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The Liberalization of the Chilean Agriculture: 1974-1990.

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**THE LIBERALIZATION OF THE
CHILEAN AGRICULTURE:
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PART I. A BRIEF OVERVIEW OF CHILEAN AGRICULTURE BEFORE 1974

This introductory section intends to present summarily the basic characteristics of the Chilean agriculture until 1974 and the main policies which helped shaping it. More specific characteristics of the sector prior to that date are described in each section of Part III.

The Chilean agriculture¹ has been characterized during the sixties and early seventies by low rates of growth (0.2 percent annual average and 2.2 percent if ones excludes the bad years of the Allende's period) and highly fluctuating ones (from 21.2 percent in 1966 to -11.5 percent in 1969) and a declining trend. The total GDP annual average rate was 3.4 percent while it fluctuated during that same period from 11.2 percent in 1966 to -5.6 percent in 1973 (Table I-1). Consequently, the share of the sector in total GDP also fluctuated between 6.3 percent and 10.1 percent during the period 1960 - 1973. The declining trend was relatively systematic.

The contribution of agriculture to GDP was similar to that of mining during the mentioned period, it was half that of trade and less than half that of industry. However, distorted relative prices of tradable goods (mostly agriculture, mining and industry) tended to undervalue the contribution of agriculture while overvaluing that of industry. "All studies on comparative advantages and rates of effective protection indicate that the value added in agricultural production is at least 30 percent less than what would prevail in an open market situation; while the value added by manufacture is approximately 60 percent higher than that would prevail under free market conditions" (PPEA, 1976, p. I-3). If corrected, the contribution of agriculture would have been only 20 percent below that of manufacture instead of 60 percent.

However, the contribution of agriculture to employment is much larger in absolute and relative terms. Although the share of agriculture employment in total employment was also reduced from 30.0 percent in 1960 to 16.6 percent in 1973, on average, its share on total employment was about two and a half times its share in GDP, but it was not the major employer. Again, on that account, it was surpassed by Personal, Community and Social Services - around 60 percent more- and by industry - about 40 percent more.

A great variety of climate and land quality leads to diversification in production and variability of productivity. However, 90 percent of agriculture production has been food while tradable products represented about 95 percent of agricultural production; they were mainly import-substitutes before 1974.

¹ Agriculture, in the context of this report, includes farming, cattle raising and forestry.

By far, the most important crop was wheat which crop area represented 5 times that of the next one: maize (Graph I-1); livestock was also significant since its share in agriculture value added reached up to 44 percent before 1974. As food production during the period 1960-1973 grew less than population, the country became less self-sufficient and more dependent from external markets. Agricultural exports were not growing while agricultural imports, usually significantly larger than exports, accelerated after 1968. Agricultural exports were never significant before 1974 as they fluctuated between 1.9 percent and 5.8 percent of total exports.

Averages over long periods hide the fact that the situation of Chilean agriculture deteriorated dramatically in 1972 and 1973, at the end of the period analyzed. The consequences were significant: agricultural GDP fell in two consecutive years, the first time in slightly more than a decade (Table I-1); food production was lower in 1973 than, the average of the period 1960-1965; and, the agricultural traditionally negative trade balance reached its peak (US\$280 million) in 1973.

Dualism in Chilean agriculture is a concept often used to describe that sector. However, this concept may be interpreted in different ways. In the first place, although agricultural production is centralized among the central and south-central provinces of the country², this area is itself sub-divided. Most exportables, and high-valued importables are located in its northern part, while forestry and the other importables, in the southern part. In the second place, dualism is used to indicate also the co-existence of a modern sector with a poorly performing one. Both characteristics are certainly interrelated. Land of lower quality is to be found relatively more in the southern part where the highest number of small and poor farmers³ is also concentrated. However, this idea of dualism is ambiguous to describe the Chilean agriculture since the poverty of farmers is not entirely consequence of geographical location.

The state of the agricultural sector has depended heavily in the past on the inward looking strategy of development adopted by authorities after the Great Depression. The import substitution policy chosen favored relatively the industrial sector development while simultaneously, a cheap food policy for urban population was followed to meet the demands of the electorate growingly concentrated in cities. Farm prices resulted depressed as a consequence of direct and indirect price interventions. In fact, there was a continuous antagonism between the Ministry of Agriculture -in favor of

² They are responsible for 95 percent of agricultural production.

³ Poor farmers are also found in non-irrigated lands in other parts of the country outside the one mentioned.

Table I-1: INDICATORS OF THE CHILEAN ECONOMY

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Real Sector																
(1) GDP, National																
Real (1977\$ Thousands) per	24,4	25,1	25,7	26,7	26,6	26,2	28,5	28,8	29,3	29,7	30,3	31,9	30,9	28,7	28,5	24,4
Growth Rate (%)	Na	4,8	4,7	6,3	2,2	0,8	11,2	3,2	3,6	3,7	2,1	9,0	-1,2	-5,6	1,0	-12,9
(2) GDP, Agriculture, Livestock,																
and Forestry																
Growth Rate (%)	Na	-1,6	-5,4	5,8	0,1	2,0	21,2	3,0	4,7	-11,5	3,6	-1,8	-7,4	-10,3	26,7	4,8
As % of GDP, National	10,3	9,6	8,7	8,7	8,5	8,6	9,4	9,3	9,4	8,0	8,2	7,4	6,9	6,6	8,2	9,9
(3) Unemployment Rates (%)																
Greater Santiago	7,4	6,7	5,3	5,1	5,3	5,4	5,4	6,1	6,1	6,2	7,1	5,5	3,8	4,6	9,7	16,2
Prices																
(4) Inflation Rate	11,6	7,7	13,9	44,2	46,0	28,8	22,9	18,1	26,6	30,6	32,5	20,1	77,8	352,8	504,7	374,7
(5) Wage Indices (Dec. 1982=100)																
Real	45,5	48,6	50,6	47,2	45,9	52,0	58,3	67,4	67,9	74,1	81,7	95,5	85,9	58,3	55,2	53,7
Nominal	0,0004	0,0005	0,0006	0,0008	0,0011	0,0017	0,0023	0,0031	0,0040	0,0057	0,0083	0,0013	0,0209	0,0608	0,4542	2,1153
(6) Real Exchange Rate (Dec. 1971=100)	37,3	34,5	33,0	37,5	32,6	34,0	36,2	39,0	42,6	44,8	45,1	41,6	38,4	54,5	80,5	109,4
(7) Wholesale Price Index																
in Agriculture (Dec. 1978=100)	0,0012	0,0012	0,001	0,002	0,003	0,004	0,005	0,006	0,008	0,011	0,015	0,018	0,038	0,0209	1,55	10,34
(8) Terms of Trade in Agriculture	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
Fiscal																
(9) Public Sector Expenditures																
As % of GDP, National	21,9	22,1	23,6	22,1	21,1	24,3	24,0	22,4	22,0	23,7	26,4	31,1	31,2	44,9	32,4	27,4
(10) Fiscal Deficit																
As % of GDP, National	4,6	4,5	5,8	4,9	3,9	4,1	2,5	1,3	1,5	0,4	2,7	10,7	13,0	24,7	10,5	2,6
Financial																
(11) Real Interest Rates																
Short term	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	-76,1	-36,9	15,9
Foreign Sector (US\$ Million)																
(12) Current Account Balance																
National	-148,1	-241,1	-181,9	-157,8	-131,6	-56,6	-82,2	-127,4	-135,3	-5,6	-81,1	-188,8	-386,6	-294,6	-210,8	-491,3
(13) Balance of Trade																
National Old Version	-85,7	-154,2	-87,8	-61,0	-17,9	68,7	90,9	105,3	109,5	246,5	155,9	-16,3	-253,4	-138,3	135,0	-118,3
National Revised Version														21,0	357,0	70,0
Agriculture	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
(14) Balance of Payments																
Old Version	-28,4	-108,6	-49,0	-28,2	23,4	46,7	119,6	-23,4	117,9	174,5	113,5	-299,8	-230,8	-112,3	-44,9	-285,0
Revised Version														43,0	-134,0	-211,0

Source: See Appendix 1
(Na) Not available

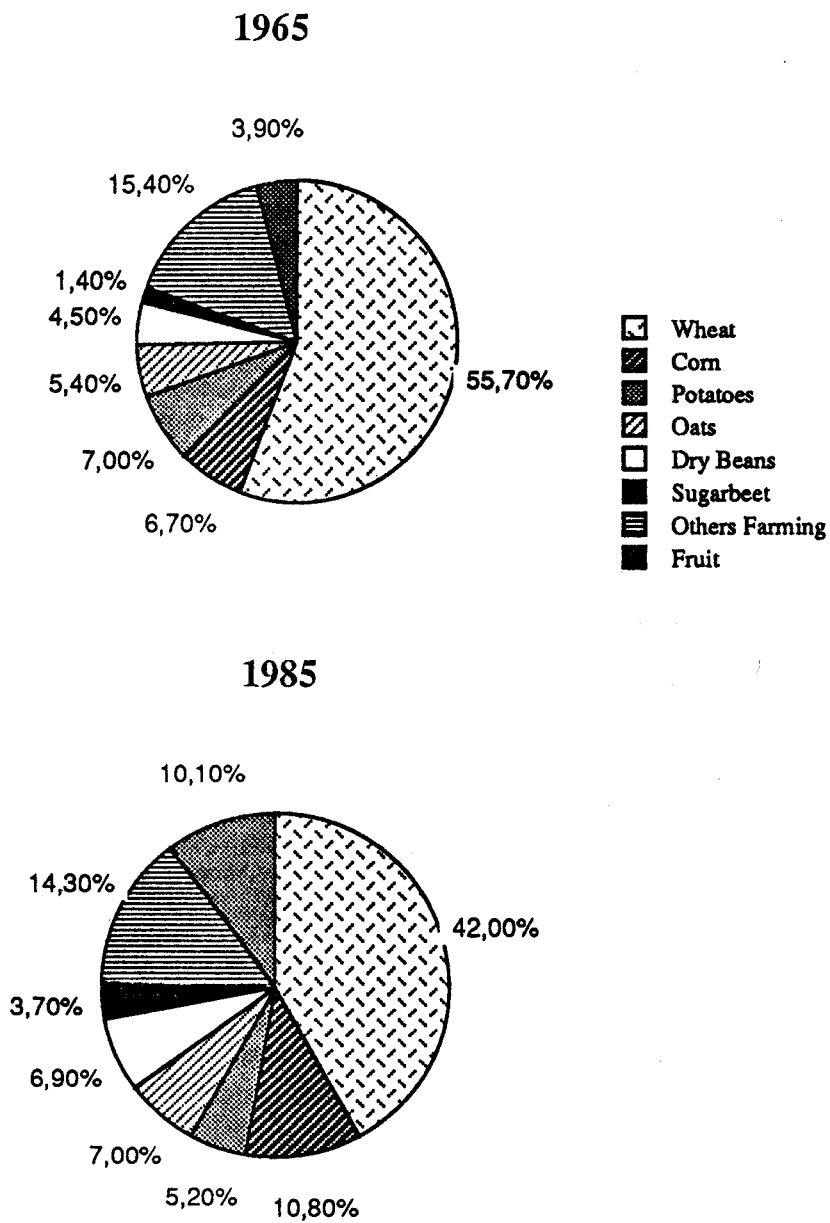
Continue Table I-1: INDICATORS OF THE CHILEAN ECONOMY

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Real Sector															
(1) GDP, National															
Real (1977\$ Thousands) per	24,9	27,0	28,8	30,7	32,6	33,9	29,1	27,9	29,2	29,4	30,6	31,8	33,5	36,3	36,5
Growth Rate (%)	3,5	9,9	8,2	8,3	7,8	5,5	-14,1	-0,7	6,3	2,4	5,7	5,7	7,4	10,0	2,1
(2) GDP, Agriculture, Livestock, and Forestry															
Growth Rate (%)	-2,9	10,4	-4,9	5,6	3,6	2,7	-2,1	-3,6	7,1	5,6	8,7	4,5	5,7	3,1	4,8
As % of GDP, National	9,3	9,3	8,2	8,0	7,7	7,5	8,5	8,3	8,3	8,6	8,8	8,7	8,6	8,1	8,3
(3) Unemployment Rates (%)															
Greater Santiago	16,8	13,2	14,0	13,6	11,8	11,1	22,1	22,2	19,2	16,4	13,5	12,3	11,0	9,4	6,4
Prices															
(4) Inflation Rate	211,9	92,0	40,1	33,4	35,1	19,7	9,9	27,3	19,9	30,7	19,5	19,9	14,7	17,0	26,0
(5) Wage Indices (Dec. 1982=100)															
Real	59,5	72,3	82,6	91,6	99,5	108,4	108,7	96,8	97,1	92,7	94,6	94,4	100,5	Na	Na
Nominal	8,9	19,2	30,7	45,4	66,7	86,9	95,3	108,3	130,0	162,6	198,3	237,3	290,0	345,8	443,8
(6) Real Exchange Rate (Dec.1978=100)	97,5	89,0	100,6	99,9	88,2	80,4	97,5	120,2	128,1	159,4	155,3	151,2	153,3	Na	Na
(7) Wholesale Price Index															
in Agriculture (Dec.1978=100)	35,8	64,1	86,3	131,1	177,2	182,1	183,4	277,4	335,6	446,5	607,7	750,8	704,2	858,0	1030,3
(8) Terms of Trade in Agriculture	Na	Na	Na	Na	60,6	75,6	88,8	73,0	81,1	100,0	123,7	108,2	78,6	84,1	Na
Fiscal															
(9) Public Sector Expenditures															
As % of GDP, National	25,8	24,9	23,8	22,8	23,1	24,9	28,5	28,4	28,8	32,5	30,0	28,3	30,7	32,0	Na
(10) Fiscal Deficit															
As % of GDP, National	2,3	1,8	0,8	-1,7	-3,1	-1,7	2,3	3,8	4,0	6,3	2,8	0,1	1,7	5,0	Na
Financial															
(11) Real Interest Rates															
Short term	64,2	57,1	42,3	16,9	12,2	38,9	35,1	15,9	11,3	11,1	7,6	9,4	7,4	11,8	16,4
Foreign Sector (US\$ Million)															
(12) Current Account Balance															
National	147,9	-551,4	-1087,9	-1189,4	-1971,0	-4733,0	-2304,0	-1117,0	-2111,0	-1329,0	-1137,0	-808,0	-167,0	-767,0	-824,0
(13) Balance of Trade															
National Old Version	460,6	-231,8	-782,6	-873,0	-1055,0										
National Revised Version	643,0	34,0	-426,0	-355,0	-764,0	-2677,0	63,0	986,0	363,0	849,0	1100,0	1229,0	2219,0	1578,0	1273,0
Agriculture	Na	-229,0	-312,0	-359,0	-543,0	-463,0	-255,0	-234,0	-94,0	196,0	418,0	441,0	449,0	488,0	Na
(14) Balance of Payments															
Old Version	450,2	-14,6	654,3	1049,1	776,0										
Revised Version	281,0	118,0	712,0	1047,0	1244,0	67,0	-1165,0	-541,0	17,0	-99,0	-228,0	45,0	732,0	437,0	2368,0

Appendix 1 - Table 1

- (1) For the period 1960-1988 per capita figures taken from, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For the period 1989-1990, figures taken from Central Bank of Chile, BOLETIN MENSUAL, AUG. 1991.
For the period 1960-1988, growth rate figures taken from Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For the period 1989-1990, figures taken from Central Bank of Chile, BOLETIN MENSUAL, AUG. 1991.
- (2) For the period 1960-1988, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For the period 1989-1990, Central Bank of Chile, BOLETIN MENSUAL, AUG. 1991.
- (3) For the period 1960-1988, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For the period 1989-1990, Universidad Catolica de Chile, Instituto de Economia, unpublished handout.
- (4) Universidad Catolica de Chile, Instituto de Economia, unpublished handout.
- (5) For the period 1960-1988, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For the period 1989-1990, BOLETIN MENSUAL, AUG. 1991.
- (6) Corresponds to the nominal exchange rate corrected for internal and external inflation.
Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
- (7) Annual averages. For the period 1960-1988, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For the period 1989-1990, calculated from values in BOLETIN MENSUAL, AUG. 1991.
- (8) See Table 2.
- (9)(10) Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES, 1960-1988. For 1989, Universidad Católica de Chile, Instituto de Economia, unpublished handout.
- (11) Corresponds to the accumulated value of monthly rates for each year charged by banks.
For the period 1973-1974, unpublished handout, TABLE II: SOME INDICATORS OF THE CHILEAN ECONOMY.
For the period 1960-1988, Central Bank of Chile: INDICADORES ECONOMICOS Y SOCIALES, 1960-1988.
For the 1989-1990 period, BOLETIN MENSUAL, AUG. 1991.

- (12) Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988. For 1989, Central Bank of Chile, BOLETIN MENSUAL, AUG. 1991.
- (13) For national figures in the period 1960-1980, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For national figures in the 1981-1990 period, Universidad Catolica de Chile, Instituto de Economia, unpublished handout.
For figures in agriculture, see Table 8.
- (14) For the period 1960-1988, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.
For the period 1989-1990, Central Bank of Chile, BOLETIN MENSUAL, AUG. 1991.
In the new version, the FOB value of imports was estimated and the Non-Financial Services series was changed, leaving the Current Account Balance unaltered. Only the reserves held by the Central Bank were considered as such, and the short-term liabilities and assets of the banking system "were included in the "Capital, Excepting Reserves" account. Until 1978 reserves correspond to the old "Net International Reserves of the Central Bank." As from 1979 they correspond to the variation of reserve holdings according to the new definition adopted by the Central Bank, which is adjusted by the above mentioned counterparts. (Page 348).

Graph I-1: ALLOCATION OF LAND BY PRODUCT

production- and the Ministry of Economy -in favor of low food prices. The "farm economy was regarded by policymakers as an inconsequential, stagnant sector, unresponsive to prices and with little potential for growth" (The World Bank, 1990). CEPAL defended this view divulged by different ideologies, giving, by so doing, intellectual support to the strategy which had been chosen under the pressure of extreme circumstances in the 30's.

Major interventions were concentrated in products that had a relatively high weight in the consumer basket in order to stabilize prices at the consumer level. The emphasis of those interventions was at the retail level. In the case of products with lower incidence in the consumer basket, incentives were given to producers. These interventions tended to send ambiguous, if not wrong, signals to producers lessening incentives to invest in agriculture. Furthermore, with the massive intensification of controls which came in the early 70's, black markets and queuing proliferated.

The direct price intervention included minimum and maximum producer and consumer prices, trade controls - such as export and import prohibitions, import quotas -, and pricing and allocation of inputs -credit and others. It intended price stability, increased farm income, and farm product. If the first goal was achieved, it resulted inconsistent with the second and third ones. To reduce this problem, input prices were intervened, -e.g. credit was subsidized,- and government expenditures in agriculture were expanded. However, conflicts would not fade. Anyway, public institutions multiplied to administrate the ever growing -in size and sophistication- vector of controls and interventions. This process was considered only natural in the environment of acceptance of increasing role for the State, which had developed after Great Depression but it also added confusion and costly uses of resources.

Support to small farmers rose substantially in the 60's. However, it had a limited impact on both productivity rises and living conditions improvements, as assistance was improperly focussed and institutionally disseminated. Credit was generously allocated to the sector within a system of rationing concomitant to subsidized interest rates. The evidence of its use is non-existent, and given fungibility of funds, there is no assurance that it was fully utilized for agriculture purposes. The land market lacked transparency and efficiency. For example, corporations were prohibited to transact land and there were limitations for renting and partition. Land tenure was rather concentrated- 7 percent of properties occupied more than three quarters of the agricultural land as large farms dominated. Research accumulated during the same period, either in universities or at INIA, but, its practical relevance is doubtful since it was never seriously tested for lack of proper vehicles and limited relations between researchers and practitioners.

Indirect price interventions also existed. They included the real exchange rate and the nonagricultural prices. These interventions were not favorable to exports, they limited the competitive capacity of importables and they pushed resources out of agriculture. The real exchange rate tended to be overvalued and erratically managed. Overvaluation would

be the direct consequence of the import substitution policies adopted, from the growing size of the State and from serious lags in adjustments of fixed exchange rates in a highly inflationary environment. The erratic management of the exchange rate was related to the macro disequilibria, variable through time in significance, and in their administration, and in the high dependency on copper exports which prices have fluctuated wildly.

Non-agricultural policies, which served before 1974 as a benchmark to agriculture policies and to the development of the sector, could be briefly summarized through a few key points such as: overvalued currency through tariff and non-tariff protection; multiple exchange rates, the lowest used for food imports; negative real interest rates; inefficient labor legislation; wage policy to improve real wages; high fiscal deficit financed by the Central Bank; and, preference for specific interventions over general rules; high and variable rates of inflation.

Given the limited faith that authorities had on the efficiency of market mechanisms, public interventions were preferred to the market to solve most problems of resource allocation in agriculture and to affect income distribution. They were multiple, usually incoherent, punctual, and erratic. However, planning improved for agriculture, at least, between 1966 and 1970. Measures were taken to improve farm production and productivity within the framework of a Farm Development Plan (the first one). The main goals were to increase farm income and to encourage a price structure consistent with comparative advantages. Domestic terms of trade of agriculture were improved by reducing protection for industry and public marketing agencies regulated private margins. Attempts were made to tie prices more closely to the international ones. Productivity was stimulated through subsidized credit, taxation based on potential land productivity, public investment in rural roads and irrigation increased, INIA, a research institute was also created. An agrarian reform started being implemented based on criteria for expropriation such as size, abandonment, poor exploitation, corporate or absentee ownership, and breach of labor laws and regulations.

The combination of improved price incentives on top of the incentive represented by the menace of expropriation on the basis, among others, of inefficiency, stimulated agricultural production between 1966 and 1970. However, the acceleration of agrarian reform⁴, after 1970, widespread illegal seizures of land, sometimes even by sheer force, multiple strikes, improper management of expropriated land, price controls, monopolization of marketing of the most significant farm products, gave rise to a chaotic situation and to an inadequate environment for normal production conditions. Tension rose, black markets and shortages multiplied, agricultural output and exports plummeted between 1970 and 1973 while imports increased substantially during the same period (Table I-1).

⁴ Over the period 1965-1973, about 48 percent of agricultural land was expropriated; more than half of it, after 1970.

In short, by following during the period 1960-1974 contradictory objectives, such as food security and low urban wages, the authorities had to intervene to lower agriculture prices to the consumers while subsidizing inputs to the producers to make production attractive. Despite this "financial stimulus", farm investment remained low during the 60's and early 70's as a consequence essentially of inadequate environment conformed by insecure property rights and erratic and often confusing rules of the game.

PART II. THE ECONOMIC FRAMEWORK, 1973-1990

It is important to situate the liberalization of agriculture in Chile within its correlative context of general economic development. The impact of liberalization, its successes and failures, are closely related to some of the more outstanding features of that development. In fact, the two stages of liberalization discussed below were clearly tied to two different phases of Chilean economic evolution: one of establishment of a new institutionality with Private Sector predominance, and the other, of its deepening.

The First Stage coincided with a period which began with a major recession (1975) and ended with an even deeper one (1982-1983). It was a period of substantive institutional adjustments, of a major drive to reestablish macroeconomic balances and of painful stabilization efforts.

A period of recovery, adjustments, consolidation of the main institutional developments of the 1970s and even a boom followed immediately, starting in 1984 and lasting up to the present time. This period coincided with some reversal in the previous policy of agricultural liberalization and a relatively protected period of agricultural development.

This Part will be subdivided into three sections with an introduction which briefly describes the conditions found by the authorities at the end of 1973 and the main economic objectives established by the military government: Section I analyzes the 1973-1981 period; Section II covers the recession of 1982-1983; and Section III deals with the period from 1984 until the end of 1989. Table I-1 presents the principal quantitative information necessary to illustrate the descriptions and judgments proposed in this Chapter.

Initial Conditions

As part of efforts to implement its political agenda, the Allende government tried to revamp the Chilean economy. Significant income redistribution and extensive State control of the means of production were among the measures employed. However, by the end of 1973, Allende had created a legacy of deep macro and microeconomic disequilibria.

That this should occur was inevitable: massive wage and social benefits readjustments, greatly broadened subsidies, significant expansion of public employment, and the nationalization and expropriation of private firms, all required financing that the Government was unable to obtain via taxes because the Chilean parliament was opposed to at least part of Allende's revolutionary program. Nevertheless, the Government persisted

with its plans, even opting for fiscal deficits financed by Central Bank credit to the extent that, in 1973, the deficit exceeded 20 percent of GDP. At that time, in order to avoid runaway inflation, generalized price controls were imposed which led, to long waiting lines for shoppers and a black market for consumer goods, disrupting channels of distribution even more and further eroding the tax base. In August, official inflation was an unprecedented 300 percent per year; only two months later, it rose to around 1000 percent.

Since the sources of revenue necessary for control of the means of production were dwindling, nationalization and expropriation were soon replaced by Government requisition or outright intervention of firms; agricultural land was one of the most propitious victim of that policy. Fair compensation was awarded only in a few instances.

As a result of these developments, production declined precipitously in 1972 and 1973; decapitalization grew rapidly in numerous sectors; foreign reserves dwindled; real income gains achieved in 1971 were eroded; the drain of technical and managerial expertise and of capital was accelerated; and labor productivity diminished significantly as labor conflicts escalated. The economic decline was exacerbated by a drop in world copper prices in 1971 and 1972, although the price for Chile's main export rose spectacularly in 1973, and by a withdrawal of international credit from traditional sources.

Major Objectives of the New Authorities⁵

The framework of objectives of the new authorities will help to understand the justification of much of what was done, agriculture not being an exception.

The elimination of serious and pressing macro disequilibria became a primary objective for the new government that took control after September 1973. However, its long-run objectives concerned the correction of structural disequilibria that had long characterized the Chilean economy and the concomitant reorganization of the economic system. Thus, there were three main goals:

- a) to secure a high and stable rate of economic growth which, in the Government's view, had been seriously jeopardized in previous decades by a combination of a faulty development strategy (based on import substitution) and an inadequate choice of instruments (tariffs, prohibitions, price and exchange controls, among others);

⁵ For details, see D.Hachette (1977); and Políticas de Desarrollo, several authors, mimeo CESEC (1973).

- b) to eradicate extreme poverty and achieve full employment through highly productive activities; and
- c) to achieve both price and policy stability.

All economic objectives, whether imposed by necessity or chosen as explicit policy, were to respect individual rights to property and of equality of opportunity in education, health and social security. Effective economic decentralization was also to be achieved, since it was considered a pre-condition for effective political decentralization and the basis for efficient democratic organization.

These objectives were to be attained through a combination of means⁶:

- a) restoration of the market as the principal instrument for economic decisions;
- b) restoration of the private sector as the main agent of development⁷, a condition that implied not only a revision of Public Sector responsibilities, but also a drastic reduction in that sector's size and involvement in economic activities. Divestiture of public enterprises would be a logical step in this endeavor;
- c) greater openness to foreign markets, in order to exploit comparative advantages, reap the benefits of greater specialization, and improve efficiency by facing foreign competition;
- d) non-discriminatory treatment of all productive sectors in order to improve resource allocation;
- e) development of an efficient financial market (previously non-existent) in order to enhance savings and investment allocation; and
- f) use of general economic tools, such as exchange and interest rates and the money supply, to help achieve these goals.

⁶ The distinction between means and objectives may be misleading. It will depend on the problem to be solved and its degree of aggregation.

⁷ See in particular Cauas (1974, 1975) and de Castro in Mendez (1979).

Policies and Results: 1973-1981⁸

Stabilization and development were the two main policy concerns during the 1974-1981 period. However, efforts to improve the social fabric were carried out and directed toward reducing extreme poverty through well-focussed social programs and improved access to opportunities (education, health, housing) that would alter income distribution in a durable way in the long run.

Stabilization Policies

The goal of restoring price stability was pursued through a combination of restrictive fiscal and monetary policies and use of the exchange rate to control expectations for most of the period along with wage adjustments in the first few years to hinder the growth of aggregate demand. Fiscal efforts were aimed at eliminating deficits, reducing the size of the public sector and making it more efficient. A comprehensive tax reform program was imposed in late 1974 which introduced a value-added tax (20%) in place of a progressive sales tax; improved the taxation of undistributed corporate earnings; eliminated exemptions; and increased real estate assessments and income tax rates. Public enterprises were allowed to raise their prices significantly and most of those firms were subjected to the rule of self-financing and marginal cost pricing. Expenditures were reduced by cutting personnel (close to 2.5 percent of the national labor force was laid off between 1974 and 1977), while the Government eliminated several programs and reduced public investment, at least as a percentage of GDP; agriculture was one of the foremost victims of these adjustments⁹ (see Part III).

As part of its drive for fiscal restraint, consistent with the subsidiary role to be played in the future by the public sector, the Government transferred more than 500 state-controlled firms to the private sector (either by auction or by unrequited transfer) or dissolved them. The transferred firms had accounted for a disproportionate share of overall Public Sector deficits - one third in 1973. As a result, the deficit of the Consolidated Public Sector disappeared in 1976 and that of the Central Government in 1978, reappearing as "equilibrium deficits", limited in size both in 1982 and 1983.

The most important price stabilization monetary policy measures were, first of all, the prohibition of Central Bank lending to Public Sector entities other than the Central Government and, secondly, the prohibition of Central Bank lending to the Public Sector as a whole, a provision that was even incorporated into the 1980 Constitution. Central Bank credit to the Public Sector diminished in nominal terms, between 1979 and 1981, despite an average annual inflation rate of more than 20 percent, while consolidated private bank

⁸ The relevant statistical material appears in Table 1.

⁹ See Marshall and Romaguera (1981), Sjaastad y Cortés (1981) and Tokman (1984).

credit to that same Sector, which represented 84.4 percent of total credit in 1976, was reduced to only 18.9 percent in 1981. At the same time, indexed treasury securities were issued in the capital market.

Although the Government considered the exchange rate a relevant price control mechanism for re-directing resource allocation while maintaining balance of payments equilibrium, the stabilization policy had some bearing on exchange rate management. After early 1976, it became clear that, first, the combination of fiscal, monetary and exchange rate policies implemented in 1975 had produced a drastic turn-around in the balance of payments, which had been severely strained after the sudden fall in the price of copper earlier that year and, second, that same combination of policies would not reduce the rate of inflation as rapidly and as substantially as desired. Thus, the Government decided to lower inflationary expectations through exchange rate management. Consequently, adjustments in the exchange rate were lower than inflation between 1976 and June, 1982, except when used to support tariff reductions. An announced sliding peg was used until 1978, followed by scheduled adjustments until June 1979. Then, after a devaluation, the rate was fixed until July 1982, in an attempt to further link domestic and international inflation.

The real exchange rate shrank almost steadily between 1976 and mid-1982, stimulating imports and trade balance deficits. The nominal exchange rate, deflated by CPI, fell by about 60 percent between the first quarter of 1976 and the last quarter of 1981.

Finally, wage adjustments between 1975 and 1978 were meant to keep pace with expected inflation so as to reduce inflationary expectations. Later, the combination of the 1978 Labor Plan which established a wage floor equal to the previous wage package, indexed by the CPI (See below), and declining inflation together with booming economic activity, stimulated real wages which soared until 1982.

The package of stabilization policies, with the exception of wage policy after 1978, seemed adequate for bridling prices. However, it took several years for inflation to come down to international levels. Even with the nominal exchange rate was fixed (June 1979 - July 1982), the rate of inflation still varied between 10 percent and 30 percent, that is, at levels considerably higher than international inflation. This apparent contradiction can be explained by the prevalence of extremely optimistic expectations for future wealth and income and the significant affluence of foreign credit stemming from the gradual creation of a Chilean capital market and the expansion of foreign liquidity available to Chile.

Initially, optimistic expectations were repressed, to a degree, by stringent monetary policy. However, after 1978, they were fed by inflation-producing inflows of foreign debt and reduced domestic savings, putting severe pressure on prices of non-tradables which kept rising at rates far greater than international inflation. Hence, high domestic inflation, despite a fixed exchange rate and a continuous decline in the real

exchange rate, prevailed. In fact, to the extent that the fixed exchange rate, chosen as an anti-inflationary device, was instrumental in stimulating capital inflows that fueled aggregate demand and, through it, non-tradable price increases, the exchange rate policy was invalidating itself as an instrument of stabilization. However, that policy was certainly not alone in inciting capital flows between 1978 and 1982: the implicit deposit insurance that existed until 1982 convinced would-be borrowers that the combination of greater world liquidity with a more open Chilean account was, simply, manna from heaven.

At any rate, inflation was reduced from a level of about 1,000 percent at the end of 1973 to about 20 percent in 1981, and even to 10 percent the following year, although it rose again later for reasons explained below.

Development Policies

The concern of policy-makers for price stabilization masks the quite significant institutional adjustments they implemented between 1974 and 1981, changes which built on past development and were to have a major impact on the future, as well.

Chilean authorities had assumed that improved resource allocation, together with the investments and savings stimulated by an efficient capital market would, when combined with deeper domestic integration in the world economy, be enough to raise and stabilize the growth rate and to mend income distribution through increased use of labor, the relatively most abundant factor.

The measures taken to rectify resource allocation are too numerous to mention in full. A few may suffice here, more are detailed in the analysis of the agricultural sector in Part III :

- a) the elimination of price controls¹⁰ and of multiple exchange rates¹¹;
- b) the progressive increase and ultimate elimination of the legal ceiling on interest rates, together with a major liberalization of the capital market;
- c) the elimination of most taxes, subsidies, and prohibitions which had fostered discrimination among sectors and the progressive elimination of special Central Bank credit lines to the private sector. By 1978, the only remaining lines were for reforestation and housing; and

¹⁰ After December, 1980, legislation was required for any new price control.

¹¹ However, after 1983, a special exchange rate was established for foreign debt payment.

- d) a major liberalization of trade, of paramount importance for benefiting more fully from Chile's comparative advantages and insertion in foreign markets, far wider and dynamic than domestic ones. All foreign commerce prohibitions¹² were eliminated in 1973 and 1974. Between 1974 and July 1979, tariffs, ranging from 0 to 750 percent, were set at a single flat rate of 10 percent for all items. At the same time, the impact of this tariff reduction on the trade balance was compensated for by a higher real exchange rate than that which prevailed in the 1960s. Thus, on both counts, exports were effectively stimulated and, although the traditional anti-export bias did not disappear, it was significantly reduced.

As a result, exports increased steadily at an average annual rate of 13.2 percent at constant prices between 1973 and 1981, a good performance. Exports also diversified so significantly that copper, instead of 82.2 percent of total exports in 1973, accounted for less than 50 percent in 1981. This result is even more remarkable given that the exchange rate trend, as part of stabilization policy, did not favor export diversification for part of the period (1976-1981), although auspicious external conditions were an important growth factor.

Savings and investment were encouraged by a more stable environment for private enterprise, a more efficient capital market and a foreign investment code attractive to investors.

The domestic financial market was developed principally in the following ways: a) by freeing interest rates; b) by eliminating or reducing qualitative and quantitative controls over credit; c) by reducing barriers against the establishment of new local banks, financial intermediaries, and foreign banks; d) by easing financial institution regulations with respect to minimum capital requirements, ownership, and reserve requirements; e) by establishing limits on equity participation in financial institutions, which were eliminated later, in 1976; and f) by selling or auctioning to the Private Sector most of the banks under State control in 1973¹³.

Opening the Chilean economy to the outside world included the authorization of domestic bank accounts denominated in foreign currency and the reduction of quantitative limits on capital inflows. However, these limits, for periods of less than two years continued to be prohibitive until mid-1981, while, on the whole, the rules governing this

¹² At one time, prohibitions covered about 60 percent of tariff positions via quantitative or administrative restrictions and/or via 10,000 percent prior deposits or via official approvals.

¹³ The freeing of interest rates was expected to encourage savings, equalize interest rates between formal and informal credit segments and to lower the costs of financial instruments. The freer flow of international capital was expected to increase investment and move domestic interest rates closer to international rates. For more details, see Ramos (1986).

opening remained restrictive until late in the period under study (1978-1979), and during the whole period for capital outflows.

In July 1974, a new Foreign Investment Code, Decree 600, was promulgated. It was rewritten soon after Chile withdrew from the Andean Pact, in October 1976, because the Government desired a more flexible and expansive code than Decision 24 of the Pact would allow¹⁴. The Code greatly reduced the sectorial limitations and other discriminatory measures: foreign investors were to be treated as equal to national investors, except for access to domestic credit; limits on profit remittances were eliminated; a choice of tax regimes on profits was offered; investors were allowed a minimal time in the country, and the stability of the foreign exchange system was ensured.

A major institutional change, unrelated initially to the private financial market but which would have a significant impact on its development, on the allocation of private savings and investment, and on the success of SOE privatizations, was the substitution of the old system of social security, based on the principle of pay-as-you-go into an obligatory personal savings and insurance program. Since it was approved only in 1980 and implemented in 1981, its influence was not felt during the period under analysis here.

In practice, the effects of the new policies on development and distribution proved to be far different from what had been expected. Average growth for 1974-1981 was only 3.7 percent, compared to the average of 3.8 percent between 1950 and 1970. Of course, this outcome should be seen in the light of a significant and systematic slide in the terms of trade after 1974 and one very deep recession (1975), two somewhat interrelated phenomena. The index of terms of trade fell from 172.9 in 1974 to 73.7 in 1981, a loss of 57 percent (It continued to fall until 1987). The average for the period was 99.7, compared to 132.5 for the 1950-1970 period. The depression of 1975, characterized by a 12.9 percent drop in the GDP, cannot be fully explained by this slide. Instead, restrictive demand policies (monetary and fiscal) introduced in 1975 to achieve stabilization, together with foreign reserve shortages, and lack of access to foreign financial markets acted so as to worsen the situation.

