millions of U.S.\$)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Mining Products	813.2	734.5	1,132.6	1,806.9	1,075.4	1,448.6	1,403.2	1,422.3	2,253.9	2,919.4	2,261.3	2,155.8	2,296.6
Copper	701.8	657.6	1,025.6	1,635.5	890.4	1,246.5	1,187.4	1,201.5	1,799.6	2,200.4	1,714.9	1,731.4	1,835.7
Others	111.4	76.9	107.0	153.4	185.0	202.1	215.8	220.8	454.3	719.0	546.4	424.4	460.9
Agriculture and Fishing Products	29.4	19.3	25.5	55.0	86.1	118.9	159.5	203.5	264.5	339.9	365.4	374.9	327.5
Fresh fruits	13.4	11.8	13.6	18.4	37.8	53.9	63.6	101.0	123.3	168.7	198.5	232.8	220.5
Others	16.0	7.5	11.9	36.6	48.3	65.0	95.9	102.5	141.2	3,171.2	166.9	142.1	107.0
Manufacturing Products	119.6	82.4	89.4	290.6	390.6	528.1	627.6	782.0	1,245.0	1,558.8	1,279.6	1,178.8	1,211.4
Fish Meal	29.8	12.4	12.0	31.1	29.2	61.6	86.5	105.8	152.6	233.7	202.0	256.0	307.1
Wood Products	7.0	4.9	4.1	12.7	25.2	29.4	70.4	94.4	164.7	286.2	163.4	122.3	116.4
Pulp and Paper	24.9	21.0	29.0	106.0	83.7	121.4	119.1	144.2	213.6	265.2	228.4	199.5	190.6
Others	57.9	44.1	44.3	140.8	252.5	315.7	351.6	437.6	714.1	773.7	685.8	601.0	597.3
Total	962.2	836.2	1,247.5	2,152.5	1,552.1	2,095.6	2,190.3	2,407.8	3,763.4	4,818.1	3,906.3	3,709.5	3,835.5

Source: Central Bank (customs data).

Note: Total exports are obtained from the "Register of Exports" in the Central Bank, while the balance of payments reflects exports for which the actual transactions took place.

Table 9. Imports of merchandise, 1971-1983
(millions of U.S.\$)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981g/	1982g/	1983g/
Consumer Goods	245.3	276.6	237.9	153.1	87.3	229.0	526.5	595.9	852.0	1,493.1	1,907.2	949.2	517.4
Food	144.8	202.5	178.1	46.0	25.5	48.1	102.5	132.2	169.7	422.8	313.1	190.6	131.5
Others	100.5	74.1	59.8	107.1	61.8	180.9	424.0	463.7	682.3	1,070.3	1,594.1	758.6	385.9
Capital Goods	199.9	312.2	333.4	502.1	378.8	375.0	503.8	653.3	879.1	1,218.9	1,249.7	583.7	332.0
Intermediate Goods	720.4	822.7	1,110.0	1,757.1	872.1	1,171.8	1,384.0	1,753.2	2,486.5	3,108.5	3,206.9	1,995.6	1,904.6
Fuels and lubricants	109.7	101.5	147.9	480.8	257.0	392.2	447.0	480.0	888.7	959.6	983.2	614.8	572.4
Agricultural raw materials	152.2	237.4	303.9	328.6	240.5	246.6	154.9	282.7	276.9	357.7	327.2	277.0	265.3
Industrial raw materials	325.8	357.5	372.2	575.9	188.7	283.3	385.2	407.0	544.7	801.0	692.1	4,334.1	533.4
Industrial intermediate goods	n.a.	n.a.	107.4	141.7	76.9	125.6	193.1	277.5	402.5	530.9	728.7	413.8	321.7
Others	132.7	126.3	178.6	230.1	109.0	124.1	203.8	306.0	373.7	459.3	475.7	255.9	211.8
Total	1,165.6	1,411.5	1,681.4	2,412.3	1,338.2	1,775.8	2,414.3	3,002.4	4,217.6	5,820.5	6,363.8	3,528.5	2,750.0

Source: Central Bank (customs data).

g/ Excluding imports to free zones which were U.S.\$ millions, 411.5, 302.4 and 214.8 in 1981, 1982 and 1983 respectively.

Note: Total imports are obtained from the "Register of Imports" in the Central Bank, while the balance of payments reflects imports for which the actual transactions took place.

1983 intermediate goods dominated the structure of manufactured imports (55.3 per cent), followed by food (16.6 per cent), consumer goods (15.6 per cent), and capital goods (12.5 per cent). Intermediate goods imports have registered a small upward trend in 1984 and in the event of a general economic recovery intermediate and capital good imports may be expected to grow more rapidly than consumer goods. Import expansion is constrained, however, by foreign exchange shortages. Total export revenue has remained stagnant at the 1982 level of \$3.8 billion. It remained at this level in 1982 and 1983, fell to \$3.5 billion in 1984 and is expected to reach \$3.8 billion in 1985 due to the recovery in international copper prices. An added complication arises from the fact that whereas 60 per cent of all imports and 70 per cent of manufactured imports are obtained from developed countries, over 70 per cent of manufactured exports are destined to other developing - particularly Latin American - economies. This makes counter trade deals impractical at least as far as the manufacturing sector is concerned. It also underlines the special importance of enhanced regional co-operation as a means for fostering industrial development in Chile.

2.4 Ownership and investment patterns

Since 1973, Chile has had a predominantly private enterprise industrial economy. The total number of establishments controlled by CORFO, the State-owned financial and development corporation, has fallen from 300 in 1973 to only 24 firms in 1984, half of which were for sale. However, a growing number of private sector bankruptcies during the 1980s has made the Government Chile's largest industry owner by 1985. Some of the largest industrial firms are once again within the public sector. State enterprises have generally produced operating surpluses. In 1983 net surplus generated by the State enterprises equalled 0.2 percent of GDP.

The privatization policies pursued during the mid-1970s led to increased industrial concentration. Large national private concerns and trans-national corporations acquired most of the industrial assets formerly owned by the Government. Increasing industrial concentration has restricted investment growth. The overall (gross) rate of investment in the economy was lower in the years 1974-1980 than in the 1960s, and in 1981 it was lower than in 1970.

Also, in the year 1970 almost 90 per cent of investment was financed from domestic savings while in 1978-1981 the figure was just 50 per cent.

1979 Census data show that the value of increases in fixed assets within the manufacturing sector was \$346 million, of which 76 per cent was spent in machinery and equipment. At the 3-digit ISIC level it is possible to identify 3 distinct groups of industries: (i) the food sector, accounting for 32.6 per cent of investment in machinery and equipment; (ii) a group consisting of printing and publishing, non-ferrous metals, beverages, paper and iron and steel industries, accounting for between 5 per cent and 7.5 per cent of investment each; (iii) a third group including tobacco and various metal products and wood products groups, accounting for between 2.5 per cent and 3 per cent of investment each. At a more disaggregate level, it is seen that investment was concentrated in the fats and oils industry, and in copper, paper pulp, spinning and weaving, pharmaceuticals, etc.

Comparing 1970 and 1979 investment data, the groups accounting for more than 5 per cent of investment each in machinery and equipment in 1970 were food and textile industries, printing, non-metallic mineral products, and transport equipment, while in 1979 the groups with similar shares were food, beverages, textile industries, paper and printing, and iron and steel. Industries that increased their share in investment in machinery and equipment were food, beverages, paper, printing and non-ferrous metal products, while industries with declining investment shares include textiles, glass, non-metallic mineral products, machinery and transport equipment.

Direct foreign investment in the Chilean economy over the period 1974 to 1980 amounted to \$996 million,^{1/} of which 83 per cent was invested during 1978-80. Approximately 25 per cent of this total was invested in manufacturing, mainly in the cement industry, food and beverages, and in tire manufacturing. In all those cases (except tires) the investment was for the acquisition of existing assets. In fact just 5 per cent of direct foreign investment was spent on capital equipment while from 1954 to 1970 the

^{1/} ECLAC estimate, net of depreciation (Estudios e Informes, No. 22, p. 14).

percentage was 50 per cent. Foreign firms generally received significant shares of foreign credit and had a higher rate of return than national firms.

The share of foreign firms in sales was 19 per cent of the national total in 1967 and 28 per cent in 1979. They account for more than 50 per cent of sales of "Sociedades Anónimas" in ISIC Divisions 38 (metalworking industries), 36 (non-metallic mineral products) and 39 (other manufactured products) but have higher shares in several branches at a more disaggregate level. Sixteen foreign firms accounted for 12 per cent of industrial exports in 1978 but this only paid for 44 per cent of their imports in the same year.

Information on investment and surplus generation within the manufacturing sector is not available for the period 1980-83. During this period total public savings declined from 10.6 per cent of GDP to 0 per cent while private savings rose from 3.3 per cent to 4.9 per cent. Total fixed investment fell from 21 per cent of GDP in 1980 to 10.4 per cent in 1983. However, investment in machinery and capital equipment remained surprisingly high. During 1979-81 it recorded a real annual average growth rate of 13 per cent. A large proportion of industrial investment was financed by means of bank credit and the banking crisis of 1983 has had adverse affects on the growth and restructuring of industrial investments in Chile.

2.5 Size and geographical distribution of manufacturing enterprises

The 1979 Industrial Census registered 9,965 establishments with more than 5 workers; total employment in those firms was 336,000 workers. There were 1,289 establishments employing 50 or more workers, accounting for 65 per cent of the total. 4,259 medium sized firms (with 10 to 44 workers each) employed 27 per cent of the work force while the smaller establishments (42 per cent in number) employed just 26,000 workers.

Among the larger establishment branches with larger employment per establishment were tobacco, non-ferrous metals, pottery, clay and china, iron and steel, and petroleum refineries. Employment per firm ranges from 333 in the case of tobacco to 154 for oil refineries. All other branches have an average employment per establishment ratio of less than 100. Restricting the

analysis to establishments employing 50 workers or more, average employment is 170 per establishment; the ratio has the highest values in the branches already mentioned, plus paper products, rubber products, textiles and transport equipment.

The geographical distribution of manufacturing industry is quite uneven. Industries are concentrated in the central region of the country, mainly in the capital, Santiago, and in the main port, Valparaíso.

In Santiago there were 5,628 industrial establishments, or 56.5 per cent of the country's total, employing 192,000 workers (57 per cent of the country's total) in 1979. In Valparaíso there were 634 establishments (6.3 per cent) with 20,401 workers (6.0 per cent). Another important industrial centre is Concepción in the south, with 496 establishments and 27,845 workers. Concepción is the location of some important industries such as the steelworks.

3. INDUSTRIAL DEVELOPMENT STRATEGIES

3.1 Goals of industrial policy

Chilean economic policy has since 1973 excluded formal sector planning and the setting of quantitative goals. Strong emphasis is placed on an export-oriented industrialization strategy and encouragement is given for stimulating the growth of natural resource-based products. Privatization and decontrol are key elements in Chile's industrial strategy. It is believed that removing controls will permit the market to produce an optimum allocation of resources.

The view that the market will promote efficient resource allocation goes hand in hand with the view that under free external and internal trade, the market will emphasize development of resource-based sectors. It is clear within this framework that liberal reform must encompass both the external and internal markets. It calls for integration of the national economy with the world markets. Government intervention is limited to the performance of functions that the private sector is not able to fulfill properly. State-run industrial units are expected to emulate private ones and be concerned primarily with profit maximization.

Domestic industrial growth and structural change is geared to world market conditions. The State does not set priorities or growth targets or other goals. Low tariff schedules have been designed to encourage productive efficiency by means of reallocation of resources in accordance with international price structures. In order to increase competition procedures for the establishment of new industries have been simplified. The export promotion policy consists of exchange rate management and low tariffs for imports, together with measures such as reimbursement of value added tax, operation of a market information system, training of export professionals, and speeding up of export procedures. It is expected that specialization in accordance with Chile's international comparative advantage would stimulate industrial growth. Industrial development is to be financed from domestic and

international capital markets. Restrictions on capital movements have been significantly reduced.

National and regional agreements which established discriminating regulations against foreign investors have been repealed. Also, foreign capital and strong local private groups were encouraged to purchase local enterprises in the privatization programme undertaken by the Government after 1974.

This industrial strategy facilitated the growth of natural resource-based and export-oriented industries. Protectionist barriers have remained low with consequent benefits to the consumer. However, the decline in import substituting industries has meant an erosion of the technological base of Chilean industry and has also led to widespread unemployment within the sector. Industrial concentration has increased and real interest rates have remained high. Thus a significant fall in real wages has not been accompanied by an increase in industrial competitiveness. New investment has been oriented towards the acquisition of existing assets rather than to the creation of new production capacity. The Government has found it to be increasingly difficult to abstain from taking initiatives. During the 1982-83 crisis the Government had to intervene to offset and prevent bankruptcies in the financial and industrial sector and to renegotiate the servicing of its international debt. As long as Chile's terms of trade remain unfavourable there will be domestic pressure to make use of protectionist measures to stimulate the recovery of the industrial sector.

3.2 Recent changes in industrial policy

Industrial growth and restructuring has been affected by three sets of inter-related decisions taken in order to deal with the crisis of 1982 and 1983.

Firstly, the policy of pegging the peso and maintaining a fixed exchange rate has been effectively abandoned under the auspices of a series of IMF supported policy measures. Several devaluations have taken place since June

1982 and the currency currently operates a two-tier exchange rate system with the official exchange rate being about 10 per cent higher than the "parallel" rate.

Secondly, the uniform 10 per cent tariff rate levied on most imports has also been abandoned. It rose to 35 per cent in 1984 and has been reduced to 30 per cent in March 1985.

Finally, the Government has provided financial assistance to manufacturing units in danger of going bankrupt. It has also abandoned its policy of not interfering in the management of the external debt of industrial enterprises. It has played a key role in debt renegotiation.

As a consequence of the adoption of these measures, import competing sectors have registered significant recovery in recent years. It has yet to be seen whether a significant level of protection is going to be maintained in the long term. The Government has already announced that tariffs will be reduced to 25 per cent in early 1986. The future shape of industrial policy is likely to be strongly influenced by the forthcoming negotiations with the IMF. Agreement on an overall financial package was reached in the context of the implementation of an adjustment program by the Chilean authorities, supported by an extended arrangement with the IMF. The extended arrangement was approved in principle by the IMF Executive Board on July 15 and became effective August 15, 1985, after the Board received assurances that the required financing from international commercial bank creditors would be available. The Chilean authorities also have requested World Bank support in the form of a structural adjustment loan.^{1/}

3.3 Institutional framework for industry

The official organizations dealing with industrial matters do not have the planning functions that are usual in most developing countries. However,

^{1/} IMF Survey, September 23, 1985, p. 281.

some institutions and corporations do exist with advisory and direct management functions within the industrial sector.

At the Cabinet level, there is a Ministry of Planning and Ministry of Production Development. The Minister for Production Development is also the Vice President of the Production Promotion Corporation, CORFO.

The National Planning Office, ODEPLAN, assists the Presidency of the Republic in all matters related to social and economic planning and development projects. The Minister of Planning is the Director of ODEPLAN.

CORFO (Corporación de Fomento de la Producción), the holding group of the principal State enterprises, comes under the Ministry of Economic Affairs. Some of the enterprises controlled by CORFO are Compañía de Acero del Pacífico (steel), Complejo Panguifrulli (Forestry and Wood), ECOM (computing and informatics), ENAEX (explosives), IANSA (sugar) and SOQUIMICH (chemicals and mining).

Specialized offices involved in industry include SENCE (National Training and Employment Service), in charge of the control and supervision of manufacturers' training activities and of authorization and supervision of training organizations, and SERCOTEC, which provides technical assistance service for industry. In the Science and Technology area, the State takes responsibility for science and basic technology activities not covered by the private sector. The State undertakes to promote access to technological information and the acquisition of technology by industrial firms. The Technological Research Institute (INTEC) does applied research including contract research for industrial firms. The National Fund for Scientific Research and Technological Development finances industrial research projects and programmes.

4. RESOURCES FOR INDUSTRIAL DEVELOPMENT

4.1 Human resources

Chile's total population is less than 12 million, of which 80 per cent live in urban areas. This may be partly attributed to the fact that over 70 per cent of the mainland territory is uninhabitable. Total labour force is 3.7 million or 31 per cent of the population. In 1984 manufacturing provided occupation to 11 per cent of the labour force. The rate of open unemployment in recent years has been around 20 per cent, while the Government's relief, Minimum Employment Programme and Family Heads Employment Programme take care of almost another 10 per cent of the labour force seeking other jobs.

The general level of education of the population is good: the adult literacy rate is 94.2 per cent and the primary school enrolment rate is 95 per cent. Third level total enrolment increased from 26,027 in 1960 to 149,000 in 1975 and then fell to 127,000 in 1979, as the number of places offered in universities fell by almost 30 per cent from 1973 to 1978. In 1979 the number of graduates in natural sciences, mathematics and computing was 322, while the number of engineering, architecture, industrial crafts and other specialists graduating that year was 2,917. In 1978 the total number of engineering students was close to 39,000.

In 1979 professionals and technicians in industry were 11,600; scientific and technical personnel in R&D were 6,000. Skilled manpower for industry is trained by firms and by State approved organizations under the supervision of SENCE (National Training and Employment Service). The Training and Employment Statute allows private firms to deduct training expenses from taxation. Finally, it is known that structural changes in industry have led to the emigration of technical and professional staff to other Latin American countries and to the United States.

4.2 Raw material resources

Agriculture

Agriculture together with forestry, hunting and fishing accounts for less than 10 per cent of GDP. A liberalized economy and increased foreign trade have stimulated the level of agricultural and animal breeding activities, by allowing them to adjust production levels to broader markets and, at the same time, making possible a specialization and expansion of the more profitable activities, in view of certain comparative advantages offered by Chile's climate and location. Agriculture and livestock have considerably expanded during this last decade, from a relatively small or local activity to its current efficient level, capable of producing a wide range of products in keeping with the requirements of demanding foreign markets.

Liberalization of trade in the 1970s changed the cropping pattern within the country. The traditional crops in Chile are cereals, legumes, and industrial crops such as sugar beet. Their total planted area in 1983 was 870,000 hectares, i.e., 70 per cent of the 1970 level. Wheat is the most

Table 10. Production of selected crops, 1979-1984
('000 tons)

	1979/80	1980/81	1981/82	1982/83	1983/84
Wheat	966	686	651	568	988
Oats	173	131	118	146	163
Barley	105	91	118	73	74
Rice	95	100	131	116	165
Maize	405	518	484	512	721
Potatoes	903	1,007	842	684	1,036
Sugar beet	450	1,460	963	1,643	2,194

Source: Ministry of Agriculture.

important traditional crop, but the area planted in 1983 was approximately 50 per cent of the 1970 level. On the other hand, in the same year the area of fruit plantations (94,000 hectares), devoted mainly to the cultivation of grapes, apples, pears, nectarines, peaches, etc., was 50 per cent higher than in 1970. Government policy aims at exploiting the international comparative advantage in fruits and forestry exports.

The cultivation of fruit is one of the fastest growing activities in Chilean agriculture. The acceptance of high quality Chilean fruit on foreign markets has generated a rapid expansion of fruit orchards which currently occupy over 90 thousand hectares. It has been estimated that additional 300 thousand hectares, after moderate and economically easy improvements could be used for fruit growing activities.

Production of the fruit growing sector grew approximately 52 per cent during the 1973-1981 period, while total production for 1983 reached 800 thousand tons. The highest share corresponded to apples (300 thousand tons) and grapes (130 thousand tons). Fruit production also supplies dehydration, freezing and canning industries, all of which have developed considerably in recent years.

In 1983 the Government initiated a programme to assist the sector, promoting renegotiation of farmers' debt envisaging the provision of special lines of credit. It is believed that long-term growth prospects of the sector will depend on continuing financial support by the State.

Agribusiness enjoys natural advantages which ensure its development, especially with regard to export markets. These advantages are a large potential of renewable resources, resulting from its temperate climate and the quality of the soil. The possibility of obtaining high yields of first quality products, together with low production costs, ensure a steady growth for this sector especially with regard to foreign trade.

Important advances have been achieved by this sector in recent years, due to the reorientation towards foreign markets, the improvement and expansion of traditional activities (mills, oil production, malt, fruit packaging and

processing centres, vineyards, fruit and vegetable dehydrating) and also to the creation of new industries in non-traditional activities (fruit juices and pulps, tomato concentrates, dehydrated grape juice and dried and dehydrated wild products).

Chilean agribusiness has expanded at an average rate of 8 per cent per year, during the 1975-1980 period, while substantial improvements have been made in technology, both in production as well as in refrigeration and preservation, the quality of its products and packaging and in distribution systems.

Agribusiness provides multiple possibilities to foreign investors. The most significant advantages generally offered by Chile are: raw materials of excellent quality, low production costs, interesting foreign and local markets and availability of labour.

Agribusiness offers profitable investment opportunities in practically its entire range of activities, from the selection and packing of fresh produce, to the industrial processing of agricultural products.

Processing of grains and legumes, industrial microbiological fermentation, seed germination, processing of honey, production of essential oils and many other similar activities are areas in which investors can find exceptional opportunities for exploitation and development.

Animal raising also offers exceptional opportunities for investment to anyone interested in cattle breeding and fattening, as well as in their marketing, slaughtering and industrialization, including animal by-products.

Foreign investors have the possibility of making either an individual investment or of entering into partnership with local businessmen interested in participating in specific agribusiness projects requiring financial support.

Forestry

Chile's forestry resources cover some 21 million hectares, or 30 per cent of the continental area. The area of yet unexploited natural forests is over

4.4 million hectares, while more than 1 million hectares have been planted by the National Forestry Corporation and private firms, at annual rates between 50,000 hectares and 90,000 hectares. Planting includes reposition of exploited areas as well as new areas.

Over 60,000 persons are employed in this sector. Two-thirds of Chile's forestry production is exported to more than 50 countries. Exports of forestry products rose from \$36.4 mn in 1973 to \$468 mn in 1980. They then fell as a result of the high value of the peso, a fall in demand in the USA and recession in Brazil and Argentina. However, export values increased by 17.3 per cent over 1983. A revival of construction activity in Argentina in 1984, together with increased exports to the Far East increased the external demand for forestry production.