Gross investment rates, estimated at current prices as a percentage of GDP, performed better in the period under discussion than in the 1960s -- 19.7 percent compared to 15.1 percent. Since then, gross investment rates at current prices have dropped considerably. However, when expressed in constant 1977 prices, the volume of investment performed better in the 1960s than during the 1974-1981 period because relative prices turned against investment goods during the 1970s. In other words, on the whole, gross investment rates did not experience major changes during the period under study when

¹⁴ Other features of the Andean Pact, such as the sector programs and the high and differentiated customs duties considered for the expected common external tariff, were also serious obstacles to Chile's remaining a full partner in the Pact.

compared to the 1960s, although efficiency improved greatly. Annual GDP growth rates remained at extremely high levels between 1977 and 1981, although the rate of growth of investment did not follow .

While public investment was significantly reduced during 1975-1981 to avoid crowding-out private investment, the share of private investment in fixed capital rose only to about 10 percent of the GDP, as compared to 8 percent in the 1960s. This performance was sluggish in the light of exaggerated expectations for a booming, dynamic private sector.

Why did investment rates not perform better? Apart from measurement problems, one of the main reasons lies in the 1975 recession during which the gross investment rate fell to an average of 13 percent of GDP. However, higher than average figures were achieved (22.9 percent) during the rest of the period. These figures mask nevertheless the much higher than normal accumulation of inventories between 1979 and 1981, which reached up to 3 percent of GDP a year, probably stimulated by the fixed nominal exchange rate and anticipation of devaluation. So, on the whole, the performance of fixed capital formation did not meet expectations. However, these conclusions should be carefully revised when the new series of investment figures become available.

This evidence is even more discouraging when compared with the ever-increasing flow of foreign savings between 1977 and 1982, which was expected to bolster, or at least complement, domestic savings. Foreign savings were high for most of the period, and reached unprecedented levels during 1979-1981, with an annual average rate of 10.3 percent of the GDP, "financing" 64 percent of investment in 1981, at the peak of its volume.

These foreign savings, attracted to the Chilean financial market by large interest rate differentials in a context of abundant world liquidity and a slowly opening local financial sector, behaved as partial substitutes for national savings during the years 1979-1981, while they seem to have complemented savings only later, in 1977 and perhaps also in 1978¹⁵.

Furthermore, the performance of domestic savings was less than satisfactory. Authorities expected the development of the financial sector, together with numerous investment opportunities, to have been instrumental in the enhancement of domestic savings. However, three separate factors over-powered this optimistic perspective: recessions, inadequate financial market developments and consumer expectations related to permanent income. The relationship between savings and recessions is obvious and needs no further comments.

¹⁵ The substitution of domestic for foreign savings is analyzed in the Chilean context by Foxley (1985) and Behrman (1977).

Authorities relied on financial liberalization to induce greater savings through at least two channels: higher interest rates and wider range of longer-term savings instruments¹⁶. Real interest rates, at the extremely high level of more than 25 percent per year during 1975-1976, exceeding by far the low or negative rates of the 1950s and 1960s, did stimulate financial savings. However, since they were closely tied to economic fluctuations, domestic savings were not stimulated as expected. At the same time, the incipient financial market was as yet incapable of the rapid development of long-term instruments that would attract significant funds for financing a wider array of investment projects because the demand for these instruments was limited by the exceedingly high interest rates. Moreover, the financial sector remained segmented throughout the period, a factor unfavorable for increasing saving rates.

Finally, the high GDP growth rates of the late 1970s and early 1980s, and the prevailing optimism with respect to income growth, reinforced by rapidly rising asset prices, raised expectations with respect to permanent income. This encouraged economic agents to increase consumption, particularly of durables, more rapidly than the growth of disposable income would seem to allow. In fact, agents went into debt, both domestic and foreign, especially the latter, since it was more available and less expensive than the former. As a result, domestic savings rates were significantly reduced¹⁷. Even if the purchase of durables were viewed as investment and savings, only two additional percentage points would be added to the traditional measurement of domestic savings vis-a-vis savings levels in the 1960s. Thus, this factor does not alter the main conclusion that the savings ratio was low between 1974 and 1981.

Income Distribution

Even though income redistribution in the short term was not a major concern of the Government between 1974 and 1981, actions were taken to attempt to reverse progressive deterioration¹⁸. The stabilization efforts and major institutional adjustments undertaken had significantly worsened living conditions for many.

Two basic elements may explain these results: high unemployment and an unusual trend in domestic relative prices. Unemployment rose suddenly in 1974 as the large, disguised employment, accumulated during the Allende era in particular, was

¹⁶ Social security should be added. However, it would have an impact on private savings only after the end of the period analyzed.

¹⁷ This phenomenon has been analyzed by various authors: Acle (1985). Edwards and Cox-Edwards (1987), among others.

¹⁸ The economic team expected on the basis of evidence gathered from comparative studies, that growth would reduce poverty and eventually inequality. Therefore, they favored measures to ease equality of opportunity to education, health, housing and the labor market.

eliminated and as structural changes, in consequence of the policies mentioned above, stimulated major sectoral and business firm adjustments. The recession of 1975 only deepened the problem. Despite better than average employment performance later and a systematic reduction of the unemployment rate between 1977 and 1981, unemployment remained high by Chilean standards -11.1 percent in 1981 or 15.7 percent, if employment in special fiscal work programs is included- as compared with 6 to 7 percent in the 1960s.

As liberalization policies and price flexibility were being implemented and subsidies eliminated, with an increased real exchange rate, the relative price of food rose. Given the importance of basic foodstuffs to lower income groups, the effect of these hikes was to severely worsen their status relative to that of other income groups.

To face this worrisome situation, the Government increased social expenditures, focussing them more carefully on the absolute poor. Moreover, it created a fiscal work program, the Minimum Employment Program (PEM), which was the equivalent of a disguised subsidy, given the extremely low productivity of the participants and the low social value of the tasks ascribed to the Program. Nevertheless, employment in that program fluctuated between 4 and 6 percent of the total labor force, a considerable figure.

For the purpose of reducing inequalities and discrimination and in order to stimulate smoother functioning of the labor and capital markets, as mentioned above, starting in 1974, special discriminatory benefits were eliminated; family allowances and retirement age requirements were made uniform; the social security tax rates were gradually reduced; and a major shake-up of the social security system was carried out toward the end of the period.

The Government had also diagnosed that both employment and income distribution would improve in the medium term as the labor market became more efficient. Major changes were introduced in the labor laws. The Labor Plan of 1978 - and later the Social Security Reform of 1981 - reduced employee costs by reducing legal severance pay, granting the right to dismiss workers without justifying the cause, limiting the application of minimum wage regulations, granting absolute freedom of worker association, eliminating the exclusive right of one union per firm and the legal distinction between blue-collar and white-collar workers, and establishing conditions for strikes in private firms and obligatory arbitration in the case of several public institutions. Furthermore, all negotiations were to take place at the firm level, with arbitration if desired. This labor reform plan¹⁹ also established a wage floor equal to the previous wage package, indexed by the CPI. The only element of these changes that may have had an impact on income

¹⁹ It included a so-called Labor Plan and a Labor Law Code whose main features have been summarized in this paragraph.

distribution in the short term²⁰ was the wage floor which allowed for an increase in real wages as inflation decreased.

Crisis and Stabilization: 1982-1984

During 1982-1983, Chile underwent a deep economic and financial crisis. Although the depressed international economy may have sparked this recession, domestic management of the exchange rate and certain features of the financial market (including the ties between producers of goods and services and financial institutions) only worsened the situation.

The most immediate cause of the crisis was the gradual loss of access to international markets together with a drop in the terms of trade. This factor raised doubts with respect to the economy's capacity to maintain the same accelerated spending rate as in the previous years and brought about a reduction of domestic demand and, consequently, of overall economic activity.

The productive sectors, especially of tradable goods (exportables and importables, particularly agriculture), had serious difficulties withstanding, on the one hand, the double effect of this demand shift, and, on the other, the rapid loss of competitive capacity. The latter was the result of the significant reduction of the real rate of exchange between 1980 and 1982 and the labor "floor" derived from the new labor laws imposed in 1980. In fact, both phenomena are the two sides of the same coin. In effect, demand for Chilean tradables was increasingly curbed, internationally, by the on-going recession and, domestically, by the growing substitution of ever-cheaper foreign goods for domestic products.

Enterprises turned increasingly to debt, encouraged by the financial liberalization, the significant flow of foreign loans, the pushy behavior of financial institutions looking for clients in the midst of abundant liquidity stemming from extremely high capital inflows, and last but not least, by the belief that the world recession would be of short duration.

This belief was shared by the authorities who gave signals coherent with those expectations and stimulated further foreign indebtedness. But, suddenly, at the end of 1981, foreign flows stopped as external and internal conditions worsened. Strongly indebted and unable to resort to additional credits, many productive enterprises went bankrupt, carrying along several prestigious financial institutions in what can be described

²⁰ Most of the other aspects of the reform would become relevant after 1985.

as a huge financial disaster, prepared for involuntarily by the ambiguity and laxity of the relevant regulations designed to implement the financial liberalization.

The mode of privatization used prior to 1982 accelerated the negative impact of the crisis by permitting financial institutions to be, de facto, holding companies with high leverage in their affiliates which experienced, as did all firms, a sharp drop in the demand for their products. Furthermore, insolvent banks worsened their situation by: i) rolling over unrealized loan losses - distress borrowing; and ii) by engaging in moral hazard and making generous use of the existing contingent subsidies for exchange and interest rate risk offered by the Authorities during 1981 and part of 1982.

As a consequence of this crisis, GDP fell at the rate of 14.1 percent in 1982, the hardest shock to the Chilean economic activity since the Great Depression. As foreign reserves were quickly depleted, while export growth lagged and external debt service nearly doubled in two years in proportion to exports, imports had to be reduced significantly, adding yet another blow to economic activity. Moreover, the Government carried out regulatory take-overs of 16 financial institutions, some to be liquidated and others to be restored to financial soundness and re-privatized later on. This action reverted the previous privatization process. As the ownership of most of these institutions was related to holding institutions, this intervention gave the State, once more, direct or indirect management of a large and significant number of enterprises that "belonged" to the private sector.

During 1983, the productive sector's crisis worsened because the country was obliged to adjust to external restrictions that had become even more acute than during 1982. The GDP fell again, although, by a modest figure: 0.7 percent. Open unemployment reached its highest level in decades - 22.2 percent. At the same time, the existing fiscal work program - PEM - had to be complemented by another one, the Program of Employment for Heads of Families - POJH. The unemployment absorbed by both programs rose to 15.1 percent of the total labor force by October, 1983. Social unrest became generalized. Meanwhile, investment fell to its lowest level in decades - and remained low in 1984 - while total and per capita consumption fell for the third consecutive year. Within this context, investment decisions may have been postponed due to high interest rates and the ambiguity about property rights which arose from the major state intervention in financial concerns and conglomerates.

Steps were taken to face the simultaneous shocks of the increased cost of foreign debt and the closing of the foreign capital market. Exchange rate policy was re-gearred toward encouraging exports and limiting imports - tariffs on imports were doubled, from 10 percent to 20 percent, and other measures were taken to put financial institutions and other enterprises back in solid positions, with the result that 1984 was a year during which there was a fundamental shift in the trend of the main aggregates and the economy began to recover.

From Recovery to Boom: 1985-1990²¹

The economy took some time to recover from the 1982-1983 crisis but it boomed subsequently and steadily until 1990.

In 1985, recovery from the crisis was far from complete. Unemployment was still high - 16.6 percent of the labor force; real remunerations were at their lowest point of the decade; gross national savings and gross investment did not exceed 5.4 percent and 13.7 percent of the GDP respectively, figures well below the average of the 1960s and 1970s; and per capita consumption was still 21.7 percent below its 1981 level. Although it is true that most of these indicators show progress with respect to the previous years, they also suggest that recovery was not yet complete.

At the same time, the terms of trade continued to worsen and the gravity of the foreign debt crisis became evident in Chile and other debtor countries.

The situation in 1985 was especially disquieting given that social demands for improved welfare were difficult to meet in the short term due to acute foreign restrictions and would face serious medium and long term obstacles, if the extremely low savings and investment rates were maintained. Confronted with these difficulties, the authorities decided to "redouble the structural reform efforts, within the framework of a structural adjustment geared to emphasize increased exports, investment and savings" (Büchi, 1988).

Reduction of Foreign Constraints

This objective was tackled by a combination of switching and restrictive expenditure policies, together with renegotiation of the Chilean foreign debt. The improvement of the terms of trade after 1987 was also certainly welcome.

In order to encourage the use of resources for the production of tradable goods, both to transform exports into an engine for growth and to curb imports, policy was implemented to establish a realistic exchange rate. Since 1983, the exchange rate was adjusted in relation to a currency basket of Chile's principal commercial partners. In real terms, it rose by more than 60 percent between the 1982-1983 period and 1989. Furthermore, price bands were established on wheat, oil seeds and sugar to stimulate domestic production, then hindering imports of these three significant component of the basic food basket.

At the same time, the authorities avoided stimulating domestic spending, thus preventing strong inflationary pressures that would reduce the competitive capacity of exports, which, in turn, would create improper pressures on the commercial balance. To

²¹ Whenever possible, 1990 information is used.

this purpose, moderating orientation guided both fiscal and monetary policies from 1985 onwards - at least until 1988, becoming expansive in 1989 in anticipation of the end-of-the-year referendum of General Pinochet's candidacy in the 1990 presidential election. Thus, after performing an expansive role during the crisis to lessen its impact, the fiscal deficit was reduced. The consolidated deficit of the non-financial Public Sector dropped from 4.4 percent of GDP in 1984 to 0.8 percent in 1987 and a large surplus was recorded in 1988. Simultaneously, monetary policy sought to meet the needs of a recovering and expanding economy in ways consistent with the restrictions on foreign trade and a declining rate of inflation from 26.4 percent during 1985 to 14.7 percent in 1988, with an increase, however, to 17 percent in 1989.

In order to alleviate the cost of adjustments to foreign debt conditions, the debt was renegotiated with creditors. By the middle of 1987, the last agreement was signed with creditor banks to restructure foreign bank debt maturity, to extend the availability of short-term credit lines, modify the frequency of interest payments and to reduce interest rates. In addition, through the Paris Club, renegotiation included maturities of government credits.

To reduce the foreign debt, the authorities implemented two mechanisms contained in Chapters XVIII and XIX of the Foreign Exchange Law. By the end of 1989, accumulated redemptions amounted to US\$ 5,701 million, making it possible to reduce total foreign debt stock to its 1981 level, despite the subsequent use of new credits²². These measures also brought about a significant improvement in foreign solvency indicators. Interest service was reduced from 65.4 percent of goods exports in 1985 to 37.5 percent in 1989, while the ratio of foreign debt stock to the same goods exports dropped from 5.1 in 1985 to 2.0 in 1989.

Finally, the fortuitous relief from foreign constraints coming from a rise in the price of copper, and reductions in the price of oil and the LIBOR rate, is worth mentioning. The impact of the terms of trade on disposable income was positive for the first time in years in 1988 and again in 1989, mostly due to the significant improvement in the price of copper.

The success of the policies designed to relieve foreign constraints is undeniable. Exports of goods and services, representing 25 percent of the GDP in 1983, rose to nearly 31 percent by the end of 1990, in terms of 1977 prices. On the other hand, this trend permitted sustained growth of imports which had been the main tool of adjustment to foreign restrictions during the crisis. Today, imports represent over 27 percent of GDP, against 21 percent in 1983. This combination of events, together with relatively stable

²² If other forms of rescue of foreign debt are taken into account, the reduction is even greater, amounting to the equivalent of US\$ 8,987.3 million, or more than fifty percent of the total foreign debt accumulated up to the end of the recession (1984).

financial servicing, made it possible to significantly reduce both the negative balance of the current account and the need for additional credit in such a way that, even with the modest actual inflow of capital, Chile has been able to accumulate foreign exchange reserves in the last few years. Likewise, some recent policy measures tend to reduce the risk of a new tightening of foreign constraints. On the one hand, the reduction of tariffs to 15 percent in 1987²³ helped correct the anti-export bias toward non-traditional exports that, today, represent more than a third of total exports, while a Copper Stabilization Fund, designed to freeze part of the increase in the price of copper since 1988, will contribute to reducing the negative impact of world cycles. At the same time, large investments from private foreign concerns and a reduction in the relative importance of foreign debt in terms of overseas liabilities will lead to more pro-cyclical debt service.

Stimulating Saving and Investment

Shortly after the crisis, the authorities recognized that it was necessary for investment to recover in order to maintain high, sustained growth and so improve the welfare of the general population and that, at the same time, national savings were going to have to finance this effort. Both variables were stimulated, after the crisis, by the recovery of general economic activity, by the solution of business and bank decapitalization problems, and by the institutional strengthening of the capital market.

GDP grew at an annual average rate of 5.5 percent between 1984 and 1990. This is both a cause and consequence of increased investments, which rose from 13.6 percent of GDP in 1984 to 20.2 percent in 1990. However, even though the private sector assumed an important role in the investment boom once the crisis of 1982-1983 was over, public investment represented a higher percentage of GDP than in the 1979-1981 period - 6.8 percent in 1988 against 4.2 percent. Since there had been a significant reduction in the foreign savings contribution after the crisis of the early eighties, investment was financed increasingly by an extraordinary effort of national savings, which increased from 3.0 percent in 1984 to 17.4 percent of GDP in 1990. Domestic savings grew even more rapidly, the difference between both being the net payment to foreign factors, which represented 74.8 percent of GDP in 1990, but almost 12 percent in 1985. That effort was shared by both private and public sectors. In fact, the period 1985-1990 witnessed the greatest effort in domestic savings achieved in Chile to date: the annual average was 21.9 percent of GDP while, during the 1965-1969 period, it did not surpass 17.3 percent, even when the price of copper was at its peak in the late 1960s.

In spite of reduced deficits, the Government maintained important levels of investment, thanks to significant saving efforts, which, in 1988, reached 8.2 percent of GDP, a figure that includes those resources destined to the Copper Stabilization Fund.

²³ Tariffs had risen to 35 percent for a period of six months in 1985 and were reduced to 20 percent in 1986.

More severe controls on current expenditures explain this promising result. However, government savings gradually lost importance in terms of GDP, allowing for greater private sector leadership in national economic development. On the other hand, the private sector was obliged to reduce consumption until 1987 in order to increase savings. Since then, both consumption and savings have increased at a rate above that of population growth. This trend in the consumption rate reveals a gradual recovery toward levels prevalent at the beginning of the decade, although per capita consumption surpassed its 1981 level only in 1989.

The strong recovery of the financial market explains, in part, the trends sustained in investment and savings, at least those of the private sector. In addition to increases of both deposits and loans in real terms, the period presented many other significant changes. One was greater competition between institutions, which reduced their spread between active and passive interest rates and significantly increased profits. Another was the normalization of the financial system at the end of 1986, which put financial and ownership situations on a solid footing and was followed by the re-privatization of two of the country's most important banks in 1987. A third change was an improvement in the quality of assets, together with the application of a series of incentive mechanisms to inject capital into financial institutions - popular capitalism, foreign investment through Chapter XIX, Central Bank lines of credit, etc.. All of these measures resulted in improvements in the net worth of financial institutions and, thus, their solvency. Various laws - Bank law, of the Superintendency - were modified to gradually reduce deposit insurance, allow for the creation of bank subsidiaries and, last but not least, implement significant improvements in the regulatory framework for financial institutions, an important factor at the bottom of financial system fragility prior to 1982 and fuel for the fire of the 1982-1983 recession.

The normalization of the financial system was linked to the ever-improving situation of debtors who were favored by the general growth of activity, the gradual reduction of the cost of credit and governmental initiatives for debt reprogramming. Likewise, savings and investment were encouraged by the rapid development of institutional investors (Pension Fund Administrators and insurance companies) and foreign investors, who operated through DFL 600 and Chapter XIX. Although contributions made through this last mechanism do not represent new investment in precise terms, they did allow enterprises to pay their debts immediately and, thus, strengthened the financial market, making savings more attractive. In addition, they allowed for increased importance of risk capital in foreign hands, which became a stabilizing element for private savings. And, importantly, the different tax reforms carried out since the crisis constituted a determinant and enduring factor for encouraging savings because they reduced taxation and increased the consumption tax.

Both reduced foreign restrictions and surging investment, within the favorable institutional structure put in place during the 1970s, have been instrumental in stimulating both exports and general economic growth and in improving living conditions, employment and overall income distribution. The volume of non-copper exports has been

increasing at an annual rate of more than 11 percent since 1985, while the GDP growth rate established a new record in 1989, when it rose to 10 percent. The unemployment rate, measured at the national level, fell to 9.8 percent in September 1989, the lowest level since 1974²⁴, while the fiscal work programs had completely faded away by that time, real wages have continued to increase since 1985. Nevertheless, by 1990, they had not yet recuperated their 1981 level, which had been the highest since 1972. It is to be expected that, if growth and high investment continue, given the stringency of the labor market, real wages will maintain their upward trend, with positive repercussions on income distribution, as well.

²⁴ It rose to 10.7 percent in September 1990.

PART III. CHILEAN AGRICULTURE POLICIES AFTER 1973

Policies toward agriculture, after 1974, could be splitted in two sub-periods: the first between 1974 and 1982, the second, since 1983. The superficial difference between the two lies in the degree of state intervention. Until 1982, the rules established for all productive sectors applied also to agriculture with few exceptions. Since 1982, the degree and number of interventions have increased representing, in a sense, a reversal to the main trends of overall economic policies of the military government. However, the main difference may have derived from a change in the perception of authorities with respect to the role of agriculture. The change occurred anyway as a recognition of particularities of the sector, and of its employment potential when total unemployment had reached peak levels between 20 and 30 percent. No less important in the change of attitude towards agriculture was probably the widespread geographical presence of a dissatisfied group which political weight had grown as a direct consequence of the deep recession of 1982-1983.

This part will present, in a succinct way the main changes occurred in agricultural policies after 1974. The latter will cover price and trade policies, export promotion, exchange rate policy, agriculture-related institutions, land tenure, research, extension and technical assistance, taxation, labor market, land market, investment, credit and debt and other. For each case, a compact comparison will be established between the state of affairs in 1974 with what was done afterwards.

Price Policies

Before 1974, price policies were intricate and interventions, pervasive. There were direct and indirect interventions. The direct price interventions included minimum and maximum producer and consumer prices, trade controls, and pricing and allocation of credit and subsidies to some inputs. They intended price stability, the promotion of agricultural development, and the increase of farm income and savings. However, if the first goal was achieved, it resulted inconsistent with the other two. To reduce the extent of this problem, agricultural input prices were also intervened while credit was subsidized and government transfers and expenditures in agriculture were expanded. However, conflicts would not fade away and outright confusion would arise. An example could illustrate the point. To protect the domestic production of nitrate -fertilizer- a high import duty was imposed. As farmers would suffer from the consequence, they would be partially compensated with a bonus given for fertilizer purchases and a subsidy for its transportation by railways. At the same time, an import duty on non-domestic fertilizer phosphate would be established at lower levels than for nitrate, distorting so the relative

prices of both fertilizers with obvious consequences on resource allocation, and choice of production and inputs.

Chile has had a long history of price interventions. Price fixing started in 1953. Later, in 1960, a state marketing agency, the Empresa de Comercio Agrícola (ECA)²⁵ was created to guarantee a normal supply. It had the monopoly on imports, initially of wheat and wheat derivatives, later, on a great number of agricultural products such as milk and fertilizers. Fixed prices determined by the Ministry of Economy were usually concomitant with transport subsidies. They also were sustained with import controls - tariffs, quotas, prior deposits, etc-, export prohibitions and even power to confiscate (e.g.: wheat, flour, pastas, bread, milk-fluid, powdered, condensed). For example, meat-price fixing used ceiling prices, tariff and import controls with power to enforce and relax quarantine conditions, export restrictions and quotas, subsidies for transportation, and even restrictions on quantities through meatless days, slaughtering prohibitions, interventions and requisitions. Even vegetables and fruits markets were intervened. Price controls at the retail level implied also legislation over quality and would create obvious control difficulties.

Panterritorial pricing policy would also applied in some occasions on wheat, milk and fertilizers. This would imply that (i) taxpayers, consumers and producers close to consumption or shipment centers were forced to subsidize those in distant locations (ii) market segmentation would result, and, (iii) combined with low consumer prices, and parastatal marketing monopolies, it would drive the private sector out of some agricultural markets (Knudsen and Nash, 1990).

Indirect price interventions included the real exchange rate and the nonagricultural prices. These interventions were not favorable to exports, limited the competitive capacity of importables and tended to push resources out of agriculture. Comments on the real exchange rate are presented below.

Starting 1974, the new economic system installed was based on a market economy with the private sector as main agent for development. Consequently, prices were to be determined in markets, free from the intervention of Government. Subsidies were to be eliminated unless discrepancies between private and social returns could be justified. Future markets were also to be stimulated to improve the smooth and efficient working of the different markets by reducing uncertainty. Monopolies were also considered distortive and, then, to be controlled.

This "price policy" was applied across sectors, and agriculture was no exception. Several reasons may be found to this position. In the first place, it was generally believed that Chile had comparative advantages in the production of some agricultural products and

²⁵ ECA , in 1973, was responsible to regulate all aspects of the Chilean agriculture.

that comparative advantages would reveal themselves more properly in a non-distorted environment. In the second place, as an eventual world boycott could arise as reaction to the military coup, food self-sufficiency would be desirable and could be obtained, or at least, food production could increase by reducing obstacles imposed by previous governments to its growth. In the third place, agricultural development was desirable to absorb unemployment generated by stabilization policies carried out from the beginning. However, some interventions were kept, but "oriented to protect the income of farmers rather than the income of urban consumers" (Hurtado, Valdés, Muchnik, 1990).

Price policies varied from one period to another.

(i) First Period: up to 1982

The aim was to rapidly free all prices, to eliminate gross distortions in allocation and distribution, to tie prices to international ones. Nevertheless, significant fluctuations and low international prices consequences of subsidies or dumping, were motives of deep preoccupation and it was considered that these issues would have to be tackled in some fashion. The process of price liberalization "required" also, in the minds of some authorities, a period of transition given the long tradition of public intervention.

The vast majority of price controls was eliminated by the end of 1973, when three categories of goods and services were created: those whose prices were to be freely determined (2,000 of them were freed immediately), those whose prices were still to be fixed by the Dirección de Industria y Comercio (DIRINCO) (about thirty) and those whose prices were to be informed -- freely set subject to approval from DIRINCO (about twenty) (de la Cuadra and Hachette, 1991). Basic goods, some food among other, belonged to the last two categories (bread, flour, simple pastas, sugar, cooking oil, tea, milk, six cuts of beef, and fat, processed foods). To reduce the effect of price increases on low- income families, the Government granted direct, temporary subsidies for some goods. Items were switched between categories, although the lists did not change much during the period analyzed. After December 1980, any new price fixing required a law none of which are agricultural²⁶. The prices of wheat, maize, rice paddy, raps and sunflower were fixed until 1977 with the intervention of a procurement agency: the Empresa de Comercio Agrícola (ECA). The latter was also intervening in markets of potatoes, onions and in the commercialization of meat until 1977. Further, price bands²⁷ were operational on wheat,

²⁶ Currently, less than ten prices are still legally fixed, none of which are agricultural.

²⁷ Price band refer to a combination of a target price and a band of plus-or-minus 10% around the target price. The target price is determined through a moving average of the relevant price in international markets plus the tariff rate applied to all chilean imports. The domestic market

oil seeds and sugar during two agricultural years (1977/78 and 1978/79) with the support of ECA as procurement agency²⁸ for the first two of them. Price bands were justified by farmers at the time on the basis of great uncertainties borne from unexpected and wide external price fluctuations leading to "resource misallocation". They were dismantled under the pressure of the same farmers given the rapidly rising trends in international markets. Agricultural prices were then free of any intervention between 1979 and 1982 with the exception of powdered milk which import price was imposed a specific duty during 1982.

Existing subsidies on agricultural inputs were eliminated. This decision represented also a significant but logical departure from traditions since its formal justification of compensating for price controls imposed on outputs would not be valid anymore. However, as they faded more rapidly than price controls on agricultural outputs, some farmers found themselves squeezed between the significant rise in some inputs and controlled adjustment of output prices. Apparently, they adjusted mainly through a reduction in the use of previously subsidized inputs (see Table A-10).

The Forestry Law (1931) had established a subsidy to plantation through income and property tax exemptions for 30 years after plantation. DL701 (1974) changed radically this approach for considering it inefficient and discriminatory against farmers with more difficult access to credit. It established a once for all subsidy on the cost of new tree plantations and "manejo de bosques" up to 1994 on top of the inextinguishability of forested land. The bonus reached up to 75 percent of the cost of a new plantation. The apparent justification behind the subsidy was that given short-sighted perceptions of private agents, they would discount long period maturity investments at a lower rate than the relevant social one. The subsidy was also accompanied by earmarked credit during a short period of time (see section Debt and Credit below) and it was consented against the obligation of replanting, once the wood cutted, to preserve the forestry resources. DL 2565 (1979) allowed small farmers and lands in the regularization process to benefit from the subsidy.

price is allowed to fluctuate freely within the band. The bands were to be widened over time and eventually eliminated, in accordance with a preannounced schedule, and a futures market be encouraged to stabilize expectations. A special report is being prepared on the issue of price bands.

²⁸ The objective of a procurement agency was to fill up the lack of financially strong buying power in one particular sector, to offer an alternative to small farmers and to increase the degree of competition in marketing.

(ii) Second Period: since 1982

Although, the main characteristics of the price policy of the First Period were maintained during the Second one, some important exceptions were made. Strong farm lobbies carried out a well orchestrated pressure during the recession in 1982 and 1983, arguing too much freedom in agricultural markets, external dumping and deficiencies in the domestic marketing process of farm products.

After direct interventions in some prices in 1982-1984, three price bands have been operational since then on wheat, oilseeds and sugar. A private procurement agency, financed by the government, the Comercializadora de Productos Agropecuarios (COPAGRO) intervened in the wheat market between 1983 and 1986 and also in rice, corn, beans, and wine during 1984; it went broke in 1986 by speculating in maize. The Comercializadora de Trigo SA (COTRISA) replaced it to operate only in the wheat market. No formal procurement agency intervened in the other two markets, the reason being that financially strong -even monopsonistic- firms were the main buyers of oilseeds and sugarbeet-the domestic input for sugar production (see footnote 27).

Again, the main objectives of the bands were to attenuate the adverse impact of short run fluctuations in international prices on domestic production while preserving the signals of border prices over the medium term for an efficient allocation of resources consistent with comparative advantages. Only in the case of wheat, the price band was supplemented by the operations of a procurement agency. Bands have been supported by a variable levy on imports. Bands operated essentially the same way for the three products.

The prices of milk and derivatives have remained intervened, although intermitently, until today (see Trade Policies below).

The mentioned interventions may be few in numbers but are very significant. In the first place, because they affect directly, a high share of land, agricultural value added, and agriculture employment and in the second place, since they have an impact on the allocation of resources in the production of agricultural substitutes both in consumption and in production; this substitution may be significant, although precise information is not available. However, it should be recalled that free imports with low tariffs limit the extent of the indirect impact of price bands on agricultural resource allocation.

Trade Policy

Within the framework of objectives of the pricing policies, trade controls were profusely used before 1974 to support price controls of agricultural outputs and inputs. They were also used to affect resource allocation. Tariffs, prohibitions, quotas, reference prices, prior deposits, administrative and phytosanitary controls, exonerations, etc were

applied with great flexibility and enthusiasm²⁹. Further, the relative use of one instrument or another depended on the output or input considered: for example, tariffs were usually applied to imports of machinery, pesticides, herbicides and fungicides, while reference prices on milk, milk derivatives, tariff exonerations on essential products, and outright prohibitions to some exportables like meat.

Tariffs

Since 1974, and with few exceptions, trade policy as described below has applied in a non discriminatory way across productive sectors.

(i) First period: until 1982

The 187 tariff positions directly prohibited were reduced to only six in 1976. The 10,000 percent prior deposits applied on more than 50 percent of tariff positions were eliminated before the end of 1976. Early 1974, all quotas and official approvals required to initiate an import operation were eliminated³⁰. Tariffs, ranging from 5 percent to 750 percent, were adjusted to reach a uniform 10 percent in June 1979, 5 year and a half after the trade liberalization started. This was done in three stages

During the first stage -until mid-1975 -, most QRs were eliminated; and so were prior deposits though they lasted *de facto* until August 1976. The maximum tariff came down from 750 to 120 percent, the simple average tariff dropped from 105 to 57 percent, and the modal tariff declined from 90 to 55 percent. Between mid -1975 and mid -1977, the second stage, tariffs were adjusted so that the schedule would vary between 10 percent and 35 percent, with a simple average of 19.7 percent and a mode of 15 percent. This tariff scale was applied according the degree of processing and, during the adjustment process, tariffs were reduced about lineally. During the final stage, which lasted about a year and a half--between December 1977 and June 1979--, tariffs were further reduced on a monthly basis to reach the single 10 percent rate. Only one exception remained to that rule: automobiles and other vehicles.

Two basic complementary measures were also taken: on the one hand, a consumption tax was imposed on any good, imported or domestically produced - from the

²⁹ However, it is interesting to note that the internal prices of most relevant agricultural products followed the trends of their international counterparts. A statistical test was applied to find out whether trade barriers had insulated domestic prices from world prices; no significant differences were found (see Table A-4 and Graphs).

³⁰ More than 50 percent of tariff positions had been subject to official approval.

industrial sector, agriculture or any other sector-, right at the outstart of the liberalization efforts and, on the other hand, most duty exemptions, which affected about 50 percent of imports, some of them from agricultural origin, were eliminated before December 1979. Only those corresponding to international agreements and a few others, which on the whole represent minor exceptions, remain until today. Even capital goods, which had been legally exempted from custom duties, were subject to the general rule, though duties could be paid in several annual installments.

A specific duty, variable through time, was imposed annually on 12 different milk derivatives (powder, evaporated, condensed, etc.)³¹ between 1976 and 1982, with the exception of 1979 and 1980 (Table III-1). Its justification was a combination of artificially depressed world prices and instability³². It should be recalled that Chile faces a residual market combined with the consequences of large subsidies conceded to producers of milk and its derivatives within the framework of the European Common Agriculture Policy and the US agriculture policy too. The specific duties imposed were unrelated to some conscious anti-dumping policy. For example, during 1982, the Sociedad Nacional de Agricultura (SNA) argued in favor of a compensatory duty for milk derivatives given the existence of subsidies in the European Economic Community (EEC). However, as the situation did not fit the General Agreement on Tariffs and Trade (GATT) legal framework, the request was refused. During that same year, butyric fats and cheese were imposed also a specific duty.

Price bands were also applied for a short period of time; they have been presented within the context of price policies. However, since they implied variable tariffs, they also belong to this section. The same Law 18525 established the price bands for wheat, oil seeds, vegetable oils and sugar. It defined the methodology to estimate the average prices (art 12), established the imposition of specific or ad valorem duties and its time validity of one year.

³¹ Gifts of milk derivatives were quite substantial at the time which certainly affected domestic production independently of the trade and price policies for them. It became a political issue around 1977.

³² Prices resulted depressed during most of the 70s.

Table III-1: TARIFF AND NON-TARIFF BARRIERS ON MILK AND DERIVATES

Year	Month	Custom Duty (1) %	Powder Milk Low Fat			Powder Milk			Butter			Cheese		
			Special Duty (2) (US\$/ton)	Special Duty %	VAM (3) (US\$/ton)	Special Duty (US\$/ton)	Special Duty %	VAM (US\$/ton)	Special Duty (US\$/ton)	Special Duty %	VAM (US\$/ton)	Special Duty US\$/ton)	Special Duty %	VAM (US\$/ton)
1976	October	30	298			298								
1977	april	20	298			298								
1977	july	20	129			129								
1977	october	13	470			248								
1978	december	10	534			298								
1981	march	10	202			74								
1982	may	10	372			228								
1982	november	10	297			382			323			323		
1983	april	20	178			229			61			63		
1983	september	20	211		1405	232		2155	513		3418	365		2436
1984	september	35												
1985	march	30		5			5			5			5	
1985	june	20												
1985	july	20		15			15			15			15	
1986	march	20		15	1431		15	1954		15	2656		15	2293
1987	march	20		8	1531		8	2297		8	3315		8	2856
1988	January	15												
1988	march	15		5	1531		5	2297		5	3315		5	2856
1988	september	15												
1990	october	15			1800			1800						
1991	february (*)	15		20			20							

(1) Ad valorem duty charged on all imports

(2) Specific duty charged on some products

VAM: Minimum Custom Value

(*) : Only charged to Polack milk

Source: Departamento de Economia Agraria-Universidad Catolica (DEA-UC), Panorama Economico de la Agricultura. #75. May 1991.

(ii) Second Period after 1982

Tariffs suffered upward and downward adjustments during this period; non-tariff barriers multiplied while price bands were installed at the beginning of the period to remain operational until today.

The uniform tariff was raised to 20 percent in March 1983 to appease the mounting anger of Chilean producers, victims of the worst depression since the Great One; this change was considered initially as temporary. It was risen again in September 1984 to 35 percent unexpectedly in one of the very few demonstration of populist policy of the military government. In fact, the new tariff level lasted barely six months as it was reduced to 30 percent in March 1985 after a major ministerial shakeup, then to 20 percent in June 1985, and to 15 percent in January 1988: reductions were all decided by one of the most influential finance ministers of the military government: Hernán Büchi. It is interesting to add that, despite the systematic critics made for more than 15 years by the opposition to the wide opening of the economy to the rest of the world, when in power, it decided to reduce the tariff to 11 percent (June 1991). In any event, despite the roller-coaster described, the tariff remained uniform and without exemptions.

As a consequence of the combination of a world recession and macropolicies incoherence, the domestic prices of agricultural importables collapsed after 1979. Further, domestic recession deepened the previous trends creating disarray in incentives: as a consequence, the area dedicated to cereal production was 30 percent lower in 1982 than in 1979. Under heavy pressure on the part of farmers and given the socio-political unrest, partly consequence of the very high levels of general unemployment, authorities took specific measures to reactivate agriculture not totally coherent with the basic scheme adopted by the military government: (i) price bands on wheat, oil seeds and sugar - described above-, (ii) minimum prices at customs for sugar and reopening of plants processing sugar beet (1982).

Although the initial justification of these measures has long faded away given the booming conditions of the economy as a whole and of agriculture, in particular, after 1984, they have been maintained until today, although their significance had varied through time.