Table 11. Exports of forest products, 1983 and 1984
(\$ mn)

	1983	1984
Pulp	159.9	200.0
Sawnwood	65.8	74.1
Logs	34.0	29.9
Newsprint	34.2	39.8
Board	7.7	8.9
Others	<u>24.6</u>	<u>30.0</u>
Total	326.2	382.7

Source: National Forestry Corporation.

Forestry production enjoys subsidies and tax benefits, and foreign investors enjoy the same rights as Chileans. Reforestation significantly increased, from an average of 20 thousand hectares in 1973 to over 70 thousand during the 1974-1981 period, as a result of a law designed to stimulate planting, enacted in 1974. Since 1979, the private sector has been

principally responsible for reforestation work, the State participating only in co-ordination, promotion and forestry control. The availability of resources for future industrialization programmes or schemes is assured by the current rate of reforestation. With its developing forestry industry Chile faces the challenge of incorporating modern technologies, to make more efficient use of this valuable and renewable natural resource. In view of the upturn in demand for cellulose (with new investment in this industry) and the coming of age of a large radiata pine plantation the Government makes optimistic claims about the future prospects, but the predicted sixfold increase in activity until 1990 will depend heavily on the availability of foreign financial assistance.

In 1984, China was the principal customer for wood exports, purchasing 12.7 per cent of the total (9.7 per cent in 1983), followed by Argentina with 7.5 per cent, F.R. Germany 7.2 per cent and Japan 6.8 per cent.

Fishery

Chile, with one of the longest coastlines in the world, offers exceptional conditions for the expansion of the fishing industry. The establishment of the 200 mile limit fishing zone opens up unsuspected possibilities. Since 1974, when the Chilean economy became freer and more accessible to foreign trade, the fishing sector has grown at an average rate of over 14 per cent per year. More than 75 per cent of the value of fishing production is destined to foreign markets. Exports have increased nearly 13 times in value during the last decade and the fishing industry's share in the country's total exports has increased significantly. At present Chile ranks third or fourth among nations with a fishing industry and is among the 10 principal exporters of fishing products. This sector employs over 1.5 per cent of the working population. Of these, 26 per cent are employed at the industrial level and 74 per cent as artisan fishermen.

Fish and seafood are very important resources for foreign trade-oriented industries, such as fishmeal. The total catch in Chile has increased from 1,191,000 tons in 1970 to 4,168,000 in 1983, including fish and shell-fish. Approximately 90 per cent of that total is processed by industry, mainly to

produce fishmeal (85 per cent), and also to be frozen, canned, or for the production of oil. The sector's total contribution to merchandise exports is over 11 per cent.

Mining

Chile's mining sector contributes only 7 per cent of GDP but is the origin of 60 per cent of the country's exports. Chile has the largest copper reserves in the world as well as large shares of reserves in molybdenum, rhenium, lithium and iodine, while proven reserves of iron ore are around 900 million tons; gold and silver production is also substantial. Mining techniques employed are both relative- and energy-intensive.

There are three distinct groups of mines in Chile: high-profitability mines; mines where returns are moderate; and low profitability mines. The first group includes the State-owned Copper Corporation (CODELCO) mines, and

Table 12. Production of main minerals, 1971-1984
('000 tons, otherwise indicated)

	1971	1980	1981	1982	1983	1984 ^{a/}
Copper	708	1,068	1,105	1,255	1,255	1,198
Molybdenum (pure, tons)	6,321	13,668	15,360	20,048	15,264	15,551
Nitrate (gross)	823	620	624	577	623	653
Coal (Encar ^{b/} only from Jan. 1981)	1,626	1,024	1,169	997	1,095	1,220
Iron	11,891	8,835	8,514	6,470	5,974	6,459
Iodine (tons)	2,563	2,601	2,688	2,596	2,794	2,415

Source: Central Bank of Chile, Monthly Bulletin, various issues.

a/ Provisional.

b/ State coal mining corporation.

some medium size mines. The second group is more labour intensive and comprises smaller medium size and small mines. The low profitability group includes mostly very small mines.

Chile holds one quarter (111 mn tons) of the world's copper reserves (456 mn tons). The giant open cast Chuquibambilla is the largest mine (45 per cent of output), whose ore content is extremely high at 1.38 per cent. El Teniente, the world's largest deep mining operation, is the second producer, accounting for about a quarter of output. These two account for 77 per cent of Chile's reserves.

The Government pronounced a well-defined strategy on mining during 1981 and early 1982. The Government decided to retain Codelco's mines as a State concern, and to sell smaller mines and unexploited resources to international concerns. The Government envisages expansion in the production of high grade copper and a production target of 1.5 mn tons per year is due to be met by the end of the decade. The international firms are to contribute substantially by the end of the 1980s. A new Mining Code came into force in December 1983 in order to facilitate long-term investment in the sector. It spells out security of tenure to companies operating large concerns, which are regarded as private properties.

4.3 Energy Reserves

Hydrocarbons play the key role in production, consumption, imports and exports. Net imports of hydrocarbons rose to 74.5 per cent of total crude requirements in 1979. As a result of offshore exploitation, hydrocarbons production grew during 1979-1981. A 15 per cent fall in demand in 1982 resulted from the combined impact of offshore production and the recession imports declined by 46 per cent. In 1984, Chile imported about 50,000 b/d of oil, again to meet about 45 per cent of domestic requirements, mostly from Venezuela.

There are oil and natural gas reserves, onshore and offshore, in the south of the country, evaluated at 70 million cubic meters of crude oil and 30 billion cubic meters of natural gas. Domestic coal also contributes to the

reduction of fuel imports (crude oil and coking coal). The 1982-1983 depression has also led to a reduction of imports.

According to estimates, investment requirement to maintain current domestic supply of gas and oil is nearly \$160 million a year. Over half of Chile's total energy consumption is in the form of petroleum, approximately

Table 13. Commercial primary energy balance, 1982
('000 tons coal equivalent)

SUPPLY		PRODUCTION	
<u>Production</u>		<u>Apparent consumption</u>	
Solid fuels	994	Solid fuels	1,187
Crude petroleum & natural gas liquids	3,525	Liquid fuels ^{b/}	7,132
Natural gas	1,177	Natural gas	1,166
Hydroelectricity ^{a/}	3,456	Hydroelectricity ^{a/}	3,456
Total production	9,152	Total consumption	12,941
<u>Imports</u>		<u>Exports</u>	
Solid fuels	240	Petroleum products	87
Crude petroleum	1,777		
Petroleum products	1,502		
Total imports	3,519	Total exports	87
		Bunkers	72
Drawdown of crude stocks	300	Increase in solid fuel stocks	48
Drawdown of petroleum product stocks	378	Balancing item ^{c/}	201
Total supply	13,349	Total demand	13,349

Sources: UN, Yearbook of World Energy Statistics, 1982; and The Economist Intelligence unit.

^{a/} The UN converts primary and internationally traded electricity on an output basis, showing the heat energy that may be obtained from it under ideal conditions. The EIU has converted it on an input basis, showing the amount of energy a thermal power station of average (28 per cent) efficiency would require to produce the same amount of electricity.

^{b/} Including refinery consumption.

^{c/} Comprises output of 115,000 tons of non-energy petroleum products (e.g., naphtha, lubricants) and statistical discrepancy.

110,000 barrels a day. Overall gas production totalled 4,803 million cubic metres in 1983.

4.4 Technical assistance to industry

Technical assistance provided by UNIDO totalled \$107,675 in 1984. Total amount committed for Chile in the country programme for the third cycle (1982-86) amounted to \$20 million. Assistance in the establishment of a Latin American information bank and exchange on industrial food processing technologies and institutional resources merit special attention in future technical assistance in view of the fact that the food processing industry is playing a pivotal role in accelerating the export diversification drive. There are three important areas in which international agencies can play an important role in supporting industrial development in Chile.

1. Assistance for export oriented industries. Non-traditional exports increased rapidly in the second half of the 1970s in response to the Governments' liberalization measures. Further export growth requires a careful examination of existing opportunities and the development of a coherent, flexible and dynamic marketing strategy. This is particularly important in view of the relatively slow growth in the main markets of Chile's manufactured products. If technical expertise can be made available for enhancing Chile's international marketing capacity, this can be of special benefit to the country.

2. Stimulating industrial employment. Unemployment has been a major problem in Chile. Throughout the previous decade labour displacement within the manufacturing sector has been high. Manufacturing employment has contracted by more than 25 per cent over the period 1973-1983. Assistance for encouraging the growth of small- and medium-scale industrial enterprises employing labour-intensive production technologies is therefore an important need.

3. Financial re-organization. Many industrial concerns have since 1982 been faced with the threat of bankruptcy. The Government has taken a series of steps to re-organize the financial structure of such enterprises and has assumed responsibility for the management of a large proportion of the private

sector's external debt. There is a need to restore international confidence in the Chilean economy and to provide appropriate international channels for negotiating the terms on which international finance is provided to Chilean industry. The Chilean Government keenly welcomes foreign investment within the manufacturing sector. An appropriate policy framework can be developed to ensure that new foreign investment is directed towards the modernization of industrial technology and the expansion of production capacity rather than the acquisition of existing industrial assets. Efforts may be made to explore the possibilities of enhanced regional co-operation in Latin America as a means for making more effective use of foreign capital invested in the countries of the region. There is also a need to promote manufactured exports within the region.

APPENDIX A

Statistical Tables

Table A-1. Comparative growth rates by economic sector, 1963-1981
(at 1975 prices)

Sectors	Period	Chile	Latin America	Developing countries Total
Agriculture	1963-1973	1.0	3.4	2.6
	1973-1981	4.0	3.7	2.8
	1963-1981	2.0	3.6	2.8
Mining & quarrying	1963-1973	3.3	2.0	9.0
	1973-1981	4.0	0.3	-1.2
	1963-1981	3.8	0.1	4.7
Manufacturing	1963-1973	4.1	7.9	7.8
	1973-1981	1.7	4.9	5.9
	1963-1981	1.4	6.9	7.2
Utilities	1963-1973	5.5	10.0	9.5
	1973-1981	4.5	9.0	9.4
	1963-1981	5.8	9.5	9.4
Construction	1963-1973	0.3	7.0	6.6
	1973-1981	1.7	5.9	7.2
	1963-1981	-1.0	6.8	7.5
Services	1963-1973	3.8	6.6	6.4
	1973-1981	5.1	5.4	6.2
	1963-1981	3.5	6.4	6.7
GDP per capita	1963-1973	1.7	3.4	3.5
	1973-1981	2.3	2.3	2.2
	1963-1981	1.0	3.1	3.1
MVA per capita	1963-1973	2.2	5.1	5.1
	1973-1981	0.0	2.3	3.3
	1963-1981	-0.4	4.2	4.6

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the Office of Development Research and Policy Analysis and the UN Statistical Office, with estimates by the UNIDO Secretariat.