Finally, the obstacles to milk imports and its main derivatives inherited from the First Period have been maintained until today, though they have varied in kind and importance. Starting 1983, a new instrument called minimum custom prices (VAM) was used on milk and its derivatives on top of the 20 percent ad valorem duty and the specific duty (Table III-1). The result was a nominal protection of about 50 percent for that industry.

Law 18525, established within the framework of the GATT protocol of 1979 signed by Chile, legalized minimum custom prices on imported goods which international prices are considered to be temporarily below their normal level and could produce an irreparable prejudice to the domestic production of that good. Their validity could not last more than 12 months. Compensatory duties could vary from 3 percent to a maximum of 24 percent³³. A National Commission to Investigate Price Distortions was established. Compensatory duties could be levied temporarily before the end of the investigation period of 90 days. The application of the compensatory duty could not last more than a year.

The minimum custom prices on agricultural imports established in 1983 lasted one year and then were reestablished in 1986 to be dropped again in 1991. Tariff surcharges, expressed in ad valorem terms, replaced the previous specific duties on milk and derivatives since 1985 (Table III-1). Tariff surcharges were established in 1983 as part of an anti-dumping system. By that time, the Chilean anti-dumping policy became more active as a consequence of increasing efforts by countries caught by the world crisis of the early 80's to stimulate exports artificially. Though relatively important in the early 80's, the significance of surcharges has decreased through time. In 1985, 21 items were subjected to surcharges; only 2 cases were approved in 1990. Powder milk, butter and butter oil, and cheese were the only agricultural products on which surcharges varying between 5 percent to 15 percent have been applied between 1985 and 1987. As of September 1991, wheat flour is the only agricultural product with tariff surcharges of 10 percent, while imports of powder skimmed milk from Poland has been the only case of countervailing duty imposed so far (June 1991).

Tariff reductions, in relation to the general treatment described above, have been also approved within the framework of Latin American Integration Agreement (LAIA). Some agricultural products are included (meat among others); however, it cannot be said that they represent a treatment of exception towards the agricultural sector, though, Authorities have been careful to avoid imports of meat which would "jeopardize" domestic production.

Non-tariff barriers

As described above, reference prices or minimum custom prices were introduced. They are part of the anti-dumping rules³⁴, (see Law 18525). By the end of 1990, 26 product categories were subject to them. These prices are used for the purpose of

³³ Since Chile had agreed with the GATT to a maximum tariff of 35 percent, the maximum compensatory duty is equal to the difference between the actual tariff level and 35 percent.

³⁴ Chile has signed neither the anti-dumping nor the customs valuation codes which would limit the flexibility given by Law 18525.

determining the base for assessing import duties. They were applied to the agricultural products on which surcharges existed such as milk and meat.

As foot and mouse disease was eradicated in 1981, after a successful, though expensive program of control and eradication which started in 1974, there has been, during this Second Period, a strict enforcement on import prohibition on live animals or fresh beef with bones (chilled or frozen). The Chilean beef has become a non-tradable.

Phytosanitary controls on agricultural imports have been enforced very strictly, though not sufficiently as "pest poles" have appeared in some occasions in the last 15 years. In particular, the import of vegetables in provenance from countries with mediterranean fly and foot and mouth disease is strictly prohibited. The adverse consequences of the pest cases have stimulated higher investment in enforcement. This issue is a formidable one in the realm of reaching an eventual Free Trade Agreement (FTA) with Argentina. It has two facets: (i) one related to the costs and modalities of application of the phytosanitary rules; (ii) the other is related to the political economy of it and, particularly, the danger to apply the rules more in protective terms than to safeguard the "free of plague" patrimony.

Export "Promotion"

The development strategy followed since 1973 does not imply export promotion per se, but the significant reduction in the anti-export bias existing in 1973. Although a drawback system existed prior to 1973, high and diversified obstacles to imports and exports as well taxed exports heavily and variedly by sector. Consistent with its general market orientation policy, the military government did not create subsidies on exports. The reduction in the anti-export bias was carried out by a significant reduction of obstacles to imports and exports described above, by improving the overall macroeconomic framework -particularly, higher real exchange rate and financial liberalization- and by improving the existing framework of "incentives" existing in 1973³⁵. No main difference could then be found on account of export promotion policies between the First and the Second Period; measures taken during the First were only deepened during the Second. Further, agricultural exports were not discriminated from the exports of the other productive sectors.

³⁵ Besides the basic drawback system approved in 1970, it should be recalled that a subsidy on fishing and tree planting existed before 1974, which, given the character of export-oriented "agricultural" activities would be stimulating indirectly agricultural exports (see Price Policies above). Also, farmers today consider that the boost given to private property stimulated investment in export activities.

(i) First Period

As tax and financial measures, special benefits came from the rebate of the value added tax introduced in 1975 (DL 825, 1974) that exporters would have to pay on the acquisition of goods and services used in export activities. The existing framework (D409, 1970) regulated the reimbursement for the import duties which applied only to the inputs imported by the exporter.

Institutional support to exporters was also considered. The Instituto de Promoción de Exportaciones (PROCHILE) was created in 1974 (i) to stimulate and promote exports, (ii) to participate in international negotiations and international organizations, and (iii) to manage relations and bilateral economic agreements. It is today integrated to the General Direction of Economic Affairs at the Ministry of Foreign Affairs. For these purposes, several committees were created to analyze and solve problems related to exporting activities (mixed entrepreneurial-government, sectorial, cases) and direct assistance can be also provided to improve the access to markets. The role of this institution has been minor so far to the extent that it cannot be argued that Chilean exports are subsidized in the rest of the world.

New transport and port legislations could also be considered as stimulative to the exporting activity. Both air and maritime transport, previously protected, were opened to foreign competition, which resulted in improved efficiency. So did the port legislation which eliminated the monopoly power of port workers and allowed the participation of the Private Sector in port services (see also section on labor market).

Certification of quality, or better, its absence, have hampered some agricultural exports such as wool while the lack of adequate facilities have created problems to sheep meat exports to the CEE. On the other hand, Chilean wool producers have been incorporated to wool bidding in New Zealand.

(ii) Second Period

Law 18708 (1988) replaced the D 409 and made extensive the benefit to imported inputs used by domestic producers of goods used in exports. It also allowed the rebate of import duties on capital goods used in export activity in the proportion of its use in that activity. A 1983 law established the temporary admission of inputs to be processed and reexported. L18480 (1985) established a simplified mechanism to replace the drawback system for small non-traditional export: while exports of an item would not surpass some given amount: US\$10 and US\$15 million as of December 1990, new reimbursement rates apply: 10 percent and 15 percent respectively.

Exchange Rate Policy.

The real exchange rate was considered by the military government as a prime instrument of resource reallocation according comparative advantages. It was also expected to play a major role in supporting trade opening, and to stimulate exports, considered as main instrument to development of a small open economy. The legacy of the previous government was an extremely distorted foreign exchange market. The existence of six different exchange rates in 1973 tells something about the distortive nature of government interventions: for example the highest exchange rate was 50 times the lowest one. Further, the coverage of each of the existing "markets" would vary continuously at will of the authorities. The possibilities of anticipating the changes were impossible.

Whatever has been the exchange rate regime chosen by Chilean authorities since 1973 -in fact, all types have been experimented at one moment of time or another-, the principle of a unique exchange rate for transactions of goods was maintained all along. This meant that agriculture was neither directly nor indirectly subjected to a discriminatory rule. In practice, up to three exchange rates coexisted at one time, but only one related to goods' transactions. Nevertheless, this situation can be considered an improvement as compared to the previous situation when 6 rates were coexisting in 1973. Today, there are two of them.

Taking the long view, it cannot be said that exchange rate policies determined the real exchange rate between 1973 and today; at best, only the nominal one. The combination of macroeconomic policies and some exogenous factors such as terms of trade, technological changes, changes in the size of the government and its expenditures' composition, large unemployment, alterations of tariff and non-tariff barriers, capital flows and foreign debt service were the main factors explaining the behavior of the real exchange rate since 1973. Again, taking the long view, the real exchange rate improved substantially with respect to previous decades, and was determinant in stimulating both agricultural import-substitution as exports, with a resulting higher average annual growth of this sector value added higher than previously (see Part V).

(i) First Period.

The real exchange rate rose substantially at the beginning of the period until 1976, and then appreciated almost systematically up to mid-1982 (Table H1). This evolution was the consequence of an initial disastrous trade balance, stabilization measures which implied a significant reduction in domestic absorption to permit facing this trade balance situation, given the expectations-realistic- of facing a closed capital market at the time. Significant and growing capital inflows with the support

of ambiguous macro management produced the downfall of the real exchange rate after 1977.

(ii) Second Period.

Both macroeconomic and exchange rate policies were geared toward rising - successfully-the real exchange rate given large debt service payments and the closing of the foreign capital market which came eventually in 1982 (Table I-1).

Institutions

Institutions and policies are intimately related; the first are instruments of the latter. As references on them are necessarily made in the different sections of this chapter as actors of any policy scenario, this section will include only an overall view of them. Even so, institutional issues are too many to be analyzed here. The focus will be related to the process of liberalization of the agricultural sector. Consequently, this section will describe succinctly the main institutional adjustments carried out in the process of liberalization between 1974 and 1990, and will illustrate some special problems with two cases analysis. Other institutional aspects are treated in connection with each policy block. Table III-2 summarizes the main changes occurred after 1973. It gives a flavor of three basic events: the disappearance of some institutions, the privatization of others, and the creation of a few ones both in the public and the private sectors.

A large and complex bureaucracy had been created before 1974 to administrate the numerous and often "overlapping programs of price controls, subsidies, credit, tariff preferences, marketing, technical assistance, research, irrigation, roads, rural education and health, colonization, and land redistribution. By November 1970, 27 independent agencies formally constituted the Public Agricultural Sector". (The World Bank, 1980), while about 35 institutions did deal directly with some aspect of the agricultural sector. During the Allende's Government, the staff of the Ministry of Agriculture alone more than doubled.

Table III-2: INSTITUTIONS IN AGRICULTURE

	Before 1974		After 1974	
	Public	Private	Public	Private
Planning of Policy				
National	ODEPLAN		ODEPLAN	
Sectoral Level	CONAF, CONSFA, MAG, ODEPA		CNR, CONAF, MAG, ODEPA,	
Research	CORFO, INFOR, INIA, IREN, SNA		CIREN, CORFO, INFOR, INIA, INTA	
Technical Assistance	CONAF, CORFO, IANSA, INDAP, INIA, SAG, SERCOTEC	COPAGRO	CORFO, INDAP, INIA, SAG, SERCOTEC	CCHT, Fruit Exports, IANSA
Financial Assistance	BCH, BECH, CORA, CONAF, CORFO, COMARSA, IANSA, INDAP	COPAGRO, IFICOOP Private Banks	BECH, CORFO, INDAP	CCHT, Fruit Exports, IANSA, Private Banks
Marketing				
Inputs	BECH, ENDS, SOQUIMICH, COMARSA,	ANASAC, INSUCOOP		ANASAC, COPAGRO, IANSA
Outputs	CONAF, DIRINCO, ECA, ENAFRI, ENAVI, IANSA, SACOOP, SOCOAGRO, SOCORA, VINEX		CNC, CNL, COTRISA	COPAGRO, IANSA, INFORSA
Pression Group		COPAGRO, SNA		ASOEX, SNA, FEDEFRUTA
Sanitary Control	SAG, CONAF		SAG	
Others				
Land Reform	CORA, ICIRA, SOCORA		CORA, ODENA	
Organizational promo	VINEX		PROCHILE	FUCHI
Infrastructure	ENAFRI, ENR, MOP, SOCOAGRO,		MOP	
Other Assistance	IDI, INACAP, MED, MTC, SEAM	IER	MBN	IER, INACAP, INPROA
Producers	CELCO, CONAF, ENAVI, FOCEA IANSA, INFORSA			

Appendix Table III-2: DEFINITIONS OF NAMES OF INSTITUTIONS

ANASAC (Agricola Nacional S.A.C) Created in 1948	IER (Instituto de Educacion Rural)
ASOEX (Asociacion de Exportadores de Chile)	IFICOOP (Instituto de Financiamiento Cooperativo)
BCH (Banco Central de Chile)	INACAP (Instituto Nacional de Capacitacion Profesional)
BECH (Banco del Estado de Chile)	INDAP (Instituto de Desarrollo Agropecuario) Created in 1962
CCHT (Compañia Chilena de Tabacos)	INFOR (Instituto Forestal) Created in 1965
CELCO (Celulosa Constitucion)	INFORSA (Industria Forestal S.A)
CIREN (Corporacion de Investigacion en Recursos Naturales)	INIA (Instituto de Investigaciones Agropecuarias) Created in 1964
CNC (Comision Nacional de la Carne)	INPROA (Instituto de Promocion Agraria)
CNL (Comision Nacional de la Leche)	INSUCOOP (Union Cooperativa Nacional de Insumos Agropecuarios)
CNR (Comision Nacional de Riego)	INTA (Instituto de Tecnologia Alimentaria)
COMARSA (Comercializadora de Maravilla)	IREN (Instituto de Investigacion en Recursos Naturales) Created in 1964 and Transformer into CIREN
CONAF (Corporacion Nacional Forestal) Created in 1970	MAG (Ministerio de Agricultura)
CONSFA (Consejo Superior de Fomento Agropecuario) Created in 1962 and transformer	MBN (Minisrerio de Bienes Nacionales)
COPAGRO (Confederacion de Cooperativas del Agro) in operation until 1986	MED (Ministerio de Educacion, Departamento de Educacion Agricola)
CORA (Corporacion de Reforma Agraria) 1962-1978	MOP (Ministerio de Obras Publicas, Direccion de Riego y Direccion General de Aguas)
CORFO (Corporacion de Fomento de la Produccion)	MTC (Ministerio de Tierras y Colonizacion, Departamento de Tierras y Bienes Nacionales)
COTRISA (Sociedad Comercializadora de Trigo) Created in 1986	ODENA (Oficina de Normalizacion Agraria) 1978-1979
DIRINCO (Direccion de Industrias y Comercio)	ODEPA (Oficina de Planificacion agricola) Created in 1967
ECA (Empresa de Comercio Agricola) 1960	ODEPLAN (Oficina de Planificacion Nacional)
ENAFRI (Empresa Nacional de Frigorificos)	PROCHILE (Direccion General de Relaciones Economicas Internacionales)
ENAVI (Empresa Nacional Avicola)	SACOOOP
ENDS (Empresa Nacional de Semillas) Created in 1966	SAG (Servicio Agricola y Ganadero) Created in 1967
ENR (Empresa Nacional de Riego) Only legal existence, it has never been constituted	SEAM (Servicio de Equipos Agrícolas Mecanizados)
FEDEFruta (Federacion de Productores de Frutas de Chile)	SERCOTEC (Servicio de Cooperacion Tecnica)
FOCEA (Forestal y Celulosa Arauco)	SNA (Sociedad Nacional de Agricultura) Created in 1838
FUCHI (Fundacion Chile)	SOCOAGRO (Sociedad de Construcciones Agropecuarias) Created in 1969
IANSA (Industria Azucarera Nacional)	SOCORA (Sociedad de Comercializacion de la Reforma Agraria) Created in 1970
ICIRA (Instituto de Capacitacion e Investigacion en Reforma Agraria)	SOQUIMICH (Sociedad Quimica y Minera de Chile)
IDI (Instituto de Desarrollo Indigena) Created in 1972	VINEX (Vinos de Chile) Transferred to the private sector

Institutions related to agriculture suffered major transformations after 1973 in line with the principal objectives of the new authorities: the market as main allocative instrument requiring the elimination of distortions to insure its efficient working, the private sector as main agent of development and a subsidiary role for the government. Short term macroeconomic stabilization considerations did have also some bearing in the restructuring of the institutional framework for agriculture.

Consistency with these general objectives implied the outright elimination of several existing institutions, the streamlining and changes in responsibilities of others, the privatization of agriculture related state-owned enterprises and of services previously offered by the public sector, and the creation of new ones according needs borne from the consequences of the new development strategy. The timing and sequencing of institutional changes did obey to a host of factors such as the consistency with general measures, fiscal considerations, availability of specialized personnel which could prepare and carry out the desired changes; it was not the result of a preconceived plan.

More specific considerations could be mentioned which would throw more light on the reasons behind institutional changes carried out during the First Period, which was one of cleaning, corrections, simplifications: (i) the elimination of public and private monopolies in marketing of agricultural inputs and outputs; (ii) the improvement of the Public Sector intervention efficiency and that of the relevant markets of inputs and outputs; even, future markets were considered, among other measures, for the latter objective, (iii) the rapid reduction of fiscal deficits.

The program of austerity imposed in 1975 resulted in a significant reduction in personnel. The number of public employees was reduced by about 100,000 over a period of four to five years. A share of it was related to agricultural services. Although its precise dimension is unknown, it was significant.

Public monopolies on trade (domestic and international) of agricultural products and inputs were suppressed; some by closing institutions (ENDS, COMARSA, DIRINCO, ECA, SACOOP, SOCOAGRO, SOCORA, ENAVI); other by taking away that particular responsibility of the institution (BECH, SOQUIMICH, IANSA, ENAFRI).

As price controls faded, DIRINCO and ECA could not justify anymore their intervention. Both were closed. However, COPAGRO and COTRISA later on, both private institutions partially or totally funded by the Government and with a guarantee to operate with a reasonable rate of return, served as a procurement agency to intervene in the wheat market. They used silos left by ECA. As such, their impact on the average annual wheat prices is marginal, though it may alter the monthly price evolution.

The production of goods and services administered by previously public institutions such as INFORSA, Forestal y Celulosa Arauco, CELCO, SOCOAGRO, SEAM, ENAFRI, ENDS, SOQUIMICH, IANSA, VINEX, ENAVI and more than 60

other agri-business firms were privatized in two rounds: all were privatized before 1979 with the exception of SOQUIMICH and IANSA which were divested after 1984. The case of ENAVI was a typical example of how large can be the differences between the realization planned by dreaming bureaucrats and the sad reality. Based on the expected large benefits to be obtained from the vertical integration of various stages of this poultry industry (reproduction, production, and marketing) with expected economies of scale, and prompt assimilation of technological changes, the public sector went into the business which resulted a fiasco. After its privatization, in 1974, poultry production surged rapidly in Chile even within a non-monopolized environment.

Operations of IANSA were significantly curtailed as several sugar beet plant processing were closed in the 70's; later, after the recession of 1982-1983, the closed plants were reopened, the institution was revamped while the level and stability given to the sugar price through the price band ensured reasonable financial attractiveness; all plants were privatized after 1985³⁶.

Institutions previously related to technical and financial assistance, research, land reform, are not analyzed here since they are covered by the respective sections of this Part III. Rationalization, consolidation, simplification, have been leit motifs for the institutional revisions, while many activities were transferred to the private sector, expropriated agricultural assets such as land, among them.

New institutions have also been created since 1974 such as the Comisión Nacional de la Leche (1983) and Comisión Nacional de la Carne (1983) supposed to be a meeting place for farmers and authorities to discuss issues related to those sectors.

³⁶ The history of the sugar industry during the period analyzed merits a section of its own; it was one of extreme confusion and later apotheosis.

EMPRESA DE COMERCIO AGRÍCOLA (ECA)

The Empresa de Comercio Agrícola (ECA) merits special attention as it highlights the consistency of actions with objectives set by the new authorities within a framework of discrepancies among military authorities, and the occasional use of somewhat unorthodox methods to carry them on.

ECA was a powerful and pervasive institution involved in the past in many activities related to price controls of food and agricultural products, to imports of agricultural inputs and outputs, and even, during the socialist regime, to imports of cars. Corruption and blatant inefficiencies were widespread in that institution when the military took over in 1973. Its transformation took longer than other institutions related to agriculture. It required a careful and methodic process of reorientation and, particularly, to "sell" the idea of the market both to the staff of ECA and to those military authorities responsible to determine its new status. The new authorities were not initially eager to eliminate price controls for redistribution motives. However, no one from the armed forces desired to keep alive a corrupted institution. Consequently, the economists of ministries of Finance, Economy and Agriculture who were pressing systematically for liberalization of markets, and consequently of prices, took advantage of this situation to convince the former to eliminate price controls established by ECA and to eliminate its monopoly powers.

A change in the rules of pricing the ECA purchases of wheat, starting in 1974, was responsible for a reduction in the ECA wheat purchases and in the rapid development of a private and free market for this product. In 1978, ECA had fully left that market. Simultaneously, it slowly lost the authority to fix norms over cereals, flours and milling operations and on other activities tied to farms. ECA, which had monopolized imports of milk products lost that privilege by the end of 1974.

Attrition of staff, consequence of a systematic and conscious reduction of its budget by the Ministry of Finance, was also another mean to reduce substantially, and de facto, its activities. It is interesting to note, that despite fading out of the main stream of agricultural policy, ECA, as of today, has not been legally abolished.

Other surviving institutions returned essentially to their original functions: ODEPA, CONAF, BECH, CORFO, INDAP, INIA while some of them have been supported by the private sector in this endeavor. Cooperatives which were very active before 1973 (Table III-3) have almost completely disappeared. In forestry, CONAF created in 1970, concentrated after 1974 all responsibilities tied to forestry policies. CONAF prior productive activities such as planting and vivarium were divested to the Private Sector; so were most forestry assets.

Table III-3: AGRICULTURAL PRODUCTIVE AND SERVICES COOPERATIVES

Cooperative Organizations	Nº of Organizations Actives in 1970	Nº Associates	% of Total
Land Reform	206	9.799	5
Peasant	308	86.330	46
Agricultural	162	33.809	18
Settlement	51	3.899	2
Fishing	47	3.291	2
Sub Total Productive Cooperatives	774	137.108	73
Electrification	15	9.974	5
Drinking-Water	140	10.448	6
Multirrecoops	14	29.650	16
Sub Total Service Cooperatives	169	49.872	27
Total	943	186.980	100

Source: Programa de Postgrado Economia Agraria (PPEA), CHILE AGRICULTURAL SECTOR OVERVIEW 1964-1974. January 1976

* In 1975 the 54% of farmers (150.000) belong to at least one cooperative; dairy cooperatives process and commercialize 40% of the milk received by plants in the country; viticultural cooperatives commercialize 20% of the wine produced; electricity cooperatives provide to 500.000 Chileans from the central zone with power; irrigation cooperatives control 72.000 hectares in a direct way and 200.000 hectares in a indirect way; 35% of the agricultural exports are carried out through cooperatives.

Land Tenure

The goal of efficient resource allocation required well functioning factor markets, land among other. A necessary condition to that effect was clearly to face and solve the land tenure problem which had arisen from the agrarian reform of previous governments.

Land tenure was probably one of the most important and hottest issue when Pinochet came to power. Private land property rights had been jeopardized first, by the agrarian reform and second, by the illegality of part of the actual process of transfer of land before 1974. In fact, if during the initial years of the agrarian reform, between 1966 and 1970, the latter was considered as an instrument to improve the state of agriculture, in the last years, when the socialist government took over, it became a political objective, throwing obvious doubts about the future of private land property and, more generally, of property rights.

The agrarian reform started legally in 1962. However, large-scale expropriation and redistribution did not begin until 1965, after L16640 was issued during the Frei regime. Until 1970, 20 percent of Chile's agricultural land was expropriated. It was expected to lead, among other goals, to create 100,000 new landowners while a reduced share of the reformed sector would become community land, the remaining left as asentamientos. Few individual land titles were actually assigned: 5500. Most land titles were assigned on a cooperative or mixed ownership basis (between 20 and 30 thousand), anyway, far from the set objectives.

About 32 percent was expropriated and illegally seized between 1971 and 1973. Cooperatives and state farms were organized on expropriated lands -Centros de Reforma Agraria (CERAS) and Centros de Producción (CEPROS)- where the property status remained ambiguous. By 1973, 60 percent of irrigated land and 50 percent of total agricultural land were in the hands of the public sector. No more than 4,132 families received reformed land from the Corporación de la Reforma Agraria (CORA) during those years. The large gap between promises and results created a large number of defrauded farmers³⁷.

When the military authorities came into power, the outcome of the land reform process was then far from expectations fueled by previous land reform efforts. Only a small fraction of rural poors had had access to land.

Expropriations were stopped altogether in 1973 and expropriated land was redistributed. In contrast to the previous governments, the military administration favored

³⁷ It is not surprising, then, that agricultural production fell two years in a row despite a significant increase in inputs availability. Of course, a host of other factors may have had also some impact in these results.

individually-owned family farms, which also appeared to be preferred by the majority of land recipients. Even cooperatives re-divided the land on an individual farm basis³⁸.

To the effect of land divestiture, the authorities proceeded to consolidate or normalize the situation of the reformed sector both in regard to production and land tenure, and, to revise the rules and habits on land expropriation, established previously, in accordance to the new set of objectives and working assumptions, economic strategy, role of private property and of efficiency.

A program was designed to create agricultural family plots (UAF) with individual ownership of land expropriated by the State and held by CORA. A small share was assigned on a communal basis. It took longer to CORA to divest land of doubtful quality -principally grazing (tierras de secano), with forestry potential or with serious conservation problems. The disposition of this land was a subject of considerable debate, inasmuch as the investments necessary to make them productive were argued to exceed the resources of small farmers and involved economies of scale. Properties not sold to assignees would be auctioned. The results of the process are shown in Table III-4 and III-5.

Table III-4: Expropriated Land by CORA

Period	Number of farms	Irrigated land (hectares)	Non Irrigated land	Total
1965-67	486	119.245	1.085.258,7	1.204.503,9
1967-70	916	170.765	2.093.325,7	2.464.090,8
1970-73	4.397	439.449	5.857.824,8	6.297.273,3
Total	5.809	729.459	9.236.409,2	9.965.868,0

Source: "La Agricultura Chilena durante el Gobierno de las Fuerzas Armadas y de Orden". ODEPA, 1989.

Land property was normalized after 1974 by assigning titles to 109,941 small farmers and 67,603 indígenas³⁹ and by completing the litigation of alleged irregularities

³⁸ Since most of the changes occurred before 1981, no distinction will be made here between the First and Second Periods

in the expropriations carried out previously; also, up to 70 percent of debt was forgiven to the reformed sector (only to the original assigned and the second buyers : 38,000 of them). 28 percent of the total expropriated land was restored to its original owners.

Table III-5: Disposition of Expropriated Land
(in May 1978)

	Number of farms	Hectares %
Total Expropriated Land	5.809	9.965.900 (100%)
Land Assigned (new owners)	2.629	3.129.604 (31,4%)
Devolution of land (original owners)	3.714	2.867.463 (28,8%)
Not assigned until May 1978		3.968.833 (39,8%)

Source: Departamento de Economía Agraria, Universidad Católica. Panorama Económico de la Agricultura N° 2, January 1979.

Illegally expropriated land was returned to their owners; but it took more than 3 years to do it. Conditions were usually imposed on them, sometimes on a negotiated basis. For example, the owners could not fire workers living on the farm. In many cases, landowners agreed to accept the return of a part of their former holdings as full compensation for expropriation of the entire farm. By the end of 1979, 97 percent of the total expropriated land had been assigned or regulated.

³⁹ Approximately 53,000 families received productive land either by assignment (70 percent) or by sale (30 percent).

CORPORACIÓN DE LA REFORMA AGRARIA (CORA)

It may be interesting to present a short story of CORA to give a better flavor of the importance of institutional changes carried out in the 70's, of problems encountered, and of coherence with a main objective of the military government: to secure private property.

CORA was the institution responsible to administer the Agrarian Reform carried out after 1966. As such, it was not only involved in expropriations and further land assignation, but also in credit and technical assistance operations with the so-called reformed sector- that is farmers working on expropriated land. It was also used, in the last years of the socialist government, as an easy and receptive institutional intermediary to hire "agitators and organize activities in favor of the quasi-elimination of land private property; the rural sector had become the main battle ground between opposite political forces. Debates around farm property had taken a dangerous trend; force was used to take it over and, in some occasion, to defend it.

The military government, after 1973, decided to stop expropriations altogether and to privatize the land in the hands of the Public Sector. CORA became a center piece of the liberalization-cum-privatization strategy desired by the new authorities and of its quest for an efficient public administration managed on the basis of technical criteria instead of political ones.

In the first place, the irrigated land was assigned in lots of 8has basic on an individual basis; titles of property accompanied and subsidized credit was given to help the assignee to pay the commercial value of the land assigned. Farms, combining irrigated and non-irrigated land, were transferred through bidding at auction in their original size. The privatization of the rest of the land, mostly non-irrigated, was subject to some debate. Considered by most specialists-in government- as non-viable for individual ownership if sold in small lots, technicians favored the transfer of previous big farms to groups of individuals -in the form of limited companies. The farmers chosen would have proved previously their quality as managers. However, one member of the military junta fought for individual ownership. The final decision favored the technicians solution. The distribution of lands from the two southern provinces of the country, essentially dedicated to sheep cattling, also rose problems. Church members were strongly in favor of small individual plots, while the government technicians recommended units able to raise 5,000 sheep as a minimum for viability reasons. The

Junta decided against the Church advice. Both examples illustrate the trust put on the technicians and the will of the new authorities to solve problems from the best economic point of view⁴⁰. It also illustrates the extent of the authorities power at the time.

In a manner coherent to the desire for a technical and efficient public sector management, all agitators were immediately thrown out of CORA, which personnel faded consistently as problems were being sold: in 1974, CORA was paying wages to 5,000 people; in 1978, to 600, in its last year of existence, 1979, to 100.

Authorities were firmly decided to close CORA by the end of 1978. To that effect, a law was enacted and passed. However, some tasks which had been legally assigned to CORA were still incomplete. To the effect of carrying them to the end, ODENA was created with a 365 days -1979- legal lifetime. By the end of the year, all public land had been assigned and other responsibilities transferred to other institutions (Servicio Agrícola y Ganadero-SAG-and Banco del Estado -BECH).

CORA, at the time of the military take-over, a symbol of interventionism, limitations to private property, illegal proceedings, faded definitively from the Chilean institutionality 50 years exactly after its inception! This once powerful institution related to agriculture is the only one which has been eliminated.

The average size returned in their entirety approximates 85 basic irrigated hectares (BIH), while the partial farms returned have averaged 50BIH (World Bank, 1979). This occurrence was favorable to the development of the land market (more on this issue in next section).

Further, DL 2247 (1978) formally repealed the legal authority for land expropriation. This action removed the 80 BIH upper limit on land-holdings as well as the ban on corporate land ownership. The arguments favoring the annulment of these impediments to land concentration were based primarily on the assumption that agriculture offers significant economies of scale in the use of machinery and in the application of modern technology⁴¹. Finally, the implicit tax subsidy -via falling tax base resulting from a lag in land price adjustment- by fading with the fiscal reform of 1974, could not be used

⁴⁰ Although, CORA did not worry, at the time, about the actual consequences of its decisions.

⁴¹ These arguments had been also used to justify collective or state farms during the Allende period.

anymore as an argument favoring expropriation. All, this led to leave the law of Agrarian Reform rather empty of any practical interest; it was repealed later on (1978) and CORA was dissolved also in 1978 (DL 2,405).

It may be worth ending this section by noting that these phenomena may have been consistent with the policy of the military regime to provide unrestricted access to land holding, with guaranteed private property, but were unrelated, though not inconsistent, with trade liberalization⁴².

Land Market

Land, labor and capital markets were pillars for a successful market-oriented development strategy. They were liberalized, although at a slower pace than the good markets as they presented intricate problems related, for example, in the case of land, to legal and social issues and to the absence of prior experience of a smooth, active, and transparent working.

Traditionally, land represented a low-risk store of value in an highly inflationary environment, with undeveloped capital market. Further, fiscal value assessments declined in real terms. Also, "land-ownership, per se, provided the collateral required for heavily subsidized agricultural credits, and hence access to other inputs, consumption goods, or opportunities for financial gains" (The World Bank, 1980) while at the same time discouraging its productive exploitation. Consequently, although net return to agricultural activity may have been low, given all contradictory types of interventions, land values would rise outpacing the rate of inflation.

An active market for land was created: it allowed the development of a new class of agricultural entrepreneurs which has been modernizing agriculture and it gave farmers the possibility to reach optimum farm sizes (Muchnik, 1991).

The flexibilization of the land market was stimulated by the strengthening of property rights, the land parcellation, consequence of the agrarian reform described in the previous section, the normalization or titling process, and, last but not least, by the inability of many families to whom reformed land was assigned after 1974 -and before too- to keep their farm. Although, initially they were forbidden to sell the lot assigned to them, they were allowed to do it after 1977. Subsidized complementary inputs, technical assistance, and credit, were not forthcoming, while the process of obtaining entrepreneurial capacity, being a farmer on its own or on CORA-owned land, had been

⁴² Although, the optimum farm size has certainly been influenced by the type of agricultural production stimulated by trade liberalization (fruits and forestry).

insufficient during the few years that agrarian reform lasted. It has been estimated that 40 percent of the original owners of land assigned had sold or transferred their rights on land (Mujica, 1991).

Land market was further stimulated by the liberalization of rules on land leasing (DL 993 and DL 2,567) and on land partition (DL 3,516, 1980). Further, incorporated companies were allowed to rent and manage farms. The separation of water rights⁴³ from land itself and the possibility to transfer them independently gave an additional boost to the land market. Competition in agricultural production on top of freedom of land transactions would impose a strict discipline in the use of land, which would itself strengthen the land market. To impose further discipline, land valuations were massively readjusted for tax assessment purposes late 1973; the consequence was that landowners would lose a subsidy unrelated to productive efforts.

Precise information on the working of the land market and its performance after 1974 is not easily available. Table III-6 gives a rough idea of the main changes occurred to size and number of properties after 1974. The number of properties increased by almost 50 percent between 1965 and 1979. The number of minifundia has also increased but in smaller proportion, 35 percent, while land available to them as share of total land increased by 44 percent in the same period. So there has been a decreased concentration of land in large farms while the number of small farms increased. The question is whether this is "an efficient" trend. At this stage, the only judgments that can be made suggest that, with the possible exception of forestry land, the average size of reformed land may not be far from the optimum. This is so as the optimum farm size depends heavily on its use, among other forces; and export products-fruits, in particular- which reach the optimum size much quicker than say, cereals, has occupied a rapidly growing share of arable and irrigated land; in fact of the best land of the country. On the other hand, the expansion of forestry, another exportable, and then the growth of large size farms, has been hampered by the artificially high returns secured to the production of milk and derivatives, cattle, and cereals; the most likely optimum size for these latter products is smaller than for forestry. So, the scanty evidence available suggests that the land market seems to work with apparent efficiency.

⁴³ This is probably the single most important measure taken to give flexibility to the land market and to improve resource allocation in agriculture.

Table III-6: Comparison of 1965 and 1979 Size Distributions of Agricultural Land

1965				1979			
Size Categories in BIH	Number of Properties	Percent of Properties (%)	Percent of Total Land (%)	Equivalence in BIH	Number of Properties	Percent of Properties (%)	Percent of Total (%)
> 5	189,529	81.4	9.7	5,1	254,925	75.0	14.0
5-20	27,877	11.5	12.7	5.1-25.6	70,975	20.6	38.7
20-80	11,633	5.1	22.5	25.6-64	11,376	3.3	2.2
> 80	4,876	2.0	55.3	> 64	5,426	1.6	21.0
Total	232,955	100.0	100.0		342,702	100.0	96.0 ^a

^aFour percent of privately owned land in 1965 held by government agencies in 1979.

Source: L. Jarvis. Chilean Agriculture under Military Rule". IIS Research Series N° 59.

It has been shown that the reformed sector tended to concentrate in activities traditionally undertaken by "inquilinos", essentially vegetables and cereals. The noted flexibilization of the land market consequently stimulated the shift of crops to more advantageous ones and more capital intensive⁴⁴, in line with the significant changes in relative incentives -e.g. towards exportables.

Research, Extension and Technical Assistance

Research

Research in agriculture had a long history in Chile of public involvement either directly through INIA, CORFO, IANSA, or indirectly, through universities mainly financed by the public sector. The role of the State in this area, tightly related to extension, was much discussed by the new authorities after 1974. Finally, it was decided that the Government should finance only high social returns projects which objective is to find new alternatives of production in areas with scanty possibilities or could solve specific problems of small farmers. Public support was also maintained to activities with non-appropriable results. Consequently, the Instituto de Investigaciones Agropecuarias (INIA)

⁴⁴ In fact, it was shown (PPEA, 1976) that reformed farmers used labor more intensively relatively to other farmers.

kept essentially the same budget while also partly financed with self-generated revenues⁴⁵. Partial public financing was given also to a new institution related to the Ministry of Agriculture, the Fondo de Investigación Agropecuaria (FIA), 1981, which would bid funds for research sharing costs with the Private Sector .

Research was carried out also at universities before 1974; however, results did not usually reached the farmers. Today, as university financing is heavily dependent on private sources, a bridge has been established between scientists and practitioners; in fact, a growing number of researchers are involved in consulting. In addition, productive firms such as SOQUIMICH and IANSA, and producers' association as SNA have been and keep being involved in research related to their specific area (cereals, fertilizers, sugarbeet respectively).

One interesting question is whether past efforts- before 1974- in research served any useful purpose at all which could justify maintaining these programs, and even increasing them. It can be argued, a posteriori and in a theoretical way, that fruit production, for example, started to develop in Chile in the 60's (even before) with the support of public sector research and CORFO's extension efforts which created a base for the phenomenal development of that sector in the 70's and 80's.

In the first place, research is only one factor in a large collection of determinants of the success story. In the second place, it can be shown that, even if the public sector had had some impact through its efforts on research, it quickly lagged by the rapidity and extent of technical changes in the fruit industry. Further, even relevant research and results require a good extensionist system to be effective; this clearly was not the case before 1974 as INDAP, SAG, CORA, institutions responsible for extension, were inefficient. In the third place, the Chilean experience suggests that in well functioning markets, the public good nature of much of the relevant knowledge freely available in California and other places, outside the country, stimulated an efficient Chilean private sector to make use of it. Finally, the usual question of what should be the optimum expenditures cannot be answered either by normative statements or in the vacuum. It should be answered taking into considerations the existence of an open economy, of well functioning markets, of the type of relevant research freely available elsewhere and the one required for the specific "needs" of the country. A posteriori, it seems that the authorities took the right decisions not to inflate the research expenditures and to let the private sector play a relevant role in this area. The Chilean experience suggests that it was in the interest of the multinationals and domestic firms involved in fruit and wood (and cellulose) production and exports to invest in research and to transfer it to the relevant producers. Despite the absence of precise information, it is likely that investment in research is far greater today

⁴⁵ The staff even increased at INIA and its operational budget too, trends clearly contradictory to views expressed in the sense that military authorities purportedly left aside this activity in accordance to the laws of the market (Jarvis, 1991).

than 20 years ago, and even, that private "research" has greatly surpassed present and past public sector research.

Some hypothesis suggest that for research to be effective in a country, a minimum size of research infrastructure is required. Whether this minimum exists or not is not discussed here.

Recommendations were nevertheless made to discontinue lines of research as relevant knowledge was freely available -at low cost- in foreign countries or because they could be provided by private enterprises (see above). However, despite the new economic team fondness for market oriented resource allocation, the authorities kept after 1974 an interested eye on agricultural research and its spreading. New lines of research may be required such as marketing related to fruits. It is interesting to note that, despite the obvious character of the need, the public sector research facilities seem oblivious of these requirements; this illustrates another shortcoming of public research. On the other hand, it appears that agricultural research carried out at universities have shown lately a higher degree of integration with principal preoccupations of practitioners.

Extension and technical assistance

Chile had one of the best financed and staffed extension programs among developing countries before 1974, albeit offering poor quality services to farmers. 90 percent of its staff would be found in Santiago or other provincial capitals. Chief public sector institutions to provide technical and extension services: the Agriculture and Livestock Service (SAG), the Agrarian Reform Training and Research Institute (ICIRA) and the Agricultural Development Institute (INDAP). The first two working almost exclusively in reformed sector. SAG (without discrimination by farm size) and INDAP were the two relevant institutions and remain so today. Assistance provided mainly non-technical partly because inadequately staffed to provide assistance in culture practices.

Programs were drastically cut after 1973 and the services of technical assistance, redesigned. This action appears to be a reaction to the combination of fiscal considerations and of the enthusiastic dedication of the personnel to the organization of farm workers during the land reform period, 1965-1973 (instead of spreading modern farming techniques). INDAP, initially dedicated to provide technical assistance and credit to small farmers gave a growing importance to socio-political objectives such as the unionization of farm workers.

The reduction of programs was also consistent with the purpose of limiting public support only to activities where externalities (positive) would develop or when costs were not recoverables; and this was not the case of all extension and technical assistance.

However, the elimination of rural poverty was considered important and a program was maintained through INDAP to cater to the very small sub-commercial producers.

Later in 1977, a program of "Asistencia Técnica Empresarial" (ATE) for a targeted population composed by the reformed sector and small farmers was created. The private sector was given the responsibility (and opportunity) to provide technical assistance to small farmers, starting in 1977. Private enterprises (Centros de Asistencia Técnica Empresarial) were responsible for extension supervised by SAG and ODEPA. The activity was subsidized initially up to 70 percent and 25 percent after 5 years with the hope that, after internalizing the information of its benefits, farmers would be willing to pay the entire cost of the assistance provided. The program did not work out. It started failing in 1980 for lack of interest on both parts⁴⁶. INIA and INDAP also transferred technical assistance to the smallest farmers (less than 5 BIH) through supervised credit operations. It has had some significant impact on the recipients. It appears that the large increase in productivity in wheat production among small farmers- more than 100 percent- is mainly the consequence of these transfers of technology, which on this crop, was assisted intellectually by Norman Burlough, the Nobel Prize, and took the institutional shape which had been successful in India. In general, extension services to small farmers have been poor during the whole period analyzed.

Programs of Technological Transfers do still exist; they have been extremely successful mainly among medium size and large farmers. Supported by INIA for a while, 4 to 5 years, they have transferred truly modern knowledge obtained easily outside - not only in California- ; although perhaps still limited in coverage, the private sector has been dynamic in creating enterprises of extension and technical assistance services. Although, initially organized and supported by the Ministry of Agriculture, it is now a fully privatized activity under the umbrella of the SNA. Some have even exported these services to surrounding countries.

If the main factors behind productivity increases are research and extension, the confidence of authorities seems to have paid off. Domestic and imported knowledge duly transferred seems to have increased in a geometric progression during the period analyzed, market forces and private sector have been active in this domain.

⁴⁶ For technical assistance to be effective it has to be demanded. Apparently, more than 40% of the land recipients surveyed by ICIRA were not demanding technical assistance because they did not see the need of it.

Other programs of rural development have existed:

(i) initially, minifundistas (subsistence level) and small farmers were supported through several programs, some of them specific to a geographical place; the private sector shared some responsibility in them together with public institutions such as INDAP, INIA, CORFO, SAG, ICIRA, CORA and the State Bank BECH. In fact, INDAP was supposed to be responsible for rural development. ODEPA (between 1978 and 1983) and SAG have also had a small share in these programs;

(ii) In 1987, authorities put forward a "Rural Development Plan", consistent with the government social policies, geared towards the small landowners and which covered other facets than technological transfer and credit such as education health, etc.

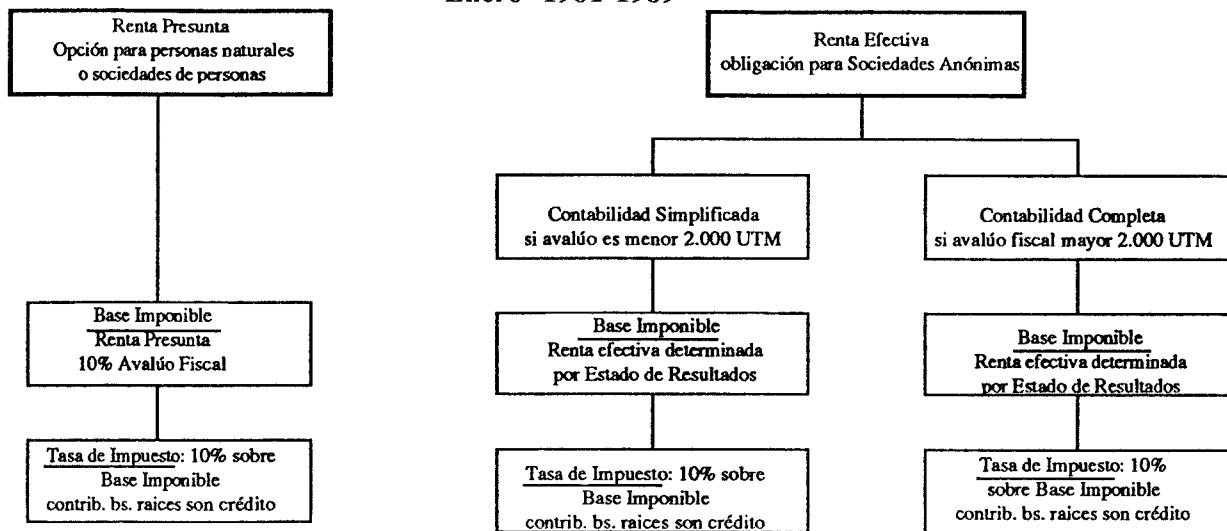
Taxation

Reforms carried out since 1973 have not introduced major changes. Tax on presumptive income of unimproved land which fiscal value is being revised continuously. The valuation had lagged singularly in the past. This was a result of a deliberate policy of reducing the potential costs of expropriations. For example, the value for tax purposes of an hectare (Clase I-r, in Isla de Maipo) had fallen in 1973 to 16 percent of its value in 1966. It jumped 10 times in 1974 and since then, rose 2.5 times until 1981. It does not appear to be now undervalued as it was the case before 1974.

The income presumed as a base to apply the relevant taxes is 10 percent of the fiscal valuation which should not include neither improvement nor investment. Tax rates are no different from those applied to other productive sectors. The real estate tax could be deduced - and still can - from the income tax. The fact that land would not pay any tax could be considered as another incentive to invest in land (See section on Land Market). One of the reforms introduced in 1974 was the system of land valuation since valuation had growingly lost any relationship to market prices before 1974⁴⁷. The price was adjusted annually by a factor equal to the sum of the CPI and a factor related to the change in relative prices of land.

⁴⁷ The valuation of land was in 1973 only 16% of that in 1966 for the same quality of land. Mujica, 1991

**Graph III-1: Agriculture taxation
Enero 1981-1989**



- Renta Presunta considerada como retirada y afecta al Impuesto personal de Global Complementario.
- El pago del impuesto no es crédito para Global Complementario

- Renta efectiva considerado como retirado y afecto al Impuesto personal Global Complementario.
- Es crédito para Global Complementario

- Hasta 1988 renta efectiva considerado como retirado y afecto al Impuesto personal Global Complementario.
- 10% sobre reinversión y crédito Global Complementario.

Reformas año 1989 y 1990

- La opción de Renta Presunta se le agrega la limitante que las ventas sean menores a 8.000 UTM anuales a partir de 1990.

- No cambió

- No cambió
- A partir de 1989 solo los dividendos pagados son renta para el impuesto personal Global Complementario.

It can also be proper to mention here the existence prior 1974, of a prohibition to plant new vineyards in the irrigated lands of the central region of the country (from Aconcagua to Nuble); this measure redistributed rents in favor of existing owners of vineyards. Further, indirect taxes existed on consumption of wines, liquors, and beers (taxes are among 26 per cent for wines and 46 per cent on beers). In 1974, these indirect taxes were replaced by a Tax on Alcohols (ILA) with a flat rate of 20 percent on the same base of IVA⁴⁸. Taxes and regulations on plantations of vineyards were eliminated. In 1979, the flat ILA was replaced by a differentiated one (Table III-7).

**Table III-7: Additional TAX on Alcohols
(1979)**

Item	Rate
Liquors including "aguardiente" and vermouth	30
"Piscos"	25
Vines, champagne, "chichas", "sidras", beer and other alcoholic beverage	15
Analcoholic beverage	15
Mineral waters with colorant and sweet	15

Source: Mujica R., Celedón C.: Efecto Tributario de la Eliminación del IVA adicional a los Alcoholes; Documento de Trabajo N°87, Instituto de Economía PUC

The present system subsidizes implicitly export activities but not the less profitable traditional annual crops (Panorama Económico de la Agricultura, 67, 1989).

A complete, though succinct, presentation of income taxes affecting agriculture can be found in Graph III-1.

Labor Market

A law was passed in 1965 flexibilizing the formation of unions; the number of agrarian workers affiliated to unions increased very significantly stimulated by the

⁴⁸ One of the most important tax reforms, in 1974, was the replacement of the taxes on sales of goods and services with cascading effect by a value added tax (IVA) of 20 percent considered neutral from the allocation point of view; the law allowed few exceptions.

promotion made by the state. At its peak, in 1972, 280,000 agricultural workers were unionized. In 1974, the number had dropped to 124,500.

Reforms of social security and labor laws reduced the sectoral discrimination among workers and, by giving more flexibility to the labor market, tended to facilitate the reallocation of labor among productive sectors; this stimulated a more rapid development (than otherwise) of specific agricultural subsectors which had comparative advantages (fruits, forestry, etc).

- (i) Social Security Reforms: starting in 1974, special discriminatory benefits were slowly eliminated, family allowances and retirement age were made uniform, and contribution rates were gradually reduced. The main reform, transforming the pay-as-you-go system into an obligatory, personal savings and insurance program, was approved in 1980 and put into practice in 1981.
- (ii) The Labor Code: The Labor Plan of 1978 --and later the Social Security Reform in 1981-- reduced the cost of the employee to the employer by reducing legal severance pay, by granting the right to dismiss workers without justifying the cause, by limiting the application of minimum wages, by granting absolute freedom of association, by eliminating the exclusive right of one union in any firm, and by eliminating the legal distinction between blue-collar and white-collar workers. Furthermore, all negotiations were to take place at the level of one firm, with obligatory arbitration if required. This labor reform plan also established a wage floor equal to the previous wage package, indexed by the CPI for the intervening period.

Minimum salaries for agricultural workers were kept with periodic readjustments applied also to the base for social security. Starting 1978, the real minimum wage was maintained to stimulate agricultural employment. The cost of labor suffered changes with the Piñera laws (1981) through which (i) the cost of social security was shifted from the landowner to the worker (ii) the rule of minimum wage adjustment tied to previous inflation (which implied during a period of declining inflation, a rise in real wages). The minimum social security premium paid by the agricultural worker was replaced by a payment to social security institutions by the landowner proportional to the full salary of the worker. The collective negotiations on a county basis were eliminated; this measure may have stimulated investment in highly labor intensive agricultural activities. The increase in port efficiency, which has also stimulated fruit exports and investment, is not unrelated to the application of the new labor laws. "The loading cost of an apple box has dropped from 0,62 dollars in 1980 to 0,23 dollars in 1987, meanwhile the productivity in ports increases from 46,000 box/day in 1980 to 140,000 box/day in 1987 (Mujica 1991, pg.26).

Credit and Debt

While the the agricultural sector was contributing about 10 percent of GDP before 1974, the share of total credit absorbed by the sector was about 30 percent. Technical reasons were argued to justified that disproportion such as long lags between investment and recovery times. Subsidy could have been another reason, though its importance fluctuated through time but increased drastically with the acceleration of inflation, after 1970. However, fungibility would not ensure that subsidized credit would be used by farmers. This is probably why a not too insignificant proportion of credit was granted in kind (machinery, fertilizers, seeds) by BECH, the State bank⁴⁹.

Many institutions were involved in credit operations to agriculture: Banco del Estado de Chile (BECH), Corporación de Fomento (CORFO), Corporación de la Reforma Agraria (CORA), Instituto de Desarrollo Agropecuario (INDAP), Instituto de Financiamiento Cooperativo (IFICOOP). Each one would cater either to a specific target group (INDAP, CORA,) or to specific operation (investment, working capital, inputs purchase). Two institutions (Compradora de Maravilla SA, COMARSA and Industria Azucarera Nacional, IANSA) would receive credit from the banking system and transfer it to farmers. In general, repayment rate in credit operations carried out by INDAP and CORA was low but high with financial operations carried out with commercial banking, either public or private.

The credit policy was to be essentially non-discriminatory during the military government. Among other measures which would directly or indirectly affect the agricultural sector, at least in comparison to previous periods, were the elimination of quantitative limits on commercial lending operations, the progressive raising and ultimate elimination of the legal ceiling on interest rates and the progressive fading of special credit lines⁵⁰ to the Private Sector (the only remaining ones were for reforestation and housing). However, a few exceptions were made towards agricultural activity and rural population:

(i) special credit lines through Banco del Estado for seasonal needs (de temporada) , for working capital, and for agriculture promotion for cereals and other crops;

(ii) CORFO offers credit for investment in agriculture with IDB and IBRD financing. However, it goes through commercial banks. There has been a de facto elimination of the traditional quasi-monopoly of the State Bank in relation to agricultural sector loans: in 1973, the Public Sector controlled the 95 percent of agriculture credit; in 1981, only the 25 percent.

⁴⁹ The subsidized credit to farm operations stimulated even more investment in land, as analyzed in a previous section, but not agricultural production.

⁵⁰ The agricultural sector had been a privileged sector before 1973 by credit policy, probably to compensate for different negative interventions from the authorities (Hurtado, Muchnik and Valdes, 1990).

(iii) between 1975 and 1979, credit was also provided to stimulate investment in forestry (besides the already mentioned subsidy) by firms related to cellulose and paper production and by individuals.

(iv) INDAP has kept a line of credit to small farmers which is subsidized and can be obtained without guarantee but subject to the condition that the loan should be part of a program of Transfer of Technology.

THE PROMOTION UNIT (UNIDAD DE FOMENTO UF)

Chile has had a long history of inflation. In the sixties, authorities intended to develop the capital market. However, high and erratic inflation rates would hinder severely the development of financial assets and even credit operations. Ways of facing this hurdle were looked for. In May 1965, Law 16,256 created a "promotion unit" (UF); its operative rules were established later, in 1967. The initial value of this unit was 100 Escudos, which would be readjusted quarterly in proportion to past inflation. This instrument was used only to readjust loans made by development banks. In 1975, the Ministry of Finance decided to change the frequency of readjustment of the UF: from quarterly to monthly, which later, in 1977, became daily in proportion to past Consumer Price Index (CPI) variations.

When the Banking Law was modified in 1978, the financial institutions were permitted to effectuate mortgage operations issuing bonds expressed in pesos, UF or foreign currency. Finally, in June 1981, Law 18,010 imposed the use of the UF as a mechanism to establish the value of readjustable obligations.

Medium-term foreign capital inflows were also progressively deregulated to reach complete freedom by 1981, a few months before the recession and financial crisis exploded, in 1982, and the capital account closed de facto.

Other

Investment

(i) Foreign

In July 1974, a new Foreign Investment Statute- Decree 600- was promulgated with the purpose of stimulating the inflow of capital and technology. It was refined later, in 1976. As DL 600 was inconsistent with Decisión 24, Foreign Investment Statute for the Andean Pact countries, Chile decided to abandon that association. In fact, this move gave also Chilean authorities a greater margin of maneuver to follow an independent tariff policy (see Trade Policy above). Among other considerations, foreign investors were to receive the same treatment as national investors , with exception of access to domestic credit. The Statute also eliminated limits to profit remittances, offered foreign investors a choice of tax regimes on profits, ensured stability of the foreign exchange regime, and required a minimum time for the investment to remain in the country (de la Cuadra and Hachette, 1991).

(ii) Domestic

Historically, the emphasis in investment related to agriculture was placed on construction of major works, with little attention paid to related on-farm development, regulation of water flows, rational water pricing and ultimate utilization of scarce water resources. The results could be expected: waste of capital, flood damage , accumulation of silt, gravel and rocks, wasted existing water supply. Also, there was a chronic lack of coordination among the many public sector agencies responsible for various aspects; a failure to institute a rational water pricing system; and the fragmentation caused by Agrarian Reform increased exponentially the problems of irrigation. A National Irrigation Commission (CNR) which would tackle all problems mentioned was created in 1975.

Although the policy of the military government towards investment was non-discriminatory, subsidies were considered to stimulate investment in forestry (see Price Policies) and small irrigation and drainage projects (L18450, 1985).

PART IV. THE POLITICAL ECONOMY OF REFORMS IN AGRICULTURE

Before 1974

Agricultural policies intended, before 1974, to be consistent with the prevalence of an inward-looking, import substituting development strategy. The latter implied a relative support to the industrial sector. This came about essentially in two different ways: by direct protection from outside competition through trade restrictions, and by reducing the cost of urban labor through interventions in food and agricultural prices. Farmers, as rural capitalists, would in some occasions be punished and in other, benefitted. But, whatever happened to them, their lobby was not powerful enough to incline systematically the balance in their favor. Further, this policy received the enthusiastic support of urban capitalists, non-agricultural labor and urban population at large, that is the majority of the country, and hence, of political power. It is then no surprise that the agricultural sector tended to be discriminated against, relatively to the industrial sector, over the long run.

In the late sixties and early seventies, agricultural policies were geared towards supporting farmers which had benefitted from land reform; earmarked subsidized credit was available for working capital and investment in equipment. However, land reform which, initially, was considered as a necessary step towards increasing agricultural production and productivity, became a political issue and an end by itself; considerations of economic costs -sectorial and national- were totally forgotten. The authorities threw themselves into the battle to take over irrigated land, as a first priority. And, although policies may have appeared favorable to new tenants and agricultural workers, it was insufficient to stimulate them, and farm production fell two years in a row. Then, the military took over in the midst of an utterly chaotic situation.

The Confederación de Sindicatos de Empleadores Agrícolas (CSEA) created in 1967, had surged as a very active pressure group, opposed initially to land reform, then to arbitrary or doubtful expropriations to become eventually a "combat group" during the socialist government in order to stop illegal takeovers. The CSEA attracted farmers belonging either to the traditional Sociedad Nacional de Agricultura (SNA) or to the Confederación de Agricultores del Sur (CAS)⁵¹. None of these two institutions were

⁵¹ Three different groups of farmers could be distinguished before the liberalization process. First, the group composed by farmers from the central part of the country; with relatively modern views, better land and infrastructure with better access to the consumer markets. Second, the group gathering those farmers from the south-central part of the country producing cereals,

action-led and none had any real major influence in consistent policy designs, though they had reached, at occasions, some success. The heavy participation of CSEA in the opposition to the socialist government together with the truck drivers, both with a clear transterritorial presence, led at least to some major bottlenecks and paved the way to the military take-over in September 1973.

How was shaped the agricultural policy after 1973?

Three sub-periods could be distinguished from the viewpoint of policy making : the period of policy shaping which lasted until 1979 when major institutional reforms were accomplished (1974-1979); the second, the liberalized period, between 1979 and 1982, characterized by a minimal intervention in agriculture and by the maintenance of the statu quo; and the third, the pragmatic period, between 1982 and 1990, by corrections to the existing framework implying, to some extent, a reversal with respect to the market oriented reforms and reduced government interventions of the previous periods. It may be useful to look into the who, why and how of the policies detailed in the previous part of this report. Why changes could be carried out, who was behind the decisions and how they were carried out. Most of the relevant answers are, timewise, related only to the first and the last subperiods.

It would perhaps be adequate to summarize before starting why changes were carried out which affected directly and indirectly the Chilean agricultural sector as it also has an element of political economy. In order to achieve a high and stable rate of economic growth and full employment and the eradication of extreme poverty, the main long-run objectives defined by the new authorities, a new strategy was proposed. The principal means to reach the objectives represent the framework which directed policies affecting all productive sectors and, then, which describe the reasons for actions taken in the agricultural sector. They have been described in Part II but will be summarized here : (i) restoration of the market as the principal determinant of economic decisions and of the private sector as the main agent of development; (ii) non-discriminatory treatment of all productive sectors to improve resource allocation; (iii) improvement of the functioning of the factor markets, labor and capital, in particular; (iv) the preferred use of general tools (exchange rate, interest rate, money supply) to achieve the objectives outlines; and, (v) last but not least, the opening of the economy to foreign markets to improve resource allocation and productive sectors efficiency, and to enhance the growth potential.

cattle and milk, where the traditional view that agriculture was a special sector which merited special considerations was specially ingrained and which had been traditionally highly dependent of authorities, subsidies, interventions, etc. The third group was composed by the small farmers from all over the country, usually living at a subsistence level and with a very limited political power.

This framework was chosen, first, as a reaction against the excesses committed in the recent past, second, influenced by new political ideologies questioning the relevancy of the inward-looking strategies of the past. Despite their inherent autarkic views, the commanders of the armed forces saw quickly the usefulness of an outward looking, market oriented development strategy. Foreign institutions, favorable to liberalization, may have had also some impact on policy choices. Although their loans were not significant, they assisted in the first years of the military government in debt rescheduling. Finally, the military by not having major ties with any of the traditional power groups or the bureaucracy, were probably the only group capable of breaking the statu quo.

Between 1973 and 1979

Why Why those major changes described in previous parts of the report were accepted is not totally obvious. Initially, major structural changes were accepted and even desired because (i) many significant reforms were not sector-specific and similar reforms affecting agricultural institutions were carried out in other productive sectors as well; (ii) the initial state of chaos and complete disarray in the agricultural sector; (iii) the loss of power by workers unions which had multiplied quickly during the socialist regime but which actions were de facto suppressed by the military regime and by the high rates of unemployment caused by the combination of recession and stabilization measures (two related events anyway), (iv) the discredit of many institutions tied to the agricultural sector as a consequence of gross mismanagement and corruption; and (v) the realization, by traditional farmers, that some price had to be paid for recuperating land, and secure property rights. This last reason was valid for different sectors, but most particularly for agriculture which had suffered the most through Agrarian Reform, and market interventions for decades and, which during the Allende's Government had been at the heart of dissension between opposite political parties and because farmers, which had been probably the most vocal oppositors to the previous regime, became logically also the most vocal supporters of the new one, at least initially. It was also realized that the main potential beneficiary of these types of changes would be agriculture, although, adjustment costs were certainly not perceived clearly at the initiation of the military regime.

However, farmers never fully endorsed the chosen strategy with its concomitant instruments and always expressed other viewpoints which in some occasions were influential in shaping some policy actions. How reforms were carried out and who had influence is explained below.

How Personalities, events, prior situation, the economic team views, and military worries or preferences were determinant in shaping the policy and institutional frame of agriculture, most of which would last, despite some reversals, until today. Personalities may have been as important as circumstances to shape the agriculture policy. This topic is analyzed below. Enough is to say that the first ministers of finance and

agriculture, the visible head of the economic team, de Castro, and the head of Confederación de la Producción y del Comercio⁵², Valdés and last but not least, the head of the Military Junta, endorsed the main lines of the strategy lines contained in the "ladrillo"⁵³.

Initially, views widely differed, among armed forces and civilians alike, not so much on the main objectives, but on intensity, instruments, timing and sequencing of reforms. Unemployment, corruption, gross inefficiencies, inflation, popular discontent, foreign reactions, and the Peruvian threat were among the main worries of the armed forces at the time. The economists brought into public affairs, although not disagreeing with those worries, underlined the importance of the reconstruction of an efficient economic system which would permit to face adequately most of these problems in the long run. Means to face these problems, shared by most, would then differ among militaries and even among civilians⁵⁴. Proposals made by the former tended to imply relatively more interventionism, quantitative controls, the maintenance of most existing institutions-although personnel would be severely screened on ideological grounds-, and a relatively higher weight for short term income distribution considerations.

For example, given considerations related to employment-rural in particular-to private property, and to poverty, militaries supported a quick return of land to their rightly owners, the rapid division of reformed land and remittance of land to farm workers - but imposing the condition of non-transferability⁵⁵. These considerations helped shaping the first steps of reforms in the desired direction but postponed the liberalization of the land market. Further, land was returned-like most previously intervened industrial firms - with the condition that no prior employed worker on that land would be fired, proviso which delayed the flexibilization of both labor and land markets and generated efficiency problems in the years to come. Further, this condition happened to be a very strict one since in many cases, those same workers had participated enthusiastically in the illegal expropriation of that particular farm. Finally, control on very few prices was maintained,

⁵² Manuel Valdés, a farmer, became the Head of the Confederación de la Producción y del Comercio when structural reforms began. A cultivate, open-minded, with modern views, who had fought against illegal actions, although not fully understanding the implications of the proposals made by the Chicago Boys to the military authorities, and despite its worries with respect to the likely impacts of the liberalization policies, took a positive stand in their favor.

⁵³ Popular name given to a report prepared by a team of economists prior to the military take-over. This report detailed, in particular, recommendations of policy and of institutional changes to improve the chaotic situation of Allende's regime.

⁵⁴ At least during the first two years, until the Chicago Boys took over the main ministries and other strategic posts and de Castro started being listened carefully by Pinochet.

⁵⁵ They seemed to have been afraid of land being taken over by capitalists and again reunited in the old type of "fundos".

against the views of the economic team, as a token consideration coherent with income distribution preoccupation.

It is important to underline that decisions on basic issues would be generally agreed upon while, often, in the midst of conflicting views on what should be done and how, consent would be reached by mutual concessions.

However, these apparent departures of the main lines of the strategy were of short duration, while the militaries endorsed most of the main reforms being carried out such as the trade and financial liberalizations, the elimination of most market interventions, the privatization of 500 public firms, the reduction of the public sector. The assumption that the agricultural sector would be one of the main beneficiaries of the new strategy may have hinder more direct support- pressed by farmers- to agriculture. Further, actions by agricultural institutions would fade not only because of agreements reached to eliminate or reduce their prior functions, but also because of severe attrition of personnel on budgetary and ideological grounds. So, these trends were indirectly supportive of the market oriented economy, reinforcing the overall reforms and the liberalization of agriculture.

The economic team influence in policy decisions grew over time. It was the consequence of its preparation, its homogeneity and its pervasiveness - at least in finance, economy, agriculture, ODEPLAN and Central Bank. In fact, it designed the essence of the agricultural policy and of its institutional changes and convinced or imposed most of its views on the relevant authorities. The strength of the team was illustrated in the story of CORA (Part III): their recommendations were accepted against contradicting suggestions made either by the Catholic Church, a strong lobby in Chile, and even against the views of a military junta member. It can be further illustrated by putting many of their fans in decisive jobs such as heading CORA and SAG. But, the best illustration is certainly the fact that it carried out an overall policy utterly unpopular to most farmers, despite the not uncertain weight of the latter given their number, their staunch support to the military take-over, their image of victims internalized during the socialist episode, and as they represented values mostly shared by the military forces.

One anecdote may be worth presenting, which illustrates the desire of consistency with overall market and non-interventionist policies and the relative strength of the economic team. When the real exchange rate was falling after 1976 and milk prices were low in international markets, cattle raisers went complaining to the ministry of finance asking for special support. As the answer was negative, they asked a highly placed member of the economic team what they would do with their animals: "eat them" was the answer. Despite the consequent uproar created by that coherent reply, the person kept his job and the anti-dumping policy related to milk imports which had been in place since 1974 (Part III) was not changed.

During that same period 1974-1979, the economic framework for agriculture was chaotic: rapid changes in the rules of the game, in institutions, in relative prices of outputs and inputs, and terms of trade within agriculture (prices of outputs/prices of inputs), while binding factors were still present which would make adjustments more difficult if not impossible: among the latter were the conditions imposed by the militaries affecting both land and labor markets (see above). It is understandable, in this context, that farmers had obtained some concessions in terms of both price bands-which lasted two years- and specific duties on milk imports and derivatives. So, in one sense, the sequencing of policy reforms was far from adequate. The land market was liberalized in 1978 while the labor market, only in 1981. It is also understandable that price controls on some basic foods remained until 1978 to alleviate the significant loss in purchasing power suffered by the poorest which budget is more strongly biased towards food than other groups.

Who The Chicago Boys, which later dominated the main lines of policymaking, were almost unknown at the time since they had not asserted themselves before the military takeover. They were, at least, tied to the preparation of the "ladrillo" (which had been prepared before 1973, anticipating the change of authorities). The group who authored that document had maintained a formal contact with the parties in the opposition (mainly National and Christian Democracy) and an unofficial one with some members of the navy during its shaping.

So, the initial preferences of the militaries among civilians to occupy public jobs of responsibility fell mainly on christian democrats which had been known through their participation in policymaking. However, pressures brought to bear on them by their party⁵⁶ produced either the departure from office or the desertion from political parties which allowed them to remain as public servants. It should be added that political parties were banned at the time (until 1989).

⁵⁶ The apparent reason for the Christian Democracy to detached itself from the military government was related to human rights.

Sergio de Castro, a Chicago Boy who became undersecretary of economy in 1974 and minister of finance at the end of 1975-until 1982-, quickly recommended names for occupying highly-placed jobs in the military government, in particular, agriculture economists who commulgated with the views of an open economy where comparative advantages could lie in some agricultural products, or at least, where negative protection to the sector as a whole would disappear. These professionals were assimilated to the economic team and performed or suggested major reforms related to the sector.

The homogeneity which strengthened the economic team was not replicated in the association of farmers. This fact reinforced even more, although indirectly, the power of the economic team. The SNA, represented farmers from the central region, owners of land of better quality, and with better access to technology, markets and credits, and which production combined exportables and importables. A second association, the CAS, gathered mainly farmers from the southern part of the principal agricultural part of the country, involved in cereals, and non-tradables (cattle and potatoes), and in forestry, although the latter was controlled mainly by the public sector (initially) and by large industrial firms. Relatively speaking, the first did not oppose as strongly to the liberalization policies as the second; the first even gave some support and lobbied in its favor. It is interesting to note that a survey taken among farmers in 1976 indicated that most farmers were against the liberalization of agriculture.

The first successes of trade liberalization reinforced its probability of future success by debilitating relatively speaking, the power of the import substitutes producers. Two new farmers associations grew out of the successful development of fruit exports:

FEDEFruta and the Chilean Exporters' Association (ASOEX). They splitted from SNA, although given their different coverage, many farmers would belong to both. Further, the SNA had been widening both its geographical coverage and its professional interest while FEDEFruta payed attention only to problems related to fruit production and exports^{57 58}. One consequence of the widening coverage of SNA was the loss of presence of CAS in professional matters (or corporative ones) and a more homogeneous and modern view of agricultural policy making. In fact, CAS has limited capacity to respond to corporative requirements.

Between 1979 and 1982

The Second Period was one of severe discipline of the market imposed on farmers. It was characterized by complete freedom of prices, one exception in terms of

⁵⁷ FEDEFruta recently divorced from SNA as it appeared to the first that the second had not taken a firm stand on the poisoned grapes in USA.

⁵⁸ The answer of the SNA is that it stands for reasonable requirements.

intervention: a specific duty on imports of milk and derivatives during part of the period 1981-1982, and the liberalization of both labor and capital markets. This is probably the freest period of intervention in the Chilean agriculture in the last 50 years. International prices for cereals were adequate, agricultural exports were growing rapidly, the Chilean economic agents bore highly optimistic views with respect to the medium term horizon which led to high rates of consumption, imports and indebtedness. However, the systematic fall in the real exchange rate during this period imposed a burden on the production of tradables. But new agriculture exports had sufficiently high returns as to compensate the negative influence of the noted trend. Consequently, they were not affected as much as the production of importables, and cereals in particular. This negative impact was also concentrated in the southern part of the country, where a large share of the production of importables is located. But as "distress borrowing" was possible, farmers would press for more credit (easily available) instead of pressing for other institutional changes or better prices. So the combination of external high prices for cereals and fruits, with generous availability of credit reduced the pressures of farmers for interventions⁵⁹. It is no surprise that, despite the falseness of the association, the farmers would associate, later on, the problems in their sector with price freedom and market-oriented policies.

Between 1983 and 1990

The Third Period started in the middle of a major crisis and was characterized by a not insignificant reversal to the non-interventionist market-oriented policy. Its main personality was no doubt J. Prado who was very close to Pinochet⁶⁰. D. Durán, head of CAS, may have had also some significance, although his power had faded with CAS and as a consequence of an unreasonable repetition of common places to justify interventions in the Chilean agriculture. But, certainly the decisively convincing factor to justify reversals in the agriculture policies during that period was the depth of the crisis characterized by a national rate of unemployment over 20 percent, a growing dependence of cereal imports, and the highest negative agriculture trade balance in decades.

Why was the liberalization reversed in 1983? Or was it a reversal?

Pressures arose to change the agriculture policy, consequence of (i) the exchange rate revaluation after 1979 (ii) the recent fall in international prices and the increases in

⁵⁹ Price bands had been eliminated in 1979 by expressed demands from farmers.

⁶⁰ He was minister of agriculture for almost 8 years after heading the SNA where he is back now.

some subsidies in international market of milk derivatives, (iii) the significant reduction in agriculture production of importables and the rising in general unemployment, with large unemployment in the rural sector, specially in the southern part of the country, (iv) the rapidly growing indebtedness of farmers, and (v) the opportunity, particularly, for CAS members to press for significant changes in agricultural policies after criticizing strongly the "free market, balance of payments" approach of the Chicago Boys during 1979-1982 period. The Junta became extremely worried of the social situation, particularly in the southern region, the most affected.

J. Prado, believer of the essence of the development strategy imposed by the Pinochet government, was called to become minister of agriculture in 1982, in the middle of the crisis, after the ministers of finance and of the interior, two conspicuous liberals (in the european sense) had left. Given the situation described above, he advocated for a "pragmatic" solution, which perhaps would appear as contradictory to the model, but which would be limited to the intervention in a few product markets (three) and would certainly helped in alleviating the social, economical and political problems of the moment. The products were chosen for having fluctuating prices, being important in the consumption basket of every one, being potentially significant in terms of employment, favoring the region central-south where the effervescence in farms was higher (they had suffered the most from the combination of fall in world prices and real exchange rates and increases in subsidies in world markets on the products where they had comparative advantages) and the recent experience of 1981, during which wheat imports reached its historical peak of about 80 percent of domestic consumption.

Besides, it was expected that the contradiction of these measures with the model was more apparent than real since, if the rules of the game of price bands were played fairly, on average and over the long run, the consumer would not be penalized. De facto, it appears to have been the case, between 1983 and 1990. Anyway, despite all the economic aspects described above, the main issue at the time was essentially political. Consequently, the interventions suggested by the the minister of agriculture received wide support from farmers and from Pinochet. It was the first time since 1974 that the minister of agriculture could impose views contradictory to those of a minister of finance and contradictory to the on-going orthodoxy.

The high external indebtedness of many productive sectors created acute financial situations to both producers and financial institutions when the domestic currency was suddenly devalued in 1982 and kept a rapid pace of real devaluation since then. Pressures to find some solution were brought to bear on the Government. Finally, a special and lower exchange rate was created for the purpose of debt amortization. It lasted 4 years (until 1986) during which the spread between the market rate and the "debt" rate was systematically reduced. No other special facility was given to debtors. This solution applied across the board independently of the debt origin. So it cannot be considered as a special measure for agriculture, although highly indebted farmers, among which some

were close to the military authorities, were extremely vocal to obtain some relief for "farmers in general".

Another apparent reversal to the dominant model was the financial and institutional support (MAG and INIA) to the Groups of Transfer of Technology⁶¹. However, in the first place, it can be argued that these transfers involve externalities, and that someone had to start rolling the ball, for the transfers to widen coverage. So why not public support. In the second place, though it started as a public affair, it has become today wholly private.

Later, in 1984, the reversal received an additional political support from the new minister of the interior, a farmer and staunch critic of the Chicago Boys, who had always favored special interventions in agriculture. Despite being a politician, he was somewhat respected by Pinochet as a shrewd operator to the extent that he was called at the through of the former's popularity to become the head of his cabinet. He certainly was in favor of the measures taken by the ministry of agriculture who stayed and appeared to have convinced successive ministers of finance, most of which were critical of the policies putted in place.

Why the reversal was maintained despite significant changes of conditions?

The situation of agriculture improved after the recession: a combination of a significant increase in the real exchange rate, rate of growth of the economy, agricultural exports and employment. Conditions developed in such a way that keeping interventions in agriculture may not have been justified after 1986 or 1987. Why were they maintained?