Table A-2. Production of selected industrial products, 1979-1984
(Physical units)

	1979	1980	1981	1982	1983	1984 ^{a/}
Harina de Pescado (000 tons)	410.6	453.2	465.6	555.6	520.7	544.8
Noodless (000 tons)	82.8	75.9	68.0	68.0	65.8	45.1
Beer (000.000 liters)	153.2	91.7	140.7	172.4	166.6	101.8
Beverages (000.000 liters)	394.7	405.0	460.6	364.9	334.5	199.0
Pressed Fiber Panels (000 m2)	12980.9	13454.1	13157.2	14211.2	13054.9	7814.5
Cellulose (000 tons)	555.9	609.5	601.7	542.4	637.8	442.5
Newsprints (000 tons)	147.7	131.6	130.5	123.1	154.5	112.1
Papers & Cardboard (000 tons)	113.6	84.7	81.7	39.6	80.7	54.9
Tires (000 units)	893.0	931.5	869.7	482.2	595.1	616.5
Flat glass (000 m2)	1924.3	1965.6	2181.5	474.7	2955.7	2085.6
Cement (000 tons)	1357.5	1576.1	1862.8	1131.6	1255.0	906.6
Iron & steel plates (000 tons)	161.5	261.5	271.8	102.1	163.3	155.6
Copperwire (000 tons)	25.0	19.0	20.1	15.8	13.3	9.8

Source: Banco Central de Chile: Boletín Mensual.

a/ January-August.

Table A-3. Index of industrial output, 1972-1983

(Base: 1969 = 100)

Groupings	X Value													
	Added	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	
311-312	Food products (A)	16.3	106.8	100.4	104.2	92.6	108.6	109.5	118.1	128.8	132.7	133.1	125.7	127.4
313	Beverages (A)	5.1	127.0	110.8	92.0	88.1	109.0	124.7	141.2	141.8	157.6	159.5	127.7	141.6
321	Textiles (A)	10.2	125.3	119.2	100.1	68.7	71.6	81.0	93.5	100.0	95.3	91.2	78.7	99.4
322	Clothing (A)	2.9	117.3	106.8	93.5	72.1	61.2	70.9	82.8	93.5	82.7	80.1	66.4	67.6
323	Leather industry except footwear (A)	1.1	96.2	88.1	85.8	76.9	69.9	79.4	83.3	70.2	69.6	60.7	53.4	49.8
324	Footwear (A)	1.8	119.6	117.1	98.1	64.2	70.0	70.8	82.5	77.9	75.4	70.0	55.7	60.5
331	Lumber industry (E)	3.0	148.8	132.2	109.3	63.3	98.7	128.7	154.3	191.8	204.7	188.2	167.5	158.5
332	Furniture and accessories	1.0	116.1	116.4	84.5	68.8	78.2	79.7	109.5	165.5	185.7	215.1	116.2	96.8
341	Paper fabrication (F)	2.1	97.9	90.9	97.3	89.7	99.9	106.1	105.5	114.1	123.8	124.9	105.3	121.0
342	Publishing and printing (F)	2.7	144.3	141.9	106.7	68.9	68.5	92.3	84.6	103.1	97.1	114.1	96.5	79.3
351	Chemical substances (D)	2.7	112.0	105.8	96.6	52.6	58.0	59.3	66.3	71.4	63.7	55.4	46.8	47.6
352	Other chemical products (A)	4.8	119.7	117.3	123.5	87.5	113.1	109.8	123.0	136.8	124.6	133.1	123.3	127.1
353	Oil refinery (D)	1.6	132.0	123.7	126.7	104.4	110.8	117.8	124.0	132.3	128.9	128.0	95.4	105.9
354	Petroleum by-products (D)	0.2	106.7	108.4	96.3	55.5	65.4	74.4	80.5	88.0	79.9	82.5	69.6	88.1
355	Rubber products (F)	1.6	132.3	124.4	120.4	44.6	76.0	98.8	82.4	96.0	101.6	95.7	60.5	92.8
356	Plastic products (F)	1.3	119.1	102.1	111.1	59.8	81.2	88.1	90.6	106.3	101.9	122.2	90.3	102.3
361	Rotary and china (E)	0.5	116.8	105.2	110.5	69.2	64.1	72.9	88.2	91.3	100.5	71.8	29.3	34.4
362	Glass (E)	0.8	119.3	136.4	109.8	54.3	101.5	132.3	146.4	149.4	161.6	150.1	90.9	119.5
369	Other mineral products, non-metal (E)	1.0	105.6	100.1	117.6	60.8	56.5	63.8	73.2	86.1	97.9	115.7	60.7	73.4
371	Basic steel and iron industry (D)	3.4	98.1	87.3	94.6	75.8	61.0	69.6	78.5	91.3	102.8	94.1	83.8	89.7
372	Non-ferrous metals basic industry (D)	13.1	118.8	122.8	151.6	137.1	166.9	177.1	180.2	189.8	192.0	195.1	190.4	-200.7
381	Metallic products (E)	4.3	120.2	114.3	112.2	67.7	68.1	79.3	105.8	94.6	103.7	93.1	68.2	70.8
382	Non-electric machinery (B)	3.2	122.4	113.8	120.5	79.9	67.8	58.7	50.5	41.8	35.4	44.4	29.3	23.7
3831-3839	Electric equipment (E)	1.0	115.3	116.8	155.1	70.8	80.9	96.5	103.8	217.9	210.3	229.7	127.6	112.0
3832	Electronic equipment (B)	2.0	146.3	106.9	142.4	118.5	74.7	83.3	113.5	90.2	143.4	195.5	79.9	57.5
3833	Household electrical appliances (B)	1.8	119.0	111.6	109.3	69.0	87.3	123.8	137.8	195.3	252.5	228.3	89.2	81.4
384	Transportation material (C)	6.2	105.9	71.6	72.8	53.6	49.6	61.5	91.9	91.6	109.7	94.6	59.5	42.7
385	Professional and scientific eq. (F)	0.2	94.4	70.9	97.0	56.8	51.7	66.2	50.3	39.9	47.4	53.5	33.0	41.3
390	Other manufacturing industries (F)	3.2	113.1	119.8	125.0	106.9	123.1	130.1	138.9	143.4	151.8	150.4	131.4	160.5
Industry Total		100.0	117.6	109.9	111.1	85.0	95.4	104.2	114.8	124.2	129.2	129.3	106.6	111.5
Sector A	Consumer goods - non-durables	44.8	116.6	110.0	104.3	84.6	96.2	101.6	112.4	119.7	120.1	119.0	106.3	115.7
Sector B	Consumer Goods - Durables	7.0	128.3	111.2	123.9	88.1	75.9	82.5	90.9	95.1	122.1	134.8	59.2	48.2
Sector C	Transportation Equipment	6.2	105.9	71.6	72.8	53.6	49.6	61.5	91.9	91.6	109.7	94.6	59.5	42.7
Sector D	Intermediate industrial goods	21.0	115.5	113.7	132.9	113.1	130.5	139.0	143.9	153.3	155.2	154.0	146.3	154.7
Sector E	Intermediate construction goods	12.5	123.5	117.8	113.5	65.1	77.5	93.4	114.5	135.4	145.7	142.8	99.4	99.3
Sector F	Other manufactured goods	8.5	120.5	114.4	105.6	67.4	81.8	96.4	92.3	106.2	108.0	121.2	93.4	102.6

Source: SICOPA.

Table A-4. Index of industrial sales, 1972-1983

(Base: 1969 = 100)

Groupings	Z Value Added	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
311-312 Food products (A)	16.3	108.9	98.9	101.8	94.5	101.1	101.6	115.6	124.0	135.6	131.6	126.4	124.8
313 Beverages (A)	5.1	123.5	107.8	85.3	89.9	102.4	121.5	132.9	136.8	150.9	146.3	125.1	135.9
321 Textiles (A)	10.2	118.0	97.0	89.8	66.6	67.8	76.5	88.6	92.6	93.3	91.2	77.2	90.2
322 Clothing (A)	2.9	115.4	102.3	93.9	69.5	60.1	68.8	77.7	90.5	78.7	79.3	67.4	76.8
323 Leather industry except footwear (A)	1.1	95.0	92.3	86.5	70.4	69.4	77.2	85.7	67.7	69.1	70.9	53.1	64.6
324 Footwear (A)	1.8	119.2	115.4	96.2	63.2	67.4	72.4	88.4	78.6	77.6	74.3	61.8	71.5
331 Lumber industry (E)	3.0	119.6	107.0	77.5	57.2	85.2	106.3	129.0	164.3	168.9	153.6	153.3	139.2
332 Furniture and accessories	1.0	125.0	113.2	83.0	69.8	85.5	77.6	101.0	183.7	209.7	222.8	128.6	110.8
341 Paper fabrication (F)	2.1	91.4	86.8	94.7	79.6	103.3	100.2	113.5	113.3	109.3	106.3	106.4	111.3
342 Publishing and printing (F)	2.7	149.0	138.4	101.5	64.9	64.9	87.1	79.4	94.5	93.8	111.7	93.6	75.0
351 Chemical substances (D)	2.7	117.2	97.9	104.9	54.2	56.5	86.6	66.6	70.2	65.6	60.2	48.2	69.8
352 Other chemical products (A)	4.8	126.9	113.0	115.9	95.8	94.0	114.3	121.2	130.3	123.1	129.0	121.1	122.5
353 Oil refinery (D)	1.6	130.2	121.5	126.9	108.0	108.8	113.5	123.1	127.8	129.1	118.7	103.6	106.6
354 Petroleum by-products (D)	0.2	100.8	106.6	107.7	62.6	66.0	73.2	79.9	84.4	88.8	84.4	71.5	88.2
355 Rubber products (F)	1.6	120.7	113.1	98.8	55.9	70.2	86.4	84.4	91.1	98.2	90.9	66.0	85.7
356 Plastic products (F)	1.3	117.9	97.5	108.0	55.3	75.6	81.6	92.4	100.3	112.0	127.1	107.2	122.1
361 Pottery and china (E)	0.5	107.6	106.3	113.4	69.7	65.5	78.7	80.4	93.8	98.4	66.9	35.5	39.5
362 Glass (E)	0.8	111.7	126.8	103.3	67.4	85.5	117.3	139.2	166.9	163.2	155.8	101.0	110.8
369 Other mineral products, non-metal (E)	1.9	102.0	97.5	109.4	57.0	55.4	68.4	71.4	80.6	91.3	107.9	62.7	73.4
371 Basic steel and iron industry (D)	3.4	104.8	97.1	94.8	69.1	62.0	68.8	75.8	92.1	97.6	95.5	84.6	93.0
372 Non-ferrous metals basic industry (D)	13.1	119.2	122.4	152.0	136.7	166.7	177.3	181.0	189.5	191.4	194.0	192.8	201.1
381 Metallic products (E)	4.3	130.0	122.3	120.3	70.2	73.3	85.7	107.6	102.3	109.7	101.5	76.9	79.0
382 Non-electric machinery (B)	3.2	129.4	116.0	120.9	85.9	74.2	61.2	55.1	49.0	44.6	46.6	36.7	27.3
3831-3839 Electric equipment (E)	1.0	159.8	154.9	224.4	110.5	102.7	117.2	141.5	365.3	349.0	371.9	211.2	182.1
3832 Electronic equipment (B)	2.0	135.0	99.0	108.4	109.1	65.0	64.4	99.6	86.7	125.8	189.7	84.3	59.1
3833 Household electrical appliances (B)	1.8	121.2	107.1	108.0	84.0	85.0	127.4	150.4	193.6	263.8	211.5	118.7	99.2
384 Transportation material (C)	6.2	90.4	70.8	75.5	53.8	47.3	54.8	86.0	84.2	95.8	82.0	59.5	68.4
385 Professional and scientific eq. (F)	0.2	101.6	80.8	96.0	60.3	56.0	71.4	51.8	36.7	52.5	54.0	39.8	44.1
390 Other manufacturing industries (F)	3.2	113.2	120.5	123.1	111.3	123.6	131.1	140.7	147.0	151.1	149.2	135.3	137.4
Industry Total	100.0	116.7	106.1	107.7	85.9	91.9	101.0	112.8	122.8	128.6	127.9	109.3	110.9
Sector A Consumer goods - non-durables	44.8	115.8	103.5	99.4	86.0	89.5	97.4	109.2	114.8	119.5	117.2	106.1	110.8
Sector B Consumer Goods - Durables	7.0	128.9	108.9	114.0	92.0	74.3	79.2	92.4	97.0	124.2	129.6	71.4	54.9
Sector C Transportation Equipment	6.2	90.4	70.8	75.5	53.8	47.3	54.8	86.0	84.2	95.8	82.0	59.5	68.4
Sector D Intermediate industrial goods	21.0	117.3	113.4	134.3	112.3	130.2	138.7	143.9	152.7	154.2	154.1	148.8	155.9
Sector E Intermediate construction goods	12.5	123.2	116.6	112.4	67.8	76.6	91.1	110.4	144.9	151.2	148.4	107.8	103.8
Sector F Other manufactured goods	8.5	118.5	109.5	98.4	64.8	79.5	96.1	94.4	101.9	106.0	115.1	96.0	99.5

Source: World Bank, Chile: Economic Memorandum, September 24, 1984.