Several factors can explain this situation: in first place, the good performance of the sector which could be tied to the price bands, although the latter may have had only a minor impact while the fast rising real exchange rate could explain most of the results observed. The resulting increase in the relative prices of tradable goods and the reduction in real wages were doubly beneficial to rural capitalists while the significant increase in rural employment acted as a compensation mechanism for the reduction of their real wages; so, on the whole, they would lobby for the statu quo. In second place, the representative of the flour producers, close to Pinochet, was also defending the wheat price stability, and found that price bands was instrumental to that end and consequently, adequate since it would protect the flour mill industry. In third place, the successive finance ministers found it good too for fiscal reasons- despite their liberal views (in the European sense), Büchi, a pragmatic minister, who appreciated the particularly dynamic

⁶¹ These groups had started their activities much earlier but became noticeable only after the recession.

behavior of cereals, did not intend very hard in widening or eliminating altogether price bands despite that their justification had completely faded. In fourth place, any minister of the interior, would be in favor of protecting the cereals production given that it is located in the southern part of the Central region of Chile, it is a large and populated area, it is basically inefficient (the region and the country has no comparative advantages in its production!) and consequently it represent a strong potential lobby or group of pressure composed by a mixture of many small farmers and the bigger ones non-irrigated land regions. However, many of the latter had become exporters by investing in forestry and in cattle raising- a non-tradable since 1981, since the eradication of the food and mouth pest. Finally, farmers were still heavily indebted. So any support they could receive through prices would be more than welcome by them and also by the financial sector which could not be considered yet as fully recovered from its crisis of the early 80's.

PART V. MAIN CONSEQUENCES

This part intends to illustrate the main impacts that liberalization policies, carried out since 1974, had on Chilean agriculture. A disclaimer is obvious at this stage: too many reforms were carried out at the same time which make it extremely difficult to assign the respective impacts to each determinant factor. Consequently, the results presented and the conclusions reached should be interpreted carefully. At any rate, most reforms were consistent with the "liberalization" stance of the military government policies. Then, despite the absence of a complete econometric model, it can be argued that the main trends observed are tied to this liberalization objective, although subject, more than ever, to international developments.

The reforms impacted farmers mainly, but not uniquely, through two channels: the prices of outputs and inputs. Their relationship is then one basic determinant of the relative attractiveness of agricultural output in relation to other activities and, within agriculture, of each one of the available options. Of course, other factors have played a role as well to stimulate, or hinder, agricultural production--aggregate or specific crops--: technological development, and the overall institutional environment relevant to that sector. The first section of Part V will consequently be dedicated to the presentation of basic hypothesis with respect at least to the expected behavior of relative prices in the Chilean context which will be compared with the available information.

The second section of Part V describes the main factors. Foreign and domestic, behind the evolution of prices. The main impacts, to be analyzed here, have been on production--levels and composition--, absorption of technology, the use of land, exports, imports and the agricultural trade balance, employment and agricultural debt. Other impacts have been important as well, as suggested in Part III: land market, land value, and land tenure, farm structure, wages and migration, and the development of agribusiness. Unfortunately, relevant information is extremely scarce on these facets; so, only a few qualitative comments will be presented on them. The basic issues related to the main impacts of changes in relative prices and institutional changes concomitant to the liberalization of agriculture will be presented succinctly in the second section of Part V.

Since Part III includes an extensive description of the institutional developments related to the agricultural sector between 1974 and 1990, this part will only refer to results.

Prices

The trade liberalization was expected, in the first place, to increase the relative price of tradables -agriculture among other- to non-tradables, and in the second place, the relative price of exportables to importables. The rise in the real exchange rate explains the first; the reduction in the anti-export bias by the reduction of protection, the second. Besides, it could be expected that the prices of previously unprotected importables, like some agricultural products, would rise relatively with respect to previously highly protected sectors such as manufactures. Finally, to the extent that the trade liberalization called for the elimination of subsidies on agricultural inputs, it also should be expected, *ceteris paribus*, that it would stimulate an increase in the prices of agricultural inputs relatively to that of outputs.

Informations on prices are unfortunately limited, costly to obtain, and debatable, qualitywise. Available time series suffer, more often than not, from changes in definitions and coverage. Since use have been made here of the available information, the strength of inferences is necessary limited. Main trends and consistency are looked for. Comparisons, whenever relevant, are also made with other research.

Relative prices of tradables and non-tradables

The only available index of relative prices of tradables to non-tradables is the one of the national accounts. It is aggregated, on the one hand, for all sectors considered tradables, and on the other, for all non-tradables. The results do not live neatly to expectations but the average index for the period after 1974 is above that one for the period 1960-1973, so, it shows a change in the expected direction⁶². However, it is not directly relevant for the analysis of the agricultural sector behavior.

Another index was estimated, agriculture being taken as the relevant tradable. Prices of the Chilean wholesale price index (WPI) were used since there are the only one to cover the chosen time period: 1960-1990. Prices of agricultural products were compared to the WPI, with the exception of agricultural prices. The results are surprising (Table V-1). The relative prices of agricultural prices to non-agricultural ones were 17 percent lower after liberalization than before. This result goes against expectations, it differs from information obtained from Hurtado, Valdés, and Muchnik, 1990, for a shorter time period, and certainly poses a challenge to explain the successful development of agriculture after 1983.

⁶² This change, by the way, is not accompanied by a consistent one in the composition of sectorial GDP. This is due to the fact that the industrial sector, one considered tradable, was composed of many non-tradable subsectors (see National Accounts).

Table V-1: AVERAGE RELATIVE PRICES**Average Relative Prices By Aggregate Item (1)**

Item	Periods			
	1960-1973	1974-1982	1983-1990	1974-1990
Real Exchange Rate	39,4	93,7	144,6	114
Agricultural/Industry	0,96	0,98	0,85	0,91
Agricultural/Importe	1,17	0,92	0,82	0,87
WPI A/WPI Ex A (b)	1,51	1,33	1,15	1,26
PA/PNA (c)	1,27	2,14	na	na
Agricultural External Terms of Trade (d)	na	82,9	92,8	88,2

Average Relative Prices By Products (2)

Products	1963-1970	1974-1982	1983-1990	1974-1990
Wholesale (3)				
Table Grapes	59	116	135	127
Apples	81	106	105	106
Live Cattle	142	97	80	89
Milk	160	105	105	105
Wheat	157	123	113	119
Sugar Beet	150	93	115	103
Sunflower	208	132	128	130
Potatoes	142	104	92	94
Rice	193	159	111	134
Corn	188	116	98	107
Consumer (4)				
Table Grapes	-	75	67	72
Apples	146	109	78	97
Beef (Posta)	57	85	87	86
Milk	42	91	107	98
Bread	57	96	113	103
Sugar	51	70	55	64
Oil	124	140	122	133
Potatoes	62	103	95	100
Rice	80	134	96	119

(a) Figures calculated from Table I-1

(b) WPI A (Wholesale Price Index to Agricultural Goods), EX A (Excluded Agricultural Goods), Base 1974. Data until 1988.

(c) PA/PNA (Agricultural-Non Agricultural relative price).

(d) Data from 1977 to 1989

(1) Figures taken and calculated from Table A-1

(2) Figures taken from Table A-3

(3) Wholesale price of products relative to the wholesale price index

(4) Consumer price of products relative to the corrected consumer price index. Data until 1988

Several considerations should be advanced to interpret the results. In the first place, the denominator of those relative prices does not correspond to a pure index of non-tradables: it also includes several tradables. Consequently, the impact on the numerator of the higher real exchange rate prevalent after 1974 as compared to the previous period, was partially or totally lost. In the second place, the downward trends of international agricultural prices, specially after 1980, reduced the impact of the upward trend in the real exchange rate on the prices of agricultural products considered in this index. However, both comments seem to be also valid for the alternative index of Hurtado, Valdés and Muchnik which presents an average relative price of agriculture products, for the period 1974-1983, 67 percent over that of the previous decade. The difference may lie in the index coverage of these authors which is more limited as it includes only 5 agricultural tradables (importables and exportables)⁶³ while the other includes 10 of which, 4 were importables, 2 exportables and 4 non-tradables.

Relative prices of agriculture to industry

It would have been expected that trade liberalization would have increased the prices of the relatively less protected (or unprotected) agriculture with respect to the prices of industrial products, the most protected sector of the economy prior to 1974. The results obtained based on the same WPI utilized above are inconclusive. Prices of agriculture appear relatively lower after 1974 than before (Table VI); but the difference is not statistically significant. The results are not totally surprising when it is realized that both sectors (in the WPI) are composed by exportables, importables, and non-tradables, and consequently, anything can happen to the evolution of relative prices which will be influenced by the relative weights of each category. In addition, it also should be stressed that the downward trend in international agriculture prices in the 80s, may have compensated more than fully for the once-for-all relative rise implied by the significant reduction of nominal protection on industrial products.

⁶³ Where the exportable used has a high weight in the calculated index.

Relative prices of agriculture outputs and inputs: domestic terms of trade

Unfortunately, no index of input prices is available before 1975⁶⁴. On the other hand, no particular trend characterizes the prices of fertilizers after that date with the exception perhaps of a slight upward trend for the triple superphosphate (Table A-12). The elimination of subsidies on agricultural inputs, existing prior to 1974, represents a once for all reduction in the rates of return of agriculture as a whole-which significance varies across agricultural products. This situation is worsened by the slightly downward trend observed in the prices of agricultural products deflated by the WPI. Consequently, the evolution of domestic terms of trade was relatively, but mildly, desfavorable to the sector. However, the results vary widely among agricultural products. The real wholesale price of exportables has risen substantially during the period 1974-1990 over the period 1960-1973 while the relative prices of importables has been reduced significantly (Table V-1); this trend was also accompanied by a similar one for non-tradables but on a smaller scale.

Now, not all agricultural products carry the same cost structure; the relative importance of tradable inputs (machinery, fertilizers, oil derivatives) and non-tradable ones (wage, interest, repairs and maintenance, water charges) will vary among products. On the other hand, the impact of the reforms implied was not necessarily symmetrical among them. In fact, the reforms may have affected relatively more the tradable content of the agriculture production function while non-tradable costs are influenced by economy-wide conditions. On this account, it is highly likely that reforms-cum-stabilization increased the relative costs of tradable inputs.

Prices to the consumers

Relative prices to consumers should have increased, at least for importables on two grounds: (i) as relative protection increased on them together, eventually, with a rise in the RER and, (ii) as the strategy of favoring low prices to consumers, to reduce the pressure wages on industrial costs and as a response to urban pressures, was abandoned. To consumers, relative prices of exportables fell while that of importables and non-tradable increased (Table V-1). This result is then consistent with the change of development strategy.

⁶⁴ An index is being constructed now, but it is not yet available.

Factors behind the evolution of prices

Several factors determine the price behavior at the farmgate level: some related to reforms, other unrelated. Among the latter are those beyond Chilean borders (international prices and transport and marketing costs), and those within Chilean borders such as demand factors (changes in tastes); among the former, the exchange rate, assistance payments, marketing costs, taxes (indirect), tariffs, reference prices are the most relevant. Some of them merit a few comments.

Overseas market prices

Although international prices may appear easily available, they are only for specific products, specific types, and specific markets. They include transport and marketing costs which may not be those characteristic of the country. No net returns FOB are available. Additionally, prices for the same product may be different in Philadelphia or Houston or Rotterdam; besides transport costs, other factors have some influence as well: marketing and demand conditions, for example. Hurtado, Valdes, and Muchnik, 1990 constructed time series of border prices (CIF and FOB), but they are incomplete for the purpose of this paper. They include only wheat, slaughtered cattle, live cattle, powdered milk, apples, grapes and cover up to 1984. At any rate, available information indicates that in nominal US\$, prices tended to increase in the 70s and to fall in the 80s (Table V-2). The average is slightly higher than during the 60s and early 70's. However, in constant US\$, they show a falling trend, with fluctuations, since 1960. Between 1974 and 1976, most of the prices for the products considered here experimented a short-lived extraordinary boom. If this type of out-of trend observation is left aside, the downward trend is even more pronounced.

Domestic factors

Farmgate prices have been influenced by the exchange rate, which, with international prices, are the most significant factors explaining prices to the Chilean producers. Nominal prices are influenced by the nominal rate. However, more interesting for decision purposes is the real exchange rate which is an approximation of the purchasing power in terms of agricultural inputs. Table I-1 presents its behavior during the period 1960-1990. In short, the real exchange rate has been, on average, more than two hundred percent over its average level of the period 1960-1973; during the sub-period 1974-1982, it was 138 percent over, and, during the following sub-period 1983-1990, 268 percent above its level before 1973. They do not need any comment. Of course, from the methodological point of view, the discussion may go into the best choice of real exchange

rate: if bilateral, if multilateral, if deflated by one type of price index or by another. However, the magnitude of the changes is such that the choice of real exchange rate will make no significant difference on the outcome described above.

**Table V-2: AVERAGE REAL INTERNATIONAL PRICES (1)
(US\$ of 1980)**

Products	Periods			
	1963-1973	1974-1975	1976-1982	1983-1988
Coffee	2,76	2,82	4,19	2,97
Rice	440,8	733,6	391,7	215,6
Soybean Oil	667,0	1.142	633,9	429,0
Sugar	0,25	0,89	0,32	0,13
Beef	2,90	2,35	2,52	2,01
Corn	147,8	202,6	128,7	90,0
Wheat	16,8	25,5	15,4	11,7

(1) Table A-4.1

In addition, trade controls were reduced and simplified after 1973. Both, exchange rate behavior and trade policy implied the significant reduction of "indirect interventions" on agricultural prices, and their effect was positive on all of them.

Subsidies, price controls, and other "direct interventions", another determinant of farmgate prices, have faded almost completely. Hurtado, Valdés, and Muchnik have shown their importance before 1973. However, they had a negative impact on nominal protection only in the case of live cattle and slaughtered cattle. Consequently, the impact of their elimination as a consequence of liberalization reforms has been limited. Nominal protection of some products may have even risen: wheat, sunflower, sugarbeet, and fluid milk as the consequence of either price bands in the first three cases, or of specific duties and/or minimum custom values, in the last case.

Processing, transportation, marketing and inspection costs may also have been influenced by trade liberalization, privatization, public and private investment in improvement in infrastructure by changing margins between consumer and producer prices over the period of 17 years, since 1973. No attempt has been made here to measure changes in them.

Impacts

In this section, the main results of reforms are presented. It will be impossible to separate the specific impacts of the different factors determining prices given the lack of information and the existence of simultaneous forces at work on the reforms side: liberalization of markets, trade opening, privatization, financial reforms, land and labor markets developments, price bands, etc. Direct and indirect interventions varied. The relative costs of processing, marketing and transportation suffered also changes with the disappearance of monopolies, the privatization of the relevant institutions, and the increased competition among producers of services.

All the reforms would not have had any major impact if farmers had been irrational. But, commercial farmers have generally responded well to the improved incentives. In the reformed sector, surveys indicate a tendency toward the more intensive use of labor and land; a high propensity to use modern inputs, despite the removal of subsidies, and a high level of commercialization.

Available information (Francisco and Muchnik, 1992) suggests that the changes in incentives after 1974, resulted in a significant reduction of negative protection to agriculture as a whole and in a reduction of the anti-export bias existing against agricultural exports.

The discrimination in favor of specific subsectors stimulated their development more than otherwise and help explaining there particularly dynamic behavior since 1983; this point is particularly valid for wheat, oil seeds, sugar beet, cattle, and forestry.

Output

Two are the main issues implicit in this section.

The significant response of agriculture is basically the response to an improved environment and marginally, of relative prices. On the other hand, the change in the output composition of the sector is the consequence of a significant change in relative prices, and to some extent, of some facets of this environment.

If liberalization is understood narrowly why as trade liberalization, then aggregate output (or its rate of growth) may or may not increase, although, it is likely to grow in the long run. This is the result of combining two assumptions: that agriculture is essentially composed of tradables and that trade liberalization brings a hike in the relative prices of tradables.

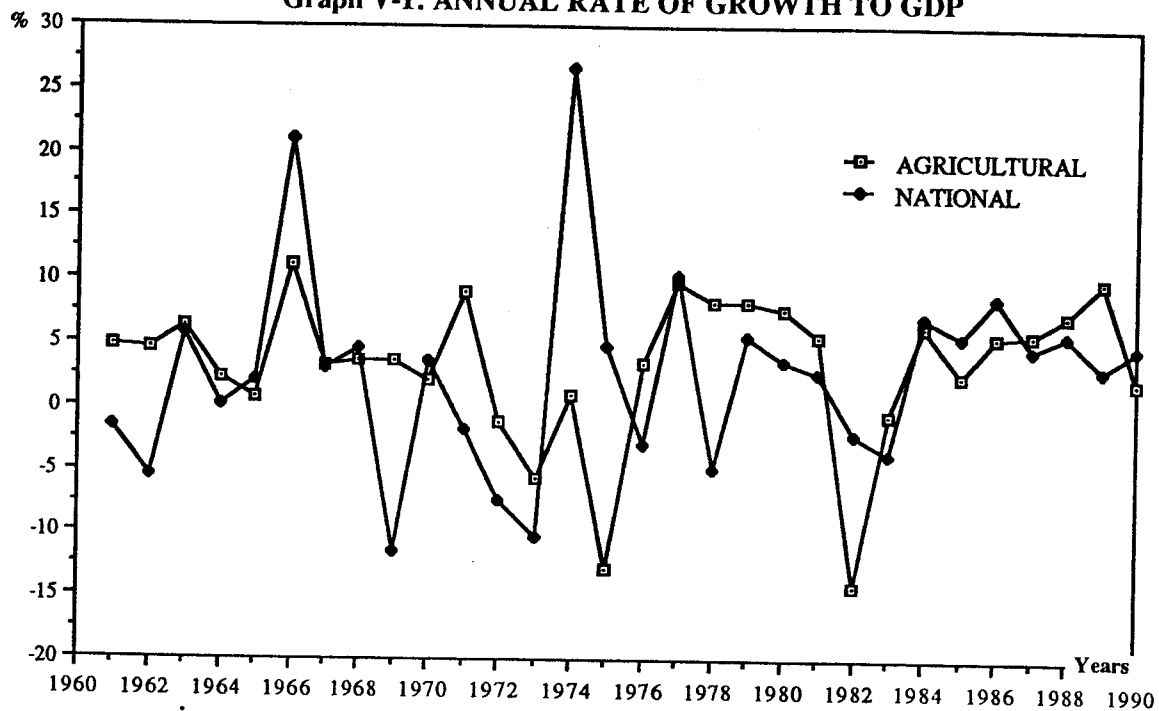
Table V-3: AVERAGE PRODUCTION

	1960-1973	1974-1982	1983-1990	1974-1990
Growth Rate				
National	3.4	1.9	4.9	3.3
Agriculture	0.2	4.9	4.5	4.7
Share of Agriculture in GDP	7.7	8.2	8.4	8.4
Exportables				
Table grapes (thousand tons)	52.6	85.9 (63.1)	390.6 (642.1)	229.3 (335.5)
Apples (thousand tons)	118.1	199.8 (69.2)	534.4 (352.5)	357.3 (202.5)
Sawnwood (thousand m3)	932.1	1,526.9 (63.8)	2,201.9 (136.2)	1,796.9 (92.8)
Importables				
Corn (thousand metric tons)	241.3	383.6 (59.0)	720.7 (198.7)	542.2 (124.7)
Rice (thousand metric tons)	78.9	104.5 (32.5)	149.3 (89.2)	125.6 (59.2)
Wheat (thousand metric tons)	1,146.5	913.1 (-20.4)	1,431.9 (24.9)	1,157.2 (0.09)
Sunflower (thousand metric tons)	1.2	15.0 (24.7)	16.2 (35.2)	1.6 (33.3)
Sugar Beet (thousand metric tons)	884.6	128.0 (44.7)	2,403.5 (171.7)	1,808.7 (104.5)
Live Cattle (thousand tons)	147.0	181.7 (23.5)	195.0 (32.7)	188.0 (27.9)
Milk (millions Lts)	797.0	1,017.1 (27.6)	1,091.9 (37.0)	1,052.0 (32.0)
Domestic				
Potatoes (thousand metric tons)	748.6	857.8 (14.6)	848.1 (13.3)	853.3 (13.9)
Agroindustry				
Pulp (thousand metric tons)	248.7	613.9 (146.9)	848.5 (241.1)	707.7 (184.6)
Paper (thousand metric tons)	201.6	294.6 (46.1)	389.9 (93.4)	332.7 (65.0)

Source: Central Bank of Chile. Indicadores Económicos y Sociales 1960-1988, and Boletín Mensual. DEA-UC, Panorama Económico de la Agricultura N° 66, sept. 1989.

Note: The percentages changes (%) with respect to the period 1960-1973 are shown in parenthesis.

Graph V-1: ANNUAL RATE OF GROWTH TO GDP



However, in the Chilean context, although it is clear that prices of exportables increased relatively to non-tradables and also to importables, the same does not apply to importables. It is not at all clear that they improved relatively to non-tradables at the producer level, it is more likely, that on average, and between 1973 and 1990, they fell slightly in comparison to the 60's and early 70's. On this account, the significant response of aggregate agriculture output is certainly surprising since the main component of the sector is importable.

The explanation have to be found in the stimulative environment which was certainly inexistent before 1974. So, when liberalization of agriculture is understood in a wider sense, it had a definite impact on the aggregate level and growth rate of the sector. The reduction in the weight of importables within the sector's output explains marginally the high growth rates, specially after 1984.

The response of farmers to price and environmental incentives was certainly positive. The growth of Chilean agriculture has been remarkable since 1974. Growth rates were significantly higher in both sub-periods (see Table V-3): 4.9 percent and 4.5 percent respectively against 0.2 percent between 1960 and 1973 -it is 2.2 percent when the bad years of Allende are eliminated. Growth in agriculture was also faster than for the economy as a whole between 1974 and 1982, but slightly lower afterwards Graph V-1. The share of the sector in GDP has even risen since 1960: from 7.7 percent during the period 1960-1973, to 8.2 percent and 8.4 percent in the periods 1973-1982 and 1983-1990 respectively. When compared with middle income countries, Chilean agriculture growth fares better in the latter period: 3.8 percent against 2.7 percent in the period 1980-1988 and worst in previous years: 1.6 percent against 3.2 percent between 1965 and 1980. However, the latter results are biased by the extremely bad years for Chilean agricultural growth before 1974.

The performance of growth varied through time among agricultural products. In the first place, the average production was significantly higher between 1974 and 1982 than before 1960 with the exception of wheat (Table V-3). In the second place, increases were more significant during the period 1983-1990 than in the previous subperiod. Further, growth was higher for exportables than for importables, after 1974, during both subperiods. However, they were two exceptions: corn and sugarbeet which showed remarkable increases between 1983 and 1990. The only non-tradable available in the sample showed during both subperiods the lowest performance. Table grapes and apples showed increases over two hundred percent.

The consequence of these trends was a change in the composition of production in favor of exportables.

The evolution of relative prices may have supported the described trends. However, they resulted favorable, as compared to the period prior 1974, only for the exportables table grapes and apples (Table V-1); for the rest of products in the sample,

relative prices fell⁶⁵. So other factors have to be found to explain the dynamic behavior of the importable sector. Large increases in productivity, a reduction in the degree of instability in their relative prices, at least during one subperiod, and a more favorable environment are forces which may have stimulated production of importables. The evolution in productivity is analyzed in the next section. Its increases were sufficiently important as to almost fully compensate for the reduction in relative prices, and even to more than compensate as in the case of corn and rice.

Price stability is often considered as a condition for production and productivity increases. The evidence presented here (Table V-4) suggests two conclusions: (i) that price bands reduced significantly price unestability; and, (ii) the available evidence is inconclusive with respect to the relation between less unestability and more production; but, it is consistent with higher productivity. Corn and rice prices, for example, suffered from greater variability than the products under price bands with rather similar fall in relative prices in the period 1983-1990 as compared to the period prior to 1974; nevertheless, the production of the former grew more rapidly than the one of the latter. It is difficult to single out other stimulating force than the favorable environment. It is certainly a catch-all category and then, rather ambiguous. But, in the perception of farmers, politicians, and technicians interviewed, it appears to be the essential variable.

It includes basically the strengthening of property rights, credibility with respect to authority (although groups of farmers would disagree in several occasions on specific policies carried out by these same authorities), land and labor markets developments, and competition imposed by the market oriented economy; all of them represented the essence of the structural reforms carried out after 1974. It appears as one main conclusion of this paper that this favorable environment and technological transfers were the main forces behind the successful agricultural development compensating more than fully for the disastrous impacts of two significant recessions and a financial crisis and for the downward trend of cereal prices⁶⁶.

Forestry merits a special place in this section. The rate of planting more than tripled after 1974 as compared to the period 1940-1973 while the responsibility shifted from the public sector to the private sector after 1974: 80 percent of total planting since then. Further, on average, slightly more than a third of total planting did not apply for subsidy (Table V-5).

⁶⁵ This is true even for milk despite the constant support through additional specific duties and later, reference prices. However, today, producers consider themselves efficient to the extent that they do not appear to worry about the possible opening of frontiers with Argentina. This would be an interesting case of successful infant industry.

⁶⁶ It should be recalled that the prices of cereals were showing downward long term trends since the sixties.

**Table V-4: COEFFICIENT OF VARIATION OF OUTPUT
AND OF RELATIVE PRICES***

	(%) Periods		
Products	1960-1973	1974-1982	1983-1990
Output			
Table Grapes	7,4	40,4	43,1
Apples	15,5	40,6	23,2
Live Cattle	15,6	9,8	9,2
Milk	6,7	14,7	14,8
Wheat	14,2	17,7	32,4
Sugar Beet	43,7	48,0	17,4
Sunflower	36,0	54,9	57,7
Potatoes	10,5	17,0	13,5
Rice	23,0	36,0	15,2
Corn	27,3	24,1	18,1
Relative Prices			
Wholesale			
Table Grapes	39,9	12,8	13,8
Apples	35,2	14,9	11,1
Live Cattle	8,3	31,3	10,9
Milk	16,7	13,3	14
Wheat	7,6	17,7	9,8
Sugar Beet	-	16,9	7,2
Sunflower	8,5	30,2	4,3
Potatoes	29,3	24,7	29,1
Rice	14,6	25,3	14,9
Corn	05	21,2	13,8
Consumer (1)			
Table Grapes	-	23,9	28,5
Apples	19	15,2	13,6
Beef (Posta)	12,4	17,2	10,2
Milk	5,6	17,9	6,7
Bread	8,2	8,3	4,1
Sugar	11,7	32,6	9,4
Oil	10,9	30,2	11,2
Potatoes	20,9	23	32,7
Rice	10,7	28,1	8,3

(*) Figures calculated from Table A-6, A-7, A-8 and A-3

(1) Data until 1988

Several factors help to explain those results :

(i) the elimination of export quotas and prohibitions (on logs) faded the monopsony power that the unique Chilean paper and cellulose producer had on raw wood before the commercial opening;

**Table V-5: AVERAGE FORESTRY PRODUCTION
(Thousand Metric Tons)**

Product	1960-1973	1974-1982	1983-1988	1974-1988
Sawed Wood (Thousand m3)	932	1.527	2.202	1.797
Boards and Veneers	32	70	155	104
Pulps	249	614	849	708
Papers and Cardboard	202	295	390	333

Source: Table A-9

(ii) the significant reduction in the anti-export bias combined with the increase in the real exchange rate, as compared to previous decades, stimulated exports of sawnwood, board and veneers, pulp and paper, and so indirectly, planting which had been highly protected and with limited incentives to export (Table V-5). While nominal protection reached levels above 100 percent in 1974 on different wood derivatives, effective protection would vary from 135 percent to 1300 percent;

(iii) despite tax exemptions, the State was mainly responsible for planting before 1974; after 1978, the private sector was responsible for 100 percent. Private property rights were doubly guaranteed in the case of forestry lands: by the overall system and by DL701 which secured specifically the inappropriability of planted lands.

However, the cost attached to the subsidy-the replanting requirement (see Chapter III on Price Policy) -had probably a deterrent effect on planting, and so may have had the support given to the production of importables like wheat and to cattle raising.

The allocation of land by use suffered alterations, as a consequence of the changes analyzed in this section. The area dedicated to farming was reduced while the reverse occurred to the fruit area and forestry (Table V-6). The increase in the area dedicated to fruit came from areas previously with crops while tree planting took over from grazing land and previously natural forest.

Table V-6: ALLOCATION OF LAND
(thousand hectares)

	1965	1975		1985	
Farming	1.254,8	1.247,4	(-0,6)	1.083,5	(-13,6)
Fruit	51,5	64,7	(25,6)	122,4	(137,7)
Forestry (Pino Radiata)	293,0	808,8	(176,0)	1.151,4	(293,0)

Source: Central Bank of Chile. Indicadores Económicos y Sociales 1960-1988.

Note: Rates of growth (%) with respect to 1965 appears in parenthesis.

Productivity

Liberalization, understood in the largest sense, should increase factors productivity. This is the consequence of a more competitive environment, of opportunities to take advantage of economics of scale, and of new available technologies.

One of the significant achievements of the reforms has been the notorious increase in productivity, particularly after 1982. Productivity, here, is measured as physical units of output per hectare⁶⁷. With no exception, the average productivity of products chosen in our sample increased by more than 30 percent since 1982 and the minimum increase for the period starting in 1974 until today was 19.5 percent (Table V-7),

⁶⁷ The measure of output per unit of land should be interpreted with care. It may be the simple reflection of a combination of factors such as investment, new technologies, new seeds, learning by doing, more labor/hectare, changes in the structure of farms. Consequently, it is not possible to single out "the" factor determining these significant improvements.

when both are compared to the average productivity of the period 1960-1973. The most spectacular increases were in corn (126.1 percent between 1983 and 1990) and apples (121.2 percent during the same period). On average, increases were the highest among exportables and the lowest for the only non-traded good: potatoes. Reforms between 1974 and 1982, although inducing on average some increase in agriculture productivity, produced modest results; productivity even fell in the case of table grapes. On the contrary, the period after the recession was extremely favorable.

Table V-7: PRODUCTIVITY

	1960-1973	1974-1982	1983-1990	1974-1990
Exportables				
Table grapes (Tons/Ha)	11.8	8.5 (-27.8)	8.1 (31.4)	9.5 (19.5)
Apples (Tons/Ha)	11.3	13.7 (21.1)	25.0 (121.2)	19.0 (68.1)
Importables				
Corn (Metric Tons/Ha)	2.9	3.4 (18.7)	6.5 (126.1)	4.9 (68.9)
Rice (Metric Tons/Ha)	2.7	3.2 (18.5)	4.1 (51.9)	3.6 (33.3)
Wheat (Metric Tons/Ha)	1.6	1.7 (6.3)	2.6 (62.5)	2.1 (31.1)
Sunflower (Metric Tons/Ha)	1.3	1.4 (9.1)	1.9 (46.2)	1.6 (23.1)
Sugar Beet (Metric Tons/Ha)	36.5	39.9 (9.3)	50.4 (38.1)	44.8 (22.7)
Domestic				
Potatoes (Metric Tons/Ha)	9.2	10.1 (9.8)	13.6 (47.8)	11.8 (28.3)

Source: Central Bank of Chile. Indicadores Económicos y Sociales 1960-1988, and Boletín Mensual.

Note: The percentages changes (%) with respect to the period 1960-1973 are shown in parenthesis.

The results described are compatible with the trends in fertilizer consumption, labor costs and the real interest rate, and of related the terms of exchange at the farm level. "Any downturn in farmgate terms of exchange has always been reflected in the use of inputs, particularly discretionary items such as fertiliser and repairs and maintenance" (Sandrey and Reynolds, 1990).

The terms of exchange at the farm level may have gone down during the first years of reform, the reverse being the case afterwards. No neat evidence is available (see the section on relative prices above). However, it should be recalled that all subsidies on inputs were eliminated after 1974 which implied at least a once for all rise in costs. Although the price of fertilizers, at constant prices, did not experimented any significant

increase, the real rate of interest did so after 1975 (Table A-12): it reached a spectacular level of 64.2 percent in 1976 and, on its average level was 33.3 percent between 1976 and 1982; this level fell to 11.4 percent, on average, during the period 1983-1990. The real interest rate was negative before 1974.

Real wages in agriculture followed a slightly different trend. Even if, information on wages is shaky, the use of minimum wage gives some indication of them. Real wages were during most of the period covered below those predominating in 1970. They fell significantly in 1972 and 1973, rose up to 1982, fell again in 1983 and remained low until 1988 (no information is available for the last two years of the period).

The consumption of fertilizers was reduced between 1974 and 1982 in comparison to the period 1968-1973, unique years for which information is available (Table V-8). But, their use experimented a significant increase afterwards: for example, on average, the level of consumption of urea between 1974 and 1990 was almost four fold over that of 1966-1973. The demand for fertilizers was certainly influenced by output prices, which, with the exception of exportables, tended to fall all along since mid-seventies late eighties.

The situation changed after the recession when terms of exchange improved within agriculture. Although, output prices kept falling in real terms, the prices of different inputs fell too, and this reduction was significant: labor and financial capital, while the real price of fertilizers was not too different from those of the previous period. Domestic and international demands were buoyant also during this latest period. So conditions improved for agriculture during the period 1983-1990; impacts, of course, differed among products.

Table V-8: CONSUMPTION OF FERTILIZERS
(Thousand metric tons)

	1968-1973	1974-1982	1983-1986	1974-1986
Sodium Salpeter	128.6	125.9 (-2.1)	293.3 (95.3)	160.5 (24.8)
Urea	21.0	32.3 (53.8)	98.7 (370.0)	52.7 (150.6)
Triple Super Phosphate	116.9	89.4 (-24.5)	122.6 (4.5)	99.6 (-14.8)

Source: Figures calculated from Table A-10

Note: The percentages changes (%) with respect to the period 1968-1973 are shown in parenthesis.

Last but not least, transfers of technology and relative stability in price conditions in specific sectors may have been among the most significant factors behind the large productivity increases. Transfers of technology started in the 70's (see Part III); but, it took some time to widen their coverage; their main impact has been after the 1982-1983.

According informal sources, productivity in wheat doubled even among the small farmers, the most difficult recipients of these transfers.

Price bands installed some stability in the price of wheat, sunflower, and sugar beet. It is argued that price stability would stimulate farmers, which are risks averters, to invest in these sub-sectors instead of - or more than otherwise - doing it in higher returns, higher risks productions. So, stability can be considered as another input. Results do not contradict this hypothesis. Increases in productivity were momentous in these crops (Table V-7) and they took place during the sub-period when bands were reintroduced and kept; but, they were also surpassed by corn, apples and potatoes; the last two have shown high variability in prices and the first one, difficulties inherent to exports.

Productivity and the use of inputs is also related to working capital and financial capital available for investment. This topic is analyzed next.

Debt

It may appear strange to include debt among impacts as it plays a role of productive factor in the production function of agriculture, a role of cause and one of consequence. However, liberalization, in its broader acception, had a significant impact on the level and composition of debt. Both will be analyzed.

The liberalization process may have presented some interesting issues related to indebtedness. In the first place, the liberalization of the sector per se does not appear to alter the traditional situation of relative high indebtedness of the sector. However the destination of credit changes *pari passu* with the change in output composition concomitant to liberalization. In the second place, the elimination of subsidized interest rates did not hinder indebtedness; high real interest rates were partly compensated by very high rates of return in the production of exportables. Several reasons, independent of the liberalization explain the high indebtedness of that sector (see Box below). There are related to the opening of the capital account together concomitant to large world liquidity in the late 70's; to adjustment to the privatization of land between 1974 and 1980; and to weather the unfavorable prices, conditions which were expected, after 1979, to be transitory. Finally, the opening of the capital account stimulated indebtedness in foreign currency specially at a time of fixed nominal exchange rate (1979-1982) and of moral hazard. The results were explosive when the exchange rate had to be devalued in 1982. Part of the actual debt overhang in the Chilean agriculture is related to most of these factors, mostly unrelated to the liberalization per se.

Chilean agriculture had accumulated debt basically through loans by financial and non-financial institutions (Part III). Information on the second category is difficult to obtain being scattered among several institutions and the ambiguity of some of their reports. Hurtado, Valdés, and Muchnik, 1990 have obtained information on loans made by CORA, and INDAP. It allows to provide an order of magnitude of the bias for not

including these institutions here. It is relatively small for the period after 1973: less than 5 percent. In addition, in 1985, ODENA (institution which represented CORA in its last year of life) forgave 70 percent of the standing debt of the small farmers for the assigned lands from the agrarian reform. However, it was higher prior to 1973 when credit granted by CORA reached almost 50 percent of agriculture loans from BECH (1970); but, on average, during the period 1966-1973, loans made by CORA did not surpass 20 percent those made by BECH. Consequently, errors for not considering the debt to those non-financial institutions are not significant. The analysis will be consequently based here on the first category of debt. Nevertheless, it may become significant given the rapidly rising role of exporters, and monopsonies, buyers of farm production (fruits, sugar beet, tobacco) as informal financial institutions. Unfortunately, no information is available to that respect.

Agricultural debt has been much higher as percentage of agriculture GDP than prior to liberalization. While this ratio was 11.6 percent during the period 1965-1973, it rose to 38.9 percent in 1974-1982 and even 79.8 percent between 1983 and 1990 (Table V-9). It was quickly accumulated between 1977 and 1982- from 21 percent of agricultural GDP to 93 percent in 1983⁶⁸. These trends are not too different from those of debt accumulation in the economy as a whole: total debt as percentage of GDP jumped from 13 percent in 1977 to 77 percent in 1982. However, they implied a relatively more rapid rate of indebtedness of agriculture than of the rest of the economy.