Table A-5. Selected industrial indicators, by branch of manufacturing, 1973 and 1980
(at current prices)

(Currency = Peso)

Description (ISIC)	Value added per employee		Wages and salaries per employee		Share of value added in gross output (percentage)		Share of wages and salaries in value added (percentage)	
	1973	1980	1973	1980	1973	1980	1973	1980
	TOTAL MANUFACTURING(300)	1302	1208656	212	222369	70.8	46.2	16.3	18.4
Food products(311)	1334	1027650	194	202929	59.3	42.6	14.5	19.7
Beverages(313)	1065	1732455	151	218683	71.7	60.0	14.2	12.6
Tobacco(314)	6758	9727273	333	483636	94.1	81.0	4.9	5.0
Textiles(321)	971	520240	219	162278	72.6	53.4	22.5	31.2
Wearing apparel,except footwear(322)	749	477959	161	147942	67.1	46.7	21.5	31.0
Leather products(323)	1860	690184	244	181595	57.3	38.6	13.1	26.3
Footwear,except rubber or plastic(324)	730	663167	185	133563	51.5	59.2	25.4	20.1
Wood products,except furniture(331)	591	531601	122	131046	70.1	57.6	20.7	24.7
Furniture,except metal(332)	498	734127	137	142063	80.4	61.9	27.6	19.4
Paper and products(341)	1529	2335216	236	331894	68.8	58.9	15.5	14.2
Printing and publishing(342)	1006	1152592	218	288243	75.0	66.3	21.7	25.0
Industrial chemicals(351)	2021	1136100	228	331950	82.7	37.6	11.3	29.2
Other chemicals(352)	1752	1503800	295	334291	77.6	61.1	16.9	22.2
Petroleum refineries(353)	4192	5256571	236	443429	47.6	13.7	5.6	8.4
Misc. petroleum and coal products(354)	1852	3327500	296	215000	21.9	49.2	16.0	6.5
Rubber products(355)	1078	862139	223	233237	50.3	49.3	20.7	27.1
Plastic products(356)	984	667292	223	210188	48.7	50.3	22.7	31.5
Pottery, china, earthenware(361)	928	339333	245	144000	84.0	66.0	26.4	42.4
Glass and products(362)	784	944059	173	200990	67.4	64.6	22.0	21.3
Other non-metallic mineral prod.(369)	675	1514493	210	276812	63.1	60.1	31.1	18.3
Iron and steel(371)	1314	1165633	256	240074	88.5	37.2	19.5	20.6
Non-ferrous metals(372)	4688	5304615	302	327582	83.7	51.2	6.4	6.2
Fabricated metal products(381)	918	640453	226	190806	70.5	53.3	24.6	29.8
Machinery,except electrical(382)	753	594321	206	301358	71.0	48.4	27.4	50.7
Machinery electric(383)	1147	807513	207	313238	73.7	45.0	18.0	38.8
Transport equipment(384)	1788	903977	223	213494	88.5	33.3	12.5	23.6
Professional & scientific equipm.(385)	944	526667	204	195556	68.0	47.9	21.6	37.1
Other manufactured products(390)	846	756818	154	211364	76.5	65.1	18.2	27.9

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

Note: TOTAL MANUFACTURING is the sum of the reported ISICs and does not necessarily correspond to ISIC 300 total.

Table A-6. Shares of exports and imports classified according to level of processing 1970 and 1981 and trend growth rates 1970-1975 and 1975-1981

CLASSES	E X P O R T S				I M P O R T S			
	CLASS SHARE OF TOTAL		CLASS GROWTH RATE		CLASS SHARE OF TOTAL		CLASS GROWTH RATE	
	(PERCENTAGE) 1970	(PERCENTAGE) 1981	(PERCENTAGE) 1970-1975	(PERCENTAGE) 1975-1981	(PERCENTAGE) 1970	(PERCENTAGE) 1981	(PERCENTAGE) 1970-1975	(PERCENTAGE) 1975-1981
A : Non-processed goods for further processing	11.35	19.95	13.25	26.08	14.00	17.63	35.50	19.38
B : Processed goods for further processing	82.43	60.72	11.95	16.61	12.91	10.74	15.22	26.15
C : Non-processed goods for final use	2.23	8.70	19.17	27.17	4.26	2.21	1.98	31.82
D : Processed goods for final use	3.99	10.62	41.49	10.15	68.83	69.42	7.58	35.02
Sum of classes: A+B+C+D in 1000 current US\$		1233611		3744828		921309		6277185
Total trade SITC 0-9 in 1000 current US\$		1233611		3744828		930085		6277185

Source: UNIDO data base; Information supplied by the United Nations Statistical Office, with estimates by the UNIDO Secretariat.

Note: Calculations are based on current US dollar prices. Sum of classes and total trade figures should be identical. Discrepancies or zero values are due to lack of countrys' trade reporting in general, but especially at the 3-, 4- and 5-digit SITC level.

Table A-7. Product mix of traded manufactured goods, 1973, 1980 and 1981 */

SITC DESCRIPTION OF TRADE GOODS	E X P O R T S				I M P O R T S			
	1973	1980	1981	1981	1973	1980	1981	1981
	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)	PERCENT IN TOTAL	PERCENT MANUFACTURES	PERCENT MANUFACTURES	(1000 US \$)
01 Meat and meat preparations	...	0.289	0.422	11335	3.568	0.505	0.591	29122
02 Dairy products and eggs	...	0.066	0.008	219	1.685	1.170	1.004	49472
032 Fish n.e.s. and fish preparations	0.430	0.663	0.946	25429	0.043	0.125	0.111	5469
0422 Rice,glazed or polished not otherwise worked	...	...	...	...	0.141	0.394	0.227	11183
046 Meal and flour of wheat or of meslin	...	...	0.000	11	0.215	0.049	0.035	1711
047 Meal and flour of cereals,except above	...	...	...	...	0.002	0.000	0.000	19
048 Cereals preparat. & starch of fruits & vegetab.	0.000	0.548	0.624	16762	0.092	0.068	0.111	5486
052 Dried fruit	0.117	0.210	0.303	8135	0.000	0.019	0.005	260
053 Fruit,preserved and fruit preparations	0.026	0.367	0.524	14086	0.051	0.209	0.138	6818
055 Vegetables,roots & tubers,preserved or prepared	0.079	0.154	0.206	5524	0.089	0.022	0.031	1540
06 Sugar,sugar preparations and honey	0.067	0.813	0.484	13011	6.719	5.837	2.542	125228
0713 Coffee extracts,essences,concentrates & similar	...	0.008	...	...	0.014	0.051	0.162	7991
0722 Cocoa powder,unsweetened	...	...	...	...	0.049	0.037	0.014	706
0723 Cocoa butter and cocoa paste	...	...	...	...	0.114	0.082	0.076	3721
073 Chocolate and related food preparations	...	0.002	0.000	10	0.008	0.156	0.206	10136
074 Tea and mate	...	0.000	0.000	13	1.063	0.860	0.498	24544
081 Feeding-stuff for animals	1.326	6.761	7.997	214888	0.968	0.375	0.347	17083
09 Miscellaneous food preparations	...	0.004	0.009	243	0.655	0.412	0.472	23250
11 Beverages	0.287	0.618	0.626	16815	0.019	0.635	0.573	28223
122 Tobacco manufactures	...	...	0.005	121	0.001	0.244	0.250	12336
2219 Flour and meal of oil seeds,nuts,kernels	...	...	...	...	...	0.000	0.000	1
231 Crude rubber,synth. & reclaimed(excl.SITC 2311)	...	0.001	...	...	0.480	0.291	0.255	12577
243 Wood,shaped or simply worked	1.301	3.774	3.332	89529	0.009	0.021	0.025	1256
251 Pulp and waste paper	2.024	5.475	6.823	183322	0.291	0.061	0.032	1595
2626 Wool shoddy	...	...	...	...	0.000	0.000	0.000	1
2627 Wool or other animal hair,carded or combed	...	...	...	...	0.050	0.005	0.020	1009
2628 Wool tops	...	...	...	...	0.618	0.135	0.074	3653
2629 Waste of wool and other animal hair n.e.s.	...	...	...	...	...	0.001	0.000	18
263 Cotton	...	0.000	0.000	0	2.732	0.679	0.550	27104
266 Synthetic and regenerated(artificial) fibres	...	0.003	...	...	0.550	0.594	0.548	26989
267 Waste materials from textile fabrics(incl.rags)	...	0.000	...	...	0.393	0.054	0.054	2677
332 Petroleum products	0.000	1.469	2.479	66617	2.137	1.346	2.948	145262
4 Animal and vegetable oils and fats	0.014	1.022	1.119	30060	2.214	1.336	1.135	55944
411 Animal oils and fats	...	0.979	1.066	28643	0.181	0.101	0.064	3131
421 Fixed vegetable oils,soft(incl.SITC 422)	...	0.001	...	...	1.955	1.109	0.994	48998
431 Animal and vegetable oils and fats processed	0.000	0.042	0.053	1417	0.078	0.126	0.077	3815

Table A-7. (Continued)

SITC DESCRIPTION OF TRADE GOODS	E X P O R T S				I M P O R T S			
	1973	1980	1981	1981	1973	1980	1981	1981
	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 \$)
5 Chemicals	2.395	5.086	3.104	83403	16.359	12.230	10.824	533342
51 Chemicals elements and compounds	1.614	3.691	1.766	47442	4.627	3.571	2.991	147372
52 Tar and chemicals from coal,petroleum,nat. gas	...	0.000	0.000	10	0.011	0.014	0.009	442
53 Dyeing,tanning and colouring materials	0.021	0.022	0.034	926	1.167	0.784	0.746	36735
54 Medicinal and pharmaceutical products	0.000	0.008	0.015	390	2.361	0.950	0.858	42297
55 Essential oils and perfume materials	0.000	0.026	0.009	248	0.542	0.995	1.019	50195
56 Fertilizers,manufactured	0.604	0.489	0.605	16256	3.274	1.788	1.249	61540
57 Explosives and pyrotechnic products	0.010	0.013	0.017	450	0.076	0.150	0.111	5472
58 Plastic materials,regenerated cellul. & resins	0.035	0.713	0.586	15749	1.676	1.967	2.073	102134
59 Chemical materials and products n.e.s.	0.110	0.125	0.072	1931	2.628	2.011	1.769	87153
6 Manufactured goods classified by material	91.329	69.910	67.072	1802238	14.003	15.975	16.620	818897
61 Leather manufactured n.e.s. & dressed fur skins	...	0.064	0.048	1299	0.461	0.305	0.253	12445
62 Rubber manufactures n.e.s.	0.000	0.307	0.377	10122	1.490	1.123	1.279	63028
63 Wood and cork manufactures(excl.furniture)	0.003	0.095	0.091	2433	0.064	0.123	0.257	12664
64 Paper,paper board and manufactures thereof	0.877	1.529	1.717	46137	1.012	1.687	1.753	86371
65 Textile yarn,fabrics,made-up articles	0.001	0.171	0.167	4490	2.282	4.261	5.040	248344
66 Non-metallic mineral manufactures,n.e.s.	0.017	0.218	0.114	3054	1.081	1.673	1.969	97032
67 Iron and steel	0.226	0.544	0.443	11905	3.283	2.496	1.953	96213
68 Non-ferrous metals	89.936	66.211	63.345	1702077	1.214	1.280	0.937	46154
69 Manufactures of metal,n.e.s.	0.270	0.772	0.771	20720	3.115	3.030	3.179	156646
7 Machinery and transport equipment	0.472	2.469	3.570	95915	40.384	46.477	47.055	2318481
71 Machinery,other than electric	0.103	0.420	0.423	11375	19.559	16.369	15.451	761275
72 Electrical machinery,apparatus and appliances	0.184	0.343	0.326	8765	6.895	11.476	10.418	513303
73 Transport equipment	0.185	1.706	2.820	75775	13.929	18.632	21.187	1043903
8 Miscellaneous manufactured articles	0.132	0.289	0.347	9318	4.283	9.544	12.463	614069
81 Sanitary,plumbing,heating & lightning fixtures	0.000	0.001	0.001	39	0.131	0.372	0.592	29182
82 Furniture	0.000	0.035	0.011	292	0.057	0.226	0.426	21013
83 Travel goods,handbags and similar articles	0.000	0.000	0.003	69	0.011	0.181	0.281	13852
84 Clothing	0.000	0.038	0.007	200	0.291	1.873	3.163	155851
85 Footwear	0.020	0.009	0.028	749	0.073	0.510	1.065	52484
86 Professional,scient. & controll. instruments	0.010	0.018	0.054	1444	1.829	2.362	2.591	127675
89 Miscellaneous manufactured articles,n.e.s.	0.101	0.187	0.243	6525	1.892	4.020	4.344	214013
		1973	1980	1981		1973	1980	1981
TOTAL MANUFACTURES		1044582	3610329	2687004		882089	3678138	4927173
TOTAL: SITC 5-9 LESS 68 a/		45882	416755	288796		651116	3050897	4238635
TOTAL TRADED GOODS: SITC 0-9		1249427	4583915	3744828		1102376	5123135	6277185

Note: Data and SITC descriptions refer to SITC revision 1

a/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found.

It covers only items recognized as exclusively manufactured goods, i.e. with a high level of manufacturing content.

Source: UNIDO data base; Information supplied by the United Nations Statistical Office.

Table A-8. Origin of imports of manufactures by branch, 1981^{*/}

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
01 Meat and meat preparations	29122	57.74	41.33	18.52	11.64	0.00	0.37
02 Dairy products and eggs	49472	5.25	93.90	1.73	86.85	0.00	0.16
032 Fish n.e.s. and fish preparations	5469	82.05	14.93	1.27	2.56	0.01	0.00
0422 Rice,glazed or polished not otherwise worked	11183	50.52	32.32	32.32	0.00	0.00	0.00
046 Meal and flour of wheat or of meslin	1711	35.84	28.94	0.06	28.86	0.01	0.00
047 Meal and flour of cereals,except above	19	45.65	54.35	54.34	0.00	0.02	0.00
048 Cereals preparat. & starch of fruits & vegetab.	5486	77.30	22.33	6.72	12.51	0.08	0.00
052 Dried fruit	260	2.40	97.60	81.01	0.00	0.00	0.00
053 Fruit,preserved and fruit preparations	6818	54.11	43.69	11.06	5.80	0.01	0.00
055 Vegetables,roots & tubers,preserved or prepared	1540	15.12	80.19	42.84	4.67	0.37	0.00
06 Sugar,sugar preparations and honey	125228	56.86	42.09	36.91	2.47	0.01	0.01
0713 Coffee extracts,essences,concentrates & similar	7991	84.47	15.53	0.27	0.30	0.00	0.00
0722 Cocoa powder,unsweetened	706	82.19	17.81	5.29	11.40	0.00	0.00
0723 Cocoa butter and cocoa paste	3721	99.39	0.60	0.15	0.23	0.00	0.00
073 Chocolate and related food preparations	10136	23.37	70.89	24.97	25.10	0.00	0.00
074 Tea and mate	24544	97.18	1.53	0.17	1.24	0.00	0.00
081 Feeding-stuff for animals	17083	76.20	22.26	3.35	16.94	0.02	0.90
09 Miscellaneous food preparations	23250	24.54	75.20	58.91	11.25	0.60	0.02
11 Beverages	28223	13.83	67.22	10.96	47.02	0.08	0.16
122 Tobacco manufactures	12336	3.20	32.07	29.93	1.58	0.05	0.00
2219 Flour and meal of oil seeds,nuts,kernels	1	99.34	0.66	0.00	0.00	0.66	0.00
231 Crude rubber,synth. & reclaimed(excl.SITC 2311)	12577	12.88	86.73	40.91	35.50	1.43	0.00
243 Wood,shaped or simply worked	1256	38.26	61.74	61.69	0.00	0.04	0.00
251 Pulp and waste paper	1595	0.00	100.00	99.98	0.01	0.00	0.00
2626 Wool shoddy	1	0.00	100.00	100.00	0.00	0.00	0.00
2627 Wool or other animal hair,carded or combed	1009	25.64	74.36	0.00	65.94	0.00	0.00
2628 Wool tops	3653	71.63	28.37	0.05	0.09	0.00	0.00
2629 Waste of wool and other animal hair n.e.s.	18	0.00	100.00	0.00	100.00	0.00	0.00
263 Cotton	27104	90.75	5.72	5.11	0.52	0.05	3.54
266 Synthetic and regenerated(artificial) fibres	26989	28.86	71.13	29.83	29.59	3.39	0.00
267 Waste materials from textile fabrics(incl.rags)	2677	0.45	99.12	97.16	1.72	0.19	0.00
332 Petroleum products	145262	62.09	34.68	9.17	22.33	1.39	1.71
4 Animal and vegetable oils and fats	55944	62.84	37.06	31.46	3.90	0.02	0.00
411 Animal oils and fats	3131	27.54	72.46	47.11	8.62	0.34	0.00
421 Fixed vegetable oils,soft(incl.SITC 422)	48998	68.35	31.54	30.62	0.37	0.00	0.00
431 Animal and vegetable oils and fats processed	3815	21.15	78.85	29.34	45.32	0.00	0.00

Table A-8. (Continued)

SITC DESCRIPTION OF TRADE GOODS	WORLD	DEVELOPING	DEVELOPED MARKET ECONOMIES			CENTRALLY	
	TOTAL (1000 US\$)	COUNTRIES (PERCENT)	TOTAL (PERCENT)	USA (PERCENT)	ECC (PERCENT)	JAPAN (PERCENT)	PLANNED DEVELOPED COUNTRIES (PERCENT)
5 Chemicals	533342	13.67	84.33	42.38	29.73	1.51	0.44
51 Chemicals elements and compounds	147372	14.71	83.44	37.30	32.91	1.66	1.41
52 Tar and chemicals from coal, petroleum, nat. gas	442	62.28	37.72	23.84	12.59	0.01	0.00
53 Dyeing, tanning and colouring materials	36735	16.36	81.52	27.50	38.10	1.63	0.09
54 Medicinal and pharmaceutical products	42297	18.27	80.70	21.22	38.29	1.60	0.11
55 Essential oils and perfume materials	50195	26.14	70.89	32.13	30.00	0.85	0.04
56 Fertilizers, manufactured	61540	6.07	91.11	71.80	14.21	0.00	0.00
57 Explosives and pyrotechnic products	5472	7.40	91.93	31.01	34.97	0.01	0.00
58 Plastic materials, regenerated cellul. & resins	102134	11.18	87.97	37.28	34.36	2.55	0.08
59 Chemical materials and products n.e.s.	87153	9.78	87.25	59.42	21.79	1.48	0.08
6 Manufactured goods classified by material	818897	30.38	64.01	22.97	17.13	10.45	0.36
61 Leather manufactured n.e.s. & dressed fur skins	12445	75.73	21.85	4.15	11.97	1.78	0.45
62 Rubber manufactures n.e.s.	63028	15.49	73.79	27.97	13.97	23.99	0.11
63 Wood and cork manufactures (excl. furniture)	12664	26.08	59.71	22.09	6.58	0.67	0.01
64 Paper, paper board and manufactures thereof	86371	33.43	64.78	28.03	14.42	5.09	0.28
65 Textile yarn, fabrics, made-up articles	248344	35.09	55.87	21.72	11.24	12.42	0.21
66 Non-metallic mineral manufactures, n.e.s.	97032	35.27	61.50	21.83	23.88	4.32	0.60
67 Iron and steel	96213	21.91	76.90	18.74	22.86	18.38	0.28
68 Non-ferrous metals	46154	34.88	64.86	24.17	18.90	1.87	0.00
69 Manufactures of metal, n.e.s.	156646	24.78	69.65	24.67	22.26	7.78	0.76
7 Machinery and transport equipment	2318481	17.83	74.75	23.62	18.64	23.29	0.15
71 Machinery, other than electric	761275	11.76	85.02	40.96	26.56	6.72	0.29
72 Electrical machinery, apparatus and appliances	513303	11.57	69.65	22.73	16.84	21.49	0.13
73 Transport equipment	1043903	25.33	69.78	11.41	13.74	36.26	0.07
8 Miscellaneous manufactured articles	614069	26.23	58.53	20.37	17.95	10.32	0.19
81 Sanitary, plumbing, heating & lightning fixtures	29182	13.07	85.00	19.11	22.35	0.94	0.26
82 Furniture	21013	31.71	61.14	33.32	12.39	4.74	0.43
83 Travel goods, handbags and similar articles	13852	20.33	32.43	9.64	16.05	3.75	0.19
84 Clothing	155851	43.88	34.35	14.91	13.32	0.57	0.16
85 Footwear	52484	54.94	18.79	6.31	8.87	0.11	0.09
86 Professional, scient. & contr. instruments	127675	14.23	82.74	26.69	24.39	24.86	0.30
89 Miscellaneous manufactured articles, n.e.s.	214013	15.15	69.28	23.61	19.76	13.51	0.15
TOTAL manufactures	4927173	24.94	68.01	24.74	19.53	14.21	0.28
TOTAL: SITC 5-8 LESS 68 a/	4238635	20.76	71.64	25.38	19.64	16.42	0.24
TOTAL traded goods: SITC 0-9	6277185	33.16	61.31	24.38	16.70	11.70	0.22

Note: Data and SITC descriptions refer to SITC revision 1

a/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found.