Table V-9: DEBT INDICATORS

	1965-1973	1974-1982	1983-1990	1974-1990
Agriculture Debt (\$ 1977 millions)	2.582	10.526	26.406	17.938
Total Debt (\$ 1977 millions)	10.200	96.891	238.551	163.555
Agric. Debt/GDP Agric.(%)	11,64	38,88	79,80	57,98
Total Debt/GDP Total (%)	3,74	28,28	60,51	54,88
Agric.Debt/Total Debt (%)	26,67	18,17	11,02	14,83
Index (1974=100) (a)	1,07	0,67	0,42	0,55

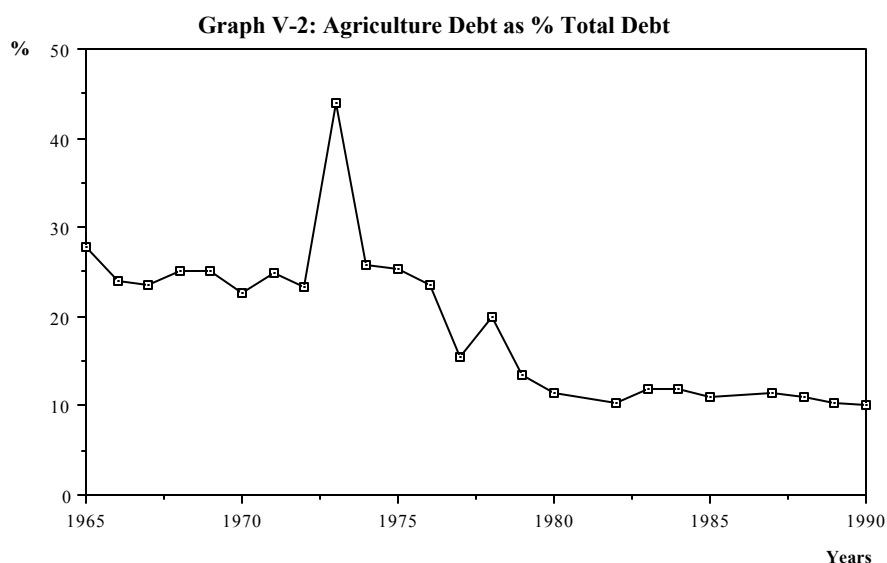
Source: Table A-14.

(a) Index = **¡Error!**

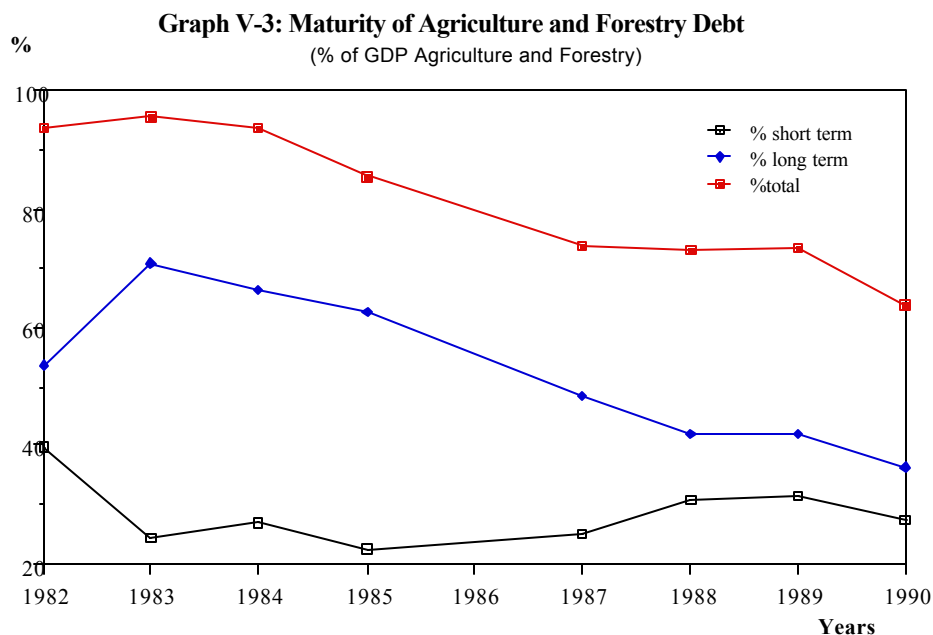
The implications for vulnerability of farmers to service it are obvious. Although information of debt/equity ratios are not available, these ratios are known to be high. On the other hand, real interest rates had increased significantly in real terms with respect to

⁶⁸ The relevant information is not available for 1981.

the period prior 1973 (Table A-12). Finally, the fluctuation of farm income had increased (Table V-4 compare price fluctuations with quantity before and after 1973: variance of prices and of quantities). Consequently, reforms carried out since 1973, on top of the special circumstances of world liquidity in the late 70s, have left the farmers in a shakier financial situation than before despite the reduction in the agriculture debt as a percentage of total debt (Graph V-2) and even of the downward trend of the relation of agriculture debt to agriculture value added as compared the ratio total debt to total GDP (Table V-9).

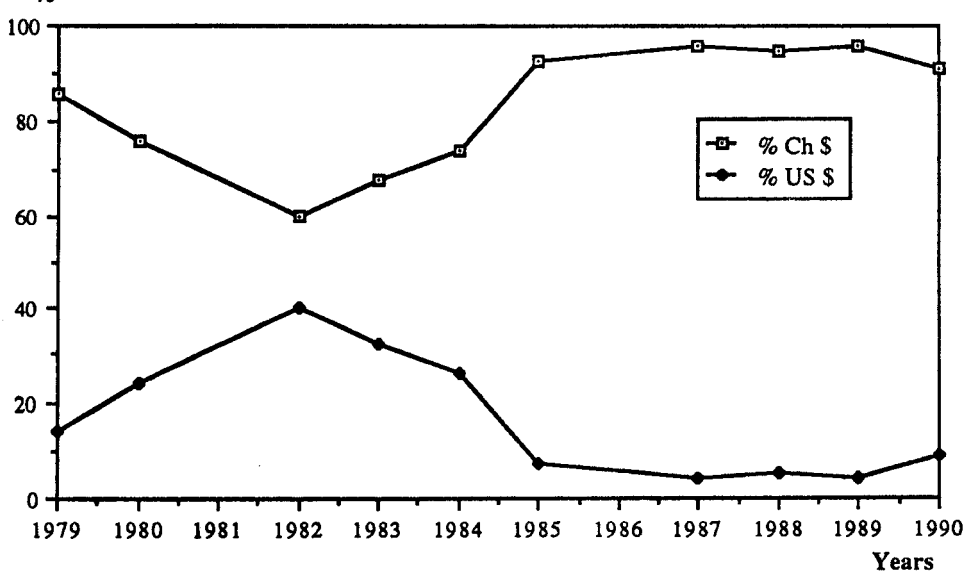


One would have expected that the development of the capital market in Chile, consequence of liberalization policies followed, on top of the attractiveness of production in exportables and others, would have increased the share of long term debt in the total debt. The relevant information is available only from 1982 on (Graph V-3). It is remarkable to note that that share has been diminishing steadily. However, the explanation lies in the debt overdose accumulated between 1977 and 1981-in domestic and foreign currency, as long term loans- the farmers have been getting read of since 1983 in a painful process of adjustment. So, these trends do not tell much about any positive impact of the deepening of the capital market.

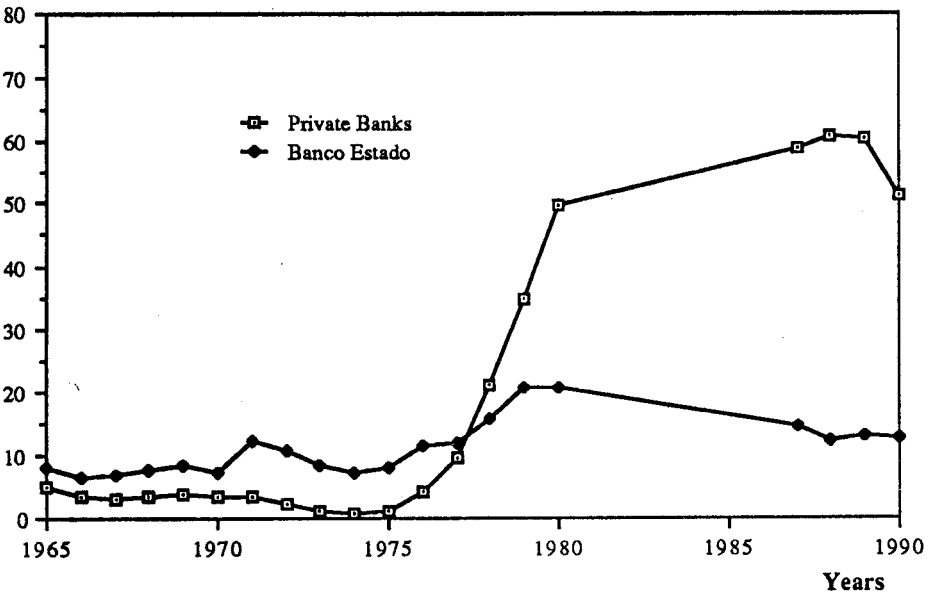


Reforms related to liberalization had also other impacts on aspects related to debt. In the first place, the opening of the capital account in the late 70s stimulated a change in the composition of debt by currency. Before 1973, most the debt was in domestic currency. After 1973, debt in foreign currency reached 40 percent of total debt (Graph V-4). Farmers reacted strongly to the closing of the world capital markets and the debt crisis after 1981, by reducing its share to about 5 percent of agriculture debt in 1990. In the second place. The financial liberalization and the pruning of the Public Sector responsibilities incentivated a significant increase of debt from private banking (Graph V-5). Before 1973, about one fourth of the agriculture debt came from that source; since then, three quarter of it.

Graph V-4: Composition of Agriculture and Forestry Debt by Currency



Graph V-5: Source of Agriculture and Forestry Debt
(as % of GDP Agriculture and Forestry)



Why debt was accumulated so notoriously in the late 70s early 80s?

When expropriated lands were either given back or privatized, the situation on the farm was deplorable. So farmers required at least working capital and for investment too since many started from scratch. The cost of credit concomitant to the financial liberalization, was not an obstacle to some farmers to borrow and take advantage of opportunities related to investment in exportables and land, as analyzed above, subsidies had faded on complementary inputs. Traditionally, Chilean agriculture has been characterized by a high debt/equity ratio. When land was privatized, after 1974, extremely high many farmers wanted to rebuild the extension of their farm prior to expropriations for status, family, or other considerations. Since they were given back or sold only one part of it, they intended to enlarge their farm by purchase financed through borrowing (see Hachette and Lüders, 1991). Further, when loans were plenty during the period of "world high liquidity (1977-1981), farmers borrowed stimulated by the optimistic income expectations like many. Unfortunately, a high share of this borrowing was for consumption purposes. Finally, producers of tradables were having problems with output prices which tended to fall pari passu with the reduction of the real exchange rate, between 1979 and 1982. Expecting that these conditions were transitory, farmers borrowed heavily to save their land. Consequently, they were highly indebted when the real interest rate rose spectacularly in 1981 and the capital account closed. The combination of all these factors stimulated distress borrowing which implied the capitalization of debt service, another factor for debt accumulation.

Exports, imports and trade balance

One of the main expected impacts of the liberalization of agriculture was the increase in exports as it was assumed that Chile had comparative advantages in the production of fruits and forestry products. The experience of these exports prior to 1974 had shown that world markets were opening to Chilean fruits and that basic production characteristic were appropriate to compete with the most efficient world producers.

However, the success of exports depended heavily on a combination of other conditions. Incentives to invest were given by strengthening of private property rights, credibility in policy-making, and stability in rules of the game. Labor and administrative reforms permitted a significant improvement in the infrastructure efficiency, ports in particular. World markets were opening fast to fruit imports. Subsidies to planting pino

radiata and the elimination of obstacles to exports incentivated also, not only the planting of trees, but also, export of forestry-related products. And last, but not least, the real exchange rate was significantly higher than in the 60's and early 70's, despite its roller-coaster between 1975-1982.

Perhaps, the singlest most impressive consequence of the reforms carried out after 1974, has been a high and steady growth rate of agricultural exports until today. In value terms, the annual average rate has been over 30 percent (Tables V-10) against only 2 percent between 1960 and 1973. Exports of agricultural products represented only 2.1 percent of total exports in 1971-1972; this share rose to 10.0 percent in 1988-1989. Another interesting result of liberalization is the development of "industrial" exports related to agricultural inputs. Food industrial exports increased from 1.8 percent of total exports to 8.6 percent in 1988-1989, while wood-by products rose from 0.1 percent to 5.6 percent in the respective periods.

Table V-10: ANNUAL AVERAGE RATE OF GROWTH OF EXPORTS PER PERIOD

Product	1960-1973	1974-1982	1983-1990	1974-1990
Fresh fruits (boxes) ^(a)	5.0	25.7	21.5	24.1
Forestry				
Sawnwood (m ³)	21.6	36.3	8.1	25.0
Board and Veneers (Metric Tons)	0.0	23.3	5.7	14.5
Agri-Business (Metric Tons)				
Pulp	64.9	22.1	1.0	13.6
Paper	4.3	13.0	16.2	14.3
Total Exports (US\$)	2.0	42.5	13.9	31.1
Farming	4.3	36.0	15.3	27.7
Livestock	-3.2	41.4	8.3	28.2
Forestry	13.5	64.5	16.1	45.1

Source: Central Bank of Chile. Indicadores Económicos y Sociales 1960-1988.

(a) Mujica, R, Chile: La Modernización Agrícola durante el Régimen Militar 1973-1988. October 1988.

The most impressive increase was concentrated on forestry products and are the direct consequence of lifting export prohibitions and other controls, the incentives given for foresting, and favorable international prices. On the other hand, farming products, fruits essentially reached also very high rates of growth. In both cases, these rates were

higher during the first subperiod, lower during the second. One reason is obvious and is related to the higher potential for exporting by products such as sawnwood at the beginning of the first subperiod than of the second- the backlog effect. The other is related to the increase in domestic demand for trees given the rapid increase in pulp and paper production and export capacity.

It is noteworthy that despite the reduction in world prices of fruits in the 80s, the rate of growth of exports of fresh fruits was only slightly reduced with respect to the period 1974-1982 when measured in volumes. Finally, forestry-related industrial exports did also show a good performance at least between 1973 and 1982; paper exports did even better after 1982, not so, pulp. The export growth of more industrialized wood derivatives (pulp and paper) is slower than the other ones being of relatively high capital intensity and where significant lags exist in new on-going investment projects; other are in preparation.

The potential for growing exports varies across sectors. Foreign markets do appear open for larger fruit exports specially if an FTA is signed with the USA and barriers are lifted in Europe and Japan in the framework of the Uruguay Round. Fruits are products with high income elasticity. Forestry by-products export growth may soon be limited by the fastly growing domestic demand derive from large investment in pulp and paper plants. Other exports, like berries have potential, but will represent only minor contributions.

Agricultural imports have not been classified as such until 1977. Even, since then, their coverage is open to discussion and results should be interpreted carefully. Comments are made only for the period 1977-1989. Imports have behaved in accordance to production trends and macroeconomic conditions since 1977. They increased until 1980 as the real exchange rate and the domestic production of domestic crops such as wheat diminished (Table V-11). They fell steadily afterwards until 1985; since then, their level has been relatively stable around US \$250 millions. High real exchange rates, price bands, and large increases in productivity have reduced the demand for imported agricultural products (see sections on Output and on Productivity). It is difficult to think that the actual level of imports could be reduced further as they include several items not produced in the country such as tropical products.

Finally, it may be important to highlight the behavior of the agricultural trade balance. Until 1984, Chile had a negative trade balance in agriculture. Since then, the balance has been positive and has grown steadily, consequence of the fast rising exports, and lower imports of cereals.

Table V-11: AGRICULTURAL EXPORTS AND IMPORTS ACORDING TO ORIGIN, AND TRADE BALANCE
(Million US\$)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
TOTAL EXPORTS FOB (1)	220	280	390	574	461	434	397	456	520	693	811	950	1.037
Farming	127	158	184	244	268	278	254	341	421	557	605	684	711
Livestock	23	28	38	37	29	34	26	28	26	38	54	56	49
Forestry (2)	70	94	168	293	163	122	116	87	73	98	152	210	277
TOTAL IMPORTS CIF (3)	379	498	580	825	761	567	514	463	250	177	218	290	272
Food of Agricultural Origin	13	19	33	26	33	22	12	12	9	11	13	15	16
Food of Industrial Origin (4)	89	114	137	243	280	168	120	102	28	30	50	78	83
Raw Materials Food and Non Food of Ag	155	283	277	312	327	277	265	218	113	80	84	112	79
Raw Materials Food of Indurtrial Origin (5)	122	83	133	244	120	99	118	132	101	57	71	85	95
TRADE BALANCE (6)	-229	-312	-359	-543	-463	-255	-234	-94	196	418	441	449	488

(1)(3) Source: Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.

(2) Corresponds to Timber clasifided as Industrial item by the Central Bank of Chile.

(4) Includes: Cow, Pig, Powdered Milk, Cheese, Milk Serum, Butter and Butter Oil, Rice, Margarine, Canned Fish, Refined Sugar, Candy and Chocolate, Pasta, Cookies, Canned Pineapple, Extract of Soluble Coffee, Mayonnaise, Beer and Whiskey. These products are classified by the Central Bank of Chile as "Foods of Industrial Origin." But more than 75% of the value within this item are products of agricultural origin. Therefore, this item is counted as part of "Total Agricultural Goods".

(5) Includes: Tea, Yerba Mate, Gross and Refined Oil, Wheat Flour, Corn Starch, Pig Fat, Cocoa, Unrefined Sugar, Soy Flour and Soy Protein. These products are classified by the Central Bank of Chile as "Raw Materials of Industrial Origin." But more than 75% of the value within this item are products of agricultural origin. Therefore, this item is counted as part of "Total Agricultural Goods".

(6) Forestry exports excluded

Employment

The liberalization of agriculture was expected to have several impacts on agricultural employment. On the one hand, its volume should have increased once for-all as a consequence of an increase in the sector production and as a consequence of reallocation of production towards more intensively labor using sectors. Also, given the relative increase in the price of capital, labor would be used more intensively in each production process. These trends are observed in the Chilean experience of liberalization. However, other factors acted as well to stimulate farm employment. Large unemployment during the recessions and stabilization efforts maintained low real wages while new labor laws improved the attractiveness of living while reducing the cost of firing.

Employment in agriculture showed also significant changes after 1974. Data drawbacks limit severely the extent and confiability of conclusions to be drawn from them⁶⁹. The latter, consequently, will be relatively few. In the first place, agricultural value added per employed in that sector has steadily increased over time (Table V-12). This trend is to be expected in any environment where there is capital accumulation and increases in real wages. More interesting is to note the remarkable stability of the agricultural employment share in total employment. This results goes against the usual trend of economic development. For example, between 1960 and 1985, this share for the southern cone countries was reduced by 28 percent while, for Latin America and the Caribbean, by 40 percent. One important implication has been the reduction in the migratory trends towards Santiago, together with the decentralization of urban development.

A higher proportion of rural population combines today urban life with rural work. Provincial cities have developed more quickly: Copiapó, Rancagua, Curicó, Osorno, etc. Another interesting indirect result of reforms has been the attraction of women to the rural labor force in export related activities such as fruit production. This phenomenon helps to explain the increase in the participation rate of the Chilean population in the labor force observed during the 70's. Another consequence of these developments has been the large increase -both in absolute and relative terms- in part time jobs in agriculture.

⁶⁹ Employment-unemployment surveys do not cover the rural sector, though they include small provincial cities where a growing share of farm labor is living today sharing, in many cases, more than one occupation. Further, full time jobs vary widely with seasons. Part-time jobs have also increased significantly, while labor mobility among regions has escalated.

Table V-12: AGRICULTURAL EMPLOYMENT

	1960-1970 (1)	1975-1982 (2)	1983-1990 (3)	1975-1990
Agricultural Value Added as percentage of Agriculture Employment	43.4	48.9	52.1	50.5
Agriculture Employment as percentage of Total Employment	17.2	18.1	16.9	17.5
Elasticity Agriculture Employment to Agricultural Value Added	-0.050	1.092	0.594	0.651
Elasticity of Total Employment to Agricultural Value Added	0.019	0.552	0.882	0.797

Source: Figures calculated from Table A-11

(1) Average employment 1966-1970 INE.

(2) 1975-1980 INE. 1980-1982 Universidad de Chile.

(3) Universidad de Chile.

Further, absorption of employment by agriculture has been clearly much greater after 1974 than before as shown by the elasticity of employment to value added by the sector which was negative in the period 1960-1973, became positive after 1974, and significant. It was higher during the first subperiod (1974-1983) than during the second one. This trend resulted from the combination of the higher basis at the beginning of the second subperiod and an increase in investment and productivity, two phenomena basically unrelated to employment considerations.

However, a note of caution has to be quickly added. Elasticity of employment to value added was certainly higher after 1974 than before, but this was true also for the economy as a whole, and this elasticity was even higher than for agriculture. This is surprising as it would have been expected that agriculture be a major absorber of labor as compared to most sectors, services excluded. The economy as a whole became more labor intensive, but the share of services increased relatively in total employment. However, this point rises the issue of the coverage of the agricultural sector employment: it could theoretically include farming, industries which produce mainly inputs to agriculture (input industries) and those which derive a substantial part of their inputs from farming (processing industries). Figures on composition of employment to measure this facet are

unfortunately not available. Among relevant sectors to be included in this larger definition, meat processing, production of fertilizar and distribution, canned food, leather tanning, wool processing, agricultural machinery production and sales, seeds, marketing should be included. But, it is likely that by using this more ample definition of agricultural employment, the share of employment of this sector would be significantly higher after 1974 than before, and it is probable that the elasticity of employment would not be too different from the one for the economy as a whole.

TRADE LIBERALIZATION AND EMPLOYMENT

The impact of liberalization on employment overall was positive, despite its negative effect on manufactures. A simulation was carried out (see de la Cuadra and Hachette, 1991, pp. 247-251) to isolate the impact of trade liberalization on employment during the period of adjustments immediate to the elimination of QR, and exemptions and the reduction of tariff barriers to a flat 10 percent on all imports in 1979. Losses in manufacturing employment were compensated for by gains in agriculture, and until 1977 even in manufacturing itself since tariffs were redundant up to 1976 while the real exchange rate had risen sharply. The results for the mining sector suggesting a negative impact are misleading: employment in this sector fell primarily because of the severe reduction in personnel at the state-owned coal company -an action unrelated to liberalization efforts- together with significant adjustments in the so-called "small-mining" subsector (pirquineros) which is extremely sensitive to the downward trend in the price of copper. The sectoral results (which are analyzed in subsectoral detail separately for manufactures and agriculture below) must be viewed in the general context; taken in isolation they give a contradictory picture. Anyway, it is interesting to note that, agriculture compensated for the loss of employment in other tradable sectors by increasing its own employment during the relatively chaotic period between 1976 and 1981.

IMPACT OF TRADE LIBERALIZATION ON EMPLOYMENT, 1976-1981 (thousand)

Sector	1976	1977	1978	1979	1980	1981
Agriculture	1.2	53.6	84.5	84.7	97.0	104.1
Mining	-1.2	-2.6	-6.9	-6.7	-6.7	-16.6
Manufactures	36.0	9.0	-16.0	-57.0	-57.0	-79.0
Total tradables	36.0	60.0	61.6	21.0	33.3	8.5

The main factors behind these developments have been presented in Chapter III. Enough is to summarize them here: labor market greater flexibility introduced by new laws (wage flexibility, labor mobility, enterprise flexibility (labor reallocation within

firms), labor supply increase (increased participation of women and use of part-time jobs), and last but not least, low real wages during the whole period between 1974 and 1990 (Table I-1).

PART VI. CONCLUSIONS

This part presents the main conclusions of the report. They represent also implicit lessons of the experience of the liberalization process. However, these lessons should be carefully evaluated at the light of a specific, and most probably different, political context. What could be done, what was effectively done and how it was done were intimately related to the political economy within the framework of the military regime, as described in Part IV. Nevertheless, several conclusions, implications and lessons may be valid in other contexts as well. They will be mainly related to agriculture. More general conclusions and lessons on trade liberalization can be found in de la Cuadra and Hachette, 1991.

1. The reforms increased the rate of growth of agricultural value added. Its composition was also changed as expected : forestry, and fruit, both exportables picked up; the behavior of importables, such as cereals, was related to the real exchange rate during the period analyzed, and to price bands, whenever these were imposed. However, the change in composition is not dramatic in terms of use of land. The reasons are that fruit production, the main beneficiary of the liberalization, is relatively land and labor intensive, while forestry, modern forestry, took over traditional forests and previously rainfed cattle raising lands. It is likely that, *ceteris paribus*, if maintaining the price bands with a desire of long run neutrality, and external prices of cereals remain at relatively low levels, the production of importables will diminish *pari passu* with the real exchange rate unless compensated with further increases in productivity, an unlikely event in the medium term.
2. Reforms, *per se*, do not seem to have had a major impact on relative prices relevant to agriculture. This replicates what occurred in the economy as a whole, which, as a consequence, does not show significant changes in the output composition. However, the rate of growth is significantly higher.
3. The situation of agriculture was chaotic in 1973, when the military regime took over. Important reforms were decided to rebuilt the economy and put it on a stable path of development; they were equivalent to a major earthquake. Changes were so many and interdependence among their impacts was so tight, that authorities, consciously or unconsciously decided first to put into effect and consolidate the most general policies, and later, to face and solve more specific or particular problems. A careful consideration of the host of details cropping out during the sequencing of major reforms would most probably have hindered the application of some of them.

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4. Institutional reforms are at the heart of the significant dynamism of Chilean agriculture. A **favorable environment** stimulated investment and technological transfer into agriculture production permitting much higher than traditional growth rates. The main elements of this environment were the macroequilibria which implied a sound fiscal and exchange rate management, the flexibilization of the land, labor and capital markets, competition which stimulated efficient production and the infrastructure management (particularly transportation, roads, and ports), liberalization of all output and input markets (even if this implied higher prices as in the case private property insured, flexibility in the obtention of inputs (even if it were at higher prices as in the case of credit and machinery and equipment), and last but not least, the insurance on private property. The latter point has been considered by most relevant actors in agricultural policy making as, perhaps, the single most important stimulus to investment, technological transfers, efficiency increases in the Chilean agriculture after 1973; the availability of credit may come in second place.

The "favorable environment" hypothesis leads to the interesting implication that the performance of the Chilean agriculture was poor prior to 1973 as compared to the latter period not so much as a consequence of different "economic incentives to the sector", but of the wrong "environment"⁷⁰.

5. A related point should be made to explain the Chilean agriculture growth. Traditional factors such as direct investment were relatively less important to explain growth than alternative factors. Among the latter, the absorption of new technologies and significantly improved efficiency in the use of all resources, land in particular, were determinant. This is probably one of the main characteristics, implications and lessons brought by the liberalization process.
6. Available evidence does not show significant differences between the two period with respect to the relation between domestic and foreign prices of agricultural products. If so, it would mean that, despite the confused situation and wide use of instruments to intervene prices at the consumer and the producer level, authorities kept an attentive eye on international prices, reaching a result not too different to the one of an open economy.

⁷⁰The main hypothesis presented in this paragraph is consistent with the more specific views of Hurtado, Valdés and Muchnik (1990, p. 203) in the sense that the indirect intervention (through macroeconomic policies) had in Chile a greater impact on agriculture than the direct one since they led to an overvalued currency.

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7. Relative prices of agricultural products do not show significant differences with the period prior to 1973. It could have been expected that trade liberalization would bring a rise in the real exchange rate, and by so doing, relative prices of agricultural tradables would have increased. In the first place, the real exchange rate was much higher than prior the liberalization, but it is doubtful that the trade liberalization explains fully that change. Other factors such as fiscal policies and debt service go a long way in explaining the level of the real exchange rate. In the second place, the rise in the exchange rate was partially compensated by a reduction in the external prices of importables. So, although exportables enjoyed relatively favorable external prices, which together with higher real exchange rates strongly stimulated the agricultural exports, their weight in total production was insufficient to produce significantly different prices than prior to liberalization.
 8. Traditional crops did well when prices were stabilized through price bands and the real exchange rate was high. Concomitantly, productivity increased substantially while social tranquility improved markedly, at least in the southern part of the country. However, it is not clear that all these characteristics can be tied neatly to price bands. The real exchange rate, sustained high rates of growth, reduction in general unemployment, the liberalization of input markets, access to credit, easier technological transfer are factors which certainly had some impact on the noted results. Despite these caveats, facts cannot refute the hypothesis that price stability reached through price bands may be the least inefficient intervention to obtain production, employment and income stability in a significant part of the traditional agriculture, given that the rules of the game of the bands are strictly enforced.
 9. Liberalization can better be carried out if the land market is working efficiently and if the labor market shows signs of slackness. A diminished workers' power and lower real wages than otherwise reduced the danger of costs increases and competitiveness decreases both in the production of importables and exportables, while resources (labor and land) can be moved more rapidly towards better uses. In fact, the postponement of the liberalization of these markets helped to explain the significant difficulties suffered by many farmers, specially among those to which land had recently been assigned after 1973: they were broke and could not sell their land. The existence of unemployment, part of the slackness of the labor market, makes reallocation easier. Reallocation is required first among productive sectors affected by the liberalization -particularly, industry and agriculture- and within sectors among products and firms.
 10. Since liberalization results usually in the increase in relative prices of agricultural products and, consequently, of food, it affects negatively the purchasing power of wage earners which would tend to obstruct the process and in hand with the urban capitalists who would expect rises in rural nominal wages and losses in

competitiveness. The existence of large unemployment may help in reducing the obstacle of workers (urban and rural); a rise in the real exchange rate would also lessen the urban pressures of the urban capitalists but would reaffirm the opposition of the urban workers. Only rapid rates of growth of output, in every sector, and in productivity may be required to "convince" the urban workers. In particular, the rapid development of highly labor intensive exportables in agriculture would be welcome. This was the Chilean experience, although it should be added that labor did not move quickly from the urban to the rural sector. Support- which may imply subsidies- to accelerate labor mobility should be recommended: information, transportation, retraining since demand for skills may change substantially, etc. Another important implication is that the liberalization is more likely to succeed -to be accepted- if all factor markets are working smoothly prior to its inception.

11. Hurtado, Valdés, and Muchnik have shown that a price liberalization in agriculture could affect both the intersectorial allocation of capital and its level of accumulation (1990, p.197). The results presented in this report are not contradictory with their findings. Although data on sectoral investment are inexistent, punctual information suggests that the rise in agricultural prices may have hindered both total investment and investment in manufactures, specially during the first period. However, these impacts were weakened by the relative high unemployment and low real wages. The obvious implication is that the regressivity of the impacts of the liberalization policy (in terms of familiar distribution of income) limited any negative impact of them on capital accumulation.
12. Agriculture is likely to benefit more with rapid liberalization than with a staged one. On the one hand, the anti-export bias, which affected agriculture in a higher degree than industry, fades more rapidly; on the other hand, investment in agriculture exportables takes time to mature. Also, unemployment can fade more rapidly if the tradable agricultural sectors are labor intensive and price elastic. Further, the indirect impact of liberalization through a higher real exchange rate is more notorious. Capital losses as a consequence of liberalization are likely to be small anyway. "Where past experience has created a lack of credibility, a more rapid *fait accompli* implementation seems called for" (de la Cuadra and Hachette, 1991, p. 276). However, to the extent that the factor markets -land, labor, and capital- are not working properly, a gradual approach to liberalization would be preferable.
13. The behavior of the real exchange rate has been shown to be important. Consequently, the main institutional changes should point towards a higher, but not out of equilibrium, exchange rate. This is certainly not the consequence of a sector-related policy. It belongs to the realm of general policies: the elimination of fiscal deficits, the reduction of the public sector, the maintenance of a long

term equilibrium level of net foreign capital inflows, and obviously, low tariffs. Consequently, and once again, the liberalization process is not a sectoral affair, but clearly, if it has to be successful, of general concern.

14. A special stage to normalize commercial policies may be required. It would involve the elimination of tariff exemptions (to public institutions, in particular), of QRs (to imports and exports), and of multiple exchange rates. This is needed to establish relative prices, important consideration for both policy-makers and producers. Perception of adjustment costs and benefits of liberalization (authorities) and the understanding of the likely impacts of policies for resource allocation purposes (farmers) require transparency in relative prices.
15. The agricultural export surge did not need a special stage before the liberalization, but to some extent, it was somewhat prepared. The sectors that picked up were already exporters and had made use of special facilities which had existed in the past: subsidized credit and inputs and specific subsidy in the case of forestry. Markets had been opened, contacts made, transportation organized. However, the inadequacies of the domestic environment had hindered a fast development of these sectors or had stopped altogether actual exports as in the case of logs. As soon as the authorities started to impose structural reforms, the exportables grew at a vertiginous rate despite the lag of investment maturity.
16. As repeatedly mentioned before, other than trade policies contributed to the liberalization of agriculture and to its problems. Here, the latter merit some attention. A significant reduction in the production of cereals, sugar and oil seeds, all importables occurred between 1979 and 1982, during the most liberal period for agriculture, when almost no intervention was in place. The tradeable sectors suffered severe losses when the exchange rate, supported by rapidly growing capital inflows, went out of line in relation to wages and interest rates. "The decreased competitiveness of tradeables and the increased pull of resources in nontradeables reduced the tradeables sector from 37.8 percent of GDP in 1979 to 36.4 percent in 1981" (de la Cuadra and Hachette, 1991, p. 292). The exportable sector suffered less because their market was booming in the rest of the world. Further, interest rates remained high despite large capital inflows: low savings, high demand for credit, the privatization of public firms, the need to increase the low working capital explain the interest rates observed. As a consequence of easier access to credit and greater availability, and high interest rates in real terms, farmers' indebtedness increased, which reached the beginning of the major recession of 1982-1983 in poor financial conditions. It should be clear by now that the lack of specific interventions in agricultural markets, or the freely functioning of the latter was not the "cause" of the crisis in agriculture. Factors described above go a long way in explaining the poor performance of agriculture between 1979 and 1982. But, they are unrelated to the opposite version.

The period 1974 to 1979 was also an extremely difficult one for farmers but for other reasons. Many changes were occurring in all facets of economic life: relative prices of products, of inputs, high interest rates, elimination of subsidies, land restructuring, etc. The adjustment costs were certainly high. Credit was used generously as a buffer. Nevertheless, many, specially farmers which had benefitted from the assignation of a piece of previously expropriated land, were unable to survive. The lack of complementary inputs, of experience, and of some support (technical or other), and the impossibility to transfer land to more efficient ones produced situations of extreme poverty. These problems could have been reduced if all factor markets had worked more efficiently before the start of the liberalization. At the time, and given the coverage, depth, and speed of structural reforms these problems were unavoidable.

17. The timing of liberalization of agriculture cannot be discussed outside the same issue applied to the overall economy. However, it seemed adequate since the authorities had a minimum domestic consensus to carry it out and world markets were open to Chilean actual and potential exports. Further, "as long as the political power was concentrated in Chile in highly concentrated well-organized urban interests, significant liberalization would have been virtually impossible" (de la Cuadra and Hachette, 1991, p. 299). The military regime took advantage timely of the radical political shake-up it implied.
18. Finally, it is noteworthy that the rural-urban migration stopped altogether; the traditional and worldwide trend was even reversed. Labor contracts were made more flexible, while women employment rose faster than that of men given the occupations created in services related and complementary to fruit production⁷¹. This result is of the utmost importance to explain the nonreversibility of the liberalization while it clearly supported the stabilization efforts which had created large pockets of unemployment. Another related but unexpected result of the liberalization was the reinforcement of decentralization, a process of such economic and political projections that even the democratic government elected in 1990, previously critical of most policies imposed by the military regime, is following the trend trying to reinforce it.

⁷¹ A side effect of the increased labor mobility related to the particular development of the Chilean agricultural sector together with more flexible labor laws has been an improvement of the flexibility of the labor market; this characteristic, however, is tied to a very particular agricultural setting where crops and fruit collection are geographically dispersed over a lengthy trail of more than 1,500 miles with crop seasons separated by several months between the northern and the southern extremes.

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APPENDIX

Table A-1: DOMESTIC AND EXTERNAL AGRICULTURAL TERMS OF TRADE

	Agricultural	Agriculture/Industry	Agriculture/Imported	WPI A/WPI Ex A	PA/PNA	Passche Price Index for Agricultural Exports	Passche Price Index for Agricultural Imports	Terms of Trade
	1	2	3	4	5	6	7	6/7
1960	0,0012	1,00	1,06	1,42	1,03			
1961	0,0012	1,00	1,06	1,42	0,98			
1962	0,0014	1,00	1,15	1,27	1,01			
1963	0,0020	1,00	0,98	1,23	1,06			
1964	0,0031	0,99	1,00	1,39	1,14			
1965	0,0042	1,06	1,28	1,53	1,23			
1966	0,0053	1,04	1,43	1,56	1,25			
1967	0,0061	0,98	1,39	1,51	1,21			
1968	0,0076	0,93	1,25	1,45	1,19			
1969	0,0107	0,97	1,28	1,51	1,31			
1970	0,0146	0,96	1,30	1,51	1,38			
1971	0,0183	1,06	1,33	1,59	1,39			
1972	0,0382	1,33	1,78	1,96	1,66			
1973	0,0209	0,12	0,14	1,76	2,80			
Average	0,0096	0,96	1,17	1,51	1,27			
1974	1,55	0,83	0,73	1,12	1,00			
1975	10,3	1,07	0,89	1,40	2,29			
1976	35,8	1,17	1,03	1,57	2,64			
1977	64,1	1,12	0,92	1,48	2,45	79,9	97,8	81,7
1978	86,3	0,99	0,92	1,36	2,15	78,9	98,8	79,9
1979	131,1	1,01	0,98	1,39	2,27	93,4	110,1	84,8
1980	177,2	0,97	0,97	1,33	2,20	111,9	159,8	70,0
1981	182,1	0,88	0,95	1,22	1,90	112,1	129,7	86,4
1982	183,4	0,80	0,86	1,12	1,60	104,9	111,2	94,3
Average	96,9	0,98	0,92	1,33	2,14	96,9	117,9	82,9
1983	277,4	0,89	0,80	1,18	1,90	87,9	116,2	75,6
1984	335,6	0,87	0,76	1,13	-	99,8	125,6	79,5
1985	446,5	0,80	0,65	1,02	-	100,0	100,0	100,0
1986	607,7	0,91	0,83	1,22	-	112,0	90,5	123,8
1987	750,8	0,93	0,92	1,29	-	109,3	101,0	108,2
1988	704,2	0,77	0,80	1,08	-	100,5	127,9	78,6
1989	858,0	0,83	0,88	-	-	102,1	121,3	84,2
1990	1,030	0,80	0,92	-	-	-	-	-
Average	626,3	0,85	0,82	1,15	-	101,7	111,8	92,8

Source:

(1)(2)(3) For the period 1960-1988, Figures calculated from Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.