It covers only items recognized as exclusively manufactured goods, i.e. with a high level of manufacturing content.

Source: UNIDO data base; Information supplied by the United Nations Statistical Office.

Note: Percentages may not add to 100.0 due to the fact that countries report trade to/from "unspecified areas".

Table A-9. Destination of exports of manufactures by branch, 1981*/

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
01 Meat and meat preparations	11335	22.51	74.99	0.16	33.81	39.38	0.00
02 Dairy products and eggs	219	100.00	0.00	0.00	0.00	0.00	0.00
032 Fish n.e.s. and fish preparations	25429	8.77	85.60	17.36	15.93	5.05	0.00
046 Meal and flour of wheat or of meslin	11	100.00	0.00	0.00	0.00	0.00	0.00
048 Cereals preparat. & starch of fruits & vegetab.	16762	100.00	0.00	0.00	0.00	0.00	0.00
052 Dried fruit	8135	78.35	21.65	0.49	15.72	0.00	0.00
053 Fruit,preserved and fruit preparations	14086	75.48	24.52	11.24	4.73	0.90	0.00
055 Vegetables,roots & tubers,preserved or prepared	5524	34.84	65.16	42.74	22.08	0.00	0.00
06 Sugar,sugar preparations and honey	13011	93.82	6.18	2.47	3.59	0.00	0.00
073 Chocolate and related food preparations	10	100.00	0.00	0.00	0.00	0.00	0.00
074 Tea and mate	13	100.00	0.00	0.00	0.00	0.00	0.00
081 Feeding-stuff for animals	214888	23.15	66.95	4.16	49.67	8.82	2.51
09 Miscellaneous food preparations	243	85.63	14.37	0.00	14.37	0.00	0.00
11 Beverages	16815	78.81	21.19	11.04	3.07	4.82	0.00
122 Tobacco manufactures	121	100.00	0.00	0.00	0.00	0.00	0.00
243 Wood,shaped or simply worked	89529	89.37	7.51	0.95	6.36	0.02	0.00
251 Pulp and waste paper	183322	67.59	31.08	0.03	27.82	0.70	0.00
263 Cotton	0	0.00	100.00	0.00	100.00	0.00	0.00
332 Petroleum products	66617	6.49	1.64	0.01	0.65	0.69	0.00
4 Animal and vegetable oils and fats	30060	62.34	36.96	2.01	33.28	1.67	0.00
411 Animal oils and fats	28643	65.22	34.05	0.00	34.00	0.05	0.00
431 Animal and vegetable oils and fats processed	1417	4.16	95.84	42.54	18.78	34.52	0.00

Table A-9. (Continued)

SITC DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US\$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES				CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
			TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	
5 Chemicals	83403	47.69	52.30	16.60	27.19	4.67	0.00
51 Chemicals elements and compounds	47442	27.05	72.93	17.28	47.17	6.65	0.00
52 Tar and chemicals from coal, petroleum, nat. gas	10	100.00	0.00	0.00	0.00	0.00	0.00
53 Dyeing, tanning and colouring materials	926	99.59	0.41	0.00	0.41	0.00	0.00
54 Medicinal and pharmaceutical products	390	63.58	36.42	0.00	8.53	4.26	0.00
55 Essential oils and perfume materials	248	54.08	45.92	0.81	3.80	0.00	0.00
56 Fertilizers, manufactured	16256	62.80	37.20	33.80	1.48	1.92	0.00
57 Explosives and pyrotechnic products	450	100.00	0.00	0.00	0.00	0.00	0.00
58 Plastic materials, regenerated cellul. & resins	15749	86.53	13.47	0.06	0.00	0.00	0.00
59 Chemical materials and products n.e.s.	1931	69.40	30.60	7.11	0.49	21.22	0.00
6 Manufactured goods classified by material	1802238	23.55	74.70	20.27	42.07	5.04	0.42
61 Leather manufactured n.e.s. & dressed fur skins	1299	4.24	95.76	84.11	9.42	0.00	0.00
62 Rubber manufactures n.e.s.	10122	95.61	4.33	0.12	2.08	0.00	0.00
63 Wood and cork manufactures (excl. furniture)	2433	60.89	39.11	28.66	8.29	0.00	0.00
64 Paper, paper board and manufactures thereof	46137	86.49	12.59	6.57	4.82	0.05	0.00
65 Textile yarn, fabrics, made-up articles	4490	65.37	34.63	2.85	27.77	3.30	0.00
66 Non-metallic mineral manufactures, n.e.s.	3054	59.86	39.08	14.25	23.02	0.00	0.00
67 Iron and steel	11905	33.34	66.66	18.66	27.01	5.69	0.00
68 Non-ferrous metals	1702077	20.42	77.75	20.95	44.04	5.29	0.44
69 Manufactures of metal, n.e.s.	20720	81.69	18.27	5.13	3.19	0.19	0.00
7 Machinery and transport equipment	95915	84.40	14.37	7.42	5.17	1.01	0.00
71 Machinery, other than electric	11375	62.67	37.22	21.52	9.01	1.17	0.00
72 Electrical machinery, apparatus and appliances	8765	70.85	29.09	26.12	1.58	0.04	0.00
73 Transport equipment	75775	89.23	9.24	3.14	5.00	1.10	0.00
8 Miscellaneous manufactured articles	9318	88.72	11.23	6.46	2.44	0.16	0.00
81 Sanitary, plumbing, heating & lightning fixtures	39	40.93	59.07	59.07	0.00	0.00	0.00
82 Furniture	292	27.30	72.70	68.39	4.31	0.00	0.00
83 Travel goods, handbags and similar articles	69	12.65	87.35	87.35	0.00	0.00	0.00
84 Clothing	200	59.53	40.47	1.80	18.84	7.06	0.00
85 Footwear	749	94.78	5.22	0.20	5.02	0.00	0.00
86 Professional, scient. & controll. instruments	1444	93.85	5.86	4.69	0.85	0.00	0.00
89 Miscellaneous manufactured articles, n.e.s.	6525	91.63	8.37	3.76	1.95	0.01	0.00
TOTAL manufactures	2687004	33.37	62.08	15.18	36.17	4.60	0.48
TOTAL: SITC 5-8 LESS 68 a/	288796	71.25	28.17	10.47	12.62	2.00	0.00
TOTAL traded goods: SITC 0-9	3744828	29.26	66.47	14.45	33.01	10.92	0.46

Note: Data and SITC descriptions refer to SITC revision 1

a/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.

a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found.

It covers only items recognized as exclusively manufactured goods, i.e. with a high level of manufacturing content.

Source: UNIDO data base; information supplied by the United Nations Statistical Office.

Note: Percentages may not add to 100.0 due to the fact that countries report trade to/from "unspecified areas".

Table A-10. Import and export quantum and price indexes, 1977-1983

(1977 = 100)

	Quantum							Price						
	1977	1978	1979	1980	1981	1982	1983	1977	1978	1979	1980	1981	1982	1983
Exports														
Mining	100.0	97.6	103.1	111.4	111.5	127.6	121.3	100.0	109.0	162.3	177.3	144.5	126.7	
Agriculture and fishery	100.0	132.2	145.7	153.8	161.0	183.4	219.4	100.0	0.9	113.8	138.5	142.2	128.1	
Industrials	100.0	133.0	162.6	171.3	150.6	188.0	210.3	100.0	0.9	122.0	145.0	135.4	100.0	
Group Total	100.0	110.2	123.3	131.6	126.3	148.9	154.1	100.0	102.6	144.2	162.0	141.0	117.1	139.2
Imports														
Consumer goods	100.0	109.7	142.7	176.1	260.4	154.3	101.9	100.0	103.2	113.4	132.3	139.1	116.8	96.4
Capital goods	100.0	117.6	150.0	141.7	179.0	83.2	49.0	100.0	110.3	116.3	138.0	138.6	139.3	134.4
Intermediate goods	100.0	123.7	136.2	148.3	166.7	111.5	114.7	100.0	102.4	131.9	141.9	139.0	129.3	120.0
Group Total	100.0	119.4	140.5	153.0	189.7	115.0	98.2	100.0	104.2	124.3	138.8	138.9	127.1	116.2

Source: Banco Central de Chile.

Table 11. Commercial copper production by product, 1970-1983
(Thousands of Fine Metric Tons)

Years/Months	Refined	Blister	In Bulk	Total
1970	404.5 ^{a/}	242.7	44.4 ^{b/}	691.6
1971	398.5	220.5	89.3	708.3
1972	461.4	169.2	86.2	716.8
1973	418.8	175.1	145.5	735.4
1974	538.1	186.2	177.8	902.1
1975	535.2	189.2	103.9	828.3
1976	632.0	224.3	148.9	1,005.2
1977	675.7	212.3	166.2	1,054.2
1978	748.2	178.4	107.6	1,034.2
1979	780.1	168.8	113.8	1,062.7
1980	810.7	142.4	114.8	1,067.9
1981	775.6	178.2	127.3	1,081.1
1982	851.6	195.2	193.9	1,240.7
1983 January	66.9	14.9	11.1	92.9
February	68.7	16.8	15.6	101.1
March	70.0	18.0	11.8	99.8
April	70.6	20.1	8.9	99.6
May	69.6	20.1	17.8	107.5
June	67.4	20.2	9.5	97.1
July	69.6	17.8	20.2	107.6
August	...	...	...	...