For the period 1989-1990, Figures calculated from, Central Bank of Chile, BOLETIN MENSUAL, JUN. 1991. Base Dec 1978=100

Corresponds to the agricultural, industry and imported wholesale price index reported by INE.

(4) Wagner, O, EVOLUCION DE LOS PRECIOS RELATIVOS DURANTE EL PERIODO 1950-1988.

WPI A (Wholesale Price Index to Agricultural Goods), EX A (Excluded Agricultural Goods), Base 1974.

(5) Hurtado, Valdeés and Muchnik. Trade, Exchange Rate, and Pricing Policies in Chile, Vol II.

PA/PNA (Agricultural-Non Agricultural relative price)

(6) See Table A-15. Includes Farming and Livestock (Value in US\$ FOB).

(7) See Table A-16. Includes select products of following item (Value in US\$ CIF): Food of Agricultural Origin (Bananas), Food of Industrial Origin (Cow, Milk Serum, Rice and Refined Sugar), Raw Materials Food and Non Food of Agricultural Origin (Crude Coffee, Wheat, Barley, Corn, Prairie, Grass, and Beet Seed and Crude Cotton), Raw Materials Food of Industrial Origin (Tea, Yerve Mate, Gross and Refined Oil, Soy Protein and Soy Flour). The value of these select products are more than 75% of Total Agricultural Imports.

Table A-2: DOMESTIC RELATIVE PRICE INDICES

	Food/Clothing (1)	CCPI F/CCPI Ex F (2)
1960	0,39	0,62
1961	0,42	0,64
1962	0,44	0,68
1963	0,46	0,74
1964	0,46	0,80
1965	0,48	0,81
1966	0,49	0,79
1967	0,46	0,74
1968	0,46	0,72
1969	0,47	0,71
1970	0,49	0,72
1971	0,49	-
1972	0,66	-
1973	0,58	0,86
1974	0,98	1,02
1975	1,18	0,97
1976	1,17	1,01
1977	1,09	1,05
1978	1,04	1,02
1979	1,04	0,99
1980	1,10	1,00
1981	1,05	0,92
1982	1,05	0,84
1983	1,08	0,82
1984	1,05	0,83
1985	1,06	0,81
1986	1,09	0,86
1987	1,09	0,91
1988	1,06	0,89
1989	1,12	Na
1990	1,23	Na

Source:

(1) For the period 1960-1988, Figures calculated from Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988. For the period 1989-1990, Figures calculated from, Central Bank of Chile, BOLETIN MENSUAL, JUN. 1991. Base Dec 1978=100

(2) Wagner, G, EVOLUCION DE LOS PRECIOS RELATIVOS DURANTE EL PERIODO 1950-1988. CCPI F (Corrected Consumer Price Index to Food), Ex F (Excluded Food), Base 1978.

(Na) Not available

Table A-3: CONSUMER AND WHOLESALE RELATIVE PRICES
(Base: 1980=100)

	Table Grapes				Apples			
	Consumer Price (1)	Wholesale Price (2)	(1)/CCPI	(2)/WPI	Consumer Price (4)	Wholesale Price (5)	(4)/CCPI	(5)/WPI
	Ch\$/mt	Ch\$/mt			Ch\$/mt	Ch\$/mt		
1963	-	0,16500	-	46	0,50	0,108	109	58
1964	-	0,16800	-	31	0,76	0,165	114	59
1965	-	0,24000	-	36	1,11	0,188	129	54
1966	-	0,31500	-	38	1,59	0,253	150	59
1967	-	0,66000	-	67	1,87	0,442	149	86
1968	-	1,02100	-	80	2,71	0,600	170	89
1969	-	1,46400	-	84	3,93	1,020	189	111
1970	-	2,09500	-	88	4,51	1,610	162	129
Average			-	59			146	81
		International Price (3)		(3)/WPI		International Price (6)		(6)/WPI
1974	-	-	-	-	352	-	136	-
1975	670,0	-	71	-	1.540	-	124	-
1976	2.790	-	89	-	3.250	-	78	-
1977	6.050	13.527	90	118	10.520	6.311	119	105
1978	6.510	22.669	64	138	14.050	11.524	106	134
1979	10.320	28.869	75	118	18.094	12.889	100	101
1980	18.700	34.203	100	100	24.580	17.862	100	100
1981	15.820	37.167	71	100	33.420	16.965	114	87
1982	10.330	50.187	42	125	32.980	22.905	102	110
Average			75	116			109	106
1983	16.900	66.105	54	114	39.260	27.655	96	91
1984	22.260	90.897	59	126	31.300	35.157	64	93
1985	24.210	149.761	50	144	46.300	58.875	72	109
1986	42.900	207.786	73	167	61.570	77.944	80	120
1987	67.640	222.691	97	150	74.070	93.903	80	121
1988	-	220.754	-	141	82.800	91.144	78	111
1989	-	233.581	-	129	-	99.305	-	105
1990	-	248.798	-	113	-	104.276	-	91
Average			67	135			78	105
Average 1974-1990			72	127			97	106

Source: CCPI (Corrected Consumer Price Index), WPI (Wholesale Price Index)

CCPI, WPI and Consumer Prices figures taken and calculated from Wagner G. EVOLUCION DE LOS PRECIOS RELATIVOS DURANTE EL PERIODO 1950-1988.

Wholesale Prices for the period 1963-1984 figures taken and calculated from Hurtado, Valdés and Muchnik. Trade, Exchange Rate, and Agricultural Pricing Policies in Chile. V and for the period 1985-1990 taken from ODEPA.

(3)(6) Central Bank of Chile, INDICADORES DE COMERCIO EXTERIOR. Taken from editions between 1980 and 1989.

Continue Table A-3: CONSUMER AND WHOLESALE RELATIVE PRICES
(Base: 1965=100)

	Beef (Pasta)		Live Cattle		Milk			
	Consumer Price (7)	Wholesale Price (8)	(7)/CCPI	(8)/WPI	Consumer Price (9)	Wholesale Price (10)	(9)/CCPI	(10)/WPI
	Ch\$/Kg	Ch\$/Kg			Ch\$/Lt	Ch\$/Lt		
1963	0,0019	0,00064	48	118	0,00014	0,000106	41	135
1964	0,0029	0,00110	50	135	0,00019	0,000134	38	113
1965	0,0042	0,00144	56	142	0,00028	0,000209	44	142
1966	0,0052	0,00180	56	145	0,00035	0,000332	44	184
1967	0,0063	0,00213	58	144	0,00042	0,000408	45	189
1968	0,0081	0,00274	59	142	0,00052	0,000496	44	176
1969	0,0099	0,00397	55	150	0,00065	0,00066	42	172
1970	0,0172	0,00571	71	159	0,00083	0,00087	40	167
Average			57	142			42	160
1974	1,9	0,80	84	160	0,11	0,0978	57	135
1975	5,65	1,43	52	49	0,66	0,42	71	101
1976	26	7,35	73	79	2,80	1,34	91	99
1977	67	17,7	87	102	6,50	2,61	99	104
1978	103	26,87	89	109	10,6	4,08	107	114
1979	153	40,6	97	110	13,6	5,97	101	111
1980	213	51,8	100	100	18,2	7,47	100	100
1981	242	49,88	95	89	21,4	7,01	98	86
1982	235	46,51	84	77	23,3	8,43	97	96
Average			85	97			91	105
1983	264	57,19	74	65	31,5	12	103	91
1984	342	83,39	80	76	37,9	16	104	101
1985	470	113,5	84	73	48,8	20,64	102	91
1986	618	149,46	93	80	57,8	24,45	101	90
1987	774	189	97	85	77,6	32,80	113	101
1988	855	211,9	93	90	93,2	40,71	119	118
1989	-	245,8	-	90	-	51,23	-	129
1990	-	263,7	-	79	-	55,3	-	115
Average			87	80			107	105
Average 1974-1990			86	89			98	105

Continue Table A-3: CONSUMER AND WHOLESALE RELATIVE PRICES
(Base: 1985=100)

	Bread	Wheat	(11)/CCPI	(12)/WPI		Sugar	Sugar Beet	(13)/CCPI	(14)/WPI
	Consumer Price (11)	Wholesale Price (12)				Consumer Price (13)	Wholesale Price (14)		
	Ch\$/Kg	Ch\$/100Kg				Ch\$/Kg	Ch\$/100Kg		
1963	0,00029	00.000	62	142		0,00047	-	49	-
1964	0,00041	00.000	60	139		0,00085	-	61	-
1965	0,00053	00.000	60	161		0,00086	-	48	-
1966	0,00065	00.000	60	175		0,00094	-	42	-
1967	0,00074	00.000	57	166		0,00118	-	45	-
1968	0,00088	00.000	54	159		0,00176	-	53	-
1969	0,00109	00.000	51	159		0,00232	0,155	53	149
1970	0,0014	00.000	49	154		0,0032	0,214	55	151
Average			57	157				51	150
1974	0,2256	12,4	85	157		0,5246	16	97	81
1975	1,24	69,361	97	151		2,62	142,5	101	125
1976	3,74	186,6	88	126		6,02	400,2	69	109
1977	7,89	375,9	87	137		9,43	596	51	87
1978	13	496,1	96	126		16	816	56	84
1979	19	659,8	105	112		20	1.055	53	72
1980	25	821,4	100	100		51	2.036	100	100
1981	30	912,9	99	102		38	1.974	61	89
1982	36	942,7	108	98		29	2.239	43	94
Average			96	123				70	93
1983	48	1.660	114	119		42	3.765	49	109
1984	56	2.100	110	121		48	4.742	47	110
1985	78	3.175	119	128		76	7.770	56	126
1986	93	3.682	118	124		95	9.401	59	127
1987	103	3.625	109	102		108	10.334	56	117
1988	117	4.031	108	107		132	10.278	60	110
1989	-	4.722	-	109			11.697	-	109
1990	-	5.103	-	97			14.082	-	108
Average			113	113				55	115
Average 1974-1990			103	119				64	103

Average

Continue Table A-3: CONSUMER AND WHOLESALE RELATIVE PRICES
(Base: 1985=100)

	Oil	Sunflower				Potatoes			
	Consumer Price (15)	Wholesale Price (16)	(15)/CCPI	(16)/WPI		Consumer Price (17)	Wholesale Price (18)	(17)/CCPI	(18)/WPI
	Cts/Lt	Cts/100Kg				Cts/Kg	Cts/Kg		
1963	0,00091	0.000	105	186		0,00019	0,00015	81	209
1964	0,00138	0.000	109	181		0,00026	0,00018	76	167
1965	0,00194	0.000	119	230		0,0003	0,00022	68	164
1966	0,00252	0.000	125	224		0,00037	0,00027	68	164
1967	0,00289	0.000	122	217		0,00035	0,00026	54	132
1968	0,00404	0.000	134	207		0,00044	0,00031	54	121
1969	0,00558	0.000	142	219		0,00048	0,0003	45	86
1970	0,00736	0.000	140	200		0,00071	0,00045	50	94
Average			124	208				62	142
1974	1	12	203	124		0,0977	0,05	73	76
1975	4,24	113	180	201		0,77	0,556	121	145
1976	13	330	166	183		2,84	1,714	134	139
1977	25	524	149	156		4,07	2,11	90	92
1978	39	579	154	121		5,96	2,44	87	74
1979	48	660	140	92		13	5,461	140	111
1980	46	998	100	100		13	6,861	100	100
1981	46	1.301	82	119		12	6,276	80	84
1982	53	1.053	87	90		17	9,168	101	115
Average			140	132				103	104
1983	79	1.459	101	86		23	14,45	111	124
1984	130	2.858	139	135		19	10,8	73	75
1985	174	4.305	142	142		21	11,2	64	54
1986	177	4.683	121	129		43	26,0	110	105
1987	197	5.460	113	126		65	35,5	138	120
1988	231	6.077	115	133		40	17,9	75	57
1989	-	7.004	-	133		-	34,2	-	95
1990	-	8.621	-	134		-	45,7	-	104
Average			122	128				95	92
Average 1974-1990			133	130				100	94

Continue Table A-3: CONSUMER AND WHOLESALE RELATIVE PRICES
(Base: 1985=100)

	Rice				Corn	
	Consumer Price (19)	Wholesale Price (20)	(19)/CCPI	(20)/WPI	Wholesale Price (21)	(21)/WPI
	Ch\$/Kg	Ch\$/Kg			Ch\$/100Kg	
1963	0,0005	0,0001	100	138	00.000	173
1964	0,00054	0,00018	74	166	00.000	199
1965	0,00074	0,00026	79	192	00.000	182
1966	0,00086	0,00037	74	223	00.000	192
1967	0,00105	0,00043	77	217	00.000	190
1968	0,00131	0,00054	75	209	0,05	180
1969	0,00183	0,00071	81	201	00.000	201
1970	0,00255	0,00095	84	198	00.000	187
Average			80	193		188
1974	0,5604	0,14	198	205	12	170
1975	2,41	0,72	177	186	53	129
1976	7,33	2,46	162	198	166	126
1977	11	3,92	114	170	258	105
1978	21	5,53	146	167	443	126
1979	23	6,14	115	124	566	108
1980	27	6,89	100	100	734	100
1981	34	9,87	106	131	718	90
1982	32	8,83	90	110	801	93
Average			134	159		116
1983	38	11,54	85	98	1.384	111
1984	53	16,59	98	114	1.744	112
1985	59	21,66	84	104	2.054	92
1986	88	30,33	105	121	2.201	83
1987	101	33,729	101	113	2.546	80
1988	117	43,874	102	139	3.684	109
1989	-	32,5	-	89	3.821	99
1990	-	49,75	-	112	4.470	95
Average			96	111		98
Average 1974-1990			119	134		107

Table A-4: INTERNATIONAL(1) AND DOMESTIC(2) PRICES BETWEEN 1963 AND 1988
(Current Chilean \$, Yearly Average)

	Coffee (3)		Rice (4)			Soybean Oil (5)		Oil		Sunflower
	International Price Ch\$/kg	Domestic Consumer Price Ch\$/kg	International Price Ch\$/kg	Domestic Consumer Price Ch\$/kg	Domestic Wholesale Price Ch\$/kg	International Price Ch\$/kg	Domestic Consumer Price Ch\$/kg	Domestic Wholesale Price Ch\$/kg	Domestic Wholesale Price Ch\$/100kg	Domestic Wholesale Price Ch\$/100kg
1963	0,00165	0,01269	0,00027	0,00050	0,00010	0,00043	0,00091			0,01948
1964	0,00259	0,01652	0,00033	0,00054	0,00018	0,00049	0,00138			0,02860
1965	0,00332	0,02396	0,00042	0,00074	0,00026	0,00084	0,00194			0,04510
1966	0,00420	0,02891	0,00065	0,00086	0,00037	0,00105	0,00252			0,05400
1967	0,00460	0,03304	0,00103	0,00105	0,00043	0,00109	0,00289			0,06220
1968	0,00639	0,04248	0,00137	0,00131	0,00054	0,00121	0,00404			0,07750
1969	0,00891	0,05428	0,00168	0,00183	0,00071	0,00205	0,00558			0,11200
1970	0,01438	0,08201	0,00167	0,00255	0,00095	0,00356	0,00736			0,13900
1974	1,43	8,44	0,45	0,56	0,14	0,66	1,00			12,0
1975	8,79	43,8	1,78	2,41	0,72	3,04	4,24			113,0
1976	45,2	194,7	3,31	7,33	2,46	5,69	13,0			330,0
1977	114,2	591,8	5,86	11,0	3,92	12,4	24,9			524,0
1978	129,2	703,9	11,6	21,3	5,53	19,2	38,7			579,0
1979	150,5	776,4	12,4	22,8	6,14	24,7	48,3			660,0
1980	153,7	1,113	16,9	26,8	6,89	23,3	46,5			998,0
1981	124,8	1,225	18,8	33,9	9,87	19,8	45,5			1,301
1982	167,0	1,304	14,9	31,9	8,83	22,8	53,1			1,053
1983	242,7	1,400	21,8	38,2	11,5	41,5	78,8			1,459
1984	320,1	1,603	24,8	52,5	16,6	71,3	129,7			2,858
1985	545,3	2,189	34,8	59,2	21,7	92,0	173,5			4,305
1986	939,6	4,161	40,6	87,8	30,3	66,0	176,9			4,683
1987	609,9	4,236	50,4	101,2	33,7	73,3	197,4			5,460
1988	747,3	4,331	73,9	117,4	43,9	113,4	230,7			6,077
1989	-	-	-	-	32,5	-	-			7,004
1990	-	-	-	-	49,8	-	-			8,621

(1) Figures calculated as International Price (US\$)*Nominal Exchange Rate

Source:

(2) Consumer prices taken from Wagner, G, EVOLUCION DE LOS PRECIOS RELATIVOS DURANTE EL PERIODO 1950-1988

Wholesale prices for the period 1963-1984 taken from Hurtado, Valdés and Muchnik. Trade, Exchange Rate, and Agricultural Pricing Policies in Chile. Vol II.
and for the period 1985-1990 taken from ODEPA.

(3) to (9): For the period 1960-1983, World Bank, Commodity Trade and Price Trends.1985

For the period 1984-1990, Organization of American States, International Commodity Quarterly Price Bulletin. May 1991.

(3) Colombian mild arabica coffees from Manizales, Armenia and Medellín, spot New York.

(4) 5% broken, milled, FOB Bangkok.

(5) US, crude,bulk, CIF, Rotterdam.

(6) Raw, "World" daily price, FOB and Stowed Caribbean ports.

(7) Imported, frozen, boneless, 90% visible lean,FOB port entry.

(8) No. 2 yellow FOB Gulf Ports.

(9) No. 2 hard red winter FOB Gulf Ports

Continue Table A-4: INTERNATIONAL(1) AND DOMESTIC(2) PRICES BETWEEN 1963 AND 1988
(Current Chilean \$, Yearly Average)

	Sugar (6)	Sugar	Sugar Beet	Beef (7)	Beef (Pasta)	LiveCattle
	International Price Ch\$/kg	Domestic Consumer Price Ch\$/kg	Domestic Wholesale Price Ch\$/100kg	International Price Ch\$/kg	Domestic Consumer Price Ch\$/kg	Domestic Wholesale Price Ch\$/kg
1963	0,00035	0,00047	-	0,00127	0,00185	0,00064
1964	0,00030	0,00085	-	0,00202	0,00294	0,00110
1965	0,00014	0,00086	-	0,00273	0,00416	0,00144
1966	0,00016	0,00094	-	0,00409	0,00522	0,00180
1967	0,00021	0,00118	-	0,00521	0,00627	0,00213
1968	0,00029	0,00176	-	0,00738	0,00801	0,00274
1969	0,00064	0,00232	0,15500	0,01101	0,00987	0,00397
1970	0,00094	0,00320	0,21400	0,01513	0,01702	0,00571
1974	0,54	0,52	16,0	1,32	1,92	0,80
1975	2,21	2,62	142,5	6,52	5,66	1,43
1976	3,32	6,00	400,2	20,6	26,4	7,35
1977	3,86	9,40	596,0	32,4	67,0	17,7
1978	5,45	15,6	816,0	67,7	102,6	26,9
1979	7,93	20,0	1.055	107,4	152,7	40,6
1980	24,6	51,2	2.036	107,6	213,2	51,8
1981	14,6	37,5	1.974	96,5	241,6	49,9
1982	9,47	29,4	2.239	121,7	235,0	46,5
1983	14,7	41,7	3.765	192,2	263,6	57,2
1984	11,2	48,3	4.742	223,8	341,6	83,4
1985	14,3	75,6	7.770	346,3	470,3	113,5
1986	25,7	94,6	9.401	404,0	618,0	149,5
1987	32,9	107,5	10.334	523,3	774,2	189,0
1988	54,9	132,2	10.278	616,9	855,4	211,9
1989	-	-	11.697	-	-	245,8
1990	-	-	14.082	-	-	263,7

Continue Table A-4: INTERNATIONAL(1) AND DOMESTIC(2) PRICES BETWEEN 1963 AND 1988
(Current Chilean \$, Yearly Average)

	Corn (8)		Wheat(9)	
	International Price Ch\$/100kg	Domestic Wholesale Price Ch\$/100kg	International Price Ch\$/100kg	Domestic Wholesale Price Ch\$/100kg
1963	0,01039	0,01330	0,01121	0,01220
1964	0,01339	0,02300	0,01536	0,01800
1965	0,01705	0,02610	0,01798	0,02590
1966	0,02376	0,03400	0,02480	0,03460
1967	0,02495	0,04010	0,03100	0,03920
1968	0,03339	0,04960	0,03944	0,04890
1969	0,04851	0,07540	0,05040	0,06690
1970	0,06774	0,09560	0,06612	0,08810
1974	10,9	12,0	13,5	12,4
1975	58,7	53,0	74,2	69,4
1976	146,1	166,0	175,5	186,6
1977	205,3	258,0	226,2	375,9
1978	318,8	443,0	414,7	496,1
1979	430,2	566,0	607,2	659,8
1980	488,7	734,0	686,4	821,4
1981	510,1	718,0	690,3	912,9
1982	556,3	801,0	819,5	942,7
1983	1.072	1.384	1.245	1.660
1984	1.249	1.744	1.517	2.100
1985	1.686	2.054	2.220	3.175
1986	1.580	2.201	2.238	3.682
1987	1.545	2.546	2.523	3.625
1988	2.445	3.684	3.553	4.031
1989	-	3.821	-	4.722
1990	-	4.470	-	5.103

Table A-4.1: NOMINAL AND REAL* INTERNATIONAL PRICES

	Coffee		Rice		Soybean Oil		Sugar	
	Nominal US\$/kg	Real	Nominal US\$/metric ton	Real	Nominal US\$/metric ton	Real	Nominal US\$/kg	Real
1963	0,87	2,47	143,3	407,1	224	636	0,18	0,52
1964	1,08	3,06	137,7	390,1	205	581	0,13	0,36
1965	1,07	2,97	136,3	378,6	270	750	0,05	0,13
1966	1,05	2,82	163,2	438,7	262	704	0,04	0,11
1967	0,92	2,47	205,8	553,2	217	583	0,04	0,11
1968	0,94	2,46	201,6	527,7	178	466	0,04	0,11
1969	0,99	2,49	186,9	470,8	228	574	0,07	0,18
1970	1,24	3,02	144,0	350,4	307	747	0,08	0,20
1971	1,09	2,56	129,0	303,5	323	760	0,10	0,23
1972	1,25	2,82	147,0	331,8	270	609	0,16	0,36
1973	1,60	3,19	350,0	697,2	465	926	0,21	0,41
Average		2,76		440,8		667		0,25
1974	1,72	2,89	542,0	909,4	795	1334	0,65	1,10
1975	1,79	2,75	363,1	557,8	619	951	0,45	0,69
1976	3,48	5,11	254,5	373,7	438	643	0,26	0,37
1977	5,30	7,33	272,2	376,5	576	797	0,18	0,25
1978	4,08	5,24	367,5	471,8	607	779	0,17	0,22
1979	4,04	4,61	334,2	381,1	662	755	0,21	0,24
1980	3,94	3,94	433,9	433,9	598	598	0,63	0,63
1981	3,20	2,93	482,8	442,5	507	465	0,37	0,34
1982	3,28	2,94	292,9	262,7	447	401	0,19	0,17
Average		4,19		467,7		747		0,45
1983	3,08	2,73	276,9	245,3	527	467	0,19	0,17
1984	3,25	2,81	252,2	218,2	724	626	0,11	0,10
1985	3,39	2,95	216,3	188,1	572	497	0,09	0,08
1986	4,87	4,36	210,3	188,4	342	306	0,13	0,12
1987	2,78	2,43	229,7	200,4	334	291	0,15	0,13
1988	3,05	2,56	301,5	252,9	463	388	0,22	0,19
Average		2,97		215,6		429		0,13

(*) Deflated by US Wholesale Price Index

Source: See Table A-4

Continue Table A-4.1: NOMINAL AND REAL* INTERNATIONAL PRICES

	Beef		Corn		Wheat	
	Nominal US\$/Kg	Real	Nominal US\$/metric ton	Real	Nominal US\$/100 Kg	Real
1963	0,67	1,89	54,7	155,4	5,9	16,8
1964	0,84	2,38	55,8	158,1	6,4	18,1
1965	0,88	2,45	55,0	152,8	5,8	16,1
1966	1,02	2,75	59,4	159,7	6,2	16,7
1967	1,04	2,80	49,9	134,1	6,2	16,7
1968	1,09	2,84	49,1	128,5	5,8	15,2
1969	1,22	3,08	53,9	135,8	5,6	14,1
1970	1,30	3,17	58,4	142,1	5,7	13,9
1971	1,35	3,17	58,4	137,4	6,2	14,6
1972	1,48	3,34	56,0	126,4	6,9	15,6
1973	2,01	4,01	98,0	195,2	13,7	27,3
Average		2,90		147,8		16,8
1974	1,58	2,65	132,0	221,5	17,8	29,9
1975	1,33	2,04	119,6	183,7	13,8	21,2
1976	1,58	2,32	112,4	165,1	12,3	18,1
1977	1,51	2,08	95,3	131,8	9,6	13,3
1978	2,14	2,74	100,7	129,3	12,5	16,0
1979	2,88	3,29	115,5	131,7	15,6	17,8
1980	2,76	2,76	125,3	125,3	16,8	16,8
1981	2,48	2,27	130,8	119,9	15,5	14,2
1982	2,39	2,14	109,3	98,0	13,3	11,9
Average		2,48		145,1		17,7
1983	2,44	2,16	136,0	120,5	13,7	12,1
1984	2,27	1,97	126,8	109,7	15,4	13,3
1985	2,15	1,87	104,8	91,1	13,8	12,0
1986	2,09	1,88	81,9	73,4	11,6	10,4
1987	2,39	2,08	70,4	61,4	11,5	10,0
1988	2,52	2,11	99,8	83,7	14,5	12,2
Average		2,01		90,0		11,7

Table A-5: AGRICULTURAL, LIVESTOCK AND FORESTRY GROSS DOMESTIC PRODUCT
(Millions of 1977 Ch.\$)

	GDP	Index of output (Base: 1985=100)	Rate of Growth (%)
1960	19.178	63	
1961	18.878	62	-1,6
1962	17.853	58	-5,4
1963	18.893	62	5,8
1964	18.920	62	0,1
1965	19.302	63	2,0
1966	23.386	76	21,2
1967	24.091	79	3,0
1968	25.223	82	4,7
1969	22.313	73	-11,5
1970	23.113	76	3,6
1971	22.693	74	-1,8
1972	21.017	69	-7,4
1973	18.856	62	-10,3
Average			0,2
1974	23.893	78	26,7
1975	25.050	82	4,8
1976	24.314	79	-2,9
1977	26.837	88	10,4
1978	25.529	83	-4,9
1979	26.966	88	5,6
1980	27.927	91	3,6
1981	28.683	94	2,7
1982	28.084	92	-2,1
Average			4,9
1983	27.062	88	-3,6
1984	28.988	95	7,1
1985	30.612	100	5,6
1986	33.275	109	8,7
1987	34.781	114	4,5
1988	36.780	120	5,7
1989	37.902	124	3,1
1990	39.737	130	4,8
Average			4,5
Average			4,7
1974-1990			

Source: For the period 1960-1982, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1982
For the period 1983-1990, Central Bank of Chile, BOLETIN MENSUAL, APR. 1991.

Table A-5.1: TOTAL PRODUCTION AND RATE OF GROWTH BY ITEM

	Production (Thousand Metric Tons)					Rate of growth (%)						
	Forestry (1)	Farming (2)	Fruit(3)	Dairy (4)	Livestock (5)	Total	Forestry	Farming	Fruit	Dairy	Livestock	Total
1960	703	3.003	-	760	182	4.649						
1961	822	2.728	-	775	198	4.523	17.0	-9.2	-	1.9	8.6	-2.7
1962	833	2.731	-	739	203	4.506	1.4	0.1	-	-4.6	2.5	-0.4
1963	876	3.281	-	796	206	5.159	5.2	20.1	-	7.7	1.4	14.5
1964	1.065	3.298	-	831	177	5.370	21.6	0.5	-	4.3	-14.1	4.1
1965	1.093	3.187	-	810	190	5.280	2.6	-3.4	-	-2.4	7.5	-1.7
1966	1.218	3.686	-	812	206	5.922	11.4	15.7	-	0.2	8.3	12.2
1967	1.167	3.843	-	829	216	6.055	-4.2	4.3	-	2.1	5.2	2.2
1968	1.248	3.980	-	846	240	6.314	7.0	3.6	-	2.0	11.1	4.3
1969	1.418	3.378	-	889	235	5.920	13.6	-15.1	-	5.1	-2.2	-6.3
1970	1.298	4.349	-	895	243	6.785	-8.5	28.7	-	0.7	3.4	14.6
1971	1.404	4.339	-	940	222	6.906	8.2	-0.2	-	5.0	-8.5	1.8
1972	1.443	3.950	-	880	185	6.459	2.8	-9.0	-	-6.4	-16.6	-6.5
1973	1.303	2.924	-	855	151	5.233	-9.7	-26.0	-	-2.8	-18.7	-19.0
Average	1.135	3.477	-	833	204	5.648	5.3	0.8	-	1.0	-8.9	1.3
1974	1.770	3.812	381	906	241	7.110	35.8	30.4	-	5.9	60.1	28.6
1975	1.406	4.192	392	956	263	7.210	-20.5	10.0	2.9	5.5	9.2	1.4
1976	1.715	4.430	380	1.021	239	7.786	22.0	5.7	-3.0	6.8	-9.1	8.0
1977	1.894	5.337	411	1.003	219	8.863	10.4	20.5	7.9	-1.8	-8.7	13.8
1978	2.069	3.512	442	978	214	7.215	9.3	-34.2	7.7	-2.5	-2.1	-18.6
1979	2.630	3.633	481	954	228	7.925	27.1	3.4	8.8	-2.5	6.4	9.8
1980	2.752	3.331	528	1.080	228	7.918	4.6	-8.3	9.7	13.3	0.0	-0.1
1981	2.339	4.190	631	1.200	256	8.617	-15.0	25.8	19.7	11.1	12.5	8.8
1982	1.851	3.507	738	1.056	251	7.402	-20.9	-16.3	17.0	-12.0	-2.1	-14.1
Average	2.047	3.994	487	1.017	238	7.783	5.9	4.1	8.8	2.7	7.3	4.7
1983	2.350	3.867	813	900	281	8.211	27.0	10.3	10.1	-14.8	12.1	10.9
1984	2.741	5.470	911	900	268	10.289	16.7	41.4	12.0	0.0	-4.6	25.3
1985	2.894	5.581	989	1.012	254	10.730	5.6	2.0	8.6	12.4	-5.0	4.3
1986	2.819	6.374	1.141	1.093	266	11.693	-2.6	14.2	15.4	8.0	4.4	9.0
1987	3.359	6.446	1.320	1.100	277	12.502	19.2	1.1	15.6	0.6	4.4	6.9
1988	3.444	6.510	1.539	1.120	311	12.924	2.5	1.0	16.6	1.8	12.1	3.4
1989	-	7.281	1.670	1.230	348	-	-	11.8	8.5	9.8	11.8	-
1990	-	6.447	1.873	1.380	339	-	-	-11.5	12.2	12.2	-2.5	-
Average	2.934	5.997	1.282	1.092	276	11.058	11.4	8.8	12.4	3.8	4.1	10.0
Average 1974-1990	2.402	4.936	861	1.052	253	9.093	8.1	6.3	10.6	3.2	5.8	6.5

Source:

(1) See Table A-9, densitive Aprox to Sawed Wood 0.7 Ton/M3

(2) See Table A-6

(3) See Table A-8

(4) See Table A-7, densitive Aprox to Milk 1.0 Ton/M3

(5) See Table A-7

Table A-4: FARMING PRODUCTION

	Wheat			Corn			Rice			Oats		
	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)
1960	1,044	833	1.25	161	82.6	1.95	107	38.8	2.76	90.1	87.1	1.03
1961	1,031	769	1.34	163	83.3	1.95	105	38.5	2.72	102	82.5	1.23
1962	970	769	1.26	181	84.6	2.14	78.5	27.7	2.83	81.8	83.1	0.98
1963	1,136	751	1.51	176	84.4	2.09	77.3	30.9	2.50	93.7	80.2	1.17
1964	1,159	748	1.55	242	88.2	2.74	80.5	30.6	2.63	85.8	70.4	1.22
1965	1,116	727	1.53	260	87.6	2.97	80.4	27.5	2.92	82.2	70.3	1.17
1966	1,346	780	1.73	285	80.7	3.54	76.7	36.9	2.08	107	66.1	1.62
1967	1,203	719	1.67	362	92.2	3.93	84.2	33.0	2.55	115	68.3	1.69
1968	1,216	698	1.74	321	88.6	3.62	93.5	32.5	2.88	158	105	1.50
1969	1,214	743	1.63	154	58.4	2.63	36.7	16.2	2.27	95.2	80.8	1.18
1970	1,307	740	1.77	239	73.9	3.23	76.2	25.2	3.02	111	72.6	1.52
1971	1,368	727	1.88	258	77.0	3.35	67.1	27.3	2.46	112	75.3	1.49
1972	1,195	712	1.68	283	84.5	3.35	86.3	25.7	3.36	111	83.8	1.33
1973	747	534	1.40	294	86.4	3.40	54.9	18.5	2.97	109	75.7	1.44
Average	1,146	732	1.57	241	82.3	2.92	78.9	29.2	2.71	104	78.7	1.33
1974	939	591	1.59	366	107.4	3.41	34.3	13.2	2.60	150	96.6	1.55
1975	1,003	684	1.46	329	91.6	3.59	76.4	22.9	3.34	131	94.5	1.39
1976	866	574	1.51	248	109.4	2.27	97.6	30.0	3.25	95.9	64.0	1.50
1977	1,219	628	1.94	355	115.6	3.07	120	35.5	3.38	124	75.0	1.65
1978	893	580	1.54	257	93.9	2.74	105	32.6	3.21	92.7	74.8	1.24
1979	995	561	1.78	489	130.4	3.75	181	47.1	3.85	150	78.7	1.91
1980	966	546	1.77	405	116.2	3.49	95.4	40.8	2.34	173	92.4	1.87
1981	686	432	1.59	518	125.5	4.13	99.7	31.4	3.18	131	80.1	1.63
1982	650	374	1.74	484	107.1	4.52	131	37.0	3.55	118	68.3	1.72
Average	913	552	1.66	384	110.8	3.44	105	32.3	3.19	129	88.5	1.61
1983	585	359	1.63	512	118.0	4.33	116	30.4	3.80	146	84.8	1.73
1984	988	471	2.10	721	138.4	5.21	165	39.9	4.14	163	96.3	1.69
1985	1,165	506	2.30	772	130.5	5.91	157	38.5	4.07	170	84.9	2.01
1986	1,626	569	2.86	721	104.7	6.89	127	32.0	3.96	124	63.9	1.95
1987	1,874	677	2.77	617	86.7	7.12	147	37.3	3.94	128	55.5	2.30
1988	1,734	577	3.01	661	90.3	7.32	162	38.9	4.17	157	60.7	2.58
1989	1,766	540	3.27	939	124.7	7.53	185	43.0	4.31	165	68.7	2.39
1990	1,718	583	2.95	823	101.1	8.14	136	32.6	4.17	206	78.3	2.62
Average	1432	535	2.61	721	111.8	6.56	149	36.6	4.07	157	74.1	2.16
Average 1974-1990	1,137	544	2.11	542	111.3	4.91	126	34.3	3.68	143	77.5	1.87

Source: For the period 1960-1988, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.

For the period 1989-1990, Ministry of Agriculture, CILPE: BOLETIN DE ESTADISTICAS BASICAS DEL SECTOR SILVO-AGROPECUARIO, JAN. 1991.

Continue Table A-4: FARMING PRODUCTION

	Barley			Potatoes			Dry Beans			Lentils		
	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectare)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectare)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectare)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectare)
1960	88.2	49.3	1.79	790	89.6	8.8	73.8	81.0	0.91	17.8	32.2	0.55
1961	71.9	44.9	1.60	843	96.2	8.8	75.2	77.5	0.97	15.7	28.8	0.55
1962	73.3	42.6	1.72	765	91.4	8.4	74.3	75.0	0.99	12.6	23.9	0.53
1963	96.7	38.7	2.50	848	88.9	9.5	64.1	70.8	0.91	12.6	24.9	0.51
1964	80.4	42.1	1.91	808	84.7	9.5	64.1	64.1	1.00	15.3	24.9	0.61
1965	74.0	38.3	1.93	703	91.1	7.7	58.9	58.5	1.01	9.3	24.1	0.39
1966	88.0	38.7	2.27	803	76.3	10.5	68.8	64.7	1.06	4.6	10.6	0.43
1967	118	50.4	2.33	717	77.1	9.3	89.8	68.4	1.31	3.9	6.8	0.57
1968	157	71.6	2.19	724	79.3	9.1	65.1	53.4	1.22	4.0	7.4	0.54
1969	60.1	44.4	1.35	603	76.2	7.9	46.8	47.2	0.99	7.8	13.7	0.57
1970	97.4	47.4	2.05	684	71.7	9.5	65.6	57.2	1.15	11.2	17.3	0.65
1971	114	52.5	2.16	836	80.0	10.4	72.2	69.9	1.03	12.0	18.1	0.66
1972	139	67.1	2.07	733	79.2	9.3	82.9	79.5	1.04	10.7	18.3	0.58
1973	107	63.9	1.68	624	66.7	9.3	65.0	67.6	0.96	9.8	16.0	0.61
Average	97.5	49.4	1.97	749	82.0	9.2	69.0	66.8	1.04	10.5	19.1	0.55
1974	148	79.8	1.85	1,012	93.3	10.8	74.8	73.9	1.01	12.8	19.5	0.66
1975	121	66.2	1.82	738	71.5	10.3	74.0	68.0	1.09	12.1	20.6	0.59
1976	89.0	53.2	1.67	539	85.2	6.3	70.3	80.5	0.87	13.5	20.8	0.65
1977	143	63.1	2.27	928	85.9	10.8	112	97.3	1.16	23.8	30.9	0.77
1978	126	63.8	1.97	981	90.8	10.8	112	112	1.00	19.0	31.8	0.60
1979	112	59.8	1.87	771	80.9	9.5	116	110	1.06	31.7	50.4	0.63
1980	105	48.6	2.16	903	88.8	10.2	84.3	111	0.76	26.8	53.0	0.51
1981	91.4	46.0	1.99	1,007	89.9	11.2	138	118	1.18	17.7	47.7	0.37
1982	118	57.5	2.05	842	77.4	10.9	163	122	1.34	15.8	38.9	0.41
Average	117	59.8	1.96	858	84.9	10.1	105	99.0	1.05	19.2	34.8	0.57
1983	73.2	38.2	1.92	684	67.2	10.2	84.4	86.4	0.98	13.8	23.0	0.60
1984	73.5	33.2	2.21	1,036	81.4	12.7	94.1	84.5	1.11	16.0	23.7	0.68
1985	85.0	35.0	2.43	909	62.9	14.4	101	83.0	1.21	24.7	36.4	0.68
1986	68.1	22.7	3.00	791	52.7	15.0	89.2	89.8	0.99	29.0	37.3	0.78
1987	48.3	16.4	2.95	727	57.7	12.6	81.2	85.7	0.95	24.7	46.3	0.53
1988	81.6	24.1	3.39	928	62.0	15.0	99.8	75.7	1.32	20.1	32.8	0.61
1989	85.1	24.6	3.46	882	62.7	14.1	73.0	63.4	1.15	7.8	14.7	0.53
1990	91.6	26.3	3.48	829	55.1	15.0	87.1	68.6	1.27	8.3	13.9	0.60
Average	75.8	27.6	2.85	848	62.7	13.6	88.7	79.6	1.12	18.1	28.5	0.63
Average 1974-1990	97.6	44.6	2.18	853	74.4	11.8	97.3	89.9	1.09	18.7	31.9	0.60

Continue Table A-4: FARMING PRODUCTION

	Chick Peas			Sugarbeet			Rapeseed			Sunflower		
	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)	(Thousand Metric Tons)	(Thousand Hectares)	(Metric Tons/ Hectares)
1960	3.3	8.5	0.39	544	18.6	29.3	34.0	38.1	0.89	50.3	43.5	1.16
1961	3.6	8.2	0.44	251	7.8	32.2	35.9	29.5	1.22	31.7	25.6	1.24
1962	3.8	7.6	0.50	431	13.3	32.4	28.6	29.6	0.97	32.0	31.1	1.03
1963	3.2	7.7	0.42	692	17.2	40.3	49.4	42.1	1.17	32.0	30.3	1.06
1964	3.7	7.2	0.51	658	18.8	35.0	56.2	49.9	1.13	45.1	42.2	1.07
1965	5.1	8.4	0.61	681	18.0	37.8	72.0	57.6	1.25	45.2	31.9	1.42
1966	4.9	8.7	0.56	768	21.0	36.6	77.1	61.8	1.25	56.0	42.1	1.33
1967	8.0	9.3	0.86	1,048	28.7	36.5	60.7	45.1	1.35	33.3	22.4	1.49
1968	7.7	16.1	0.48	1,143	30.2	37.8	47.9	37.4	1.28	43.0	29.0	1.48
1969	3.5	8.7	0.40	1,066	27.7	38.5	63.6	48.4	1.31	28.2	24.6	1.15
1970	5.4	11.3	0.48	1,635	41.7	39.7	69.9	53.7	1.30	28.2	20.2	1.40
1971	7.2	16.1	0.45	1,391	35.1	39.6	82.2	49.4	1.66	20.3	15.3	1.33
1972	9.3	20.3	0.46	1,202	31.4	38.3	77.9	56.1	1.39	19.9	14.8	1.34
1973	4.1	15.5	0.26	836	23.0	37.2	40.0	30.8	1.30	13.5	11.9	1.13
Average	5.2	11.0	0.49	885	23.8	36.5	56.8	45.0	1.25	34.2	27.5	1.26
1974	5.0	13.8	0.36	1,025	27.4	37.4	34.8	25.1	1.39	10.4	8.4	1.24
1975	4.9	7.8	0.63	1,617	42.5	38.0	46.4	45.5	1.50	17.8	13.3	1.34
1976	2.7	6.1	0.44	2,276	57.8	39.4	104.8	42.1	2.49	27.0	18.2	1.48
1977	5.0	8.3	0.60	2,208	56.2	39.3	82.7	53.7	1.54	15.3	10.3	1.49
1978	5.5	11.0	0.50	840	21.5	39.1	52.0	34.4	1.51	30.1	20.9	1.44
1979	9.4	16.8	0.56	680	16.2	41.9	64.6	53.9	1.20	33.3	21.7	1.53
1980	11.6	20.6	0.56	450	11.1	40.6	72.4	50.4	1.44	38.3	32.4	1.18
1981	6.4	16.2	0.40	1,460	36.8	39.7	26.7	23.9	1.12	7.5	5.1	1.47
1982	4.1	10.1	0.41	963	22.0	43.8	13.2	10.3	1.28	5.4	3.4	1.59
Average	6.1	12.3	0.50	1,288	32.4	39.9	57.7	37.7	1.50	20.6	14.9	1.42
1983	3.2	7.8	0.41	1,643	35.6	46.1	2.9	2.7	1.07	4.6	2.9	1.59
1984	6.9	11.9	0.58	2,194	47.8	45.9	4.1	4.2	0.98	7.4	4.9	1.51
1985	9.2	11.3	0.81	2,124	44.1	48.2	31.9	19.2	1.66	32.5	20.0	1.63
1986	8.9	12.6	0.71	2,638	51.3	51.4	97.1	57.0	1.70	54.4	30.1	1.81
1987	14.8	14.8	1.00	2,650	53.7	49.3	95.1	46.9	2.03	39.6	18.8	2.11
1988	7.6	14.2	0.54	2,487	48.6	51.2	123	60.3	2.03	48.9	23.2	2.11
1989	4.2	7.8	0.54	3,030	54.6	55.5	113	61.1	1.85	31.9	15.0	2.13
1990	6.0	8.7	0.69	2,462	44.6	55.2	53.2	32.0	1.66	27.3	11.8	2.31
Average	7.6	11.1	0.66	2,404	47.5	50.4	65.0	35.4	1.62	30.8	15.8	1.90
Average 1974-1990	6.8	11.8	0.57	1,809	39.5	44.8	61.1	34.6	1.56	25.4	15.3	1.64

Table A-7: DAIRY AND LIVESTOCK PRODUCTION

	Milk		Cattle		Sheep		Pig	
	(Million Lts)	Reception in Plants	(Thousand Tons)	(Thousand Heads)	(Thousand Tons)	(Thousand Heads)	(Thousand Tons)	(Thousand Heads)
1960	760	361	139	588	20	1.020	24	370
1961	775	382	148	633	21	1.050	29	441
1962	739	375	158	681	20	1.079	25	408
1963	796	432	160	662	21	1.123	25	399
1964	831	442	133	532	17	912	27	430
1965	810	416	137	540	20	1.099	33	523
1966	812	415	151	596	20	1.043	34	554
1967	829	439	157	612	22	1.220	37	605
1968	846	476	172	666	27	1.461	42	594
1969	889	519	167	642	26	1.472	42	662
1970	895	526	176	671	22	1.258	44	672
1971	940	571	152	564	25	1.372	45	701
1972	880	506	118	407	16	888	51	760
1973	855	442	89	325	12	730	49	763
Average	833	450	147	580	21	1.123	36	563
1974	906	523	175	671	16	962	50	757
1975	956	580	215	893	18	1.048	30	463
1976	1.021	594	198	810	16	949	25	376
1977	1.003	608	173	674	16	933	29	416
1978	978	557	165	637	15	889	34	485
1979	954	519	167	659	18	1.065	43	624
1980	1.080	592	162	610	16	943	50	698
1981	1.200	663	185	690	16	966	56	798
1982	1.056	567	195	781	11	886	45	822
Average	1.017	578	182	714	16	960	40	604
1983	900	502	208	879	13	794	59	832
1984	900	492	197	866	12	741	59	828
1985	1.012	589	175	720	14	829	66	926
1986	1.093	666	177	707	13	796	76	1.064
1987	1.100	667	175	696	15	874	88	1.246
1988	1.120	681	197	799	14	873	100	1.384
1989	1.230	771	221	925	13	800	113	1.570
1990	1.380	886	210	854	14	955	115	1.667
Average	1.092	657	195	806	13	833	85	1.190
Average 1974-1990	1.052	615	187	757	15	900	61	880

Source: For the period 1960-1984, Valdes, Hurtado, and Muchnik (1990), TRADE, EXCHANGE RATE, AND PRICING POLICIES IN CHILE. For the period 1985-1990, Ministry of Agriculture, CHILE: BOLETIN DE ESTADISTICAS BASICAS DEL SECTOR SILVO-AGROPECUARIO, JAN. 1991.

Table A-8: FRUIT PRODUCTION (*)

	Almonds			Table Grapes			Apples			Kiwis		
	(Tons)	(Hectares)	(Tons/Ha)	(Tons)	(Hectares)	(Tons/Ha)	(Tons)	(Hectares)	(Tons/Ha)	(Tons)	(Hectares)	(Tons/Ha)
1960	Na	Na	Na	46700	Na	Na	106900	Na	Na	Na	Na	Na
1961	Na	Na	Na	49100	Na	Na	109500	Na	Na	Na	Na	Na
1962	Na	Na	Na	51400	Na	Na	112100	Na	Na	Na	Na	Na
1963	Na	Na	Na	53200	Na	Na	115500	Na	Na	Na	Na	Na
1964	Na	Na	Na	55800	Na	Na	118200	Na	Na	Na	Na	Na
1965	409	2400	0,2	57800	5500	10,5	101700	8500	12,0	Na	Na	Na
1966	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1967	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1968	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1969	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1970	647	Na	Na	Na	Na	Na	160825	Na	Na	Na	Na	Na
1971	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1972	Na	1515	Na	Na	4050	Na	Na	10850	Na	Na	Na	Na
1973	525	1575	0,3	54500	4150	13,1	120000	11290	10,6	Na	Na	Na
Average	-	-	-	52643	4567	11,8	118091	10213	11,3	-	-	-
1974	475	1570	0,3	58200	4250	13,7	120270	11350	10,6	Na	Na	Na
1975	750	1605	0,5	59100	5550	10,6	125000	11700	10,7	Na	Na	Na
1976	870	1800	0,5	63000	6950	9,1	130000	12600	10,3	Na	Na	Na
1977	1050	1735	0,6	68900	8405	8,2	150000	12970	11,6	Na	Na	Na
1978	1080	2100	0,5	75400	10300	7,3	175000	13800	12,7	Na	Na	Na
1979	1100	2099	0,5	78880	12550	6,3	210000	14735	14,3	Na	Na	Na
1980	1228	2450	0,5	85000	13500	6,3	245000	15500	15,8	Na	10	Na
1981	1330	2720	0,5	121670	16900	7,2	298000	16900	17,6	Na	20	Na
1982	1430	2850	0,5	162680	20300	8,0	345000	17600	19,6	35	95	0,4
Average	1035	2103	0,5	85870	10967	8,5	199808	14128	13,7	-	-	-
1983	1320	2910	0,5	196400	24100	8,1	365000	18100	20,2	120	390	0,3
1984	1560	3000	0,5	225000	28700	7,8	410000	18700	21,9	200	900	0,2
1985	1760	3100	0,6	276200	34355	8,0	425000	19800	21,5	450	1990	0,2
1986	1850	3220	0,6	307500	38825	7,9	515000	21550	23,9	1100	3450	0,3
1987	1450	3385	0,4	397000	43530	9,1	580000	22070	26,3	4300	6210	0,7
1988	1750	3540	0,5	516000	46825	11,0	630000	22870	27,5	12000	10880	1,1
1989	2050	3635	0,6	547000	47800	11,4	660000	23000	28,7	25700	11810	2,2
1990	2240	3748	0,6	660000	47562	13,9	690000	23059	29,9	37300	12260	3,0
Average	1748	3317	0,5	390638	38962	9,7	534375	21144	25,0	10146	5986	1,0
Average 1974-1990	1370	2675	0,5	229290	24141	9,5	357251	17430	19,0	4777	2824	0,5

Source: For the period 1960-1986, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988. For the period 1987-1990, Ministry of Agriculture, CHILE: BOLETIN DE ESTADISTICAS BASICAS DEL SECTOR SILVO-AGROPECUARIO, JAN 1991.

(*) Production corresponds to the period beginning on May 1st of the previous year and ending on April 30th of the year in question.

Continued Table 2.2. FRUIT PRODUCTION

	Avocados			Peaches and Nectarines			Pears			Plums		
	(Tons)	(Hectares)	(Tons/Ha)	(Tons)	(Hectares)	(Tons/Ha)	(Tons)	(Hectares)	(Tons/Ha)	(Tons)	(Hectares)	(Tons/Ha)
1960	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1961	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1962	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1963	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1964	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1965	8672	3400	2.6	61970	9700	6.4	13127	2800	4.7	13019	2900	4.5
1966	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1967	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1968	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1969	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1970	15235	Na	Na	136686	Na	Na	38699	Na	Na	28338	Na	Na
1971	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
1972	Na	4490	Na	Na	13715	Na	Na	2520	Na	Na	1660	Na
1973	13400	4490	3.0	134550	15040	8.9	31000	2600	11.9	12100	1685	7.2
Average	-	-	-	-	-	-	-	-	-	-	-	-
1974	14500	4500	3.2	142460	14840	9.6	32540	2615	12.4	12620	1690	7.5
1975	14650	4605	3.2	145800	14550	10.0	33800	2630	12.9	13200	1780	7.4
1976	15000	4900	3.1	122250	13500	9.1	35500	2700	13.1	13850	2200	6.3
1977	17300	5126	3.4	121000	12610	9.6	37500	2720	13.8	14800	2310	6.4
1978	18800	5850	3.2	117750	12680	9.3	38150	2820	13.5	15850	2850	5.6
1979	19360	5980	3.2	116600	11857	9.8	38250	2980	12.8	16600	2858	5.8
1980	21700	6180	3.5	114540	13300	8.6	43095	3300	13.1	16985	3700	4.6
1981	25000	6460	3.9	121710	13900	8.8	45500	4100	11.1	18225	4700	3.9
1982	27730	6800	4.1	128360	14500	8.9	50550	4800	10.5	22700	5500	4.1
Average	19338	5600	3.4	125608	13526	9.3	39432	3185	12.6	16092	3065	5.7
1983	29600	7100	4.2	138000	14150	9.8	57000	5400	10.6	26000	6400	4.1
1984	31500	7400	4.3	142000	14490	9.8	66000	6050	10.9	34500	7200	4.8
1985	29800	7605	3.9	143100	14585	9.8	71000	6750	10.5	42000	7880	5.3
1986	35000	7705	4.5	148900	15110	9.9	78000	7555	10.3	54000	8445	6.4
1987	32000	7840	4.1	157000	15830	9.9	84000	9450	8.9	64000	9050	7.1
1988	28000	7905	3.5	167400	16425	10.2	99000	12830	7.7	85000	8985	9.5
1989	39000	7945	4.9	178400	16700	10.7	119000	14520	8.2	98500	8435	11.7
1990	37580	7991	4.7	196000	16739	11.7	139600	15324	9.1	110000	8290	13.3
Average	32810	7686	4.3	158850	15504	10.2	89200	9735	9.5	64250	8086	7.8
Average 1974-1990	25678	6582	3.8	141251	14457	9.7	62852	6267	11.1	38755	5428	6.7

Table A-9: FORESTRY PRODUCTION

	Sawed Wood	Boards and Veneers	Pulps	Papers and Cardboard
	(Thousand m3)		(Thousand Metric Tons)	
1960	681	15	105	106
1961	765	17	146	123
1962	776	19	146	125
1963	810	21	152	137
1964	1.033	22	175	146
1965	994	28	199	171
1966	1.062	34	217	224
1967	851	28	309	235
1968	996	43	279	230
1969	1.012	42	390	278
1970	976	42	326	247
1971	1.047	48	345	278
1972	1.114	47	345	272
1973	932	49	350	251
Average	932	32	249	202
1974	1.399	51	433	307
1975	960	33	436	266
1976	1.223	46	515	298
1977	1.336	56	603	300
1978	1.475	71	665	301
1979	2.196	86	701	306
1980	2.249	88	763	326
1981	1.732	105	743	279
1982	1.172	93	668	270
Average	1.527	70	614	295
1983	1.606	105	796	325
1984	2.002	135	839	366
1985	2.191	153	837	369
1986	2.026	165	848	388
1987	2.677	183	861	442
1988	2.710	187	910	450
Average	2.202	155	849	390
Average 1974-1988	1.797	104	708	333

Source: For the period 1960-1988, Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988.

(Na) Not available

Table A-10: AGRICULTURAL INPUTS

DOMESTIC CONSUMPTION OF FERTILIZERS (Metric Tons)							
	Sodium Salt peter	Potassium Salt peter	Urea	Diamonium Phosphate	Triple Super Phosphate	Normal Super Phosphate	Potassium Sulfate
1968	145.680	34.657	4.000	na	124.600	14.200	5.000
1969	129.010	34.979	18.500	na	124.900	27.600	4.500
1970	84.623	71.148	26.885	12.141	142.113	20.651	8.013
1971	112.044	84.503	23.875	20.867	115.110	18.866	6.656
1972	158.086	83.330	28.309	11.081	100.841	19.730	10.907
1973	142.204	48.036	24.645	101.403	93.800	29.245	15.883
1974	142.818	46.154	24.859	61.776	121.296	23.172	19.207
1975	140.466	32.930	11.747	22.184	62.849	26.923	6.910
1976	168.507	39.473	21.583	33.056	79.086	12.659	16.992
1977	114.526	38.159	22.624	15.978	89.002	28.187	7.523
1978	123.570	53.634	32.666	37.888	100.381	na	10.872
1979	110.818	42.767	54.184	45.516	101.903	9.223	13.149
1980	83.186	41.899	51.566	44.646	100.371	4.873	14.453
1981	84.546	39.015	48.164	37.110	75.685	8.721	13.149
1982	165.024	47.478	23.378	22.282	73.797	10.371	9.606
1983	177.804	39.072	53.461	36.132	91.623	5.515	11.665
1984	232.021	46.073	74.945	47.390	117.013	14.052	14.719
1985	286.359	40.912	96.796	49.738	126.437	16.242	17.000
1986	256.753	43.360	169.361	67.675	155.350	20.546	21.500

Source: Departamento de Economia Agraria-Universidad Catolica (DEA-UC), PANORAMA ECONOMICO DE LA AGRICULTUR.

66. Sep 1989

Na: Not available

Table A-11: AGRICULTURAL (1) AND NATIONAL EMPLOYMENT
(Thousand)

	Agricultural		National	
	(A)	(B)	(A)	(B)
1966	467		2.799	
1967	494		2.809	
1968	508		2.844	
1969	488		2.793	
1970	465		2.809	
1971	409		2.871	
1972	375		2.882	
1973	na		na	
Average	458		2.829	
1974	na		na	
1975	518		2.650	
1976	501		2.777	
1977	521		2.821	
1978	531		2.981	
1979	504		3.003	
1980	530	585	3.257	3.276
1981	508	612	3.271	3.369
1982	478	587	2.943	3.069
Average	511	594	2.963	3.238
1983	509	556	3.216	3.151
1984	536	601	3.349	3.369
1985 (2)	751	612	3.537	3.559
1986	802	627	3.896	3.745
1987	837	673	4.011	3.945
1988	865	708	4.266	4.096
1989	857	685	4.425	4.227
1990	858	701	4.460	4.425
Average (3)	828	668	4.099	4.000

(1) Includes Fishing

(2) INE change the sample desing

(3) Average between 1985 and 1990

Source:

(A) Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988. For the years 1966,1969,1971,1975 (jul-Dec), 1967,1968 (mar-jun), 1970 (sep-dec), 1972 (janu-jun) and for the period 1976-1990 (oct -dec). Taken from survey carried out by INE.

(B) Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988. Average mar-sep for each year.

Taken from survey carried out by University of Chile

Na: Not available

Table A-12: PRICE OF AGRICULTURAL INPUTS

Table A-12: PRICE OF AGRICULTURAL INPUTS										
CONSUMER PRICE OF FERTILIZERS (1)							COST OF LABOR (2)	REAL INTEREST RATES (3)	PRICE OF PETROLEUM (4)	PRICE OF UREA (3)
(Thousand Chilean \$ July 1989/Tons)							(Chilean \$ 1988)		(Chilean \$ 1988/barrel)	
	Sodium Saltpeter	Potassium Saltpeter	Urea	Diammonium Phosphate	Triple Super Phosphate	Normal Super Phosphate	Potassium Sulfate	Monthly Minimum Wage	Charged by Banks	
1975	43,9	61,2	131,7	139,9	137,5	52,7	na	13.363	15,9	4.885
1976	30,9	46,1	62,6	71,4	63,8	29,5	na	14.379	64,2	4.097
1977	25,1	33,7	47,1	51,8	38,5	18,2	46,0	17.496	57,0	3.654
1978	29,2	35,8	58,7	51,0	45,9	na	50,8	21.677	42,3	3.848
1979	32,5	40,9	64,1	67,2	56,6	48,7	60,4	19.190	16,9	4.032
1980	31,0	41,0	62,9	76,1	60,5	41,9	59,6	18.617	12,2	5.102
1981	28,9	39,4	59,1	60,2	49,6	34,5	58,5	20.252	38,9	5.332
1982	18,6	31,0	61,6	70,2	58,3	32,4	73,4	20.358	35,1	6.690
1983	23,7	42,5	65,3	77,4	65,1	49,8	80,3	14.337	15,9	6.227
1984	32,9	49,3	80,2	85,5	66,9	47,2	86,3	11.813	11,3	5.882
1985	33,4	53,1	86,2	93,5	69,0	48,5	100,8	10.215	11,1	6.499
1986	30,1	50,8	63,8	88,3	70,4	46,0	91,8	9.847	7,6	3.300
1987	28,3	50,2	55,0	78,7	66,3	42,4	81,2	9.293	9,4	4.005
1988	32,8	49,7	65,7	88,2	72,1	43,0	85,4	10.273	7,4	3.339
1989	na	na	na	na	na	na	na	na	11,8	3.783
1990	na	na	na	na	na	na	na	na	16,4	4.620

Source:

- (1) DEA-UC, PANORAMA ECONOMICO DE LA AGRICULTURA #66.Sep 1989. With out Value Added Tax.
 (2) Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988. Value in legal currency of the period deflated by wholesale price index.
 (3) Central Bank of Chile, INDICADORES ECONOMICOS Y SOCIALES 1960-1988. Corresponds to the accumulated value of monthly rates for each year.
 (4) Organization of American State, INTERNATIONAL COMMODITY QUARTERLY PRICE BULLETIN. May 1991. OPEC spot price deflated by wholesale price index.

Table A-13: HECTARES AND SHARE OF TOTAL LAND IN USE

	1965		1975		1985	
	HA	%	HA	%	HA	%
Farming						
Wheat	727.100	55,7	686.200	52,3	506.200	42,0
Corn	87.600	6,7	91.600	7,0	130.500	10,8
Rice	27.500	2,1	22.900	1,7	38.500	3,2
Oats	70.300	5,4	94.500	7,2	84.900	7,0
Barley	38.300	2,9	66.200	5,0	35.000	2,9
Potatoes	91.100	7,0	71.500	5,4	62.900	5,2
Dry Beans	58.500	4,5	68.000	5,2	83.000	6,9
Lentils	24.100	1,8	20.600	1,6	36.400	3,0
Chick Peas	8.400	0,6	7.800	0,6	11.300	0,9
Sugarbeet	18.000	1,4	42.500	3,2	44.100	3,7
Rapseed	57.600	4,4	45.000	3,4	19.200	1,6
Sunflower	31.900	2,4	13.300	1,0	20.000	1,7
Rye	7.100	0,5	8.700	0,7	5.000	0,4
Peas	7.300	0,6	8.600	0,7	6.500	0,5
Subtotal	1.254.800	96,1	1.247.400	95,1	1.083.500	89,9
Fruit						
Almonds	2.400	0,2	1.605	0,1	3.100	0,3
Table Grapes	5.500	0,4	5.550	0,4	34.355	2,8
Apples	8.500	0,7	11.700	0,9	19.800	1,6
Kiwis	0	0,0	0	0,0	1.990	0,2
Avocados	3.400	0,3	4.605	0,4	7.605	0,6
Peaches and Nectarines	9.700	0,7	14.550	1,1	14.585	1,2
Pears	2.800	0,2	2.630	0,2	6.750	0,6
Plums	2.900	0,2	1.780	0,1	7.880	0,7
Cherries	1.600	0,1	1.050	0,1	2.800	0,2
Apricots	800	0,1	1.625	0,1	1.650	0,1
Lemons	3.900	0,3	7.420	0,6	5.255	0,4
Orange	4.200	0,3	4.630	0,4	6.300	0,5
Walnuts	2.600	0,2	4.350	0,3	7.300	0,6
Olives	3.200	0,2	3.205	0,2	3.020	0,3
Subtotal	51.500	3,9	64.700	4,9	122.390	10,1
Total	1.306.300	100	1.312.100	100	1.205.890 *	100

Source: Central Bank of Chile, "INDICADORES ECONOMICOS Y SOCIALES 1960-1988.

* Not includes news cultivars in use.

Table A-14: DEBT INDICATORS

Year	Agriculture Value Added \$1977 millions 1	Agriculture Debt \$1977 millions 2	National Debt \$1977 millions 3	GDP Total \$1977 millions 4	(2)/(1) (%) 5	(3)/(4) (%) 6	(2)/(4) (%) 7	(2)/(3) (%) 8	Ratio (see (a)) 9	Index (see (b)) 10
1965	19.302	2.492	8.970	224.990	12.91	3.99	1.11	27.78	3.238	1.03
1966	23.386	2.347	9.820	250.079	10.04	3.93	0.94	23.90	2.556	0.82
1967	24.091	2.439	10.366	258.198	10.12	4.01	0.94	23.53	2.522	0.80
1968	25223	2.748	10.925	267.442	10.89	4.08	1.03	25.15	2.667	0.85
1969	22313	2.740	10.950	277.393	12.28	3.95	0.99	25.02	3.111	0.99
1970	23.113	2.477	10.897	283.097	10.72	3.85	0.87	22.73	2.784	0.89
1971	22.693	3.528	14.237	308.449	15.55	4.62	1.14	24.78	3.368	1.07
1972	21.017	2.688	11.575	304.707	12.79	3.80	0.88	23.22	3.367	1.07
1973	18.856	1.782	4.060	287.750	9.45	1.41	0.62	43.89	6.698	2.14
1974	23.893	1.910	7.408	290.554	7.99	2.55	0.66	25.78	3.135	1.00
1975	25.050	2.316	9.128	253.043	9.25	3.61	0.92	25.37	2.563	0.82
1976	24.314	3.854	16.438	261.945	15.85	6.28	1.47	23.45	2.526	0.81
1977	26.837	5.740	36.931	287.770	21.39	12.83	1.99	15.54	1.667	0.53
1978	25.529	9.437	47.399	311.417	36.97	15.22	3.03	19.91	2.429	0.77
1979	26.966	14.975	111.972	337.207	55.53	33.21	4.44	13.37	1.672	0.53
1980	27.927	19.722	171.301	363.446	70.62	47.13	5.43	11.51	1.498	0.48
1981	28.683	n.a.	218.575	383.551	n.a.	56.99	n.a.	n.a.	n.a.	n.a.
1982	28.084	26.252	252.871	329.523	93.48	76.74	7.97	10.38	1.218	0.39
1983	27.062	25.799	219.033	327.180	95.33	66.95	7.89	11.78	1.424	0.45
1984	28.988	27.097	229.368	347.926	93.48	65.92	7.79	11.81	1.418	0.45
1985	30.612	26.181	236.437	356.447	85.53	66.33	7.34	11.07	1.289	0.41
1986	33.275	0	225.176	376.627	n.a.	59.79	n.a.	n.a.	n.a.	n.a.
1987	34.781	25.633	226.313	398.230	73.70	56.83	6.44	11.33	1.297	0.41
1988	36.780	26.887	246.851	427.530	73.10	57.74	6.29	10.89	1.266	0.40
1989	37.902	27.903	271.477	470.243	73.62	57.73	5.93	10.28	1.275	0.41
1990	39.737	25.359	253.755	480.323	63.82	52.83	5.28	9.99	1.208	0.39

Source: Indicadores Economicos y Sociales, Banco Central de Chile y Superintendencia de Bancos e Instituciones Financieras

(a) Ratio = (Agriculture Debt/Agriculture Value Added)/(Total Debt/National GDP)

(b) Index (1974=100) of the ratio calculated in (a)

Table A-15: VALUE AND PAASCHE PRICE INDICES OF AGRICULTURAL EXPORTS

	Value of Agricultural Exports (US\$ Thousand FOB)			Paasche Price Index for Agricultural Exports (Base: 1985=100)	
	Farming (A)	Livestock (B)	Agricultural (A+B)		
P77Q77	126600	23200	149800	1977	79,91
P85Q77	171410	16044	187454		
P78Q78	157700	27800	185500	1978	78,89
P85Q78	211157	23995	235152		
P79Q79	183800	37500	221300	1979	93,41
P85Q79	208261	28651	236912		
P80Q80	244300	36900	281200	1980	111,92
P85Q80	226984	24270	251254		
P81Q81	268000	29100	297100	1981	112,08
P85Q81	242901	22184	265085		
P82Q82	278100	33500	311600	1982	104,89
P85Q82	266992	30091	297083		
P83Q83	253700	26400	280100	1983	87,93
P85Q83	293336	25198	318534		
P84Q84	345600	29100	374700	1984	99,82
P85Q84	350677	24687	375364		
P85Q85	425800	25900	451700	1985	100,00
P86Q86	557100	37700	594800		
P85Q86	484874	46390	531264	1986	111,96
P87Q87	605100	54200	659300		
P85Q87	533063	70026	603089	1987	109,32
P88Q88	683800	55600	739400		
P85Q88	680458	55302	735760	1988	100,49
P89Q89	710400	48800	759200		
P85Q89	699061	44712	743773	1989	102,07

Source: Central Bank of Chile, INDICADORES DE COMERCIO EXTERIOR. Taken from editions between 1980 and 1989.

Table A-16: VALUE AND PAASCHE PRICE INDICES OF AGRICULTURAL IMPORTS

Value of Select Food of Agricultural Origin (US\$ Thousand CIF)		Value of Select Food of Industrial Origin (US\$ Thousand CIF)					Sub-Total
Bananas		Cow	Milk Serum	Powdered Milk	Rice	Refined Sugar	
P77Q77	9.700	11.900	0	9.000	3.000	15.300	48.900
P85Q77	15.007	5.926	0	10.694	4.487	11.940	48.053
P78Q78	16.200	18.400	0	15.300	11.600	21.200	82.700
P85Q78	22.956	14.520	0	15.610	11.471	15.169	79.725
P79Q79	26.400	8.100	0	17.800	4.200	32.900	89.400
P85Q79	30.216	5.097	0	16.391	2.863	21.493	76.059
P80Q80	35.800	12.800	0	27.700	27.200	209.000	312.500
P85Q80	40.569	5.766	0	19.278	17.007	45.399	128.019
P81Q81	36.900	17.400	0	18.300	9.600	26.800	109.000
P85Q81	40.560	8.230	0	11.272	5.642	7.943	73.647
P82Q82	19.000	10.400	900	16.100	10.900	54.800	112.100
P85Q82	23.149	5.368	1.052	10.410	7.651	29.978	77.608
P83Q83	9.500	2.700	1.100	20.200	10.700	48.100	92.300
P85Q83	11.512	1.933	1.205	13.808	11.112	33.692	73.262
P84Q84	10.200	7.500	1.600	17.700	3.500	41.400	81.900
P85Q84	10.833	4.893	1.857	15.263	3.002	28.802	64.650
P85Q85	8.600	6.500	900	3.000	1.000	1.000	21.000
P86Q86	9.900	3.500	400	12	8.300	3.000	25.112
P85Q86	9.724	3.055	393	11	13.033	2.346	28.562
P87Q87	11.900	2.100	3.200	12.900	4.600	5.000	39.700
P85Q87	11.787	1.311	2.513	12.054	7.526	3.709	38.900
P88Q88	13.900	4.000	5.000	18.400	8.600	12.800	62.700
P85Q88	14.042	2.770	2.762	12.670	9.005	7.093	48.342
P89Q89	15.100	5.800	3.400	24.500	2.200	8.700	59.700
P85Q89	14.896	3.639	1.511	12.820	2.034	3.633	38.533

Source: Central Bank of Chile, INDICADORES DE COMERCIO EXTERIOR. Taken from editions between 1980 and 1989.

Continue Table A-16: VALUE AND PAASCHE PRICE INDICES OF AGRICULTURAL IMPORTS

Value of Select Raw Material Food and Non Food of Agricultural Origin (US\$ Thousand CIF)							Sub-Total
	Crude Coffee	Wheat	Barley	Corn	Prarie, Grass, and Beet Seed	Crude Cotton	
P77Q77	13.600	70.500	0	9.400	0	39.100	132600
P85Q77	4.760	92.694	0	16.548	0	32.221	146.224
P78Q78	18.900	165.200	0	32.600	0	42.500	259.200
P85Q78	10.717	169.084	0	49.042	0	36.090	264.932
P79Q79	31.400	136.900	8.500	27.200	0	23.300	227.300
P85Q79	17.346	103.929	11.307	34.645	0	37.850	205.077
P80Q80	13.300	206.100	7.400	69.800	0	23.300	319.900
P85Q80	6.550	145.933	6.148	75.152	0	17.108	250.891
P81Q81	10.700	211.900	1.200	49.200	0	23.800	296.800
P85Q81	7.281	147.880	972	53.466	0	17.647	227.245
P82Q82	9.400	175.800	0	50.831	0	12.200	248.231
P85Q82	8.904	141.861	0	68.712	0	10.814	230.291
P83Q83	8.700	198.300	0	22.400	4.900	21.100	255.400
P85Q83	9.745	165.634	0	24.847	4.144	16.609	220.979
P84Q84	10.400	154.500	2.000	8.500	4.100	31.200	210.700
P85Q84	11.920	137.118	1.948	6.266	3.950	23.614	184.816
P85Q85	10.300	67.800	900	1.044	2.000	25.000	107.044
P86Q86	12.900	19.500	2.000	5.250	2.600	30.000	72.250
P85Q86	5.809	22.360	2.724	9.319	1.804	36.092	78.108
P87Q87	11.300	4.600	7.700	13.200	3.400	38.000	78.200
P85Q87	8.754	3.927	10.431	23.517	2.514	35.074	84.217
P88Q88	14.000	13.900	1.400	27.500	3.700	40.600	101.100
P85Q88	14.207	9.714	1.811	37.084	2.430	36.139	101.385
P89Q89	10.700	4	43	12.500	4.900	39.000	67.147
P85Q89	11.619	1	57	14.420	2.996	36.764	65.857

Continue Table A-16: VALUE AND PAASCHE PRICE INDICES OF AGRICULTURAL IMPORTS

	Value of Select Raw Material Food of Industrial Origin (US\$ Thousand CIF)					Sub-Total	Total Agricultural Imports	Paasche Price Index for Agricultural Imports (Base:1965=100)	
	Tea	Yerba Mate	Gross and Refined Oil	Soy Protein	Soy Flour				
P77Q77	17.000	0	27.800	0	0	44.800	177.400	1977	97.75
P85Q77	7.207	0	30.027	0	0	37.234	183.458		
P78Q78	13.500	0	37.600	0	5.700	56.800	316.000	1978	98.83
P85Q78	17.182	0	36.476	0	5.114	58.772	323.704		
P79Q79	17.300	6.700	45.200	0	6.600	75.800	303.100	1979	110.10
P85Q79	20.182	6.993	43.220	0	4.975	75.370	280.446		
P80Q80	17.200	18.000	39.700	0	17.500	92.400	412.300	1980	159.80
P85Q80	16.762	8.853	37.725	0	11.317	74.657	325.548		
P81Q81	19.200	11.100	44.200	0	11.800	86.300	383.100	1981	129.71
P85Q81	16.054	6.335	47.908	0	8.202	78.499	305.744		
P82Q82	16.000	5.200	43.200	0	10.300	74.700	322.931	1982	111.17
P85Q82	13.883	5.205	56.080	0	8.254	83.422	313.713		
P83Q83	15.000	8.000	59.700	0	9.800	92.500	347.900	1983	116.24
P85Q83	16.209	7.141	54.548	0	6.566	84.464	305.443		
P84Q84	21.700	5.900	71.500	0	8.000	107.100	317.800	1984	125.58
P85Q84	13.299	4.856	44.654	0	6.002	68.811	253.627		
P85Q85	16.500	6.300	54.049	3.400	5.200	85.449	192.493	1985	100.00
P86Q86	9.600	6.500	16.400	3.100	6.800	42.400	114.650		
P85Q86	13.987	4.363	20.679	2.969	6.180	48.178	126.286	1986	90.54
P87Q87	9.200	9.800	18.700	4.500	10.800	53.000	131.200		
P85Q87	14.999	6.133	23.900	4.302	9.693	59.027	143.244	1987	101.00
P88Q88	11.600	9.600	16.500	4.800	15.900	58.400	159.500		
P85Q88	14.260	5.166	17.253	3.367	10.772	50.818	152.203	1988	127.89
P89Q89	12.700	9.400	23.400	5.000	10.300	60.800	127.947		
P85Q89	14.496	5.075	24.040	3.007	7.242	53.860	119.717	1989	121.33