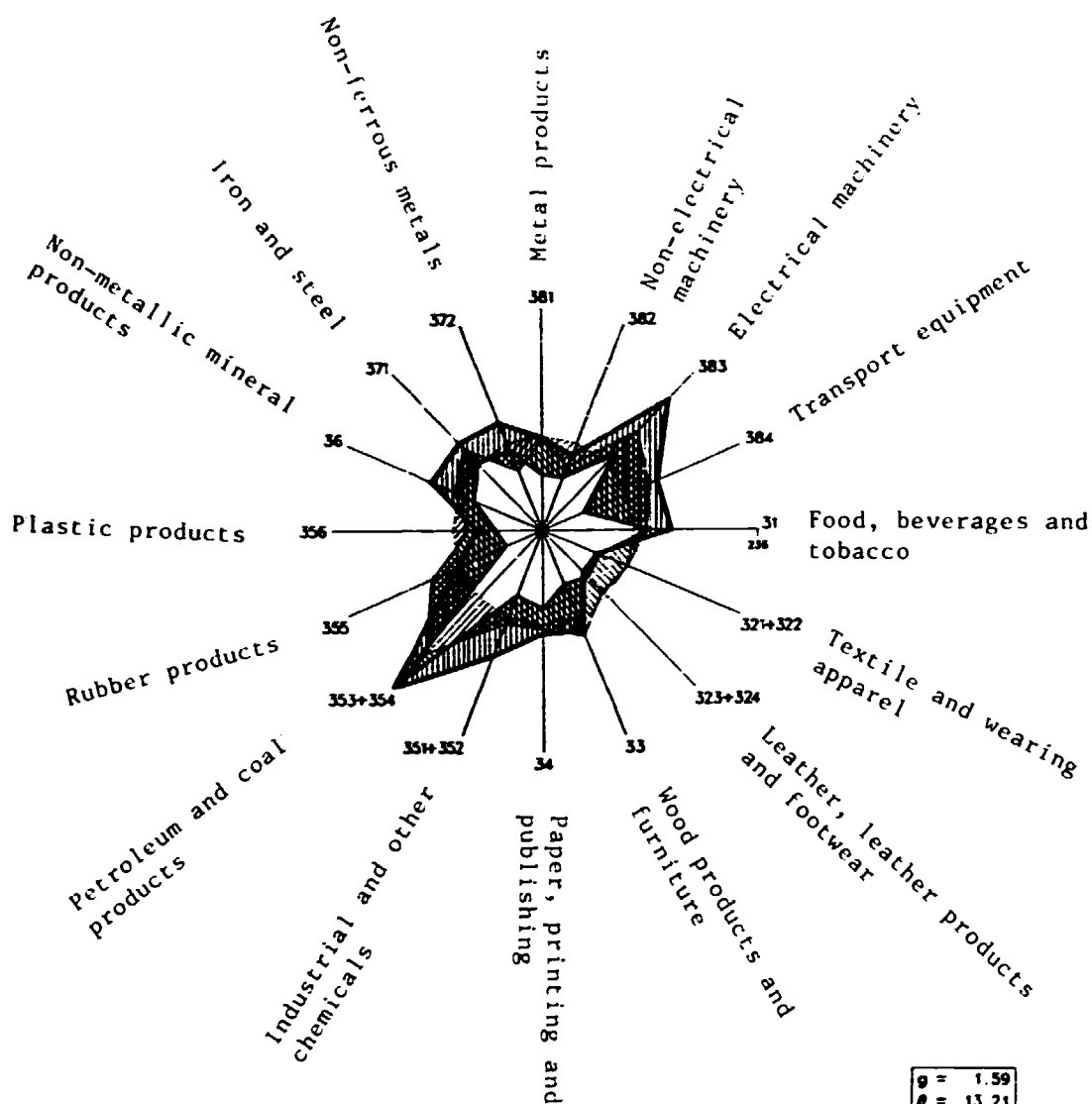
Source: Chilean Copper Commission.

a/ Includes electrolyte rods, cathodes and refined copper.

b/ Includes cement, concentrated, slag and minerals and copper as co-product of gold and silver.

Table A-12. INDUSTRIAL STRUCTURAL CHANGE, 1960-1980

(Index of value added: 1965=100)



$g = 1.59$
 $\theta = 13.21$

Key:

Constant prices for 1975

g Average annual growth rate 1965-1980 (in %)

θ Index of structural change 1965-1980

▨ 1975-1980
 ▧ 1970-1975
 ▩ 1965-1970

The measure for structural change is defined as:

$$\cos \theta = \frac{\sum_i s_i(t) \cdot s_i(t-1)}{\sqrt{(\sum_i s_i(t)^2) \cdot (\sum_i s_i(t-1)^2)}}$$

where $s_i(t)$ is the share of the i -th branch of value added in total value added in the year t .

The value θ can be interpreted as the angle between the two vectors $s_i(t-1)$ and $s_i(t)$ measured in degrees.

The theoretical maximum value of θ is 90 degrees.

APPENDIX B

The approved and/or operational technical co-operation projects of UNIDO

Republic of CHILE

Backstopping Responsibility (Spec. Act. Code)	Project Number	Project Title
IO/AGRO (31.7.A)	SI/CHI/84/803	Development of modular wooden bridges
IO/MET (31.8.B)	SI/CHI/82/802	Technical assistance to the Mineral and Metallurgical Research Centre (CMM)
IO/MET (31.8.B)	DP/CHI/84/002	Control of biological processes in the bacteriological leaching of copper from Chilean ores
IO/MET (31.8.B)	DP/CHI/84/010	Manejo y recuperacion de residuos minerales
IO/MET (31.8.B)	SI/CHI/84/802	Assistance in mineral beneficiation - bacterial leaching of copper ores
IO/ENG (31.9.C)	DP/CHI/84/008	Optimizacion de los sistemas de energia electrica
IO/CHEM (32.1.B)	DP/CHI/84/009	Comportamiento de caminos en Chile - estudio de parámetros de diseño, construcción y mantención de pavimentos asfálticos
IO/CHEM (32.1.I)	UC/CHI/83/192	Assistance to the Institute Forestal in industrial utilization of woodwaste
IO/CHEM (32.1.I)	UC/CHI/84/075	Industrial production of oleoresins from pine - preliminary assistance
IO/CHEM (32.1.K)	SI/CHI/84/801	Advisory assistance to the construction and housing industries

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

** Total allotment \$1 million or above.

APPENDIX C

Major Industrial Companies in Chile, 1984
(values in US \$ million)

Rank	Company	Type of Business	Sales/ Turnover ^{1/}	profit ^{1/} (loss)	Number of employees ^{1/}	Total assets ^{1/}
1	Codelco Corp. Nac. de Cobres de Chile	Copper mining	1,774.1		30,000	500
2	ENAP Emp. de Petroleos	Petrol	1,268	35.5	4,200	1,287
3	Copec - Compania de Petroleos de Chile	Petroleum prod	904.9	(70)	500	215.7
4	ENAMI - Emp. Nac. de Minera	Copper mining	328	3.7	2,300	292.4
5	CAP - Comp. de Acero del Pacifico	Steel	311.8	64.6	10,000	1,309.5
6	Endesa - Emp. Nac. de Electricidad	Hydroelectricity	309.4	106	4,000	1,670
7	Esso Chile Petrolera	Petroleum prod	270.8	est 10.2	365	
8	Chilectra - Cia Chilena de Electricidad	Electricity	247.8	24.2	4,100	510.8
9	Cia de Manuf Papeles y Cartones	Packaging	233.1	18.5	4,000	575
10	Shell Chile	Petroleum prod.	225	est 5.6	498	
11	Cia Industria Indus	Veg oil	215.1		412	576.2
12	Cia de Refineria de Azucar de Vina del Mar	Sugar	202.9		629	
13	Soc. El Tattersal	Farm produce	173	est	350	
14	Sudamericana Vapores	Shipping	164.2		1,000	148.1
15	CTC - Cia de Telefonos de Chile	Telephone service	151.2	41.6	6,000	347.5
16	Cia Cervecerias Unidas	Beer & soft drinks	128	43	2,000	439.5
17	Soquimich - Soc Quimica y Minera de Chile	Nitrates	117	(22.8)	6,271	95
18	IANSA - Ind. Azuc. Nac. SA	Refined sugar	117		349	
19	Industrias Lever	Household prod	110.1		1,300	
20	Chiprodal - Cia Chilena de Productos Alimenticios	Food	105.5		1,000	55.6
21	General Motors Chile	Automobiles	103.9		653	
22	Emp. Nac. de Comercializacion y Distribuidores	Commerce	101		600	
23	Emp. El Mercurio	Publishing	100.7	9.3	1,125	
24	Linea Aerea Nacional	Airline	98.3		2,600	
25	Celulosa Arauco y Constitución	Cellulose	90.7	0.2	1,106	583.4

Appendix C (continued)

Rank	Company	Type of Business	Sales/ Turnover ^{1/}	profit ^{1/} (loss)	Number of employees ^{1/}	Total assets ^{1/}
26	Tabacos - Cia Chilena de Tabacos	Cigarettes	86	7.6	1,200	78.5
27	Comp. Chilena de Navegacion Interocéanica	Shipping	84.9	8.7	434	114.2
28	Gasco - Cia de Consumidores de Gas de Santiago	Gas	81.5	2.9	1,000	158.3
29	Supermercados Almac	Supermarket	79.7		620	
30	Cia Tecno Ind	Dom elec appl.	77.1		1,200	
31	S.A. Manuf de Cauchos, Tejidos y Cueros	Footwear	73.9		1,893	
32	Embotellada Andina	Soft drinks	68.4	3.5	1,000	57.2
33	Emp. Minera de Mantos Blancos	Copper mining	68.1		2,248	
34	S.A. de Navegacion Petrolera	Shipping	67.7		254	
35	Pesquera Colosa	Fish products	66.2		1,319	
36	Pesquera Indo-Eperra	Fish products	65.5		1,373	
37	Astilleros y Maestranza de la Armada	Shipyard	63.4		3,750	
38	Manufacturas de Cobre	Copper products	61.3	4.2	1,500	
39	Peugeot Chile	Automobiles	60.3		104	
40	Emp. Constructora Delta	Construction	59.6		680	
41	Philips Chilena	Radio/television	56.4		575	
42	Molinos y Fideos Lucchetti	Noodles	56.2		475	
43	Fiat Chile	Agri. mchy	56.2		824	
44	Pesquera Guanaye	Fish products	54.8		1,200	
45	Molibdenos y Metales	Metal products	53.5		165	
46	Petroquímica Dow	Chemicals	51.9		300	
47	Salinas y Fabres	Agri. mchy	50.6		279	
48	Cemento Cerro Blanco de Polpaico	Cement	50.2		512	
49	Cia Frutera Sud Americana	Dried fruit	49		1,223	
50	Manufacturas Sumar	Textiles	48.9		3,186	
51	Bata SA	Shoes	48.6		643	
52	Cristalerías de Chile	Glassware	46.4		927	
53	Gas Licuado - Lípigas	Dom. appl.	46.2		228	
54	Televisión Nac. de Chile	TV services	45.3		521	
55	Soc. Agrícola y Forestal Colcura	Forest products	44.2		354	
56	Ind. Chilenas de Alambre	Metal products	43.2		444	
57	Cia General de Electricidad Ind.	Power eqt	43.1		700	
58	Enacar - Emp. Nac. del Carbon	Coal	42.6	(7.0)	7,699	112

Appendix C (continued)

Rank	Company	Type of Business	Sales/ Turnover ^{1/}	profit ^{1/} (loss)	Number of employees ^{1/}	Total assets ^{1/}
59	Inds. de Radio y Television	Elect prods	42.2		1,000	
60	Fideos y Alimentos Carozzi	Pasta products	41.8		493	
61	Cia. Electrometalurgica	Heavy eng	41.3		260	
62	Pesquera Iquique	Fish products	40.5		1,383	
63	Industrias Forestales	Forest prods	39.6		998	
64	Gildemeister SA	Commerce	39.2		582	
65	Ladeco	Milk prods	37.8			
66	Cantolla y Cia	Engineering	32		140	
67	Cemento Cerro Blanco de Polpaico	Cement	30.2		512	
68	Viña Concha y Toro	Wine	29.8		750	
69	McKay -	Confectionery	28.6		699	
70	Fab. de Cemento el Melon	Cement	28.6		1,050	

Source: South, January 1985.

^{1/} Many of the latest figures available are those for 1981 although some later data has been included.

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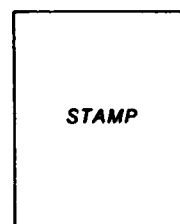
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